FORUM PEDAGOGICZNE

2025, 16, 2: 167–177
p-ISSN 2083-6325; e-ISSN 2449-7142
https://doi.org/10.21697/fp.2025.2.15

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Received: 14.07.2025; revised: 4.08.2025; accepted: 5.09.2025

ACADEMIC *RESILIENCE* SCALE (ARS-30) – ASSESSMENT OF PSYCHOMETRIC PROPERTIES OF THE POLISH VERSION OF THE MEASURE

SKALA *RESILIENCE* AKADEMICKIEGO (ARS-30) – OCENA WŁAŚCIWOŚCI PSYCHOMETRYCZNYCH POLSKIEJ WERSJI NARZĘDZIA THE ACADEMIC RESILIENCE SCALE (ARS-30)

Streszczenie: W artykule przedstawiono polską adaptację narzędzia *Academic Resilience Scale (ARS-30)* autorstwa Simona Cassidy'ego. Skala ma charakter samoopisowy i służy do pomiaru rezyliencji akademickiej wśród studentów. Celem badania było opracowanie polskojęzycznej wersji narzędzia oraz ocena jego właściwości psychometrycznych, w tym rzetelności i trafności. Badanie walidacyjne przeprowadzono wśród 380 studentów (M = 22,06; SD = 2,79). Struktura czynnikowa polskiej wersji jest zbliżona do oryginału. Analiza danych pozwoliła na wyodrębnienie czteroczynnikowej struktury wyjaśniającej 42,8% wariancji wyników. Uzyskane wyniki empiryczne wskazują na satysfakcjonującą rzetelność i trafność adaptowanej skali.

Słowa kluczowe: rezyliencja, rezyliencja akademicka, adaptacja narzędzia, studenci, Skala Rezyliencji Akademickiej

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Abstract: This article presents the Polish adaptation of the Academic Resilience Scale (ARS-30) developed by Simon Cassidy. The scale is a self-report instrument designed to measure academic resilience among university students. The aim of the study was to develop a Polish-language version of the scale and to evaluate its psychometric properties, including reliability and validity. The validation study was conducted among 380 students (M = 22.06; SD = 2.79). The factorial structure of the Polish version closely resembles the original. The analysis identified a four-factor solution that accounted for 42.8% of the total variance. The empirical findings demonstrate satisfactory reliability and validity of the Polish adaptation of the instrument.

Keywords: academic resilience, resilience, adaptation, students, Academic Resilience Scale

Introduction

Recent data from the Patient Ombudsman's Report (2020) indicate that students are increasingly experiencing mental health crises. The most frequently reported issues include low self-esteem, suicidal thoughts, stress, depressive and anxiety disorders, neurosis, difficulties in adaptation, and personality disorders. Students also face crises in family, peer, and emotional relationships, along with problems in communication, loneliness, and a lack of empathy (Kluczyńska et al. 2019). These difficulties are compounded by the fast pace of life and the stress inherent in academic environments, making university years particularly challenging for young adults. Such experiences can significantly impact academic achievement and, in some cases, lead to university dropout. Nevertheless, some students are able to adapt effectively to these changing and adverse circumstances and even succeed academically. These individuals are described in the academic literature as "resilient" – a phenomenon referred to as academic resilience (Cassidy 2016).

Academic resilience

The once dominant view of resilience as a one-dimensional, generalized, and global construct has evolved toward a more contextual approach (Riley, Masten 2005). This shift is evident in studies exploring resilience across various domains, including business organizations (Riolli, Savicki 2003), the military (Palmer 2008), sports (Galli, Vealey 2008), juvenile rehabilitation (Konaszewski 2020), and broader communities (Brennan 2008). This contextualized understanding has also been extended to education, encompassing both school pupils and university students. Consequently, research on academic resilience has emerged, focusing on individuals' responses to challenges encountered within the specific setting of formal education.

Academic resilience is defined as "the ability to overcome sudden and/or chronic adversity that is perceived as a major threat to a student's educational development" (Martin 2013, p. 488). It is regarded as one of the key attributes enabling students

to succeed in their studies (Cassidy 2016). Students characterized by high levels of academic resilience demonstrate the capacity to recover from academic failure and ultimately achieve success, while their peers may struggle or continue to perform poorly when facing the same obstacles (Martin, Marsh 2006).

Assessment tools for measuring academic resilience

Several instruments have been developed to assess resilience, often focusing on either capabilities or personality traits. Capability-based measures include the Brief Resilience Scale (BRS; Smith et al., 2008) and the Connor-Davidson Resilience Scale (CD-RISC; Connor, Davidson 2003). Trait-based instruments include the Ego-Resiliency Scale (Kaczmarek 2011) and the Resilience Measurement Scale (SPP-25; Ogińska-Bulik, Juczyński 2001).

In educational settings, one commonly used instrument is the one-dimensional Academic Resilience Scale (ARS) by Martin and Marsh (2006), which assesses students' ability to cope with academic challenges, such as poor grades, negative feedback, academic stress, and pressure.

Cassidy (2016), however, proposed a broader, process-oriented understanding of academic resilience, viewing it as a developmental ability to draw on internal and external resources for positive adaptation. Based on this conceptualization, Cassidy developed the Academic Resilience Scale – ARS-30, which evaluates both adaptive and maladaptive cognitive, emotional, and behavioral responses to academic adversity.

The scale includes a vignette describing a typical academic problem and 30 items across three subscales:

- Perseverance (14 items) – e.g., "I would use feedback to improve my work";
- Adaptive help-seeking (9 items) – e.g., "I would use my past successes to motivate myself";
- Negative affect and emotional response (7 items) – e.g., "I would probably get annoyed".

Items are rated on a 5-point Likert scale (1 = strongly agree, 5 = strongly disagree). Cassidy (2016) reported high internal consistency: $\alpha = .90$ (total scale), $\alpha = .83$ (Perseverance), $\alpha = .78$ (Help-seeking), and $\alpha = .80$ (Negative affect). Inter-item correlations ranged from $r = .37$ to .65 across subscales. A positive correlation was observed between academic resilience and self-efficacy ($r = .49$).

The ARS-30 has been adapted into several languages. In the Spanish version, confirmatory factor analysis supported the three-factor structure, and Cronbach's alpha ranged from .83 to .88 (Trigueros et al. 2020). The scale negatively predicted academic stress and positively predicted self-efficacy. The Iranian adaptation yielded a three-factor structure explaining 54.82% of the variance, with reliability coefficients ranging from .84 to .96 (Ramezanpour et al. 2019). The Turkish version

(Cengiz, Peker 2022) also confirmed the original factor structure, with alpha values between .78 and .83, indicating good validity and reliability.

The present study aimed to validate the Polish version of the Academic Resilience Scale (ARS-30). Two studies were conducted: the first focused on the translation and cultural adaptation process, while the second assessed the tool's factorial structure, internal consistency, and construct validity. Validity was examined through correlations with self-efficacy, general resilience (BRS), and well-being.

Study 1: Development of the Polish language version

The development of the Polish version of the scale followed a multi-stage process and was conducted in accordance with established procedures for the cultural adaptation of psychological instruments (Hornowska, Paluchowski 2004). First, the original author of the ARS-30 granted written permission to adapt the scale for use in the Polish context.

Next, three independent English–Polish translators translated the introductory section, instructions, items, and response options. A panel of three bilingual experts—an educator, a special educator, and a psychologist – then reviewed the translations and agreed upon a unified version. This version was subsequently subjected to back-translation by two additional independent translators.

To ensure the linguistic appropriateness of the Polish version for the target age group, a pilot comprehension check was conducted with 15 individuals aged 18 to 25. The preliminary version was further reviewed by a linguist, who provided stylistic corrections to selected items.

Finally, an expert panel was convened, comprising the principal investigators, the lead translator, and two specialists in health psychology. The panel reviewed the translation, resolved any discrepancies, and approved the final version of the Polish ARS-30.

Study 2. Psychometric Properties of the Polish Version of the ARS-30

Participants and procedure

The sample consisted of 380 students, the majority of whom were female (88%) enrolled at Polish universities, aged between 18 and 43 years (M = 22.06; SD = 2.79). The survey was conducted online in June 2024. Participants completed a battery of questionnaires measuring academic resilience, general resilience (BRS), self-efficacy, and well-being. They were informed that participation was voluntary and that they could withdraw from the study at any time without providing a reason. All participants consented to take part in the study without receiving any form of compensation. The research protocol was approved by the Research Ethics

Committee at Maria Curie-Skłodowska University in Lublin (Application No. 3/2023).

Measures

To assess the construct validity of the ARS-30, its correlations with other theoretically related instruments were examined:

1. Brief Resilience Scale (BRS) by Smith et al. (2008), adapted into Polish by Konaszewski, Niesiobędzka, and Surzykiewicz (2020). The BRS contains six items rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). The Polish version has demonstrated satisfactory reliability (Cronbach's $\alpha = 0.88$). Example item: "I usually get through difficult situations without major problems".
2. Generalized Self-Efficacy Scale (GSES) by Schwarzer, Jerusalem, and Juczyński (2001). This scale measures the strength of an individual's belief in their ability to cope with stressors. It consists of 10 items rated on a 4-point Likert scale (1 = no, 4 = yes). Reliability: $\alpha = 0.88$. Example item: "Thanks to my ingenuity and resourcefulness, I know how to cope with unforeseen situations".
3. WHO-5 Well-Being Index by the WHO Psychiatric Research Unit (Topp et al., 2015). The scale includes five items assessing well-being over the past two weeks, rated on a 6-point scale (0 = never, 5 = all the time). The total score ranges from 0 to 25. Reliability: $\alpha = 0.82$. Example item: "I felt cheerful and in a good mood".

Statistical Analyses

Exploratory factor analysis (EFA) was conducted using SPSS Statistics 29, applying the Principal Axis Factoring method with oblimin rotation. The number of factors was determined using Cattell's scree test and Kaiser's criterion (eigenvalues > 1). Factor loadings above 0.40 were considered significant. Pearson's r was used to examine correlations between variables. According to Cohen (1992), correlations < 0.10 are trivial, 0.10–0.30 small, 0.30–0.50 moderate, and > 0.50 large. Internal consistency was assessed using Cronbach's alpha.

Results

The scree plot suggested a four-factor solution, accounting for a total of 42.80% of the variance (Factor 1: 13.87%; Factor 2: 12.80%; Factor 3: 10.30%; Factor 4: 5.81%). Given the sample size (>200), this solution is considered robust (Field, 2013). Additionally, retention of four factors met Kaiser's (1960) criterion, with

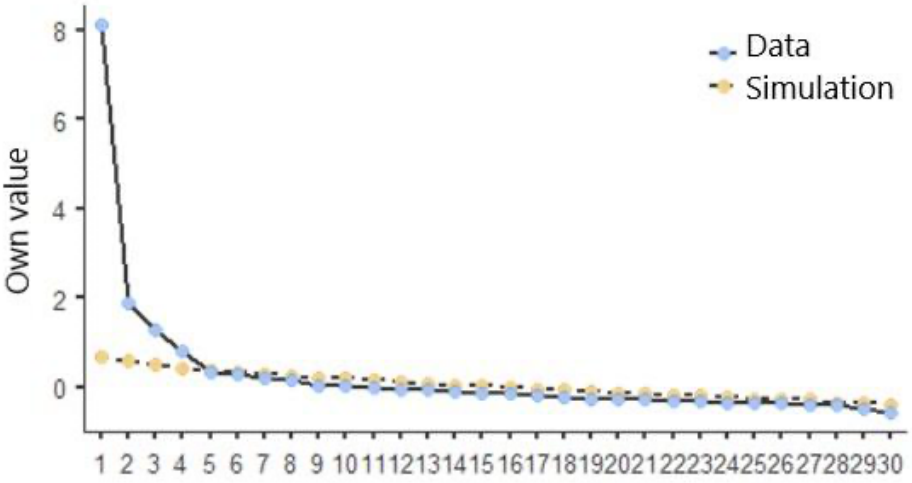

Figure 1. A scatter plot showing the amount of variance in each factor

Source: authors' own elaboration.

eigenvalues of 4.16, 3.84, 3.09, and 1.74, respectively. Bartlett's test of sphericity (χ^2 = 4506.08, df = 435, $p < .001$) confirmed the data's suitability for factor analysis.

Table 1 shows the values of factor loadings obtained using the principal axis factoring method (PAF), which was applied in conjunction with oblimin rotation. A loading cut-off of > 0.4 was used. Item grouping suggests that factor 1 includes items 8, 9, 18, 20, 21, 22, 24, 25, 26, 27; factor 2 includes items 5, 7, 10, 12, 17, 19, 28, 29; factor 3 consists of items 1, 2, 11, 13, 15, 16, 30; factor 4 includes items 4, 6, 14. Items 3 and 23 were removed due to low factor loadings (< 0.4).

Table 1. Factor loadings of the Polish version of the ARS

	Factor 1	Factor 2	Factor 3	Factor 4
Item 27	0.642			
Item 22	0.592			
Item 9	0.551			
Item 18	0.522			
Item 25	0.506			
Item 24	0.488			
Item 26	0.458			
Item 21	0.445			
Item 8	0.433			
Item 20	0.422			
Item 19		0.705		
Item 7		0.689		
Item 28		0.663		

	Factor 1	Factor 2	Factor 3	Factor 4
Item 12		0.621		
Item 5		0.46		
Item 10 R		-0.453		
Item 29		0.446		
Item 17 R		-0.412		
Item 2			0.64	
Item 16			0.589	
Item 15 R			-0.548	
Item 30			0.502	
Item 11			0.489	
Item 13			0.472	
Item 1 R			-0.423	
Item 6				0.695
Item 14				0.561
Item 4 R				-0.485

Note. R: items should be recoded.

The results of the reliability analysis indicate that Cronbach's alpha is: factor 1: 0.82, factor 2: 0.82, factor 3: 0.76, factor 4: 0.64. Table 2 indicates the correlations between the different factors of the ARS scale.

Table 2. Correlations between ARS scale factors

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1	—			
Factor 2	-0.52***	—		
Factor 3	0.56***	-0.44***	—	
Factor 4	-0.29***	0.3***	-0.14**	—

Note: * p < .05, ** p < .01, *** p < .001.

Table 3 shows the descriptive statistics of the scale and individual items, including the mean (M), standard deviation (SD), minimum and maximum values, and values of skewness (S) and kurtosis (K) measures.

Table 3. Descriptive statistics for the subscales of the Polish version of the ARS-30

	Factor 1	Factor 2	Factor 3	Factor 4
M	35.4	19.5	26.6	11.2
SD	7.19	6.51	4.66	2.66
Min	10	8	7	3
Max	50	40	35	15
S	-0.51	0.5	-0.94	-0.46
K	0.02	-0.24	1.65	-0.34

To assess the validity of the tool, a correlation analysis was conducted between academic resilience (ARS) and other psychological constructs, including general resilience (BRS), self-efficacy (GSES), and mental well-being (WHO-5).

Table 4. The validity of the ARS scale

	Factor 1	Factor 2	Factor 3	Factor 4
BRS	0.26***	-0.35***	0.17***	-0.21***
WHO-5	0.28***	-0.30***	0.14**	-0.17***
GSES	0.33***	-0.30***	0.27***	-0.16**

Note. ** p < .01, *** p < .001

Factor 1 is positively related to resilience, self-efficacy and well-being. Factor 2 has a negative correlation with resilience, self-efficacy and well-being. Factor 3 is positively related to resilience, self-efficacy and well-being. Factor 4 is negatively related to resilience, self-efficacy and well-being.

The way to analyze and interpret the results

The Polish version of the ARS questionnaire contains 28 statements. Respondents respond to each statement using a 5-point Likert scale, where 1 means "strongly disagree" and 5 means "strongly agree." Note that items marked "R" (reverse-scored) require the scale to be reversed. Scores for each statement are summed across four dimensions, which include: (1) Adaptive support-seeking, (2) Negative affect and emotional response, (3) Perseverance, and (4) A negative approach to feedback.

Discussion

The purpose of this research was to evaluate the psychometric properties of the Polish version of the Academic Resilience Scale (ARS-30). The present research allows us to conclude that the Polish version of the ARS-30 differs marginally from the original version. The authors of the Polish version of the tool propose a 4-factor structure: adaptive support-seeking, negative affect and emotional response, perseverance, and negative attitude towards feedback. The reliability of the individual subscales was satisfactory. Analyses were also conducted to check the validity of the assessment tool. It was found that adaptive support-seeking and perseverance were positively related to well-being, self-efficacy, and resilience. In contrast, negative affect and emotional response, and negative attitudes toward feedback were negatively related to well-being, self-efficacy, and resilience.

Adaptive support-seeking includes an individual's ability to cope with difficulties by taking solution-focused actions and seeking support. Respondents express a desire to be motivated by past successes, to seek support from others (e.g., family, teachers), to set goals for themselves, and to try new solutions. Negative affect

and emotional response includes negative thinking and emotional reactions to difficult situations. Respondents indicate concerns about future professional and educational success, a sense of missed opportunities, a tendency to become depressed, and negative thoughts about the future. Negative affect also manifests itself in the perception of a situation as temporary, with no long-term consequences. Perseverance is an emotional response to stressful or unsuccessful situations and motivation resulting from challenges. Respondents indicate that some emotional reactions could lead to motivation for action. Negative attitudes toward feedback refer to reactions to information received from teachers and a lack of persistence in making further efforts. Respondents indicate that they tend to blame teachers and resist criticism. They report feeling annoyed and disappointed.

The period of study is a demanding time for young people, involving, among other things, increased study and responsibilities, new acquaintances, surroundings, changes in residence, and separation from family and loved ones. In view of this, access to a tool dedicated to students makes it possible to improve specialized support services for them in the context of academic resilience. The Polish version of the ARS-30 is a reliable and accurate way to measure academic resilience in students in its four dimensions. The scale can be used for research and intervention purposes with a group of students.

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