

## Adaptation and psychometric properties of the SBI-U scale for Academic Burnout in university students

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**Título:** Adaptación y propiedades psicométricas de la escala SBI-U sobre *Burnout* Académico en estudiantes universitarios.

**Resumen:** El objetivo del presente trabajo ha sido desarrollar una adaptación española a estudiantes universitarios de la escala *School Burnout Inventory* (SBI) de 9 ítems. Así, se llevó a cabo una doble adaptación, por un lado, del inglés al español y, por otro, de estudiantes de secundaria a universitarios. La escala se aplicó a 578 estudiantes universitarios (25.7% hombres; 74.3% mujeres) de diversas zonas de España. Los resultados muestran que el SBI-Universitarios tiene la misma estructura que la versión original inglesa para estudiantes de secundaria, ello se ha constatado el mediante análisis factorial confirmatorio que ha indicado la existencia de tres factores: *Agotamiento*, *Cinismo* e *Inadecuación*. Por otro lado, las tres subescalas presentan una fiabilidad aceptable (entre .77 y .70). Además, se aportan indicios de validez a través de dieciocho correlatos externos y siete escalas de contraste. Finalmente, el SBI-U se configura como un instrumento potencialmente útil para evaluar el *burnout* académico en estudiantes universitarios.

**Palabras clave:** *Burnout* académico; SBI; universidad; versión española; estudio instrumental.

**Abstract:** The objective of the present study was to draw up a Spanish adaptation for university students of the School Burnout Inventory (SBI) 9-item scale. This entailed a double adaptation, on the one hand from English into Spanish and then from secondary school students to university students. The scale was applied to 578 university students (25.7% men; 74.3% women) from different regions in Spain. The findings indicate that the University students-SBI has the same structure as the original version in English for secondary school students. This was confirmed by factor analysis that pointed to the existence of three factors: *Exhaustion*, *Cynicism* and *Inadequacy*. Furthermore, the three subscales showed acceptable reliability (between .77 and .70). In addition to this, indications of validity were found using eighteen external correlates and seven contrast scales. Finally the SBI-U constitutes a potentially useful instrument for evaluating academic burnout in university students.

**Key words:** Academic burnout; SBI; university; Spanish version; instrumental study.

### Introduction

In the mid seventies of the last century, Freudenberger used the construct burnout to define the deterioration process in the care and professional attention that users receive in services organisations such as healthcare and education centres, etc. Later on, Maslach (1976) referred to the burnout experienced by employees who provide services to people. Maslach and Jackson (1981) defined it as an inadequate response to chronic emotional stress, whose main features are physical, psychological and emotional exhaustion (*emotional fatigue*), a cold attitude towards others (*depersonalization*) and a feeling of inadequacy concerning the tasks they have to carry out (*low personal fulfilment*).

Burnout syndrome has been studied in many professions. The most prominent of these are healthcare workers such as nursing staff, physiotherapists and external emergency workers (Bernaldo & Labrador-Encinas, 2007; Figueiredo, Grau, Gil-Monte, & García, 2012), university professors (Otero, Santiago, & Castro, 2008), teachers (Pishghadam & Sahebjam, 2012), carers of the elderly (Menezes, Fernández, Hernández, Ramos, & Contador, 2006) and of minors (Jenaro-Río, Flores-Robaina, & González-Gil, 2007), council workers (Boada-Grau, De-Diego, & Agulló, 2004),

traffic police (Aranda, Pando, Salazar, Torres, & Aldrete, 2009), prison officers (Hernández-Martín, Fernández-Calvo, Ramos, & Contador, 2006), firemen (Moreno-Jiménez, Morett, Rodríguez, & Morante, 2006) and state and private companies (Salanova, Grau, Llorens, & Schaufeli, 2001; Salanova, Schaufeli, Llorens, Peiró, & Grau, 2000; Schaufeli, Salanova, González-Romá, & Bakker, 2002). Other collectives are currently being researched such as sports players (Arce, De Francisco, Andrade, Arce, & Raedeke, 2010) and adolescents (Salmela-Aro, 2012).

Numerous studies have applied the MBI-General Survey scale (MBI-GS) (Maslach & Jackson, 1981) to students, although it was originally designed to evaluate burnout in the general population. Research studies on academic burnout have basically focussed on students in healthcare. Key among these are the studies of medical students (De-Abreu, Grosseman, De-Oliva, & De-Andrade, 2011; Backović, Živojinović, Maksimović, & Maksimović, 2012; Costa, Santos, Rodrigues, & Vieira, 2012; Kains & Piquard, 2011; Prinz, 2012; Santen, 2010; Young, Fang, Golshan, Moutier, & Zisook, 2012), of nursing students (Botti, Foddiss, & Giacalone-Olive, 2011), of odontology students (Campos, Jordani, Zucoloto, Bonafé, & Maroco, 2012; Divaris, Polychronopoulou, Taoufik, Katsaros, & Eliades, 2012), gynaecology and obstetrics (Nalesnik, Heaton, Olsen, Haffner, & Zahn, 2004), pharmacy students (Ried, Motycka, Mobley, & Meldrum, 2006) and physiotherapy students (González, Souto, Fernández, & Freire, 2011). Studies have also been carried out (Martínez, Marques, Salanova, & Lopes da Silva,

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2002; Schaufeli et al. 2002) with university students studying sciences, social sciences and humanities.

In addition to the above, Schaufeli, Martínez, Marqués-Pinto, Salanova and Bakker (2002) designed a specific burn-out scale for students, called the MBI-Student Survey (MBI-SS). This scale focuses on burnout due to the demands of studying as well as displaying an attitude of indifference towards ones studies, and feeling competent as a student. There have been studies carried out with university students (Adie & Wakefield, 2011; Gan, Shang, & Zhang, 2007; Martínez & Marques Pinto, 2005; Martínez et al., 2000-2001; Palacio, Caballero, González, Gravini, & Contreras, 2012; Rostami, Reza, & Schaufeli, 2012; Salanova, Martínez, Bresó, Llorens, & Grau, 2005).

Previous studies had been carried out in countries such as: Spain (Salanova et al., 2005; Martínez, Marques, Salanova, & Lopes da Silva, 2002), Portugal (Martínez & Marques Pinto, 2005; Martínez et al., 2000-2001), China (Gan et al., 2007), Colombia (Palacio et al., 2012), Iran (Rostami, Reza, & Schaufeli, 2012) and England (Adie & Wakefield, 2011).

Another more recent line of research is that initiated by Salmela-Aro et al. (2009), who designed and validated the School-Burnout Inventory scale (SBI-9). This instrument has been applied to students in higher education (university and non-university) from Finland (Salmela-Aro & Kunttu, 2010), to adolescent students from Spain (Moyano & Riaño-Hernández, 2013), from Peru (Merino, Delgadillo, & Caballero, 2013) and from Colombia (Aguilar-Bustamante & Riaño-Hernandez, 2013).

However, as some authors point out, (Caballero, Hederich, & Palacio, 2010; Salmela-Aro, Kiuru, Leskinen, & Nurmi, 2009) we need to construct and validate specific scales to evaluate academic burnout in particular. Hence, the contribution of this study is that it presents an instrument that enables us to evaluate academic burnout in university students given that a scale of these characteristics has never been published before in Spanish.

Following on from the above the present instrumental study (Montero & León, 2007) sets three objectives. Based on studies of burnout in job environments (Schaufeli, Bakker, & Salanova, 2006) and in academic environments (Salmela-Aro et al., 2009; Salmela-Aro & Kunttu, 2010; Martínez et al., 2002, Schaufeli et al., 2002) it puts forward an academic burnout model for university students. In the first objective 1, the Salmela-Aro et al., (2009) academic model in Spanish is expected to have three factors: *Exhaustion due to the demands of university work*, *Cynicism concerning the meaning of university*, and *A sense of inadequacy at university*. As far as reliability is concerned, the Cronbach alphas are expected to be acceptable (objective 2) for all three factors, and finally, the convergent validity (objective 3) was checked by correlating the three academic burnout factors with various indicators such as social demographic data, irritation, psychological wellbeing, depression, personality, self-regulation and self-efficacy.

## Method

### Participants

The sample was made up of 578 university and post-graduate students from different Autonomous Communities in Spain. The data was gathered by three Spanish universities (Universitat Rovira i Virgili -Tarragona, Universidad de Salamanca and Universidad de Valladolid) and one EADA Business School (Escuela de Alta Dirección y Administración). 25.7% of the sample were men and 74.3% women ( $M= 21.6$ ;  $SD=4.94$ ). The types of studies were undergraduate (61.9%), diploma (28%), graduate studies (9%) and masters (1%). 49.9% of the sample were in their first year, 20% in the second, 9.2% in the third, 15.4% in the fourth, 25% in the fifth and 15% were on postgraduate or masters courses.

### Instruments

- The School Burnout Inventory (SBI-9; Salmela-Aro et al., 2009) (See Annex 1) was drawn up for the purpose of evaluating burnout among adolescents in secondary education (16 year olds). The version we present has undergone a double adaptation. It was first translated from English into Spanish and the contents were then adapted from secondary school students to university students. The first adaptation was carried out following the steps set down in the scientific literature on adapting evaluation instruments (Muñiz & Bartram, 2007): Translation by experts of the items into Spanish, a discussion group on the translation of the items followed by their back-translation into English and a final check to make sure that the two versions are equivalent. Group techniques such as brainstorming and focus group were used in the second adaptation and were applied to various groups of university students. The scale consists of 9 items assessed on a Likert type scale (from 1=*Completely disagree* to 6=*Completely agree*) and 3 subscales (*Exhaustion*, *Cynicism* and *Inadequacy*). In order to distinguish it from the original version the Spanish version was labelled SBI-U.
- The Spanish version of the Irritation Scale (IS; Merino, Carbonero, Moreno, & Morante, 2006) consists of 8 items and 2 subscales. It enables us to diagnose irritation, which is defined as a state of progressive psychological fatigue that cannot be relieved with normal rest periods. Irritation may also arise when a person feels there is a discrepancy between a given state of affairs and their achievement of an important personal goal. The first subscale is called *Emotional irritation* (reliability = .86) and is made up of 5 items (for example, “3.-When other people talk to me it makes me irritated”); the second is called *Cognitive irritation* (reliability = .87) and is made up of 3 items (for example, “1.-I find it hard to switch off after work”). The Likert responses were gathered using a 7 point scale (from 1.-*Very much disagree* to 6.-*Very much agree*).

- The Beck Depression Inventory (BDI; Sanz & Vázquez, 1998) has been adapted into Spanish for university students. It enables us to evaluate general subclinical states of depression. It is a single factor scale with a reliability of .83. It is made up of 21 items that deal with sadness, pessimism, etc. and are assessed on a four-point Likert scale.
- The Overall Personality Assessment Scale (OPERAS; Vigil-Colet, Morales-Vives, Camps, Tous, & Lorenzo-Seva, 2013) is an instrument based on a model of the five big personality factors. According to this model, human behaviour depends mainly on five personality traits: *Extraversion*, *Responsibility*, *Emotional Stability*, *Agreeableness* and *Openness to Experience*. The scale consists of a total of 40 items, the responses to which are based on a 5-point scale. The factors are: *Extraversion* (alpha = .86; for example, “2.-I’m the life of the party”), *Emotional Stability* (alpha = .86; “32.-I often change mood”), *Responsibility* (alpha = .77; “5.-I always keep my word”), *Amiability* (alpha = .71; “12.-I respect others”) and *Openness to Experience* (alpha = .81; “24.-I like trying out new things”).
- The Self-Regulation Scale (SRS; Luszczynska, Diehl, Gutiérrez-Doña, Kuusinen, & Schwarzer, 2004) consists of 7 items which are answered using a four point scale (1=*not at all* to 4=*a lot*) and its configuration is one dimensional. Self-regulation is regarded as a dispositional variable that is responsible for being able to regulate oneself in a wide range of situations. Hence controlling alertness is a key component when it comes to overcoming obstacles. The scale’s internal consistency in the different transcultural studies that have been carried out ranges between .63 and .87. Here is one example of an item: “7.-I keep focussed on my goals and do not allow anything to divert me from them”.
- The General Self-Efficacy Scale (GSES; Sanjuán, Pérez, & Bermúdez, 2000) assesses the stable feeling of personal competency in coping effectively with a large variety of stressing situations. This is a one-dimensional instrument made up of 10 items with a 10-point response format (1=*Completely disagree* to 10=*Very much agree*). An example of one item is: “5.-Thanks to my qualities and resources I can overcome unforeseen situations”. The studies were carried out with samples featuring different nationalities and showed considerable internal consistency for the scale (between .79 and .93).
- Finally, we also used certain correlates, also known as external indicators (Streiner & Norman, 2008), in the form of questions that the respondents had to answer. One of them was answered using a scale of 10 anchors (1=*Completely disagree* to 10=*Very much agree*). These referred to support from tutors and professors, the class schedule load, the furniture and classroom conditions, and professor non-attendance of classes without prior notice. Others were answered providing specific details or stating how often they did certain things. For example, students

were asked how often they had woken up at night thinking about things related to a certain subject, what they had studied over the weekends, etc.

### Procedure

Non-probabilistic sampling was used, which is also known as random accidental sampling. Students participated on a voluntary and anonymous basis and their personal identification data was not registered. The data was always gathered inside the classroom on a group basis following the consent of the professor teaching the subject. An expert psychologist was always present during the application of the questionnaire to solve any possible queries that the university students might have.

### Data Analysis

Taking into account that we already had a hypothesis concerning the questionnaire’s factor structure, given that the original version had put forward three factors, we carried out a confirmatory factor analysis (CFA) in order to verify this structure. Once the scale’s factor structure was defined we used other scales and external indicators to analyse its reliability and criterion validity. The data were analysed using the programmes SPSS 19.0 and Mplus 5.1.

### Results

A CFA was performed on the polychoric correlation matrix given that the items seemed to be on an ordinal scale. We used the fit indices put forward by Hu and Bentler (1999), the comparative fit index (CFI), the non-normative fit index (NNFI) and the root mean square error of approximation (RMSEA). Although there is no absolute consensus, acceptable cut-off values for the first two tend to be equal to or above .90 whereas values below .08 were considered acceptable and equal to or under .05 excellent for the RMSEA (Browne & Cudek, 1993).

In our case the SBI-U showed an acceptable fit with the three factor model initially put forward by Salmela-Aro et al. (2009), and it came up with the following indicators: CFI = .95; TLI = 0.93; RMSEA = .06 (90% reliability interval, .047 – .078; RMSEA approximate fit test <.05,  $p=.098$ ). Consequently the indicator values were close to optimum.

Figure 1 shows the resulting model. Although we had initially considered a three factor structure, given the close relationship between two of them, we thought that a two factor model might be more suitable than the three factor structure. However, when the model was contrasted using CFA, creating a new factor by joining the items of factors 2 and 3, the model’s fit decreased significantly ( $\Delta\chi^2 = 26.72$ ;  $p < .001$ ).



**Figure 1.** Confirmatory factor analysis of the SBI-U-9 scale ( $\chi^2 = 86.413$ ;  $df = 24$ ;  $p < .001 = .0000$ ;  $RMSEA = .06$ ;  $CFI = .95$  and  $TLI = .93$ ;  $SRMR = .03$ ).

The questionnaire's dimensionality was established and Table 1 shows the scales' descriptive statistics, reliabilities and validity ratios. Reliability is between .70 and .77 which means that it can be considered acceptable if we take into account the small number of items that make up each of the subscales.

Table 1 also displays the correlations between the three scales and eighteen external correlates and five scales (Irritation, BDI, OPERAS, SRS and GSES). The three academic burnout factors (*Exhaustion due to the demands of university work*, *Cynicism concerning the meaning of university* and *A sense of inadequacy at university*) displayed relations with the different measures in the expected direction and correlated positively with irritation (*emotional and cognitive*) and general depression, whereas the third factor also showed a positive correlation with emotional stability (*Sense of inadequacy at university*). Fur-

thermore, the three factors displayed negative correlations with extraversion, self-regulation and general efficacy. More specifically, we found different negative correlations such as between: *Exhaustion concerning university work* (F1) and emotional stability; *Cynicism concerning the meaning of university* (F2) and emotional stability, responsibility and amiability; and between *A sense of inadequacy at university* (F3) and responsibility, amiability and openness to experience).

As regards the external correlates, the three subscales that make up academic burnout were associated with various of these. We found three direct correlations, (for example, the number of the academic year, the Sundays they had devoted to studying, competition among colleagues, faculty absenteeism, etc.) plus nineteen inverse correlations (such as for example, support from tutors and professors, the class schedule load, level of comfort of furniture, transport, etc.).

**Table 1.** SBI-U-9: Descriptive statistics, reliability, confidence intervals, correlations among the three subscales, and the correlations between the three subscales and social-demographic aspects, external correlates and the contrast scales.

		F1	F2	F3
M		12.71	7.53	6.48
SD		4.22	3.73	2.62
Reliability		.70	.77	.71
Confidence Interval		.66-.74	.74-.80	.67-.75
External Correlates	Number of academic year	.08	.15*	.07
	How often have you woken up at night thinking about something to do with any of your subjects?	.31**	.06	.04
	How often have you thought about any of your subjects during your leisure time?	.14**	.03	.06
	How many class hours do you have a week?	.11*	-.02	.00
	How many compulsory internships do you intend to do over the present academic year?	.10*	-.03	.01
	To date how many Saturdays have you studied?	.10*	.01	-.02
	To date how many Sundays have you studied?	.14**	.00	-.03
	What was your average mark last year?	-.04	-.11*	-.15**
	I have support from tutors.	-.03	-.19**	-.20**
	I have support from professors.	.00	-.17**	-.15**
	I have an acceptable schedule load.	-.20**	-.15**	-.13**
	The professors do not give prior notice when they don't turn up to class.	.04	.12**	.12**
	The lighting, ventilation, etc. inside the classrooms is satisfactory.	-.06	-.08*	-.07
	The classroom furniture is comfortable.	-.13**	-.11**	-.12**
	I receive adequate feedback from my classmates when I do projects and/or prepare for exams.	-.05	-.13**	-.15**
	I receive adequate feedback from my professors when I do projects and/or prepare for exams.	-.04	-.27**	-.29**
	There is suitable transport to get to the campus.	-.09*	-.14**	.11**
	There is a lot of competition among colleagues.	.17**	.08*	.09**
Irritation	Emotional	.46**	.25**	.29**
	Cognitive	.68**	.21**	.28**
BDI	Global Depression	.41**	.29**	.34**
OPERAS	Extraversion	-.12**	-.13**	-.15**
	Emotional Stability	-.22**	-.24**	.29**
	Responsibility	-.04	-.22**	-.26**
	Amiability	-.04	-.09*	-.11**
	Openness to experience	.04	-.08	-.09*
SRS	Self-regulation	-.22**	-.27**	-.32**
GSES	General self-efficacy	-.16**	-.25**	-.25**
F1		---	---	---
F2		.29	---	---
F3		.39	.63	---

\*\*  $p < .01$ ; \*  $p < .05$

F1.-Exhaustion due to university work

F2.-Cynicism towards the meaning of university

F3.-Sense of inadequacy at university

## Discussion

In the present study we present the psychometric properties of the SBI-U-9, a brief instrument that enables us to evaluate academic burnout (exhaustion, cynicism, inadequacy) in university students and this is the first time this scale has been presented in Spanish.

The findings from the confirmatory factor analysis of the SBI-U-9 support the three factor model (Salmela-Aro, Kiuru, Pietikäinen, & Jokela, 2008) tested on a sample of Finnish teenage students (Salmela-Aro et al., 2009) and Spanish students (Moyano & Riaño-Hernández, 2013). The SBI-U-9 and MBI-SS scales have three subscales, whose contents are similar (Salmela-Aro et al., 2009; Schaufeli et al., 2002). We can therefore affirm that the study's first objective was totally confirmed.

The second objective was corroborated given that the reliability of the three factors was found to be appropriate.

Salmela-Aro et al. (2009) reliability ratios for the three subscales were: *Exhaustion* (.80), *Cynicism* (.80) and *Inadequacy* (.67). The ratios in the Spanish version were acceptable ranging between .70 and .77. Moyano and Riaño-Hernández's (2013), adaptation into Spanish the SBI, and tested on adolescents obtained similar reliabilities: *Exhaustion* (.57), *Cynicism* (.63) and *Inadequacy* (.49). As regards the MBI-SS (Schaufeli et al., 2002) the resulting reliabilities in university students for the three subscales that make up the scale were as follows: From .74 to .79 (Spanish), from .69 to .82 (Portuguese) and from .67 to .86 (Dutch).

As far as criterion validity is concerned, a review of the literature shows that burnout is related to irritation (Merino-Tejedor et al., 2006), depression (Ahola & Hakonen, 2007), personality (Hudek-Knezevic, 2011), self-regulation (Gurcay, 2009), self efficacy (Skaalvik, 2007) and certain external indicators (Salanova et al., 2000) such as age, profession, etc. The results of the present study found significant correla-

tions between the three factors of the SBI-U scale and the abovementioned variables. They thus meet our objective in that they confirm the proposed validity ratios. In the study we are presenting what stands out primarily is the correlation between academic burnout and depression, which ranges between .29 and .41. Although the instruments used to measure depression were different, the association between academic burnout and depression was also found by Moyano and Riaño-Hernández (2013) in their research study, where the correlations ranged from .31 to .48.

By way of conclusion we can state that the SBI-U-9 scale's psychometric properties, in its Spanish version, are satisfactory. Thus, the CFA clearly confirms the structure of the three original factors. Furthermore, the reliability estimates were acceptable and there is clear evidence of validity. We can consequently state that the present scale in Spanish is useful for evaluating academic burnout in university students.

The study has at least two drawbacks: On the one hand, more longitudinal studies need to be carried out in order to further determine the relationship between academic burn-

out and other variables such as the year of the student's course (for example, the first year versus the fourth year), the number of repeat subjects, the type of repeat subjects (for example, education, psychology, medicine, engineering, economics, law, etc.), etc. Furthermore, the validation of a psychometric instrument is a dynamic process which does not end once it has been constructed and published (Padilla, Gómez, Hidalgo, & Muñoz, 2006). Hence new studies are likely to contribute new data both on academic burnout and on the scale we have presented. Finally, this study uses a convenience sample to adapt the scales and this limits the validity of the findings. Having said this, this is relatively common practice in research studies in the behavioural sciences (Alonso-Tapia & Rodríguez-Rey, 2012; Boada-Grau & Gil-Ripoll, 2011; Boada-Grau, Sánchez-García, Prizmic-Kuzmica, & Vigil-Colet, 2012). However, as Highhouse and Gillespie (2008) point out, quite often the use of incidental samples does not constitute an important threat to a study's validity and on the other hand, the present study, despite the fact that the sample is a convenience sample, incorporates students from different faculties.

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**Annex 1.** Spanish version of the academic burnout scale (SBI-U-9).

**Instrucciones.** Por favor, elige la alternativa que mejor describe tu situación (estimación del mes pasado) en cuanto a tu situación en tu Universidad.

1 Totalmente en desacuerdo	2 Relativamente en desacuerdo	3 En desacuerdo	4 Relativamente de acuerdo	5 De acuerdo	6 Totalmente de acuerdo
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- 1.-Me siento agobiado/a por el trabajo académico (AGO 1).
- 2.-Siento una falta de motivación en mis actividades universitarias, y a menudo, pienso en dejarlo (CIN 1).
- 3.-A menudo tengo una sensación de insuficiencia en mis actividades universitarias (INAD 1).
- 4.-A menudo me cuesta dormir por temas relacionados con mi trabajo académico (AGO 2).
- 5.-Siento que estoy perdiendo interés en mi trabajo académico (CIN 2).
- 6.- Me pregunto constantemente si mi trabajo académico tiene algún significado (CIN 3).
- 7.-Me obsesiono con temas relacionados con mi trabajo académico durante mi tiempo libre (AGO 3).
- 8.-Solía tener unas expectativas más altas de mi trabajo académico que las que tengo ahora (INAD 2).
- 9.-La presión de mi trabajo universitario me causa problemas en mis relaciones personales con los demás (AGO 4).

*Nota.* AGO = Agotamiento del trabajo universitario; CIN = Cinismo hacia el sentido universitario; INAD = Sentido de inadecuación a la universidad