



Psychometric Properties of Update Arabic Version of the Trait Hope Scale and the Rosenberg Self-Esteem Scale

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ABSTRACT

Hope and self-esteem are crucial components of positive psychology, and there is a lack of tools to assess these concepts in Morocco. Therefore, this study aims to provide the necessary instruments for evaluating hope and self-esteem among Moroccan college students. A total of 1150 college students (444 males, 703 females) completed an updated Arabic version of the Trait Hope Scale (THS) and the Rosenberg Self-Esteem Scale (RSES). The data underwent factorial and reliability analyses, with test-retest reliability assessed using responses from 26 students. Both the THS and RSES revealed a two-factor solution, and Multigroup Confirmatory Factor Analysis (MGCFA) demonstrated measurement invariance with respect to gender. Furthermore, the results indicated good and acceptable internal consistency ($\alpha = .85$ for THS and $\alpha = .70$ for RSES) and acceptable temporal stability ($r = .72$ for THS and $r = .76$ for RSES). In conclusion, the updated Arabic versions of the THS and RSES exhibited strong psychometric properties and stability. They have been established as valid and reliable tools for assessing hope and self-esteem among Moroccan college students.

ABSTRAK

Harapan dan harga diri adalah komponen penting dalam psikologi positif, dan di Maroko masih terdapat kekurangan alat untuk menilai konsep-konsep ini. Oleh karena itu, penelitian ini bertujuan untuk menyediakan instrumen yang diperlukan untuk mengevaluasi harapan dan harga diri di kalangan mahasiswa Maroko. Sebanyak 1.150 mahasiswa (444 laki-laki, 703 perempuan) mengisi Skala Harapan Sifat (THS) dan Skala Harga Diri Rosenberg (RSES) versi bahasa Arab yang diperbarui. Data dianalisis dengan analisis faktorial dan reliabilitas, dengan *test-retest* reliabilitas dinilai menggunakan respon dari 26 mahasiswa. Baik THS maupun RSES menghasilkan solusi dua faktor, dan Analisis Faktor Konfirmatori Multikelompok menunjukkan invarian pengukuran sehubungan dengan gender. Selain itu, hasil analisis menunjukkan konsistensi internal yang baik dan dapat diterima ($\alpha = 0,85$ untuk THS dan $\alpha = 0,70$ untuk RSES) dan stabilitas temporal yang dapat diterima ($r = 0,72$ untuk THS dan $r = 0,76$ untuk RSES). Kesimpulannya, THS dan RSES versi Arab yang diperbarui menunjukkan karakteristik psikometrik dan stabilitas yang kuat. Mereka telah ditetapkan sebagai alat yang valid dan dapat diandalkan untuk menilai harapan dan harga diri di kalangan mahasiswa Maroko.

Introduction

A recent report by the World Health Organization (WHO) (2019) stated that one in every ten people worldwide has a mental disorder. Additionally, the same report mentions that nearly 85% of individuals with mental disorders do not receive treatment in less affluent countries (WHO, 2019). Consequently, positive psychology appears to be a promising approach to the prevention of mental health, the reduction of psychological distress, and the promotion of mental health (Seligman & Csikszentmihalyi, 2000; Waters et al., 2022; WHO, 2004). It aims to enhance individuals' traits and strengths, such as hope and self-esteem, to promote their mental well-being (Seligman & Csikszentmihalyi, 2000; Sachau, 2007).

Indeed, the potential of positive psychology to promote mental health was previously investigated through some of its concepts. For instance, hope is associated with the reduction of psychological distress; people with high scores in hope manage to maintain good mental health (Abdullah et al., 2018; Bai et al., 2017; Gallagher & Lopez, 2009; Jahanara, 2017). Similarly, self-esteem directly affects mental health (Izadi et al., 2014). High self-esteem helps individuals control their feelings and maintain their self-confidence (Orth & Robins, 2014), while low scores in self-esteem are coupled with high scores in depressive mood and anxiety (Nguyen et al., 2019; Rosenberg et al., 1995; van Tuijl et al., 2016). Furthermore, hope and self-esteem were found to be positively associated (Abdel-Khalek & Snyder, 2007; Ko & Lee, 2015; Pacico et al., 2013; Parvan et al., 2015; Snyder et al., 1991). It appears that hope directly affects self-esteem (Snyder, 2002), and self-esteem appears to mediate the effect of hope on mental health (Du et al., 2015). In addition, it was shown that for young adults, high levels of self-esteem and hope positively affect mental health, physical health, and emotional state (Andonova, 2015; Bronk et al., 2009).

Snyder and colleagues (1991) developed the Adult Dispositional Hope Scale, also known as the Trait Hope Scale (THS). This scale was developed using a sample of college students and consists of eight items representing agency and pathway thinking, with scoring based on an eight-point Likert scale. Hope was originally described as a two-component concept based on the relationship between agency and pathway thinking. The agency component is defined as the desire and determination to reach goals, while the pathway component refers to the ability to generate successful plans to achieve those goals (Snyder et al., 1991). The original THS exhibited strong psychometric properties and a two-dimensional structure (Snyder et al., 1991). Subsequently, the THS was widely used across different populations and demonstrated strong psychometric properties in various cross-cultural adaptations where the two-factor structure suggested for the scale was preserved: Kuwait (Abdel-Khalek & Snyder, 2007; $\alpha = .80$), Brazil (Pacico et al., 2013; $\alpha = .78$), France (Gana et al., 2013; $\alpha = .68$), Malaysia (Abdullah et al., 2018; $\alpha = .72$), and Italy (Alfieri et al., 2021).

Another significant aspect of positive psychology that represents the evaluative side of the self-concept is self-esteem (Martín-Albo et al., 2007; Purkey, 1970; Shavelson et al., 1976; Seligman & Csikszentmihalyi, 2000). Rosenberg (1965) defined self-esteem as a person's overall subjective emotional evaluation of their worth. The concept of self-esteem was suggested to be represented by global self-esteem and specific self-esteem. Global self-esteem was defined as 'the individual's positive or negative attitude toward the self as a totality' (p. 141), and specific self-esteem was 'one's judgment of a particular facet of oneself' (p. 143) (Rosenberg et al., 1995).

The Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965) has been adapted in different countries and has shown strong internal consistency [China (Cheng & Hamid, 1995; ranging from $\alpha = .77$ to $\alpha = .85$), Spain (Martín-Albo et al., 2007; ranging from $\alpha = .85$ to $\alpha = .88$), and Sweden (Eklund et al., 2018, $\alpha = .91$)]. The RSES and the concept of self-esteem have been treated as a single construct - global self-esteem (Bagley et al., 1997; Gnambs et al., 2018; Gray-Little et al., 1997; Pullmann & Allik,

2000; Salerno et al., 2017) – while a two-construct model involving positive and negative self-esteem was later suggested (Huang & Dong, 2012; Marsh & Craven, 2006; Tafarodi & Milne, 2002).

The Arabic version of the THS and the RSES has been previously published (Abdel-Khalek & Snyder, 2007). However, it presents some considerable issues according to the authors' descriptions. First, the translation procedure of the two scales from their original language to Arabic did not include the back-translation step. Second, the original Likert scale of the two scales was changed. Third, the negatively worded items of the RSES were transformed into positively worded items, and the THS had considerable translation flaws of the original statements. Concerning Abdel-Khalek & Snyder's (2007) work, all of the aforementioned actions present considerable issues with the recommended procedures for cross-cultural adaptation of self-reported scales (Beaton et al., 2000; Guillemin et al., 1993; Rupareliya & Shukla, 2020). Therefore, the present study aims to evaluate the psychometric properties of an updated Arabic version of the THS and RSES that are based on the original scales and followed all the recommendations for cross-cultural adaptation of self-reported scales.

Method

Participants and procedures

The sampling strategy used for this study was stratified cluster sampling. At first, the sampling was based on three levels: 1) the city, 2) the type of institution [open access (institutions with an unlimited number of seats) vs. regulated access (institutions with a limited number of seats)], and 3) study level (i.e., undergraduate students of the first year, undergraduate students of the second year, and undergraduate and graduate students of the last year). For each institution, we defined a two-stage cluster in which the precise sample size was randomly selected as a function of the institution's number of students. The numbers of the total samples and the subsamples from each institution were calculated using Epi-Info 7 software's Stat Calc application.

The study population comprises 100,828 students from Abdelmalek Essaâdi University. To maintain accuracy, the maximum acceptable error margin has been set at 3%. Sampling for this study involves a stratified cluster sampling method with a three-layer structure. These layers encompass a total of nine strata. Notably, the parameter to be estimated carries an expected frequency of 50%, although this estimation is approached with caution, considering the maximum size of the population within the 50% range.

Approximately, 1060 students must be included in this study. This figure is increased by 10% to anticipate refusal and non-response. The final size is $N = 1200$ students. Of 1200 graduate and undergraduate students asked to participate in the study, only 1150 returned the questionnaires. The sample was composed of students from four cities in a northern province of Morocco, including eight institutions. Each institution received a permission request that was approved before collecting the data.

Most of the participants were females ($n = 703$, 61.1 %), and 444 of the participants (38.6 %) were males. The mean age of the participants was 20.00 ($SD = 2.6$) years (range: 17 to 49 years). Most of the participants were single ($n = 1021$, 88.8 %), 94 (8.2 %) were in relationships, 13 (1.1 %) were no longer in a relationship, and 22 (1.9 %) participants did not answer the question about their marital status.

For test-retest reliability, an additional sample of 26 graduate or undergraduate students was randomly selected from an institution to complete the study twice over two weeks. This additional sample was composed of 10 men and 16 women (Mean age = 21.02 years, $SD = 1.44$ years).

Instruments

The Adult Dispositional Hope Scale, "the Trait Hope Scale (THS)", aims to measure the dispositional hope trait. It comprises 8 hope items and 4 distracters. Answers are based on an 8-point Likert scale,

where responses range from 1 (definitely false) to 8 (definitely true). The THS has two subscales: the agency subscale, composed of items 2, 9, 10, and 12, and the pathway subscale, represented by items 1, 4, 6, and 8. The total score is calculated by summing the scores of the two subscales (Snyder et al., 1991). The THS was developed with a two-dimensional structure and revealed acceptable internal consistency (ranging from $\alpha = .74$ to $\alpha = .78$) (Snyder et al., 1991).

The Rosenberg Self-Esteem Scale (RSES) is composed of 10 items that assess self-perception by evaluating positive and negative feelings. Answers are based on a 4-point Likert scale, where responses range from 1 (strongly disagree) to 4 (strongly agree) (Rosenberg, 1965). The score is calculated by summing the score of all items after reversing the score of the following items: 2, 5, 6, 8, and 9.

Translation procedures

In adherence to Beaton et al.'s (2000) suggestions, the process of adapting scales was structured into five sequential stages to ensure methodical and accurate scale transformation. Initially, the procedure commenced with the Translation stage, wherein two distinct versions of the scales were developed. These versions formed the basis for the subsequent Synthesis phase, aiming to amalgamate the content and intricacies of the two scales into a unified version.

Following this, the Back-translation stage was executed, engaging two native English speakers who independently generated two versions of the scales from the translated material. Moving forward, an Expert Committee Review convened to meticulously assess all reports and methodologies utilized in creating the pre-final versions of the scales. This phase sought to synthesize diverse inputs and perspectives for comprehensive evaluation.

Lastly, the pretesting stage involved a pilot examination of the questionnaires. This testing phase was designed to assess the level of item comprehension among respondents, providing valuable insights into the effectiveness and clarity of the scales before finalizing them for implementation.

Statistical analysis

All statistical analyses were performed using the Statistical Package for the Social Sciences (SPSS) 21.0 (IBM) and SPSS AMOS v26 software for Windows. A confirmatory factor analysis (CFA) was conducted to test model fitting in the data. The analysis was concluded based on the following fit indices: the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA) (Hoyle, 1995; Hu & Bentler, 1999). According to Hu & Bentler (1999), CFI values greater than .90 refer to an adequate fit, and greater than .95 refer to a good fit; TLI values greater than .90 refer to an adequate fit; and values of RMSEA less than .06 refer to a good fit, and less than .08 refer to a mediocre fit.

Multigroup confirmatory factor analysis (MGCFA) was performed to evaluate measurement invariance about gender. In the first step, a baseline model was established separately for male and female participants. In the second step, and based on the results of the fit indices of the baseline model, configural invariance was established to verify if factor loadings – that are freely estimated – were approximately equivalent. In the last step, variables loading on each factor were constrained to equality in both groups to establish metric invariance. To decide if the measurement is invariant concerning gender, RMSEA, and CFI differences were calculated between the configural invariance model and the metric invariance model. A difference in the limit of -.01 for CFI and .010 for RMSEA supports measurement invariance (Chen, 2007; Putnick & Bornstein, 2016).

Internal consistency was measured using Cronbach's alpha coefficient, and the interpretation of the results was based on George & Mallery's (2003) rule of thumb: " $\geq .9$ = Excellent, $\geq .8$ = Good, $\geq .7$ = Acceptable, $\geq .6$ = Questionable, $\geq .5$ = Poor, and $\leq .5$ = Unacceptable" (p. 231). The intraclass correlation coefficient (ICC) was chosen to evaluate temporal stability because of its good reputation for measuring reliability (Koo & Li, 2016). With a confidence interval of 95 %, the ICC results were

calculated using a 2-way mixed-effects model, mean measurement, and absolute agreement. The Interpretation of the results of ICC was based on the following rule of thumb: $ICC < .5$ indicates poor reliability, $.5 \leq ICC \leq .75$ indicates moderate reliability, $.75 \leq ICC \leq .9$ indicates good reliability, and $ICC > .90$ indicates excellent reliability (Portney & Watkins, 2000).

Ethical considerations

The present study was conducted in agreement with the Declaration of Helsinki (World Medical Association, 2001). Participants were invited to participate voluntarily; they received an oral presentation of the study and its aims and had the right to withdraw from the study at any time without giving a reason. Those who agreed to participate in the study signed a written informed consent form.

Results

Confirmatory factor analysis of updated Arabic version of the THS

Items 2, 9, 10, and 12 were configured to load on the “agency” factor, and items 1, 4, 6, and 8 were configured to load on the “pathway” factor (Fig 1). The factors loadings of THS items are presented The loading of Items 1, 4, 6, and 8 ranged from 0.65 to 0.72. Additionally, the loading of items 2, 9, 19, and 12 ranged from .49 to .79.

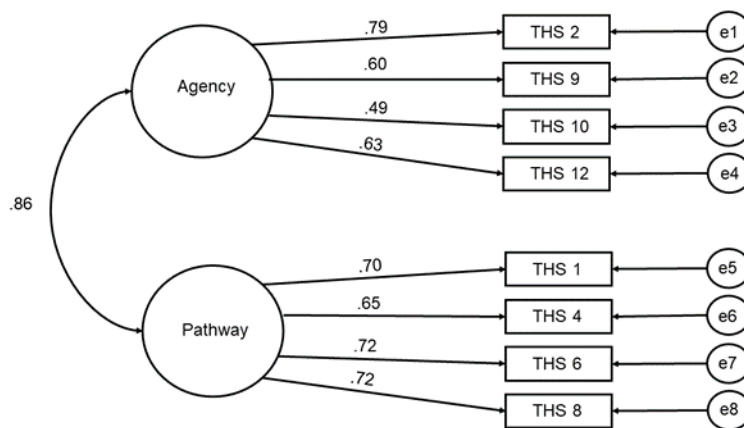


Figure 1. Factorial structure of THS

The results of the test are displayed in Table 1, in which the model fit indices were $\chi^2 = 87.914$, $df = 17$, $p < .000$, CFI = .976, TLI = .950, and RMSEA = .060 (Table 1).

Table 1. Confirmatory factor analysis results of the THS

Fitting indices	χ^2	P	CFI	TLI	RMSEA
Value	87.914	.000	.976	.950	.060
Acceptable Values	>0	<.05	≥ .90	≥ .90	≤ .08

Note. χ^2 : the minimum fit function chi-square, CFI: comparative fit index, TLI: Tucker-Lewis Index, RMSEA: root mean square error of approximation.

Measurement invariance of updated Arabic version of the THS across genders

The baseline model for male and female participants showed a good fit [$(\chi^2 = 44.869, df = 17, p < .000, RMSEA = .061, CFI = .981)$ and $(\chi^2 = 65.377, df = 17, p < .000, RMSEA = .064, CFI = .968)$, respectively]. The configural invariance model also showed a good fit ($\chi^2 = 170.268, df = 32, p < .000, RMSEA = .061, CFI = .954$). In addition, the metric invariance model showed a good fit ($\chi^2 = 179.891,$

df = 38, $p < .000$, RMSEA = .054, CFI = .952). The RMSEA and CFI difference between the configural invariance model and the metric invariance model results were Δ RMSEA = .004 and Δ CFI = .002 ($p > .05$) (Table 2).

Table 2. Measurement invariance across genders for the THS

	χ^2	p	RMSEA	CFI	Δ RMSEA	Δ CFI
Baseline model for male participants	44.869	< .000	.061	.981	-	-
Baseline model for female participants	65.377	< .000	.064	.968	-	-
Configural invariance	170.268	< .000	.061	.954	-	-
Metric invariance	179.891	< .000	.057	.952	-	-
Comparison of the configural invariance model and metric invariance model	-	-	-	-	.004	.002

χ^2 : the minimum fit function chi-square, RMSEA: root mean square error of approximation, CFI: comparative fit index.

Confirmatory Factor Analysis (CFA) of updated Arabic version of the RSES

The CFA was conducted on the data using two models of the RSES: a one-factor model and a two-factor model. All items were configured to load on one general factor in the one-factor model (Fig. 2). In the two-factor model, items 1, 3, 4, 7, and 10 were configured to load on factor 1, and items 2, 5, 6, 8, and 10 were configured to load on factor 2 (Fig. 3).

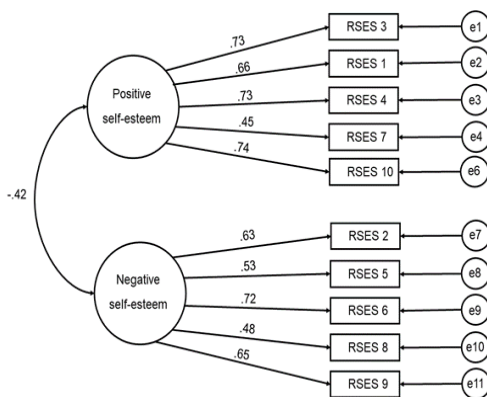


Figure 2. One-factor model of self-esteem

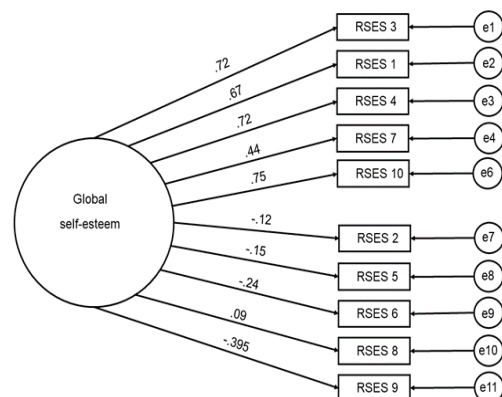


Figure 3. Two-factor model of self-esteem

The factors loadings of RSES items are presented in table 4. The loading of Items 1, 3, 4, 7, and 10 ranged from $r = .45$ to $.74$ ($p > .05$). Additionally, the loading of items 2, 5, 6, 8, and 9 ranged from $r = .48$ to $.72$ ($p > .05$). The results of the test are marked in table 5, in which the model fit indices for the one-factor model were $\chi^2 = 488.54$, $df = 29$, $p < .000$, CFI = .818, TLI = .655, and RMSEA = .117; and for the two-factor model were $\chi^2 = 189.037$, $df = 28$, $p < .000$, CFI = .936, TLI = .875, and RMSEA = .071 (Table 3).

Table 3. Confirmatory factor analysis results of the RSES

Fitting indices	χ^2	p	CFI	TLI	RMSEA
One factor model	488.541	.000	.818	.655	.117
Two factor model	189.037	.000	.936	.875	.071
Acceptable values	> 0	< .05	$\geq .90$	$\geq .90$	$\leq .08$

Note. χ^2 : the minimum fit function chi-square, CFI: comparative fit index, TLI: Tucker-Lewis Index, RMSEA: root mean square error of approximation.

Measurement invariance of updated Arabic version of the RSES across genders

Using the two-factor model for the RSES, which showed a better fit in the data, the baseline model for male and female participants showed an acceptable fit [$\chi^2 = 102.937$, $df = 17$, $p < .000$, $RMSEA = .080$, $CFI = .914$) and ($\chi^2 = 131.346$, $df = 17$, $p < .000$, $RMSEA = .076$, $CFI = .937$), respectively]. The configural invariance model also showed an acceptable fit ($\chi^2 = 280.480$, $df = 56$, $p < .000$, $RMSEA = .059$, $CFI = .912$). In addition, the metric invariance model showed an acceptable fit ($\chi^2 = 294.2$, $df = 65$, $p < .000$, $RMSEA = .055$, $CFI = .911$). The RMSEA and CFI difference between the configural invariance model and the metric invariance model results were $\Delta RMSEA = .004$ and $\Delta CFI = .001$ ($p > .05$) (Table 4).

Table 4. Measurement invariance across genders for the RSES

	χ^2	p	RMSEA	CFI	$\Delta RMSEA$	ΔCFI
Baseline model for male participants	102.937	< .000	.080	.914	-	-
Baseline model for female participants	131.346	< .000	.076	.937	-	-
Configural invariance	280.480	< .000	.059	.912	-	-
Metric invariance	294.2	< .000	.055	.911	-	-
Comparison the least and the most constrained models	-	-	-	-	.004	.001

χ^2 : the minimum fit function chi-square, RMSEA: root mean square error of approximation, CFI: comparative fit index.

Internal consistency and test-retest reliability

Regarding the internal consistency of the THS, Cronbach’s alpha was $\alpha = .77$ for the agency subscale, $\alpha = .79$ for the pathway subscale, and $\alpha = .85$ for the total scale. Additionally, the α value for the RSES was .70. The α coefficient of the positive self-esteem factor was $\alpha = .79$, and the negative self-esteem factor was $\alpha = .60$ (Table 5). With regard to the test-retest reliability in a two-week period, the agency and pathway subscales, the THS total scale, the RSES, the positive self-esteem, and the negative self-esteem had ICC results of $ICC = .77$ ($CI = .48, .87$), $ICC = .81$ ($CI = .59, .91$), $ICC = .82$ ($CI = .60, .92$), $ICC = .79$ ($CI = .53, .90$), $ICC = .80$ ($CI = .54, .81$), and $ICC = .82$ ($CI = .59, .92$); respectively.

Table 5. Cronbach’s alpha coefficient values and Spearman rho values of test-retest correlations

Scales and domains	Cronbach’s α	Intraclass correlations	Test-retest	
			95% confidence interval	
			Lower bound	Upper bound
Agency domain	.77	.77	.48	.87
Pathway domain	.79	.81	.59	.91
THS	.85	.82	.60	.92
RSES	.70	.79	.53	.90
PES	.79	.80	.54	.91
NES	.60	.82	.59	.92

Note. All correlations are significant at the 1% level.

THS: Trait Hope Scale, RSES: Rosenberg Self-Esteem Scale, PSE: positive self-esteem, NES: negative self-esteem.

Item analysis results for the THS are presented in table 7. The Item-total correlation ranged from $r = .48$ ($p > .05$) for item 10 to $r = .68$ ($p > .05$) for item 2. In terms of scale’s Cronbach’s alpha coefficient if item deleted, the results ranged from .82 to .84.

Table 6. *THS items analysis*

	<i>M</i>	<i>SD</i>	Scale mean if item deleted	Scale Variance if Item deleted	Corrected item-total correlation	Cronbach Alpha If Item deleted
THS_1	6.36	1.74	43.00	67.34	.58	.83
THS_2	6.55	1.57	42.81	66.97	.68	.82
THS_4	6.56	1.72	42.80	67.94	.56	.83
THS_6	6.46	1.64	42.90	67.57	.61	.82
THS_8	6.17	1.58	43.19	67.82	.64	.82
THS_9	6.12	1.75	43.24	67.28	.57	.83
THS_10	5.31	1.72	44.05	69.96	.48	.84
THS_12	5.83	1.64	43.53	68.66	.60	.83

Note. All correlations are significant at the 1% level.
THS: Trait Hope Scale.

Item analysis results for the RSES are presented in table 8. The Item-total correlation ranged from $r = .42$ ($p > .05$) for item 2 to $r = .56$ ($p > .05$) for item 10. In terms of scale's Cronbach's alpha coefficient if item deleted, the results ranged from .64 to .69.

Table 7. *RSES items analysis*

	<i>M</i>	<i>SD</i>	Scale mean if item deleted	Scale Variance if Item deleted	Corrected item-total correlation	Cronbach Alpha If Item Deleted
RSES_1	3.01	.89	25.07	16.11	.55	.64
RSES_2	3.22	.81	25.71	17.92	.42	.69
RSES_3	3.18	.85	24.86	17.06	.46	.66
RSES_4	2.95	.87	24.91	16.82	.47	.66
RSES_5	3.15	.87	25.50	17.77	.46	.69
RSES_6	2.37	.83	25.52	17.36	.51	.68
RSES_7	2.58	.89	25.14	17.62	.43	.66
RSES_8	2.56	.86	25.86	17.52	.44	.67
RSES_9	2.23	.98	25.26	16.40	.50	.65
RSES_10	2.83	.89	24.94	16.15	.56	.64

Note. All correlations are significant at the 1% level.
RSES: Rosenberg Self-Esteem Scale.

Discussion

The confirmatory factor analysis revealed that the two-factor structure of the THS, as suggested by Snyder et al. (1991), fits with the data in this study. This result is consistent with several other studies that have found the same pattern (Alfieri et al., 2021; Gana et al., 2013; Pacico et al., 2013; Smedema et al., 2013; Yailagh et al., 2012). Moreover, the MGCFA revealed that no significant differences emerged between the configural and metric invariance models, indicating that measurement invariance regarding gender was supported, following Putnick & Bornstein (2016). Therefore, we can conclude that the updated Arabic version of the THS was interpreted similarly by male and female

participants, and any differences in scale interpretation are likely due to chance rather than flaws in the scale (Vandenberg & Charles, 2000).

The internal consistency of the updated Arabic THS in the present study ($\alpha = .85$) was consistent with the scale development study by Snyder et al. (1991), who reported internal consistency ranging from $\alpha = .74$ to $\alpha = .78$ after administering the scale to six different samples of college students. The α coefficient result in the present study is also consistent with other studies (Gana et al., 2013; Pacico et al., 2013). The two subscales of the THS—pathway and agency—also demonstrated strong internal consistency in the present study, aligning with the scale development article by Snyder et al. (1991) and other studies (Gana et al., 2013; Smedema et al., 2013; Yailagh et al., 2012). Regarding temporal stability, our findings for the agency subscale, pathway subscale, and THS total scale demonstrate good temporal stability. These results are consistent with previous studies (Gana et al., 2013; Snyder et al., 1991).

Several studies have suggested a one-dimensional structure for the RSES (Bagley & Mallick, 2001; Martín-Albo et al., 2007; Pullmann & Allik, 2000; Vasconcelos-Raposo et al., 2012), while others have proposed a two-dimensional structure for the RSES, distinguishing 'positive self-esteem' and 'negative self-esteem' (Mimura & Griffiths, 2007; Hatcher & Hall, 2009; Sinclair et al., 2010; Vasconcelos-Raposo et al., 2012). Therefore, two different models of the RSES (the one-factor model versus the two-factor model) were included in the CFA, and the results indicated that the two-factor model provided a better fit for the data than the one-factor model.

Rosenberg et al. (1995) noted that self-esteem can be assessed as a global self-evaluation or as a narrower self-evaluation representing specific facets of the self. Thus, the two-factor solution found for the RSES can be attributed to specific self-esteem. It is possible that participants evaluated their self-worth by considering various facets of themselves, and this evaluation may have been influenced by the nature of the RSES items, which include both positively and negatively worded items. For example, item 1 ('on the whole, I am satisfied with myself') could be interpreted in the context of a college environment, where a participant evaluates their academic performance, while item 8 ('I wish I could have more respect for myself') might relate to social interactions in a different context. Therefore, we can conclude that the RSES consists of two factors: positive self-esteem, based on a positive self-evaluation of specific facets of the self, and negative self-esteem, based on a negative self-evaluation of other facets of the self.

An additional result supporting the validity of the two-factor solution of the RSES is the MGCFA, which demonstrated that the instrument is invariant with regard to gender. Consequently, we can assert that the differences in scale interpretation are more likely due to chance rather than flaws in the scale (Vandenberg & Lance, 2000).

Furthermore, our study revealed that the internal consistency of the updated Arabic version of the RSES is acceptable and consistent with previous research (Bagley et al., 1997; Hatcher & Hall, 2009; Martín-Albo et al., 2007; Mimura & Griffiths, 2007; Pullmann & Allik, 2000; Sinclair et al., 2010; Vasconcelos-Raposo et al., 2012). For the positive self-esteem factor, we obtained an alpha coefficient of $\alpha = .79$, indicating acceptable internal consistency. This result aligns with findings from two other studies (Mimura & Griffiths, 2007; Vasconcelos-Raposo et al., 2012). In contrast, the negative self-esteem factor yielded an alpha coefficient of $\alpha = .60$, indicating questionable internal consistency, which is lower than the results reported in previous research. Hatcher & Hall (2009) reported $\alpha = .83$, Mimura & Griffiths (2007) reported $\alpha = .67$, and Vasconcelos-Raposo et al. (2012) reported $\alpha = .79$.

Moreover, this study also demonstrates that the RSES exhibits good temporal stability over a two-week period, consistent with results reported in two other studies (Martín-Albo et al., 2007; Pullmann & Allik, 2000).

This study demonstrates several significant strengths and implications for future research. Firstly, it successfully validated two crucial self-reported questionnaires among Moroccan college students, establishing their psychometric adequacy. This achievement paves the way for future studies exploring mental health and positive psychology within similar populations. Additionally,

the study outlines a practical process for cross-cultural adaptation of self-reported questionnaires, providing a valuable blueprint for researchers aiming to adapt similar scales in diverse cultural contexts.

However, several limitations should be acknowledged. Firstly, the sample used in the test-retest analysis did not fully represent all institutions within the study and was relatively small. This limitation might compromise the credibility of the temporal stability test results. Secondly, the study's focus on a specific population impacts the generalizability of the findings. Finally, there is a lack of evidence regarding the construct validity, hindering the ability to compare the scales with other constructs and undermining the overall validity of the scales.

Conclusion

The study findings offer robust support for the updated Arabic versions of the Trait Hope Scale (THS) and the Rosenberg Self-Esteem Scale (RSES), confirming their commendable psychometric properties. The factorial analysis for the THS replicated the proposed two-factor model, and similarly, the RSES exhibited a reliable two-factor model. Both scales demonstrated adequate internal consistency and test-retest reliability, further affirming their reliability.

In conclusion, the updated Arabic versions of the THS and the RSES emerge as dependable instruments suitable for assessing trait hope and self-esteem within Moroccan college populations. Their demonstrated reliability underscores their potential value in research and assessment contexts within this demographic.

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Appendix 1

1- The updated Arabic version of the THS

تعليمات: اقرأ كل عبارة بعناية، ثم ضع دائرة حول أحد الأرقام التالية لكل منها والذي يصفك بشكل أفضل .

طبعاً صحيح	غالباً صحيح	بشكل ما صحيح	صحيح بعض الشيء	خطأ بعض الشيء	بشكل ما خطأ	غالباً خطأ	طبعاً خطأ	العبارة
8	7	6	5	4	3	2	1	1. أستطيع أن أفكر في عدة طرق للتخلص من مازق .
8	7	6	5	4	3	2	1	2. أسعى بنشاط لتحقيق أهدافي .
8	7	6	5	4	3	2	1	3. أشعر بالتعب في معظم الوقت.
8	7	6	5	4	3	2	1	4. لكل مشكلة أكثر من طريقة لحلها .
8	7	6	5	4	3	2	1	5. أنهزم بسهولة في أي جدال .
8	7	6	5	4	3	2	1	6. أستطيع التفكير في كثير من الطرق للحصول على الأشياء المهمة بالنسبة لي، في الحياة
8	7	6	5	4	3	2	1	7. أقلق على صحتي .
8	7	6	5	4	3	2	1	8. حتى عندما تثبط عزيمته الآخرين، أعرف أنني أستطيع أن أجد طريقة لحل المشكلة .
8	7	6	5	4	3	2	1	9. لقد أحسنت تجاربي السابقة إعدادي لمستقبلي .
8	7	6	5	4	3	2	1	10. لقد كنت ناجحاً جداً في الحياة.
8	7	6	5	4	3	2	1	11. عادةً ما أجد نفسي قلقاً من شيء ما.
8	7	6	5	4	3	2	1	12. أحقق الأهداف التي وضعتها لنفسي

Appendix 2

The updated Arabic version of the RSES

تعليمات: فيما يلي مجموعة من العبارات التي يمكن أن تصفت شعور الإنسان نحو نفسه. اقرأ كل عبارة وقرر إلى أي حد تُعَدُّ كلٌّ منها وصفاً لشعورك نحو نفسك، وذلك بوضع دائرة حول رقم من الأرقام التالية لكل عبارة:

العبارة	لا أتفق بشدة	لا أتفق	أتفق	أتفق بشدة
1. على العموم، أنا راضٍ عن نفسي.	1	2	3	4
2. في بعض الأوقات، أفكر أنني لست جيداً إطلاقاً.	1	2	3	4
3. أشعر أنّ عندي عدداً من الصفات الحميدة.	1	2	3	4
4. أنا قادر على فعل الأشياء بشكل جيد كمعظم الآخرين.	1	2	3	4
5. أحس أنه ليس لدي الكثير لأفخر به.	1	2	3	4
6. بالتأكيد أحس أنني لا أنفع في بعض الأوقات.	1	2	3	4
7. أشعر أنني شخص له قدره، وأنني على أقل تقديرٍ أتساوى مع الآخرين.	1	2	3	4
8. أتمنى لو أستطيع أن أحظى باحترام أكثر لنفسِي.	1	2	3	4
9. باعتبار كل شيء، لدي نزعة لأحس أنني فاشل.	1	2	3	4
10. لديّ اتجاه إيجابي نحو نفسي .	1	2	3	4