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Standardization of Resilience Scale for Graduate Students

Dr. MUATH AHMED MOHAMMED QAID MEKRAN
Faculty of Education
IBB University, Yemen
Dr. MAMUN ALI NAJI QASEM
Faculty of Education
IBB University, Yemen

Abstract:

The study was conducted to evaluate the validity and reliability of Resilience Scale for graduate students of Yemen. The descriptive survey method was used in the study. The sample of the study consisted of (520) graduate students from the college of Education of Ibb University, Yemen, in the academic year (2015-2016), which was selected by employing stratified random sampling technique. The findings of the study revealed that: 1- The Resilience Scale has a good content and construct validity. 2- The Resilience Scale has a good reliability. 3- The final format of the Resilience scale consists of only 56 items related to 7 dimensions, each item also offers five choices to express different degrees of responses as: (Strongly agree =5, Agree =4, I don't know =3, Disagree =2, Strongly disagree = 1) for positive items. (Strongly agree =1, Agree =2, I don't know =3, Disagree =4, Strongly disagree = 5) for negative items. The dimensions of Resilience Scale are self efficacy, impulse control, analysis causa, realistic optimism, emotion regulation, sympathy and reaching out.

Key words: Validity, Reliability and Resilience.

INTRODUCTION

Resilience refers to patterns of positive adaptation in the context of past or present adversity, which is one class of adaptive phenomena observed in human lives (Mekran & Qasem, 2016). Resilience is explicitly inferential, in two conditions of an individual's life: (a) adaptation or development has occurred after significant adversity or threat and (b) functioning or development is okay, either because adequate adaptation was sustained over a period of adversity or because recovery to adequate functioning has been observed (Riley & Masten, 2005).

RESEARCH PROBLEM

The present research aims to answer the following questions:

1- Is the Resilience Scale is valid among graduate students in Yemen?
2- Is the Resilience Scale is reliable among graduate students in Yemen?

RESEARCH OBJECTIVES

The present research aims to:

1- To evaluate the validity of Resilience Scale among graduate students in Yemen .
2- To evaluate the reliability of Resilience Scale among graduate students in Yemen .

RESEARCH METHOD AND PROCEDURE

To achieve the above mentioned objectivities of the study, the researchers used descriptive survey method. As it is common approach used in the field of social and human sciences. Descriptive research observes and records carefully a certain

phenomenon or problem during certain periods of time with the purpose of exploring such problem in terms of content and characteristics to reach certain conclusions and generalizations which can help in understanding the current situation and improving it (A'llam, 2006).

RESEARCH SAMPLE

The stratified sampling technique was used for selecting (520) graduate students from the College of Education of Ibb University, Yemen, in the academic year (2015- 2016).

RESEARCH PROCEDURE

For evaluating the Resilience Scale in Yemen, the researchers followed the steps given below:

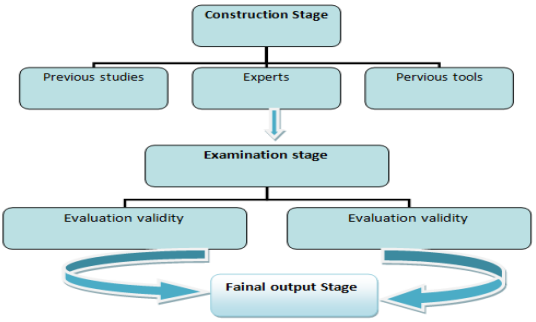


Figure No.1: Steps of Scale Construction

First stage (**Construction stage**): This stage consists of three steps: (i) collection of items of the scale from previous studies, (ii) opinion of the experts and (iii) review of previous scales.

Second stage (Examination stage): After completing the first stage (construction stage) the research tool was subjected to the second stage (Examination stage), which consists of the two steps: (i) ensuring validity of the scale (ii) ensuring

reliability of the scale. In this stage, first draft of the scale was applied on 520 graduate students of Yemen.

Third stage (Final output stage): The final format of the scale consists of 56 items, within seven dimensions and each dimension consists of eight items according to (Reivich et al., 2005).

ANALYSIS AND INTERPRETATION OF THE RESULTS

In order to achieve the formulated objectives in the present study, the data has been analyzed and interpreted, which has been presented through the following tables and figures:

***First objective**: To evaluate the validity of Resilience Scale among graduate students of Yemen*

A scale is valid if it measures what it claims to measure (Best & Khan, 2003). To determine the validity of the scale, the researchers tested three types of validity:

Content validity

Content validity describes the extent to which the assessment method is accurately representing or abstracting the object of assessment based on the constructive concept. It is therefore, necessary to identify the important items within the dimension in question (Koji, 2009).

The content validity of scale was tested by 15 experts. The first draft of the test containing 62 items was given to fifteen experts of the subject area. On the basis of their suggestions, 6 items were dropped out and some were modified. The revised draft consisted of 56 items. It is evident from the assessment of experts that items of the scale are directly related to the different dimensions of resilience**.**

Construct validity

Construct validity describes the extent to which the assessment method is adequately measuring the theorized constructive concept that is taken as the object of assessment. It is therefore, necessary to accurately define one's constructive concept beforehand. (Koji, 2009).

In order to find out the construct validity, the researchers used two methods i.e. relationship between the score of each dimension & total score of the scale and Confirmatory Factor Analysis.

1- The relationship between the score of each dimension & total score of the scale

Table No.1: Correlation Coefficient between Dimensions and Total Score

Dimension	One	Two	Three	Four	Five	Six	Seven
'r' values	.67	.68	.75	.76	.70	.72	.65
Sig.	.000	.000	.000	.000	.000	.000	.000

From the above table, it can be concluded that the correlation coefficient of all the dimensions with total score (respectively .67, .68, .75, .76, .70, .72 and .65) is significant. This indicates that all dimensions are related to resilience and the scale has good construct validity.

2- Confirmatory Factor Analysis

Confirmatory factor Analysis has been used to knowing the contribution of each domain the total score of the scale, the following figure and table show the result of Confirmatory Factor Analysis.

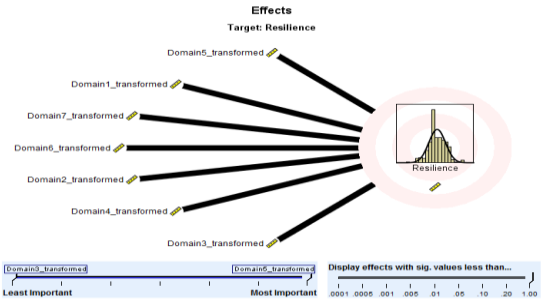
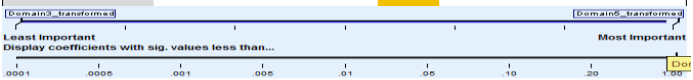


Figure No.2: Result of Confirmatory Factor Analysis

Table No.2: Contribution of Each Dimension in Total Score

Coefficients
Target: Resilience

Model Term	Coefficient	Std.Error	t	Sig.	95% Confidence Interval		Importance
					Lower	Upper	
Intercept	1.286-	0.246	5.217-	.000	1.770-	0.802-	
Domain5_transformed	0.999	0.007	152.589	.000	0.987	1.012	0.180
Domain1_transformed	1.000	0.007	143.639	.000	0.986	1.014	0.160
Domain7_transformed	1.036	0.007	139.992	.000	1.022	1.051	0.152
Domain6_transformed	1.007	0.007	135.422	.000	0.992	1.022	0.142
Domain2_transformed	0.993	0.007	134.933	.000	0.979	1.008	0.141
Domain4_transformed	0.983	0.008	125.193	.000	0.967	0.998	0.121
Domain3_transformed	1.022	0.009	116.392	.000	1.005	1.039	0.105



From the above table (2) and figure (2), it can be concluded that the contribution of all dimensions is significant and the dimension no. 5 is the most contributing or important dimension while the dimension no.3 is the least important dimension in comparison to other dimensions.

Discrimination Validity

To find out the discrimination validity for each dimension of the scale, 't' test for two independent samples was applied (high group and low group). Finally, the discrimination validity of the whole scale was also determined by using't' test. Discrimination validity for each dimension and whole test is given in the table no. 3. It indicates that all't' values are significant at level 0.01

and the mean of high group also higher than that of low group, which support the high validity of Resilience Scale.

Table No.3: Discrimination Validity

	Dimension	Group	N	Mean	s.d.	T	df	Sig.
1	Dimension One	High	133	30.72	3.96	15.98	264	0.01
		Low	133	23.63	3.23			
2	Dimension Two	High	133	33.18	3.30	17.37	264	0.01
		Low	133	25.70	3.70			
3	Dimension Three	High	133	33.51	2.78	19.53	264	0.01
		Low	133	26.33	3.19			
4	Dimension Four	High	133	33.84	2.56	20.60	264	0.01
		Low	133	25.57	3.84			
5	Dimension Five	High	133	32.18	4.02	17.00	264	0.01
		Low	133	23.86	3.95			
6	Dimension Six	High	133	35.04	2.75	19.30	264	0.01
		Low	133	27.32	3.69			
7	Dimension Seven	High	133	33.27	3.58	14.42	264	0.01
		Low	133	26.35	4.21			
	Total	High	133	231.77	11.09	38.98	264	0.01
		Low	133	178.79	11.07			

Second objective*: To evaluate the reliability of Resilience Scale among graduate students of Yemen*

Cronbach (2004) defined the reliability as the correlation of an instrument with itself. The degree of consistency among test scores is called reliability. The reliability of the scale was tested by calculating Alpha Cronbach Coefficient. The values of reliability coefficient for each dimension and the whole scale are given below:

Table No.4: Reliability Coefficients of Resilience Scale

Alpha Cronbach Coefficients			
Dimension One	.71	Dimension Five	.73
Dimension Two	.72	Dimension Six	.73
Dimension Three	.70	Dimension Seven	.71
Dimension Four	.71	**Total**	**.88**

All the values of reliability coefficient for each domain are highly significant. The reliability coefficient for whole the scale

is 0.88 and the reliability coefficients for each domain of Resilience Scale is .71, .72, .70, .71, .73, .73 and .71 respectively.

Resilience Scale in Final Format

The final format of the scale consists of only 56 items related to 7 dimensions, each item also offers five choices to express different degrees of response as:

- (Strongly agree =5, Agree =4, I don't know =3, Disagree =2, Strongly disagree = 1) for positive items.
- (Strongly agree =1, Agree =2, I don't know =3, Disagree =4, Strongly disagree = 5) for negative items.

Dimensions of Resilience Scale
Dimension (One): Self efficacy 1-8
Dimension (Two): Impulse control 9-16
Dimension (Three): Analysis cause 17-24
Dimension (Four): Realistic optimism 25-32
Dimension (Five): Emotion regulation 33-40
Dimension (Six): Sympathy 41-48
Dimension (Seven): Reaching out 49-56

Administration of Resilience Scale: Resilience Scale can be used for graduate students. It can be administered either individually or in group and there is no time limit for the completion of the scale.

Scoring of Resilience Scale: The maximum possible score of this scale is 280 and the minimum score is 56. Thus, high score on the scale indicates high level of resilience and low score on the scale indicates low level of resilience.

To categorize the students, the researchers used the standards calculated by using the Percentiles by using SPSS.

Table No.5: Standards for categorization

Category	Standard
Weak Resilience	56 – 187
Below average Resilience	189 – 200
Average Resilience	201- 210
Good Resilience	211 – 223
High Resilience	224 – 280

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