

## Translation and Validation of EPOCH Measure of Adolescent Well-Being

Syeda Farhana Kazmi<sup>1</sup>, Owais Ahmad<sup>2\*</sup>, Shamsa Siddique<sup>2</sup>**Abstract**

The Engagement, Perseverance, Optimism, Connectedness, and Happiness (EPOCH) measure of adolescent well-being-20 was translated into Urdu and validated in this study, which was divided into two parts: part one involved forward and reverse translation of the EPOCH measure, and part two involved the launch of the scale's psychometric properties. A sample of 428 adolescents from different cities, schools, and institutions were selected; exploratory factor analysis revealed a five-dimensional aspect construct; confirmatory factor analysis goodness-of-fit indices also showed a good fit between the model and the data, and internal consistency values for both the scale and factor dimensions were high. The current study discovered that the EPOCH measure of adolescent well-being is a brief and easy-to-administer tool. The acquired goodness-of-fit index value was .92, the adjusted goodness-of-fit index value was .90, the comparative fit index value was .97, the incremental fit index value was .97, and the root mean square error of approximation (RMSEA) score was .05 with a p close value of .02.

**Keywords:** Adolescents, EPOCH, Pakistan, Reliability, Translation, Urdu Validity, Well-being

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**Introduction**

"Well-being" is often used to describe the highest level of psychological functioning and experience. In the field of scholastic psychology, research on well-being has grown increasingly more studied in relation to students' ideal psychological experiences and academic performance. Since the need for "twenty-first-century schooling" has gained traction, it is widely acknowledged that educational institutions should prioritize students' welfare in addition to academic knowledge. Given that school experiences would influence their development beyond

merely academic achievement, this might be seen as an excellent source for their learning style, acquiring abilities, and conquering life's challenges. Higher self-control regarding academic tasks and academic performance is correlated with it. Happier students are less likely to skip class, feel more capable of overcoming academic challenges, and value education more in general. Additionally, there is a correlation between reduced bullying in schools and aspects of well-being, including optimism and connectedness. Academic well-being may also be regarded as a useful coping strategy for managing stress and impending challenges in the classroom. The development of characteristics, viewpoints, attitudes, and skills that influence future development and functioning occurs during adolescence. Therefore, we place more emphasis on positive attributes that support sound psychosocial development than on enjoyable experiences (Zeng & Kern, 2019). Measures of Teenager's Well-Being, measures five plus psychological traits which may promote well-being, physical health, and

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other favorable products in later life. These traits are engagement, perseverance, optimism, connectedness, and happiness. The measure was developed using pool of 60 items, and its aspect structure, internal and test-retest reliability, convergent, and predictive validity were all examined in a sequence of 10 studies involving 4,480 adolescents (aged 10 to 18) as of the U. S. and Australia. The resulting 20-item measure's psychometric characteristics were sufficient. The EPOCH measure is a quick multidimensional exam that adds to batteries used to evaluate the positive psychological functioning of adolescents. It also helps empirically test and apply the well-being theory (Kern et al., 2016). The scale is translated and validated in multiple languages like German, Turkish, Swedish, Chinese, Indonesian and Spanish.

### **The EPOCH Model**

The EPOCH model is an integrative paradigm that focuses on the well-being of teenagers and specifically incorporates a eudemonic and hedonic approach. According to the EPOCH, well-being is more than merely feeling good or being content. It relates to the sensation of working well and being positive about one's future, as it incorporates a eudemonic perspective of well-being. The EPOCH model is founded on the concept of well-being a multifaced paradigm that includes Positive Emotions, Engagement, Relationships, Meaning, and Accomplishment (PERMA). When the PERMA pattern was applied to youngsters, it exposed several aspect compositions, such as those items exhibiting value full of interactions component. The EPOCH model addresses the well-being of teenagers aged 10 to 18 by incorporating the five criteria Engagement, Perseverance, Optimism, Connectedness, and Happiness. Being immersed by an activity means forgetting about everything else. "Flow" refers to extremely high levels of involvement.

Perseverance is defined as persisting with tasks and pursuing one's goals despite setbacks. Persistence appears to be the key to subjective achievement. Optimism implies one's view of hopefulness and positiveness concerning the upcoming. Being connected is defined as owning buddies plus being loved for. Happiness is a consistent condition of optimistic state, likewise a broad sense of well-being. The five EPOCH model variables are said to promote adult well-being in the sense of PERMA. As a result, EPOCH defines well-being operating multifaceted method, providing opportunity to evaluate well-being completely. Hence excellent identify and enhance well-being by originating special interposition requirements. This becomes extremely beneficial to educational institutions (Bakker & Schaufeli, 2008).

A similar inquiry form, the EPOCH assess of Adolescent Well-Being, contains 20 items on 5 points answer measure aimed at assessing well-being in the sense of the EPOCH paradigm. Each EPOCH domain is represented by four pieces. The validation research results favored a 5-aspect construction beside aforementioned EPOCH fields over a developed-order composition. The variables remained reasonably interconnected. Nonetheless, the authors recommend computing a complete psychological performance as the standard of all five-aspect scores in addition to the five-feature scores. Discovering the nomological system revealed that well-being remained dimly to moderately related to additional measurable ill-being characteristics, confirming the hypothesis that well-being states to beyond than just lack of ill-being. Furthermore, the findings are based on qualitative research of students' and instructors' conceptions of institute-concerned well-being.

The multidimensional EPOCH model, as modified for the school environment,

provides a suitable framework for mapping the elements of institute-linked well-being as told by pupils and instructors. In this empirical survey, school children and instructors were invited to complete a questionnaire with comments concerning their students' institute-linked well-being. The EPOCH framework was then used to categorize student and instructor statements. Connectedness, Happiness, and Engagement were the most addressed categories, while Perseverance and Optimism were less addressed. This might be attributable to the inquiry form design, which clearly links the problems to detectable actions, which is further complex to respond in terms of Perseverance and Optimism (Kern et al., 2016).

The EPOCH, on the other hand, focuses on teenagers' overall well-being while ignoring context-specificity. As a result, it allows for inferences about teenagers' inclusive well-being, but then it bounds the ability to identify real assets alongside intervention requirements inside relevant situations, for instance school setting. We sought to use the benefits of the EPOCH ideal while also seizing the overlooked situation-specificity because there is a paucity of Urdu-speaking instruments that holistically target children's well-being in school. As a result, we intended to offer an effective multidimensional Urdu-language tool aimed at evaluating pupils' well-being that incorporates hedonistic and eudemonic well-being markers. We did this by translating the EPOCH measure into Urdu and adapting the EPOCH version to the educational settings (Buerger et al., 2023).

### **Method**

The existing research was managed in two levels. Segment 1 comprises of translating EPOCH measure of adolescent's well-being in Urdu and Segment 2 incorporates establishing psychometric assets of measure. To observe the components of EPOCH, EFA and CFA were used.

### **Measures**

The following measures were employed in the current investigation.

Each item is graded on a 1–5 scale across domains (nearly never/not at all like me = 1; almost always/very much like me = 5). Results are computed as the mean of the four items for all fields, the findings might be presented as a profile crosswise area, that is calculating the average of every subscale individually by adding all the corresponding four items for every subscale subsequently.

### **Instruments**

The measures utilized in this investigation are presented in this section. Based on the collected data, all numerical indicators, for example CFA model fit indices and AMOS, remained assessed.

### **EPOCH-U-S Scale of School-Linked Adolescent Well-Being**

The EPOCH scale of School-Linked Adolescent Well-Being is a 20-items school-linked well-being measure created for students 12 to 18 ages that addresses the earlier outlined characteristics. Engagement, Perseverance, Optimism, Connectedness, and Happiness ("The scale has a five-point response format (1 = not at all true; 5 = totally true).

### **Segment 1: Translation of EPOCH to Urdu**

Linguistic conversion of EPOCH was completed, from the foundation (English) to objective language (Urdu) through the support of six multi-lingual specialists (one professor of Psychology, one lecturer of Urdu, and four master's students of Psychology). They were asked to translate the measure word-for-word; consequently, the senses of words were not distorted. The succeeding phase is for a committee of three psychology professionals (one associate professor, one assistant professor, and one professor) to carefully evaluate all items. These specialists thoroughly reviewed each item in terms of style, grammar, and word choice, which

appears to be close to the actual test. The scale was then back translated utilizing the Brislin (1976) method. Two Urdu lecturers, two English lecturers, and one psychology lecturer had been asked to translate the Urdu things back into English. These instructors had no knowledge of or experience to the initially published English version rating of EPOCH.

### **Segment 2: Psychometric Assets of EPOCH**

Cronbach's alpha was utilized for scale reliability study to establish the psychometric features of the Urdu translation of EPOCH. The construct validity of EPOCH components was evaluated using Analysis of Moment Structure (AMOS 23; CFAs).

#### **Sample**

Using a convenience sampling technique, a sample of 428 teenagers were reached from schools and institutions in Khyber Pakhtunkhwa (Pakistan). For data collection, written approval was sought from the appropriate authorities. Participants who volunteered to be a part of the investigation were involved in the research. EPOCH was administered to all those participants.

#### **Procedure**

Prior consent was obtained from the appropriate officials (administration, principals of schools and colleges). The panel of ethics has also given its blessing. All the participants were Pakistani citizens who provided written informed permission. Subjects were provided with instructions on how to respond to the surveys honestly and with sincerity. The test was given to children aged 12 to 18 years, regardless of gender. Previously, data was collected from 500 participants. However, incomplete and carelessly completed questionnaires were excluded before being entered into SPSS. The survey contained 428 carefully completed questionnaires in total.

#### **Data**

Following data collection and explanation,

#### **Analyses**

relevant statistical methods were used to assess the data. The initial degree of reliability was assessed, and then SPSS-30 was used to analyze the EFA factor network and primary factors of the instrument. CFA in AMOS-23 was also utilized to examine EPOCH variables.

### **Results**

#### **Reliability of EPOCH-20**

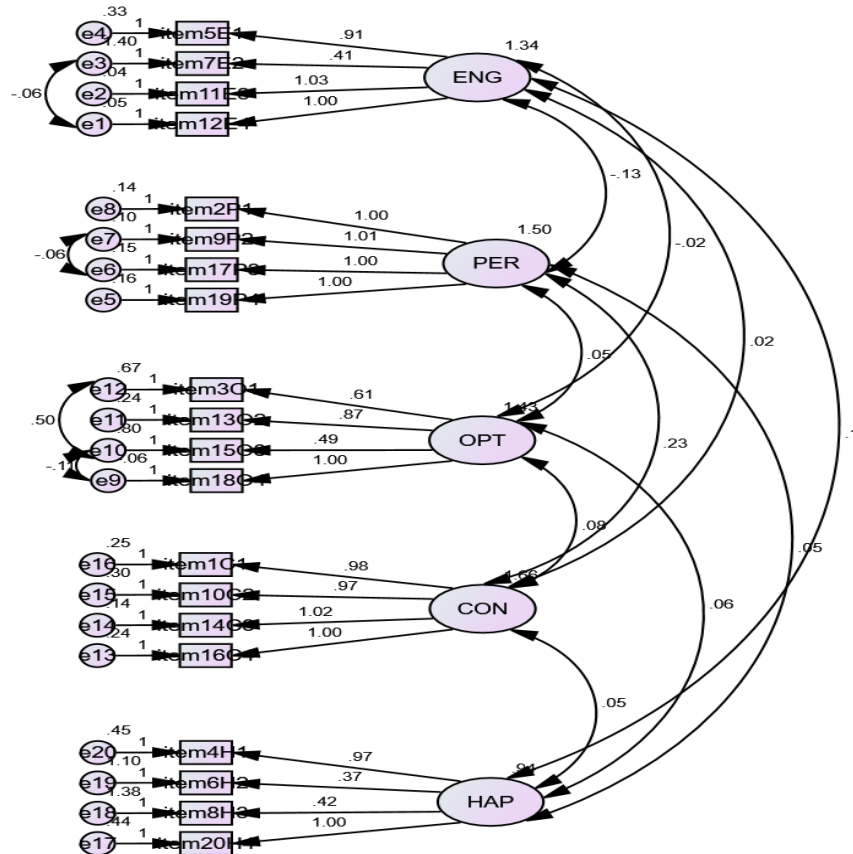
EPOCH-20 reliability evaluation was performed. The test demonstrated a suitable degree of reliability. The entire measure alpha value was .75. Factor 1 had an  $\alpha$  score of .86, Factor 2 had an  $\alpha$  score of .97, Factor 3 had an  $\alpha$  score of .88, Factor 4 had an  $\alpha$  score of .96, and Factor 5 had an  $\alpha$  score of .71. Correlation research revealed that the EPOCH Urdu translation has a substantial positive relationship to the original English instrument at .01 significance level, indicating that the Urdu translation and English are both meaningfully related.

#### **Validation of EPOCH-20**

EFA was employed for the scale's factor design and primary characteristics. CFA was employed to assess the EPOCH-20 variables. CFA is a popular method of factor analysis. All the observed components showed suitable standardized regression scores, which is, more than .35, based on the fundamental criteria. Hence, in current investigation, the CFA factor loadings for all EPOCH-20 dimensions were greater than .35. The following graphic illustration of the components is provided for complete analysis: Figure 1 depicted the EPOCH-20 factor framework for the five different dimensions. All the numbers exceed .35, that is an appropriate limit of standardized regression score. Table 1 shows the demographic details of the sample in standings of age, gender, education, and school, as well as their frequency and proportion. Table 2 displayed the extracted value of all EPOCH-20 items, demonstrating

that all 20 items had adequate value and may be used to assess adolescent well-being.

**Figure 1.**  
*Graphical Appearance of Five Dimensions of EPOCH-20*



Note. EPOCH-20 = Engagement, Perseverance, Optimism, Connectedness and Happiness–20

**Table 1**  
*Demographic Features of Sample Measuring Well-Being (N = 428)*

Demographics	Frequency	%
Age		
12	1	.3
13	67	19.1
14	57	16.3
15	73	20.9
16	56	16.0
17	66	18.9
18	30	8.6
Gender		
Male	173	49.4
Female	177	50.6

Education in Class		
Six	24	6.9
Seven	14	4.0
Eight	67	19.1
Nine	106	30.3
Ten	45	12.9
Eleven	83	23.7
Twelve	11	3.1
Institute		
Shaheen education academy	119	34.0
Bunyard grammar	17	4.9
Scholar's	21	6.0
Educators	53	15.1
Umerzai model school	70	20.0
Islamia college school	2	.6
new islamia	8	2.3
Tameer-e-watan	41	11.7
progressive academy	7	2.0
Pakistan Grammar School	7	2.0
Roots	5	1.4

**Table 2**

*Communalities Estimates of Extraction Order Via Principal Factors Analysis of EPOCH-20 (N = 428)*

Item numbers	Value
1	.948
2	.968
3	.882
4	.824
5	.926
6	.550
7	.500
8	.556
9	.965
10	.941
11	.965
12	.955
13	.880
14	.962
15	.783
16	.946
17	.954
18	.903
19	.963
20	.836

Table 2 displayed the factor loading scores for five EPOCH-20 Urdu translation factors. As per the findings all the factor loadings are

considered as good and acceptable as they are all above .50.

**Table 3**

*Factor Loading for EFA Via Varimax Rotation Investigation of EPOCH-20 (N = 428)*

Question No	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
11	.965				
12	.955				
05	.926				
07	.500				
02		.968			
09		.965			
19		.963			
17		.954			
18			.903		
03			.882		
13			.880		
15			.783		
14				.962	
01				.948	
16				.946	
10				.941	
20					.836
04					.824
08					.556
06					.550
% Variance	9.43				
Cumulative Variance	77.06%				
Kaiser-Meyer-Olkin measure	.730				
Bartlett's test of Sphericity	8741.44<.000				

**Table 4**

*Ideal Fit Indices Intended for EPOCH-20 (N = 428)*

Representations	X <sup>2</sup> (df)	X <sup>2</sup> /df	GFI	AGFI	Goodness of Fit		
					CFI	IFI	RMSEA
EPOCH-20 (five factors)	385.66(156)	2.47	.92	.90	.97	.97	.05

Note. GFI = goodness-of-fit index, AGFI = adjusted goodness-of-fit index, CFI = comparative fit index, IFI = incremental fit index; RMSEA = root mean square error of approximation.

Table 4 displayed CFA for the goodness-of-fit index (GFI) for the scale's five subscales. Appropriate figures for GFI (goodness-of-fit

index), AGFI (adjusted goodness-of-fit index), CFI (comparative fit index), and IFI (incremental fit index) are .90 or higher, and

the present analysis gained scores that are higher than .90. As a result, the present

research provides substantial results which shows that the model is fit.

**Table 5**

*The CFA Reliability and Validity Outcomes for Concluding Model of EPOCH-20 (N = 428)*

Variables	Questions	Factor loading	$\alpha$ (>.7)	CR (>0.6)	AVE (>0.5)
Factor 1	11	.965	.86	.91	.73
	12	.955			
	05	.926			
	07	.500			
Factor 2	02	.968	.97	.98	.92
	09	.965			
	19	.963			
	17	.954			
Factor 3	18	.903	.88	.92	.74
	03	.882			
	13	.880			
	15	.783			
Factor 4	14	.962	.96	.97	.90
	01	.948			
	16	.946			
	10	.941			
Factor 5	20	.836	.71	.79	.50
	04	.824			
	08	.556			
	06	.550			

Cronbach's  $\alpha$ , composite reliability, and average variances extracted of the five factors are all excellent, as shown in Table 5 of EPOCH-20.

**Table 6**

*Correlation among Subscales of EPOCH-20, Engagement, Perseverance, Optimism, Connectedness, and Happiness Scale (N = 428)*

Scales	1	2	3	4	5	EPOCH
connectedness	1	.18**	.25**	.32**	.13*	.64**
perseverance	—	1	.35**	.21**	.13*	.64**
Optimism	—	—	1	.24**	.11*	.62**
Happiness	—	—	—	1	.03	.59**
engagement	—	—	—	—	1	.48**
EPOCH	—	—	—	—	—	1

\*\* $p < 0.01$ , \* $p < .05$

**Table 7**  
*Gender Differences on EPOCH-20 (N = 428)*

Variable	Boys (n = 208)		Girls (n = 220)		t (426)	p	Cohen's d
	M	SD	M	SD			
EPOCH	60.28	10.06	59.52	10.65	.70	.21	-

Note. M = Mean, SD = Standard Deviation.

Table 7 reveals gender differences in the EPOCH measure among adolescents. As the p-value exceeds .05, which means that no

significant differences were concluded between boys and girls in the EPOCH measure among adolescents.

**Table 8**  
*Correlations between MIH-5 and EPOCH-20 (N = 100)*

Scale	EPOCH-20	MIH-5
EPOCH-20	1	.82**
MIH-5	----	1

Note. MIH-5 Mental Health Inventory 5 items, \*\* $p < 0.01$

Table 8 shows the convergent validity between EPOCH measure of adolescent well-being and mental health inventory. As both the scales are measuring same constructs

hence, the correlation between both the variables are significantly positive with  $r = .82^{**}$ .

## Discussion

This research was supervised headed for translate and validate EPOCH-20 measure of adolescent's well-being in Urdu. Results showed multiple and different values for different factors. Overall, five factors were obtained. CFA was employed for evaluating the factors, which revealed high levels of model fit indices for the five EPOCH components. The overall reliability of the scale was satisfactory which was .75. The reliability scores for the five different subscales were higher than acceptable. Composite reliability along with convergent validity were high for all five criteria. Factor 1's estimated composite reliability was .86, and Factor A's estimated convergent validity was .47\*\*. Similarly, the computed composite reliability score for Factor 2 was .97, and the determined convergent validity score for Factor B was .28\*. The composite reliability for factor 3 is .88 and

value for convergent validity is .42\*\*. In the same way the score of the composite reliability for factor 4 is .96 and value for convergent validity is .42\*\*. Moreover, composite reliability of factor 5 is calculated .71 and the convergent validity for Factor 5 is .50\*\*. Moreover, the overall convergent validity between the two scales like EPOCH-20 and MIH-5 was calculated as .82\*\* that was significant at .01 level two tailed as given in table 8. EPOCH-20 and its 5 dimensions demonstrated good construct validity, with all items demonstrating a substantial association with total scores. The goodness-of-fit indices for all five dimensions of EPOCH-20 were adequate. The score of  $X^2$  was 385.66, the  $X^2/df$  ratio was 2.47, which is lower compared to the recognized standardized score, which should be under three. Regarding the chi-square test, a score of  $X^2/df = 1$  is deemed ideal; a score of  $X^2/df$  less than 2 is considered good; if the

score obtained is less than 5, it is considered acceptable; and if the score gained is 5 or greater, it is considered unacceptable. The score of  $X^2/df$  is linked to the size of the participants (Marques & Neves, 2014).

Moreover, the score obtained for GFI was .92, AGFI was .90, CFI was .97, IFI was .97, and NFI was .95. All these numbers are more than .90, a standardized criterion score. These scores range from 0 to 1, with values close to 1 indicating a perfect model fit. Scores in the .90 to .95 series or higher indicate good model fit. The result attained for RMSEA was .05, which is lower than the acceptable standardized value of RMSEA of .06; this figure ought to be lower than .08 for appropriate model fit and less than .05 for a good model fit. The score obtained of RMSEA in the current investigation was .05, indicating a strong model fit of the scale. RMSEA has the advantages of providing 95% or 90% certainty that the model is inside the acceptable fit range (Hu & Bentler, 1999).

Furthermore, the current study indicated, the EPOCH translated measure is having excellent and adequate psychometric assets and is aligned with the original English version scale. As it is clear from factor loadings, all the items are factor loaded exactly in the same factors as the original English version scale. However, the scale is already translated into Indonesian language and by checking the CFA analysis of that article there came out a difference emerged, that two items from different subscales have been excluded (Setyandari, 2019; Silitonga, 2023). Hence, the researchers concluded that the current Urdu version scale is an appropriate measure to assess the well-being of adolescents.

These findings are backed by earlier research. Previous research shows that employee engagement has a positive relationship with employees' well-being (Schaufeli et al., 2008). Other research has found a positive link between optimism and well-being (Kern

et al., 2016). As an outcome, the Urdu translation of the EPOCH-20 was discovered to be a reliable and valid measure for assessing teenagers' well-being.

### **Limitations and Suggestions**

The current research has reserved engagement, perseverance, optimism, connectedness, and happiness for association by EPOCH-20; It is advised that future studies incorporate any contrary construct for association to figure out the scale's divergent validity. Also, the data collected was based on self-reported measures, and social desirability was not exempted from the study.

### **Implications**

It stood determined that the Urdu translation of the EPOCH-20 is a valid and reliable instrument for determining the well-being in teenagers. The CFA results suggested that the scale was multidimensional. EPOCH-20 would be extremely beneficial for educational psychologists and psychiatrists to evaluate the well-being of teenagers. The correlation with engagement, perverseness, optimism, connectedness, and happiness makes significant contributions to literature. EPOCH-20 was determined to be a brief, succinct, and readily administered scale with acceptable and adequate psychometric qualities. It helps in identifying the overall well-being of students in any educational setting.

### **Ethics Statement**

All the ethical standards of APA were met. Informed consent was taken in written form from all the respondents to participate in this study.

### **Contribution of Authors**

Syeda Farhana Kazmi: Methodology, Writing - Reviewing & Editing, Supervision

Owais Ahmad: Conceptualization, Investigation, Methodology, Data Curation, Formal Analysis, Writing – Original Draft

Shamsa Siddique: Methodology, Writing – Original Draft, Writing - Reviewing & Editing

### Conflict of Interest

There is no conflict of interest declared by the authors.

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The authors declared no source of funding.

### Data Availability Statement

The datasets of the current study are not available publicly due to ethical reasons but are available from the corresponding author [O.A.] upon the reasonable request. Further, the Urdu version of the scale can be requested from the corresponding author [O.A.].

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