

The Turkish Version of a Personal Responsibility Scale for Chinese College Students: Adaptation and Validation

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Purpose: The purpose of this study is to carry out the Turkish adaptation study of the personal responsibility scale developed by Ren et al for Chinese university students and to examine the validity and reliability of the adapted scale. The original scale was developed to determine the personal responsibility levels of Chinese university students. This research is very important in terms of determining the personal responsibility levels of Turkish university students.

Methods: This research involved university students, who were selected through purposeful sampling, a non-probability sampling method. After the original scale was translated into Turkish, a pilot study was conducted on 165 students and exploratory factor analysis was conducted to reveal the scale structure. The validity and reliability of the determined factor structure was tested on 259 students. Internal consistency was obtained with the Cronbach Alpha coefficient. Confirmatory factor analysis was used to check the validity of the two subscale structure.

Results: To examine the two-dimensional factor structure of the scale, fit indices were examined: X^2/df (1.591), GFI (0.949), IFI (0.937), TLI (0.920), CFI (0.936), RMSEA (0.048) and SRMR (0.050) and It was observed that the indices were within acceptable limits. In the analysis results conducted with the multi-group confirmatory factor analysis method for measurement invariance, it was observed that ΔCFI and ΔTLI values among all metrics were less than or equal to 0.010.

Conclusion: The Turkish version of the personal responsibility scale for Chinese college students, consisting of 12 items and two subscales, was proven to be a confirmatory and reliable tool to measure university students' awareness of personal responsibility.

Keywords: Turkish adaptation, university students, personal, responsibility, validation, scale

Introduction

The study of personal responsibility is a classic and dynamic topic that has been approached by different researchers in different ways.¹ To fully understand this issue, it is important to first explain the concept of responsibility. The concept of responsibility is defined by many authors and researchers as being aware of one's own behavior or of an event that falls within one's competence, and accepting the consequences of one's behavior and situations. It is also an emotion that makes us feel strong, not weak, and at the same time gives us a sense of authority and superiority.² Another definition is that responsibility is a form of personal integrity. In other words, personal integrity arises when thoughts, feelings and actions are in harmony and the individual is willing to be accountable.³ Another definition of responsibility is that individuals hold themselves accountable, blaming themselves for failure and congratulating themselves for success.² Personal responsibility is viewed as an individual's obligation to oneself and is analyzed in two components: responsibility to oneself and responsibility to one's body.⁴ Personal responsibility entails taking steps to improve oneself, communicating respectfully with others without overstepping boundaries, being accountable for one's choices and accepting the consequences of those choices, directing one's own life, prioritizing physical and emotional well-being, and thinking and feeling in a responsible manner. Individuals have responsibilities towards themselves, including developing a healthy identity, acquiring healthy values, perceiving and

evaluating situations in a healthy manner, and cultivating healthy interpersonal relationships.⁵ Knowing and developing responsibilities in a positive manner is crucial. This research focuses on the university level, which is considered the starting point for personal responsibility. University students are individuals who are often away from their families for the first time and must take on new responsibilities. Based on this, individuals must assume greater personal responsibility for meeting their own needs, making their own decisions, and coping with the challenges of life. This research aims to develop a measurement tool to determine the level of personal responsibility required by university students. The tool will serve as a guide for their future training and development. In this regard, it also emphasizes the significance of research. Measuring the personal responsibilities of university students is crucial in this context, and having a tool to measure it is even more important. The aim of this research was to develop a measurement tool for determining the levels of personal responsibility among Turkish university students.

Materials and Methods

Participants

The population of the research consisted of 424 students in the recreation department of Istanbul Gelisim University. There are different studies in the literature to determine the optimal sample size in factor analysis. The most recommended method in these studies is to have at least 10 participants in each item.^{6–8} According to this approach, since the Personal Responsibility Scale (CCPRS) for Chinese university students consists of 13 items, a pilot study was conducted with 165 students determined by randomization technique in order to examine the reliability and factor structure of the scale. As a result of the pilot study, the final version of the scale suitable for Turkish society was applied to 259 students of the recreation department of Istanbul Gelişim University and who approved the voluntary participation form, and the validity and reliability of the scale was tested. The students participating in the research were determined by a purposeful sampling method, one of the non-probability sampling methods, in accordance with the research topic. Prior to commencing data collection, the necessary ethical committee (Istanbul Gelisim University Ethics Committee Approval Code: 2024–02, Approval Date: 2024.09.02) permissions were obtained. Following the granting of ethical approval by the relevant committee, a Google form was created to the collection of data. Prior to commencing the survey, participants were furnished with comprehensive information regarding the research in question, and a personal information form and a voluntary participation form were presented. It noted that no personal data pertaining to the individuals who participated in the survey was collected, and that all responses were recorded in an anonymised format. The researchers were informed that they could withdraw from the study at any point, and the participants were explicitly informed that all data would be stored on the researcher's computer in a manner that would prevent third parties from accessing the data.

Instruments and Procedure

For the study “Turkish Version of the Personal Responsibility Scale for Chinese University Students: Cultural Adaptation and Validation”, the necessary legal permissions were first obtained from the developers of the scale Ren et al.¹ The original scale consists of 13 items, each rated on a 6-point Likert scale ranging from “strongly agree (6)” to “strongly disagree (1)”. As a result of factor analysis, three subscales emerged: Responsibility cognition (RC) (items 2, 4, 6, 8, 11, 12), Sense of responsibility (SR) (items 1,5,9) and Responsibility behavioral tendency (RBT) (items 3,7,10,13). RBT subscale items were reverse coded. The validity and reliability study of the original CCPRS was conducted on 301 university students, and the Cronbach Alpha value, which indicates the reliability of the scale, was calculated as 0.79.

The original CCPRS was first independently and blindly translated from English to Turkish by bilingual researchers of Turkish culture, both of whom were familiar with the survey concept. To test the language and content validity of the scale, opinions were taken from 5 experts in the field of three language and two behavioral sciences and the form was rated as “item is appropriate (4)”, “item is appropriate but minor changes are recommended (3)”, “item is somewhat appropriate and major changes are required (2)” and “item is not appropriate (1)”. Davis method was used to calculate the Content Validity Index (CVI) values of the scale. According to the Davis method, CVI values were obtained by calculating the ratio of the number of experts who gave 4 and 3 points for the items in the scale to the total number of experts, and 0.800 was accepted as the criterion for the values.⁹ Regarding language and content validity, the item CVI

(I-CVI) value of the first and eighth items was obtained as 0.800, and the I-CVI values of the other items were obtained as 1.000. To examine the general content validity of the entire scale, the scale CVI (S-CVI) value was calculated by dividing the total item CVI value by the number of items, and the S-CVI value was obtained as 0.969. In addition, the kappa value calculated to statistically evaluate the agreement between experts was obtained as 0.600 for the first and eighth items and 1.000 for the other items. According to these values, it was determined that the content validity of the scale was good and the final version of the scale was created. In the second stage, a pilot study was conducted to examine the reliability and factor structures of the scale consisting of 3 factors and 13 items with Exploratory Factor Analysis (EFA), and the final version of the CCPRS suitable for Turkish culture was created. In the third stage, since it was not appropriate to analyze the model obtained by EFA using the same data set for Confirmatory Factor Analysis (CFA), the final version of the scale was applied to 259 different students who were not included in the pilot study.

Statistical Analysis

All statistical analyzes were performed using SPSS 25.0 and R package, version 4.0.2. To test the content validity of the scale, expert opinions were obtained and CVI values were calculated. Cronbach Alpha was calculated to test the internal consistency of the scale. A Cronbach Alpha value of 0.70 and above indicates that the scale has high reliability.¹⁰ CFA was used to examine construct validity. Accordingly, the indices used to evaluate how well the data fits the model are as follows: ratio of chi-square to degrees of freedom (χ^2/df), root mean square error of approximation (RMSEA), comparative fit index (CFI), standardized root mean square residual (SRMR), Tucker Lewis Index (TLI), Goodness of Fit Index (GFI) and Incremental Fit Index (IFI).^{11–13} Additionally, measurement invariance will be examined according to the gender variable to test whether the scale measures the same characteristics in different groups.

Results

Gender demographic data were collected from the students in the research to test the measurement invariance of the Turkish version of the CCPRS scale, and it was determined that 47.9% were female and 52.1% were male the 259 students participating in the research.

Exploratory Factor Analysis

As a result of the pilot study, it was seen that the difference between the factor loadings of item 7 (I would cross the street directly without traffic, even if the pedestrian lights are red) in the SR and RBT dimensions was 0.038, meaning there was cross loading between the two dimensions. Since the difference between the factor loadings of this item was less than 0.100, it was removed from the scale.¹⁴ The factor loading of other items in the scale varies between 0.366 and 0.729. Item 7 is located in the “RBT” subscale of the original scale. After removing item 7, the overall Kaiser-Meyer-Olkin (KMO) measure of the scale was 0.710 and Bartlett’s test of sphericity was found to be statistically significant ($\chi^2(66)=291,902, p<0.0001$). Accordingly, it can be said that the data is suitable for principal component analysis (PCA). Additionally, after removing Item 7, Cronbach’s alpha value was obtained as 0.700.

Although the original scale had 3 subscales, 2 subscales were formed according to the factor loadings, and the factor loadings obtained using varimax rotation are given in Table 1. While items 1, 5 and 9 were included in the “SR” subscale in the original scale, in the Turkish version of the scale they were included in the “RC” subscale and items 3, 10 and 13 were included in the “RBT” subscale.

Confirmatory Factor Analysis

CFA analysis was conducted on 259 students to confirm the two-factor structure revealed by EFA in the pilot study. The final Turkish version of the scale, consisting of 12 items, was named CCPRS-Tr and the Cronbach Alpha value was obtained as 0.730 and the KMO value as 0.81. In addition, the Cronbach Alpha value of the RBT subscale was calculated as 0.530 and the Cronbach Alpha value of the RC subscale was calculated as 0.748. To check the validity of the structure with CFA, χ^2/df (1.591), GFI (0.949), IFI (0.937), TLI (0.920), CFI (0.936), RMSEA (0.048) and SRMR (0.050) fit indices were calculated.

The findings in Table 2 and Figure 1 confirmed the applicability and acceptability of the CCPRS-Tr. The measurement invariance of the CCPRS-Tr scale according to the gender variable was tested according to the structural, metric,

Table 1 Factor Loadings Obtained by Varimax Method

Items	Factor 1 (RC)	Factor 2 (RBT)
I am capable of putting myself in other people's shoes.	0.399	
It is wise not to make promises I cannot keep.	0.541	
If I know the request is inappropriate, it is reasonable to refuse to help the other person.	0.560	
I try my best to keep my promise even when it is challenging.	0.576	
I think that more promises should come with more work accordingly.	0.617	
I think that it is not appropriate to make promises thoughtlessly.	0.664	
I would worry about how my actions might affect the group I belong to.	0.494	
I think that it is wrong to shirk responsibility.	0.366	
I will not make thoughtless promises if the appeal puts me in a tough spot.	0.514	
I might make excuses when I am accused of my mistake.		0.708
I may do the same if the people in front of me are not queuing in order.		0.654
When strangers ask me for help, I tend to do it (without care) as fast as possible.		0.729

Table 2 Fit Indices for the Models for the Turkish Form of the CCPRS in CFA

	CCPRS-Tr	Acceptable Fit	Perfect Fit
CMIN/DF	1.591	<5	<3
GFI	0.949	>0.90	>0.95
IFI	0.937	>0.90	>0.95
TLI	0.920	>0.90	>0.95
CFI	0.936	>0.90	>0.95
RMSEA	0.048	<0.08	<0.05
SRMR	0.050	<0.10	<0.05

scale and strict invariance hierarchy. Δ CFI and Δ TLI values were taken into account to examine whether measurement invariance was achieved between two hierarchical stages. The fact that these values are in the hierarchical order of Δ CFI, Δ TLI ≤ 0.010 is interpreted as measurement invariance being ensured at the relevant stage.¹⁵

When the structural, metric, scale and strict invariance findings given in Table 3 are examined, it was seen that all invariances are achieved since the fit values are at good levels in both groups according to gender (RMSEA<0.080, SRMR<0.080, TLI, CFI>0.900). Additionally, it was observed that Δ CFI and Δ TLI values between all metrics were less than or equal to 0.010. In the analysis results conducted with the multi-group CFA method, when goodness-of-fit statistics were taken into account, it was observed that full measurement invariance was achieved according to gender variable. Accordingly, it can be interpreted that the item-factor structure and factor loadings, variances, covariance and error variances of the CCPRS-Tr scale are equivalent for male and female students.

Discussion and Conclusion

In this paper, the validity and reliability of the “personal responsibility for Chinese university students” scale, developed by Ren et al¹ was examined in order to introduce it into Turkish literature. In the study, first the original scale was translated into Turkish and its language validity was tested. In the pilot study, EFA was performed to examine the factor structure and the item 7, which had a loading difference of less than 0.100 between the two subscale, was removed from the scale.¹⁴ As a result of EFA conducted to test the construct validity, it was seen that the scale, which consisted of three subscales in the original scale, was grouped under two subscales in its Turkish adaptation. These subscales are named “RC” and “RBT” considering the content of the items. In order to test the reliability of the scale, the Cronbach Alpha value was calculated and since the Cronbach Alpha value was above 0.700, it was determined that the scale had high

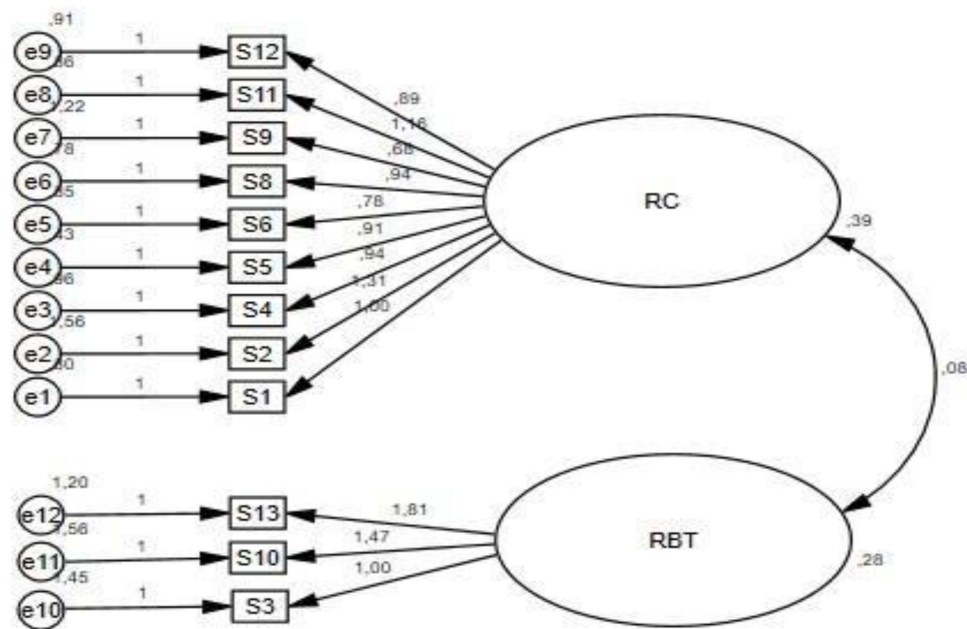


Figure 1 The CFA loading of CCPRS-Tr.

reliability.¹⁰ In the pilot study, the two subscale structures that emerged with EFA were examined with CFA and it was determined that the scale fit well with the two subscale structures since the calculated indices were in acceptable fit.¹¹⁻¹³

Multiple Group CFA analysis was applied to test the measurement invariance of the scale according to gender. According to the analysis results, it was seen that the personal responsibilities of university students provided structural, metric, scale and strict measurement invariance according to gender, respectively because $\Delta CFI, \Delta TLI \leq 0.010$.¹⁵ According to the male and female groups, the means, variances, covariance and error variances of the model were found to be equivalent in both groups. Accordingly, it can be said that the observed scores obtained from the personal responsibility model can be compared according to gender.

As a result, it was concluded that the adaptation study of the personal responsibility scale to Turkish university students is valid and reliable enough to measure the personal responsibility awareness of university students.

Similar to many studies in the literature, this study has some limitations. The most important limitation of the study is that the scale was applied to students at the recreation department of Istanbul Gelişim University by using the purposeful sampling method. However, the sample size is sufficient for the study and the CCPRS-Tr has been shown to be valid and reliable by statistical analysis. In this context, the effectiveness of using the CCPRS-Tr in measuring the personal responsibility levels of Turkish university students has been proven. In addition, the applicability of the scale to other university students and other department students in Turkey is very important to show that the scale is generalizable.

Table 3 Fit Statistics for Measurement Invariance According to Gender

	χ^2	df	χ^2/df	CFI	TLI	RMSEA	SRMR	ΔCFI	ΔTLI
Configural	141.105	106	1.331	0.922	0.903	0.051	0.060	-	-
Metric	155.833	116	1.343	0.912	0.899	0.051	0.069	-0.010	-0.004
Scalar	165.309	126	1.312	0.913	0.909	0.049	0.072	0.001	0.010
Strict	194.266	138	1.408	0.875	0.881	0.056	0.081	-0.038	-0.028

Abbreviations: CCPRS, the personal responsibility scale for Chinese college students; CFA, Confirmatory factor analysis; EFA, Exploratory Factor Analysis; CVI, Content Validity Index; RMSEA, root mean square error of approximation; CFI, comparative fit index; SRMR, standardized root mean square residual; TLI, Tucker Lewis Index; GFI, Goodness of Fit Index; IFI, Incremental Fit Index.

The findings from the study show that behavioral scientists, psychologists and other field experts can use the CCPRS-Tr scale to determine the personal responsibility levels of Turkish university students. In addition, considering the diversity of university students, in future studies, the effects of demographic variables such as different ethnic origins, family structures, and places where students live can be examined on the personal responsibilities of students. In addition, the personal responsibility levels of university students in different countries and the personal responsibilities of Turkish university students and the factors affecting them can be investigated in detail.

Data Sharing Statement

The study data can be obtained by contacting the author of correspondence, Mustafa Can Koç, at cankoc_01@hotmail.com.

Ethics Approval and Consent to Participate

The studies involving humans were approved by Istanbul Gelisim University, Ethics Committee. (Approval Code: 2024-02), (Approval Date: 2024.09.02). The studies were conducted in accordance with the local legislation and institutional requirements. This study was prepared to comply with the Declaration of Helsinki. Prior to commencing the survey, participants were furnished with comprehensive information regarding the research in question, and a personal information form and a voluntary participation form were presented.

Disclosure

The authors report no conflicts of interest in this work.

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