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Original Paper

Assessing Cultural Invariance of the Extended Objective Measure of Ego-Identity Status (EOM-EIS) Questionnaire

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Abstract

The purpose of this study was to assess the cultural invariance of the Extended Objective Measure of Ego-Identity Status (EOM-EIS) Questionnaire across three ethnic groups (African-Americans, Caucasians, and Latinos).

The total sample consisted of 289 undergraduates from a comprehensive doctoral university in the Southeastern United States. Results of the chi-squared test of goodness-of-fit indicated that the sample reflected the university's student body proportionally by gender, ethnicity, and academic major. To assess if the factor structure of the EOM-EIS operated equivalently across the three ethnic groups, a multi-group confirmatory factor analysis was conducted. Results indicated that EOM-EIS was invariant across the ethnic groups.

Keywords

Adolescence, Developmental Studies, Confirmatory Factor Analysis, Construct Validity

1. Introduction

Assessing the construct validity of the adolescent ideology identity is a central issue in developmental studies (Schwartz, 2002a). The classical statistical method to assess construct validity is exploratory factor analysis (EFA) (Borkenau & Ostendorf, 1990). EFA, however, has serious deficiencies because "they make naïve assumptions as to the meaning of concepts, provide limited information as to measurement and method error, and examine only primitive aspects of construct validity" (Bagozzi & Phillips, 1982, p 459). It has been established that confirmatory factor analysis is a powerful method for investigating the construct validity of a measure (Borkenau & Ostendorf, 1990). Confirmatory factor analysis provides an indication of overall fit and precise criteria for assessing convergent and discriminant score validity. The purpose of this investigation was to obtain empirical evidence through confirmatory factor analysis with maximum likelihood of the invariance of the ideological portion of the Extended Objective Measure of Ego-Identity Status (EOM-EIS) across three ethnic groups

(African-Americans, Caucasians, and Latinos).

2. Method

2.1 Participants

The total sample consisted of 289 undergraduates from a comprehensive doctoral university in the Southeastern United States. The racial make-up was 179 (62%) white, 32 (11%) Hispanic/Latino, and 21 (7%) Black/African American. There was slightly more females 165 (57%) than males. Ages ranged from 17 to 29. Results of the chi-squared test of goodness-of-fit indicated that the sample reflected the university's student body proportionally by gender, ethnicity, and academic major. This study was approved by the institution's IRB. All selected students signed a consent form that explained the purpose of the study and asked for their permission to use their data. All participants were given a copy of the completed manuscript prior to submission to review and confirm the integrity of the results.

2.2 Instrumentation

The EOM-EIS (Adams, Bennion, & Huh, 1989) is a 64-item questionnaire scored on a five point Likert-type scale (1= "Strongly Disagree" to 5 = "Strongly Agree"). The instrument specified a four-factor model: Politics, Occupation, Religion, and Life-Style. Identity statuses to participants are determined by standardization technique, i.e., the participant's scores are converted to standard scores, and the status with the highest standard score becomes the participant's classification. Participants whose status scores are all within one-half standard deviation of their respective means are assigned as ''undifferentiated'' status (Jones, Akers, & White, 1994).

3. Results

Covariance matrices were analyzed using confirmatory factor analysis. The model was examined by AMOS version 22 with the maximum likelihood method for parameter estimations (Arbuckle, 1999). This technique assesses the degree to which an expected or hypothesized factor model can effectively reproduce the observed or sample item covariances. Confirmatory factor analysis begins with an a priori hypothesized model and deductively ascertains its feasibility by offering a more definitive empirical evidence of the underlying factor structure of a scale than exploratory factor analysis.

The model was evaluated three ways. First, departure of the data from the specified model was tested for significance by using a chi-square test. Meyers et al, (2013) advise against the sole use of the chi-square value in judging the overall fit of the model because o the sensitivity of the chi-square to sample size. Second, goodness-of-fit between the data and the specified model was estimated by employing the Comparative Fit Index (CFI) and the Tucker-Lewis Index (TLI) and the Root Mean Square Error of Approximation (RMSEA). Third, the hypothesized loadings were examined for statistical significance with alpha set at < 0.05.

3.1 Differences across Ethnicity

To assess if the factor structure of the EOM-EIS operated equivalently across the three ethnic groups,

both the factor loadings and the covariances were constrained equal to each other. The chi-square test for differences revealed that the factor structure was in fact invariant across the three ethnic groups χ^2 (12) = 16.476, p = .17.

Although this invariant model achieved a significant chi-square, χ^2 (330) = 947.76, p < .01, the model yielded acceptably high goodness of fit indices (.92 and .94) for both the CFI and the TLI respectively. The RMSEA achieved a value of .08 indicating an acceptable fit of the model in relation to the degrees of freedom. With the single exception of foreclosure loading on Life-Style, all items loaded significantly on their respective factors, p < .01. The factor loadings are provided in Table 1.

Table 1. Factor Loadings of the Teacher Efficacy Survey

Level	Politics	Occupation	Religion	Life-Style
Diffused	.58*	.73*	.68*	.49*
Foreclosure	.12*	.17*	-.16*	-.03
Moratorium	.99*	.75*	.85*	.46*
Achieved	.14*	-.46*	-.53*	-.37*

* indicates p < .05.

The inter-correlations among the factors were all less than .85 indicating that the factors demonstrated discriminate validity. The correlations are provided in Table 2.

Table 2. Correlations among the Four Factors

Factor	1	2	3	4
1. Politics	--	.35*	.27*	.37*
2. Occupation		--	.37*	.55*
3. Religion			--	.81*
4. Life-Style				--

* p < .05.

4. Discussion/Conclusion

This study suggests that the Extended Objective Measure of Ego-Identity Status (EOM-EIS) maintained its structural integrity across ethnicity. The psychometric properties of the instrument indicated the four subscales demonstrated discriminate validity. Additional studies are needed to further test score validity and reliability. Until such studies are completed, it is suggested that this instrument be used in conjunction with other methods of ego identification.

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