EAM2025 XI Conference
23RD - 25TH JULY 2025
European Association of Methodology
Spain Tenerife Canary Islands

# Coping Flexibility Among Young Adults from Six Countries: Cross-Cultural Validation of the Coping Flexibility Scale (CFS)

**Bella M. González-Ponce[1] , Manuel Sánchez García[2], Adrian J. Bravo [3], Fermín Fernández Calderón[1]**

[1] University of Extremadura (Spain), [2] University de Huelva (Spain), [3]College William & Mary (United States). Contact: fermin.fernandez@dpces.uhu.es

## BACKGROUND AND AIMS

Coping flexibility is essential for adapting to changing demands that typically arise during adulthood. To measure it, Kato et al. (2012) developed the Coping Flexibility Scale (CFS), which conceptualizes coping flexibility as the ability to discontinue an ineffective coping strategy and generate and implement an alternative one. The CFS is a two-factor instrument comprising 10 items (evaluative coping=5 items; adaptive coping=5 items), originally developed with a Japanese sample. However, subsequent studies in Western contexts suggested a unidimensional structure for the CFS.

We aimed to examine the psychometric properties of the Coping Flexibility Scale (CFS) among young adults (18-25 years) in diverse cultural and contextual settings. We used two independent samples to provide evidence of the scale´s reliability and validity across six countries (Spain, Argentina, the United States, Canada, England, and South Africa).

## MATERIALS AND METHODS

Study 1 included a multinational sample of university students (n = 3,753), and Study 2 a Spanish community sample of people who use cannabis (n = 612). We conducted CFA using diagonally weighted least squares (*DWLS*) estimation to examine the dimensional structure of CFS. Two competing models were tested in Study 1: the original two-factor model and a unidimensional model.

Item selection was based on two criteria: a) items with factor loadings < .40 and/or b) items with corrected item-total correlations < .30 were removed. Items were eliminated individually, and model fit indices were recalculated after each exclusion. The final model from Study 1 was then tested in Study 2 to assess replicability in an independent sample.

To conduct country-level measurement invariance, we use 15 pairwise comparisons across countries. Invariance was assessed in three steps, configural, metric, and scalar, using changes in fit indices (ΔCFI < .01, ΔTLI < .01, ΔRMSEA < .015) between nested models..

Table 1. Confirmatory factor analysis for the models of the Coping Flexibility Scale

| Country | Sample size | Models | $\chi^2(df)$ | CFI | TLI | RMSEA [90% CI] | SRMR | $\alpha$ | $\omega$ |
|---|---|---|---|---|---|---|---|---|---|
| All countries | 3753 | 2-factor model-10 items | 1322.70* (34) | 0.990 | 0.987 | 0.101 [0.096 – 0.105] | 0.054 | .64, .88 | .65, .88 |
| | | 1-factor model-10 items | 1450.06* (35) | 0.989 | 0.986 | 0.104 [0.099 – 0.108] | 0.057 | .86 | .87 |
| | | 1-factor model-9 items | 1203.48* (27) | 0.991 | 0.988 | 0.108 [0.103 – 0.113] | 0.052 | .86 | .89 |
| | | 1-factor model-8 items | 1049.14* (20) | 0.992 | 0.989 | 0.117 [0.111 – 0.123] | 0.051 | .89 | .89 |
| Spain | 500 | 2-factor model-10 items | 111.33* (34) | 0.989 | 0.986 | 0.068 [0.054 – 0.082] | 0.057 | .58, .90 | .59, .90 |
| | | 1-factor model-10 items | 129.57* (35) | 0.987 | 0.983 | 0.074 [0.060 – 0.087] | 0.064 | .85 | .86 |
| | | 1-factor model-9 items | 82.75* (27) | 0.992 | 0.990 | 0.064 [0.049 – 0.080] | 0.049 | .88 | .89 |
| | | 1-factor model-8 items | 74.06* (20) | 0.992 | 0.989 | 0.074 [0.056 – 0.092] | 0.049 | .90 | .90 |
| Argentina | 439 | 2-factor model-10 items | 139.68* (34) | 0.992 | 0.989 | 0.084 [0.070 – 0.099] | 0.060 | .58, .88 | .58, .88 |
| | | 1-factor model-10 items | 155.84* (35) | 0.991 | 0.988 | 0.089 [0.075 – 0.103] | 0.064 | .80 | .80 |
| | | 1-factor model-9 items | 108.89* (27) | 0.994 | 0.991 | 0.083 [0.067 – 0.100] | 0.052 | .84 | .85 |
| | | 1-factor model-8 items | 96.13* (20) | 0.994 | 0.991 | 0.093 [0.075 – 0.112] | 0.052 | .79 | .80 |
| USA | 1935 | 2-factor model-10 items | 827.71* (34) | 0.990 | 0.987 | 0.110 [0.103 – 0.116] | 0.057 | .70, .88 | .70, .88 |
| | | 1-factor model-10 items | 893.92* (35) | 0.989 | 0.986 | 0.113 [0.106 – 0.119] | 0.059 | .89 | .89 |
| | | 1-factor model-9 items | 761.80* (27) | 0.991 | 0.987 | 0.119 [0.111 – 0.126] | 0.055 | .90 | .90 |
| | | 1-factor model-8 items | 665.69* (20) | 0.991 | 0.988 | 0.129 [0.121 – 0.138] | 0.055 | .90 | .90 |
| Canada | 341 | 2-factor model-10 items | 168.16* (34) | 0.990 | 0.987 | 0.108 [0.092 – 0.124] | 0.061 | .69, .88 | .70, .88 |
| | | 1-factor model-10 items | 171.96* (35) | 0.990 | 0.987 | 0.107 [0.092 – 0.124] | 0.062 | .88 | .86 |
| | | 1-factor model-9 items | 147.63* (27) | 0.991 | 0.988 | 0.115 [0.097 – 0.0133] | 0.059 | .90 | .90 |
| | | 1-factor model-8 items | 117.45* (20) | 0.992 | 0.989 | 0.120 [0.099 – 0.141] | 0.056 | .90 | .90 |
| England | 182 | 2-factor model-10 items | 114.95* (34) | 0.986 | 0.982 | 0.115 [0.092 – 0.138] | 0.069 | .48, .86 | .51, .86 |
| | | 1-factor model-10 items | 126.31* (35) | 0.984 | 0.980 | 0.120 [0.098 – 0.143] | 0.075 | .81 | .82 |
| | | 1-factor model-9 items | 117.14* (27) | 0.985 | 0.979 | 0.136 [0.111 – 0.136] | 0.076 | .85 | .85 |
| | | 1-factor model-8 items | 113.14* (20) | 0.984 | 0.977 | 0.160 [0.132 – 0.190] | 0.082 | .86 | .87 |
| South Africa | 356 | 2-factor model-10 items | 148.43* (34) | 0.985 | 0.980 | 0.097 [0.082 – 0.114] | 0.066 | .56, .86 | .48, .86 |
| | | 1-factor model-10 items | 168.22* (35) | 0.983 | 0.978 | 0.104 [0.088 – 0.120] | 0.070 | .82 | .81 |
| | | 1-factor model-9 items | 152.87* (27) | 0.984 | 0.978 | 0.115 [0.097 – 0.133] | 0.070 | .85 | .86 |
| | | 1-factor model-8 items | 130.22* (20) | 0.985 | 0.980 | 0.125 [0.105 – 0.145] | 0.070 | .87 | .87 |

Note. p <.001; Estimation Method: Diagonally Weighted Least Squares (DWLS); CFI = Comparative Fit Index; TLI = Tucker Lewis Index; RMSEA = Root Mean Square Error Approximation; SRMR = Standardized Root Mean Square Residual. α = Cronbach's alpha; $\omega$ = McDonald's omega

## RESULTS AND CONCLUSIONS

Although the original two-factor model showed excellent fit indices (Table 1), the high inter-factor correlation suggested that a unidimensional model was more appropriate. Items 2 and 7 consistently failed to meet the established selection criteria across all six samples. As a result, we proposed a unidimensional 8-item version of the CFS. This 8-item model demonstrated measurement invariance across all samples, indicating cross-cultural stability of the structure. Consistent with Study 1, CFA results in Study 2 confirmed excellent fit for the unidimensional 8-item model.

This study proposes a refined unidimensional version of the CFS supported by robust psychometric evidence across culturally and behaviorally diverse young adult samples. Our findings indicate that, in Western contexts, coping flexibility is best represented as a single-factor construct. Evidence of measurement invariance enhances the scale's applicability for cross-group research and clinical screening.

PSICOCANN Project. Grant PID2020-118229RB-I00 funded by MICIU/AEI/10.13039/501100011033

MINISTERIO DE CIENCIA, INNOVACIÓN Y UNIVERSIDADES
AGENCIA ESTATAL DE INVESTIGACIÓN

Universidad de La Laguna
Cabildo de Tenerife
Tagoro
Gobierno de Canarias
Consejería de Universidades, Ciencia e Innovación y Cultura
Agencia Canaria de Investigación, Innovación y Sociedad de la Información
ICI Instituto Canario de Igualdad

tea hogrefe cajasiete