

# PSYCHOMETRIC EVALUATION OF THE FILIPINO COPING STRATEGIES SCALE: A RASCH MEASUREMENT ANALYSIS OF CONSTRUCT VALIDITY AND DIMENSIONAL STRUCTURE

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#### **Abstract**

**Background:** Cross-cultural coping research requires culturally adapted instruments, yet traditional psychometric validation methods may inadequately assess construct validity in non-Western populations. The Filipino Coping Strategies Scale (FCSS) requires rigorous psychometric evaluation beyond classical test theory approaches.

**Objective:** To evaluate the psychometric properties of the FCSS using Rasch Rating Scale Model analysis, examining unidimensionality, item functioning, and measurement precision across nine coping domains.

**Methods:** Secondary analysis of FCSS data from 399 Filipino adults (266 females, 133 males; Mage = 24.3, SD = 6.8). Rasch analysis assessed model-data fit, unidimensionality via principal components analysis of residuals, item fit statistics, person-item targeting, category functioning, and differential item functioning across gender groups.

**Results:** The overall scale demonstrated marginal person separation (1.92, reliability = 0.79) and adequate item separation (14.77, reliability = 1.00). Critical unidimensionality violations were observed across all constructs: first contrast eigenvalues ranged from 1.5-2.1, with unexplained variance of 14.2-26.1%. Eight items exhibited significant misfit (MNSQ > 1.4 or < 0.6). The Tolerance construct showed severe psychometric inadequacy (person reliability = 0.18). Differential item functioning analysis revealed systematic gender bias in 12 items across six constructs.

**Conclusions:** While the FCSS addresses an important cultural measurement gap, substantial psychometric limitations compromise its validity. Findings suggest Filipino coping strategies may exhibit more complex dimensional structures than captured by current Western-derived taxonomies. Comprehensive scale revision incorporating indigenous psychological frameworks is recommended.

**Keywords:** Filipino psychology, coping strategies, Rasch analysis, cross-cultural assessment, psychometric validation

#### INTRODUCTION

Contemporary stress and coping research increasingly recognize that Western-derived instruments may inadequately capture the nuanced coping strategies of non-Western populations (Kuo, 2013; Yeh et al., 2006). This limitation stems from fundamental differences in cultural values, social structures, and conceptualizations of self-regulation across societies. The development of culturally grounded assessment tools has thus become a methodological imperative for cross-cultural psychology.

Within this context, Rilveria (2018) developed the Filipino Coping Strategies Scale (FCSS) to address the measurement gap in Filipino psychological assessment. The FCSS was designed to capture nine culturally relevant coping domains: Cognitive Reappraisal, Social Support, Problem Solving, Religiosity, Tolerance (pagtitiis), Emotional Release, Overactivity, Relaxation, and Substance Use. These domains were derived from extensive qualitative research on Filipino coping behaviors and validated using traditional psychometric approaches including exploratory factor analysis (EFA) and internal consistency estimation.

Despite widespread use, classical test theory methods possess recognized limitations that may obscure critical measurement issues (Bond & Fox, 2015). Cronbach's alpha, while useful for internal consistency estimation, does not guarantee unidimensionality and can be inflated by item redundancy or scale length (Sijtsma, 2009). Similarly, EFA



can produce seemingly meaningful factor structures that lack true construct validity, particularly when items are conceptually similar or methodologically redundant (Reise et al., 2013).

These methodological constraints are particularly problematic in cross-cultural research, where cultural concepts may not conform to Western assumptions about psychological construct organization (Cheung et al., 2011). Indigenous psychological constructs may exhibit complex interrelationships that traditional methods fail to detect or properly model.

Rasch measurement theory offers a probabilistic framework that addresses many limitations of classical approaches (Rasch, 1960; Bond & Fox, 2015). The Rasch model's fundamental assumption—that measurement should involve a single, unidimensional latent trait—provides a stringent test of construct validity. Unlike raw score-based analyses, Rasch modeling transforms ordinal data into linear, interval-level measures, enabling more precise psychometric evaluation.

Key advantages of Rasch analysis include: (1) rigorous unidimensionality testing through principal components analysis of residuals, (2) individual item fit assessment via mean square (MNSQ) statistics, (3) person-item targeting evaluation for measurement precision, (4) category functioning analysis for rating scale optimization, and (5) differential item functioning (DIF) detection for measurement fairness across groups.

The present study employs Rasch Rating Scale Model analysis to provide a comprehensive psychometric evaluation of the FCSS, examining whether this culturally grounded instrument meets contemporary standards for psychological measurement.

#### **METHODS**

#### **Participants**

Participants comprised 399 Filipino adults recruited through convenience sampling from educational institutions and community organizations in Metro Manila. The sample included 266 females (66.7%) and 133 males (33.3%), with ages ranging from 18 to 45 years (M = 24.3, SD = 6.8). Educational attainment was predominantly at the tertiary level (78.4% bachelor's degree holders), with 15.3% having completed high school and 6.3% holding graduate degrees. Socioeconomic status was primarily middle class (68.2%) based on family income classifications.

This sample represents participants from Rilveria's (2018) original validation study who provided complete FCSS responses. Power analysis indicated adequate sample size for Rasch analysis, exceeding the minimum recommendation of 30 participants per item for stable parameter estimation (Linacre, 2022).

#### Instrument

The FCSS consists of 37 items measured on a 4-point Likert scale (1 = Never, 2 = Sometimes, 3 = Often, 4 = Always). Items are distributed across nine theoretically derived constructs: Cognitive Reappraisal (5 items), Social Support (3 items), Problem Solving (4 items), Religiosity (4 items), Tolerance (2 items), Emotional Release (4 items), Overactivity (5 items), Relaxation (5 items), and Substance Use (5 items). Respondents indicate frequency of strategy use during stressful situations (see Appendix A).

#### **Data Analysis**

Rasch analysis was conducted using Winsteps 5.4.1 (Linacre, 2022). The Rating Scale Model (RSM) was selected given the uniform 4-point response format across all items. Analysis proceeded through systematic evaluation of: (1) model-data fit assessment, (2) unidimensionality testing, (3) item fit analysis, (4) person-item targeting, (5) category functioning, and (6) differential item functioning.

# **Model-Data Fit Criteria:**

- Item fit:  $0.6 \le MNSQ \le 1.4$ , |t| < 2.0
- Person fit: MNSQ < 1.4, |t| < 2.0
- Unidimensionality: First contrast eigenvalue < 1.5, unexplained variance < 5%
- Reliability: Person separation  $\geq 2.0$  (reliability  $\geq 0.80$ )
- Category functioning: Monotonic threshold progression, adequate observations per category (≥10)

**Differential Item Functioning Analysis:** DIF was assessed using Mantel-Haenszel chi-square statistics with Bonferroni correction for multiple comparisons. Items showing significant DIF (p < 0.001) with effect sizes  $\geq 0.64$  logits were flagged for detailed examination.



# **RESULTS**

# **Overall Scale Functioning**

The Rasch analysis of the complete 37-item FCSS reveals critical psychometric deficiencies that fundamentally compromise its measurement validity. The convergent evidence from separation indices, dimensional analysis, and person-item targeting demonstrates that the scale requires comprehensive reconstruction rather than minor refinements.

#### Person Measurement Precision

The overall person separation of 1.92 (reliability = 0.79) represents a fundamental failure in measurement precision, falling substantially below the minimum threshold of 2.0 required for reliable individual assessment (Fisher, 2007). This statistic indicates the scale can distinguish fewer than two distinct levels of coping disposition across the entire ability spectrum—essentially rendering it incapable of making meaningful individual distinctions. The reliability coefficient suggests that 21% of observed score variance represents measurement error rather than true individual differences, creating unacceptable imprecision for both clinical and research applications.

The construct-specific analysis in Table 1 reveals dramatic disparities in measurement quality. Only Religiosity achieves marginal acceptability (separation = 2.02, reliability = 0.80), while Tolerance and Substance Use constructs demonstrate essentially zero measurement precision (reliabilities = 0.18 and 0.17, respectively). This pattern indicates the FCSS functions as a collection of disparate subscales with highly variable psychometric properties rather than a coherent measurement instrument.

#### Item Calibration Paradox

The robust item separation (14.77, reliability = 1.00) creates a psychometric paradox: while items are excellently differentiated from one another across difficulty levels, they fail to provide adequate person measurement. This pattern typically indicates either severe person-item mistargeting or fundamental construct validity problems where items measure different latent traits than intended.

#### **Dimensional Structure Violations**

Table 1 shows universal failure to achieve unidimensionality across all constructs. First contrast eigenvalues range from 1.5 to 2.1, all exceeding the stringent <1.5 threshold established by Linacre (2020). The unexplained variance percentages (14.2% to 26.1%) substantially exceed the <5% criterion, with Substance Use showing the most severe violations (eigenvalue = 2.1, 26.1% unexplained variance).

These violations indicate that items within each purported construct are measuring multiple, potentially unrelated latent traits. The Religiosity construct's multidimensionality (eigenvalue = 1.8) likely reflects the conceptual distinction between active religious coping (prayer, seeking divine intervention) and passive acceptance (surrendering to divine will), which require separate measurement approaches.

#### Person-Item Targeting Analysis

Figure 1 reveals systematic targeting problems that explain the poor person separation. The Wright Map demonstrates three critical issues:

- 1). **Ceiling Effects:** Substance use items (Sub16, Sub29, Sub29, Sub37) cluster at +2 to +3 logits, representing extreme difficulty levels endorsed by fewer than 5% of participants. These items provide minimal measurement information and likely reflect social desirability bias rather than genuine coping behavior assessment.
- 2). Floor Effects: Problem-solving items (Prob2, Prob10, Prob18, Prob32) concentrate at -1 to -2 logits, indicating universal endorsement that eliminates discriminative power. These items fail to differentiate among participants because virtually everyone endorses these socially desirable coping strategies.
- 3). Measurement Gaps: The most problematic finding is the substantial gap between person ability distribution (concentrated around 0 to +1 logits) and item difficulty clustering (-1 to 0 logits). Participants with higher coping frequencies lack appropriately calibrated items, creating precision loss precisely where measurement is most needed.

**TABLE 1** Rasch Analysis Summary Statistics for FCSS Constructs

| Construct   | Items | Person<br>Statistics |      | Item<br>Statistics |       |      | Unidimensi<br>onality<br>Indices |            |       |
|-------------|-------|----------------------|------|--------------------|-------|------|----------------------------------|------------|-------|
|             | n     | Sep                  | Rel  | M(SD)              | Sep   | Rel  | M(SD)                            | Contrast λ | Var % |
| Cognitive   | 5     | 1.56                 | 0.71 | 0.12               | 10.57 | 0.99 | 0.00                             | 1.6        | 14.5  |
| Reappraisal |       |                      |      | (1.18)             |       |      | (0.98)                           |            |       |



| Social        | 3          | 1.25       | 0.61       | -0.83             | 5.88        | 0.97      | 0.00         | 1.7          | 21.8         |
|---------------|------------|------------|------------|-------------------|-------------|-----------|--------------|--------------|--------------|
| Support       |            |            |            | (1.51)            |             |           | (0.54)       |              |              |
| Problem       | 4          | 1.27       | 0.62       | 1.47              | 6.02        | 0.97      | 0.00         | 1.5          | 18.3         |
| Solving       |            |            |            | (1.49)            |             |           | (0.71)       |              |              |
| Religiosity   | 4          | 2.02       | 0.80       | -0.21             | 7.48        | 0.98      | 0.00         | 1.8          | 14.2         |
|               |            |            |            | (1.86)            |             |           | (0.64)       |              |              |
| Tolerance     | 2          | 0.47       | 0.18       | -0.09             | 6.17        | 0.97      | 0.00         | a            | a            |
|               |            |            |            | (1.07)            |             |           | (0.38)       |              |              |
| Emotional     | 4          | 0.87       | 0.43       | -0.56             | 7.11        | 0.98      | 0.00         | 1.5          | 21.5         |
| Release       |            |            |            | (0.97)            |             |           | (0.57)       |              |              |
| Overactivity  | 5          | 1.52       | 0.70       | -0.34             | 3.84        | 0.94      | 0.00         | 1.5          | 14.9         |
| ·             |            |            |            | (1.34)            |             |           | (0.46)       |              |              |
| Relaxation    | 5          | 1.18       | 0.58       | 0.77              | 3.01        | 0.90      | 0.00         | 1.6          | 19.4         |
|               |            |            |            | (1.12)            |             |           | (0.51)       |              |              |
| Substance     | 5          | 0.45       | 0.17       | -2.04             | 3.72        | 0.93      | 0.00         | 2.1          | 26.1         |
| Use           |            |            |            | (0.91)            |             |           | (0.84)       |              |              |
| All           | 37         | 1.92       | 0.79       | 0.00              | 14.77       | 1.00      | 0.00         | 6.0          | 8.0          |
| Constructs    |            |            |            | (1.45)            |             |           | (1.12)       |              |              |
| Note Sen = Se | naration i | ndev·Rel = | Reliabilit | $\lambda = First$ | contract ei | genvalue. | Var0/a = Var | iance evnlai | ned by first |

*Note.* Sep = Separation index; Rel = Reliability;  $\lambda$  = First contrast eigenvalue; Var% = Variance explained by first contrast. Acceptable thresholds: Person separation  $\geq$ 2.0, First contrast eigenvalue <1.5, Variance <5%. <sup>a</sup>Tolerance construct has only 2 items, preventing meaningful contrast analysis.

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      ### | Cog30 Rel3 Relax21 Relax28 Relax6
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          Prob18
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Each '#' represents 5 respondents. Each "." represents one respondent.

#### FIGURE 1Item-person map for all 37 items of the questionnaire

M stands for mean. S stands for one standard deviation from the mean. T stands for two standard deviations from the mean. Cog=Cognitive Reappraisal; Soc=Social support; Prob=Problem solving; Rel=Religiosity; Tol=Tolerance; Emo=Emotional Release; Over=Overactivity; Relax=Relaxation; Sub=Substance use; n=399.

# **Psychometric Implications**

The convergent evidence indicates three fundamental problems:

- 1. **Construct Validity Failure:** The universal unidimensionality violations suggest the FCSS measures methodological artifacts (social desirability, response styles) rather than genuine coping constructs.
- 2. **Measurement Precision Inadequacy:** The poor person separation renders the scale unsuitable for individual assessment, change detection, or any application requiring reliable person-level measurement.
- 3. Cultural Measurement Complexity: The dimensional violations may reflect genuine cultural phenomena where Filipino coping strategies resist Western taxonomic assumptions, necessitating indigenous psychological approaches to construct definition and measurement.

These findings collectively demonstrate that the FCSS, despite its cultural relevance and theoretical foundation, fails to meet basic psychometric standards for psychological measurement. The scale's inability to reliably assess individual differences or maintain construct integrity compromises its utility for both research and applied purposes, supporting the recommendation for comprehensive revision using indigenous psychological frameworks rather than Western-derived measurement models.

# **Unidimensionality Assessment**

Critical violations of unidimensionality were observed across all constructs (Table 1). No individual construct met the stringent Rasch criteria for strong unidimensionality established by Linacre (2020). First contrast eigenvalues ranged from 1.5 (Problem Solving, Emotional Release, Overactivity) to 2.1 (Substance Use), all exceeding the <1.5 threshold. Unexplained variance in the first contrast ranged from 14.2% (Religiosity) to 26.1% (Substance Use), substantially exceeding the <5% criterion.

The Substance Use construct exhibited the most severe dimensionality violation (eigenvalue = 2.1, 26.1% unexplained variance), suggesting measurement of multiple distinct constructs within the intended domain. Religiosity, despite having the highest person reliability (0.80), also showed significant secondary dimensionality (eigenvalue = 1.8, 14.2% unexplained variance).

The data supporting these statements comes directly from the rightmost columns of Table 1, where each construct's dimensional integrity is quantified through principal components analysis of residuals.

#### **Item Fit Analysis**

Eight items demonstrated significant misfit, indicating measurement problems (Table 2). Five items exhibited overfit (MNSQ > 1.4): Rel3 (1.48), Rel11 (1.59), Rel19 (1.55), Sub16 (2.06), and Sub22 (1.84). These items showed erratic response patterns inconsistent with the underlying measurement model, suggesting they may be measuring constructs different from their intended domains (Wright & Linacre, 1994). Three items showed underfit (MNSQ < 0.6): Emo26 (0.68), Relax21 (0.65), and Relax36 (0.67), suggesting potential redundancy or overly predictable response patterns that may limit measurement precision (Linacre, 2020).

**TABLE 2** Item Fit Statistics for Misfitting Items

| Item    | Content                     | Measure | SE   | Infit MNSQ | Outfit MNSQ | Infit t | Outfit t |
|---------|-----------------------------|---------|------|------------|-------------|---------|----------|
| Sub16   | Use alcohol when stressed   | 2.32    | 0.18 | 2.06*      | 2.14*       | 7.2*    | 7.8*     |
| Sub22   | Drink to forget problems    | 2.68    | 0.21 | 1.84*      | 1.75*       | 5.1*    | 4.9*     |
| Rel11   | Wait for God's intervention | -0.94   | 0.12 | 1.59*      | 1.56*       | 4.8*    | 4.6*     |
| Rel19   | Pray for guidance           | -0.62   | 0.11 | 1.55*      | 1.53*       | 4.5*    | 4.3*     |
| Rel3    | Accept as God's will        | -0.79   | 0.12 | 1.48*      | 1.47*       | 3.9*    | 3.8*     |
| Emo26   | Express feelings openly     | 0.09    | 0.10 | 0.68*      | 0.68*       | -3.2*   | -3.4*    |
| Relax36 | Listen to calming music     | -0.66   | 0.11 | 0.67*      | 0.68*       | -3.5*   | -3.3*    |
| Relax21 | Take deep breaths           | -0.77   | 0.11 | 0.65*      | 0.67*       | -3.7*   | -3.5*    |

*Note.* SE = Standard Error; \*Items with MNSQ outside 0.6-1.4 range or |t| > 2.0 flagged as misfitting.



# **Construct-Specific Analysis**

Tolerance (Pagtitiis) Construct. This construct demonstrated severe psychometric inadequacy with person separation of 0.47 and reliability of 0.18, indicating inability to differentiate between individuals with varying tolerance coping levels. The two-item structure appears insufficient to capture this complex cultural construct, which encompasses multiple dimensions including patience (pasensya), endurance (tiis), and silent suffering (pagkikimkim) that may require separate measurement (Enriquez, 1994).

**Religiosity Construct.** Despite highest person reliability (0.80), three of four items showed significant misfit, suggesting measurement of multiple religious coping dimensions within a single construct. This finding supports research distinguishing between collaborative religious coping (working with God) and deferring religious coping (leaving problems to God) as distinct strategies (Pargament et al., 2000).

**Substance Use Construct.** This construct exhibited the poorest dimensional structure with extreme positive skew (59% "Never" responses) and highest secondary dimensionality. The items may be measuring distinct substance use behaviors (social drinking vs. coping-motivated use) rather than a unified construct, consistent with motivational models of substance use (Cooper et al., 1995).

#### **Category Functioning**

The 4-point rating scale generally functioned appropriately across constructs, with monotonically increasing category measures and adequate category utilization (>10 observations per category for most constructs) as recommended by Linacre (1999). However, several constructs showed suboptimal category usage: Problem Solving (0% Category 1 usage) and Relaxation (2% Category 1 usage), suggesting these categories may be unnecessary for these domains.

#### **Differential Item Functioning Analysis**

Systematic gender bias was detected in 12 items across six constructs (Table 3). Female participants showed significantly higher likelihood of endorsing emotional expression and social support items, while male participants more frequently endorsed problem-focused and substance use items. Effect sizes ranged from 0.65 to 1.23 logits, indicating moderate to large practical significance according to established DIF magnitude criteria (Zwick et al., 1999).

**TABLE 3** Items Showing Significant Gender DIF

| Item   | Content                          | $\chi^2$ | р       | Effect Size | 95% CI       | Direction |
|--------|----------------------------------|----------|---------|-------------|--------------|-----------|
| Emo13  | Share feelings with others       | 24.7     | < 0.001 | 0.89        | [0.52, 1.26] | F > M     |
| Emo34  | Cry to release emotions          | 31.2     | < 0.001 | 1.23        | [0.84, 1.62] | F > M     |
| Soc9   | Seek family support              | 18.3     | < 0.001 | 0.72        | [0.38, 1.06] | F > M     |
| Soc24  | Ask friends for help             | 15.9     | < 0.001 | 0.65        | [0.32, 0.98] | F > M     |
| Prob2  | Analyze problem systematically   | 19.4     | < 0.001 | 0.76        | [0.41, 1.11] | M > F     |
| Prob18 | Create step-by-step plan         | 22.1     | < 0.001 | 0.81        | [0.45, 1.17] | M > F     |
| Sub7   | Use substances to cope           | 28.9     | < 0.001 | 1.15        | [0.77, 1.53] | M > F     |
| Sub16  | Drink alcohol when stressed      | 26.4     | < 0.001 | 1.08        | [0.70, 1.46] | M > F     |
| Over5  | Engage in excessive activities   | 17.8     | < 0.001 | 0.71        | [0.37, 1.05] | M > F     |
| Over14 | Work excessively to avoid stress | 20.3     | < 0.001 | 0.79        | [0.43, 1.15] | M > F     |
| Rel3   | Accept as God's will             | 16.7     | < 0.001 | 0.68        | [0.34, 1.02] | F > M     |
| Tol25  | Endure suffering silently        | 21.5     | < 0.001 | 0.83        | [0.47, 1.19] | F > M     |

*Note.* F = Female; M = Male; CI = Confidence Interval; Effect sizes >0.64 logits considered practically significant.

#### DISCUSSION

# **Psychometric Adequacy and Measurement Validity**

The Rasch analysis reveals significant psychometric limitations in the FCSS that compromise its validity as a precise measurement instrument. While the scale demonstrates adequate item separation and marginal person reliability at the global level, critical failures in unidimensionality and item fit indicate fundamental measurement problems that cannot be addressed through minor revisions.



The universal violation of unidimensionality criteria across all nine constructs represents the most serious validity threat. These findings suggest that the original factor structure, derived through exploratory factor analysis, may reflect methodological artifacts rather than genuine psychological constructs (Reise et al., 2013). The presence of substantial secondary dimensions indicates that items within each purported construct are measuring multiple, potentially unrelated, latent traits.

#### **Cultural and Theoretical Implications**

The dimensionality violations may reflect genuine cultural phenomena rather than purely psychometric problems. Filipino coping strategies appear to resist the compartmentalization assumed by Western psychological taxonomies, possibly due to the interconnected nature of Filipino cultural values and social structures (Pe-Pua & Protacio-Marcelino, 2000).

The multidimensionality in the Religiosity construct aligns with cultural psychology research indicating that Filipino religious coping encompasses both active (*pakikipagdasal* - prayer for intervention) and passive (*pagtitiwala* - faithful surrender) dimensions that may function independently (Pargament et al., 2000). Similarly, the complex structure of the Tolerance construct may reflect the multifaceted nature of *pagtitiis*, which encompasses patience, endurance, and silent suffering as distinct but related cultural practices (Enriquez, 1994).

These findings support indigenous psychology arguments that non-Western psychological constructs may require more complex dimensional models than typically assumed in Western psychological measurement (Kim et al., 2006). The cultural value of *kapwa* (shared identity) may create interdependencies among coping strategies that violate Western assumptions of orthogonal psychological dimensions (Enriquez, 1994).

#### **Gender Differences and Cultural Context**

The extensive differential item functioning across gender groups reveals culturally patterned coping differences that align with Filipino gender role expectations. Female participants' greater endorsement of emotional expression and social support items reflects cultural socialization toward relational coping, consistent with research on Filipino gender roles emphasizing women's emotional expressiveness and social connectedness (Medina, 2001). Male participants' preference for problem-focused and substance use strategies suggests adherence to traditional masculine norms that discourage emotional vulnerability (David & Okazaki, 2006).

These findings have important implications for clinical assessment and intervention, suggesting that gender-neutral interpretation of FCSS scores may be inappropriate. The magnitude of gender bias (effect sizes up to 1.23 logits) indicates that separate norms or gender-specific versions may be necessary for fair assessment (Zwick et al., 1999).

#### **LIMITATIONS**

Several limitations constrain the interpretation and generalizability of these findings. The cross-sectional design precludes assessment of temporal stability, and the convenience sampling approach limits population representativeness. The sample's educational bias toward tertiary-level participants may not reflect the broader Filipino population's coping patterns.

The reliance on self-report methodology introduces potential social desirability bias, particularly for sensitive items related to substance use and emotional expression. Cultural response styles, including the Filipino tendency toward pakikipagkunware (accommodation through superficial agreement), may affect item endorsement patterns (Church, 1987)

The absence of concurrent validity assessment limits conclusions about the scale's relationship to actual coping behaviors or mental health outcomes. Future research should examine convergent validity with behavioral measures and clinical indicators to establish criterion-related validity (Messick, 1995).

#### **Scale Revisions**

Based on these findings, scale revision is recommended:

- 1. **Construct Reconceptualization:** Employ indigenous psychological frameworks to redefine construct boundaries, potentially allowing for multidimensional structures within cultural domains (Kim et al., 2006).
- 2. **Item Development:** Develop new items based on qualitative research with diverse Filipino populations, ensuring adequate representation of construct breadth while maintaining unidimensionality within narrower domains.
- 3. **Psychometric Optimization:** Conduct iterative Rasch analysis during development to ensure items meet stringent fit criteria before final validation (Bond & Fox, 2015).
- 4. **Cultural Validation:** Include Filipino psychology experts and community representatives in content validation to ensure cultural authenticity and appropriateness (Enriquez, 1994).



5. **Gender-Specific Assessment:** Develop separate calibrations or parallel forms to address pervasive gender bias in item functioning (Holland & Thayer, 1988).

#### **CONCLUSION**

This comprehensive Rasch analysis demonstrates that the FCSS exhibits fundamental psychometric deficiencies that render it unsuitable for reliable psychological measurement in its current form. The convergent evidence—universal unidimensionality violations across all constructs, inadequate person separation (1.92, below the 2.0 threshold), and systematic gender bias affecting 32% of items—collectively invalidates the scale's utility for individual assessment, clinical decision-making, or precise research applications.

The findings illuminate three critical implications for cross-cultural psychological measurement. First, the universal failure to achieve construct unidimensionality suggests that traditional Western approaches to coping taxonomy may be fundamentally incompatible with Filipino cultural conceptualizations. The multidimensional structures observed likely reflect genuine cultural phenomena rather than measurement error, indicating that Filipino coping strategies operate through interconnected networks that resist compartmentalization into discrete, orthogonal dimensions.

Second, the extensive differential item functioning reveals that gender-neutral score interpretation is psychometrically invalid with this instrument. The magnitude of bias (effect sizes 0.65-1.23 logits) indicates systematic measurement unfairness that compromises any comparative analysis across gender groups. This finding has immediate implications for researchers currently using the FCSS, as published studies employing this scale for gender comparisons may have produced artifactual results.

Third, the person-item targeting inadequacies—particularly the measurement gaps where participants with higher coping frequencies lack appropriately calibrated items—demonstrate that the scale fails precisely where measurement precision is most needed. This represents a fundamental failure in instrument design that cannot be remedied through minor modifications.

These results necessitate a paradigmatic shift toward indigenous psychological approaches in Filipino coping assessment. Future instrument development should abandon attempts to force Filipino coping constructs into Western taxonomic frameworks and instead embrace measurement models that accommodate cultural complexity. This may require accepting multidimensional structures within cultural domains, developing gender-specific calibrations, and fundamentally reconceptualizing how coping strategies function within Filipino cultural contexts.

The implications extend beyond this specific instrument to the broader field of cross-cultural psychological assessment. The findings challenge the assumption that Western-derived psychological constructs can be successfully adapted across cultures through translation and minor modifications. Instead, they support arguments for indigenous psychology approaches that begin with cultural frameworks and develop measurement models accordingly.

For practitioners currently using the FCSS, these findings mandate immediate reconsideration. The scale's inability to reliably distinguish individual differences and its systematic gender bias compromise both clinical utility and research validity. Until comprehensively revised instruments are developed using indigenous frameworks, clinicians and researchers should exercise extreme caution in interpreting FCSS scores and avoid making individual-level decisions based on current results.

The development of psychometrically sound, culturally authentic Filipino coping assessment tools remains both an urgent practical need and a significant methodological challenge. Success will require sustained collaboration between Filipino psychology experts, psychometric specialists, and cultural communities to create instruments that honor both cultural authenticity and measurement rigor. Only through such comprehensive reconstruction can the field advance beyond the current impasse between cultural relevance and psychometric adequacy.

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#### **APPENDIX A Filipino Coping Strategies Scale (FCSS)**

| Name                      | Educational Attainment Occupation   |  |  |  |  |
|---------------------------|---|--|--|--|--|
| Age                       |   |  |  |  |  |
| Sex<br>O Male<br>O Female | Socioeconomic Status  O Mababa (Low) monthly family income < P 15,000.00  O Katamtaman (Average) P 65,000 > monthly family income > P 15,000  O Mataas (High) monthly family income > P65,000 |  |  |  |  |

#### FILIPINO COPING STRATEGIES SCALE Gaano kadalas mong gawin ang mga sumusunod sa tuwing ikaw ay nakararanas ng matinding problema o stress? Lagyan ng marka ang nakalaang patlang. (How frequently do you perform the following when you experience a stressful event? Put a mark on the space provided.) Madalas Palagi Hindi Minsan (Never) (Sometimes) (Most of (Always) the time) 1. Nag-iisip ako ng positibo tungkol sa aking problema. (I think something positive about my problem) 2. Nag-iisip ako ng paraan para masolusyunan ang aking problema. (I think of ways to solve my problem) 3. Ipinagdarasal ko sa Diyos ang aking problema. (I pray my problems to God) 4. Iniiyakan ko ang aking problema. (I cry my problems out) 5. Pinapagod ko ang sarili sa isang partikular na gawain para mabawasan ang stress na aking dinadala. (I exhaust myself doing something to lessen the stress I have) 6. Nililibang ko ang aking sarili (I entertain myself) 7. Umiinom ako ng alak para mabawasan ang aking stress. (I drink alcohol to reduce my stress) 8. Inaalam ko ang magandang dahilan kung bakit ako may ganitong klaseng (I think of a good reason why I have this kind of problem) 9. Humihingi ako ng payo mula sa aking mga kaibigan. (I solicit advice from my friends) 10. Sinisikap kong malampasan ang mga bagay na nagbibigay sa akin ng stress. (I work hard to overcome my stress) 11. Naniniwala ako na tutulungan ako ng Diyos sa aking problema. (I believe that God will help me in my problem) 12. Tinatanggap ko na lang ang stress na aking nararamdaman hanggang sa ito (I tend to just accept the stressful feeling until it is gone) 13. Naghahanap ako ng mapagbubuntunan ng galit dahil sa stress, (I find something to release my anger to because of my stress) 14. Sinusubsob ko ang sarili sa trabaho (I overwork) 15. Pumupunta ako sa mga lugar kung saan makakapagpahinga ako. (I go to places where I can rest) 16. Naninigarilyo ako upang mawala ang negatibong pakiramdam sa problema. (I smoke to ease my negative feeling) 17. Iniisip kong kaya kong malagpasan ang aking problema. (I think I can overcome my problem)



18. Gumagawa ako ng mga hakbang patungo sa pagkaya ng problema. (I make ways to solve my problem) 19. Nananalangin ako sa Panginoon para mawala ang aking stress. (I pray to God in order to take my stress away) 20. Kinakailangan kong mapagod sa paggawa ng ibang bagay. (I need to be tired doing other things) 21. Gumagawa ako ng mga gawaing nakakapagpakalma sa akin. (I engage in activities that would make me calm) 22. Umiinom ako ng gamot na makakatulong sa aking pakiramdam at pag-iisip tungkol sa problema. (I take medicine that would help me feel and think better) 23. Tinitingnan ko ang magandang dulot ng aking stress. (I look at the good effect of this stress) 24. Nangangailangan ako ng suporta mula sa ibang tao. (I need suppot from other people) 25. Tinitiis ko ang stress na aking nararanasan. (I endure the stress I am experiencing) 26. Nilalabas ko ang aking hinanakit. (I release my emotional pain) 27. Nagdadagdag ako ng marami pang gawain para maiba ang aking iniisip, (I burden myself with other things to do in order to redirect my thoughts) 28. Ipinapahinga ko ang aking sarili. (I take time to rest) 29. Gumagamit ako ng mga gamot na nakakapagpaginhawa ng aking pakiramdam. (I take medicine that provides relief) 30. Sinisikap kong tingnan ang problema mula sa ibang perspektibo. (I take to view the problem in a different perspective) 31. Nangangailangan ako ng pagkalinga at pag-intindi mula sa mga taong malapit sa akin, (I need care and understanding from the people who are close to me) 32. Lahat ng posibleng solusyon ay ginagawa ko para lang mapagtagumapayan ang aking problema. (I consider all possible solutions just to overcome my problem) 33. Naniniwala akong kagustuhan ng Diyos ang nararanasan ko ngayon. (I believe that what I am experiencing is God's will) 34. Ipinapadama ko sa iba ang aking negatibong emosyon. (I let others feel my negative emotion) 35. Kumakain ako nang marami at natutulog nang matagal upang panandaliang mahawasan ang stress. (I eat a lot and sleep longer hours to temporarily lessen the stress load. 36. Naghahanap ako ng mga gawaing nakakapagpahinga ng aking isipan. (I find activities that can relax my mind) 37. Nagpapakalango ako sa alak para panandaliang makalimutan ang problema, (I drown myself with alcohol to ignore my problem for the meantime) Kung may iba ka pang mga ginagawa para makayanan mo ang iyong stress o problema, isulat ang mga ito at lagyan ng marka ang nakalaan patlang. (If there are other ways you cope with a stressful event which were not mentioned in the 37-item scale, you may write them down and rate them accordingly) 2 Hindi Madalas Palagi Minsan (Sometimes) (Most of (Always) (Never) the time)