

Machine Learning-Based Classification of Cultural Beliefs and Mental Health Attitudes


Zuzana. Kováčová¹, Mariam. Grigoryan^{2*}

¹ Department of Experimental Psychology, Comenius University, Bratislava, Slovakia



² Department of Educational Psychology, American University of Armenia, Yerevan, Armenia

* Corresponding author email address: mariam.grigoryan@aua.am

Editor

Salami Mutiu Olagoke
Associate Professor, Head of
Counseling Psychology and
Guidance Department, Ibn Haldun
University, Turkey
salami@fpm.upsi.edu.my

Reviewers

Reviewer 1: Mehdi Ghezelsfloo
Assistant Professor, Department of Psychology, Gonbadkavos University,
Gonbadkavos, Iran. Email: m.ghezelsfloo@gonbad.ac.ir
Reviewer 2: Abotaleb Saadati Shamir
Assistant Professor, Department of Educational Sciences, University of Science and
Research, Tehran, Iran. Email: psychology@iau.ac.ir

1. Round 1

1.1. Reviewer 1

Reviewer:

In the introduction, the statement “family stability represents a multidimensional construct encompassing emotional cohesion, structural consistency, relational satisfaction, and adaptive functioning” is conceptually strong but lacks an explicit operational linkage to the selected measurement instrument (FACES IV). Please clarify how each of these dimensions maps onto specific FACES IV subscales to strengthen construct validity.

The paragraph beginning with “Socioeconomic status remains one of the most robust predictors of family functioning and stability” would benefit from a more critical synthesis rather than descriptive citation stacking. Specifically, please discuss inconsistencies or boundary conditions in the literature (e.g., contexts where SES shows weaker effects), which would enhance theoretical depth.

In Table 2, the sentence “the correlation matrix reveals several statistically meaningful relationships” lacks reporting of significance levels (p-values) and confidence intervals. Please include these to allow proper statistical inference.

The reported correlation “(r = 0.67) between communication quality and family stability” is interpreted as strong, but the potential issue of shared method variance (since both may derive from the same instrument) is not addressed. Please discuss this limitation.

In Table 3, the sentence “the consistency across models suggests that the selected variables provide robust predictive power” may be overstated. Similar performance across models could also indicate redundancy or limited model sensitivity. Please provide additional diagnostics (e.g., calibration plots, confusion matrices).

Response: Revised and uploaded the new document.

1.2. Reviewer 2

Reviewer:

In the sentence “cultural variables function as both protective and risk factors, depending on the broader social and economic context,” the argument is theoretically sound but underdeveloped. Please provide a more explicit mechanism (e.g., moderation or mediation pathways) explaining how cultural variables switch roles under different conditions.

The paragraph discussing immigrant and minority populations includes the sentence “the concept of social capital has emerged as a key explanatory mechanism,” yet social capital is not included as a measured variable in your model. This creates a conceptual–methodological mismatch that should be addressed either by including it empirically or reframing its role as contextual background.

In the methods section, the sentence “a total of 428 participants were selected through a multistage cluster sampling procedure” requires further elaboration. Please detail the clustering levels (e.g., regions → neighborhoods → households), sampling frames, and any weighting procedures applied to ensure representativeness.

The statement “trained field researchers administering the instruments in both Spanish and, where necessary, indigenous languages” raises important concerns regarding measurement equivalence. Please clarify whether back-translation, measurement invariance testing, or linguistic validation procedures were conducted.

In the measures section, the phrase “researcher-developed instruments tailored to the Ecuadorian sociocultural context” is too vague. Provide psychometric properties (factor structure, validity indices) for these instruments beyond Cronbach’s alpha, as reliability alone is insufficient.

The sentence “yielding Cronbach’s alpha coefficients above 0.80 for all major constructs” should be expanded by reporting exact alpha values for each construct, as well as additional indices such as composite reliability or McDonald’s omega to strengthen measurement rigor.

In the data analysis section, “multiple imputation” is mentioned, but no details are provided regarding the number of imputations, convergence diagnostics, or missingness mechanism (MCAR, MAR, MNAR). This omission limits reproducibility and methodological transparency.

The statement “model performance was evaluated through 10-fold cross-validation” should clarify whether stratified cross-validation was used, particularly if the outcome variable is imbalanced, as this significantly affects performance metrics.

Response: Revised and uploaded the new document.

2. Revised

Editor’s decision: Accepted.

Editor in Chief’s decision: Accepted.