Feature Sensitivity Mapping of Adolescents' Identity Development: An Interpretable Machine Learning Study in Brazil

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1. Round 1

1.1. Reviewer 1

Reviewer:

The opening paragraph states that identity development is a central adolescent process but does not specify the guiding theoretical framework. Please clearly indicate whether the study is grounded primarily in Eriksonian, neo-Eriksonian, or dual-cycle identity models, and articulate how this framework informs the analytic approach.

Terms such as "Strong Positive" and "Moderate Positive" are used without quantitative definition. Please specify the criteria used to assign these labels.

Figure 1 is insufficiently interpreted in the narrative. Please add a detailed textual explanation of the principal patterns and interactions illustrated.

Several discussion statements imply causality, despite the cross-sectional design. Please revise language to reflect associative rather than causal inference.

Authors uploaded the revised manuscript.

1.2. Reviewer 2

Reviewer:

The paragraph discussing ethnic, national, religious, and bicultural identities is extensive, yet none of these constructs appear in the empirical model. Please justify their inclusion in the theoretical discussion or explicitly acknowledge their exclusion from the model to avoid conceptual drift.

The manuscript characterizes Brazil as culturally complex and rapidly digitizing, but this assertion is not empirically supported within the text. Please provide supporting context or evidence to strengthen the rationale for site selection.

The statement that the sample demonstrates a "balanced gender distribution" would benefit from reporting exact frequencies and percentages for gender and age groups to substantiate representativeness.

The description of "stratified ten-fold cross-validation" does not specify the stratification variable(s). Please clarify how stratification was implemented.

SHAP, partial dependence plots, and accumulated local effects are mentioned but not analytically integrated. Please explain how these tools jointly enhance interpretability and complement one another.

Authors uploaded the revised manuscript.

2. Revised

Editor's decision after revisions: Accepted.
Editor in Chief's decision: Accepted.