





# Stacked Generalization Model for Predicting Happiness: Positive Affect, Gratitude, Social Connectedness, and Psychological Flexibility

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## 1. Round 1

### 1.1. Reviewer 1

Reviewer:

In the paragraph discussing positive affect, the statement “Positive affect not only reflects momentary emotional states but also contributes to long-term well-being...” is theoretically sound; however, the authors should clarify whether positive affect is treated as a trait or state variable in the present study, as this distinction has implications for measurement validity and interpretation.

In the gratitude section, the sentence “Gratitude operates through multiple psychological pathways...” is conceptually broad; the manuscript would be strengthened by specifying a clear mediational mechanism (e.g., prosociality or cognitive reappraisal) and aligning it with the variables included in the model.

In the social connectedness paragraph, the claim “Recent theoretical developments have positioned connectedness as a core component of lifestyle psychiatry...” is compelling but underdeveloped; the authors should elaborate how this framework specifically informs the current predictive model.

In the paragraph interpreting Table 2, the sentence “The improvement observed in the stacked model underscores...” is appropriate, but the authors should statistically test whether differences in model performance are significant (e.g., via cross-validated paired comparisons).

In Table 3 (SHAP values), the interpretation assumes linear ranking of importance; however, SHAP values can be context-dependent, and the authors should clarify whether these are mean absolute SHAP values and discuss variability.

Authors revised and uploaded the document.

## 1.2. Reviewer 2

Reviewer:

In the psychological flexibility paragraph, the sentence “Importantly, psychological flexibility may interact with other positive psychological constructs...” introduces interaction hypotheses, yet these are not explicitly formalized as research hypotheses, which reduces conceptual clarity.

In the methodology section under “Study Design and Participants”, the phrase “The sample size was determined to be adequate for machine learning modeling...” is insufficiently justified; the authors should provide a formal rationale (e.g., learning curves, power analysis, or rules of thumb in ML).

In the Measures section, the sentence “All instruments demonstrated acceptable internal consistency...” lacks reporting of actual Cronbach’s alpha coefficients, which are essential for evaluating reliability in a high-impact journal context.

In the data analysis section, the description “Missing data were handled using multiple imputation...” is too brief; the authors should specify the imputation method (e.g., MICE), number of imputations, and convergence criteria.

In the same section, the sentence “Hyperparameter tuning for all models was conducted באמצעות grid search...” again contains a non-English term and lacks detail about parameter grids, which are critical for reproducibility.

In the Findings section (demographics paragraph), the statement “The sample demonstrated moderate variability across socioeconomic indicators...” is vague and would benefit from quantitative indices or distributional statistics to substantiate this claim.

In Table 1 and its accompanying paragraph, while correlations are reported, the absence of significance levels (p-values) in the table limits interpretability; the authors should include full inferential statistics.

Authors revised and uploaded the document.

## 2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.