




Interpretable Gradient Boosting Analysis of Academic Cheating in Adolescents Using Moral Disengagement and Achievement Goals

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1. Round 1

1.1. Reviewer 1

Reviewer:

In the sentence “Moral disengagement therefore functions as a central cognitive gateway...”, please clarify which specific mechanisms (e.g., moral justification, diffusion of responsibility) are most prominent in adolescence based on prior evidence, as later analyses emphasize differential effects.

While SHAP rankings are presented, the manuscript does not discuss absolute versus relative importance. Please clarify how the magnitude of 0.182 for moral disengagement compares practically with 0.113 for performance-avoidance goals.

The description “strongly nonlinear, accelerating at higher levels” requires visual evidence. Please include numerical threshold estimates or annotate the curve to quantify the identified turning points.

The figure is referenced but not sufficiently described in text. Please include explicit interpretation of color distribution and density to help readers unfamiliar with SHAP visualizations.

The statement “These results provide robust empirical support for theoretical models...” would be strengthened by explicitly naming the specific theories being confirmed and how the present findings refine them.

Authors uploaded the revised manuscript.

1.2. Reviewer 2

Reviewer:

The claim that “these relationships are rarely linear or isolated” is theoretically important; however, the paragraph would be strengthened by briefly citing prior empirical studies demonstrating nonlinearity to justify the machine learning approach earlier in the paper.

The paragraph discussing personality traits introduces constructs (psychopathy, narcissism, hubristic pride) that are not measured in the present study. Please explicitly justify their inclusion here or clarify their role as contextual background.

In the sentence “A multistage cluster sampling strategy was used...”, please report the number of districts and schools selected at each stage to allow reproducibility of the sampling framework.

In the sentence “Mastery-avoidance goals exhibited a small but significant positive relationship with cheating”, please report the exact correlation coefficient and effect size interpretation (small/moderate/large).

The manuscript claims that gradient boosting “demonstrated substantial predictive accuracy”. Please include confidence intervals or cross-validation variance for the reported R^2 to support model stability.

Authors uploaded the revised manuscript.

2. Revised

Editor’s decision after revisions: Accepted.

Editor in Chief’s decision: Accepted.