

Review of: "Trends in Malaysian Adolescents' Mathematics Performance Across Two Decades: What Factors Matter?"

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Potential competing interests: No potential competing interests to declare.

This manuscript provides a thorough and well-researched study of a wide array of predictors of Malaysian students' mathematics attainment. The multilevel modeling is appropriate, and interpretations of model parameters and their implications appear to be solid.

A few points could benefit from further clarity.

The text notes: "Predictors at the student level include eight factors. (1) *Self-concept*, based on students' responses to (a) I usually do well in math, (b) I learn things quickly in math, (c) math is not one of my strengths, and (d) math is more difficult for me on a 4-point Likert scale: 4= agree a lot; 3= agree a little; 2= disagree a little; 1= disagree a lot. The last statement is reversed coded." It would seem logical to reverse-code both (c) and (d), as they both convey negative valence. It is not clear to what extent this consideration may impact model validity.

The reported changes in correlational direction over time are interesting. These changes likely are genuine, but such variability in direction also may be a by-product of model overfitting and/or high multicollinearity. It would be helpful to be able to rule out such potential sources of confounding.

The article demonstrates very meaningful results that could provide guidance on the complex problem of understanding the correlates of student achievement. The manuscript refers only rather briefly to implications for policy and practice/intervention and would be more likely to have broader impact with more extensive and more specific discussion of such implications.

The manuscript provides a useful addition to the literature.