

# 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.

The article is well written and contains an extensive and up-to-date literature review on individual and school factors associated with mathematics achievement of Malaysian students over the past two decades. The study analyzes the results of six TIMSS studies conducted every four years, from 1999 to 2019, involving about 38 thousand eighth-grade students. The study methodology used is known as Multilevel Modeling.

This type of study has been conducted in a large number of countries, with the purpose of finding school factors that are associated with student learning and that can be modified through school programs and policies in the different countries. Methodologically, the study is well conducted, and its results are similar to other studies using the same techniques.

However, the text can be improved if three aspects are addressed: one of form and two of content.

1. Pages 7 and 8 describe the eight student factors and the six school factors that were correlated with mathematics scores. To do this, each of the scales used is detailed. For example: (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. High: students who agreed a little or a lot on average with all four statements; Low: students who disagreed a little or a lot, on average; Medium: includes all other response combinations. Although this information is important to know how the variables used were measured, it would be appropriate not to describe them in the body of the document, but rather in an annex or appendix at the end.
2. The results obtained in the different evaluations do not always coincide: some variables are significant in one year but not in another. In these cases, the authors do not explain the reasons for these differences (even tentatively). This is the case of the variable "Teacher's work experience".
3. The authors do not explain the limitations of the methodology used and the inconsistencies of the results from one year to another, beyond explaining that this is a correlational study (not causal) and that the variables were reported by the students (subjectively).

In summary, it is recommended that this work be published and that the authors be asked to address the points mentioned above.