

# Review of: "Why are there different versions of the COM-B model diagram?"

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This is a short paper aimed at clarifying the differences in published variants of the COM-B model.

I appreciate the authors' attempt to explain the different variants of the model as it has appeared in various publications over time. The writing is clear, and I found the paper generally informative, even if, in the end, I was a bit disappointed with the take-home message. I have three comments that might be helpful for a revision.

First, while the authors provide intuitive examples as to why certain links could (or should) be added to the model, I was missing a more thorough evidence base. Rather than only relying on examples, even if they are convincing, it would be helpful to add specific pointers to the studies that provide the foundation for the presumed links.

Second, what I'm missing from the discussion, especially when considering its practical relevance, are assertions about the strength and relevance (individual- or population-level) of these links. To provide guidance for researchers and practitioners alike, it would be extremely helpful to try to assess, even if only roughly, the strength of these relations and provide a stronger formal foundation for the approach. The literature on causal models (e.g., Pearl, 2000) might be a good starting point to refine and improve the model.

Third, while I can see that for each added relation in the model, one can come up with good qualitative arguments, the end state (e.g., Fig. 1d) seems to be an overly complex model that is at risk of explaining everything and nothing. From a scientific perspective, I wonder how we could empirically test the model, distinguish between different model variants (e.g., Fig. 1a-d), or what empirically-testable predictions would result from each of the models. From a practical point of view, I wonder to what extent a model in which almost every factor influences or is influenced by another factor can provide guidance (e.g., what are the most promising intervention points for a practitioner to address a social or behavioral problem - motivation? Capability? Opportunity? And which variants of these, per Table 1?)