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Will the suffering ever end? An item response theory algorithm for shortening tests

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Item Response Theory (IRT) provides an ideal framework for shortening existing tests given the detailed information on the measurement precision of each item with respect to different levels of the latent trait. As such, brief yet psychometrically sound short test forms (STFs), can be developed to prevent the loss of quality in the response process due to the respondents' fatigue. This contribution focuses on the estimation of the latent trait levels, which is done in three scenarios considering: (i) all the items in a full-length test without accounting for the effect of response fatigue, (ii) all the items in a full-length test accounting for the effect of response fatigue, and (iii) a subset of items selected by an algorithm (Léon) designed for developing informative STFs while accounting for the respondents' fatigue. In this application, the response fatigue has been operationalized by moving down the upper asymptote of the probability of correctly responding to an item. The results of a simulation study indicate that administering all items without accounting for the response fatigue lead to biased estimates of the latent trait, especially of the medium-high levels. This bias can be prevented by administering a subset of items, carefully chosen to approximate the measurement precision that would have been obtained if all items were administered.

If you're submitting a symposium talk, what's the symposium title?

New perspectives for developing short forms of tests

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?

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