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Abstract

Probabilistic forecasts from discrete choice models, which are widely used in marketing science and competitive event forecasting, are often best evaluated out-of-sample using pseudo-coefficients of determination, or pseudo-R^2s. However, there is a danger of misjudging the accuracy of forecast probabilities of event outcomes, based on observed frequencies, because of issues related to pseudo-R^2s. First, we show that McFadden's pseudo-R^2 varies predictably with the number of alternatives in the choice set. Then we evaluate the relative merits of two methods (bootstrap and asymptotic) for estimating the variance of pseudo-R^2s so that their values can be appropriately compared across non-nested models. Finally, in the context of competitive event forecasting, where the accuracy of forecasts has direct economic consequence, we derive new R^2 measures that can be used to assess the economic value of forecasts. Throughout, we illustrate using data drawn from UK and Ireland horse race betting markets.

Keywords: Forecasting, Decision analysis, Finance, Discrete choice models, Horseracing

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