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Testing Independence Conditions in the Presence of Errors and Splitting Effects

This paper presents an experimental test of several independence conditions employed in axiomatizations of expected utility and alternative models. We perform a repeated choice experiment and fit an error model which allows us to discriminate between true violations of independence and those which are likely caused by errors. In order to investigate the role of event splitting effects, we present each choice problem not only in coalesced form (as in most previous studies) but also split form. It turns out previously reported violations of independence and splitting effects remain significant even when controlling for errors. Splitting effects have a substantial influence on the tests of independence conditions. When presented in split form, violations of all independence conditions we tested become either insignificant or unsystematic.