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Abstract: A concern for airline revenue management operations is to forecast customers’ responses to the closure of cheaper fares. Recently, detailed air travel choices have been studied using stated choice experiments. However, the studies are typically based on fixed choice sets having controlled attribute levels. The paper makes use of a simulated population to demonstrate that fixed choice sets perform poorly when the market is made up ‘pricable’, and ‘yieldable’ customers. To overcome the bias we develop an orthogonal master / D-efficient attribute experimental design and apply it to choice data collected by way of an airport lounge intercept survey. A mixed logit choice model based on the availability design identified substitution patterns between fares that relate to fare-restriction (upsell), time of day (recapture), switching to the low cost carrier or choosing not to fly (collectively, spill).