

Online Supplement E

In this supplement, we provide a robustness check, in which we use a different measure of a simulation error. We still use *MTL*, as described in Section 4, but instead of measuring the difference between two models estimated with the same number of draws, we compare the difference between a model estimated with a given number of draws, and a model estimated with 100,000 draws. In this analysis, we use only a subsample of our experiment, as models with 100,000 draws were estimated only for the MXL design and Sobol draws. Table E1 presents analogous results to Table 5.

1 **Table E1. Minimum number of *Sobol* draws required for desired level of log-likelihood and parameter estimates precision (95% confidence**
2 **intervals in [] brackets)**

Choice tasks per individual	4	4	4	8	8	8	12	12	12
Individuals	400	800	1,200	400	800	1,200	400	800	1,200
5 attributes									
≤5% probability of simulation-driven error in the LR test for 5 attributes ⁴⁷	103 [87-120]	154 [133-176]	230 [198-265]	308 [271-348]	461 [418-506]	690 [617-768]	924 [817-1,045]	1,382 [1,250-1,524]	2,068 [1,835-2,327]
≤5% probability that parameter estimates differ by ≥5% from true values for 5 attributes ⁴⁸	663 [597-734]	523 [474-576]	413 [371-458]	695 [631-765]	549 [500-600]	433 [392-477]	729 [659-806]	575 [521-634]	454 [408-505]
Minimum recommended number of draws	663 [597-734]	523 [474-576]	413 [371-458]	695 [631-765]	549 [500-600]	690 [617-768]	924 [817-1,045]	1,382 [1,250-1,524]	2,068 [1,835-2,327]
10 attributes									
≤5% probability of simulation-driven error in the LR test for 10 attributes ²⁴	171 [131-220]	334 [271-407]	655 [526-807]	1,065 [899-1,260]	2,087 [1,840-2,368]	4,087 [3,439-4,866]	6,652 [5,429-8,240]	13,027 [10,745-16,019]	25,514 [19,895-33,141]
≤5% probability that parameter estimates differ by ≥5% from true values for 10 attributes ²⁷	9,750 [8,299-11,458]	6,710 [5,787-7,782]	4,618 [3,948-5,405]	10,508 [9,040-12,259]	7,232 [6,292-8,324]	4,978 [4,293-5,776]	11,325 [9,653-13,372]	7,795 [6,727-9,071]	5,365 [4,584-6,287]
Minimum recommended number of draws	9,750 [8,299-11,458]	6,710 [5,787-7,782]	4,618 [3,948-5,405]	10,508 [9,040-12,259]	7,232 [6,292-8,324]	4,978 [4,293-5,776]	11,325 [9,653-13,372]	13,027 [10,745-16,019]	25,514 [19,895-33,141]

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⁴⁷ At 0.05 significance level ($MTL_{0.05}^{LL} \leq 1.9207$).

⁴⁸ $MTL_{0.05}^{\beta} \leq 0.05|\beta|$.