SIMULATION PLAN

**Simulation 3** = replicate Jonker, benchmark scenario 3.

**Simulation 4** = replicate Jonker, benchmark scenario 4.

Settings:

Nr. Respondents = 100

Nr. Replic = 10

Informative prior = TRUE population distribution = normal with mean and variance see end of document.

uninformative prior = normal distribution with mean 0, and variance 1

\* seqKL / seqDB should be changed such that no choice set can occur twice

\* Use 512 draws in importance sampling 🡪 should be changed to m = 9

**STEPS SIMULATION 3 and 4:**

🡪 load sample (Nr. Respondents = 100) of individual beta vectors from population distribution.

This matrix will be given, in wich each row is an individual beta vector

**\*If (0 adaptive sets)**

These designs are already generated and the mean individual d-errors are computed.

**\*If (6 adaptive sets)**

For each individual beta vector:

Do (Nr. Replic) times with informative prior and (Nr. Replic) times with uninformative prior:

🡪 Load in initial 6 choice sets (these will be given)

🡪 Respond to 6 initial choice sets with true individual beta vector (respondMNL)

Do 6 times for KL and 6 times for DB:

🡪 sample from posterior (ImpsampMNL)

🡪 generate choice set (seqKL / seqDB)

🡪 generate response (respondMNL)

🡪 calculate D-error for design given true individual betas (DBerr)

🡪 Write to txt file: individual D-error given nr. Respondent and Nr. Replic and condition (6 or 11 adaptive sets)

\***If (11 adaptive sets)**

For each individual beta vector:

Do (Nr. Replic) times with informative prior and (Nr. Replic) times with uninformative prior:

🡪 Load in initial choice set (these will be given)

🡪 Respond to initial choice set with true individual beta vector (respondMNL)

Do 12 times for KL and 12 times for DB:

🡪 sample from (prior) posterior (ImpsampMNL)

🡪 generate choice set (seqKL / seqDB)

🡪 generate response (respondMNL)

🡪 calculate D-error for design given true individual betas (DBerr)

🡪 Write to txt file: individual D-error given nr. Respondent and Nr. Replic and condition (6 or 11 adaptive sets)

RESULTS:

**Informative\_6, Uninformative\_6, Informative\_12** and **Uninformative\_12**

= (Nr respondents = 100) x (criterion = 2) x (Nr. Replic) designs 🡪 100 x 2 x 10 ind. d-errors

= 2000 individual D-errors for each sub scenario (**Informative\_6, Uninformative\_6, Informative\_12** and **Uninformative\_12** )

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|  | **SIMULATION 1** | **SIMULATION 2** | **SIMULATION 3** | **SIMULATION 4** |
| Nr. Respondents | 50 | 50 | 100 | 100 |
| Levels | 3 3 3 | 2 3 2 3 | 3 3 3 | 3 3 3 |
| True population mean | -0.5, 0, -0.5, 0, -0.5, 0 | -0.5, -0.5, 0, -0.5, -0.5, 0 | 0.4, 0.8, -0.8, -1.6, 1.6, 3.2 | 0.4, 0.8, -0.8, -1.6, 1.6, 3.2 |
| True population VC matrix | 0.5 I6 | 0.5 I6 | covariance matrix A  (see below) | covariance matrix B  (see below) |
| Choice sets | 15 | 15 | 12 | 12 |
| Alternatives per set | 2 | 3 | **2** | 2 |
| Coding | effects coding | effects coding | dummy coding (first alternative = reference) | dummy coding (first alternative = reference) |
| Nr. of draws in sampling | 512 (lattice points) | 512 (lattice points) | ? | ? |
| Nr. of relplications | 100 | 100 | ? | ? |
| Nr. Adaptive sets | 15 | 15 | is 0 - 6 - 12 ok? | is 0 - 6 - 12 ok? |
| Prior(s) | = population distribution | = population distribution | informative = population distribution, semi-informative = ? | informative = population distribution, semi-informative = ? |

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| Covariance matrix A    Covariance matrix B |
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