

The reversal of the gender gap in education and relative divorce risks: A matter of alternatives in partner choice?

Additional analyses V3 – September 2017

In this document, we describe how we determined the necessary number of simulation runs for the experiments reported in Grow, Schnor, and Van Bavel (2017).

The simulation model is stochastic and model outcomes can therefore vary across simulation runs, even when they use the same parametrization. In line with the suggestions by Lorscheid et al. (2012), we used the coefficient of variation (θ) to determine the number of runs after which the variability of the outcome stabilizes, so that the reported results are reliable. The coefficient is defined as the ratio of the standard deviation of a number of independent outcome measurements (sd) to their arithmetic mean (am):

$$\theta = \frac{sd}{am} . \quad (1)$$

The number of outcome measurements can be considered as sufficiently large when the value θ approaches a stable value. Figure 1 shows for Belgium the value of θ for the shares of marriages that had dissolved per marriage type, marriage cohort, and the number of experimental runs for which outcomes were obtained. For sample sizes below 500, the value of θ tended to be more volatile in the cases of hypergamous and hypogamous marriages than in the case of homogamous marriages. The value of θ tended to be stable for samples larger than 500. Thus, the sample of 1,000 runs that we used in our experiments was sufficiently large to obtain reliable results.

References

- Grow, André, Christine Schnor, and Jan Van Bavel. 2017. The reversal of the gender gap in education and relative divorce risks: A matter of alternatives in partner choice?, *Population Studies*: <https://doi.org/10.1080/00324728.2017.1371477>.
- Lorscheid, Iris, Bernd-Oliver Heine, and Matthias Meyer. 2012. Opening the “black box” of simulations: Increased transparency and effective communication through the systematic design of experiments, *Computational and Mathematical Organization Theory* 18(1): 22–62.

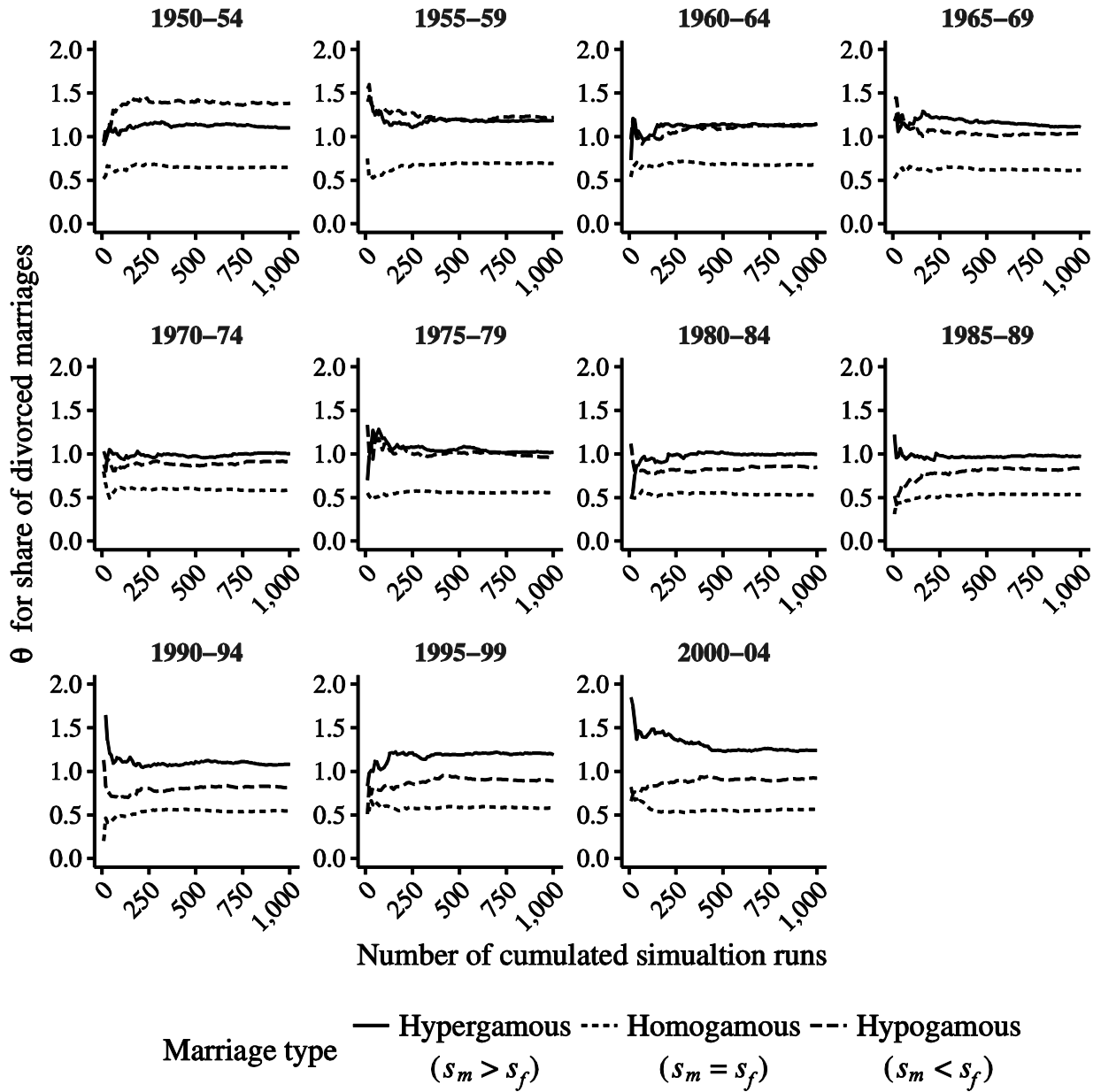


Figure 1 Coefficient of variation (θ) by marriage cohort, marriage type, and cumulative number of simulation runs for the case of Belgium

Notes: The lines show θ for sample sizes that increase in steps of ten simulation runs.