Chapter 7

Conclusion

In this book, we have shown how to build a microsimulation model in the SAS language. Chap. 3 showed how to replicate a multistate model; Chap. 4 added two new dimensions; Chap. 5 offered examples of alternative scenarios and Chap. 6 demonstrated how to adapt the model for other uses.

The codes we proposed are adapted to specific contexts, but microsimulation models have the advantage of being very flexible. Beginning with the framework we presented, only minor changes would be required to adapt the codes to other uses and include more variables. Conditional on the availability of data, sociocultural variables such as religion or language could be added, based on the modelling of the internal mobility module (Chap. 3). We could then use these variables to modulate fertility rates by applying relative risks or other types of parameters.

Alternatively, we could completely change the modelling of fertility by using logit regression parameters (see Potančoková and Marois (2020) for an example). In that case, we would merge parameters to the population file in the same way we did for the labour force participation and sector of activity modules, and then from those parameters, calculate each individual's probability within the model.

We could also change the modelling of education. Rather than applying transition rates from the age of 15, we could decide at birth the highest level of education an individual will reach during his or her lifetime, and then assign ages for graduations (see Marois et al. (2019) for an example of this modelling). This would allow us to take into account the education of the mother as a predictor of educational attainment with regression parameters.

Our labour force participation module assumes that the probability of being a worker is independent of past status. This was a constraint of data availability and not a constraint of the microsimulation method. Indeed, we model this module this way because our data source doesn't allow for calculating entry and exit rates. If those data existed, we might decide to model the event as the probability of leaving or entering the labour force. Again, this would only require changes in the parameter

files and minor changes in the code of the equation (depending on the statistical model used).

References

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