DYNAMIS-POP – A Multi-Country Portable Dynamic Microsimulation Model for Population, Education and Health Applications in Developing Countries.

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Detailed socio-demographic projections are key for policy making and planning. In this paper we introduce the dynamic microsimulation platform DYNAMIS-POP. In its core, DYNAMIS-POP is a population projection model, able to reproduce existing macro (cohort-based) population projections in their aggregate outcomes, but with the additional possibility to simulate in more detail some geographic, education, ethnicity, child mortality, partnership status, fertility and health characteristics.

DYNAMIS-POP is a continuous time interacting population model implemented in Modgen, a freely available programming technology developed at Statistics Canada. The code is also x-compatible with openM++, a platform-independent open-source implementation of Modgen. All components of DYNAMIS-POP are freely available and documented on line. Most statistical analysis scripts and scripts for post-processing and visualization of the results are implemented in R. Aiming to support portability, the model code and the R scripts are generic. Adaptation of the model to a specific country only requires adapting a single setup script and simulation module. The model is provided with test data of an imaginary country. Required data are available for most developing countries. To date, the model was tested using data from Mauritania, Nepal and Senegal.

Designed as a modular and versatile microsimulation platform, DYNAMIS-POP can be adapted for a variety of applications related to population issues, education and health. In this paper we

give some illustrations from an application to Nepal, including the projection of the new World Bank Human Capital Index (HCI) and studies on child vaccination.