EXTENDED ABSTRACT

Informing global population projections. A survey on experts' opinions

Population projections provide a valuable toolbox for thinking about the implications of upcoming trends and shifts in population size and structure, which are crucial for understanding various global economic, environmental, societal, and geopolitical developments that significantly depend on human actions. As a result, gaining insights into the future of the global population, in terms of both size and composition, is essential for strategic policy formulation.

At present, several organizations engage in developing global long-term population projections, following different methodologies and assumptions, which lead logically to varied results in terms of projected population size and structure. The United Nations Population Division in the Department of Economic and Social Affairs has been the main provider of global population estimates and projections at regular intervals since 1951 following several modelling methodologies (deterministic, probabilistic, Bayesian), but not using expert judgement about the trend and uncertainty of future fertility, mortality and migration. Their latest estimates and projections to 2100 were published in 2022 (UNDESA 2022). In recent years, two newcomers have entered the field of global population projections : the Wittgenstein Centre for Demography and Global Human Capital since 2013 with projections that include the level of educational attainment of the population and in which population is forecasted using model- and expert-based assumptions (Lutz et al. 2014, Lutz et al. 2018 in collaboration with the European Commission Joint Research Centre, KC et al. 2023); and more recently the Institute for Health Metrics and Evaluation (Vollset et al. 2020) with projections that are mostly model-based. While this diversity is a demonstration of, on the one hand, uncertainties surrounding the long-term future and, on the other hand, of the scientific wealth existing in the field of population projections, there is a need to reflect on the ingredients that feed into the projections. The Global Demography Survey offers a way to address this need by asking experts to assess the validity and relevance of alternative arguments about the forces that could shape future fertility, mortality, and migration trends in the country of their choice.

In one way or another, most global projections are based on expert opinions. These opinions may relate to the future trajectory, the target level, or the composition of the determinants of population growth. This is particularly the case for projections produced by national statistical agencies. Expert knowledge has also been used for research-project-related population projections. Just to cite a few examples, within the Uncertain Population of Europe (UPE) project, Alders, Keilman, and Cruijsen (2007) used expert views to derive future expected levels of fertility, mortality, and international migration by 2050, as well as to assess the uncertainty around these levels to derive probabilistic population projections for 18 European countries. A similar approach was followed by Lutz, Sanderson, and Scherbov (1998) at the level of 13 world regions. Both these exercises involve a limited number of experts.

In 2010-2011, the International Institute for Applied Systems Analysis (IIASA), the Vienna Institute of Demography (VID/OEAW) in collaboration with Oxford University initiated a global internet survey on the likely future trends in fertility, mortality, and migration, and the drivers of the changes. In the survey, the experts were asked to assess the validity and relevance of alternative arguments about the forces that could shape future fertility, mortality, and migration trends in the country of their choice. In this paper, we document the results of the 2023 online survey that follows in the step of

the survey above which was taken as a basis for developing the arguments, although it differs in four main ways. Firstly, the arguments were revised to reflect some of the trends that have become more salient since 2010-2011, such as climate change and the spread of infectious diseases. Secondly, the procedure to elicit opinions from the experts was simplified by only asking for agreement to a particular argument instead of the validity and relevance of the argument. Thirdly, the migration module covers separately immigration and emigration that were previously merged together. Fourthly and last, the survey includes a section on the potential consequences of demographic change for policy.

A total of 237 respondents, primarily members of the main demographic associations shared their opinions on 240 statements related to future trends and drivers of fertility, mortality, immigration, and emigration, as well as on the policy consequences of key demographic megatrends. They also provided numerical estimates of future fertility and life expectancy levels in 2050 and 2100, with 80% confidence intervals. It is worth noting that the participation and geographical coverage of the respondents do not allow this survey to be considered representative for country specific analysis. Nevertheless, it does offer valuable insights into the demographic challenges of the future, their drivers, uncertainties, and potential consequences.

Results indicate that survey respondents overwhelmingly express agreement about various factors contributing to decreased fertility in high fertility countries, including urbanization, reduced child mortality, increased educational and employment opportunities for women, delayed age at first marriage, greater acceptance of modern contraception, and shifts in family ideals. It is expected that current high fertility countries will continue to experience a decline in the number of births per woman. However, this decline is anticipated to be at a slower pace compared to the projections made by leading demographic institutions. Furthermore, many experts report that evidenced factors contributing to further declines in fertility in low fertility countries include choices for delayed parenthood, increased social acceptance of childlessness, economic uncertainty, and rising housing costs. Conversely, most experts consider that government policies such as universal access to childcare and child subsidies could help people realize their choices and have larger families. There is also some recognition, although to a lesser extent, of the role of advancing reproductive technology and more flexible work practices in increasing fertility.

Our findings also indicate that life expectancy is expected to rise across world regions throughout the century. Experts project the most significant improvements in current low mortality countries. These advancements will be facilitated by future medical breakthroughs and the continued adoption of health-conscious behaviors. In low mortality countries, the most debated issues concern the persistence of lifespan disparities among sub-populations, the resilience of healthcare systems, and the potential impacts of climate change. In high mortality countries, there was the greatest disparity in opinions regarding economic challenges and access to medical services that could hamper an increase in lifespan.

Experts in the field of international migration generally concur on climate change leading to an increase in immigration, but there is less consensus regarding the impact of climate change on emigration. The discrepancy may be linked to the geographic origins of the respondents, with the majority residing in Europe or North America. Factors such as aging populations, labour force shortages, economic developments, and migration schemes are widely acknowledged as major drivers of both immigration and emigration.

When exploring the policy consequences of key demographic megatrends, demographers' viewpoints can be broadly categorized into two ‘perspectives’ concerning the role of population

policies, especially in relation to fertility: interventionism and abstentionism. Interventionists, without challenging the human rights-centered approach, advocate for a more prominent role for population policies and family planning. In contrast, abstentionists place their trust in the autonomous forces of development and education, believing that these factors can autonomously lead to a reduction in fertility rates. Those who express greater concerns about the adverse consequences of population growth on the environment and development often advocate for more interventions. Conversely, a more moderate position is taken by those who attribute emissions to income levels and emphasize the inevitability of demographic inertia.

In conclusion, experts' opinions suggest that the demographic challenges of the future may not always have straightforward demographic solutions. Instead, addressing these challenges is likely to require an emphasis on enhancing the adaptive capacities of societies. It highlights the importance of not only considering traditional demographic policies but also fostering adaptability and resilience to navigate the complexities of evolving demographic trends.

References

UNDESA. 2022. World Population Prospects 2022. Online Edition. United Nations, DESA, Population Division. URL: http://population.un.org/wpp/

Lutz, W., 2014, 'A Population Policy Rationale for the Twenty-First Century'. Population and Development Review' 40(3): 527–44.

Lutz, W., Goujon, A., KC, S., Stonawski, M. and Stilianakis, N. (Eds). 2018. Demographic and human capital scenarios for the 21st century. Luxembourg: Publications Office of the European Union.

KC, S. et al. 2023. 'Wittgenstein Center (WIC) Population and Human Capital Projections - 2023'. https://zenodo.org/record/7921989 (October 5, 2023).

Vollset, S. E. et al. 2020. 'Fertility, Mortality, Migration, and Population Scenarios for 195 Countries and Territories from 2017 to 2100: A Forecasting Analysis for the Global Burden of Disease Study'. The Lancet 396(10258): 1285–1306.

Alders, M., Keilman, N. and Cruijsen, H. 2007. 'Assumptions for Long-Term Stochastic Population Forecasts in 18 European Countries: Hypothèses de Projections Stochastiquesàlong Terme Des Populations de 18 Pays Européens'. European Journal of Population / Revue européenne de Démographie 23(1): 33–69.

Lutz, W., Sanderson, W. C. and Scherbov, S. 1998. 'Expert-Based Probabilistic Population Projections'. Population and Development Review 24: 139.