Letter to the Editors

International Comparability of Population Statistics is Essential

Counting the population is probably the oldest statistical activity, but it remains as important as ever. The population of interest has, however, been changing over time, from the count of men able to draw a sword, to potential tax payers, and so on. Whenever there is a discussion of population statistics, it is therefore important to be clear about the population to which the statistical evidence applies. During the past century, three main definitions of population have played a major role: the population present (also known as *de facto* population), the *de jure* population, and the usually resident population, these latter two definitions being often confused as synonymous. While the United Nations international recommendations for population censuses still put these definitions on an almost equal footing, in Europe – particularly in the European Union – there has been a wider adoption of the definition based on usual residence, even if it is sometimes implemented in different forms, such as using legal or registered residence instead of the place of daily rest.

These definitions are – each with its own strengths and weaknesses – fit for purpose when the ultimate aim is the allocation of each and every individual to a single geographic territory. This is achieved either by capturing the place where the person is at the reference time (*de facto* population) or by looking at ongoing connections with the territory. In the case of usual residence, that is objectively assessed by means of a duration of stay of at least one year. This latter approach has been confirmed in the latest review by the UN Statistical Commission, the highest body in the world of official statistics. In its 52nd Session in March 2021, it endorsed a revision of the main definitions for the UN recommendations on international migration based again on a duration of stay of at least 12 months.

This outcome, which, like other international recommendations in this domain, is likely to hold for several years – if not decades – has direct implications for the definition of population. Population and migration statistics are intrinsically intertwined: in its simplest interpretation, migration is the act of joining or leaving a population other than by a vital event. Consequently, the statistical rules that define the entry or exit from a population, that is, a migration, must be the same as those defining the population itself. If a person is a member of the population of a given territory because (s)he has had the place of daily rest in that geographic area for not less than 12 months, then any other person should be considered a new member of that population only once their place of daily rest is within the same territory for the same minimal duration of stay – and vice versa.

Even though the ‘usually resident population’ is a definition privileged only in relatively recent times, it is sometimes argued that it does not capture a comprehensive picture of

Acknowledgments: The information and views set out in this note are those of the author and do not necessarily reflect the official opinion of the European Commission/Eurostat.

modern societies, that it does not allow a timely monitoring of demographic dynamics, or that it does not take full advantage of more efficient or alternative data sources. Policy needs obviously change over time and not all policies may find an adequate statistical basis in the 'usually resident' population definition; in particular, national and international needs may not fully overlap. Here there are several implications for statistics. One of the main issues is the uniqueness of the population definition: should the statistical community pursue the adoption of a single definition for all purposes, or would it be better to identify a set of population concepts?

Besides the three population definitions mentioned above (*de jure*, *de facto* and usually resident) there are further examples, such as the 'service populations'. These are, populations that represent the demand for, or provision of, services in a geographic area of interest. This is a concept that already has its place in the UN international recommendations for population censuses; or the concept of centre of economic interest, used for population data in national accounts. The need for alternative population definitions may become more urgent for cases where the data source dictate – to some extent – the population being counted, such as register-based systems, or when the data source is based on new technologies that capture the digital traces left by individuals. Here, the push towards new definitions is a consequence of the difficulty of implementing an existing conceptual framework, rather than a response to a need not served by 'traditional' definitions.

For instance, the mapping of individual spatiotemporal trajectories using new technologies such as the mobile network data could well fit into the population present frame. It could even fit in the usually resident population, provided that well-known issues such as representativeness, private ownership of the data, confidentiality, and technological changes are solved, and that there are clear – and possibly internationally agreed – rules of conversion from the digital traces to meaningful locations of individuals. New data sources or applying different techniques to existing data sources may also provide the appropriate statistical basis for population definitions that have not previously been feasible to implement.

The point here, however, is not about finding alternative population concepts for a given purpose, but rather about indentifying the definition that serves it better. In other words, it is not a matter of multiple definitions for one purpose but, on the contrary, about finding one definition for one or more purposes, possibly for *all* purposes. Whilst the adoption of a specific population definition for specific national needs is obviously an option for a country, for international comparisons based on population statistics it is fundamental to ensure – to the highest possible extent – that there are no biases due to methodological divergences. If different population definitions were applied for the same purpose in an international context, any cross-country analysis would be affected. For instance, it would not be possible to compare meaningfully *per capita* indicators, or to compute an origin-destination migration matrix. For international purposes, the comparability of the population data should be seen as a fundamental feature, the lack of which may have far-reaching consequences in many statistical domains. Population statistics should be here understood in their broader meaning, that is, encompassing all components of population change (vital events and migration). No population-based phenomenon or population dynamic can be properly measured and analysed if the elements that make the change are not based on the same consistent definition.

In Europe, and particularly in the European Union, there has been remarkable progress towards internationally comparable data thanks to the coordinated effort of the European Statistical System (ESS). The EU regulations, first on migration statistics (2007), then on population censuses (2008), and finally on demographic statistics (2013), have been the pillars upon which the ESS has moved towards better harmonisation of population statistics. Thanks to the experience gained over those years, a further leap ahead is now possible. At the time of writing, a public consultation on future European statistics on population is under way. This is an important (and unprecedented) initiative aiming for a comprehensive picture of unmet and emerging needs in population statistics. The scientific community, policy makers, official statisticians, and ordinary citizens are invited to contribute to shaping one of the most fundamental statistical information. The architecture of European population statistics for the twenty-first century is now being written. Let us not miss this opportunity: the future is now.

Giampaolo Lanzieri

Senior Expert at the Statistical Office of the European Union (Eurostat)

European Commission – Eurostat,
BECH building, office D2/729
5, rue A. Weicker, L-2721 Luxembourg.
Email: giampaolo.lanzieri@ec.europa.eu