4.3. Limitations and caveats

When using MPD to produce official statistics, it is important to consider the following:

- The availability and quality of the socio-demographic information. Due to certain reasons (i.e., privacy or quality issues, in some countries the identification by age is not correct for the lowest age classes (e.g., below 15 years) as normally parents register their contracts).
- Another possible limitation can be the completeness and accuracy of the data as they depend on the type of devices (i.e., old generation or obsolete mobile phones).
- The location is almost always the position of the mobile network cell the subscriber is connected to. The time gaps between records define the density of the data[1].
- If a person changes his/her mobile operator and keeps the device in order to trace further his/her activities, one needs to have the data from all the Mobile Network Operators (MNO) existing in the country. This would raise the quality by minimizing data gaps.
- MPD can be difficult to access from MNOs due to privacy and other legal aspects as MPD includes highly sensitive information about the whereabouts of the subscribers, or are difficult to either access due to ethical aspects and/or for commercial confidentiality reasons.
- When checking for the quality of geographical coverage, the network’s cell level is the minimum level of analysis. Uneven distribution of mobile antennas throughout the country generally reflects the location of the population and transport infrastructure. The accuracy of passive positioning is, therefore, greater in more densely populated areas or in areas with denser networks of roads, with accuracy being lower in more sparsely populated areas. So, it might be a challenge as the nearest cell tower does not always precisely capture users’ locations[2].
- Geographic accuracy or the so-called “tossing” means that even if the person is in one place, his/her phone may connect to different antennas and swap (toss) them automatically, depending on the antennas’ workloads. It is possible to raise the geographical accuracy of the passive positioning data with the cooperation of operators, e.g., dividing cells into sectors or using better positioning techniques for data collection.
- Coping with under- or over-coverage. There is a discrepancy between the target population and mobile phone users. MPD captures only the subscribers, while the target population includes all the individuals who reside in the country.

[1] Draft: Practitioners’ Guide on Harnessing Data Innovation for Migration Policy (to be clarify after publishing)