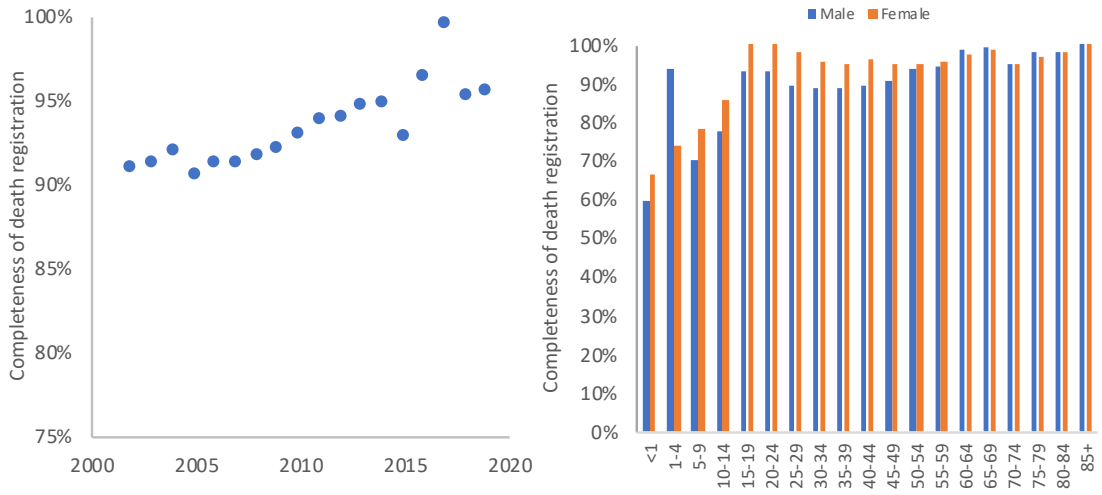
# Supplementary Appendix




(a) (b)

**Figure A1: Proportion of estimated all-cause deaths that are registered ("completeness" of death registration) in Brazil over time, (a), and by age and sex groups in 2019, (b).**

Figure A1 shows the completeness of death registration data in Brazil based on IHME's estimates of all-cause deaths. The estimates suggest that completeness has increased over the last two decades to 95.5% in 2019. Note that this is lower than WHO's estimate of completeness (98.2% in 2019). The completeness estimates vary substantially by sex and age. In general, completeness is lower among males (except among 1-4 year olds), and children under 15.

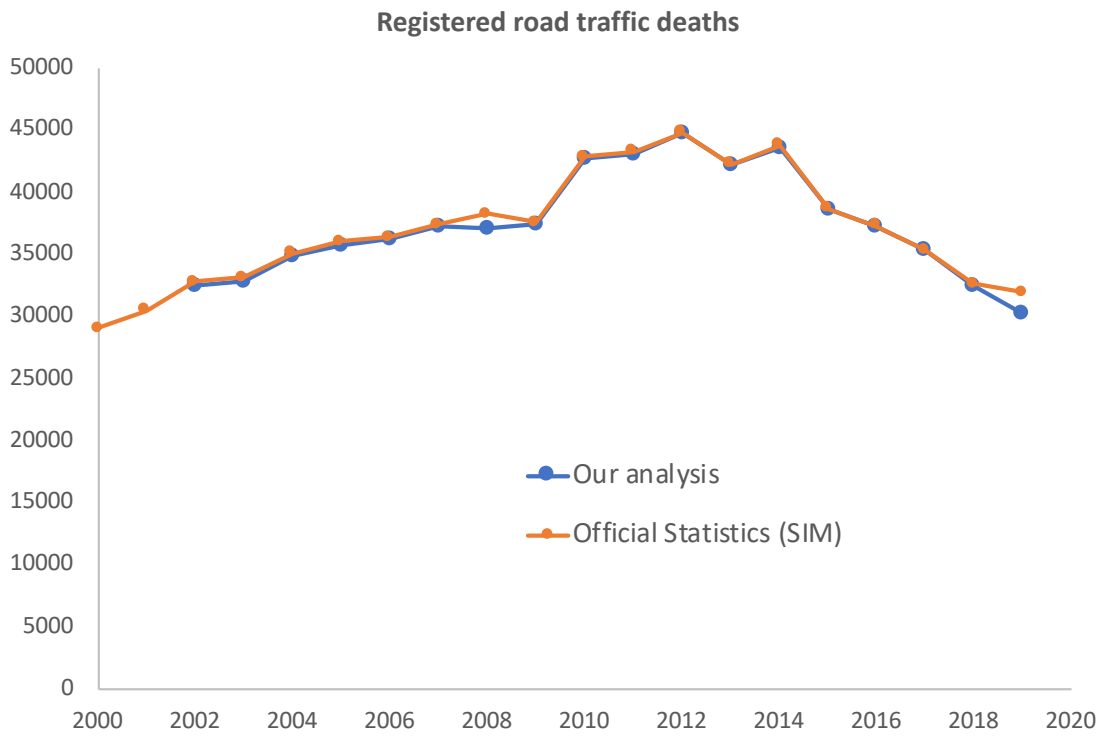



**Figure A2: Deaths coded to our case definition (Table 1) of road traffic deaths in the WHOMDB compared with official statistics**

Figure A2 illustrates our ability to reconstruct official statistics from the WHOMDB. The figure shows a close correspondence between deaths coded to the fully specified ICD-10 codes for road traffic deaths in the WHOMDB, and the official statistics reported by SIM. Notably, the 2018 GSRRS reported that the official death toll in Brazil for the year 2015 reported was 38,651 deaths, which is the same number that we extracted from SIM. However, our analysis of the WHOMDB found 38,553 deaths that met our case definition. While this discrepancy (0.2%) is negligibly small, we note that Figure 3 shows a larger discrepancy for the years 2008 and 2019, whose source is unclear to us. To some extent, such discrepancies may be attributed to differences in the case definition. For instance, the case definition used in SIM includes deaths due to rail (ICD10:V05, V87). However, the number of cases coded to these ICD10 codes in the WHOMDB was too small to explain the difference.

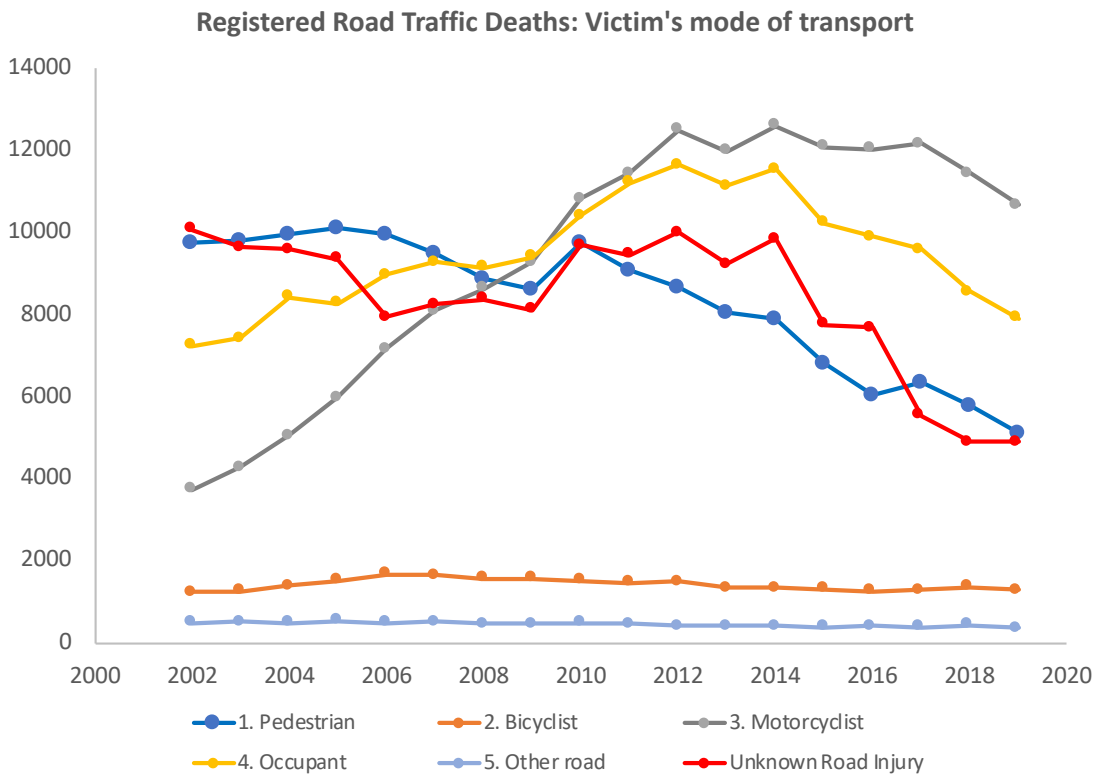



**Figure A3: Deaths coded to our case definitions for various road-user categories**

Figure A3 shows trends in deaths among different types of road users. These trends (notably, rising motorcyclist deaths and declining pedestrian deaths) are broadly consistent with the reported literature.[16–19] Notably, deaths coded to road traffic injuries where the victim's mode of transport is unknown have been declining starting in 2014. While these accounted for 31% of deaths coded to road traffic in 2002, they only accounted for 16% of such deaths in 2019. Although this is a fairly large proportion of the deaths registered as due to road traffic, these deaths are specified as road traffic deaths, and thus counted in official statistics as road traffic deaths.