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The research potential of the Scottish Longitudinal Study (SLS) and methodological innovations for working within TREs

Lee Williamson¹

¹University of Edinburgh, Edinburgh, United Kingdom

The Scottish Longitudinal Study (SLS) is a largescale research ready record-linkage study created and supported by the SLS Development and Support Unit (SLS-DSU). The SLS is accessed via the SLS-DSU safe haven/trusted research environment (TRE). The SLS links Census through time 1991–2022 to administrative data on major life events, maps changing residential location and for children, their progress through the educational system. This paper will introduce the SLS as a data resource for researchers, the datasets held as part of it, the application process, the SLS-DSU, along with two innovations developed for making research using the SLS, and its sister studies, easier to do within the separate TREs. Census data are the building blocks of the SLS from 1991 onwards, for a 5% representative sample of the Scottish population

(about 270,000 sample members each Census). The SLS links together a wealth of information from routinely collected administrative data, including vital events registrations (births, deaths and marriages), migration data, Scottish education data, and with appropriate additional permissions can be linked to NHS health data including cancer registry and hospital admission data. With the SLS-DSU two innovations were developed SYNTHPOP (an R package for creating bespoke synthetic project extracts) and eDataShield (an R package for doing combined federated type analysis with the SLS and one of the sister studies ONS LS for England and Wales, or the Northern Ireland LS). An overview of SYNTHPOP and eDataShield will be provided to demonstrate how they make working within TREs easier, given data restrictions.

