Continuity and change in spatial patterns in UK fertility: the case of London

In 2018 the Borough of Camden in west London had a Total Fertility Rate (TFR) of 1.10 children per woman, the lowest TFR of all local authorities in England and Wales, while Barking and Dagenham in east London had the highest at 2.28 (ONS Birth Summary Tables 2018). It is striking that this strong east-west pattern in London's fertility has persisted for at least 150 years: the fertility decline which formed part of the first demographic transition is generally not thought to have started until the 1870s, but in 1851 Mayfair in London already had below replacement fertility but many areas of east London had TFRs of over five children per woman (PopulationsPast.org). This paper will explore the evolution of this geography over time and discuss whether the factors driving the observed pattern of fertility are the same today as in the nineteenth century, and consider possible reasons for its persistence.

Data and methods

Our main data sources are full count individual level decennial census data from 1851–1911 published by the Integrated Census Microdata Project (Schürer and Higgs 2014) and summary statistics from the twenty-first century censuses (2001 and 2011) for London boroughs and wards provided by Office for National Statistics (ONS). The continued growth of London over past 150 years means that much of our analysis focusses on contemporary Inner London; the footprint of the city in the late nineteenth and early twentieth century covers 13 of today's central London boroughs. Fertility estimates for twenty-first century London are provided by ONS, we apply the Own Child Method to historical census data to estimate fertility levels for similar geographical units for the earlier period (Reid et al. 2019).

This paper has two main aims. First, we intend to examine the spatial patterns of fertility within London and compare them over time. Second, the paper aims to explore in further detail the correlates of high and low fertility in the city and how these might have persisted or changed. We explore the influence of factors such as socio-economic profile of the local area, prevalence of unemployment, female labour force participation, health and mortality and migratory background and the ethnicity of the local populations. Our modelling strategy is to estimate OLS and spatial models of the relationship between the level of fertility and a range of contextual variables for each geographical unit. Historical census data also allow us to explore the geographical dimensions of variation in fertility in London by differentiating local area populations by their socio-economic background or place of origin.

Preliminary results

Figure 1 provides estimates of TFR by Registration sub-districts (RSDs) in 1891, 1901 and 1911 and by boroughs in 2001, 2011 and 2018. These results demonstrate that even in the late nineteenth century, when the overall fertility levels in London were lower than in other regions of England and Wales, London still exhibited a quite distinct spatial fertility pattern. The fertility levels in East London in 1891, 1901 and 1911 were consistently much higher

than in West London, which experienced relatively low fertility: a pattern which had persisted since the 1850s or perhaps even earlier. We also find that during the fertility transition there was considerable variation in fertility at the RSD-level in London. For example, in 1891, districts in Kensington and Marylebone had TFRs close to one child per woman, whereas eastern districts such as Bethnal Green and Stepney had TFRs over five children per woman.

As expected, the spatial patterns at the borough level are much more muted by the early twenty-first century and overall there is less variation in fertility across London. However, despite the 100 years that have passed, some of the spatial fertility patterns still hold. Inner London and west London boroughs tend to have the lowest levels of fertility in the capital while and the highest levels are still experienced by boroughs in east London. However, there are parts of London's East End which had high levels of TFR in the late nineteenth century which had transformed into low fertility areas by 2001. In the early twenty-first century the areas with high(er) fertility are more prevalent in boroughs further east, beyond the original nineteenth century city boundary such as Barking and Dagenham, Newham and Waltham Forest.

Our full paper will compare the correlates of fertility differences in the late nineteenth and the early twenty-first centuries. It will reflect on the challenges of comparative work over such a long time period, considering factors such as whether variables used to represent the influences on fertility are really capturing the same thing at different time points, and the extent to which the scale of measurement affects results.

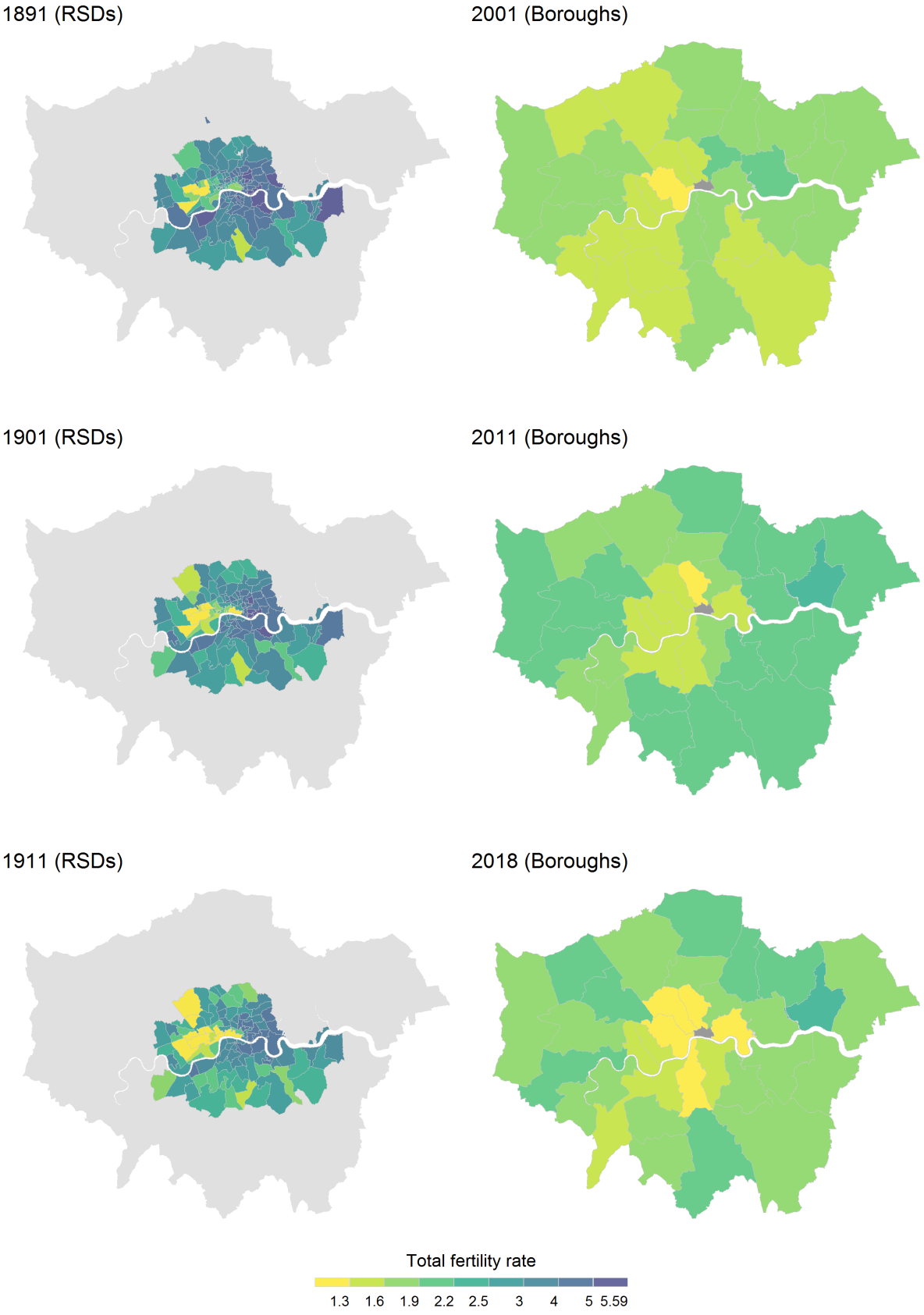

Figure 1. Registration sub-district (RSD) or borough level variation in Total fertility rate (TFR) in London, 1891–2018