Health inequalities: Differences in life expectancies

To extend the dataset on MSOA-level life expectancies, I merged datasets allowing me to categorise each MSOA by region and rural-urban classification published by the Government Statistical Service, and also finding data on MSOA population, and each MSOA's population breakdown of race, religion, and age category, as well as its size in km^2. I have focused on the inequalities in life expectancy owing to region, and subsequently urbanisation, and race.

Figure 1 shows the difference in years in life expectancy from that of London (80.76 for males, 84.86 for females) for each region of England. It can be seen that the further a region is from the capital, the lower its life expectancy, with the Home Counties having only a mild drop, while the two northernmost regions have the largest fall in life expectancy. Women are universally more affected by the regional differences than men, to a greater proportion than would be owing only to naturally longer lives: it is likely that London women have proportionally longer lives than London men, rather than peripheral women having relatively shorter lives. I hypothesised that the more peripheral regions may be more rural, and thus life expectancy may be reduced due to higher distances to healthcare, so I included an urban dummy and the area of each MSOA (in logged square kilometers) in a regression of life expectancy against the regional dummies. However, I found that this only *increased* the life expectancy deficits of each region to London for both sexes[1]. It is unlikely that this is accounted for by per capita government spending resulting in healthcare differences, as the South East and South West sees the lowest, with the North West and North East having the highest bar London (Greer, 2009).

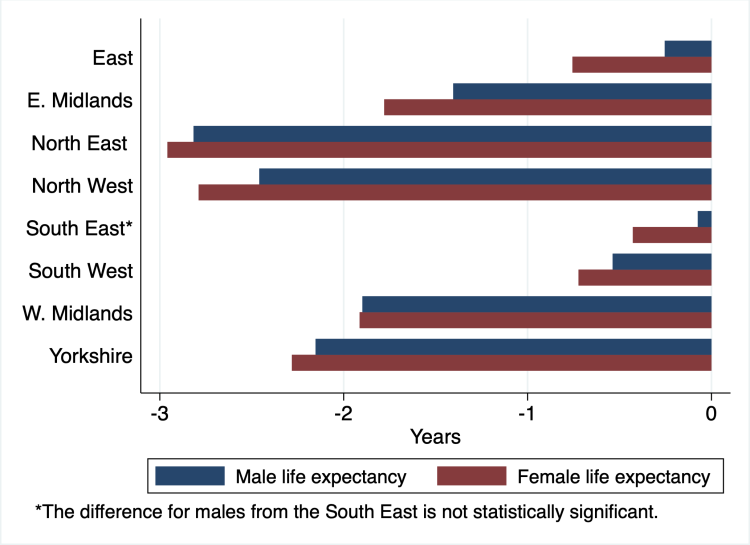

Figure 1: Mean difference in life expectancy from London, by sex and region

Another hypothesis was that London is very urban, so distances to healthcare are low, resulting in higher life expectancy, so I graphed the physical size of each MSOA against its life expectancy (Figure 2). However, a clear positive trend exists between MSOA-area and life expectancy. I have highlighted urban and rural areas[2] to highlight that this trend exists for them too. This trend of higher life expectancy in increasingly rural areas is stronger for men than women, while for both sexes it is larger still when considering only the North[3]. Kyte and Wells (2010) attribute this trend to clean air, green space, and the opportunity for exercise in rural areas, as well as a lower likelihood of deprivation. However, rural populations are relatively older, which is associated with greater healthcare needs, but rural areas receive relatively less funding than urban areas.

[1]The results of each regression can be found in the DO file.
[2]Defined by the Government Statistical Service in its 2011 Rural-Urban Classification for Output Areas.
[3]The North East, North West, and Yorkshire and the Humber, calculations in DO file.

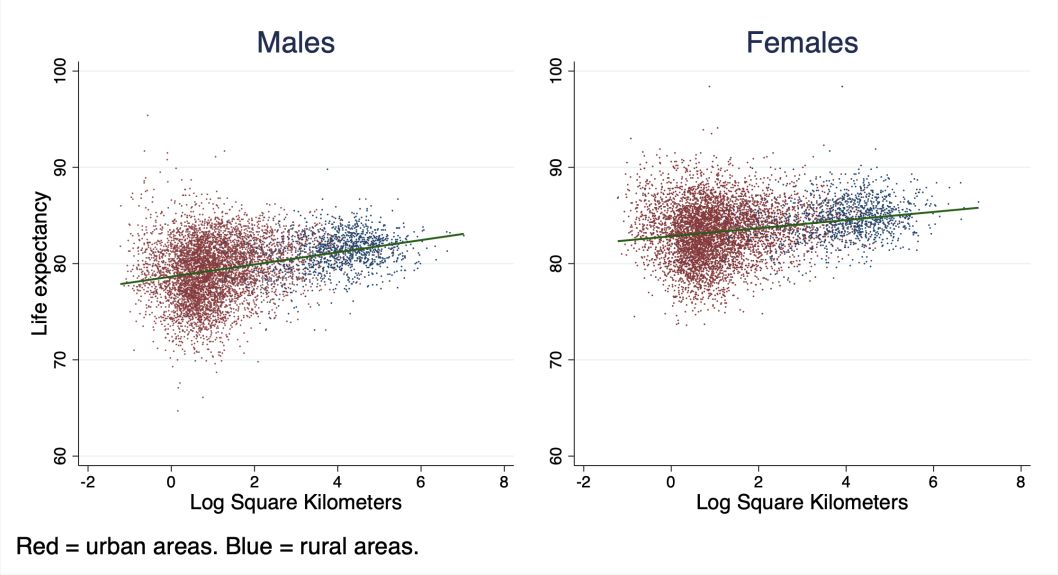

Figure 2: Life expectancy by MSOA area in log km^2.

Finally, I consider ethnicity as a driver of life expectancy inequality. I construct five main ethnic groups: Bangladeshi and Pakistani, Indian, Asian other, Black, and White. I have split Indian from Bangladeshi and Pakistani owing to different dominant religions potentially leading to different cultural attitudes, and hence life experiences. The five variables are formatted as the proportion of each ethnic group in any one MSOA, hence they sum to unity. Figure 3 visualises a regression of life expectancy on four of the five groups (accounting for multicollinearity). The results show that versus the white population, the Bangladeshi and Pakistani have a slightly lower life expectancy, while the effect is largest for the black population, especially black men. Indians experience greater longevity. To account for regional effects (e.g., London has the highest black population, so black life expectancy would be upward biased by London's effect), I have included regional dummies and the log km^2 variable. This is broadly consistent with the findings of Chouhan and Nazroo (2020), who find that Bangladeshi, Pakistani, and Indian people report fair or bad health far more than white people, while black people experience worse patient care. My result for Indian people represents an unexplained deviance from these findings. Accounting for MSOA-level economic inequality, such as the Index of Multiple Deprivation (albeit giving only LSOA-level data), would represent a good extension to my findings, to give further context on the relative economic standings of each ethnicity, and hence may correct for deviations from others' findings.

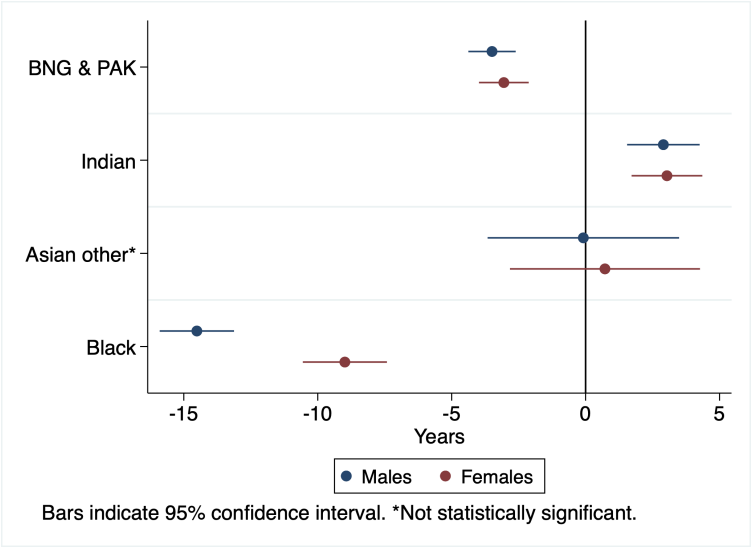

Figure 3: Regression of life expectancy against ethnicity. 100% white population vs. 100% x population.