

Urban environment & postnatal depression: descriptive statistics

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2nd June 2021

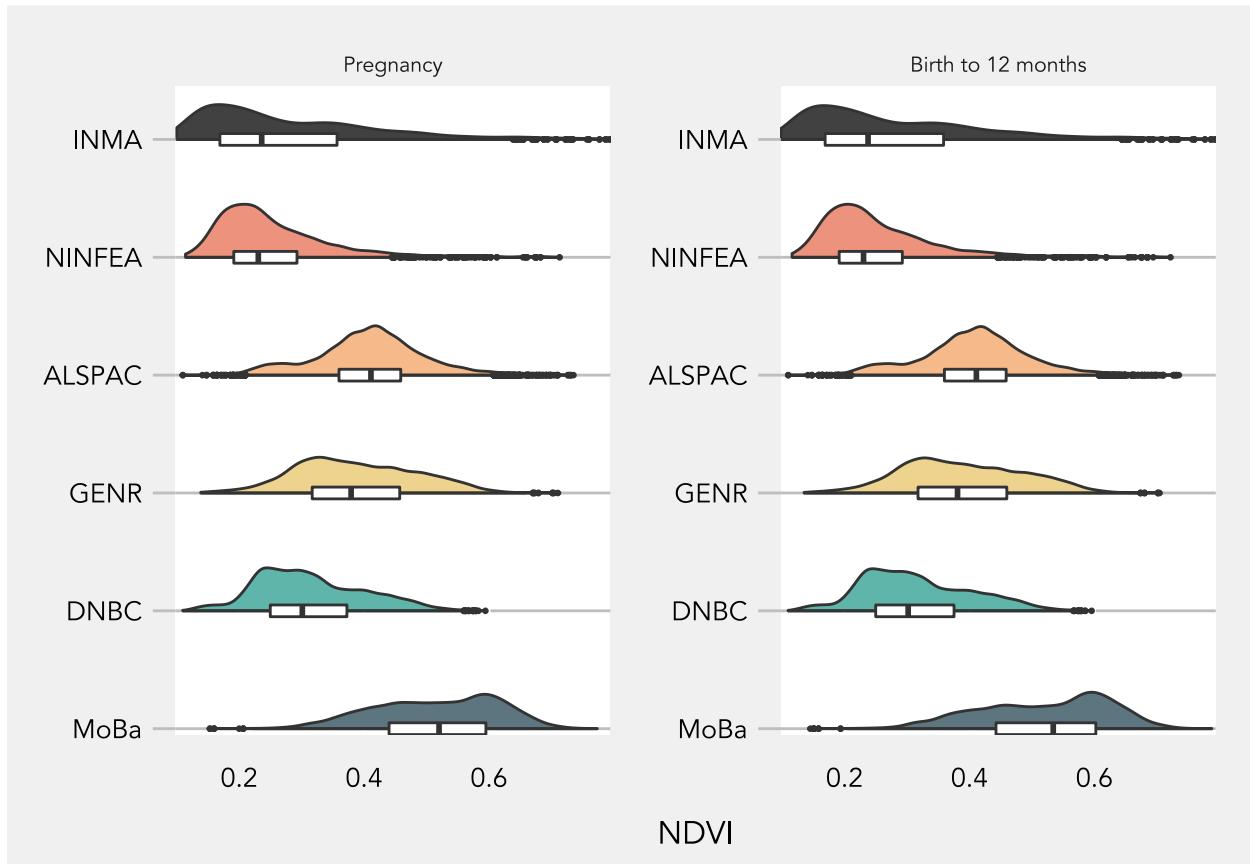
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1 Overview

I've put together (i) descriptive plots for exposures and outcomes, (ii) correlations between exposures, and (iii) associations between each exposure and outcome. I will also look at non-linearity in exposure-outcome associations, but I need to write a function to do spline modelling in DataSHIELD.

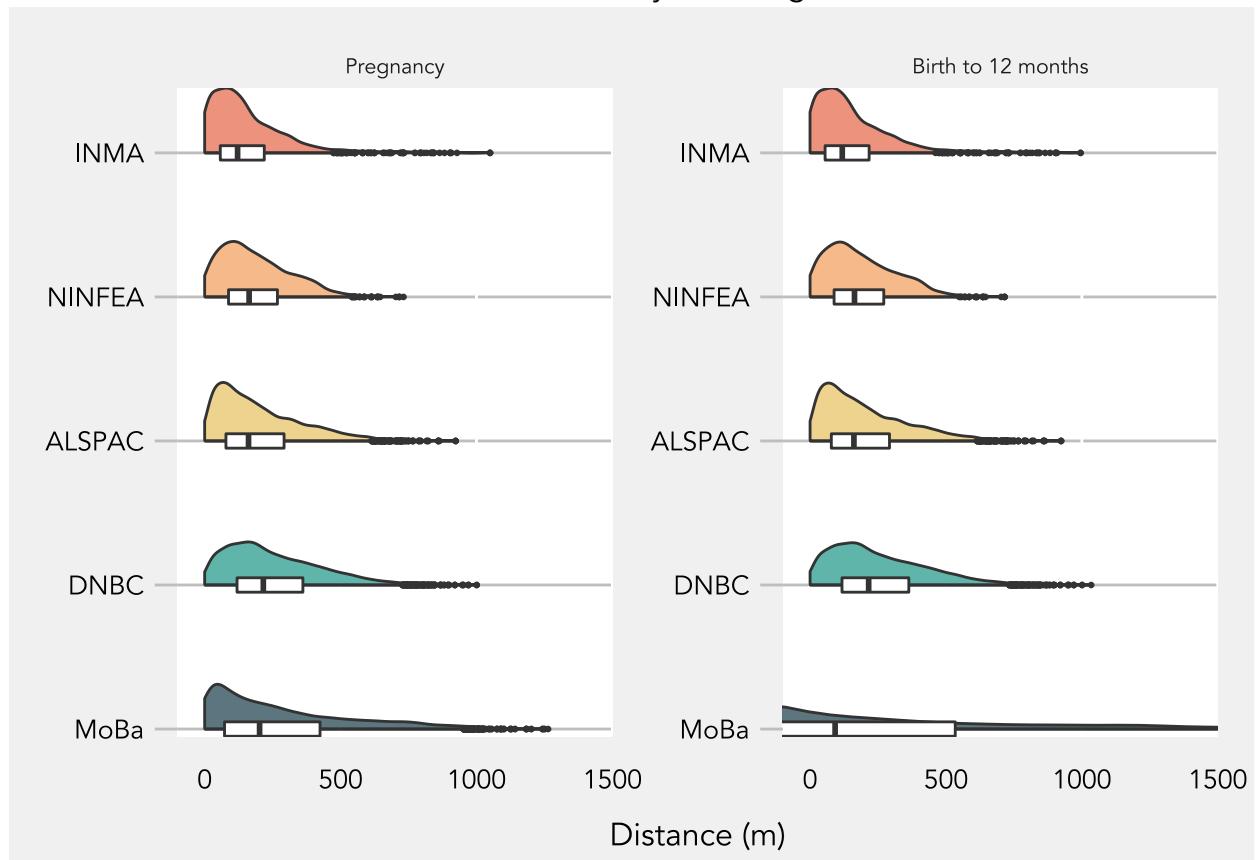
2 Descriptive statistics for exposures

2.1 NDVI (300m buffer)



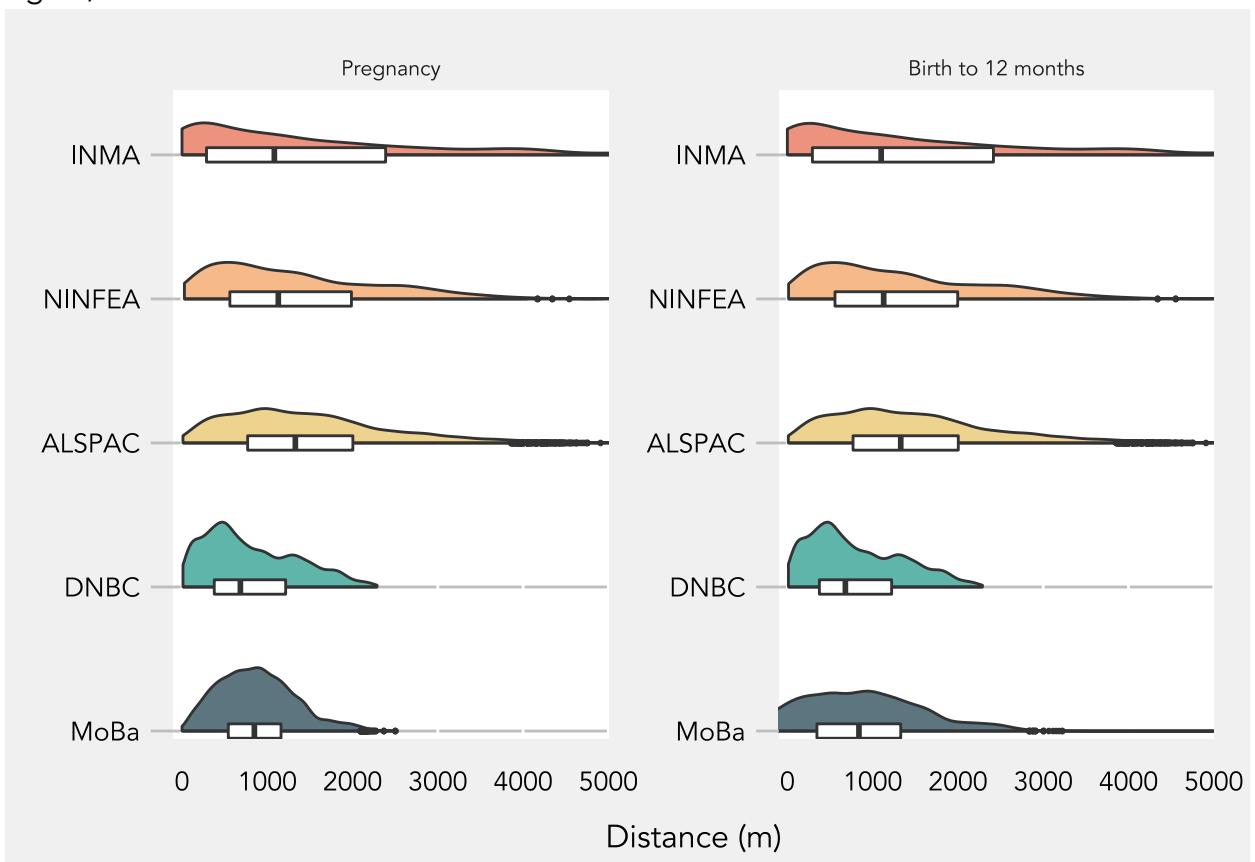
2.2 Distance to nearest green spaces > 5000m²

There is a mistake with GEN-R data which they are fixing.

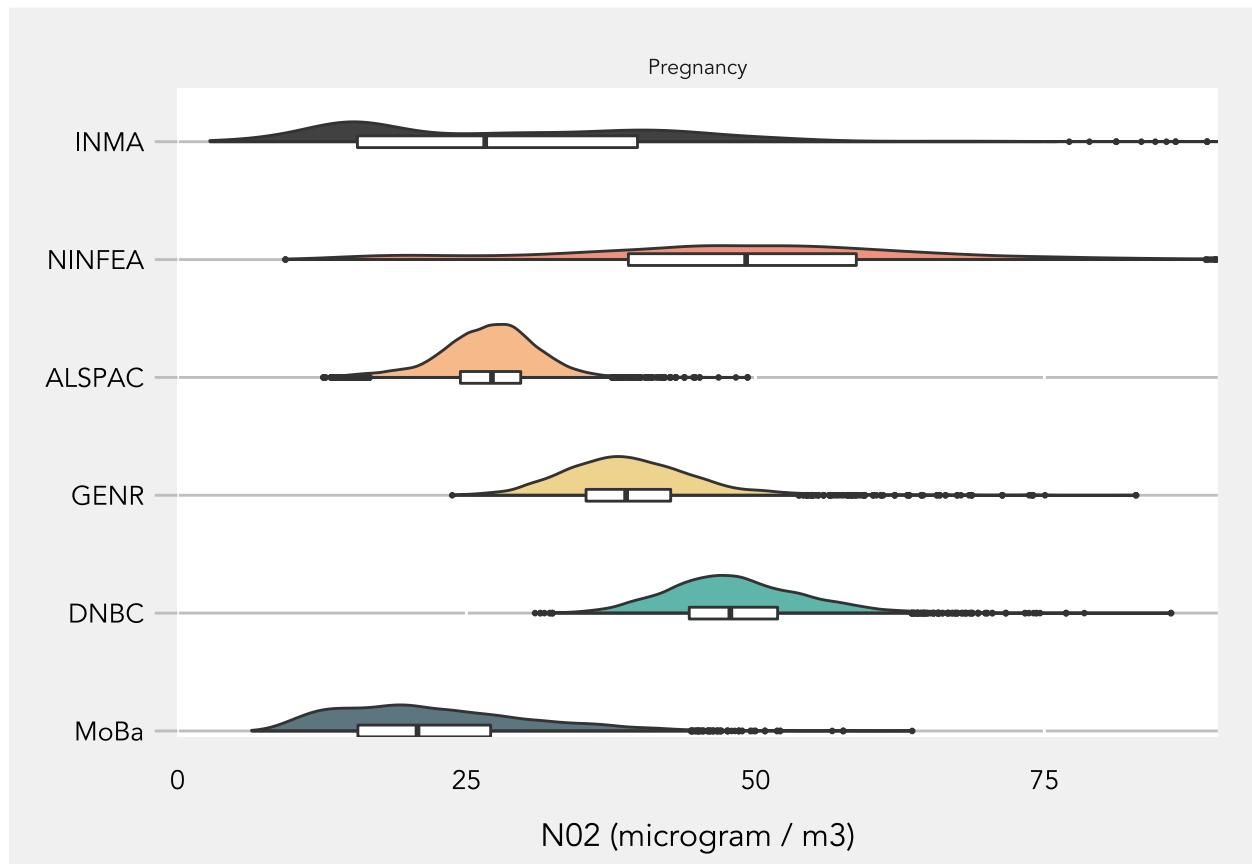


2.3 Distance to nearest blue spaces > 5000m²

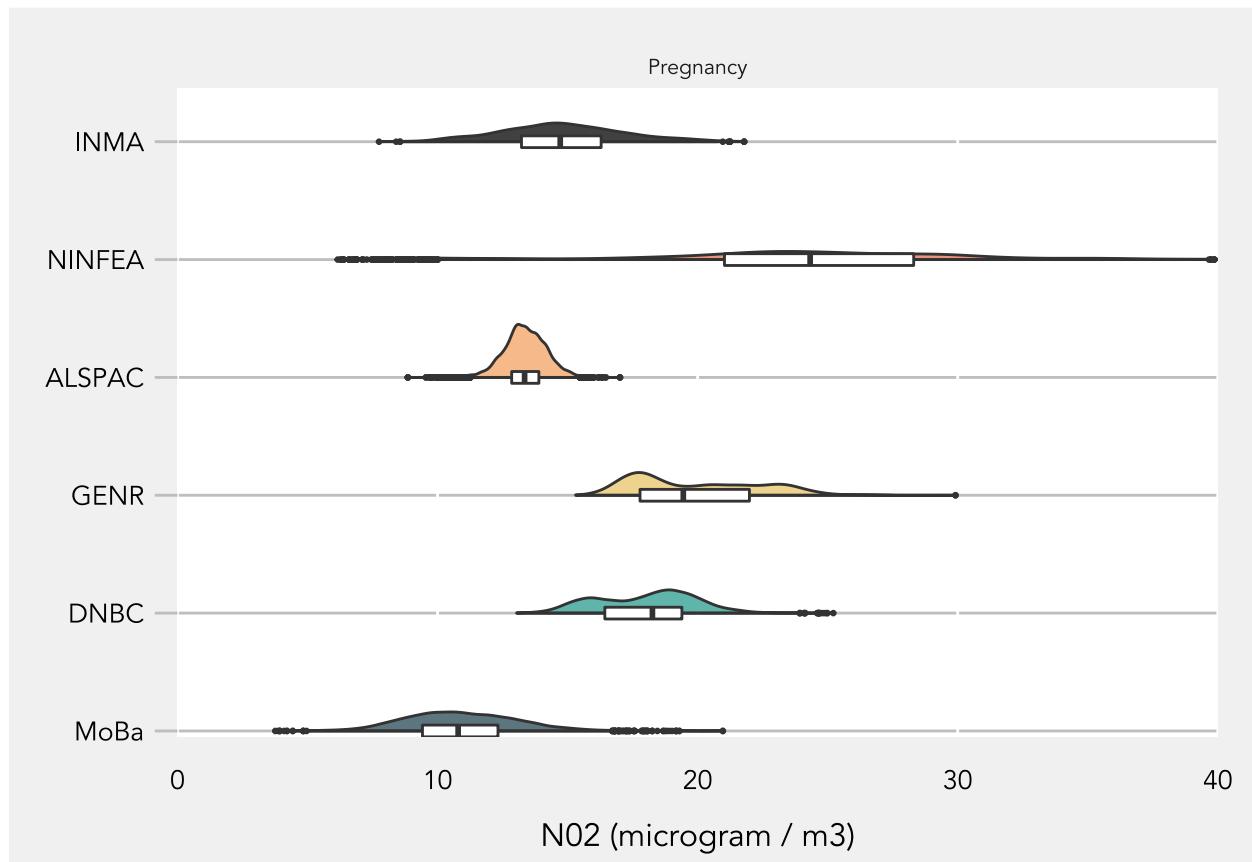
Again, GEN-R is excluded because of an error with their data.



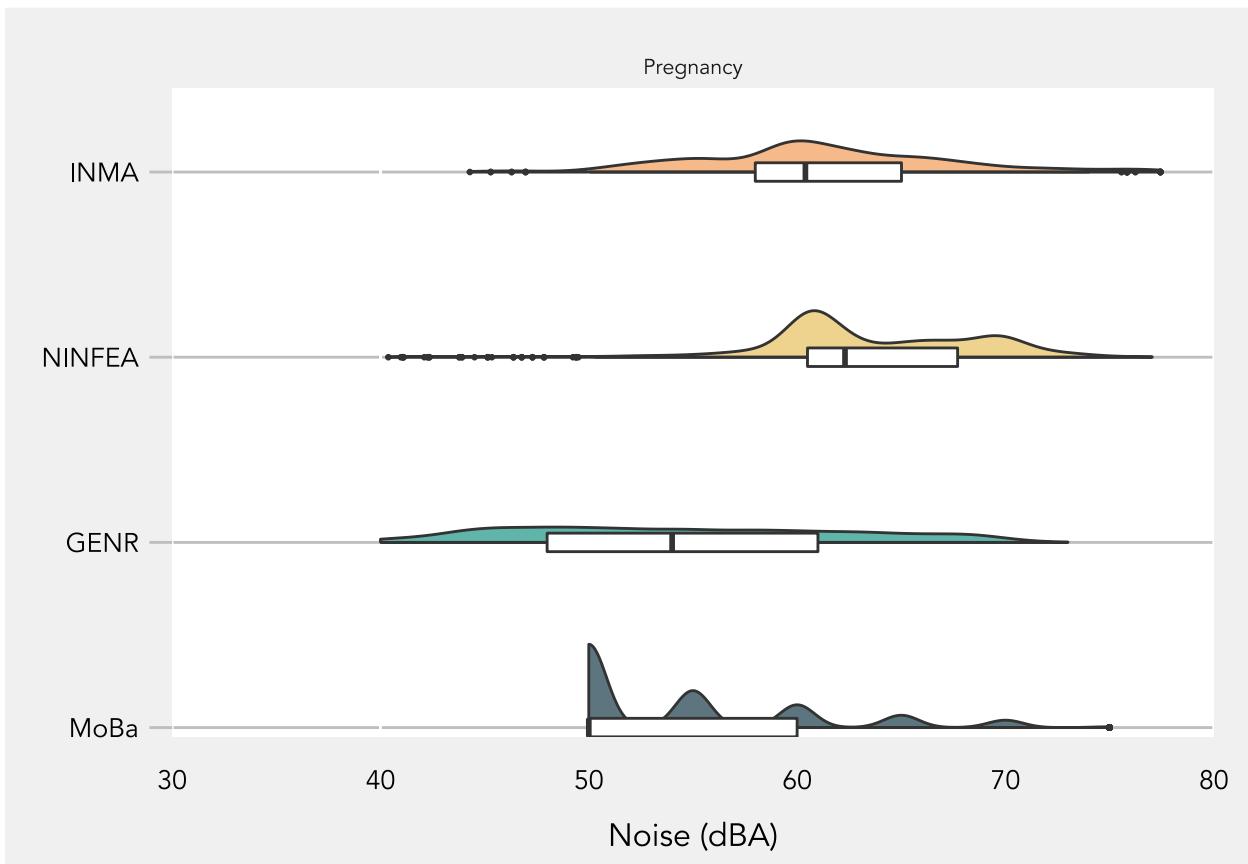
2.4 Mean NO₂ in pregnancy



2.5 Mean PM_{2.5} in pregnancy



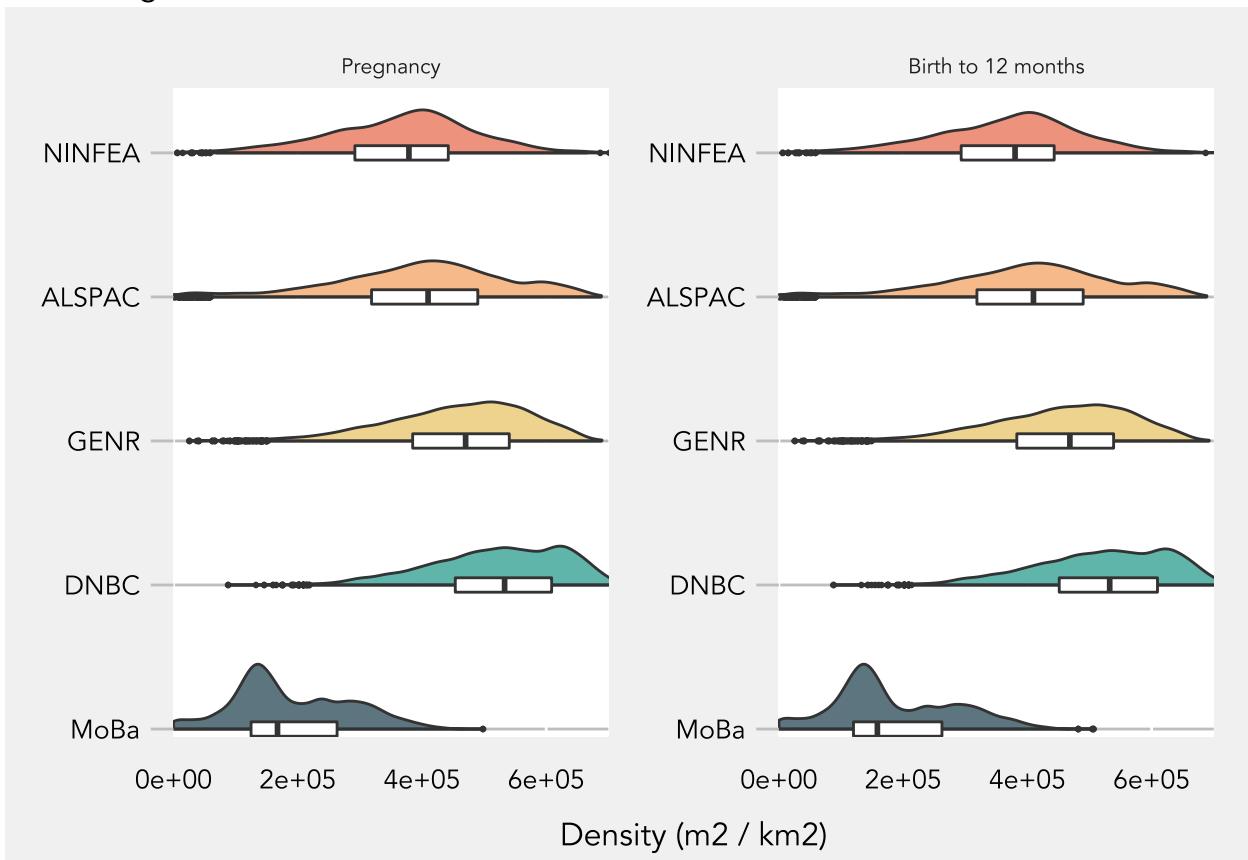
2.6 Mean day-evening-night traffic noise



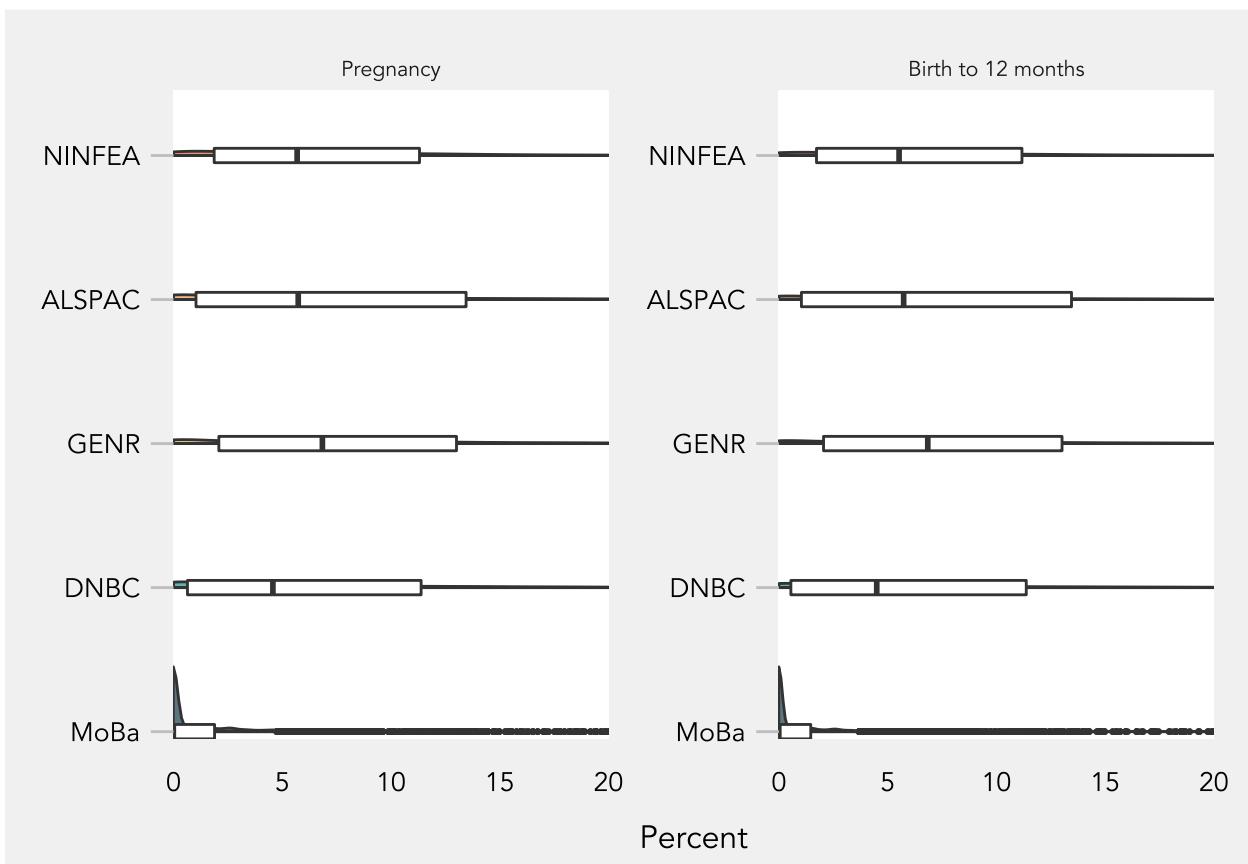
For ALSPAC only the categorical version is available - I will add this.

2.7 Mean building density

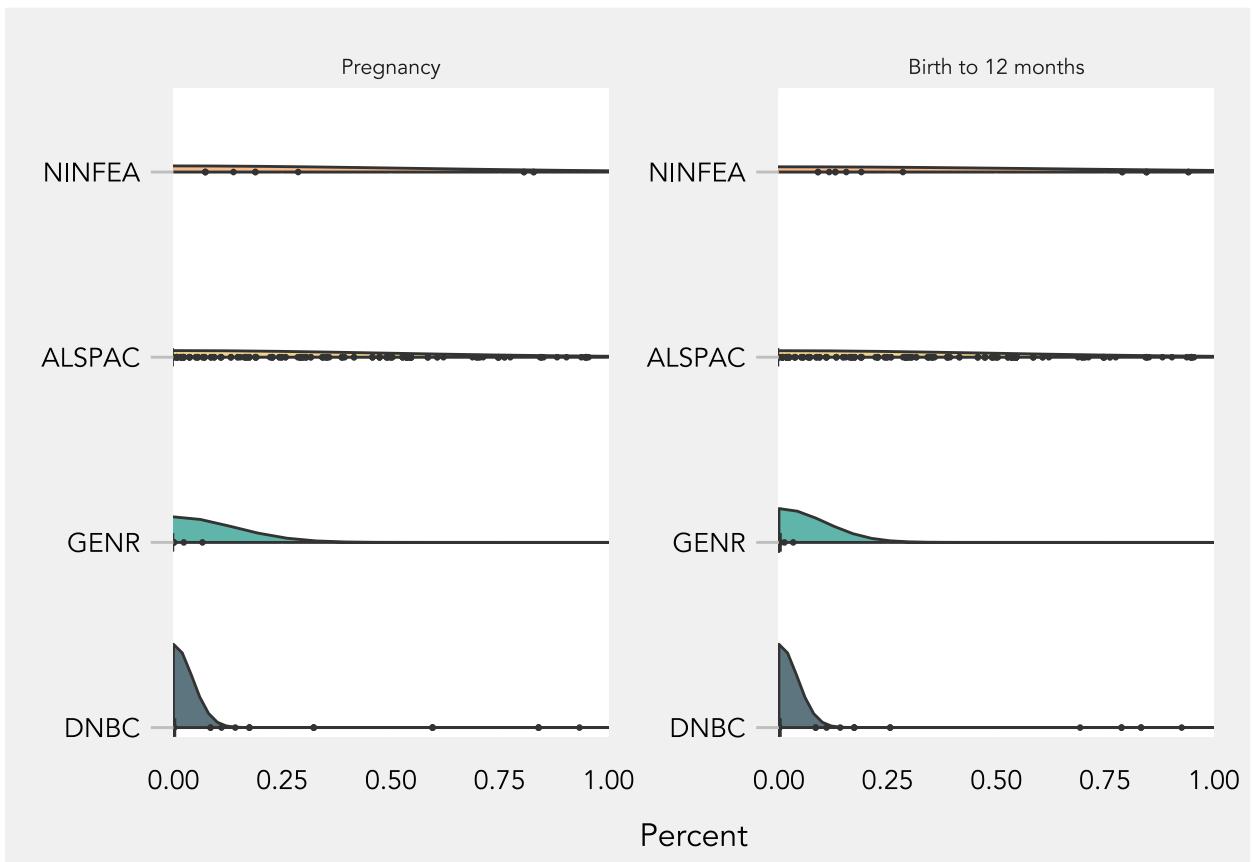
I'm waiting on the built environment variables from INMA.



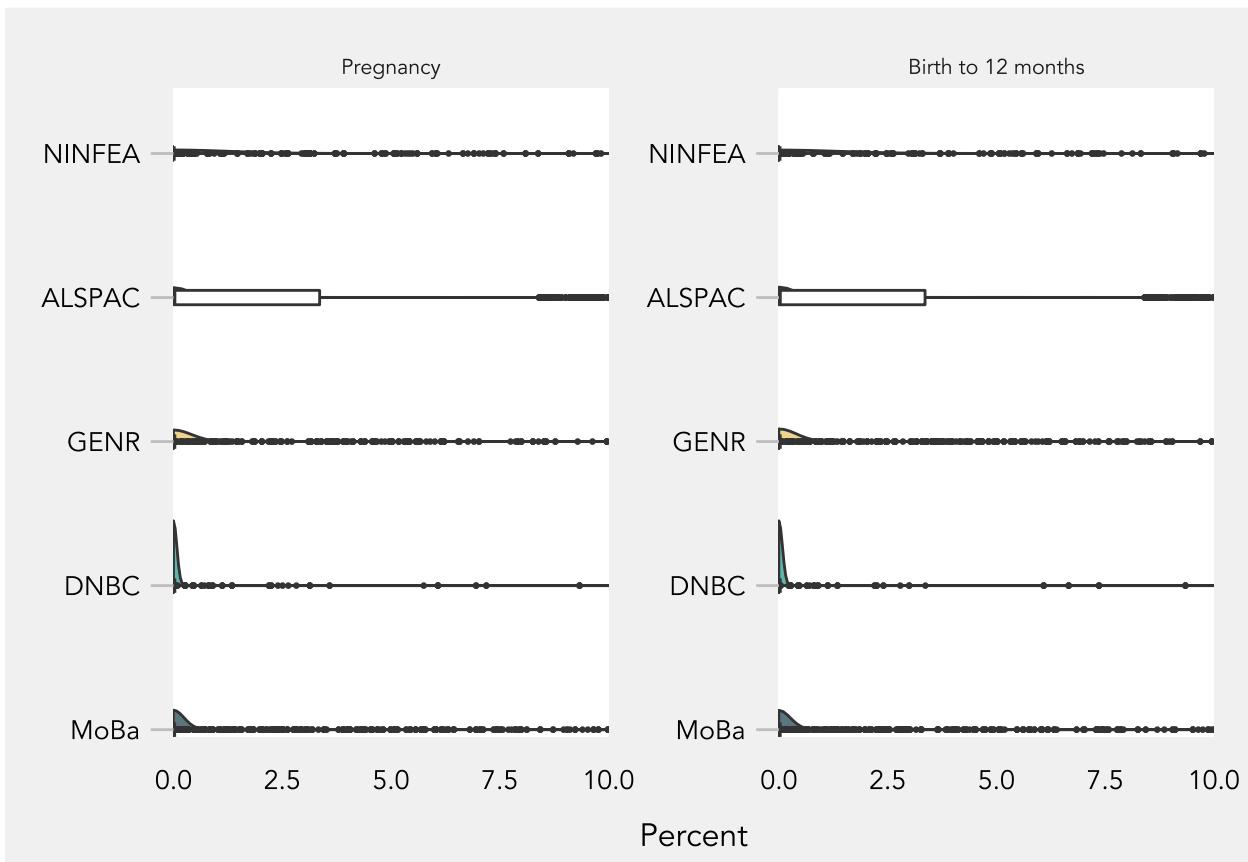
2.8 Percentage of urban green land use



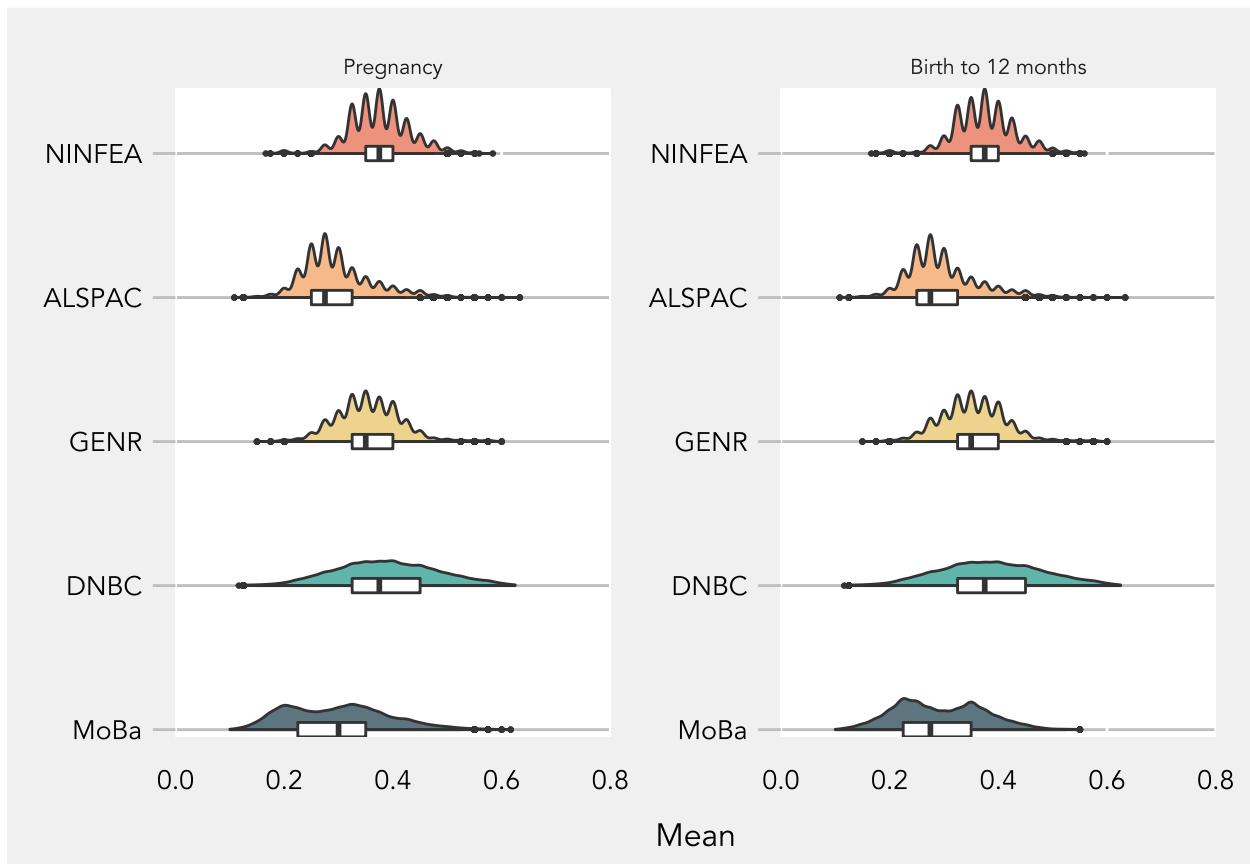
2.9 Percentage of forest land use



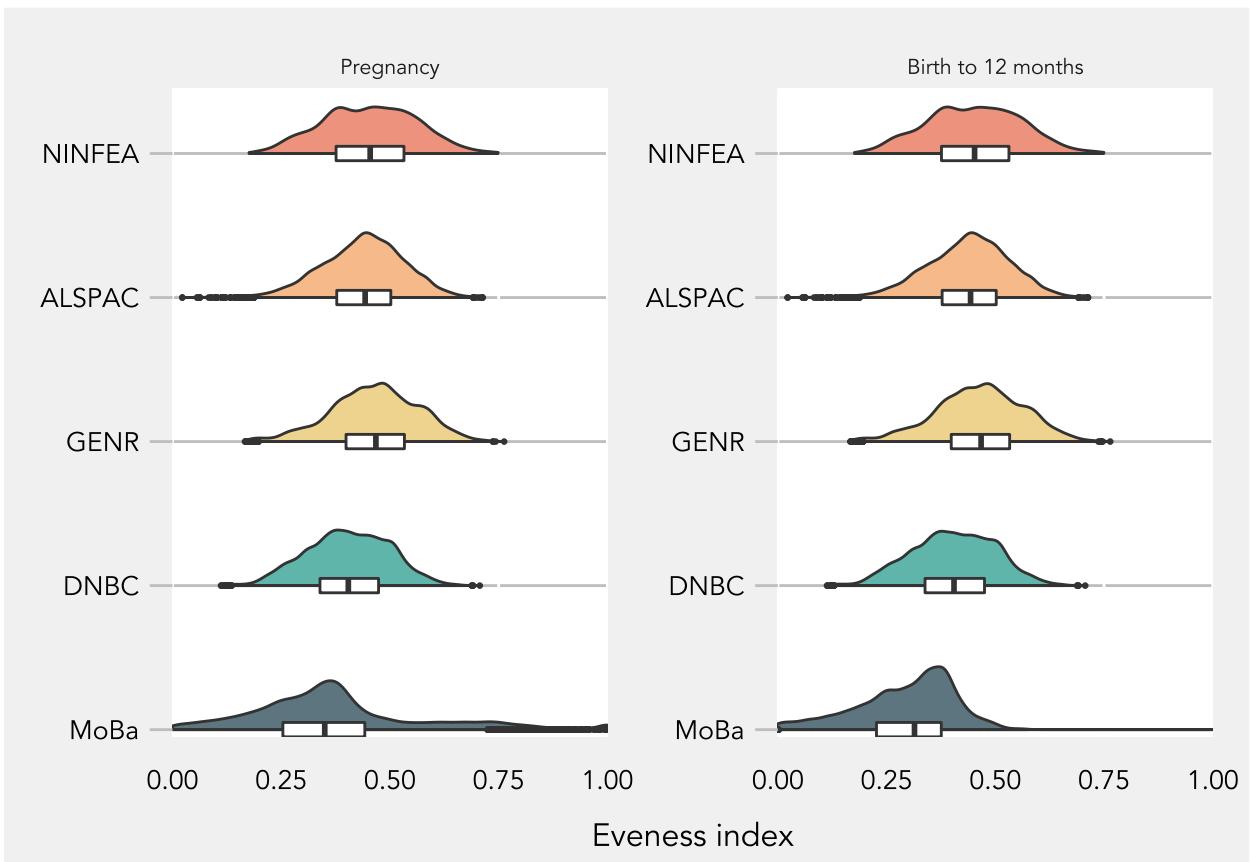
2.10 Percentage of agricultural land use



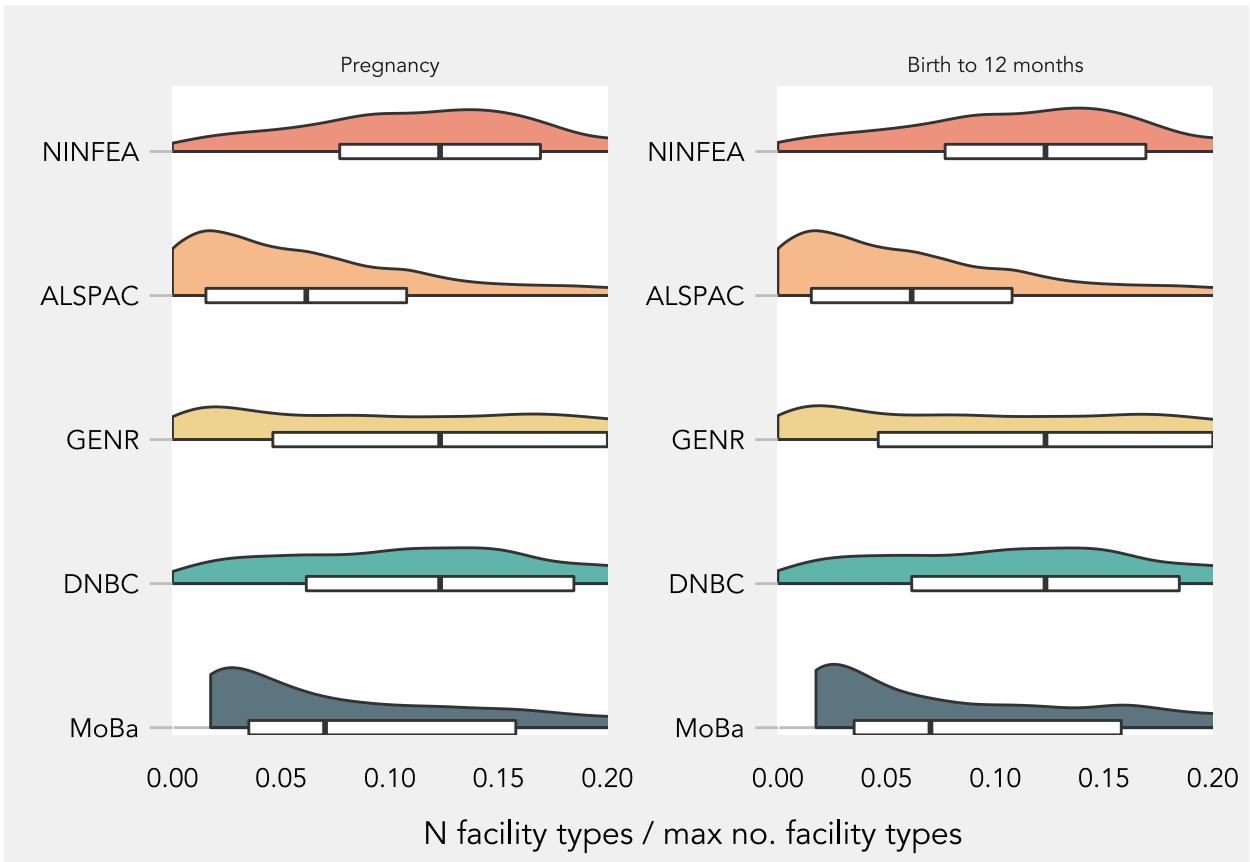
2.11 Walkability index



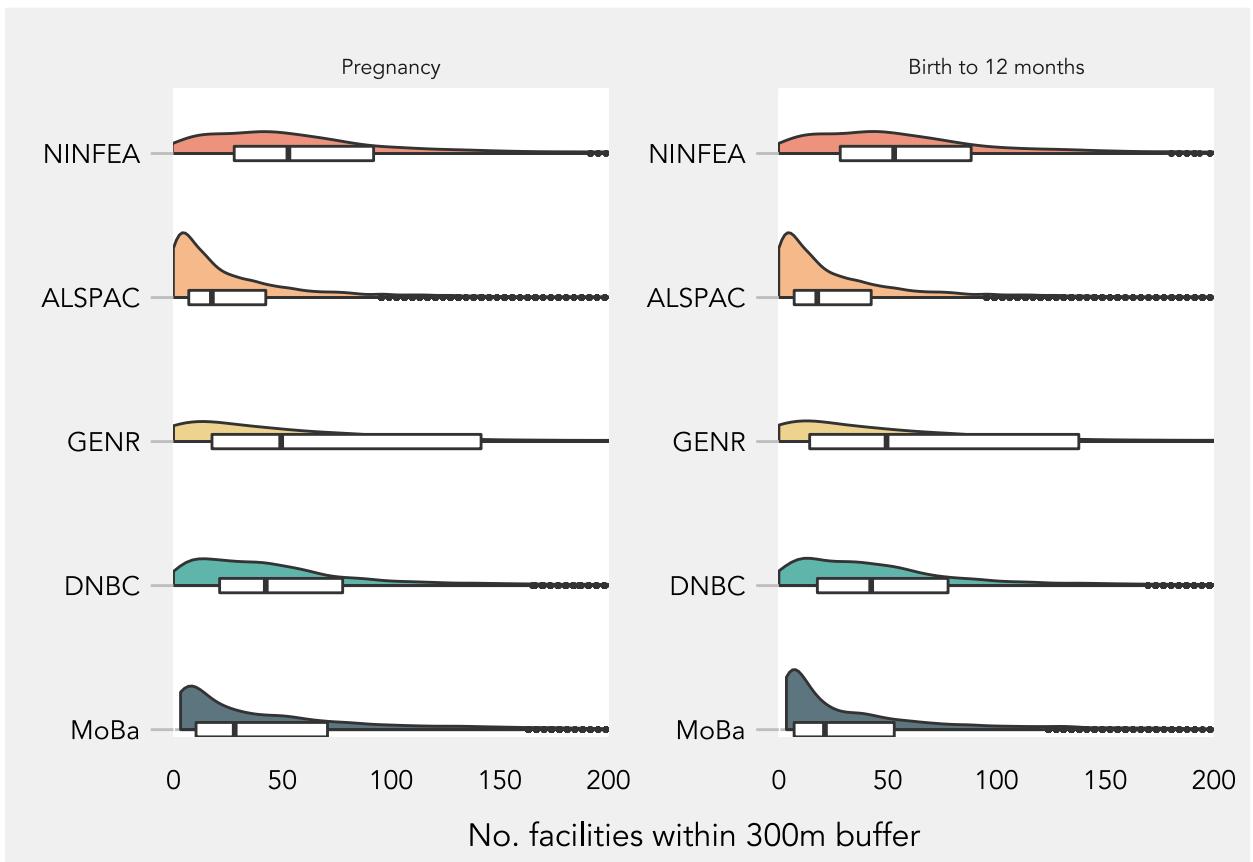
2.12 Land use (Shannon's evenness index)



2.13 Facilities richness



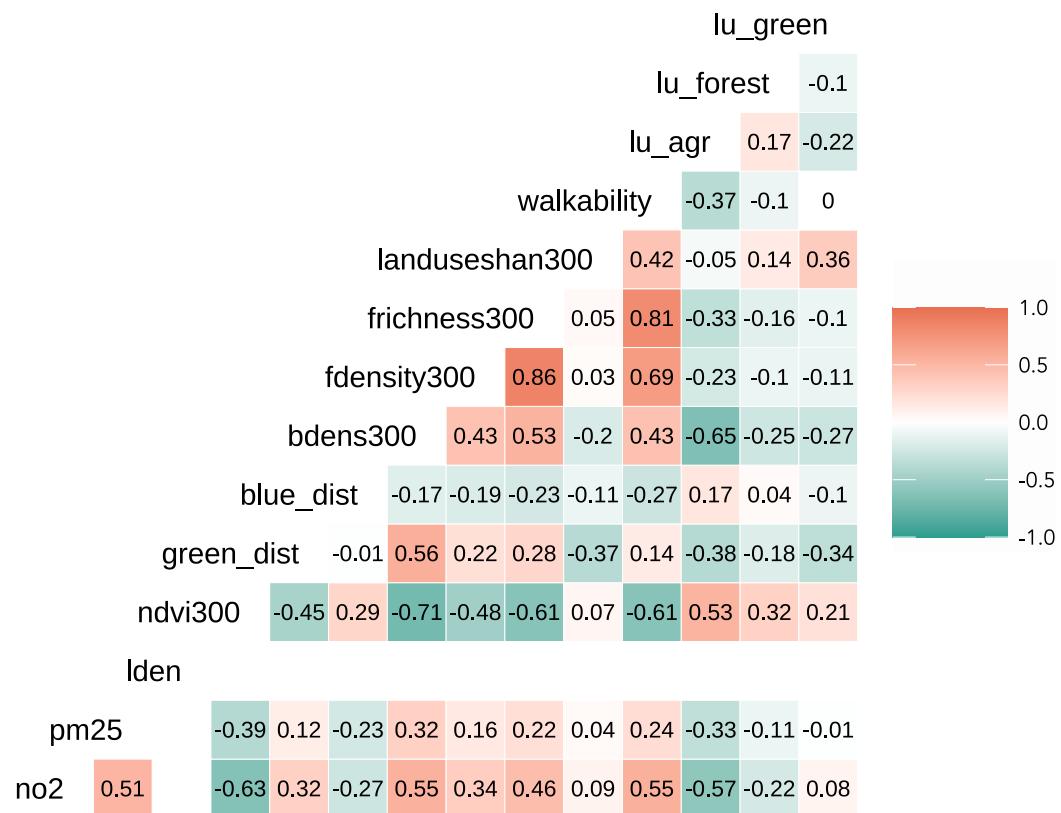
2.14 Facilities density



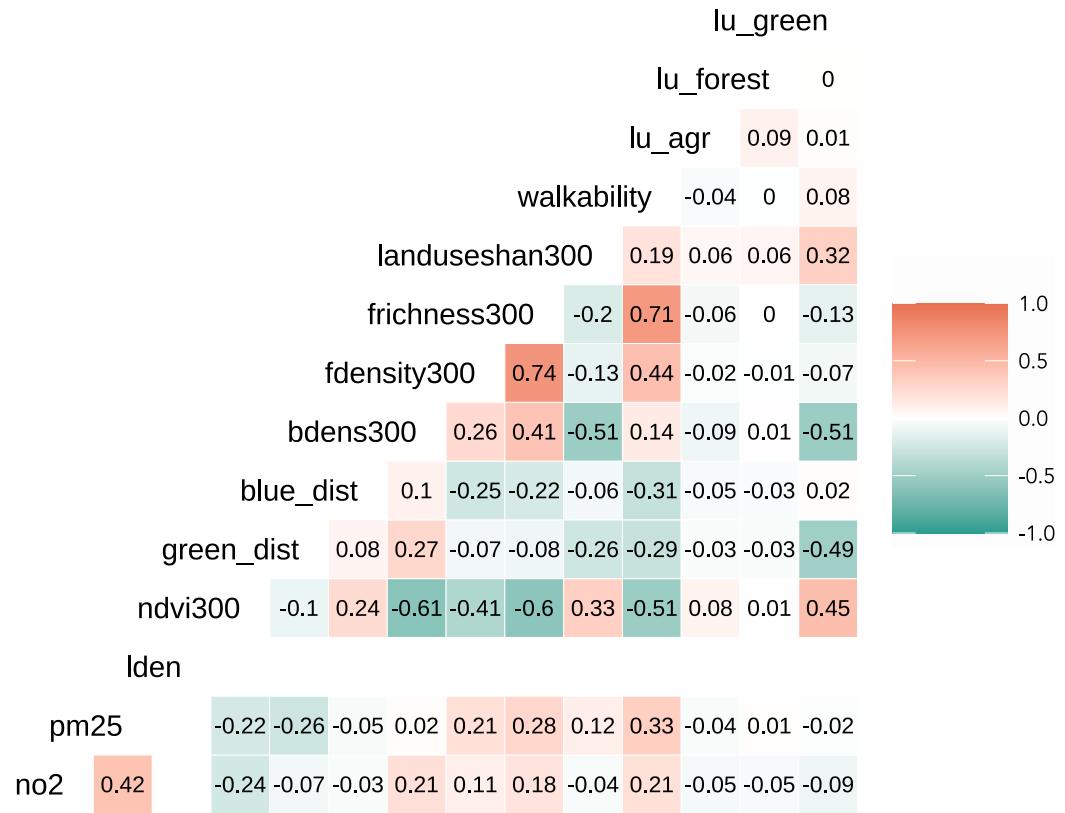
3 Correlations between exposures

To avoid overload I have just plotted correlations between the pregnancy exposures.

3.1 ALSPAC

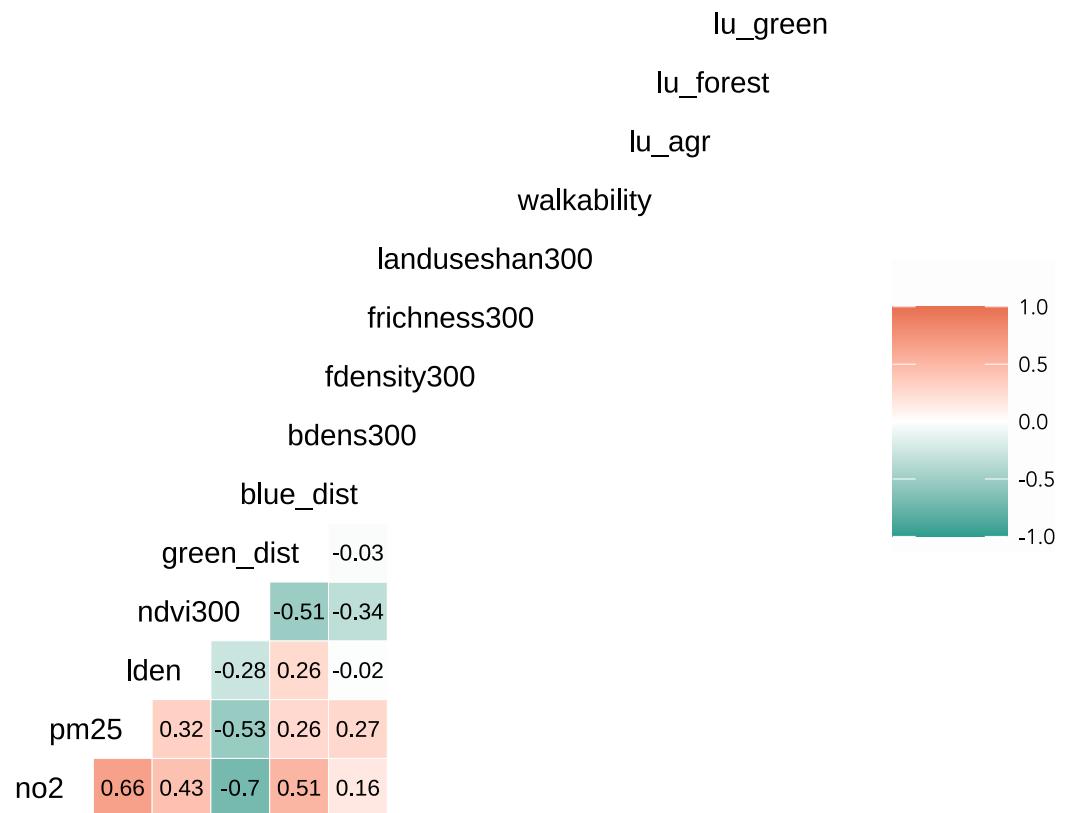


3.2 EDEN

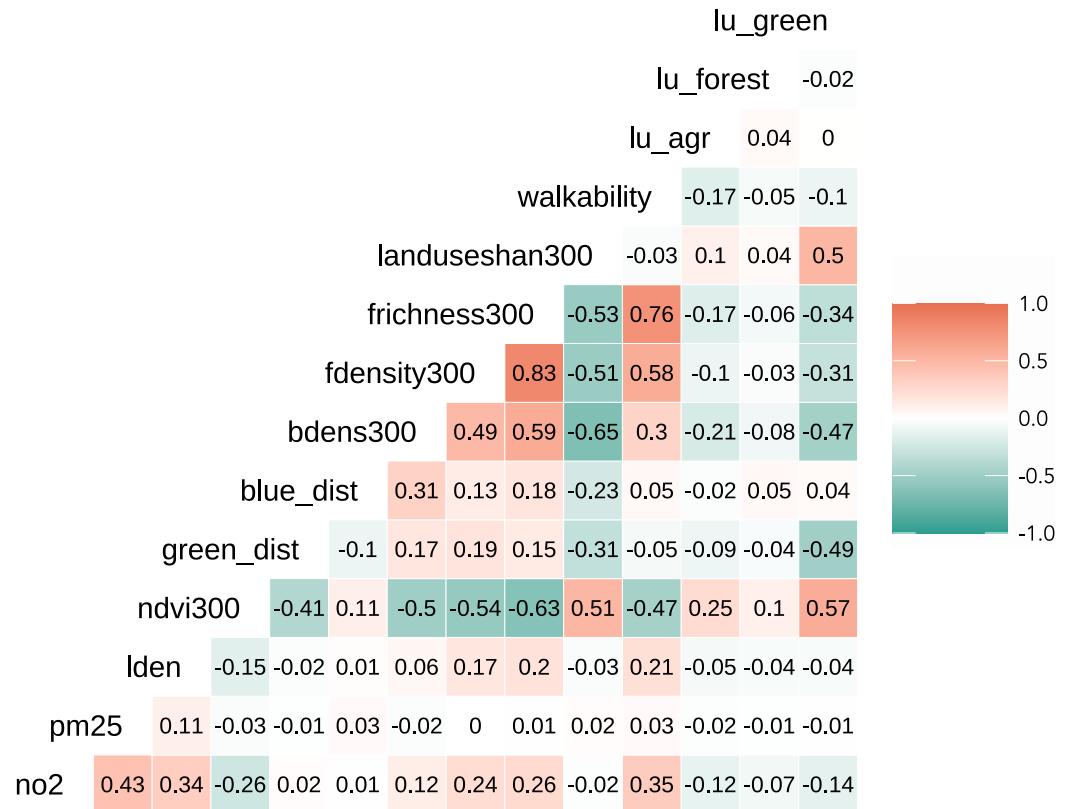


3.3 INMA

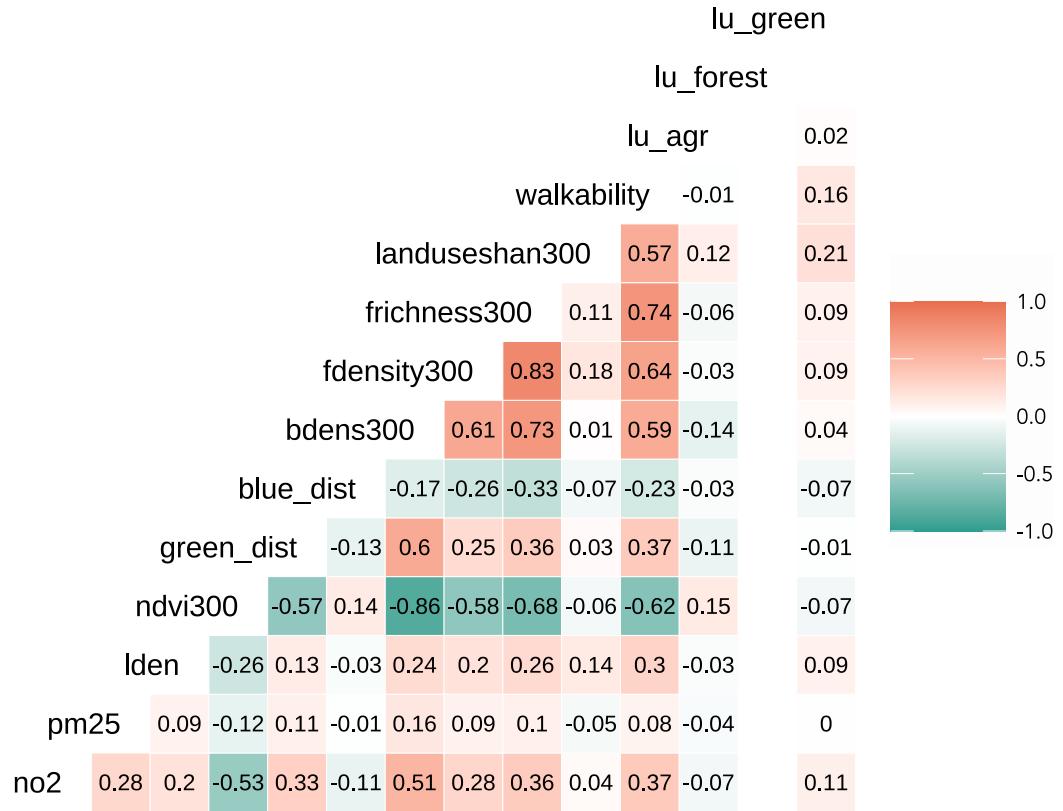
See above - waiting on built environment data.



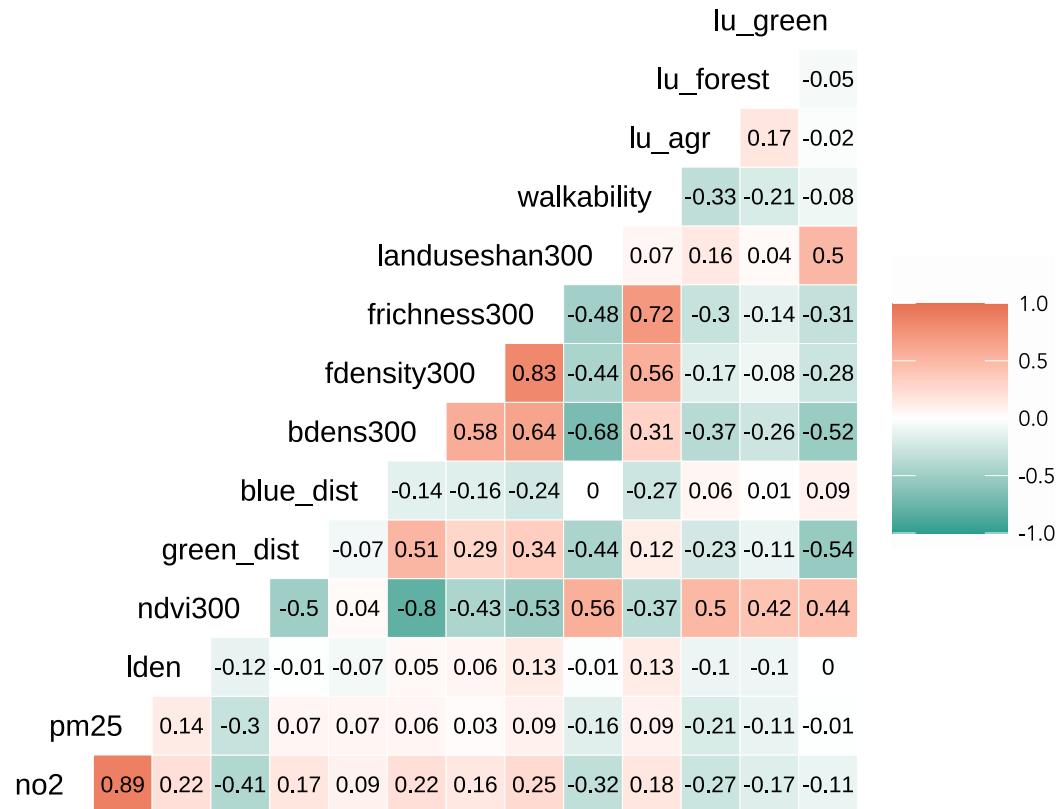
3.4 GEN-R



3.5 MoBa

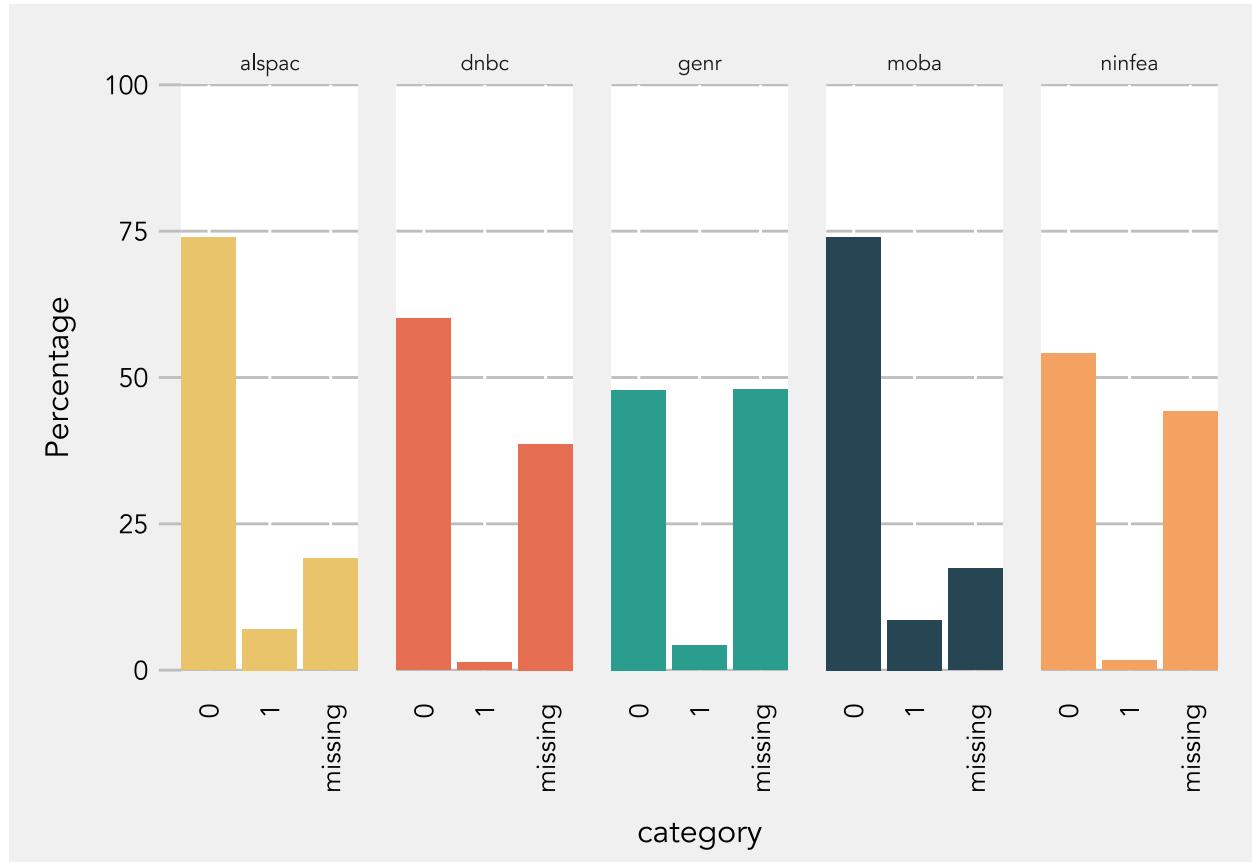


3.6 NINFEA



4 Descriptive statistics for outcome

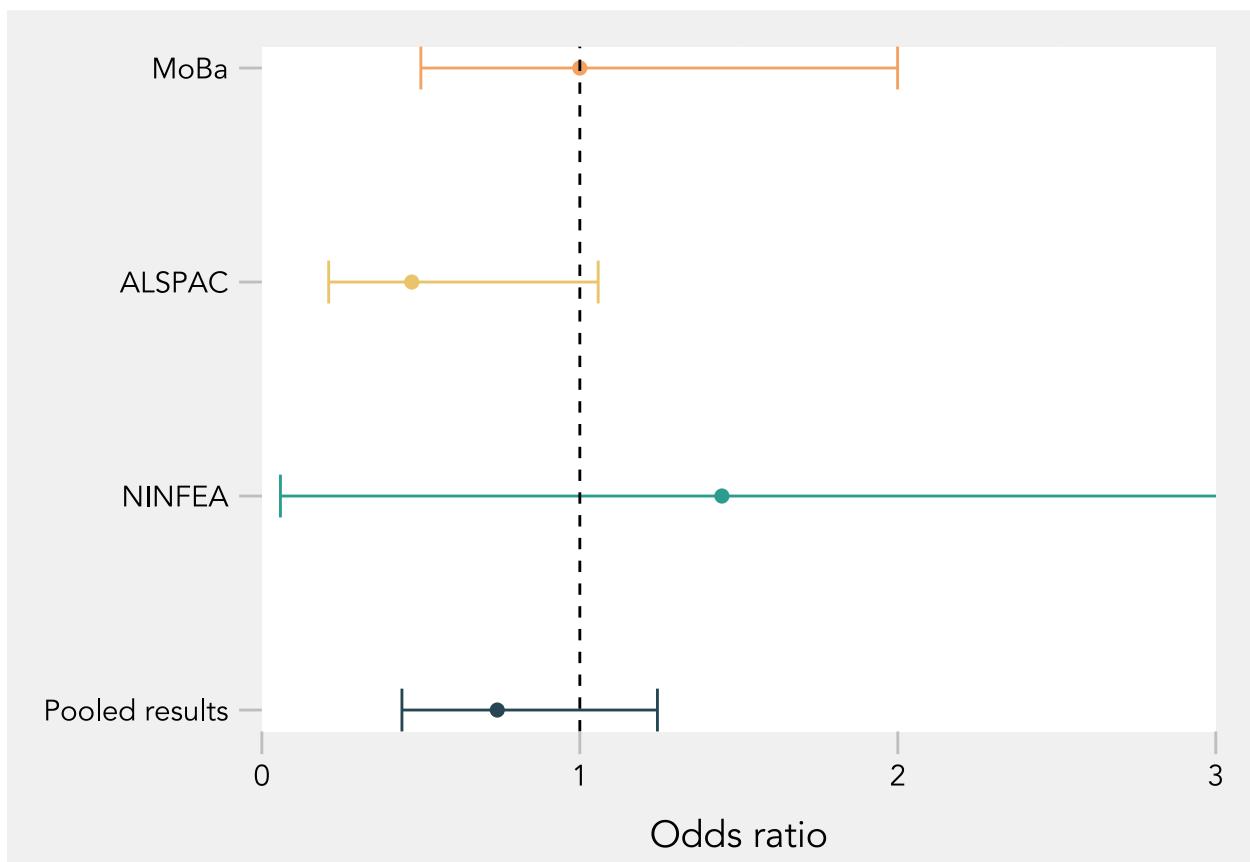
Here are the frequencies for postnatal depression. We need discuss how to code this for DNBC.



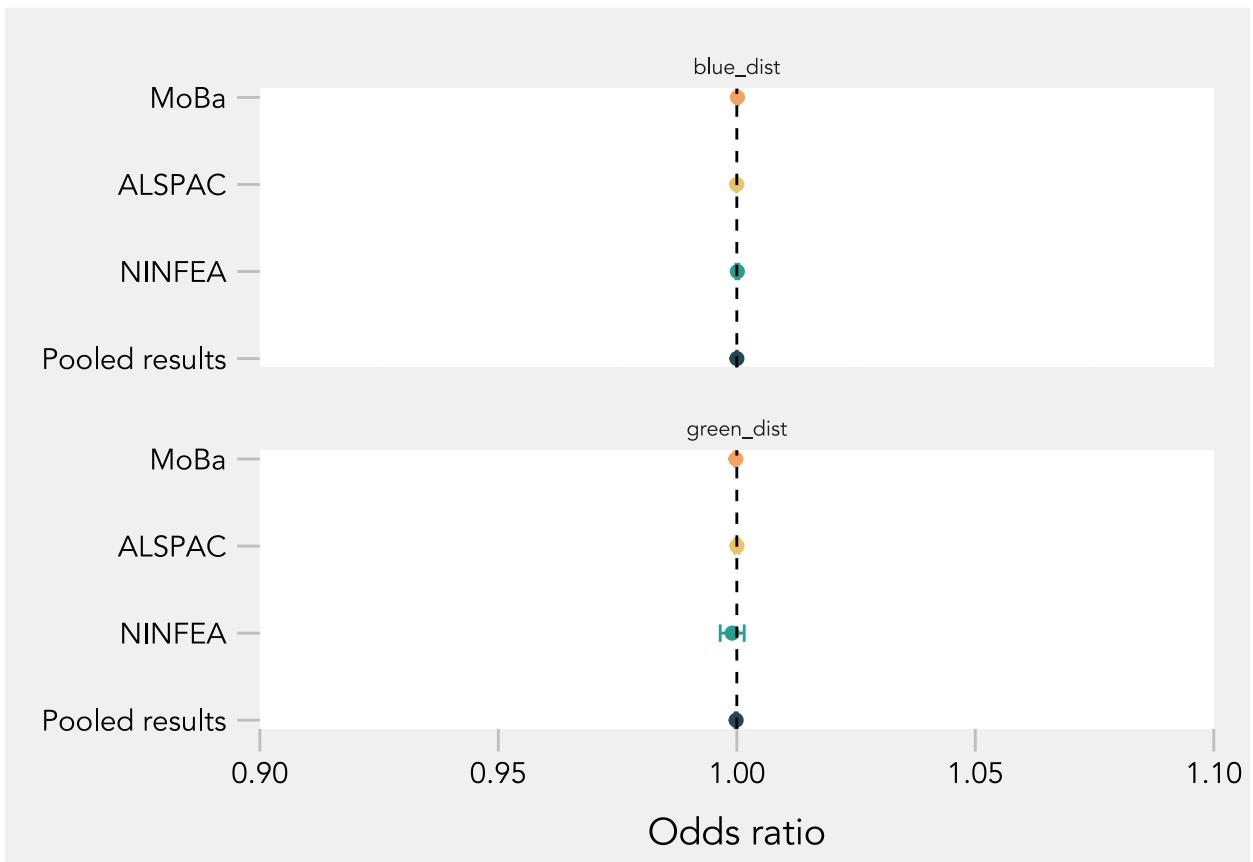
5 Single exposure - outcome associations

For most exposures there is very little evidence of an association. However some evidence for a small negative association between NDVI and postnatal depression, and a small positive association between PM2.5 and PND. However these are unadjusted models so will likely attenuate.

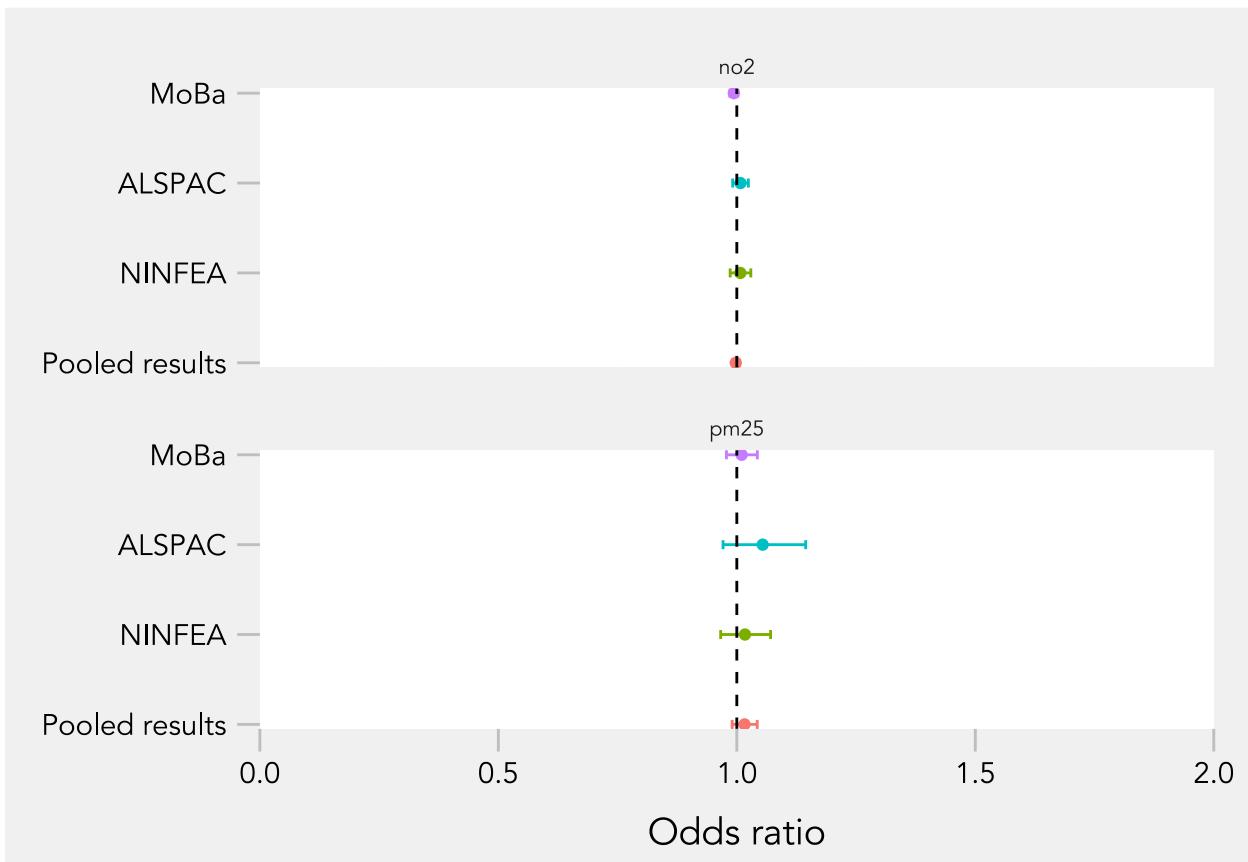
5.1 NDVI



5.2 Distance to natural spaces



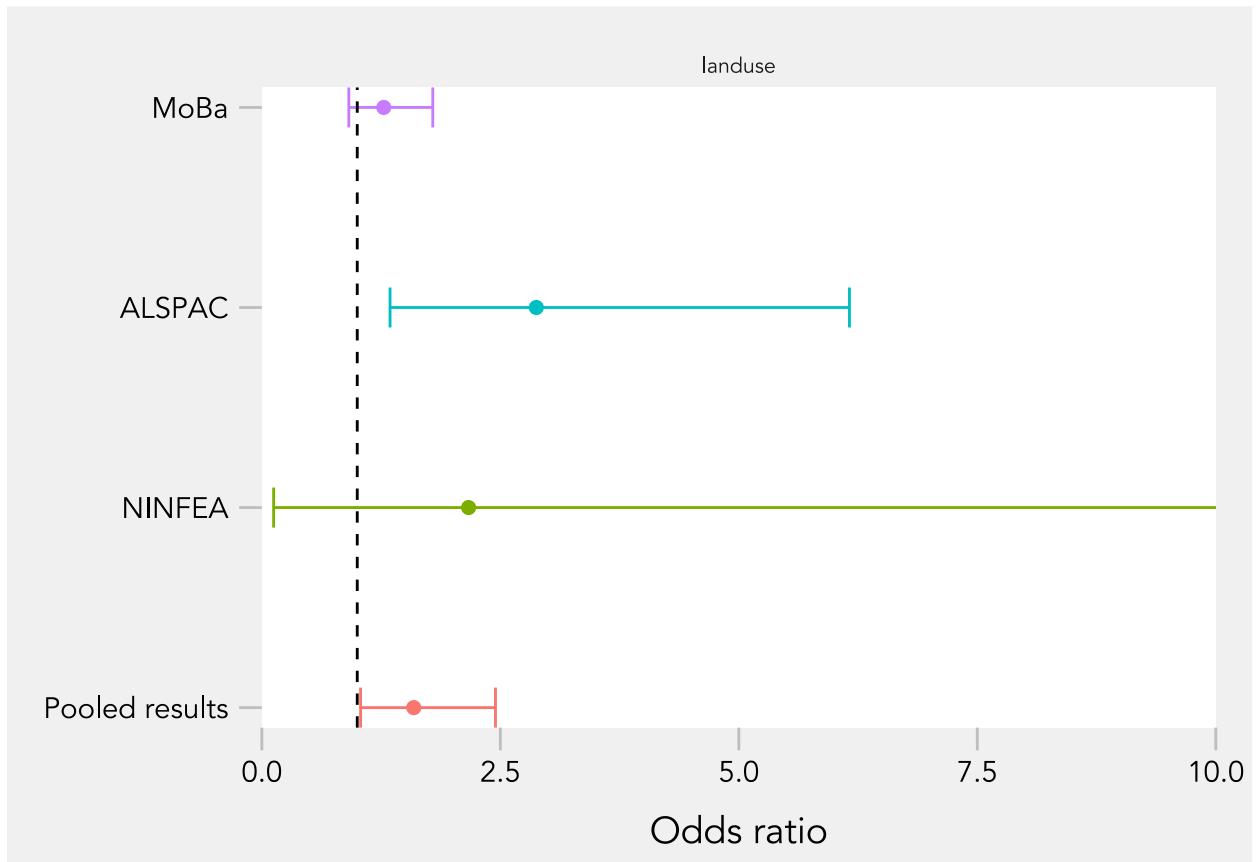
5.3 Pollution



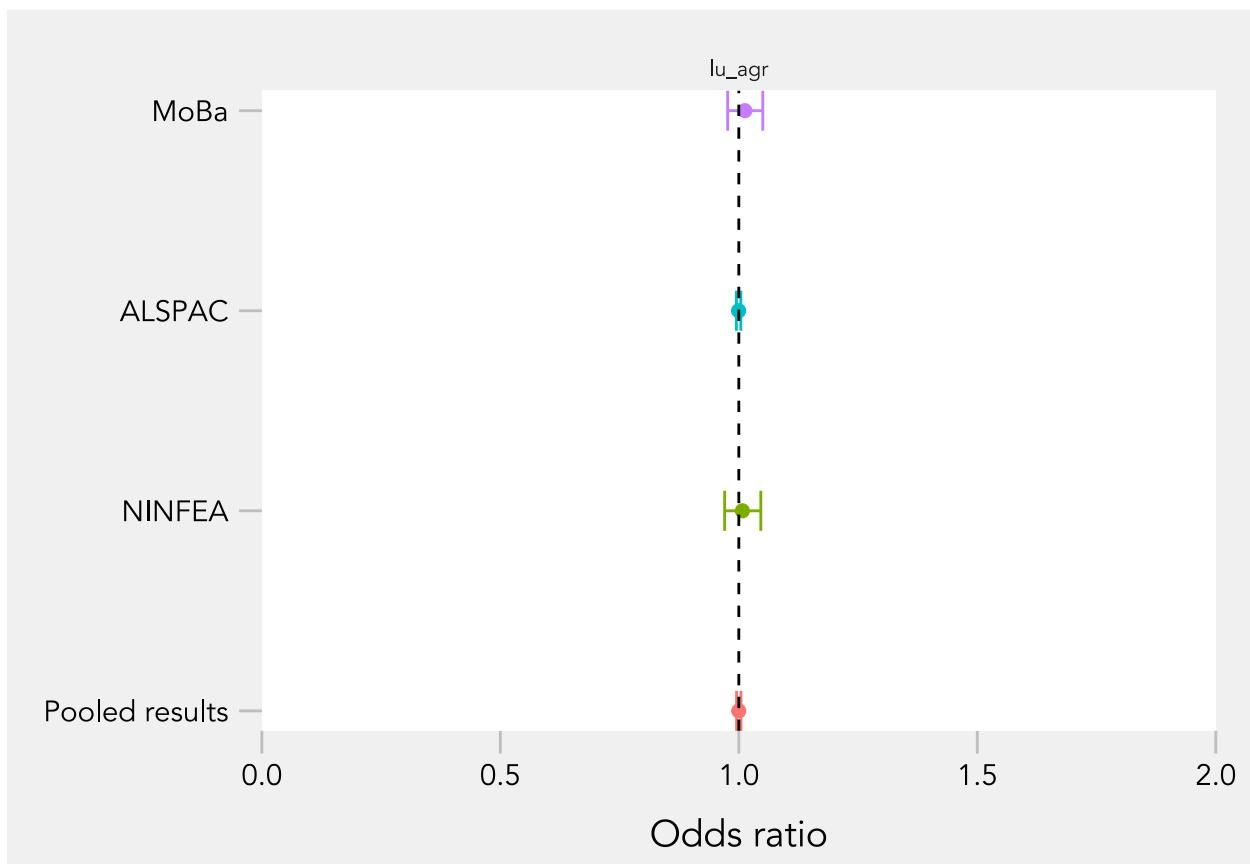
5.4 Noise

Will add this.

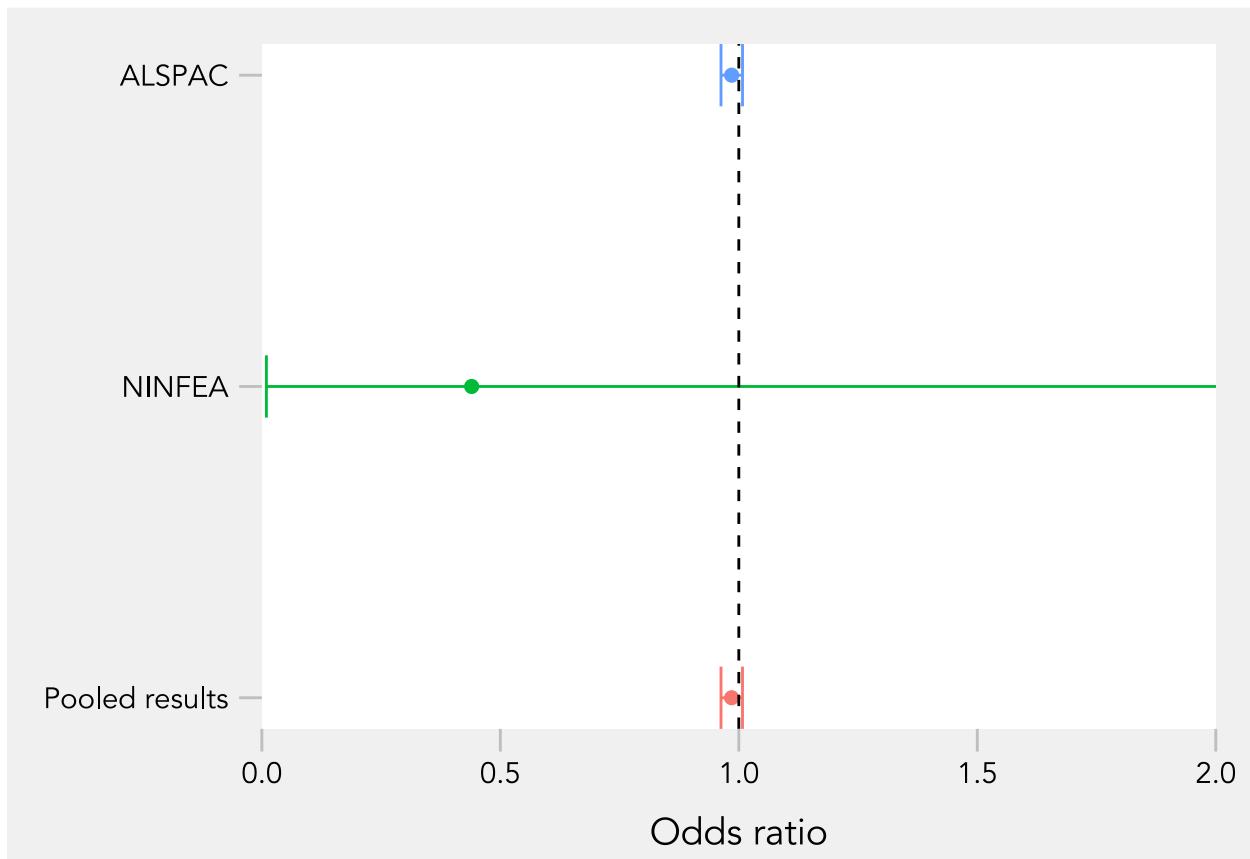
5.5 Land use index



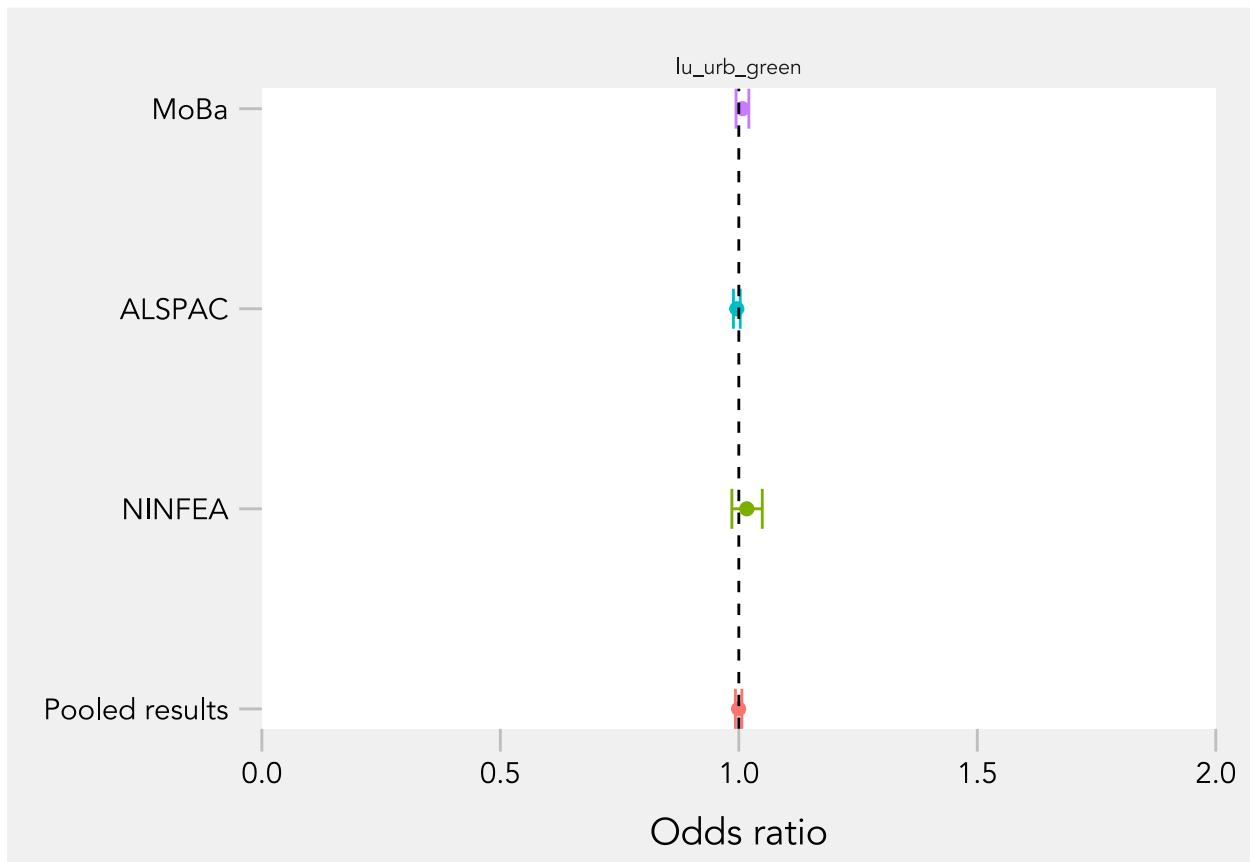
5.6 Agricultural land use



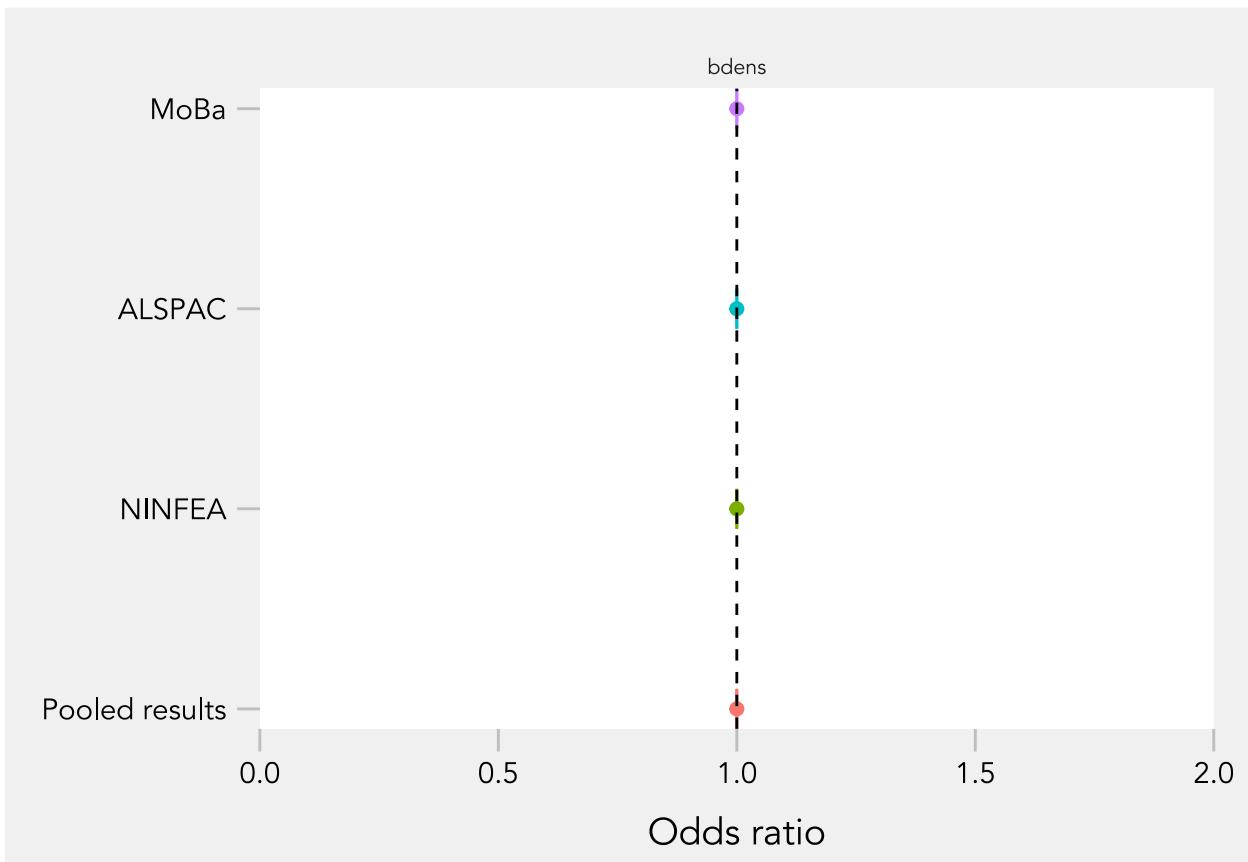
5.7 Forest land use



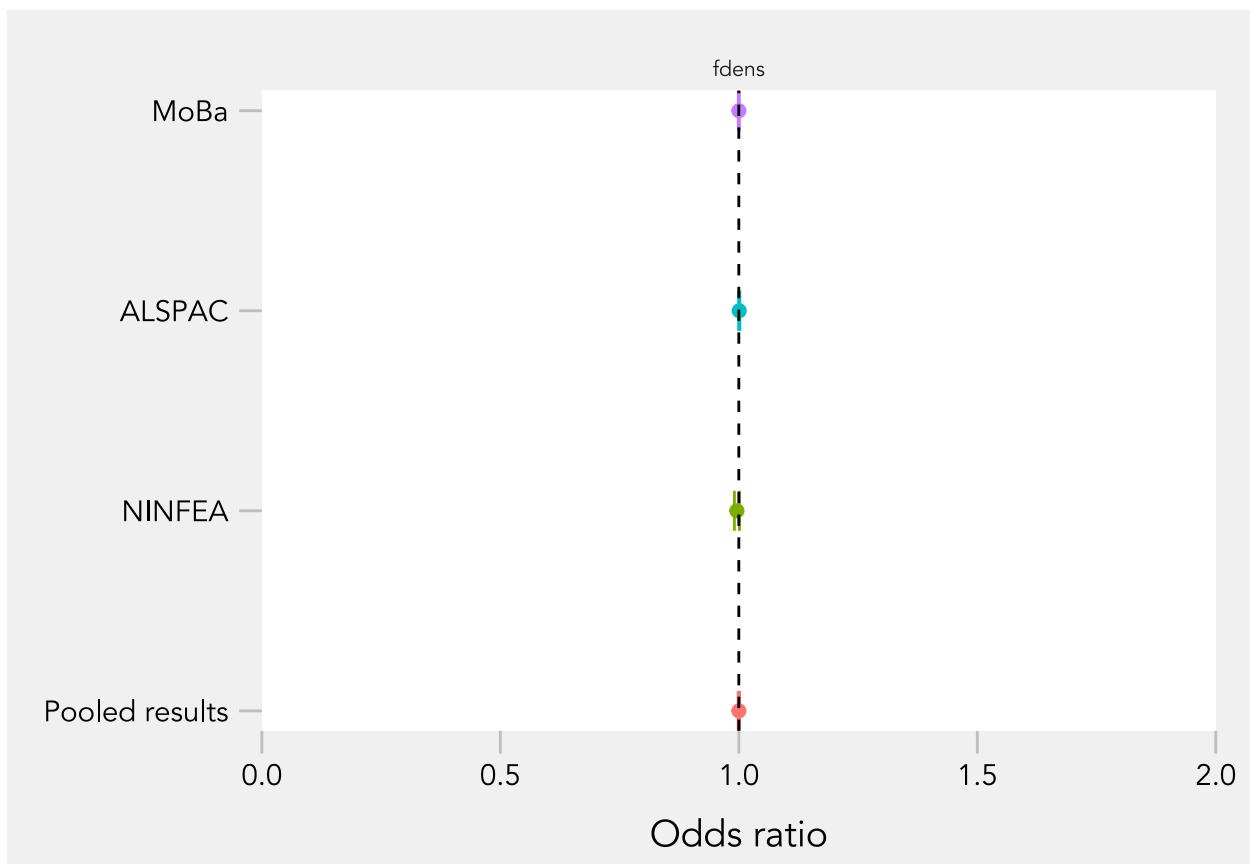
5.8 Urban green land use



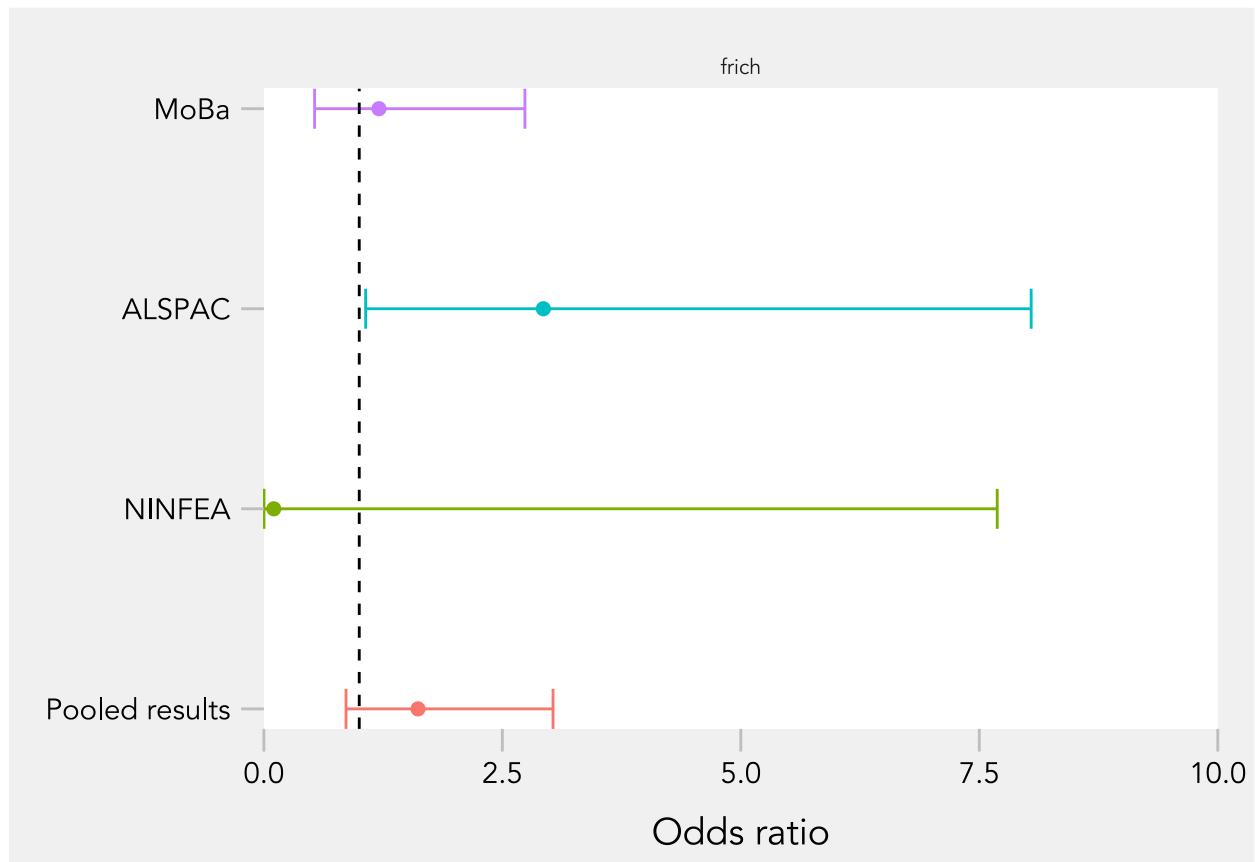
5.9 Building density



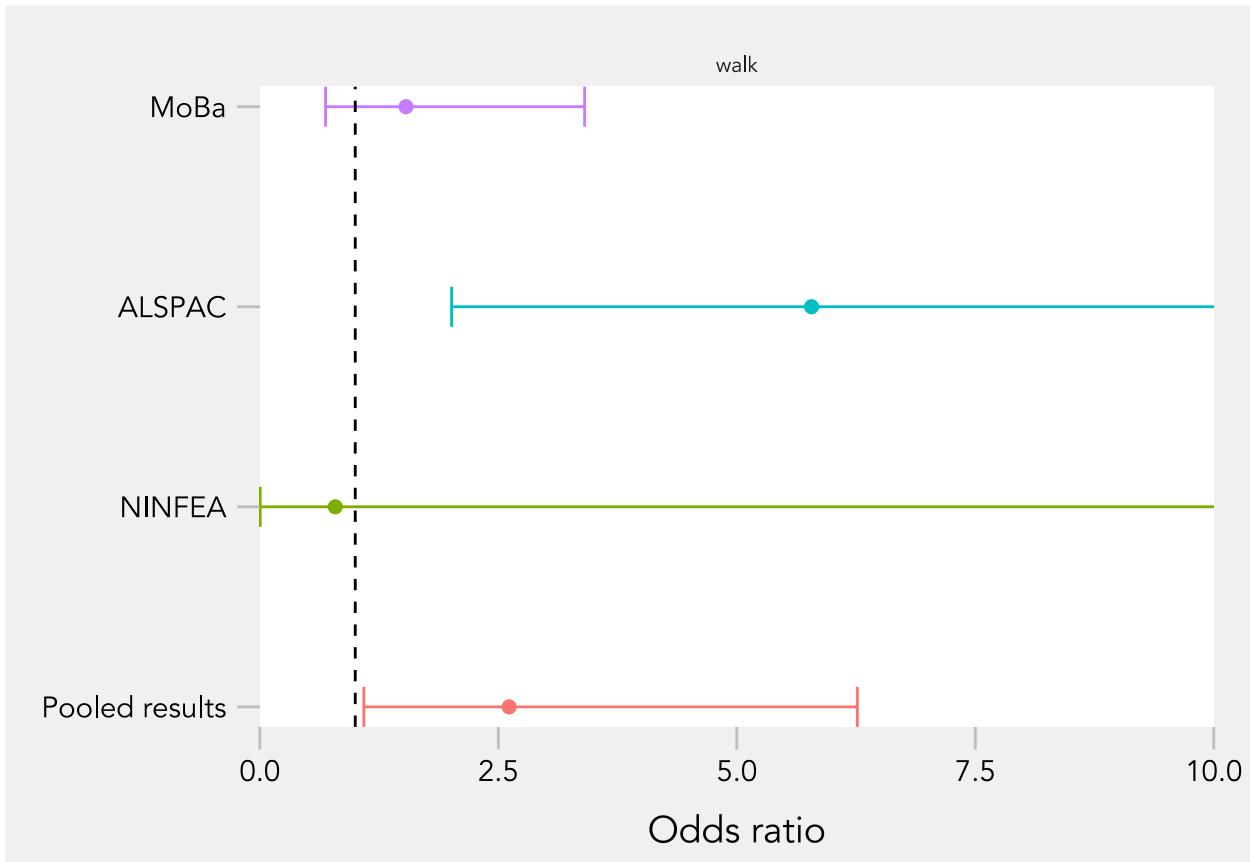
5.10 Facility density



5.11 Facility richness



5.12 Walkability



5.13 Next steps

1. Decide how to harmonise DNBC PPD variable
2. Non-linear exposure-outcome associations
3. Meeting with IS Global collaborators
4. DAGs for each class of exposure