

Urban environment & postnatal depression: descriptive statistics

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| | |
|---|----|
| 1 Overview | 2 |
| 2 Natural spaces | 2 |
| 3 Air pollution | 5 |
| 4 Road traffic noise | 7 |
| 5 Land use | 8 |
| 6 Correlations between exposures | 15 |
| 7 Postnatal depression | 21 |
| 8 Queries / discussion | 21 |

1 Overview

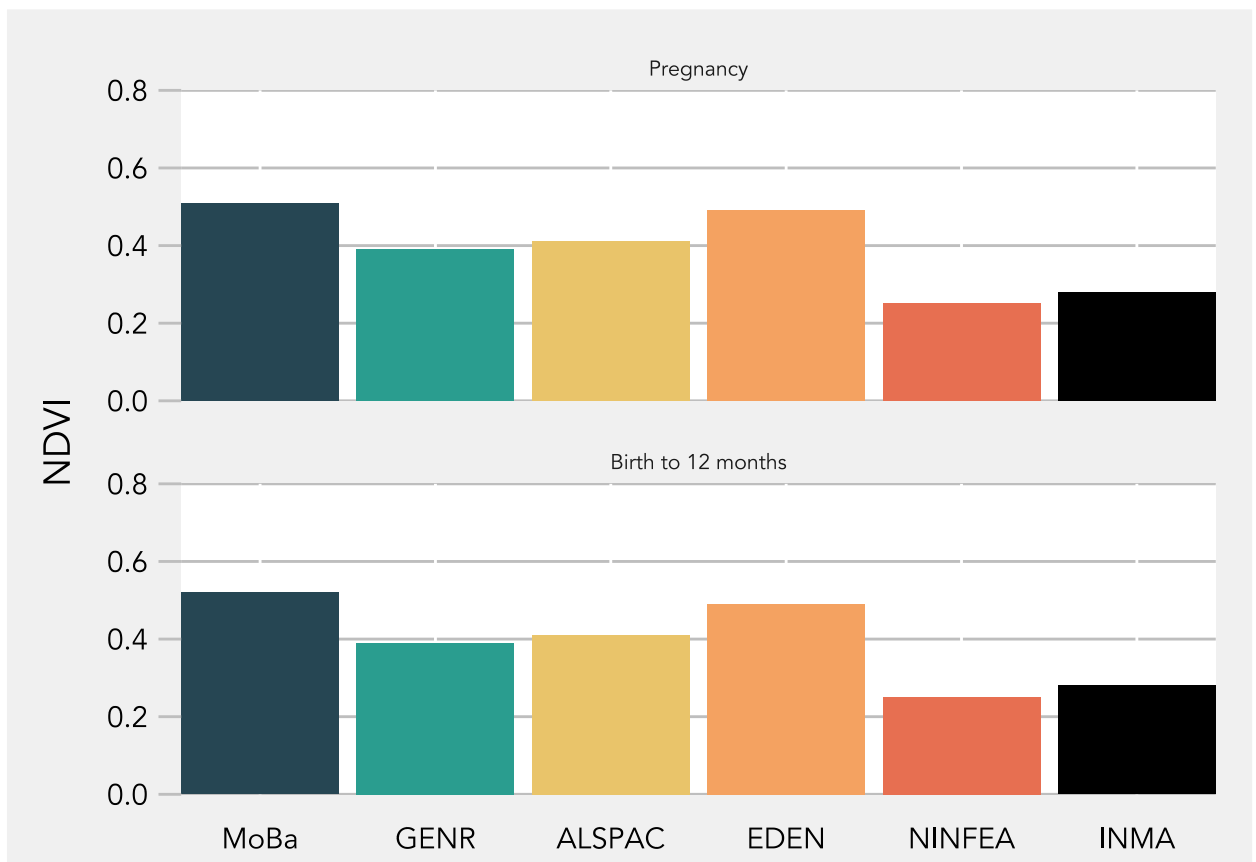
I've put together some basic plots of each environmental exposure and also the postnatal depression outcome. I've split the environmental exposures into two time periods where available: (i) pregnancy, (ii) birth - 12 months. You'll see from the descriptives there is very little differences in values across the two time periods.

I've also shown the the correlations between environmental variables.

Luise is still working on the DNBC environmental data - she's encountered some issues with the upload that she's working with Sido to fix.

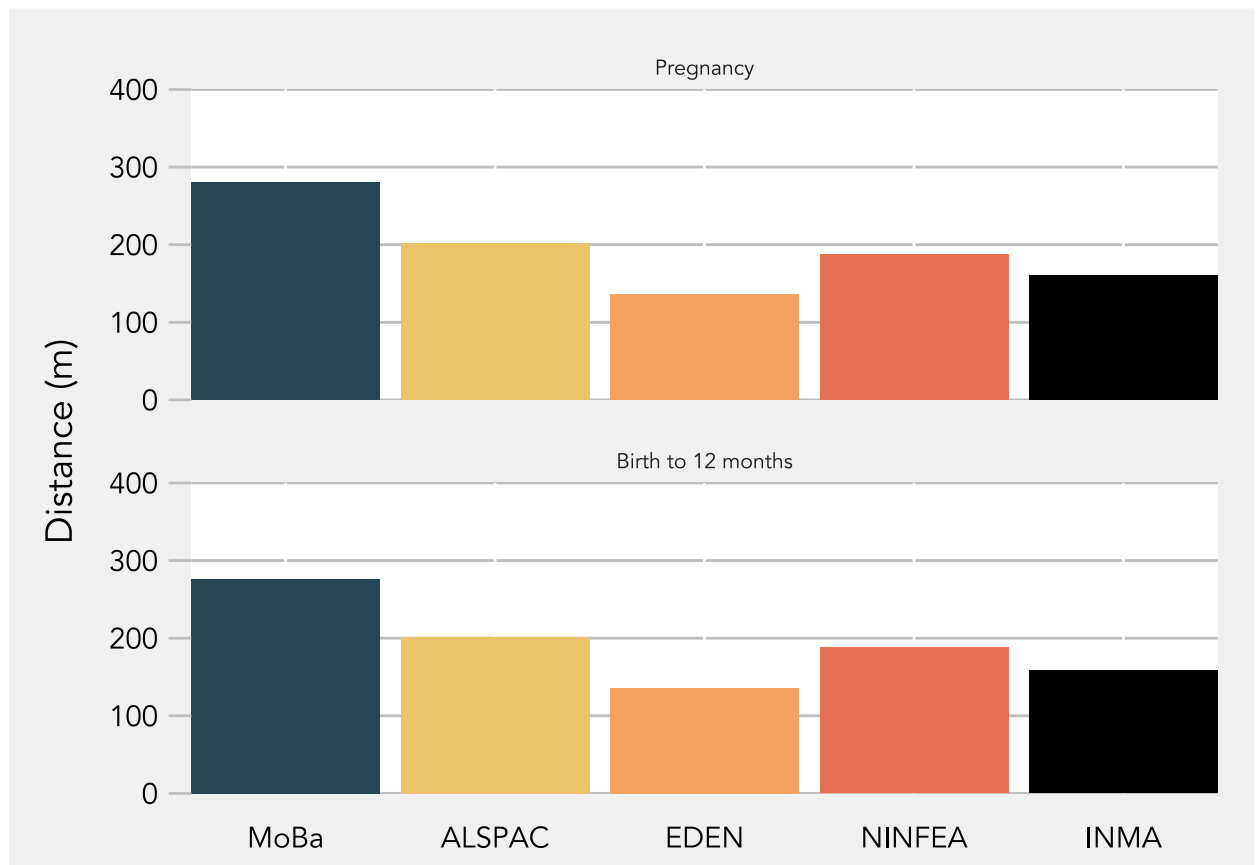
2 Natural spaces

2.1 NDVI (300m buffer)



2.2 Distance to nearest green spaces > 5000m²

There's definitely something wrong with GEN-R data. Here is the data for the cohorts excluding GEN-R:

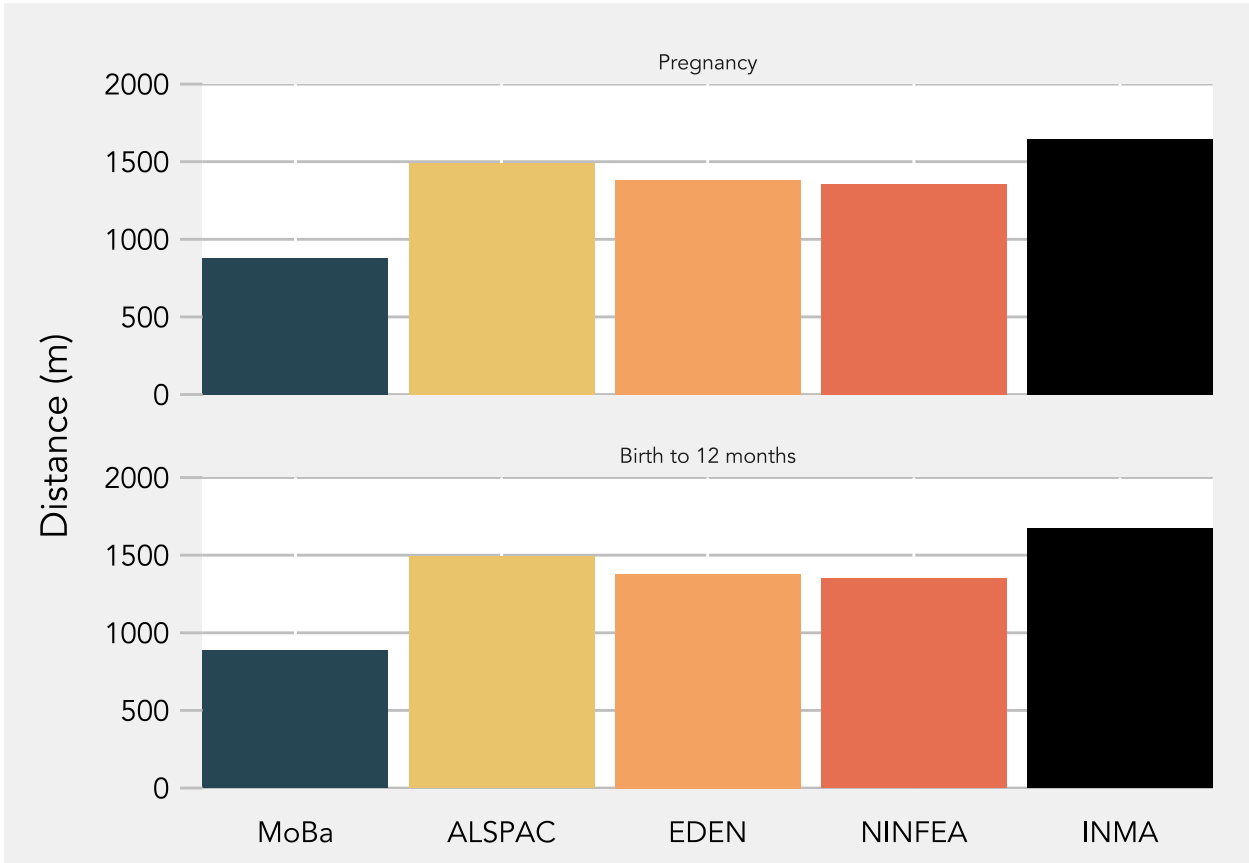


And here is GEN-R data:

| Cohort | Time | Mean | Std.dev |
|--------|--------------------|-----------|-----------|
| genr | Birth to 12 months | 191420159 | 216171462 |
| | Pregnancy | 185821138 | 164552042 |

2.3 Distance to nearest blue spaces > 5000m²

Again, something not right with GEN-R data...

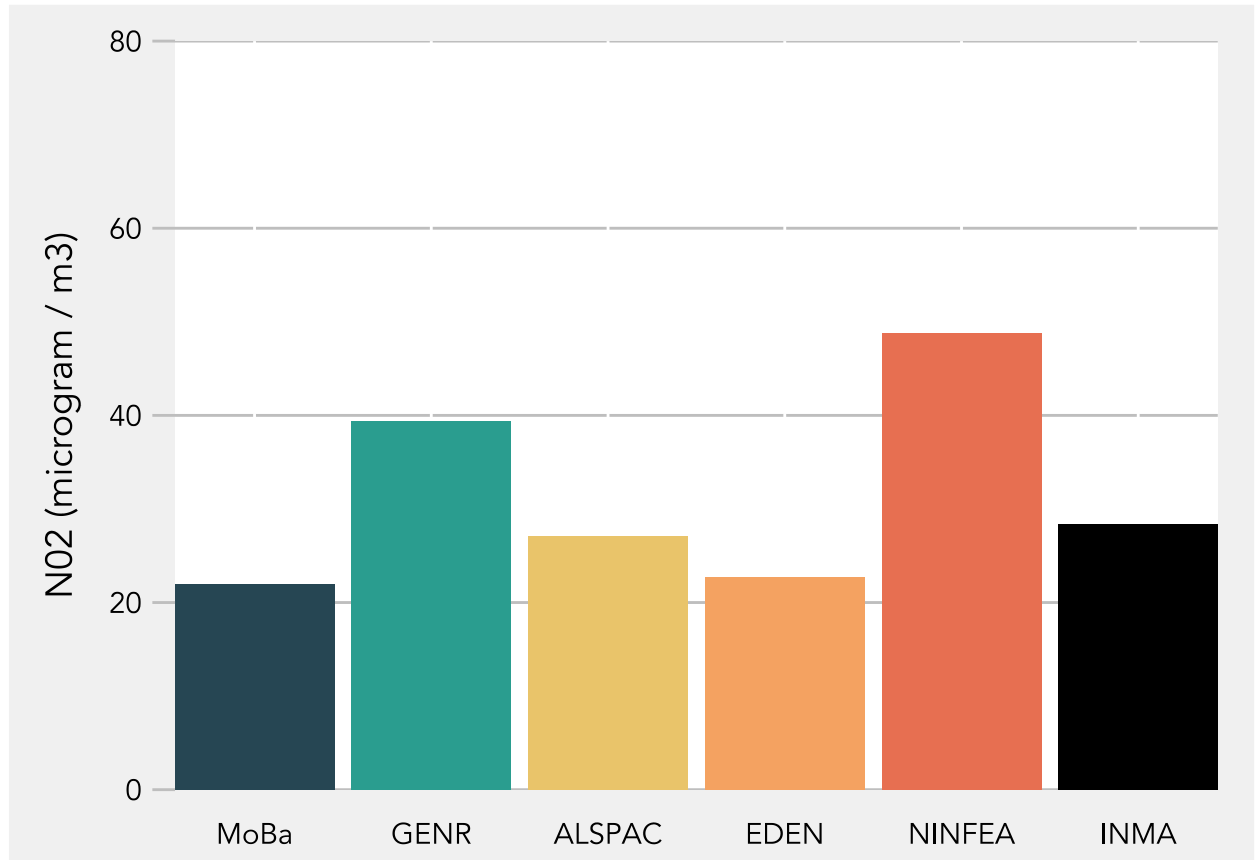


| Cohort | Time | Mean | Std.dev |
|--------|--------------------|-----------|-----------|
| genr | Birth to 12 months | 318851858 | 361375863 |
| | Pregnancy | 308149539 | 263917518 |

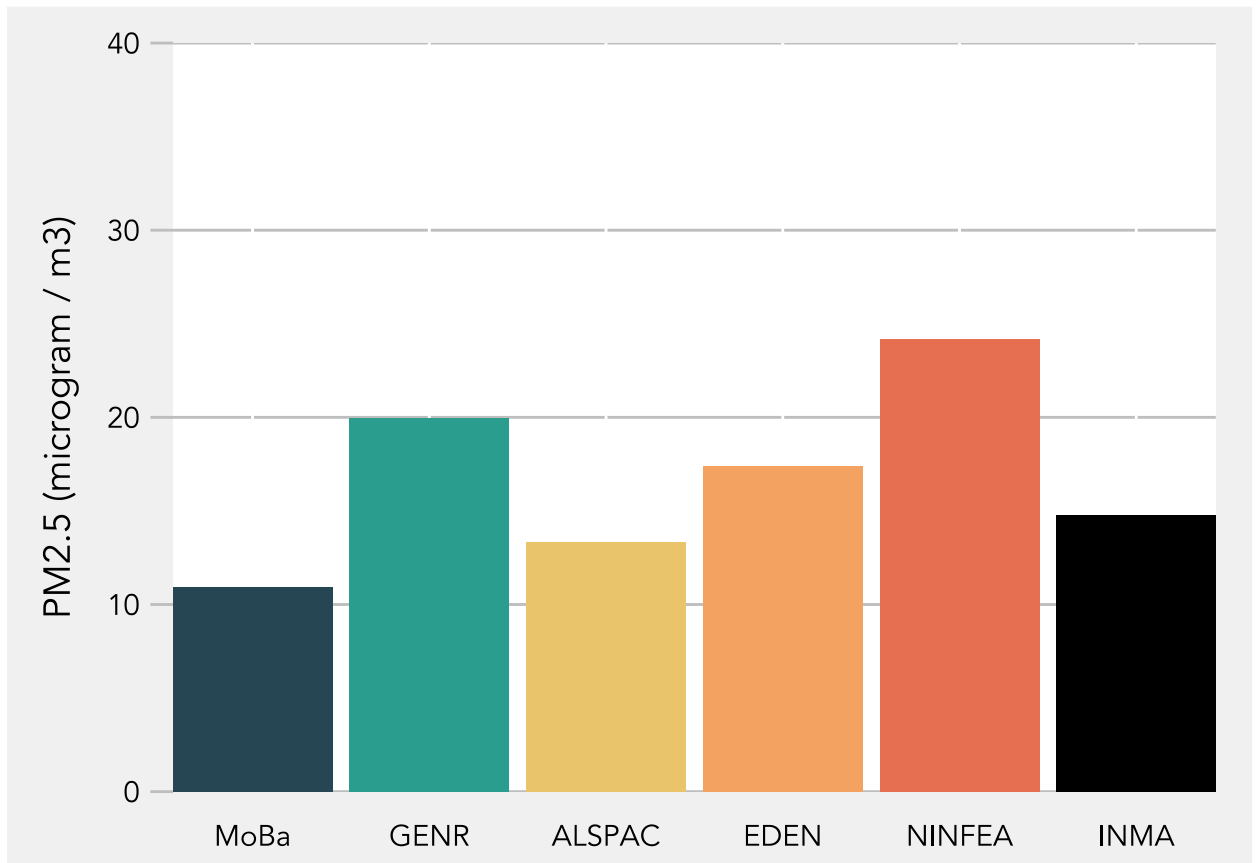
3 Air pollution

There only appears to be pregnancy data - do you think this is correct?

3.1 Mean NO₂ in pregnancy



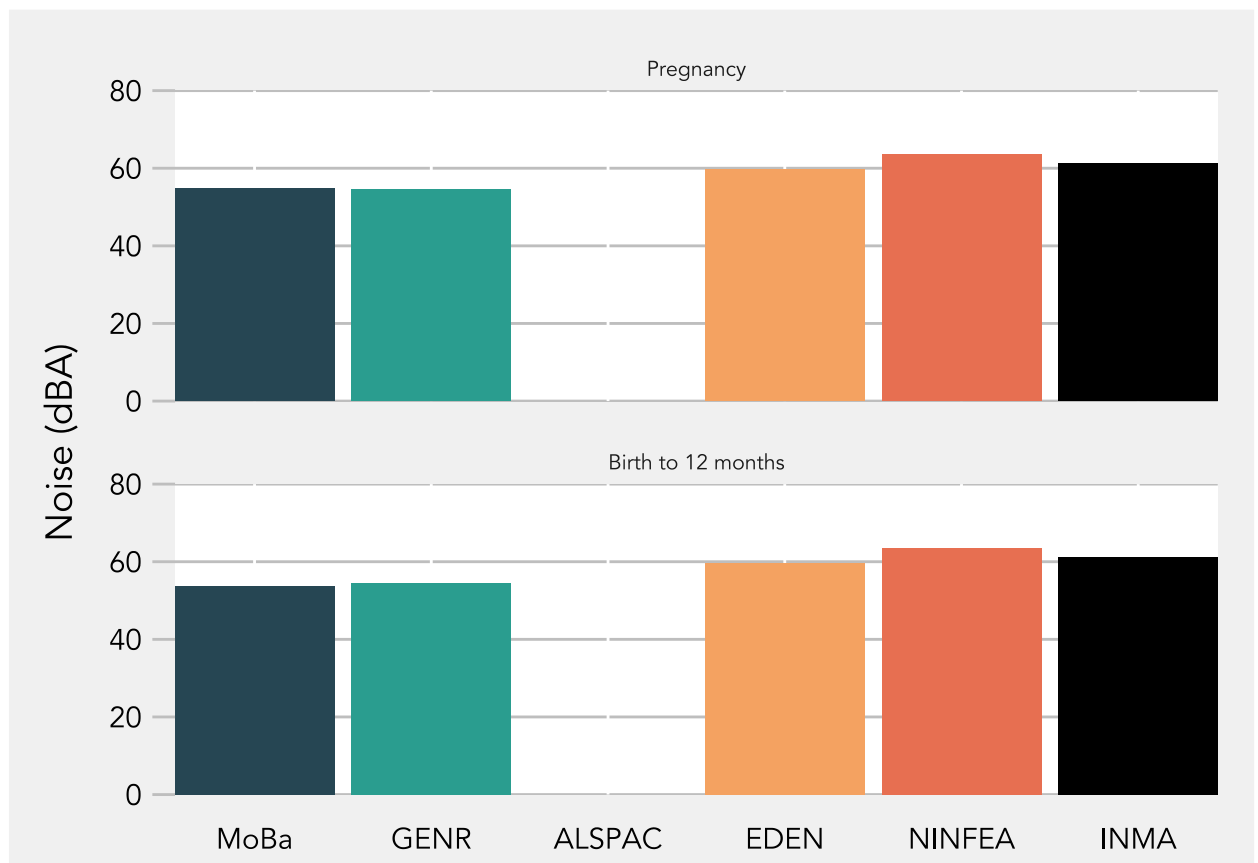
3.2 Mean PM_{2.5} in pregnancy



4 Road traffic noise

4.1 Mean day-evening-night traffic noise

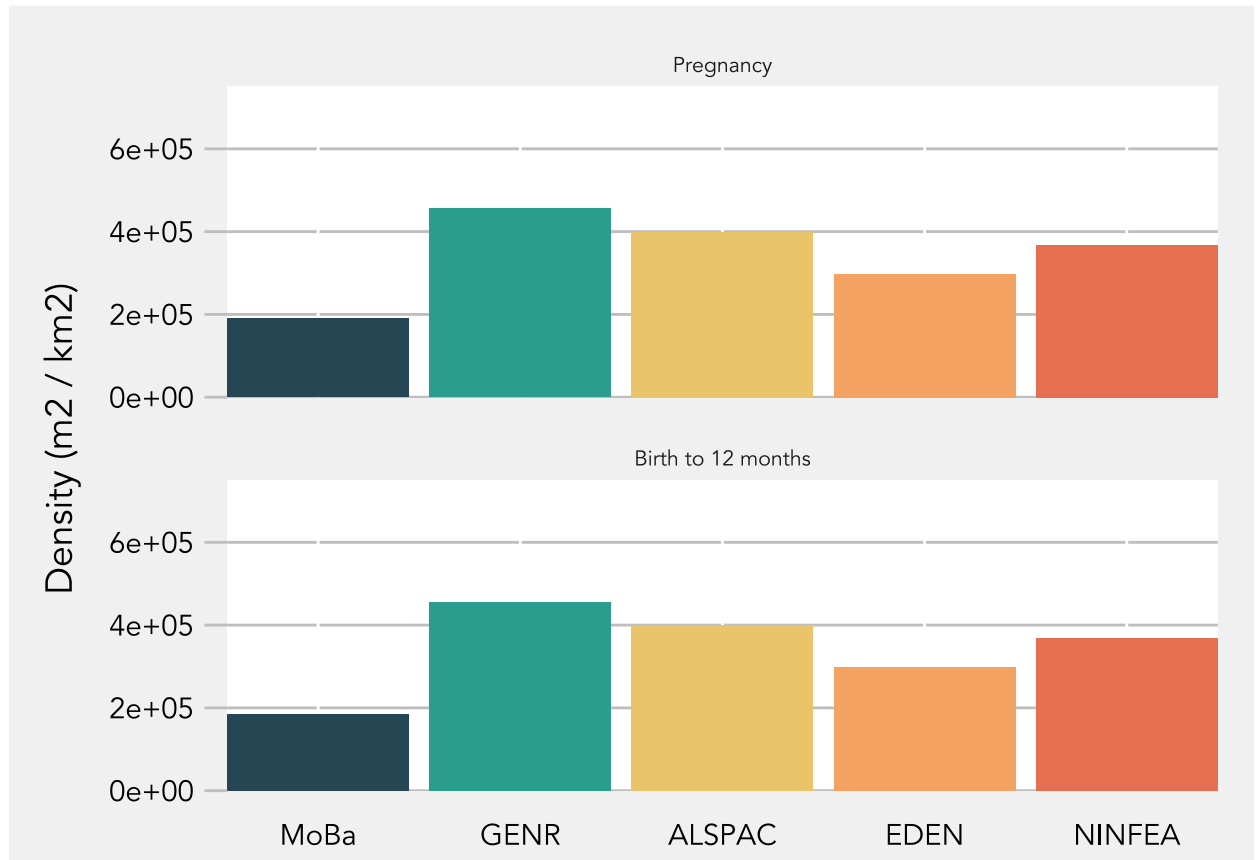
This isn't available for ALSPAC



5 Land use

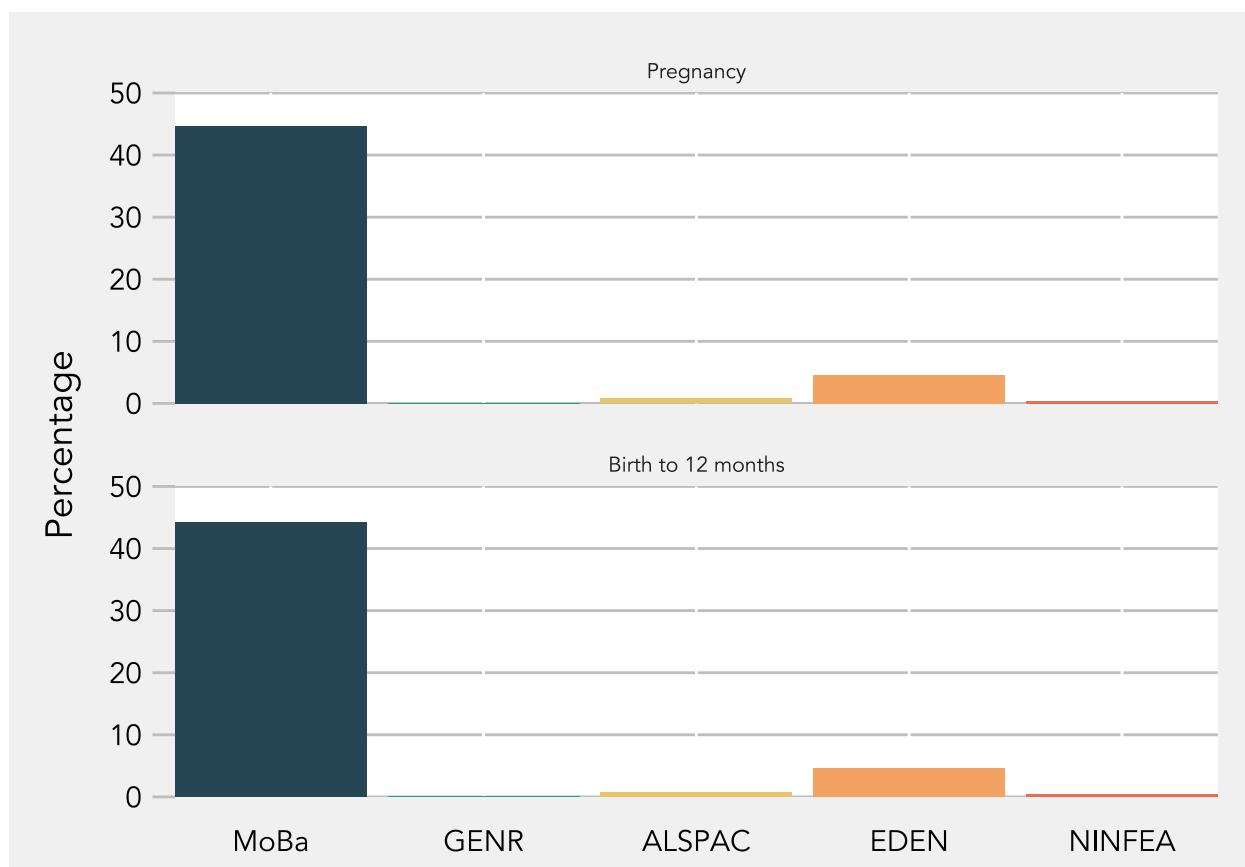
I'm waiting on the built environment variables from INMA. I had to send an additional request as they weren't included in the original application (they were suggested later by Payam)

5.1 Mean building density

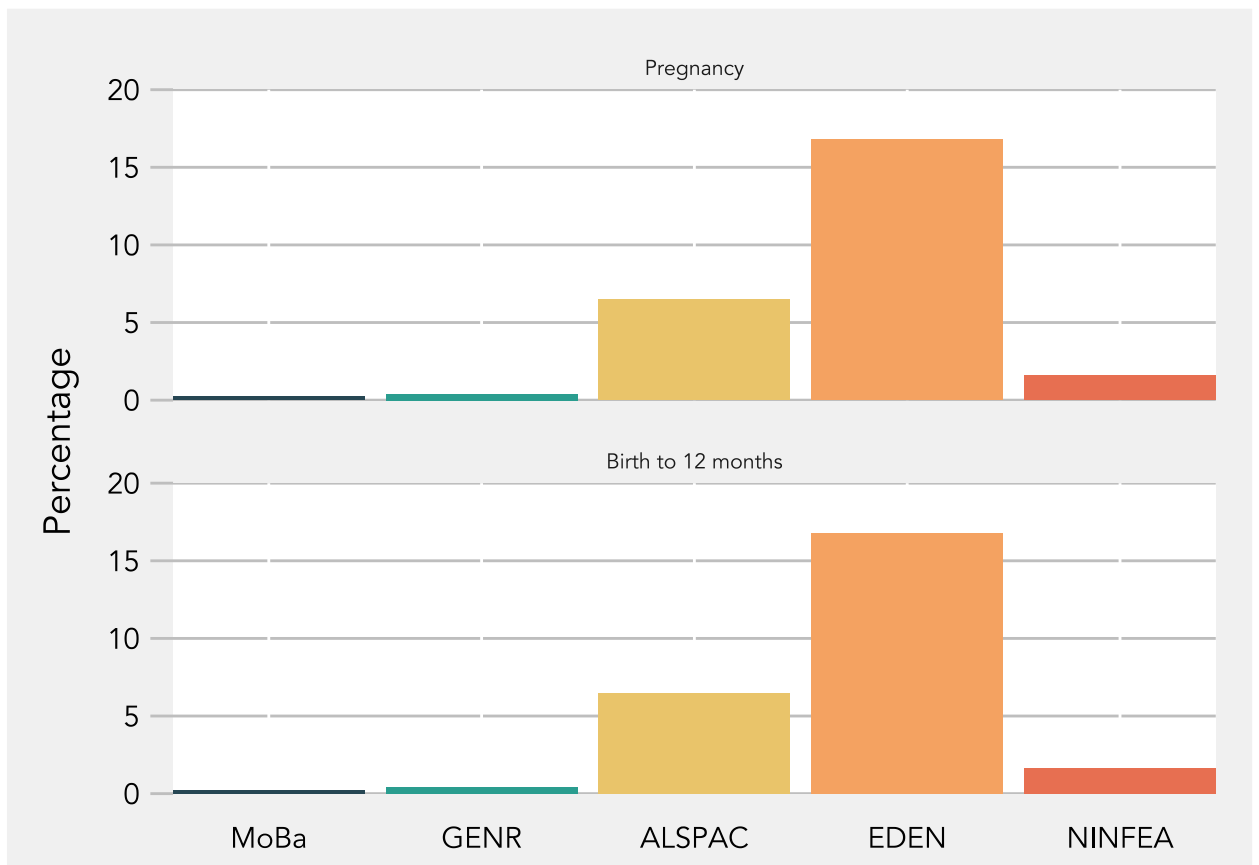


5.2 Percentage of urban green land use

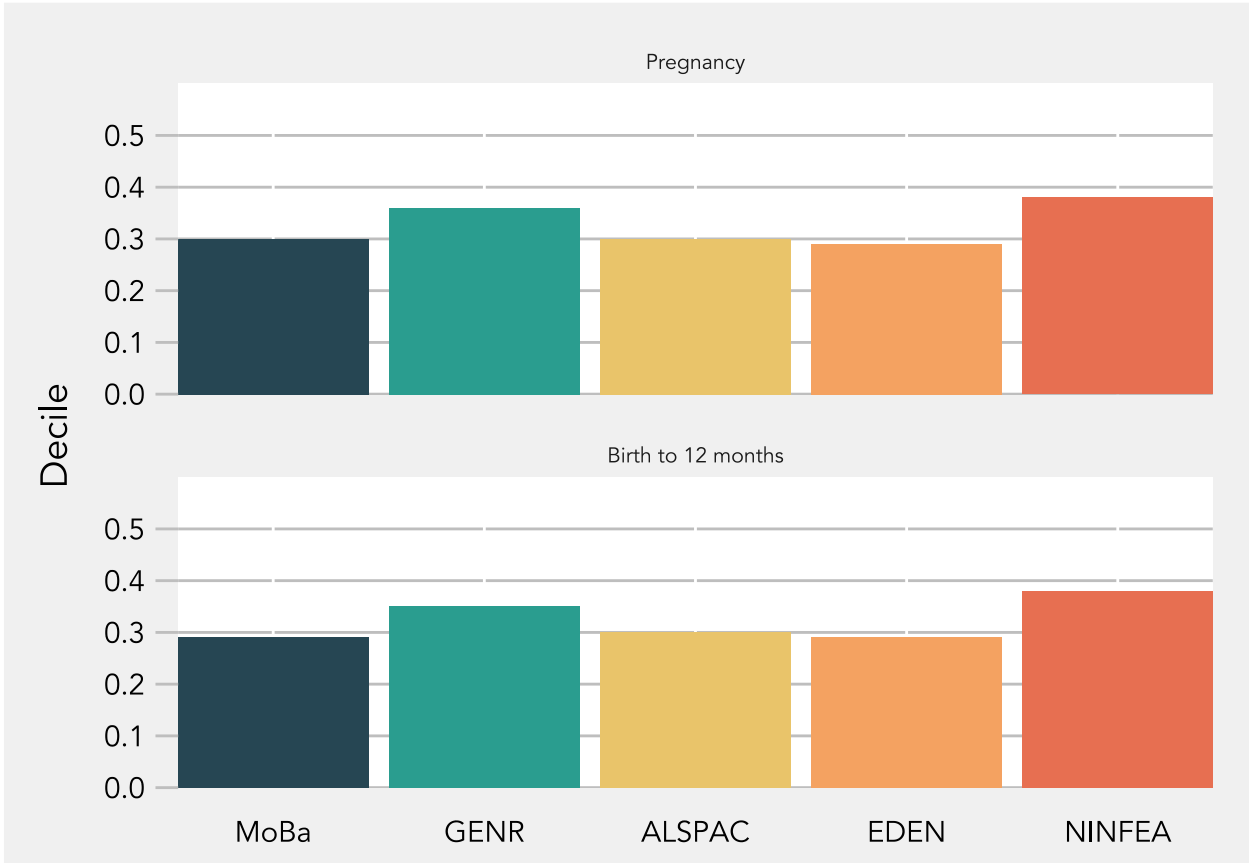
Big difference between MoBa and other cohorts - does this look like an error?



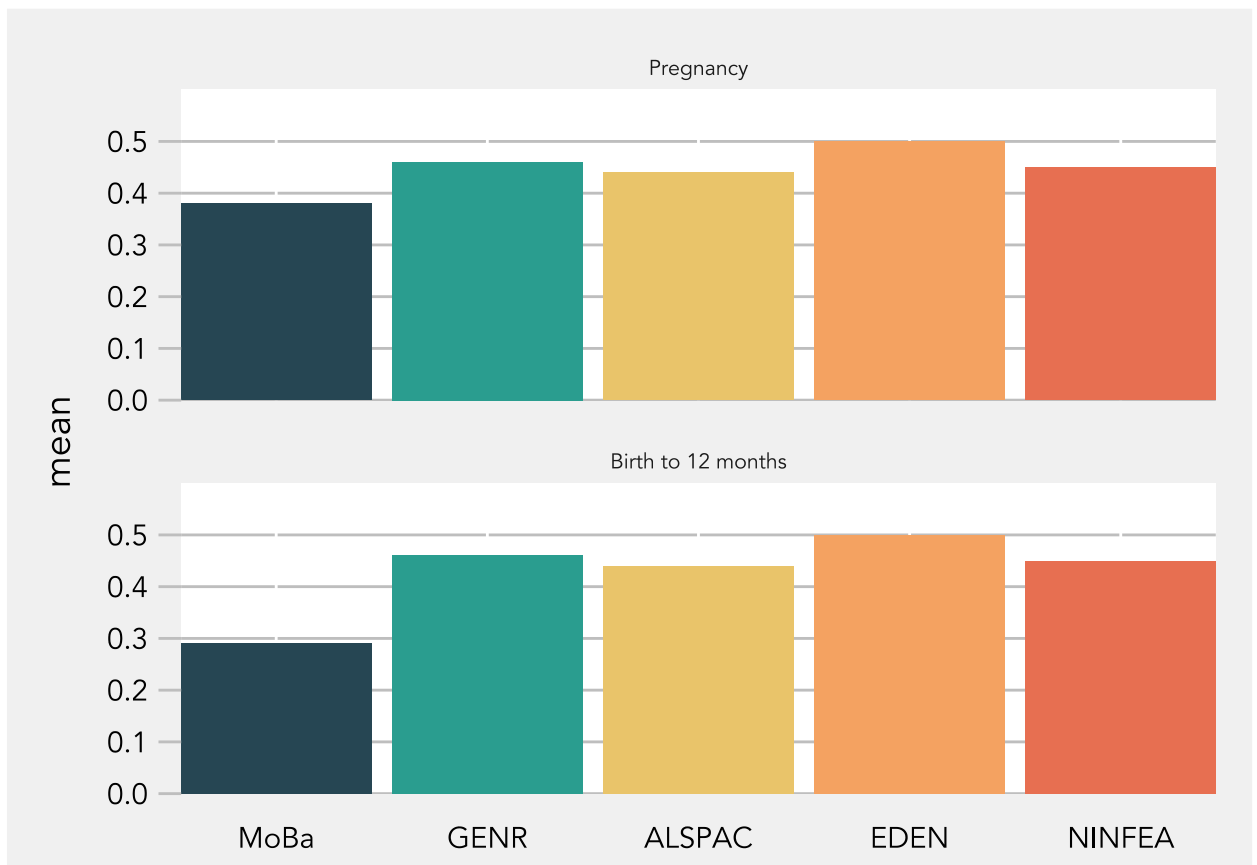
5.3 Percentage of forest land use



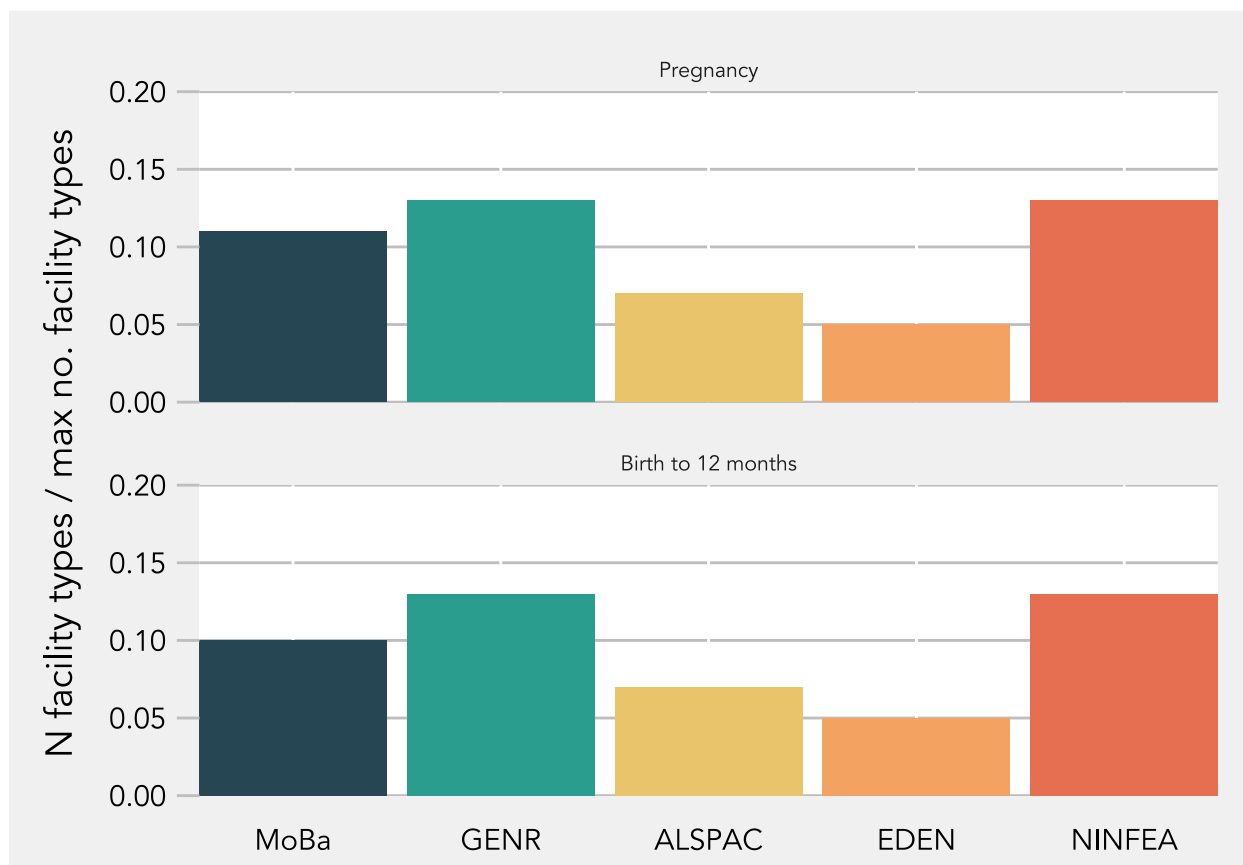
5.4 Walkability index



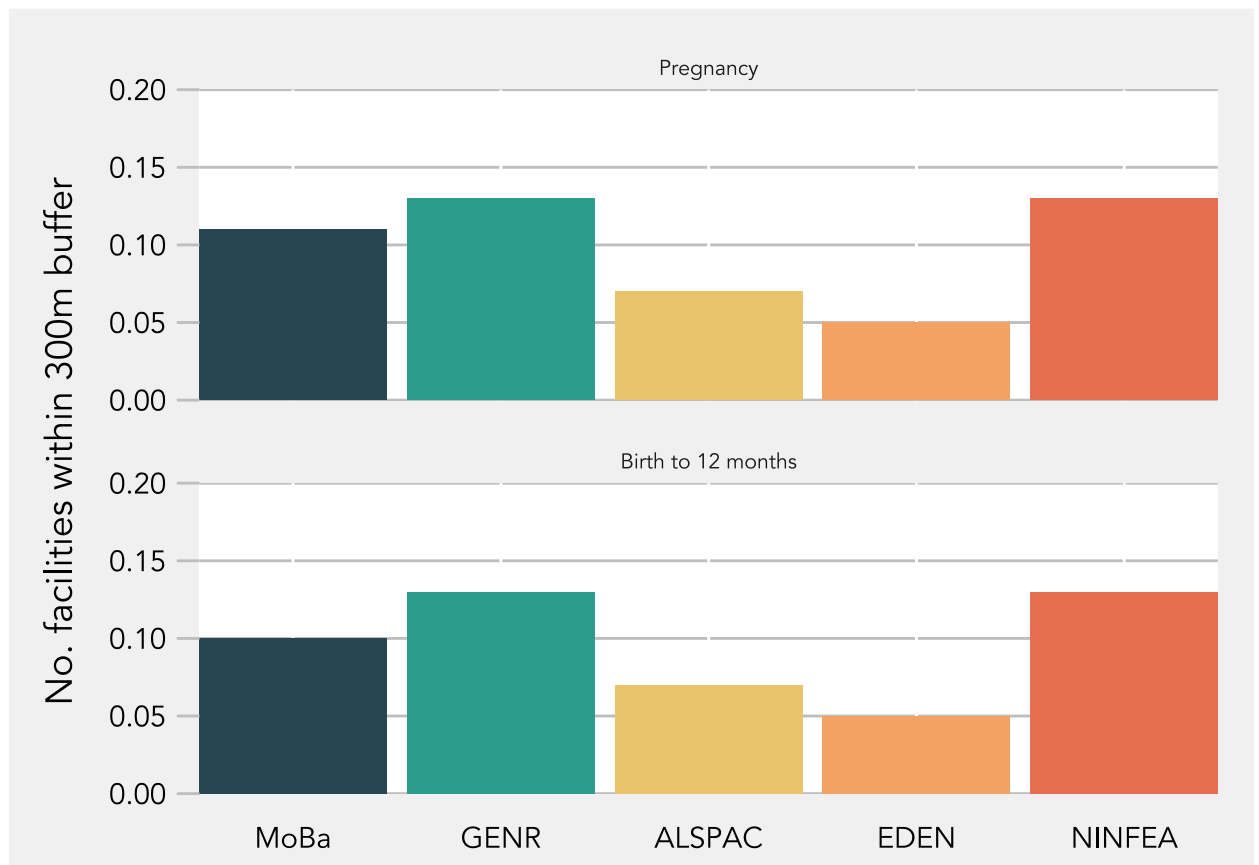
5.5 Land use (Shannon's evenness index)



5.6 Facilities richness



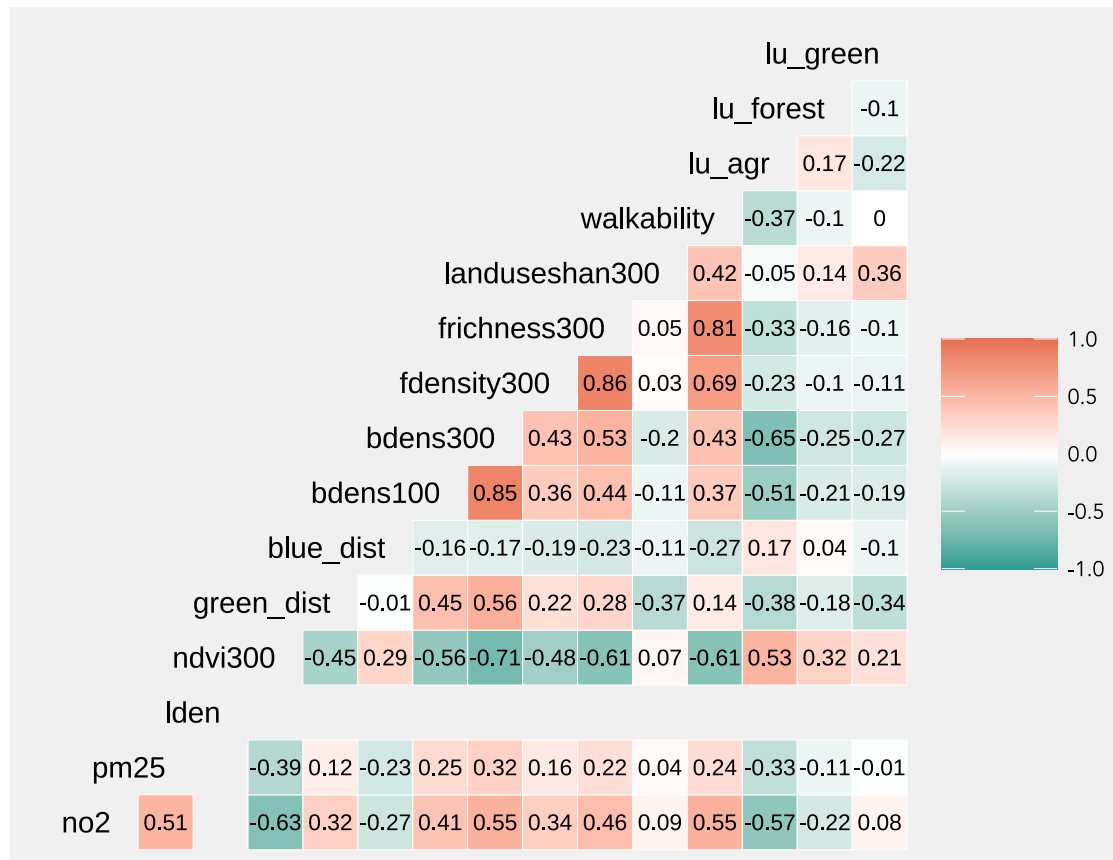
5.7 Facilities density



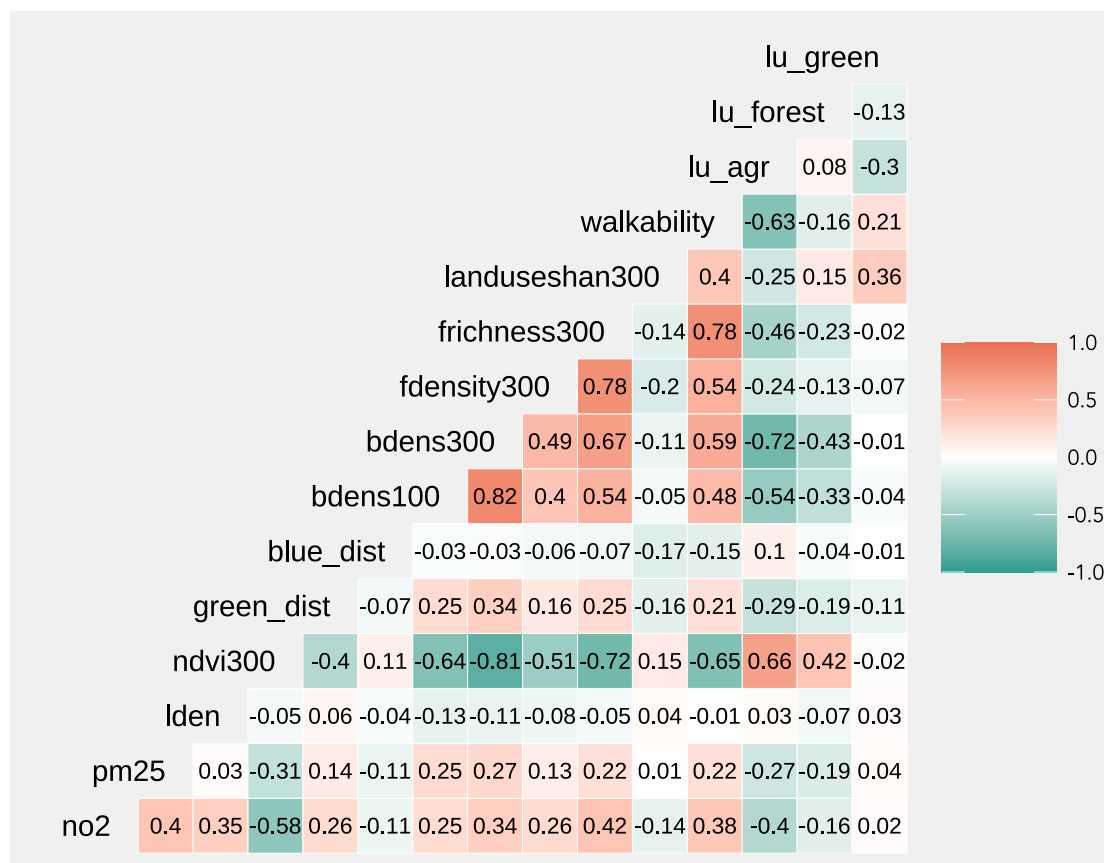
6 Correlations between exposures

To avoid overload I have just plotted correlations between the pregnancy exposures. It's easy to add the exposures in the first year of life if you want to see them too.

6.1 ALSPAC

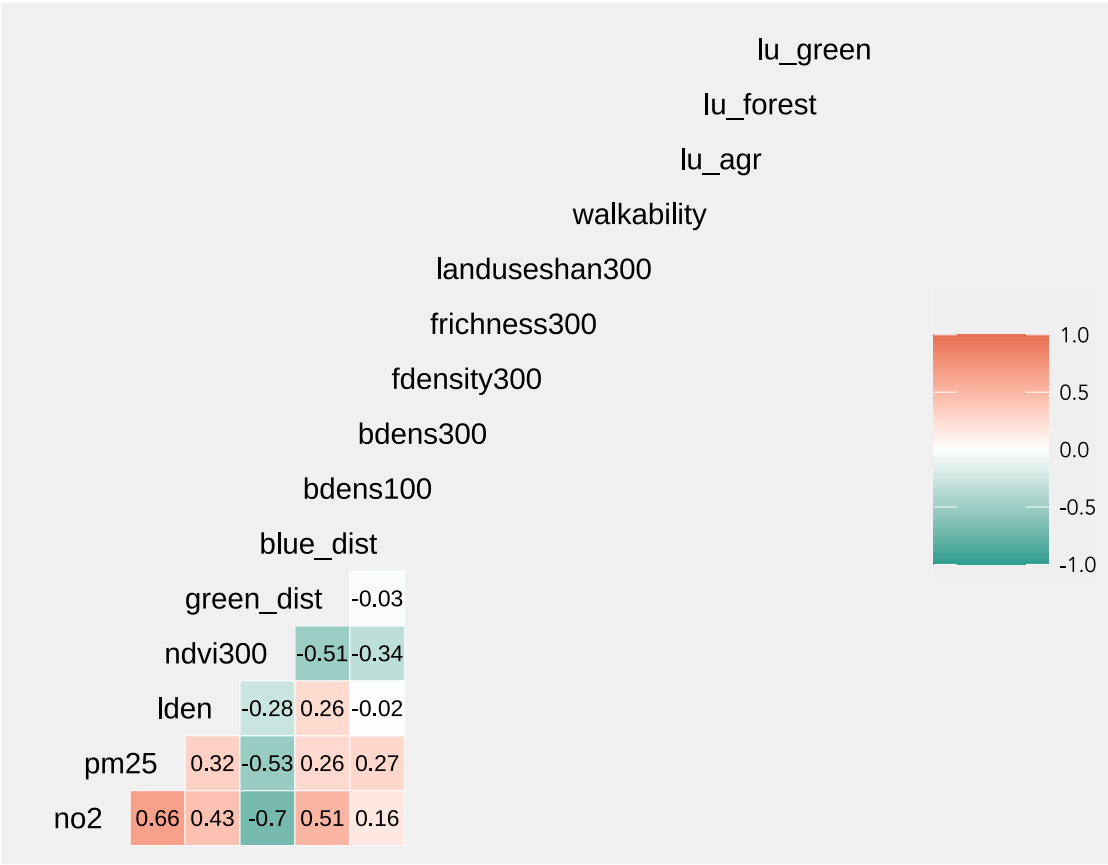


6.2 EDEN

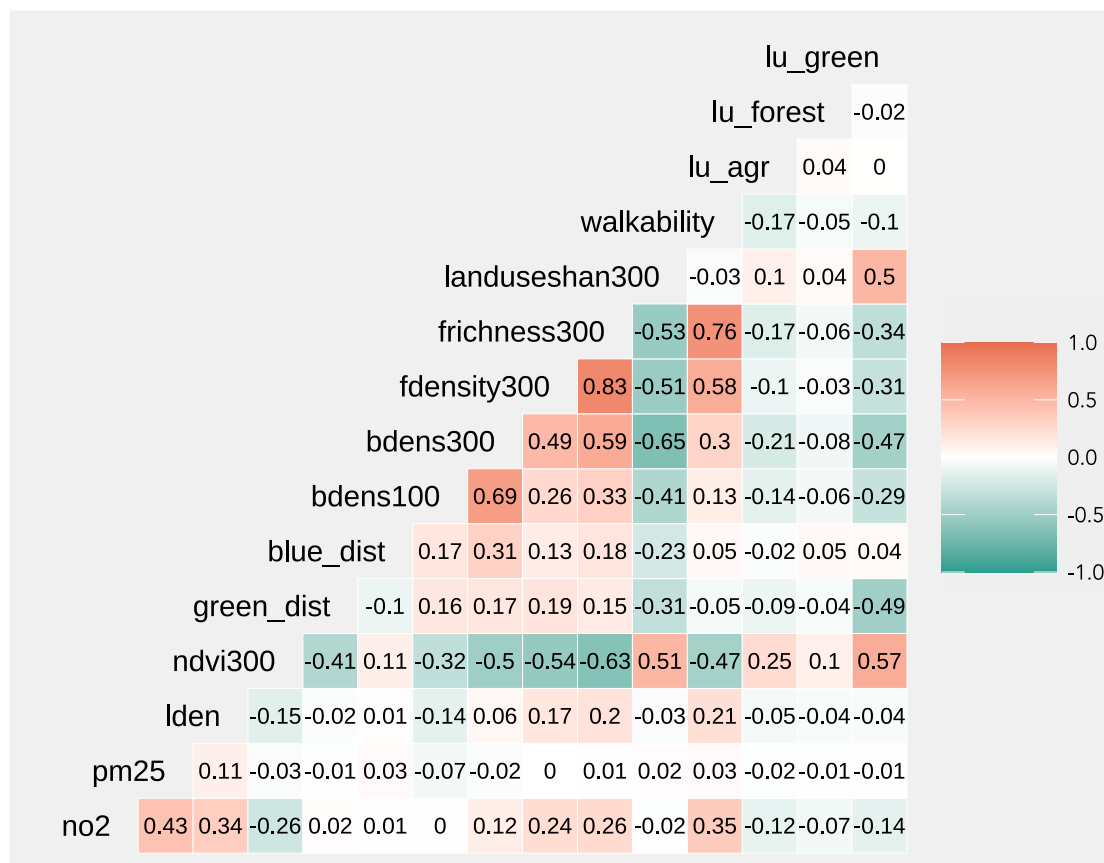


6.3 INMA

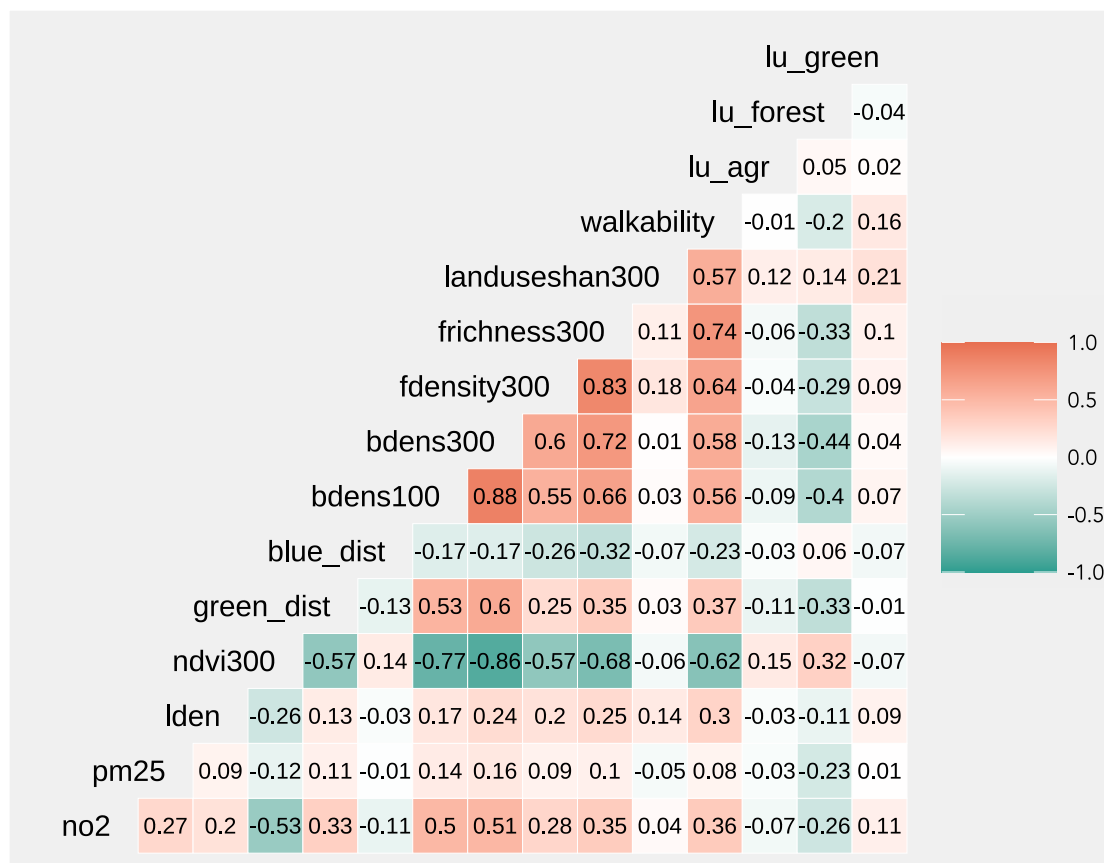
See above - waiting on built environment data.



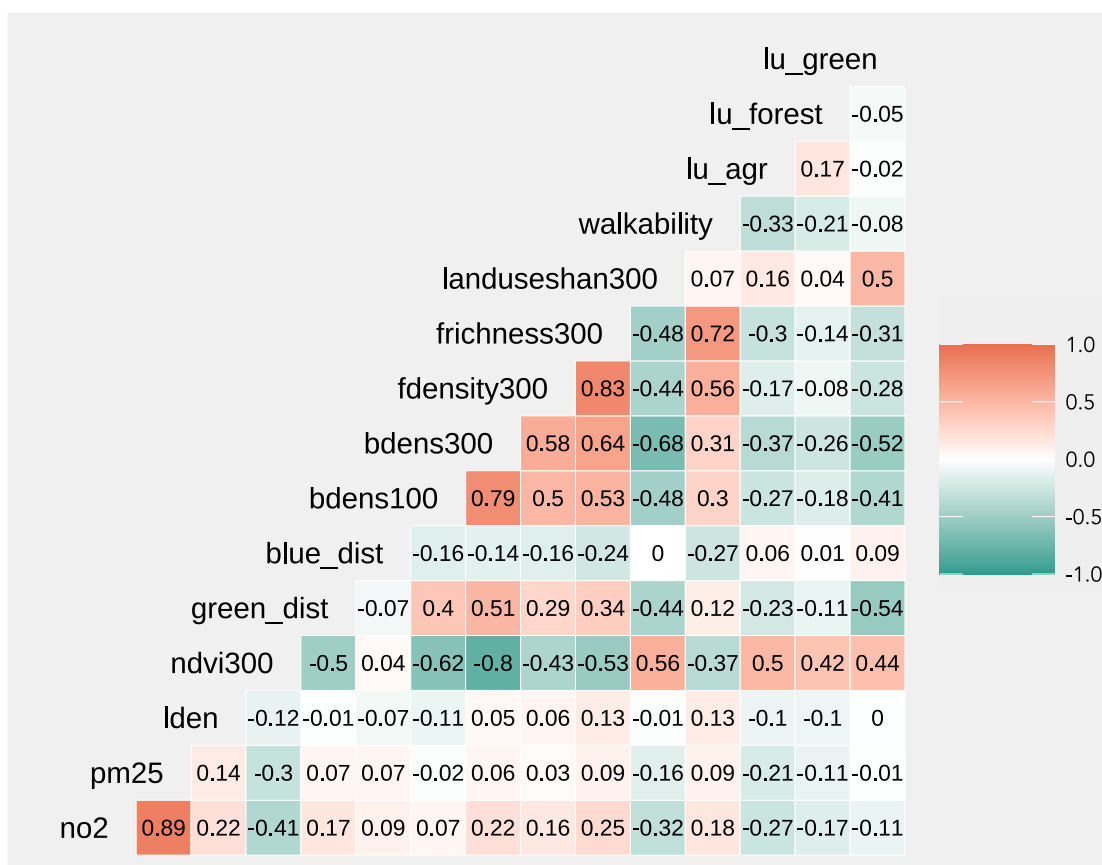
6.4 GEN-R



6.5 MoBa



6.6 NINFEA

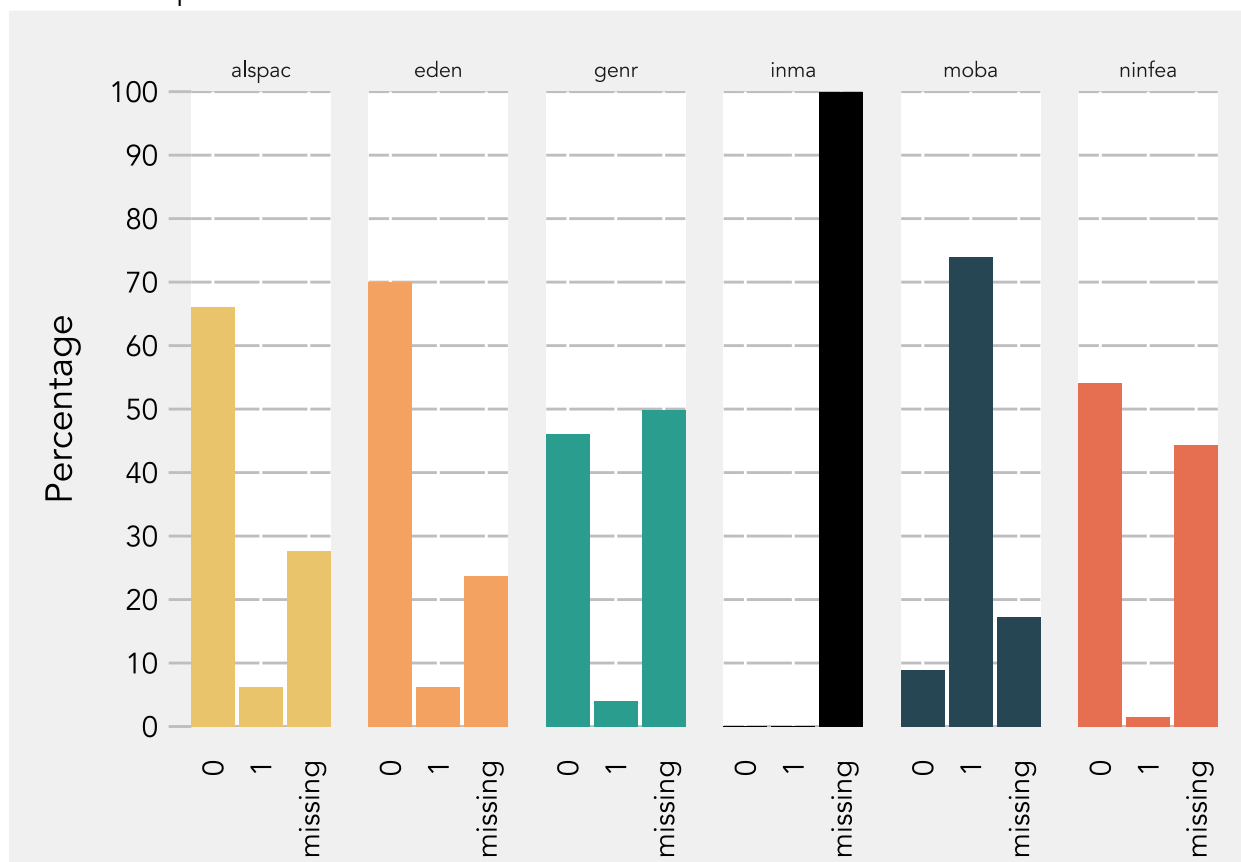


7 Postnatal depression

You can see something is clearly miscoded for MoBa as levels of PND can't be this high - I will contact them.

I am working with Luise to code the DNBC PND variable.

Values look plausible for the other cohorts.



8 Queries / discussion

8.1 Next steps

1. Test for non-linear associations between each exposure and outcome
2. Contact cohort(s) about issues with data
3. Harmonise DNBC PND variable
4. Descriptives for DNBC exposures when available

8.2 Queries

1. How to include all these exposures without risk of false positives?
2. Harmonisation of DNBC PND variable