



Centre de Recherche en Sciences de la
Ville,
du Territoire et du Milieu rural

Inequalities in income and car ownership: close links

Comparison between Flanders, Brussels and Wallonia

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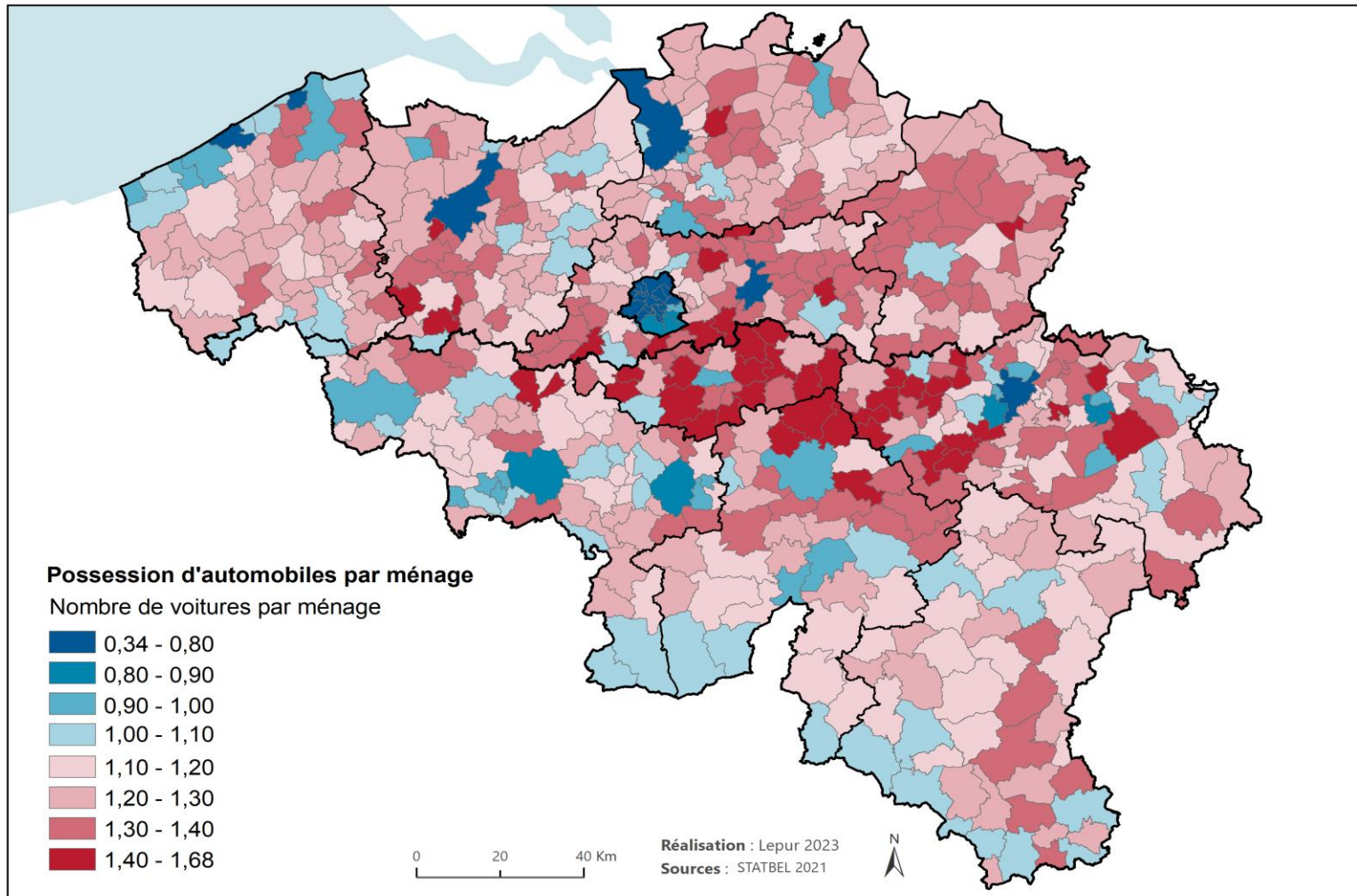
Belgian Geographers Day



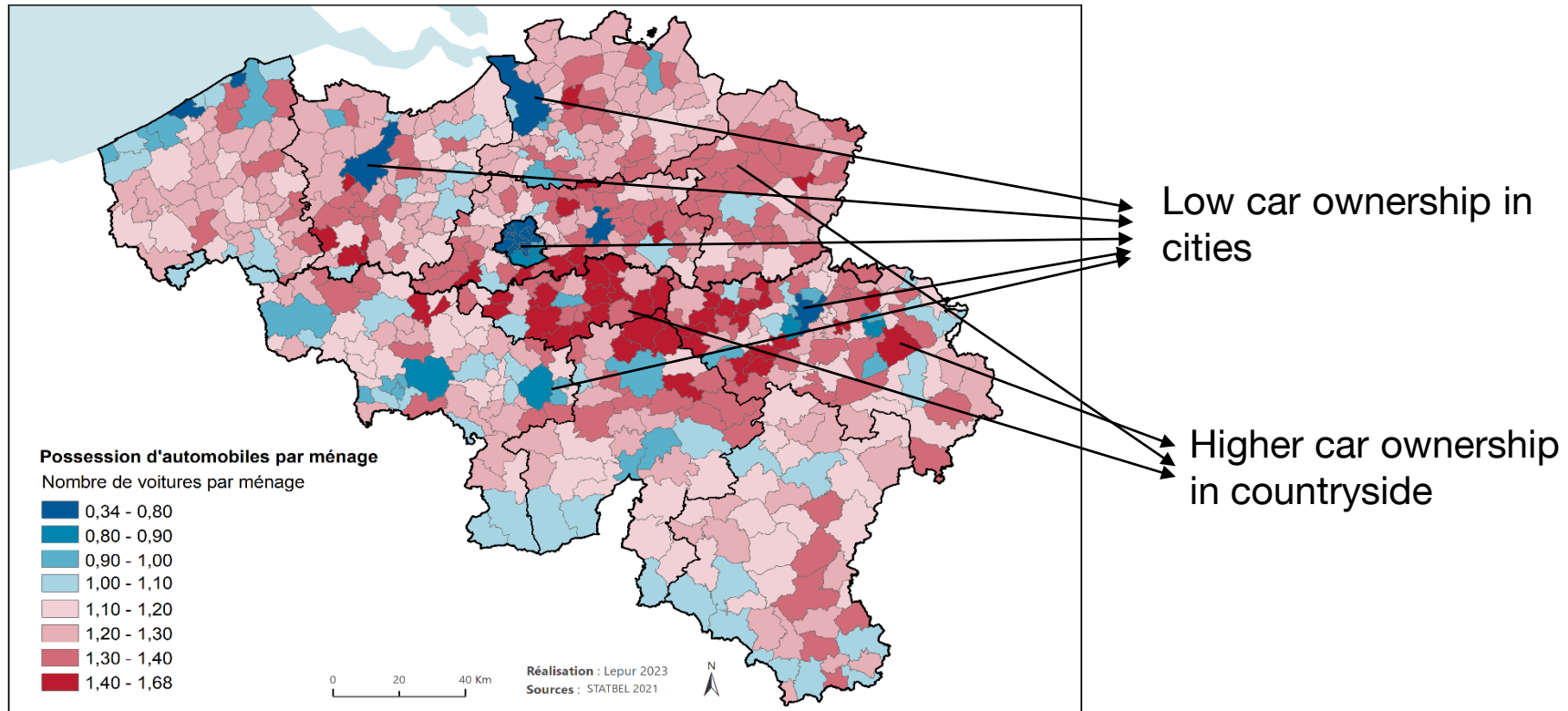
Context

- Since 2020, STATBEL has been able to estimate car ownership by household on a fine spatial scale
- Data by statistical sectors → new opportunities (*spatial distribution, determinants of possession*)
- Some studies are being / have been carried out
 - *Notably at IBSA/BISA (T. Ermans et al., Focus n°53 + Cahier n°9)*
- Another work is underway at ULiège, with a Master thesis aimed at carrying out a similar analysis on Wallonia.

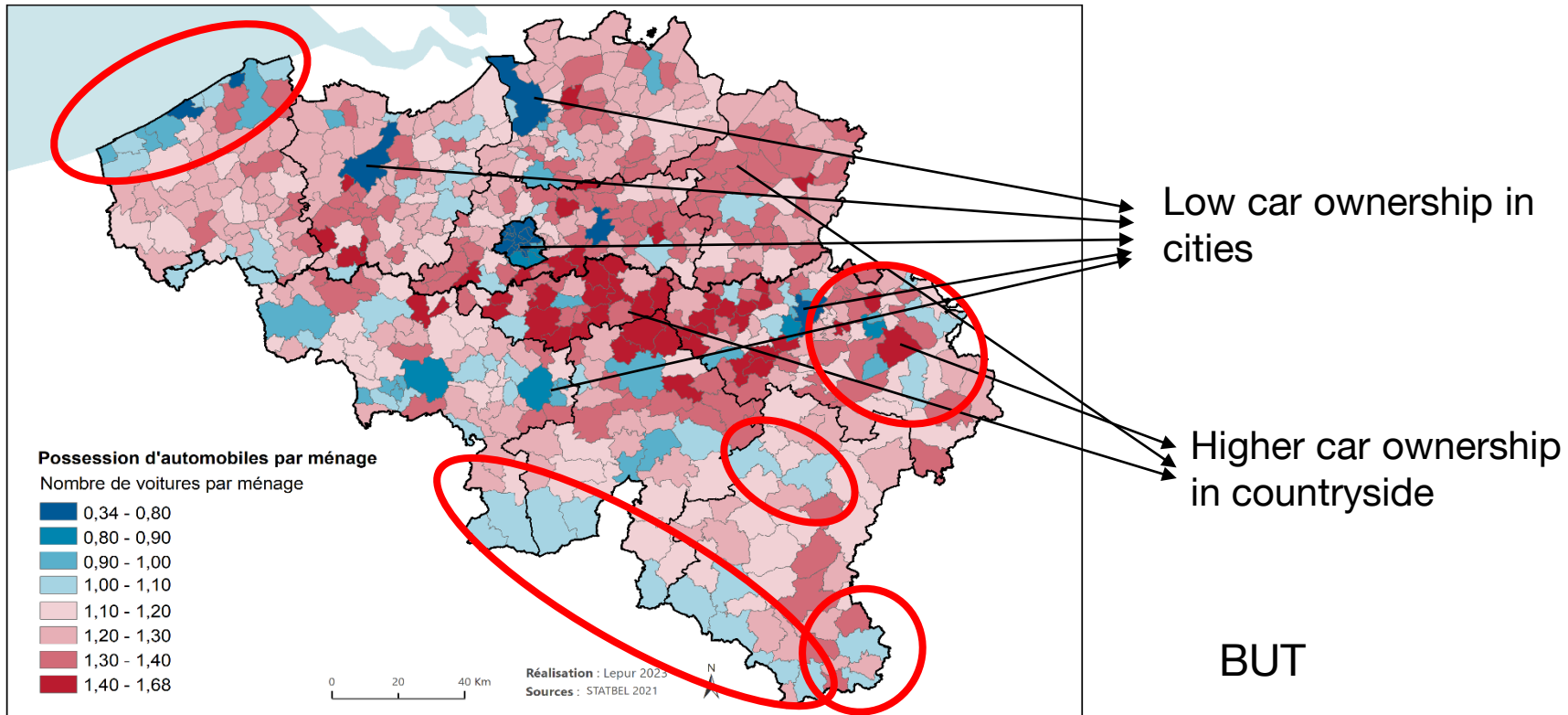
An overview of spatial distribution



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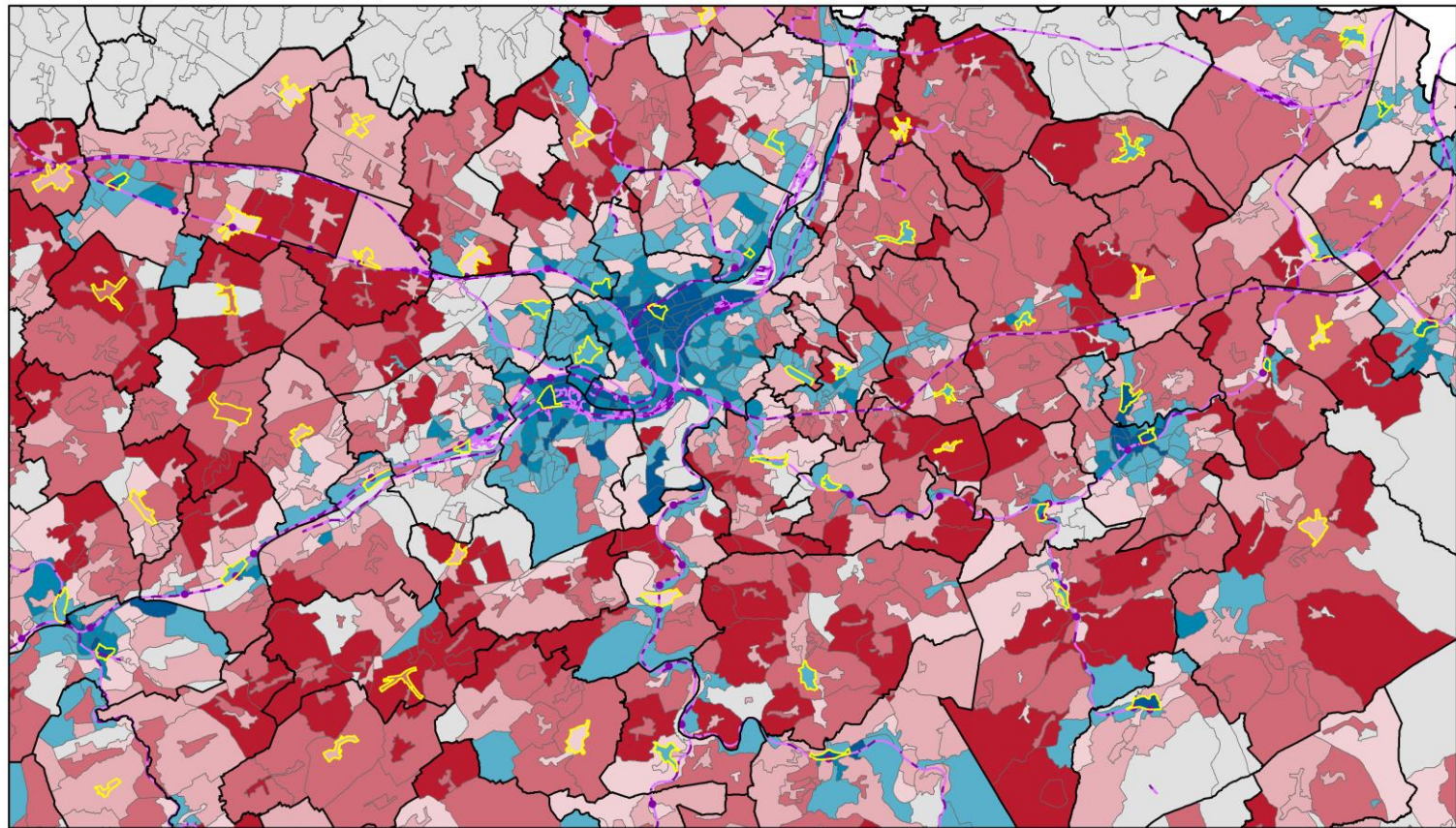
An overview of spatial distribution



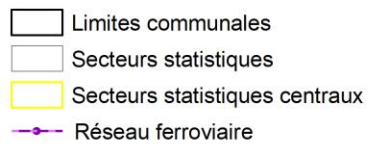
How can this be explained?

→ Living in cities or in the countryside is (probably) far from being the sole determinant of car ownership

An overview of spatial distribution



Nombre de voitures par ménage



Possession d'automobiles par ménage

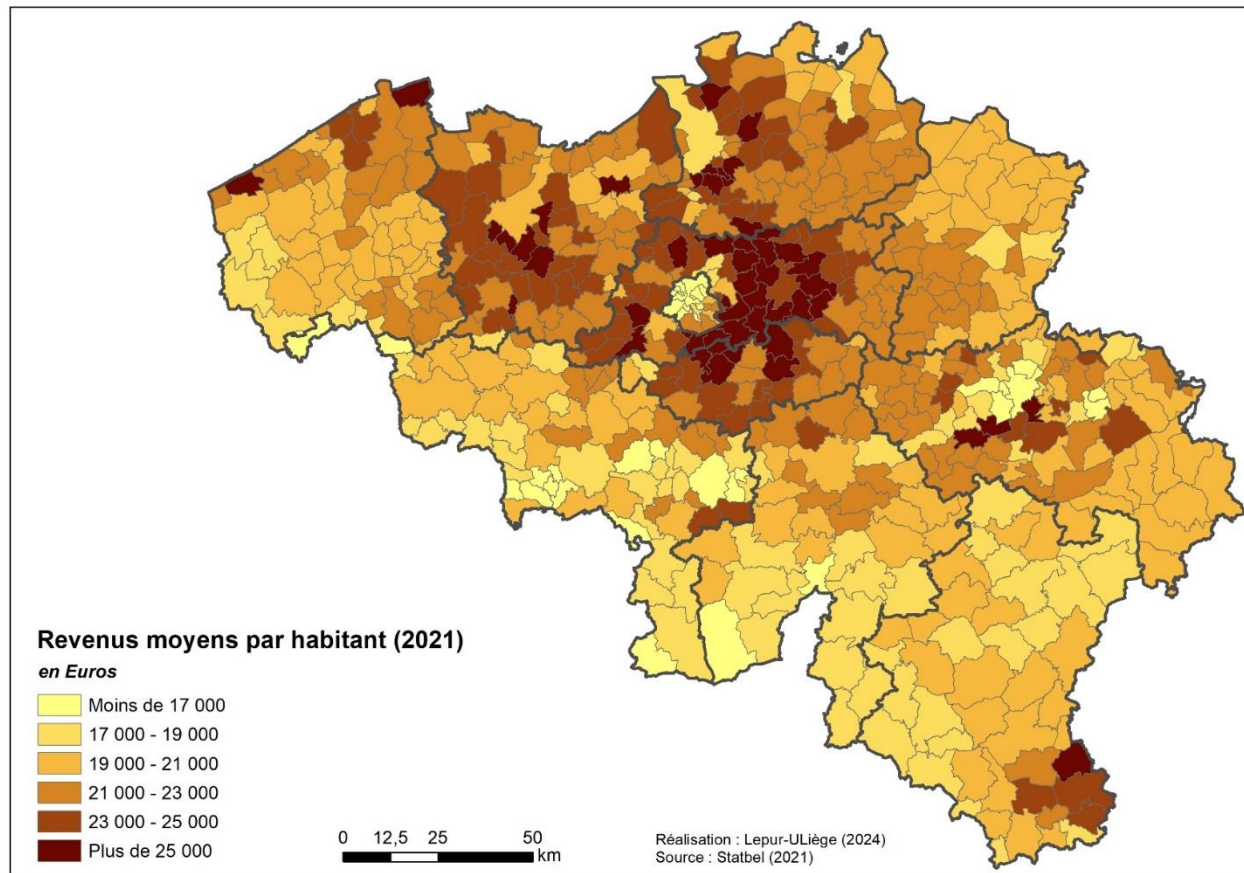


Réalisation : Lepur 2023
Sources : STATBEL 2021



Role of income

- We have tested a determinant that appears fairly often in the scientific literature: **income**



Role of income

- We have tested a determinant that appears fairly often in the scientific literature: **income**
- Methodology is straightforward: simple regression

$$Y = ax + b$$

Where Y = car ownership and x = income

$$\text{Car own.} = 0,00004 * \text{Inc.} + 0,40 \quad (R^2 = 0,38)$$

- Other determinants aside, income plays a significant role...

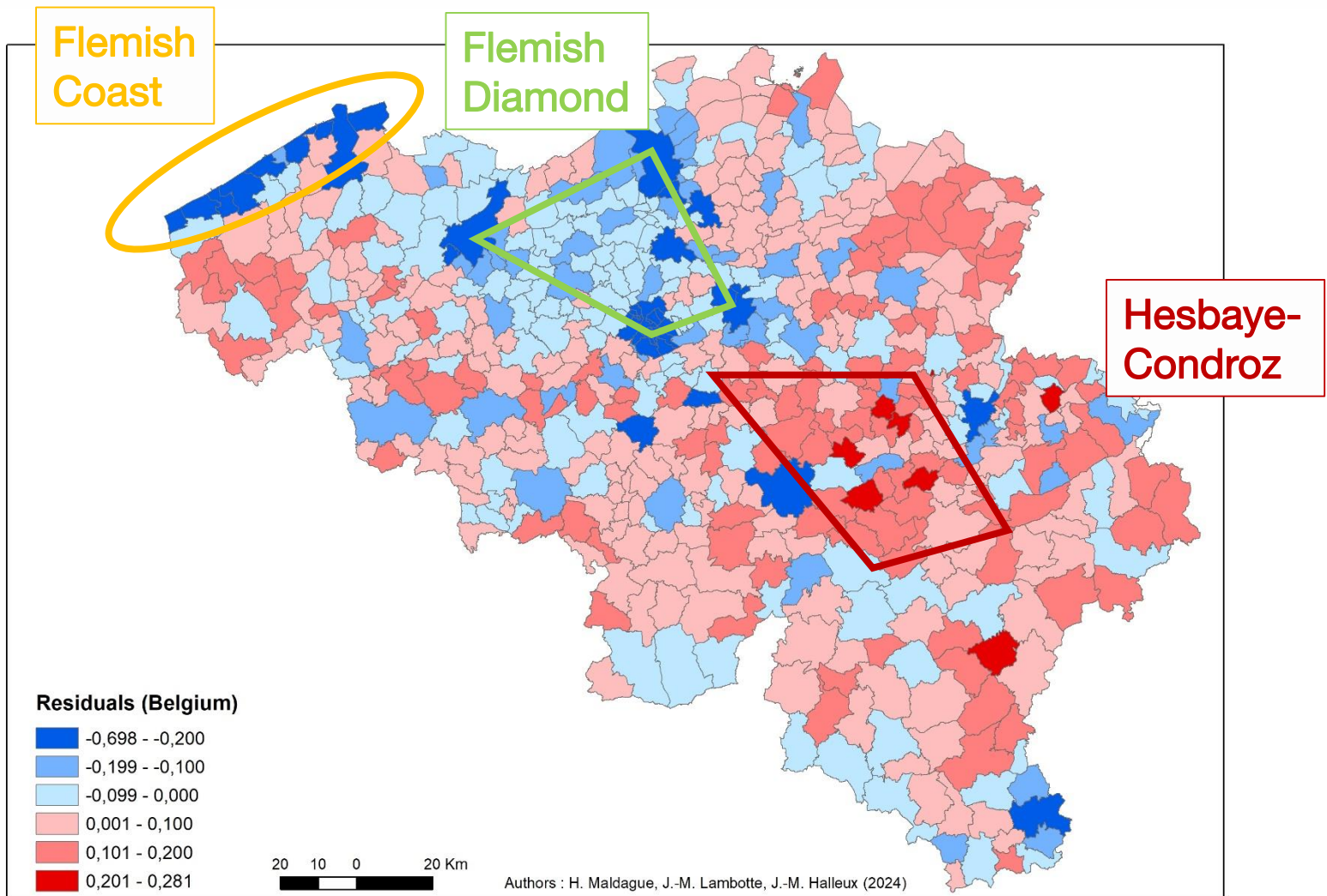
Role of income

- ...and varies between regions!
- Flanders: $Car\ own. = 0,00002 * Inc. + 0,77$ ($R^2 = 0,16$)
- Brussels: $Car\ own. = 0,00004 * Inc. + 0,018$ ($R^2 = 0,54$)
- Wallonia: $Car\ own. = 0,00005 * Inc. + 0,29$ ($R^2 = 0,61$)

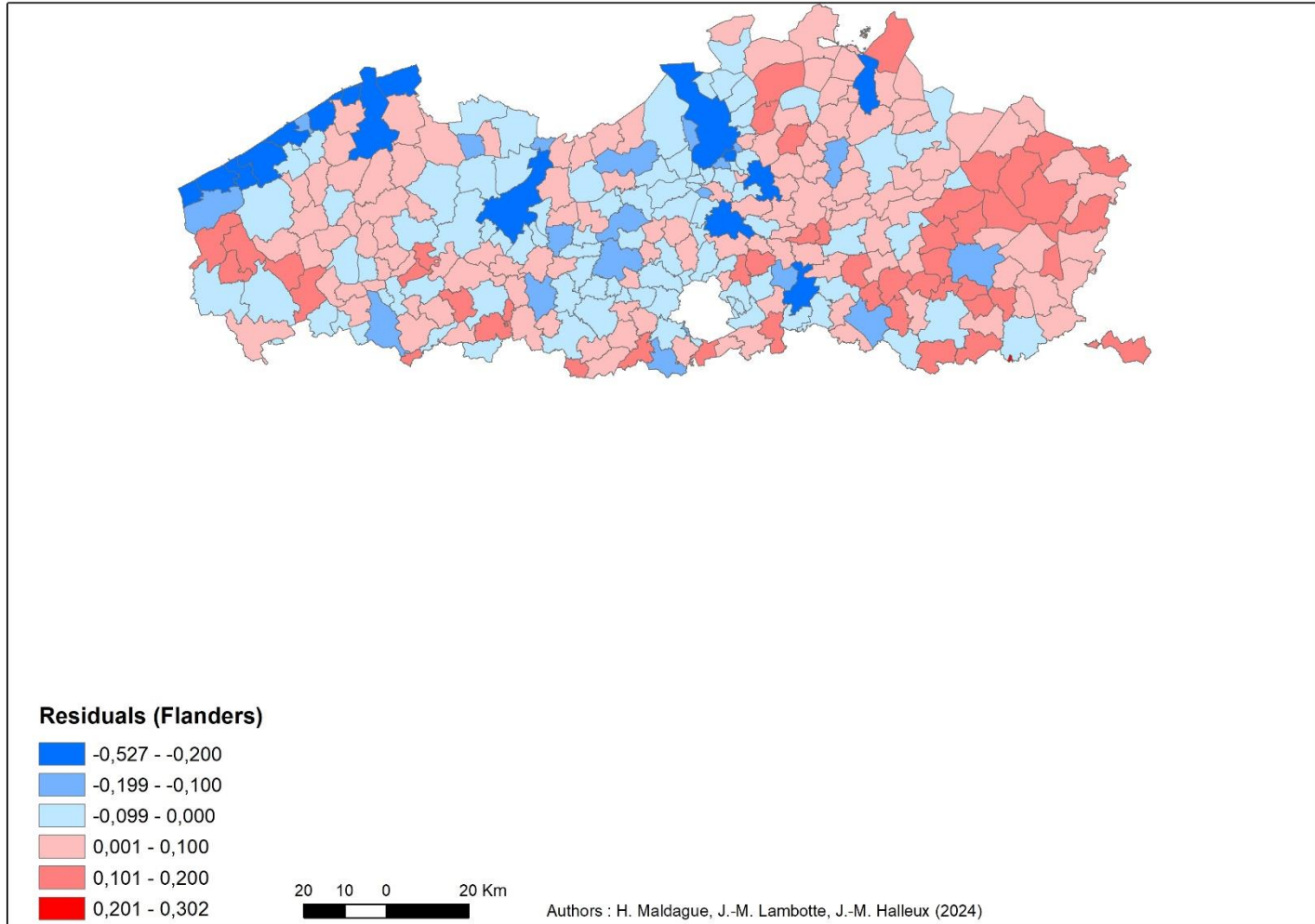
→ Income seems to have a greater impact on car ownership in Wallonia and Brussels than in Flanders.

→ For a same 1.000 € extra income, car ownership rate grows higher in Wallonia and Brussels than in Flanders.

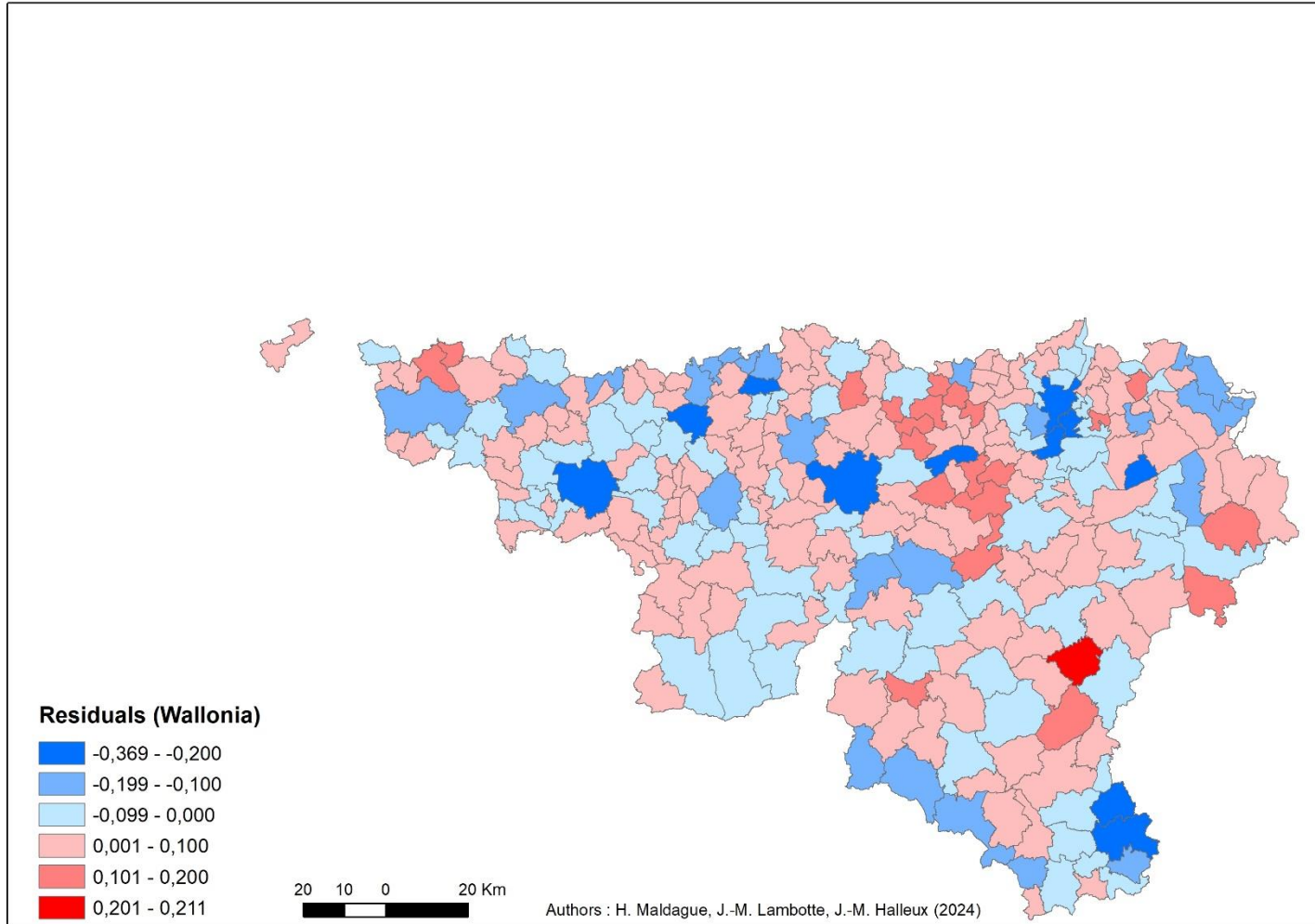
Spatial distribution of residuals (Bel)



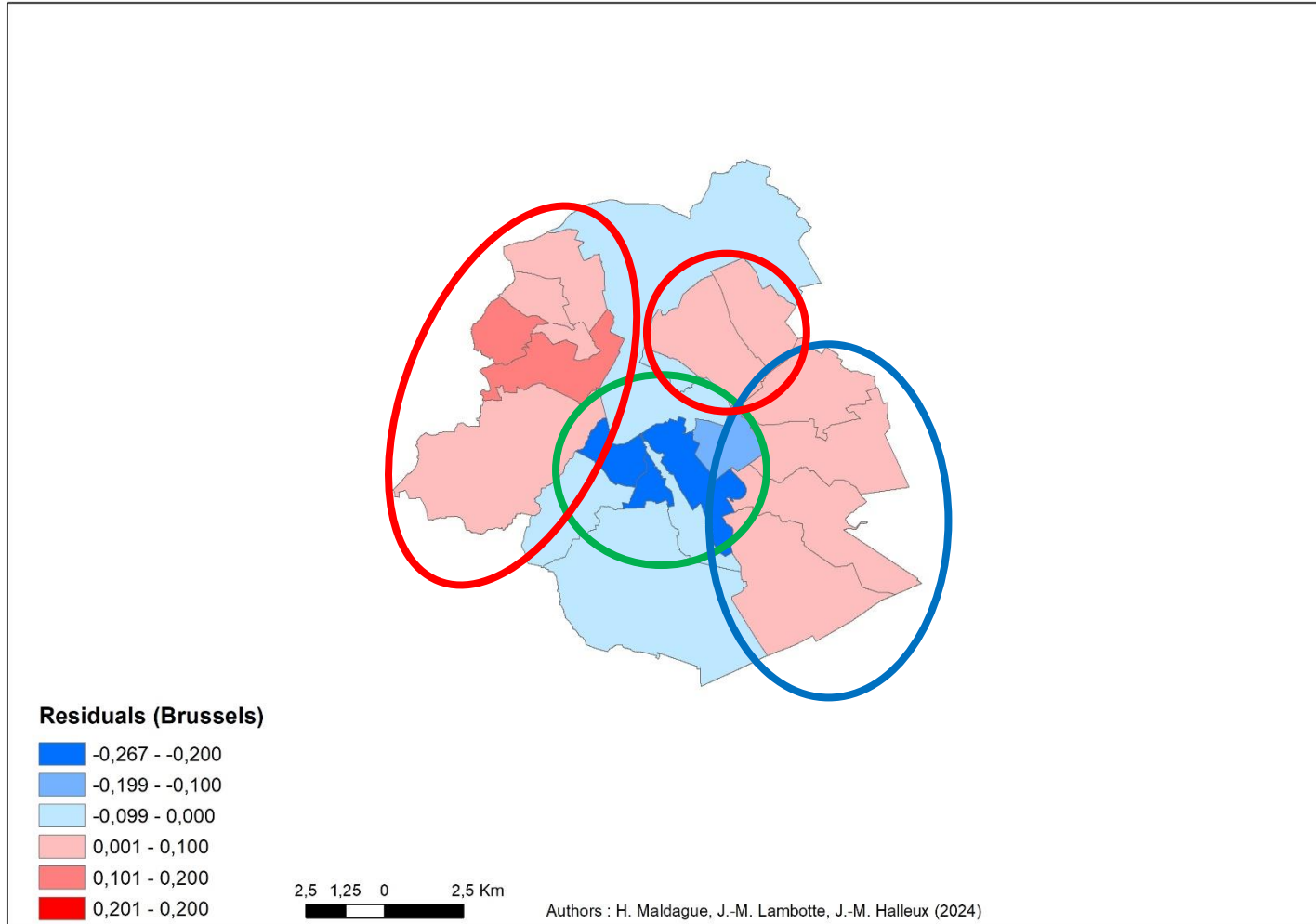
Spatial distribution of residuals (Vla)



Spatial distribution of residuals (Wal)



Spatial distribution of residuals (Bru)



Highlights

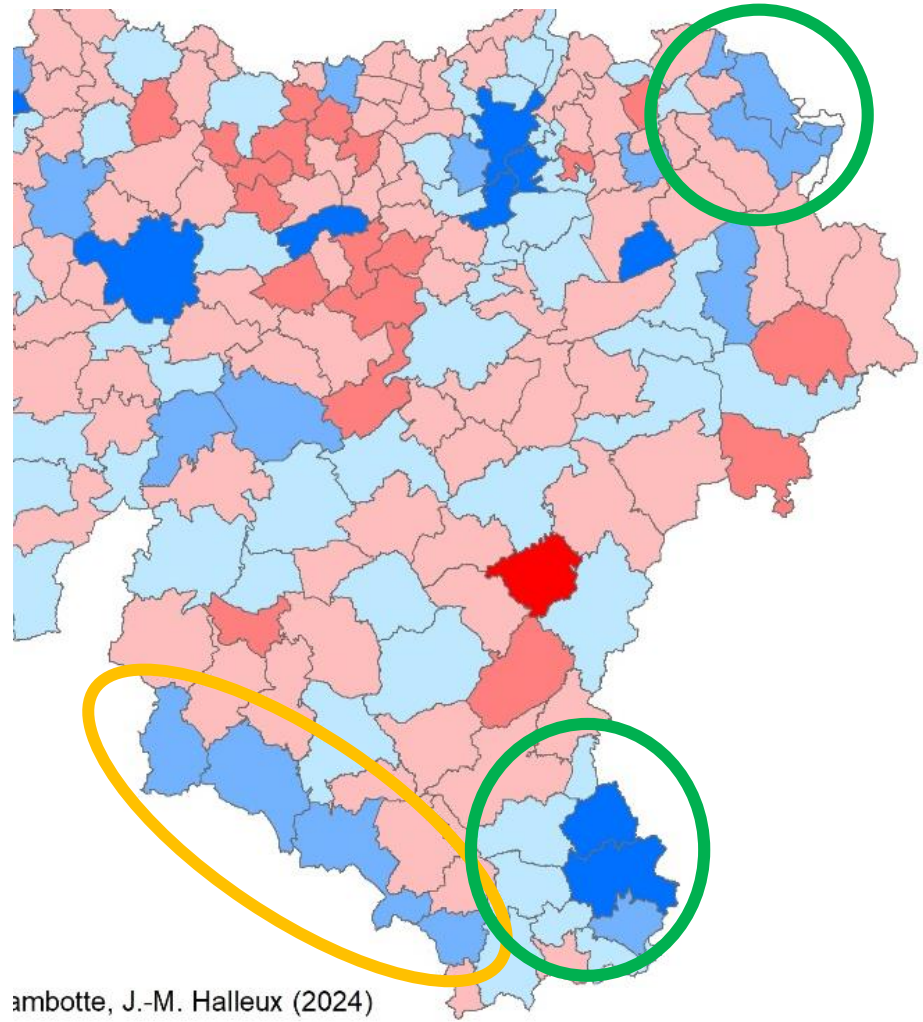
- Model **overestimates** links between income and car ownership in cities (role of other determinants: urbanization, public transport services → the need of a car is less important)
- Model **underestimates** links between income and car ownership in rural areas (even if income is low, greater need of a car)

But

- There are other determinants such as age (part of population > 65 years...)
- ...and possibly some bias in datasets

Highlights

- There are other determinants
- Overestimation near the French border (or Flemish coast). *Age?*
- ...and possibly some bias in datasets
- Overestimation in some areas near border (Arlon & Raeren) → *No data for foreign (company) cars?*



Thanks for your attention !