

Impact of public lighting on passengers' modal choice for nocturnal transportation

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2. Public lighting management – A complex landscape
3. Understanding mobility habits at night and acceptance of light reductions
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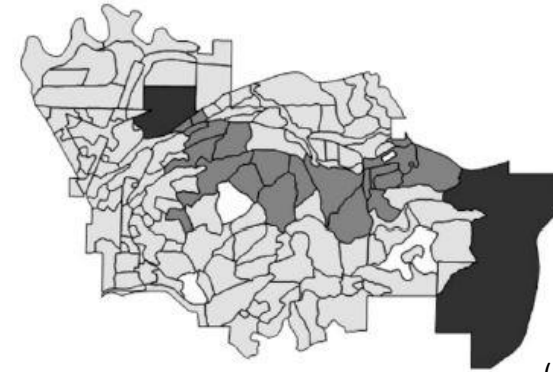
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Context – Biodiversity corridors

“Wildlife movement corridors, also called dispersal corridors or landscape linkages as opposed to linear habitats, are linear features whose primary wildlife function is to connect at least two significant habitat areas”
(Beier and Loe, 1992 *in* Bond, 2003, p.1)

Figure 1. A Landscape with a Corridor



(St John, Toth, Zabinsky, 2018)

Connection corridors to alleviate biodiversity loss: conception through mathematical optimisation

Context – Dark corridors

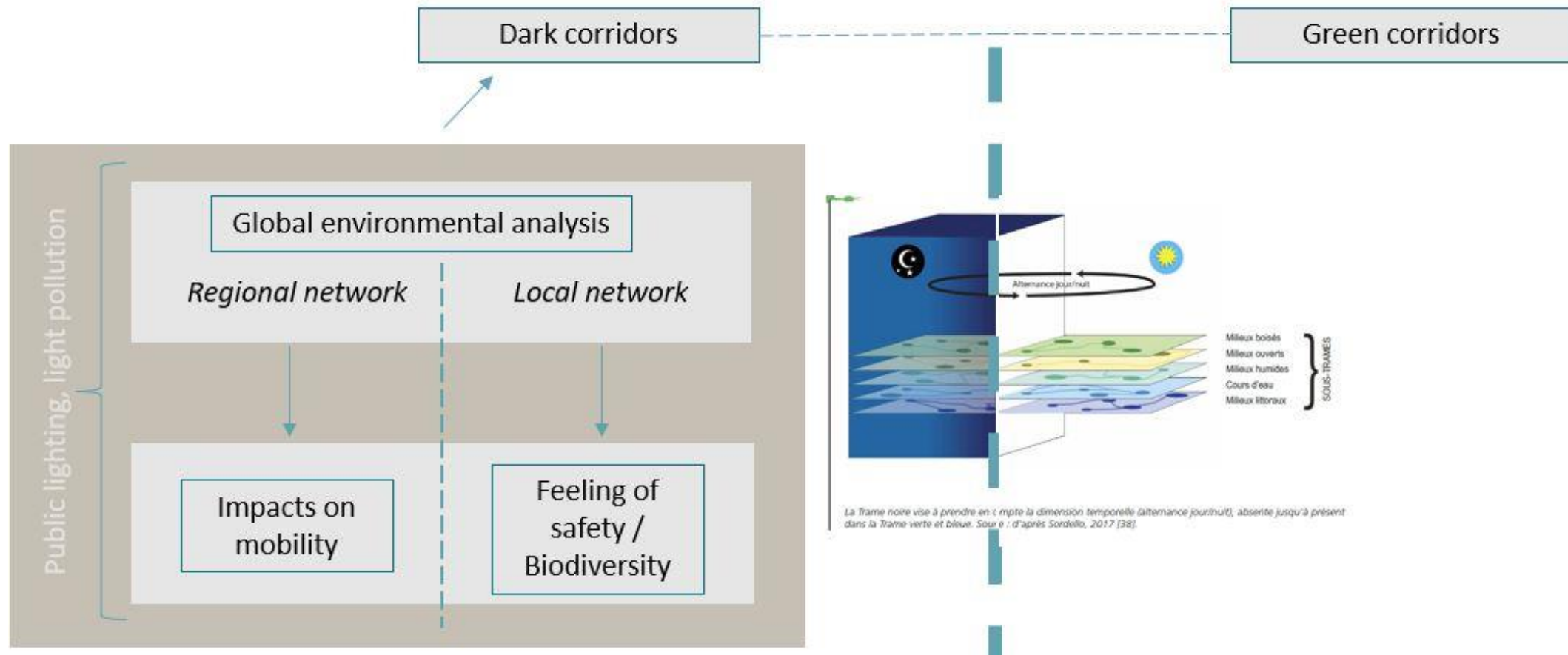
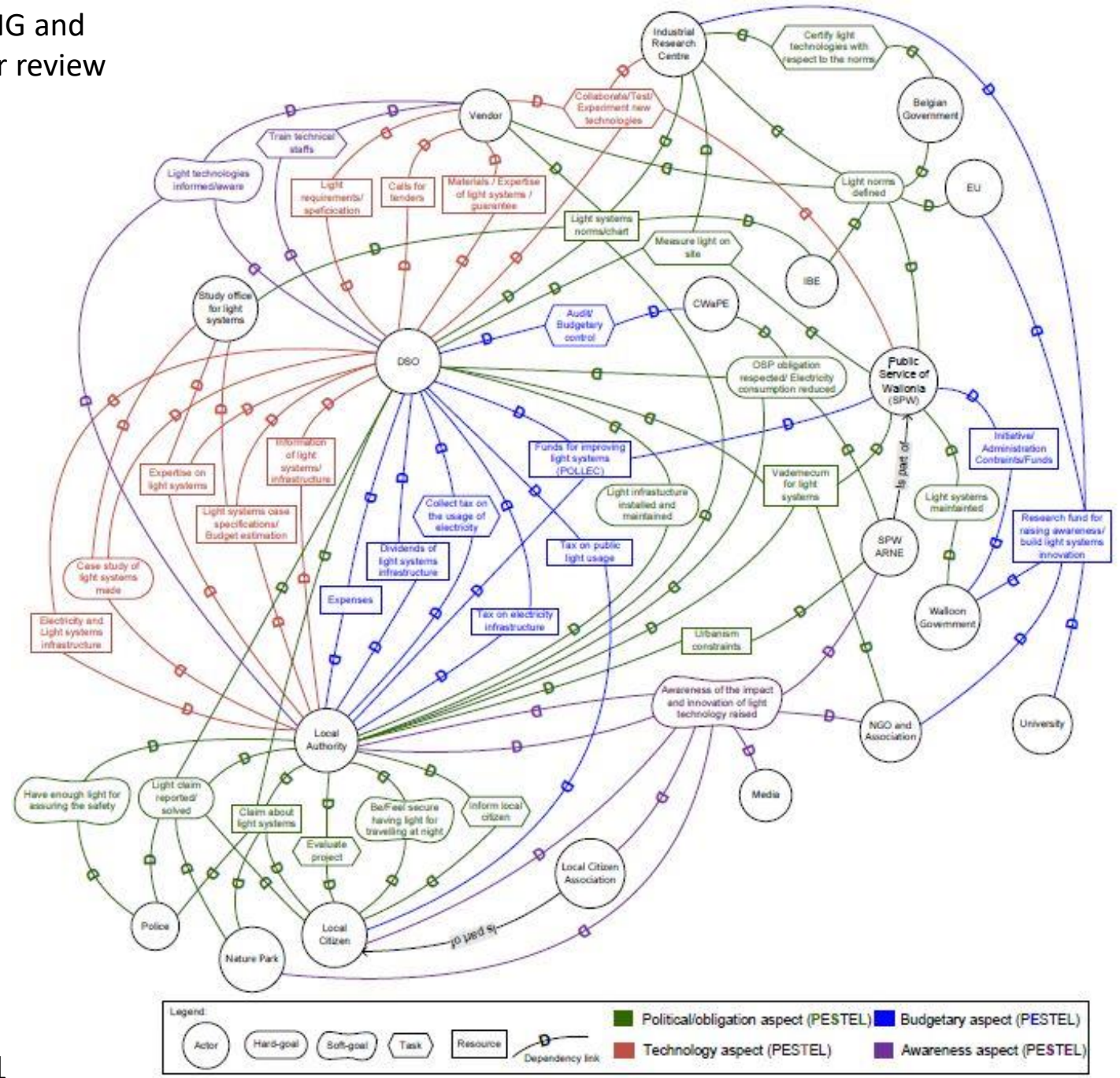


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Joint research with Samed HENG and Sabine LIMBOURG – under peer review



i* Modelling: Yu et al., 2011

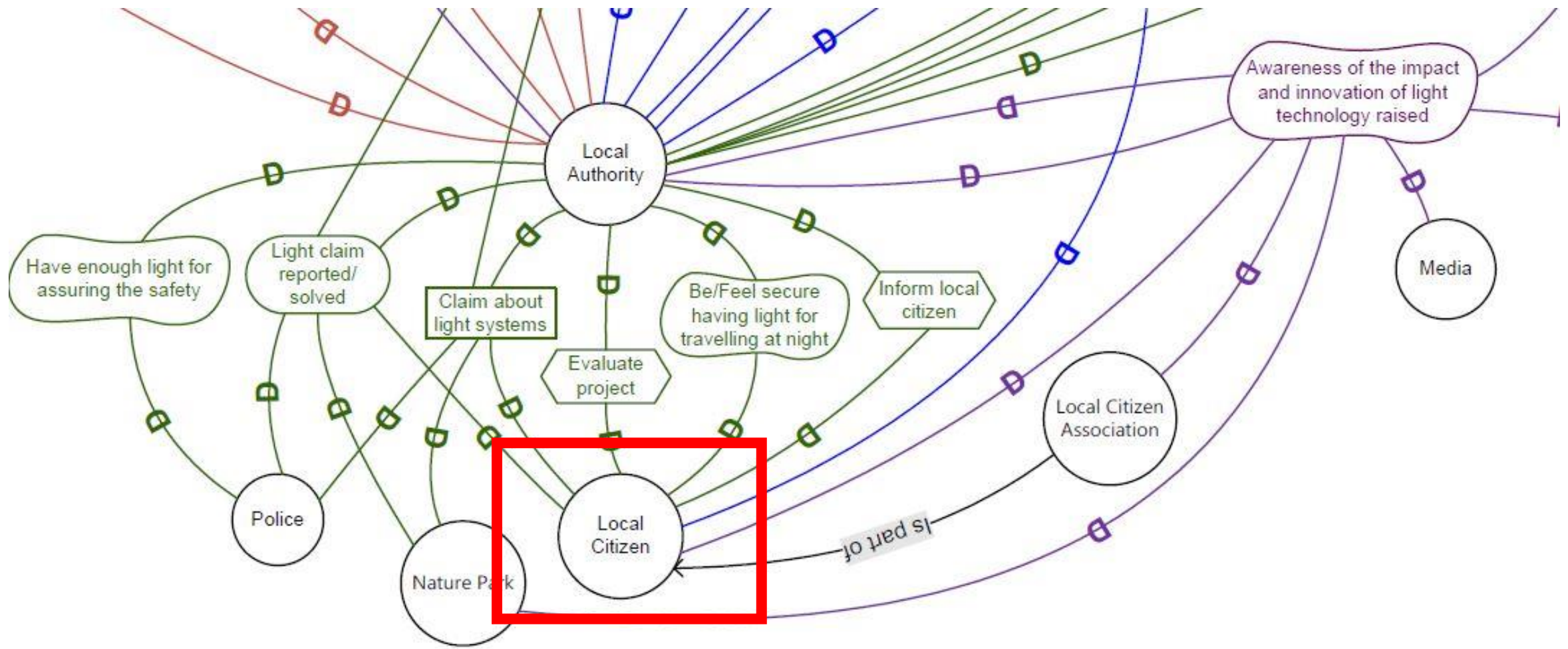


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Mobility at night – Literature review

- **Modal choice** – explanatory variables
 - Gender, weather (e.g. Cools & Cremers, 2013), urbanity, day vs. night
- Influence of **nighttime** on modal choice
 - Travels to work (Kapitza, 2022) – Germany ; (Plyushteva, 2019) – Belgium, Bulgaria
 - Leisure, young people (Scagnolari et al., 2015) – Switzerland
- Perception of **public lighting** and **safety**
 - Need for public lighting (Cornet & Touzain, 2021) – France
 - Acceptance of light reduction (Beaudet et al., 2022) – France
 - Perception of light pollution (Lyytimäki & Rinne, 2013) – Finland
 - Gender, inclusiveness (Farina et al., 2021) – Belgium, Brazil
 - Perception of safety (e.g. Boyce et al., 2000)

Mobility at night – Aims of the research

- All types of trips
- Other spatial units
- Impact of the Covid-19 pandemic
- Perception and need for public lighting
- Biodiversity concerns – Light pollution

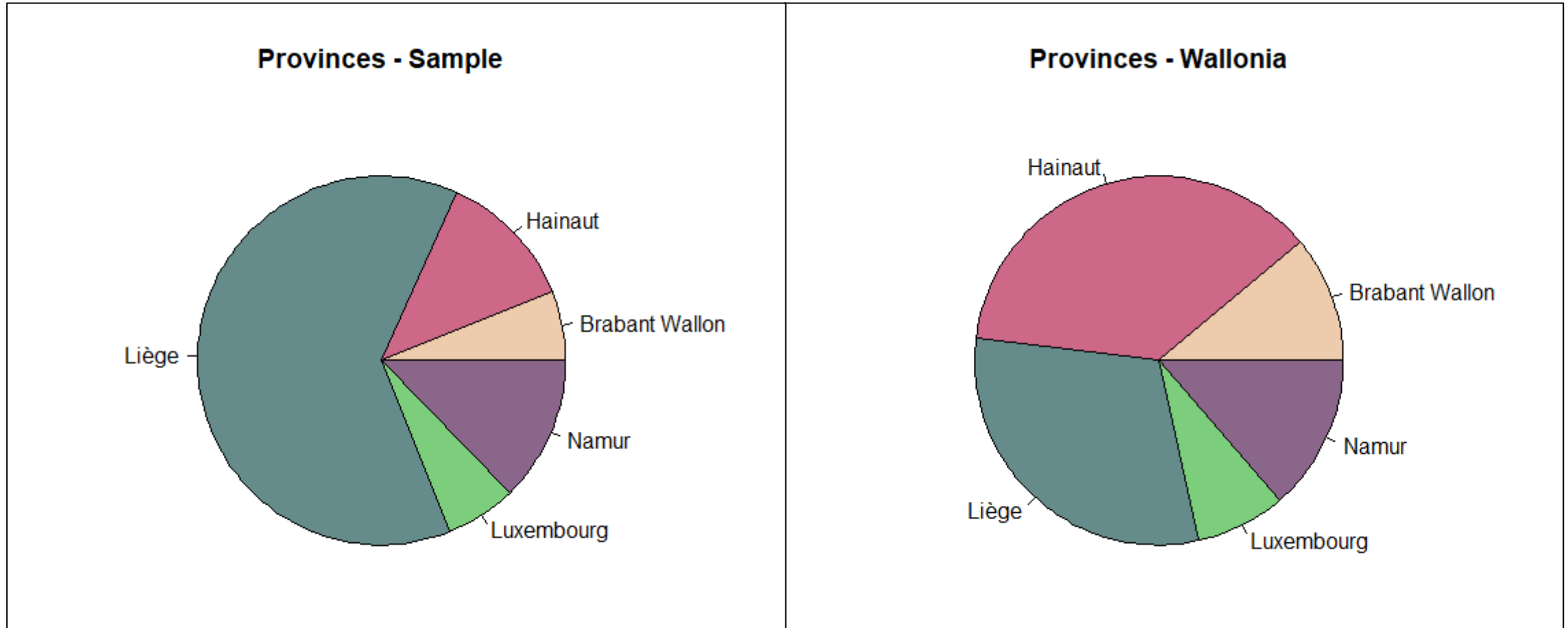
Mobility at night and social acceptance – Walloon population survey

- Walloon Region (residents, 16+)
- Online administration
- Between 16th February 2022 and 29th March 2022
- N = 685; 95% CI; 3.74% margin of error

Mobility at night and social acceptance – Walloon population survey

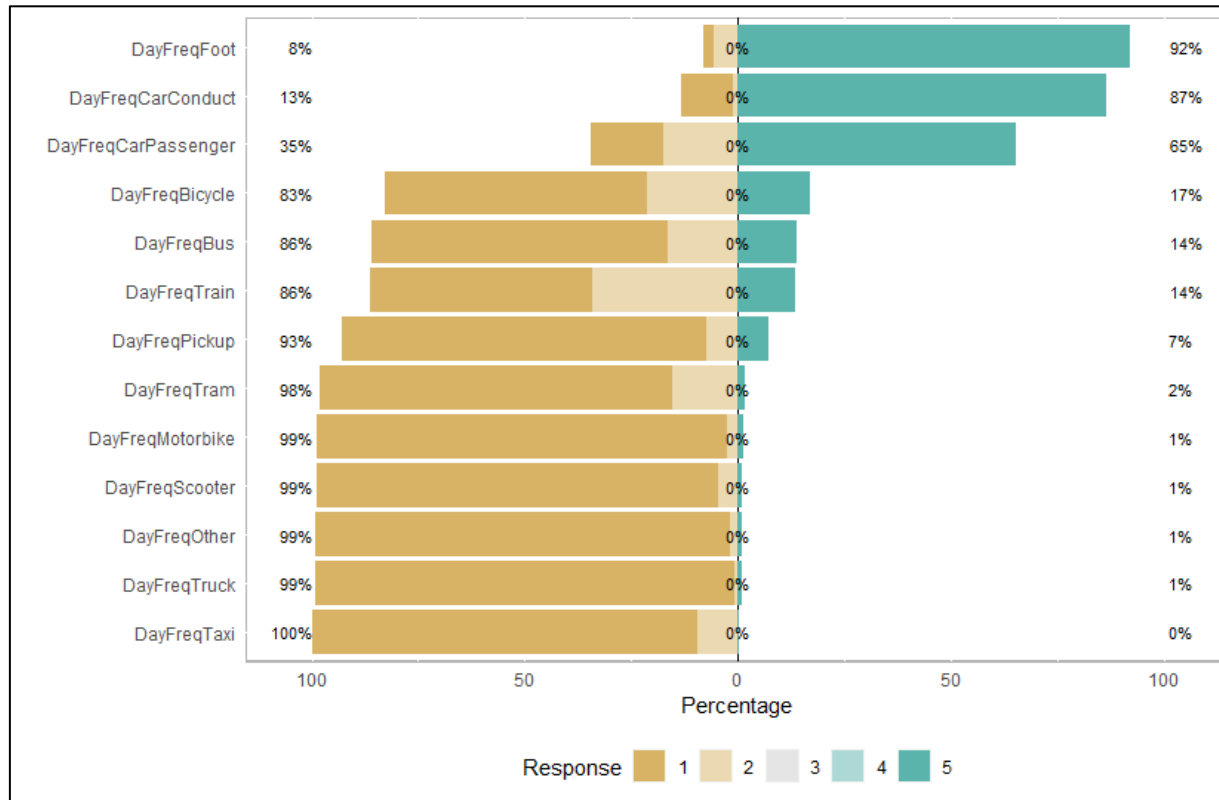


Mobility at night and social acceptance – Walloon population survey

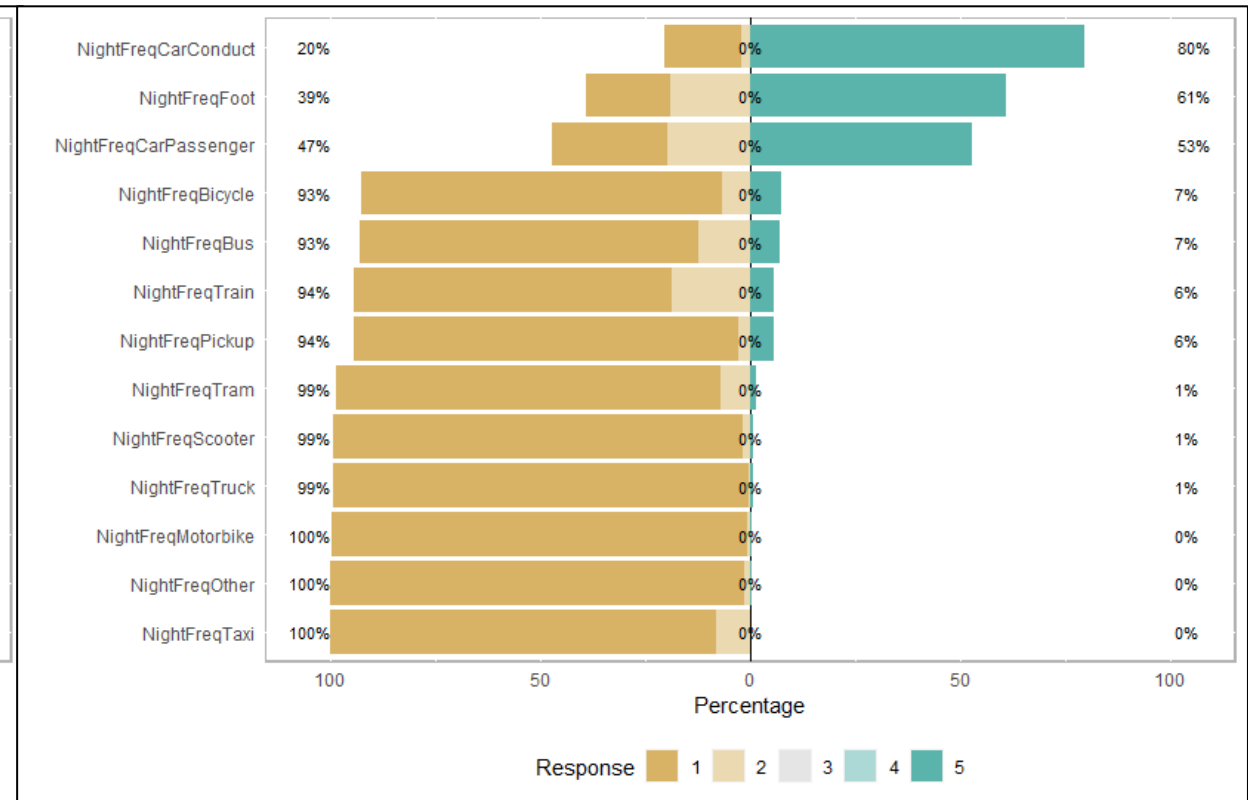


Mobility at night and social acceptance – First results

Modal choice - Frequency - Day



Modal choice - Frequency - Night



1: Never 2: More than once a year 3: More than once per quarter 4: More than once a month 5: More than once a week

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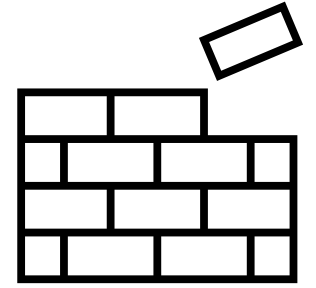
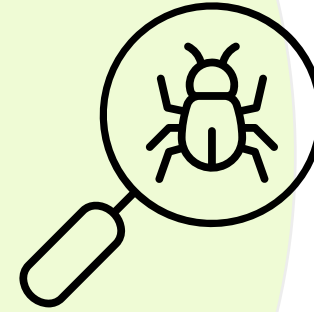
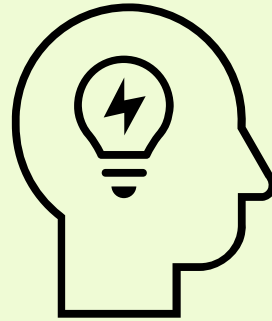
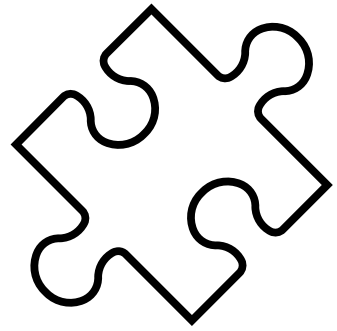
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Further developments

1. Recalibration
2. Hypothesis testing
3. Tests: Mann-Whitney (Cleff, 2019)
4. Safety aspects

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