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Understanding Mobility in Sparsely Populated Areas : Between Vulnerability and Asserted Choice?

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Introduction

Mobility in sparsely populated areas is at the heart of public policy concerns. It takes part in the challenge of decarbonized mobility policies.

Vulnerability of people living in these areas takes many forms :

- Mobility vulnerability due to a higher car dependency,
- Environmental and energy vulnerability because of the lack of credible mobility alternatives to solo-driving,
- Economical vulnerability because of the energy crisis and the increase of fuel costs.

There is an urgent need for an ecological transition in these territories. Public policy stakeholders are yet mobilized to propose more sustainable mobility services adapted to these areas. However, their need to rely on a better understanding of mobility needs and current mobility practices. This knowledge remains partial due to a real difficulty of setting up statistical databases in rural areas.

The key question is then how to characterize car dependency of people living in sparsely populated areas.

Method

Definition of sparsely populated areas : the French case



- Different geographical realities : peripheral areas of metropolises, isolated rural areas or villages
- Different methods to define rural areas

→ Using the definition of the French Statistics Institute (INSEE) based on Eurostat results =

2 types of sparsely populated territories :

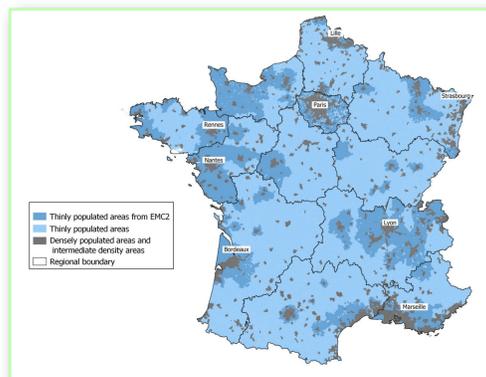
- * sparsely : 50% of the population living in communes with a density < 300 inhabitants per km²
- * very sparsely : 50% of the population living in communes < 25 inhabitants per km²

Definition of sparsely populated areas (based on Eurostat method)

Typology	Number of inhabitants	Average density (inhab/km ²)
Urban Dense area	> 50,000	> 1,500
Urban Intermediate-density area	5,000 < x < 50,000	300 < x < 1,500
Rural Sparsely populated area	> 300	25 < x < 300
Rural Very sparsely populated area	< 300	x < 25

Sparsely populated areas in France:

- 90% of the number of communes
- 33% of the French population (EU : 27%, Switzerland : 18%, Belgium : 18%, Germany : 23%, Italy : 25%)



Specific analyses of 2 databases on daily mobility to give orders of magnitude

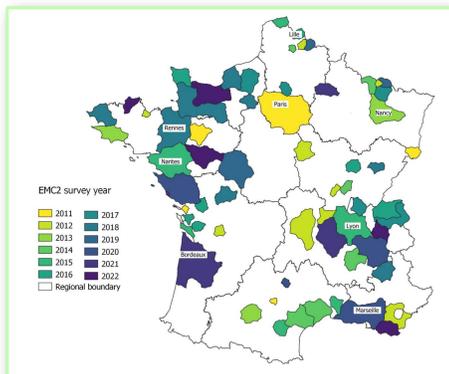
1st database (EMC2 base) : a set of 69 household travel surveys carried out in large and medium-sized conurbations between 2011 and 2022 and based on a national methodology : the EMC2 surveys

(for more information see www.cerema.fr)

- concerns weekday journeys made by people the day before the survey
- 1,765,000 gross trips of which 26% are made by people living in sparsely populated areas

2nd database (EMP base) : a French national mobility survey lead in 2019

- both daily journeys and long-distance travel
- a total sample of 13,825 individuals surveyed, including 4,842 people living in low-density areas
- 12,687 trips made in low-density areas



Main results

Differences in mobility practices in sparsely populated areas?

- the same number of **average daily trips** : more than 3 trips per day,
- the same **time travel budget** : between 83 and 87 minutes,
- the same hierarchy of **transport modes use** : the car remains the first mode use, walking the second, and Public Transport (PT) the third

BUT

- Difference in the **intensity of mode use** : a modal share of the car higher, a less use of walking and PT
- **Longer trips** : an average of 11.8 km versus 7 km in densely populated areas
- **More immobility** : between 11 and 16% according to the databases compared with 10 to 11% in densely areas.

Modal shares (%) by territorial density

Mode	Territorial density		
	Dense area	Intermediate-density area	Low-density area
Car	44.9 / 43.2	66.0 / 69.4	71.4 / 77.2
Walking	35.2 / 33.2	24.1 / 21.5	19.2 / 14.2
Public Transport	15.2 / 17.5	6.1 / 5.9	5.3 / 4.1
Cycling	2.3 / 3.4	1.6 / 2.2	1.3 / 2.5

Nota : the first number relates to the results of EMC2 base; the second one of the EMP base

An asserted or chosen car dependency?

- A car dependency widely cited in the scientific literature
- A reflex or a non-reflexive use?

Considering the average trip : 12 km in sparsely populated areas :

- A distance ruling out the alternative of walking
- Bicycles : a possible alternative... With safe cycle routes!
- And PT alternatives? Diversity of situations
 - * low-density areas are less well covered and served by PT : only 25% of these areas are part of an urban transport perimeter with some PT services;
 - And when they are, 40% of them are part of small intermunicipal structures that are still thinking about setting up mobility services adapted to their territory
 - * Rail services? 30% of rural communes and 45% of rural population under the influence of a rail service



Mobility profiles in sparsely populated areas : multimodal VS exclusive cars users?

According to the frequency of modes use : 89% of people living in rural areas are not exclusively dependent on car use

- * Less than 1% of them never use the car, either as a driver or a passenger → they walk or take PT
- * 25% never use the car as a driver → they walk or travel by car as a passenger

In sparsely populated areas, 2 main multimodal mobility behaviors models = 70% of multimodal people

- * car + walk
- * car + walk + cycling
- * And PT = the third mode after car and active modes in sparsely populated areas

Being a multimodal people in sparsely and densely areas means using...

Mode	Frequency		
	Regular use	Occasional use	No use
Car passenger	38.0	37.1	24.9
Car driver	76.8	2.9	20.3
Walking	68.1	25.2	6.7
Public Transport	9.0	17.5	73.5
Cycling	12.5	32.4	55.1

Mode	Proportion of people	
	Living in sparsely populated areas	Living in densely populated areas
Car and walking	40.7	18.8
Car, walking and cycling	28.7	9.3
Car, walking, cycling, PT	11.9	25.0
Car, walking, PT	11.6	39.8

Conclusion

- Car dependency in sparsely populated areas results from either a constraint or an asserted choice;
- A degree of dependency depending on profile of people;
- Aspirations of people in rural areas to have alternatives to the car (the "yellow vest" movements in 2019);
- An urgent need to transform mobility in rural areas : a double challenge
 - * reducing car dependency in sparsely populated areas :
 - Implementing mobility services adapted to these areas (shares mobility, rural mobility as a service, self-service bicycles,...) and to revitalize small railroad lines.
 - Bringing about sociological change (habits, social norms,...)
 - * but also acting for mobility of vulnerable population (with financial and/or physical constraints)
- A complex double challenge
 - * no single model of mobility solutions for these areas
 - * implementing a package of mobility services



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