

## **Title: Life and migration trajectories and territorial inequalities in France**

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### **Introduction**

This work analyzes young adults' life trajectories in France. For several decades, Western Europe has been experiencing population ageing, particularly in regions with a strong industrial past such as those linked to metal and steel production. While these areas, especially in the Northeast, were once economically attractive, they have faced a decline in appeal in recent years largely due to economic instability. Consequently, numerous regions experience decreasing populations, as people move to more attractive areas offering higher employment prospects. The movement of certain groups can result in a downward spiral of decreasing services and fewer job opportunities coupled with an ageing population. These regions, commonly referred to as vulnerable zones, i.e. the so-called fragile territories. One of these territories will be analyzed: the Lorraine region. These dynamics cause downward spiral effects, including a decline in amenities and problems with access to healthcare, education, and more.

As highlighted by Cordazzo and Fichet (2013), analyzing transitions and passages is essential to understanding residential and social mobility dynamics throughout the life course. Moreover, young people moving into adulthood tend to be more mobile and are more likely to experience unemployment (Joubaire et al., 2024). Furthermore, the development of local territories depends on demographic dynamics, namely residential mobility (Charvet, Savignon, 2002). Bernard and Kalemba (2022) highlight that a substantial body of literature has developed on the relationship between internal migration, educational attainment, employment and family situation. Spatially, migrations observed at the entry into working life are often directed toward urban centers that concentrate employment opportunities, while migrations during this second transition often head to rural areas under urban influence (Détang -Dessandre et al., 2002), which constitute peri-urban flows. However, many trajectories of rural immobility are increasingly observed in the field (Coquard, 2019).

This research aims to delve deeply into the personal individuals' journey residing in France. We focus on migration paths influenced by sociodemographic, educational, job market entry and professional growth factors, conducting a spatial and longitudinal approach. Therefore, this research identifies migration paths, both within regions and between different types of territory, i.e. isolated rural areas, outlying areas, small or medium-sized towns, and large urban agglomerations. Understanding different viewpoints, regardless of migration status, is essential

to grasp the complexity of social and spatial dynamics (Impicciatore and Panichella, 2019). To capture this complexity, a variety of perspectives are needed, irrespective of migratory status. Employment trajectories are thus examined as one way to explain migration patterns. This article adopts a multi-approach framework. The trajectories are analyzed through a multi-scalar lens, incorporating internal mobility patterns at both interregional and intraregional levels. Beyond the socio-demographic perspective, the originality of this analysis lies in accounting for the degree of urbanization of individuals' places of residence. First, analyses are conducted at the national level, followed by a more focused examination centered on a specific region.

## **Data & methods**

Sequence analysis provides a powerful framework to capture the complexity and temporal ordering of life-course trajectories, allowing for a nuanced understanding of individual mobility patterns over time (Robette, 2011). We examine residential and occupational mobility, considering sociodemographic characteristics and origins. Our data come from the Permanent Demographic Sample, the French population census, and the employee panel, giving detailed and accurate information. This dataset combines data from the national census, tax records, civil status records, and business records. It provides a detailed and representative view of the demographic, social, and economic characteristics of individuals living in France. Access to the "All Employees" panel<sup>1</sup> enables longitudinal analysis of employment paths by linking them with migration trajectories.

We examine migratory trajectories, considering the origin area origin. Urban densities are established in 9 classes, based on population density tiles and access to education (Rosenwald, 2019). This method distinguishes municipalities according to their density predominance. Here we describe the origin and density trajectory of the residence municipalities. The population characteristics moving within the country is analyzed from 2011 to 2021 in France, and to 2019 for the case of Lorraine. This period offers the most recent and comprehensive available data. Our sample consists of young individuals surveyed for each year within this period. We define the cohort according to their age, i.e. between 18 and 20 in 2021. We then focus on the life period between ages 18 and 30. Using semi-structured interviews we complement our analysis by highlighting choices and motivations between life trajectories, emphasizing how spaces are sustained or transformed through individuals' trajectories.

The census data providing information on education level, duration of studies, and unemployment, among other variables, involve sample sizes that are too small at the regional level. For this reason, the second part of the analysis focuses on the following trajectories:

This article presents only descriptive results and the main analyses. The presentation will include figures from these analyses, such as sequence index plots.

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<sup>1</sup> (N = 282 284)

This work aims to examine the sociological and geographical impact on life-course decisions, using statistical probability and trajectory analysis. Therefore, we use a sequence analysis approach to examine the individuals' migration trajectories at the municipal level. This method highlights the diversity of migration trajectories at the local level and explores mobility dynamics within communities. We focus on migrations on the finest available scale, i.e. the municipality level, and subsequently we contextualize these findings by describing migrations within regions, departments, and living areas. To achieve this, we employ multimodal modeling to analyze various migration patterns, including individuals who remain in place, those who relocate, and those who return to their place of origin. This approach includes a Multiple Correspondence Analysis (MCA) followed by a Hierarchical Clustering (HC), along with Chi-square tests to assess the statistical associations between variables. Furthermore, we investigate what drives individuals to leave their communities, particularly during adulthood transition. We then focus on rural and urban areas, examining both individual traits and journey arcs. Surveys show that the reasons for professional mobility are multiple and varied (Schachter, 2001). To supplement our quantitative research, we plan to conduct qualitative interviews with both residents and policymakers. This approach aims to uncover hidden facets of life-course journeys that may elude traditional survey methods.

## **I. Internal national residential trajectories**

On average, individuals in our sample changed their place of residence 3.5 times in 10 years, half of whom moved 0 to 3 times. Based on sequence analyses, we identify 6 clusters of trajectories, considering mobility as a change of the commune of residence. These clusters differ regarding life trajectories, geographical context and individual profiles.

We tested the relation between an individual's nationality and their internal migration path. Results show that individuals who were immigrants and of foreign nationality at birth are associated with immobility at the municipal level.

### **Young people who are the most mobile return home more**

Different clusters reflect distinct migration patterns, ranging from immobile youth to those who are highly mobile. Among them, three clusters represent a particularly mobile population, characterized by variations in both the number and timing of residential moves. When examining return trajectories, it appears that the young people who spend the most time in their original municipality (as defined in 2011) are those who move the least. The cluster most strongly associated with immobility has 50% of its population remaining in the same municipality over a 10-year period. Among mobile populations, the returns proportion is not directly linked to the residential moves number. In fact, most mobile individuals (who did between 5 and 7 moves) are more likely to return compared to those who moved less frequently (with an average of 3 moves). While populations experiencing a significant number

of moves do not return to their original municipality, they engage in proximity migrations more frequently.

### Immobility and return trajectories in rural areas

It's common knowledge that a significant number of young people relocate to different cities during their studies and job searches, especially towards the attracting metropolis (Rowe, 2020). However, surprising statistics reveal that a large proportion of students, particularly those from less attractive areas (often rural), tend to return to their hometowns after completing their education. These return trajectories are frequently associated with precarious living conditions and difficulties in integrating the job market. Such return patterns are often linked to both geographical and social origins, and are further compounded by setbacks in higher education pathways.

Residential immobility is a defining feature of rural populations. Young people originating from rural areas with dispersed housing are associated with residential immobility. Strong territorial attachment is evident both in quantitative measures of immobility and in qualitative insights collected through field interviews. Although migration is typically driven by the aspiration to improve labor market integration, findings suggest that for some young adults from rural areas, migration may have adverse effects. Conversely, individuals who remain in their place of origin often demonstrate higher levels of employability.

However, young people from smaller towns have a stronger association with frequent residential mobilities. This suggests that the territorial attachment phenomenon is less pronounced among urban youth.

### Less mobile youth are more often unemployed or inactive

Our results show that young people are associated with immobility, and low mobility are more likely to be unemployed and inactive. Moreover, highly mobile individuals are more often associated with delayed entry into higher education.

Our interest lies in individuals' education duration in relation to their migration trajectories. Individuals with higher mobility tend to have a greater proportion of long-duration studies. Specifically, regarding highly mobile individuals (i.e. at least 6 times), the study completion rate by the end of the period is approximately 15%, which is about one third higher compared to immobile and less mobile individuals.

Job searching is a variable that helps to reflect potential difficulties in professional integration as well. Results show that individuals experiencing immobility or low mobility have a higher rate of job search activity compared to highly mobile individuals. Twice as many individuals in this population are engaged in job searching, with an average of 4% for the population in the cluster associated with immobility.

## **II. Results for one region in decline : the case of Lorraine**

Regional-level analyses provide a better understanding of internal dynamics, especially in vulnerable areas that exhibit specific spatial patterns (Dubuc, 2004). Lorraine has a population of approximately 2.3 million inhabitants and has experienced a demographic decline in recent years, marked by decreasing birth rates and out-migration. The region is also home to around 280,000 cross-border workers, which contributes to challenges related to traffic congestion and housing availability. This region is cross-border with Luxembourg and attracts workers from all over the world. Despite this, it is one of the regions in France experiencing the most negative population growth.

We analyze these trajectories on a population that has lived at least one year in Lorraine. This allows us to account for trajectories of immobility, arrival, return, and departure.

The trajectories are based on four distinct pathways, analyzed using a multi-channel approach: changes in municipality of residence, residence within or outside Lorraine, urbanization level of the place of residence, and socio-professional category. The clustering analysis was conducted on a sample of over 5 000 individuals. It highlighted five distinct groups characterized by different mobility patterns. These include those who remain largely immobile, those with limited interregional mobility, individuals exhibiting significant interregional moves, those who depart from Lorraine, and a group experiencing both arrivals and departures. Moreover, previous research has demonstrated that the number of children plays a crucial role in shaping residential mobility patterns (Thomas et al., 2017), making it an important variable to include in our analysis.

### **Departure from lorraine : from isolated rural to dense urban**

Consistent with previous findings, this study observes early mobility among women, whereas men tend to experience mobility at later stages. Late departures from Lorraine are associated with the male gender and higher-level executive occupations. They are also linked to residential transitions from isolated rural areas to major urban centers. This pattern reflects a classic case of brain drain, where highly skilled individuals. Departures can often be linked to family trajectories. In this case, they are associated with minimal marriage rates and a very low number of children. Therefore, these departures are largely explained by professional career considerations, given that the regional context is not conducive to such types of employment.

### **Rural immobility**

This corresponds to a large majority of individuals with no change in their municipality of residence. In this context, staying in Lorraine and not changing municipalities is linked to a particular profile. These individuals tend to have more established family paths, with a high rate of marriage and childbearing. These patterns are predominantly observed among individuals in the working class.

### Regional internal mobilities

Individuals experiencing multiple internal moves within the region are more likely to have fragmented employment histories, characterized by prolonged spells of unemployment. These individuals mainly live in low-density rural areas and in both peripheral and densely populated urban zones.

### **Conclusion :**

In summary, our analysis reveals distinct mobility and employment patterns within the region. While some individuals exhibit residential stability tied to established family trajectories and working-class occupations, others experience frequent internal migrations associated with fragmented employment and prolonged unemployment. These dynamics vary across different spatial contexts, from low-density rural areas to urban peripheries and dense city centers, highlighting the complex interplay between social, economic, and geographic factors in shaping life courses. The dual national and regional approach allows us to reveal this complexity and the strong territorial dimension of these dynamics.

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