



HAL
open science

The Geographical Dimension of Inequalities in Access to Employment

Philippe Askenazy, Verónica Escudero

► **To cite this version:**

Philippe Askenazy, Verónica Escudero. The Geographical Dimension of Inequalities in Access to Employment. Clémentine Cottineau; Julie Vallée. Inequalities in Geographical Space, Wiley; ISTE, pp.85-118, 2022, SCIENCES – Geography and Demography, 9781789450880. 10.1002/9781394188338.ch4 . halshs-04828621

HAL Id: halshs-04828621

<https://shs.hal.science/halshs-04828621v1>

Submitted on 10 Dec 2024

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.



Distributed under a Creative Commons Attribution - NonCommercial - ShareAlike 4.0 International License

4

The Geographical Dimension of Inequalities in Access to Employment

Philippe ASKENAZY¹ and Verónica ESCUDERO^{2,3}

¹ *Centre Maurice Halbwachs, CNRS, ENS, Paris, France*

² *International Labour Organization, Geneva, Switzerland*

³ *Center for Effective Global Action, UC Berkeley, USA*

4.1. Introduction

Most countries have significant and persistent spatial disparities in access to employment. These disparities concern all dimensions of access to employment: whether or not one is working; the nature and amount of earnings received; whether one has a job that corresponds to one's aspirations; and the type of job (full-time, part-time, self-employed, etc.). The dispersion of unemployment rates at different territorial levels provides an entry point for this chapter, which explores the significance of geographical processes (essentially internal to a country) in inter-individual inequalities by covering all dimensions of access to employment.

The magnitude of the differences in unemployment, wages or income¹ within countries is as great as between countries at the same level of development whether

1. Wages are a form of remuneration for work in a given salaried job, paid on an hourly, monthly or even piecework basis. The definition of employment income is broader, including all earnings from work over a given period of time (usually a year), including wages for different jobs and earnings for self-employed activities. In addition, labor income also includes transfers that are directly related to being in the labor force, such as unemployment

Inequalities in Geographical Space,

coordinated by Clémentine COTTINEAU and Julie VALLÉE. © ISTE Ltd 2022.

the analysis is conducted at a regional level (NUTS 1 and 2 within the European Union, for example) or more locally.

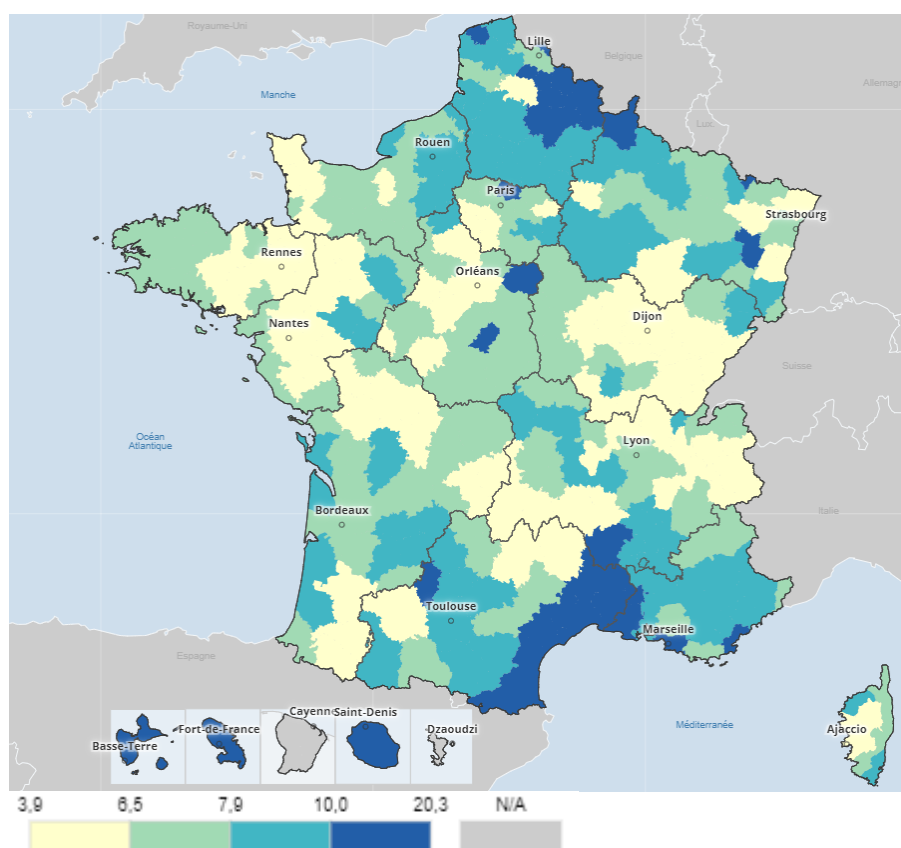


Figure 4.1. Average annual unemployment rate by employment zone in metropolitan France and overseas departments, 2021 (sources: IGN and Insee localized unemployment rate; extracted from the INSEE local statistics website: statistiques-locales.insee.fr). For a color version of this figure, see www.iste.co.uk/cottineau/inequalities.zip

insurance benefits. Finally, income in the broadest sense includes other sources of financial transfers: investment earnings, pensions, donations, etc. Wages and income can be expressed as gross or net of social contributions and/or taxes.

In France, for example, there are large disparities between the unemployment rates of different employment areas (Figure 4.1), with a wide spectrum in metropolitan France ranging from Les Herbiers in the Vendée to Agde-Pézenas in the Hérault (with 3.9% and 15.2% rates of unemployment in 2021, respectively), exceeding 16% across the overseas departments of Guadeloupe and La Réunion.

	Regions with the highest unemployment rate	2019	Regions with the lowest unemployment rate	2019
Belgium	Brussels-Capital	12.6	Antwerp Province	3.6
	Prov. Hainaut Province	8.6	Oost-Vlaanderen Province	2.9
	Namur Province	7.0	West-Vlaanderen Province	2.5
Spain	Autonomous City of Melilla	27.0	Aragón	10.0
	Autonomous City of Ceuta	25.8	País Vasco	9.2
	Extremadura	21.5	Comunidad Foral de Navarra	8.2
Hungary	Észak-Alföld	6.3	Pest	2.4
	Dél-Dunántúl	4.8	Közép-Dunántúl	2.0
	Észak-Magyarország	4.5	Nyugat-Dunántúl	1.8
Italy	Calabria	21.0	Emilia-Romagna	5.5
	Campania	20.0	Provincia Auton. Di Trento	5.0
	Sicilia	20.0	Provincia Autonoma di Bolzano/Bozen	2.9
Poland	Lubelskie	5.4	Slaskie	2.4
	Podkarpackie	5.1	Lubuskie	2.0
	Mazowiecki regionalny	4.6	Warszawski stoleczny	2.0
Slovakia	Východné Slovensko	9.1	Západné Slovensko	4.0
	Stredné Slovensko	6.1	Bratislavský kraj	2.3

Table 4.1. Regions (NUTS 1) with the highest and lowest ILO unemployment rates (in %) within selected European countries, 2019 (source: Eurostat)

Regional differences are significant in nearly all of the countries of the European Union, sometimes even more pronounced than in France (Table 5.1). Over the last three decades, northern Italy has experienced an unemployment rate that is three or four times lower than that of southern Italy (Kline and Moretti, 2013). Similar results can be seen for the United States. The unemployment rate in Flint (Michigan) was nearly six times higher than that of the city of Iowa (Iowa) (*ibid.*).

These geographic differences persist over several decades (Blanchard and Katz 1992; Moretti 2011) and across generations (Chetty et al. 2014). Moreover, they do not simply reflect differences in the average characteristics of residents. The degree of variability remains when rates are adjusted for education, age, gender or ethnicity. Beginning with an analysis of the sources of this variability in terms of unemployment allows us, in this chapter, to progressively explore the multiple geographic channels that affect the various social gradients in access to employment.

Different models have been used over the years to study spatial differences in unemployment from an economic perspective. Regardless of their assumptions, all models conclude that unemployment differentials depend on labor supply factors (such as changes affecting the labor force, labor force participation, commuting patterns, migration and other preferences of workers, etc.); labor demand factors (such as job vacancies and amenities that affect the production function of firms); and wage setting (including wage levels, how well job seekers are matched to existing vacancies, etc.) (Elhorst 2003). However, not all models take into account all aspects that can be classified into these three broad categories of factors. In fact, space characteristics, such as housing conditions, property values, infrastructure, including transportation, public services and the perception of disamenities such as insecurity, pollution, etc., are often not incorporated, although they may determine variations in labor supply and demand, and more often than not both simultaneously. For example, the value of land will affect both. On the one hand, it can limit or increase the costs of firms attracting more or fewer jobs. On the other hand, it will allow or prevent households from residing near workplaces. For this reason, we have chosen to present simple models of migration and amenities as a starting point for this discussion, as they allow us to explore the role of geography in creating inequalities in access to employment.

However, these models are based on a strong assumption of costless and frictionless labor mobility, which is not the case either for movements within a country (economic, social, family and emotional costs of moving) or internationally (language barriers, legal barriers, etc.). Thus, explaining the persistence of large spatial disparities in labor market access within countries requires us to go beyond existing models. This investigation will reveal how geographic mechanisms can generate, amplify or moderate inequalities in gender, age, education or ethnicity in access to (decent) jobs. Many channels emerge. In this chapter, we develop those that seem to us to be the most illustrative. They can be divided into three groups, each of which addresses a hypothesis of migration or amenity models: residential immobility and spatial mismatch (section 4.3); how models and their assumptions need to be adapted when looking at employed couples rather than the individual

(section 4.4); and the lack of free access to the labor market and the question of networks (section 4.5).

Finally, the last section of the chapter deals with digital space (section 4.6) to explore whether some of the changes brought about or facilitated by digital technologies might erase the geographical dimension of access to employment, and their consequences in terms of (un)equal access to employment.

4.2. Compensatory differences between territories

The economic literature pays particular attention to the role of interregional labor migration as a mechanism for balancing the performance of regional labor markets (Pissarides and McMaster 1990; Molho 2001; Layard et al. 2009). This section presents two generic models taken from this literature, followed by the findings of empirical studies testing their relevance.

4.2.1. From the immigration model to the amenities model

One strand of this work identifies interregional migration as the key aspect of reconciling spatial and regional differences in labor market and economic opportunities (Hunt 1993). Migration models assume that the decision to move residentially is determined by the costs and benefits of moving from one area to another (Groenewold 1997; Molho 2001). Unemployment and wages are key variables in this decision, as workers are expected to migrate to balance these two factors (among others). Indeed, according to traditional economic theory, areas of high unemployment experience a decline in relative wages, which in turn causes individuals to migrate to other areas. At the same time, the decline in relative wages also leads to an increase in the relative demand for labor, and emigration leads to a decrease in the relative supply of labor. In the second stage, unemployment therefore falls in these areas, and relative wages rise, causing workers to move to these areas from other locations. The repetition of this process tends toward an equilibrium.

However, in Hunt (1993), Molho (2001) and Pissarides and McMaster (1990), the migration process is assumed to be slow, and thus while an equilibrium can be reached, it will only be long term through compensating differentials in local unemployment and wage. In this simple theoretical version, net migration is assumed to be zero. An extension of the model relaxes this assumption, allowing market conditions other than unemployment and wages (job vacancies and amenity differences, such as housing prices and public services) to play a role (Groenewold 1997). But the basic assumption of these approaches is that a regional imbalance in

unemployment and wages is only slowly resolved by interregional migration flows, among other factors.

In contrast, a second strand of the literature assumes that local economic and labor markets, as well as the migration process, are efficient. Thus, any differences in individuals' preferences for wages, unemployment and other economic opportunities are quickly mediated by migration, which quickly restores equilibrium differentials between localities. This is the basis of the commodities or amenities model, which supports a spatial equilibrium view of unemployment (Elhorst 2003). According to this model, relocation is driven by the availability, consumption and relative prices of amenities, and the perception of disamenities in residential areas. Thus, in this model, the accessibility (or lack of accessibility) of amenities is the factor that compensates for spatial differences in unemployment. Utility differentials (i.e. people's preferences for certain amenities) are not emphasized in these models, as they will be automatically compensated for by residential mobility. What matters are changes in the demand for and supply of amenities (and their upstream determinants, such as increases in real incomes), because they will lead to a momentary disequilibrium.

4.2.2. Empirical findings

The empirical findings do not support some of the assumptions of the migration and amenities models, nor their key theoretical prediction that intra-regional differences in unemployment will reach equilibrium (albeit in the long run).

First, empirical analyses have struggled to demonstrate that people move primarily to take advantage of better amenities, and that geographic differences in employment opportunities can be quickly arbitrated by migration. In fact, other factors play an important role, such as changes in local real wages and household rent (Blanchard and Katz 1992; Diamond 2016); mobility costs, which are disproportionately higher for more vulnerable groups (Bound and Holzer 2000; Moretti 2011); changes in local labor demand, such as shifts in the sectoral composition of firms (Blanchard and Katz 1992; Moretti 2011); and so on. Moreover, rather than reducing interregional inequalities, the migration of people to areas with better jobs and better amenities can lead to the labor market segmentation, spatial segregation of workers according to their level of income or qualifications, and greater economic inequality. This is what Diamond (2016) found when she studied the geographic sorting of young people in the United States from 1980 to 2000. She found that the most educated job seekers settled in areas with better jobs and amenities, while the least educated job seekers moved to areas with worse jobs and amenities.

Second, various studies have shown that labor markets remain fairly local. Indeed, even when people want to move, they prefer not to move far away. For example, Manning and Petrongolo (2017), in their study of local labor markets in England and Wales, found that job seekers are less interested in jobs the further away they are. In addition, many people who would like to move are unable to do so because they cannot always find jobs in other locations (Gobillon et al. 2007).

Finally, even in countries where interregional migration is a widespread phenomenon, such as the United States, it is insufficient to balance regional labor markets in the long run. For example, in 2009, the average hourly wage of a worker in Stamford, Connecticut, was twice that of another worker with the same education, age, gender and race in Jacksonville, North Carolina (Kline and Moretti 2013). The difference was even greater for job opportunities.

All in all, the empirical results show that the simplifying assumptions of existing theoretical models do not allow these models to accurately represent the complex realities of individuals and households with respect to the geographical dimension of inequalities in access to employment. It is therefore necessary to introduce new, more realistic mechanisms into the analysis. This is what we do throughout the rest of the chapter, where we discuss immobility and spatial mismatch (section 4.3); how models and their assumptions change when we no longer look at the worker as a single person but as a member of a household (section 4.4); the absence of free access to the labor market and the question of networks (section 4.5); and finally the digital space (section 4.6).

4.3. Immobility and spatial mismatch

When jobs are far away from the people seeking them, there is a spatial mismatch. In particular, this common phenomenon affects low-income households around the world. In some countries, such as the United States, particularly in former large industrial cities, this mismatch is fueled by the concentration of jobs in the suburbs and the concentration of affordable housing in the inner cities. Other geographic areas suffer from a reverse pattern of this spatial mismatch. For example, in many contemporary cities, particularly in Europe (Berlin, Paris, London, Milan, etc.), high-income jobs and the most expensive housing are concentrated in the city centers, pushing more affordable housing to the suburbs, where the jobs to which these populations are entitled are rarely located. This pattern creates a displacement problem, especially for vulnerable workers, including people with disabilities, who cannot take advantage of distant employment opportunities, especially in the absence of reliable public transportation.

4.3.1. Residential sorting and access to employment

The spatial mismatch hypothesis was pioneered by Kain (1965). Using data for Detroit and Chicago in 1952 and 1956, he concluded that African Americans were concentrated in inner-city housing, suffering from significant residential immobility (linked to racial discrimination – which we will return to in the next subsection). This, combined with the suburbanization² of jobs, has reduced the employment opportunities for this group.

The phenomenon of spatial mismatch has been the subject of much empirical research, generally confirming its initial predictions. In the United States, most studies have focused on the effects of spatial mismatch on the labor market outcomes of Black workers. Parks (2004), for example, finds that improved geographical accessibility³ to jobs is associated with lower unemployment rates among Black workers. Weinberg (2004) finds that Black residential centralization can explain a large portion of the employment differential (48–62%) between Black and White workers. Hu (2019) extends this analysis to other racial/ethnic groups. Using longitudinal and census demographic data, combined with travel time matrices, his studies focus on Hispanic and Asian populations in the Los Angeles area. He finds that when Hispanic people with low or moderate education have low job accessibility, the result is a lower probability of employment than White people. In the case of Asian job seekers, the spatial mismatch hypothesis is confirmed, even when they are highly educated.

Meanwhile, in Europe, Gobillon et al. (2011) assess whether differences in unemployment duration in Île-de-France (Greater Paris Area) reflect residential sorting. The authors use duration models based on an administrative dataset containing spells of unemployment, workers' characteristics and their place of residence between 1996 and 2003. The study finds that local indicators, composed mainly of measures of residential segregation, capture 70% of labor market disparities. These findings are supported by Korsu and Wenglenski (2014), who explain that being located far from employment in the Paris Region tends to complicate individuals' access to employment. Finally, Åslund et al. (2010) study this issue for refugees in Sweden. The authors draw on a government policy that randomly assigns refugees to neighborhoods with different degrees of accessibility, combined with rich individual-level data for 1990–1991 and 1999. The study finds that neighborhoods with twice as many jobs

2. “North-American” suburbanization differs from European suburbanization (Hervouët 2001). Suburban areas are positioned between peri-urban and urban areas. Suburbanization is the movement of a population from the center to the suburbs.

3. Accessibility in these studies is generally measured using an index capturing the distance between residences and potential workplaces (Gobillon et al. 2007).

have a 2.9 percentage point higher probability of refugee employment on average. In addition, sorting individuals into areas with low job availability permanently worsens their labor market outcomes 10 years later.

While these studies confirm the effect of spatial labor market mismatch on the employment of vulnerable workers, other studies have focused on the mechanics of this effect. Indeed, spatial mismatches are driven by the barriers faced by workers, primarily the most vulnerable, to commute or relocate to geographic areas where jobs exist. These barriers are discussed in the following sections.

4.3.2. Gradients in residential immobility

Some studies in geography and sociology see residential immobility and even segregation as a voluntary choice demonstrating an attachment to one's land or neighborhood, to one's roots and community (Cooke 2011), which may even have benefits (Peach 1996). However, many studies explore the mechanisms (social and economic, but also legal⁴) of involuntary residential immobility and its links with access to employment and the labor market.

Social housing recipients face a double challenge (Hu 2019), namely the spatial concentration of supply and waiting lists that make it difficult to obtain housing in a distant locality where the worker would have obtained a promise of employment. Mobility must therefore precede the search for employment. Even in France, where municipalities are required to maintain a quota of low-cost housing, it is concentrated in large cities in certain neighborhoods (see Chapter 7).

At the same time, access to rental housing in the private sector is hampered by the unequal financial capacity of individuals. In growing employment areas in particular, landlords can charge higher prices and be selective by requiring a job, a promise of stable employment or a deposit. Young people are particularly exposed to these requirements. This creates a very strong gradient and a social reproduction of inequalities in terms of opportunities: a young person whose parents have wealth and/or a comfortable income will be able to leave the family home to move and get closer to a job market where their skills will be most valued, unlike a young person with the same skills whose lack of family support will prevent them from moving.

In addition, some private landlords discriminate against certain populations, even though this is illegal in many countries. Kain's (1965) original hypothesis of racial

4. For example, Schleicher (2017) offers an impressive list of legal devices that "trap" US households especially in cities in decline.

discrimination in the housing market limiting residential choice for African Americans has since been largely validated. Online rental offers have provided a field for numerous experimental analyses in different countries. They systematically point toward clear statistical discrimination, as well as a discrimination of preference against ethnic minorities (except in neighborhoods and localities where they are already concentrated), thus compounding spatial segregation and trapping these minorities in low employment opportunities (e.g. Bosch et al. 2010, on Spain).

Homeowners are a priori exempt from these constraints. Nevertheless, especially for those on the lowest incomes, ownership can become a straitjacket (Askenazy 2021). Transfer costs include a fixed share, and the transfer of credit from one dwelling to another can also be costly. Above all, homeownership involves being overexposed to local economic downturns. If, for example, an employment area suffers the closure of a large factory, not only will employment opportunities plummet but housing values will also decline, making it impossible for a homeowner to sell and acquire a home in an up and coming area. Thus, homeowners may have less residential mobility than renters. Hassan et al. (1996), for example, illustrated this in the case of Australia. Such vicious cycles particularly affect certain categories or minorities, such as low-wage workers in Australia or Black and Latino populations in the United States (Hall et al. 2018). At a more macrolevel, these mechanisms participate in a divergence of employment or unemployment rates between employment areas following economic recessions or restructuring (e.g. with reference to France, Askenazy 2018).

Social barriers appear across the board, whether someone is an owner or a tenant. For example, local friendship and family networks offer daily support that allows for reconciling family and professional life, and accessing jobs with staggered hours or on weekends, especially when childcare services are limited. Mobility can break these social barriers down. Here too, a social gradient appears whereby young, single mothers with children, and in the case of the United States, Black mothers, are the most dependent on maintaining such networks for their participation in the labor market (Parish et al. 1991).

All in all, mobility is limited by numerous fixed costs and barriers that ultimately reinforce the social and ethnic gradient in access to employment.

4.3.3. *Commuting patterns*

The empirical literature supports the intuition that extending commutes increases employment opportunities and, in part, resolves spatial mismatch (Bastiaanssen et al. 2020). While spatial mismatch theoretically allows one to escape from a

monopsonic local labor market (see Box 4.1), and thus experience an increase in job quality (and in wages, first and foremost), its positive effects are not so clear in practice, at least for certain groups of workers.

A monopsony is a market situation that is symmetrical to that of a monopoly: demand is essentially the result of one player. In the labor market, a monopsony is an employer who does a large share of the hiring, and an oligopsony is a limited group of employers who concentrate most of the jobs or hires. A degree of concentration or monopsony in a labor market can be calculated: for example, the Herfindahl-Hirschmann index is calculated by squaring the employment (or hiring) share of firms recruiting in a given market.

In practice, a monopsony is assessed for a segment of the labor market and is often location-based. For example, in a given catchment area, a large factory may concentrate most of the industrial jobs; a supermarket may be the only source of part-time jobs for low-skilled women in the area. Monopsonic situations are frequent but often hidden; for example, in the city of Paris, the Casino distribution group concentrates nearly half of the jobs in the food retail sector through a multiplicity of different brands (Monop', Franprix, Naturalia, Leader Price, etc.).

The monopsony has market power that allows it to capture workers' rents and, in particular, to crush wages (below the theoretical level of the competitive model). The level of employment is itself sub-optimal. The prevalence of a monopsony is thus one of the main theoretical and empirical explanations for the absence of a negative impact on employment of the introduction of a minimum wage or of a significant increase to it, a phenomenon observed in particular since 1999 in the United Kingdom and since 2015 in Germany (Gautié 2020).

Box 4.1. *Monopsony: a key concept in labor economics*

A journey by private car involves significant fixed costs (purchase and maintenance of the vehicle, parking space, etc.) and variable costs (fuel, possible tolls) to be weighed against the opportunities to which this journey gives access. This trade-off therefore tends to reinforce inequalities in access to employment between professional categories. In fact, we observe much longer journey times for executives than for employees. This also implies a generational bias, with young people (Brandtner et al. 2019), as well as poorer households (Jouffe et al. 2019) less likely to have their own vehicle.

From this perspective, public transport infrastructure plays a key role in reducing inequalities in access to employment. This argument has long been discussed statistically, as the presence of infrastructure is partly endogenous to the distribution of housing and jobs: for example, the construction of a subway line may be decided because there are *ex ante* flows of workers from their place of residence to their place of work. Recent work has moved beyond the critique of the endogeneity of infrastructure as a response to pre-existing routes. They reference natural experiments, such as a disaster that cuts off transportation lines for an extended period (e.g. Tyndall 2017, based on Hurricane Sandy in New York City), and support the influence of infrastructure on inequality. Young people are the primary beneficiaries of public transportation in terms of access to employment (Brandtner et al. 2019).

In addition to its direct effects, the improvement of individual and collective transport infrastructures involves positive and negative externalities. Its impact in terms of inequalities in access to employment is thus ambiguous. Better infrastructure enhances the attractiveness of the area that benefits from it, not only for workers but also for employers and consumers. Numerous studies confirm that it accentuates the agglomeration of activities (e.g., Ghani et al. 2016, with reference to India); this agglomeration therefore offers increased employment opportunities to all the residents who are beneficiaries. Yet, conversely, it tends to reinforce the geographic segmentation of a space with – to use the terms of Krugman’s (1991) initial model – cores where jobs are concentrated and peripheral territories where residents suffer from a deficit of employment opportunities.

Moreover, promoting longer commutes affects the quality of employment, the environment, and the lives of individuals. Indeed, the length and nature of these trips are a working condition. Commuting can be a factor of increased fatigue and stress, especially for the longest journeys, and automatically increases risks (accidents in private vehicles, picking up an infection on public transport). Above all, commuting time replaces health activities, such as meal preparation, time spent with family for meals or physical activities (Christian 2012). Overall, travel time tends to worsen individuals’ health indicators, and even more so their perceptions of their health (e.g. Hansson et al. 2011, with reference to Sweden). The improvement of infrastructure thus has ambiguous effects for the inhabitants of the areas concerned: it generates new journeys and encourages longer commutes, but it reduces the time spent in transport for a given distance, and by agglomeration makes it possible to offer similar employment opportunities for shorter trips in terms of distance and time.

In sum, a number of barriers impede the ability of workers, especially the most vulnerable, to commute to or relocate to geographic areas where jobs are available. In addition, the dynamism of firms' locations in geographic areas can also determine spatial mismatch. Theoretical models suggest that employment centers emerge when built-in areas become large enough to allow for greater demand, which depends on economies of scale and transportation costs (Krugman 1991). Empirical analyses show that this geographically concentrated production is indeed a factor in regional unemployment differentials (Elhorst 2003). Polycentrism, or the decentralization of certain economic sectors, is also a dynamic phenomenon, given the constant rise and fall of industries and firms, and the changing organization of metropolises. In these circumstances, the availability and affordability of transport and housing become all the more important, because, in practice, reassignment and commuting are the only mechanisms for absorbing sudden changes in labor demand in terms of skills and locations.

Lastly, it will be interesting to monitor the long-term impact of the Covid-19 health crisis on commuting, both in terms of inequality in access to employment and health. In addition to telecommuting, which will be discussed in section 4.6, the crisis may have increased distrust of public transport; it has also accelerated the construction of bicycle infrastructure in many cities, which combines mobility and physical activity for distances of a few kilometers.

4.4. The importance of couples' geographic trade-offs in individuals' access to employment

So far, we have considered isolated individuals or households⁵ without distinguishing between their members. However, while some choices may remain individual, some are fundamentally shared within a household. The space in which the household establishes its main residence is one of the most structurally significant, since it is one of the determinants of its members' labor markets. Looking within a household reveals new mechanisms linking space and inequalities in access to employment. As in most existing work, we restrict ourselves here to heterosexual, dual-earner couples living in the same dwelling, with or without children (see Figure 4.2) – the main configuration of non-retired households in many advanced, emerging and developing countries.

5. According to the Eurostat definition, a household consists of a person living alone or a group of persons not necessarily related to each other, residing at the same address, sharing at least one meal a day, or sharing a living room.

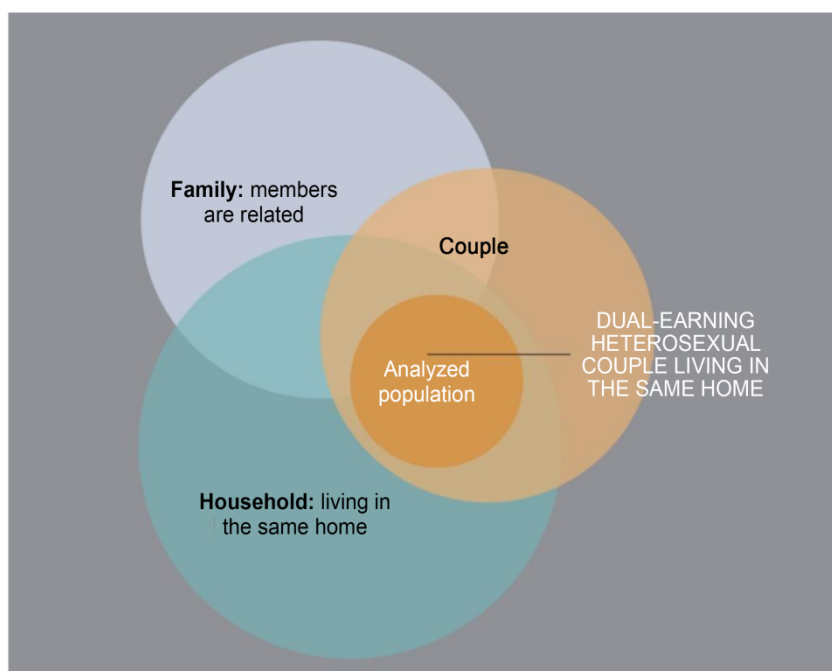


Figure 4.2. *Between couple, family and household, the position of dual-earning heterosexual couples living in the same home. For a color version of this figure, see www.iste.co.uk/cottineau/inequalities.zip*

4.4.1. A theoretically gendered space

A bulk of work in family economics has broken down unitarian views of the household (Donni and Ponthieux 2011). Unlike, for example, Becker's (1974) approach, family choices are not made by an altruistic head of household who seeks to maximize total household income. They are the result of negotiations between two adults.

Frank (1978) combines this household approach with job search theory to rationalize the differential in job access and earnings between men and women in couples. Women are more likely than men to be unemployed or in positions below their education level because of the priority given to the man's career in deciding where the family will live. Women are then locked into a local labor market that is suboptimal for them, which reinforces income inequalities between men and women. This theory is consistent with the observation that women are overqualified

for the jobs they hold. In the labor market, the geographical dimension thus reflects the inequality of relative bargaining power within the household.

The integration of gendered responsibilities amplifies the bias against women in access to employment, by reducing the radius of the labor market on which women operate. Indeed, theoretical studies show that, even when households change residence, it is women who minimize commuting (Clark et al. 2003). Thus, the assumption that women are responsible for the household (childcare, housework), which is largely confirmed by empirical measures, theoretically reduces the time available for women to “commute”. The birth of a child results in an atrophy of the labor market accessible to mothers, especially since it is not necessarily accompanied by a change in place of residence. The break-up of a couple does not necessarily break the residential dependence because, very often, the mother retains custody of the children, and sometimes also the associated family dwelling (40% of women with sole custody of the children retain it after a divorce in France (Bonnet et al. 2015)). If she is forced to move out, the proximity to the children’s schooling becomes the priority, even if it means moving to a much smaller dwelling.

It should be noted that the literature based on a job search approach automatically makes the male/female differential the result of a supply effect, as concluded by Le Barbanchon et al. (2020). However, it cannot be ruled out that, for example, local monopsonic firms take advantage of the spatial limitation of women to impose a lower quality of employment (working conditions and wages) on them⁶.

In these theoretical frameworks, the larger, denser and more diverse the labor market, and the more rapid transportation options are developed, the more opportunities women have. Thus, the less they should suffer from being disadvantaged in comparison to men.

4.4.2. Indicators of a restricted labor market for women

A large body of literature has empirically explored these theoretical mechanisms and tends to validate them overall. Within the OECD, for example, it has been observed that women’s commuting times or distances to work are sometimes significantly shorter than men’s commuting times or distances to work. Unemployed women also tend to look for work within a smaller radius than men. Small differences can have significant impacts. For example, using French administrative

6. An empirical study of firms’ profits would make it possible to differentiate between the supply and demand effects. Profits should be reduced by a less efficient matching in the first case and increased in the second. To our knowledge, there is no such work.

data, Le Barbanchon et al. (2020) find that unemployed women are less “willing” to commute, generating a “voluntary” wage loss of about 10% of the male/female differential in their job search model. However, according to the European Working Conditions Surveys, the difference in commuting time between employed women and men in France is smaller, compared with some countries, such as Germany, the United Kingdom, Ireland and Austria (Table 4.2). It should be noted that the comparison of gender differences must be assessed in countries with a similar level of female participation. The apparent near-equality in commuting time in Italy and Poland is explained by a much lower female employment rate.

In particular, a body of work suggests that parenthood affects women’s commuting distances but has no effect on men’s commutes (e.g. McQuaid and Chen (2012) with regard to the UK, or Lee and McDonald (2003) with regard to South Korea). It suggests that commuting time has a more severe impact on women’s decision to leave their jobs, while hourly wages have a more significant impact for men. This explains why women accept more precarious jobs in exchange for a shorter commute (Nafilyan 2019). However, the risk of being overqualified decreases with commuting distance for both men and women (Büchel and Battu 2003). The very rich article by Skora et al. (2020) explores the complete chain of events leading to a wage decrease for mothers. The authors exploit the German Socioeconomic Panel (GSOEP) from 2001 to 2017. Their results show that the transition to first-time parenthood is associated with a partial withdrawal from the labor force. For women remaining in employment, transition to motherhood is associated with a one-third decrease in the distance of their commute, while the transition to fatherhood has no effect. Moreover, the more mothers reduce their commuting distances after the transition to parenthood, the more they suffer a wage penalty. The authors suggest that wage penalties for mothers who change jobs to secure one closer to their place of residence are subject to not only a mismatch in their skills profile but also a potential loss of firm-specific human capital, as the change involves moving to jobs in firms with lower wages. In total, one quarter of the wage discount of German mothers could be explained by the shrinking of their labor market.

The nature of the local housing market also seems to play a role. Thus, if we look at Germany, Nisic (2017) shows that the gender wage differential for a given level of education is much less pronounced in large cities. It should be noted that while there is a concentration of couples in which both members have a high level of education in large urban areas⁷, this does not mean that this choice of abode

7. The concentration of graduate couples is higher in these areas because of the concentration of single graduates.

corresponds to a search for balance between the careers of the two partners: a study by Compton and Pollak (2007) based on the American Panel Study of Income Dynamics suggests that, even in these couples, the man's career tends to sway the choice of location.

	Men (M)	Women (W)	Difference (M-W)	Female employment rate (15–65 years-of-age)
Belgium	51.1	45.0	6.1	58.0
Czech Republic	37.5	33.7	3.8	62.4
Denmark	48.2	48.4	– 0.2	68.7
Germany	48.7	41.7	7.0	69.9
Ireland	52.5	44.4	8.1	59.3
Greece	33.1	31.9	1.2	42.5
Spain	37.1	36.4	0.7	52.7
France	46.7	43.0	3.7	60.6
Croatia	37.5	38.4	– 0.9	51.6
Italy	28.6	27.3	1.3	47.2
Latvia	52.9	45.4	7.5	66.4
Netherlands	46.9	43.1	3.8	69.2
Austria	45.7	34.1	11.6	67.1
Poland	35.3	36	– 0.7	56.6
Portugal	25.7	25.1	0.6	61.1
Romania	41.8	38.7	3.1	53.2
Slovenia	42.3	37.5	4.8	61.0
Sweden	53.2	46.6	6.6	74.0
United Kingdom	57.9	46.4	11.5	67.9

Table 4.2. Average time spent commuting between work and home (in minutes) by gender, 2015. Selected European countries (source: Eurofound [QOE_EWCS_3C3] and Eurostat (employment rates))

Why, then, do some countries with high female employment rates, such as Denmark (see Table 4.2), show more equality between men's and women's commuting times? Does this equality translate into reduced disparities in working conditions? Although the empirical literature is sparse, existing studies shed some

light on this question. If women accept less advantageous working conditions in exchange for greater flexibility and shorter commutes, then reducing gender inequalities in the labor market would require us to address the reasons why women prefer more flexible jobs. One such reason is the desire to balance work and family life, as women take on the majority of child-related tasks, as well as those related to elderly parents and relatives (Gimenez-Nadal and Molina 2016; Nafilyan 2019). Providing affordable childcare, encouraging flexible work practices and promoting more egalitarian gender norms (as in Denmark) could be good ways to eliminate inequalities in working conditions between the sexes.

4.5. Labor market networks and access to employment

Free entry into the labor market is marked by information asymmetries for both employers and workers. Despite the signals provided by the diploma, the orientation and filtering work of public employment services, and the service of digital platforms of vacancies and applicants' profiles, employers have only imperfect information on the quality of a candidate for employment. Conversely, a candidate has only partial public information on the working and salary conditions of an open job. A very large body of work views the use of personal contacts (or social networks) as a means of recruitment that allows agents to limit these asymmetries (Ioannides and Loury 2004). A person already employed in a company is able to give precise indications about the nature of the job, the employer's requirements or what it is like to work there. Conversely, the employer can extract information about a candidate from their referee, which also reduces the employee's "moral hazard"⁸. The interest in networks in the labor market is justified in practice: in many countries, the use of personal contacts is a major way, if not *the* main way, of hiring new entrants⁹ (for Europe, see Pellizzari (2010)). A social network is based on multiple dimensions, including ethnicity, religion and alma mater¹⁰. We focus here on its geographical dimension, and more specifically on its residential dimension.

8. In labor economics, a moral hazard arises from information asymmetries between the employer and the employee. The employee exploits the inability of the other party to observe their behavior perfectly, to reduce effort, thus failing to adhere to the terms of the labor contract.

9. The irruption of digital job platforms rather seems to have reinforced the importance of social networks in the labor market (Kuhn and Mansour 2014).

10. As suggested by the "strength of weak ties" theory developed by the American sociologist Mark Granovetter in 1973, which has taken on new life with social networks, a job seeker is more likely to find a job by sharing their search with members of their extended social circles (i.e. their weak ties) than by asking their close network (family, friends, etc.).

4.5.1. *The empirical relevance of residential networks*

If recruitment to a university position, whether permanent or not, after a doctorate can be attributed to a network of professional contacts without, a priori, a particular residential dimension, this configuration represents the exception rather than the rule. A series of studies have highlighted the role of residential networks in the labor market¹¹.

For example, Hellerstein et al. (2011), using establishment-level matched employer–employee panel data covering most of the United States, explore an immediate residential effect. Although they do not have a direct indicator of neighborhood contacts, the authors show that there is an overrepresentation in U.S. establishments of employees who reside in the same census tract (a scaled-down level of about 1,500 people). The residential effect is more significant for low-skilled, Black and Hispanic workers, the latter being overrepresented in the informal economy. The residential network also affects the quality of the job. Again, in the United States, the more employees from the same place of residence work in the same establishment, the higher their wages are and the less frequently they resign or are fired (Hellerstein et al. 2014).

More recently, Jahn and Neugart (2020) investigated whether residential networks helped workers to find a job after being laid off due to a plant closure in Germany. Combining rich spatial information with administrative data, they find that a 10-percentage point higher neighborhood employment rate causally increases the probability of finding a job by about 2 percentage points. Laid-off workers not only benefit from residential networks in terms of higher earnings and longer job stability, but also have a greater chance of finding a job in the plant that already employs a neighbor.

4.5.2. *Networks that generate spatial inequalities?*

The development of matched employer–employee databases, and even more so data from online social networks or mobile telephony, should make it possible to observe real networks of residential acquaintances, and provide new empirical evidence of their impact on the labor market (Topa 2019).

11. The longitudinal dimension of the data used in these studies makes it possible to address reverse causality if the choice of housing not only influences, but is influenced by the professional network. For example, a work colleague can provide information on the existence of a sale or rental opportunity, and on the amenities and the neighborhood.

These new data will also allow us to further explore the impact of residential networks on residential inequalities in access to employment. The theoretical approaches of Topa (2001) and Calvó-Armengol and Jackson (2004) emphasize the externalities of residential networks: if your neighbors are unemployed or work in firms with few job opportunities, your chances of getting a (good) job are diminished, and vice versa. Equally, your own access to employment influences the chances of your neighbors. These externalities then generate residential polarization, with blocks of neighbors having few job opportunities and high unemployment, and others having privileged access to employment. Empirical analyses do seem to validate a large-scale spatial correlation of employed persons (e.g. Conley and Topa 2007).

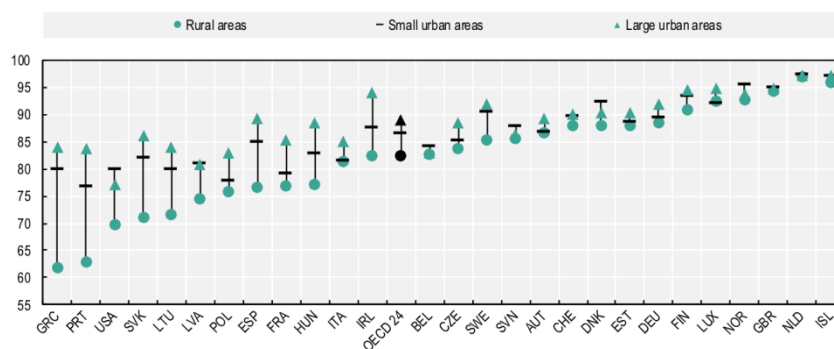
The importance of local recruitment networks for the lower skilled may also affect their mobility opportunities. This is also true for workers in precarious segments of the labor market. Thus, in France, more than 80% of hires are for short-term jobs, and two-thirds are in fact rehires (recruitment of a former employee); in this way, precarious workers have reputational capital via their network of former employers, which they would squander if they moved to other segments or areas offering better quality jobs.

4.6. Digital space: the abolition of geographical constraints?

Like any technological revolution, the digital one reshapes with each wave the nature and location of economic activities, as well as the organization of territories, especially the city. Beyond this power to transform the demand for labor and the geography of jobs, certain changes brought about or facilitated by digital technology may erase the geographical dimension of access to employment. Digital technology could then abolish certain inegalitarian mechanisms that we have described previously. We explore three of these global changes here: recruitment platforms, teleworking and digital microwork. The first is capable of opening up a labor market without physical limits, while the other two are capable of breaking down the location-based nature of employment. Two questions arise: do they really erase the geographical dimension? And what are their consequences in terms of (un)equal access to employment?

First, it is important to note that to seize the potential opportunities associated with these changes, one would first need access to the digital spaces. Even in the most advanced countries, there are still areas in rural regions without access to mobile telephones, mobile Internet or high-speed Internet (Figure 4.3). Indeed, the rollout of wireline networks outside dense cities remains limited and territorial

divides will deepen at least in the medium term¹². These divides will interact with individual barriers to access to technologies because of the fixed costs they involve and the minimum skills, including literacy, required for their use. Beyond this mechanical inequality, each change has its own dynamics that we will analyze.



Scope: Proportion of households living in a home with broadband internet access in 2018. Data refer to 2017 for the United States and Switzerland.

Figure 4.3. *The broadband access gap between urban and rural areas in OECD countries in 2018 (source: OECD ICT Access and Usage by Households and Individuals (database)¹³). For a color version of this figure, see www.iste.co.uk/cottineau/inequalities.zip*

4.6.1. The emergence of online job portals and professional networking platforms

The development of the Internet has changed the way people search for jobs, making it easier to search for jobs from a distance within a country. In particular, over the past two decades, corporate online job portals (e.g. careers.accor.com, for the worldwide postings of the Accor hotel group) as well as cross-company (e.g. CareerBuilder) and professional networking platforms (e.g. LinkedIn) have emerged as important players for both employers and salaried job seekers. However, existing economic literature struggles to demonstrate that these tools have improved job search efficiency, especially for remote jobs. One of the main difficulties is capturing causal effects. Indeed, available sources of exogenous variation in Internet

12. The deployment of satellite constellations to cover the entire surface of the Earth is under way. While the first commercial proposals should emerge in North America as early as 2021, it is expected that this kind of infrastructure could take until the end of the decade to mature. The cost of access is also unknown.

13. Available at: https://stats.oecd.org/Index.aspx?DataSetCode=ICT_HH2.

use are scarce, meaning that at an individual level, identification is difficult due to the natural self-selection of people in specific methods (Kroft and Pope 2014).

Nevertheless, some studies tend to confirm the positive effects of online search and recruitment on the labor market with the growing maturity of tools and uses. For example, in the United States, Kuhn and Mansour (2014) study job search patterns using the National Longitudinal Survey of Youth (NLSY97) for the period 2005 to 2008. Unlike the weak results of Kuhn and Skuterud (2004), covering an earlier period (1998 to 2001), the authors found that unemployed individuals who search for a job online are rehired 25% faster than comparable individuals who search for a job by other means. Examining online job search and match quality in Germany, using individual data from the German Socioeconomic Panel (SOEP), Mang (2012) also observes that job seekers who search online are more satisfied with the job found than their counterparts who searched for a job through other channels (e.g. newspapers, friends, employment agencies, etc.).

The benefits of online job portals can be expected to multiply and extend to more job seekers as Internet access becomes more widespread – Internet penetration is now approaching 90% in advanced countries¹⁴ – and as job vacancies continue to migrate to the Internet. This raises the question of whether existing inequalities in the labor market will be reduced or exacerbated by these portals and platforms. Two opposing mechanisms seem to be at work.

On the one hand, online job searches can open up new avenues for some workers who lack professional or personal networks, or who suffer from discrimination. For example, Kuhn and Mansour (2014) find in their study that Black job seekers are significantly more likely to search for work online than White job seekers in an attempt to compensate for the limited opportunities available to them through “informal” channels (professional, residential networks, etc.).

On the other hand, companies continue to selectively publish their job offers. More importantly, professional networking platforms tend to reinforce the importance of professional networks without changing their exclusive nature. For example, Brenner et al. (2020) study a large dataset of people with full-time jobs to explore their behavior in terms of joining professional social networking sites such as LinkedIn. They find that most people who join these platforms in order to find a new job do so because they already have a professional network whose members are

14. From the ITU 2020 report: https://www.itu.int/dms_pub/itu-s/opb/pol/S-POL-BROAD-BAND.21-2020-PDF-E.pdf.

active on the platform. It thus seems that these platforms encourage segregation in human interactions, ultimately favoring the most qualified.

In this context, the impact of online portals and platforms on the geographic inequalities in access to employment, has not been extensively explored. Partial empirical evidence suggests that spatial mismatch remains a pervasive problem, even for those who have access to the Internet and the digital literacy to use online job search tools. On the labor demand side, there is no evidence that the proliferation of online job search portals and recruitment platforms has significantly increased the size of labor markets, at least not for all types of workers. On the job seeker side, the Internet age does not appear to have improved the poor access to employment that workers face when they live further away from those jobs. Marinescu and Rathelot (2018) use 2012 data from the largest online job search site in the United States, CareerBuilder.com, to assess the impact of distance on the application behavior of job seekers in the United States. They show that workers who use online job search tools are also not looking to apply for distant jobs. In fact, the authors report that these workers are 35% less likely to apply for jobs located 10 miles from their current residence. One interpretation of this result is that by improving local job opportunities, the relative ratio of job opportunities to costs (in terms of transportation, health care, etc.) in searching a larger geographic area decreases. In doing so, workers, especially the less educated, are exposed to the power of local corporate monopsony, which translates into lower quality jobs (lower pay, higher skills requirements for a given position (Macaluso et al. 2019)).

4.6.2. Telework: a new order?

The European Framework Agreement of July 16, 2002 between the European Trade Union Confederation (ETUC), the Union of Industrial and Employers' Confederations of Europe (UNICE/UEAPME) and the European Centre of Enterprises with Public Participation and of Enterprises of General Economic Interest (CEEP) provides a definition of telework encompassing most academic approaches as well as legislation: telework is a "form of organising and/or performing work, using information technology, where work, which could also be performed at the employers premises, is carried out away from those premises on a regular basis. The agreement concerns teleworkers with an employment contract and does not deal with self-employed telework". Telecommuting is therefore different from working from home. On the one hand, it requires a salaried relationship with an employer who has premises, and the use of information technology (an artist painting in his studio is not a teleworker). On the other hand, telework can be done outside the home in a third place (such as a coworking space, for example).

With the advent of network technologies, analysts in the 1980s saw the firm implementation of telework on the horizon. Supiot (1996), in the introduction to a special issue of the *Revue internationale du travail* (the journal of the International Labour Organization), “Regards croisés sur le travail et son devenir”, stated: “The futuristic horizon of a population of autonomous teleworkers connected to the Internet is unlikely to ever be reached” (Supiot 1996). However, available pre-Covid statistics, both from the OECD and developing countries, show an expansion of telework. For example, in Europe, according to the Labour Force Surveys, 11.5% of employees were teleworking in 2019, compared to 7.5% 10 years earlier (Milasi et al. 2020). This practice is concentrated in sectors and professions where tasks are based on the use of digital or digitizable technologies, such as the information technology sector or legal professionals. However, for the vast majority, telework is only done occasionally – this is the case, for example, with teachers, who represent the professional category with the highest proportion of teleworkers.

Despite its relative marginality, telework has been the subject of many empirical studies. All of this work suffers from the problem of establishing causal identification, as telework can largely be chosen. The picture of working conditions is mixed, with, for example, a possible better work/life balance, but also greater isolation (for a review, see ILO 2020).

Hook et al. (2020) and O’Brien and Yazdani Aliabadi (2020) survey the extensive literature on the impact of telecommuting on housing and commuting. The first striking result is the persistence of such commutes. Ory and Mokhtarian (2006), using California data, describe a particularly illuminating dynamic: people who move after telecommuting move closer to their workplace on average, while those who take advantage of their move to telecommute move much farther – on average 30 km from their physical workplace! One interpretation is that, as teleworkers gain experience, they abandon the illusion that they won’t have to travel frequently to their employer’s premises.

Panel studies in the United States, the Netherlands and Sweden attempt to identify a net causal effect of telecommuting (for workers who do or do not change their residential area, and for those who do or do not change jobs when telecommuting). If commuting to work remains, the time or distance traveled increases significantly by 5–15%, especially for workers living in suburban areas. In the Netherlands, for example, telecommuting means that people accept 5% longer commute times on average, and each additional day of telecommuting is associated with a 3.5% increase in distance traveled (de Vos et al. 2018).

All in all, like job portals and platforms, telework, at least until 2019, was far from abolishing distances; it did, however, allow a number of workers, mainly qualified and in expanding sectors, which already had opportunities to access a (quality) job, to benefit from a significantly larger labor market.

The lockdowns and other travel restrictions during the Covid-19 health crisis provided a remarkable exogenous shock. However, this cannot be used to measure the impact of telework on working conditions or the labor market, because the conditions are so specific (e.g. children were also confined to their homes) and because, above all, the direct effects of the crisis itself in terms of its health, social and economic dimensions are much more prominent.

On the other hand, lockdown has revealed the potential of telework and even more so its extreme heterogeneity. This is striking, for example, for France, according to the large EpiCov epidemiological survey of a representative sample of 135,000 people (Table 4.3): 70% of employed managers and professionals were teleworking in May 2020, compared with less than 7% of blue-collar workers. The predictions of the ex-ante studies (ILO 2020) are broadly confirmed by these ex-post observations.

	Part-time	Full-time
Workers	5.0	1.5
Employees	13.9	20.7
Intermediate professions	18.8	28.0
Executives and intellectual professions	22.8	57.3
Craftspeople, tradespeople	13.3	7.9
Farmers	4.8	0.6
All	15.8	28.1

Interpretation: In May 2020, 28.1% of those who had worked the week before the survey reported having teleworked exclusively, while 15.8% had done so partially.

Scope: People aged 15 years or older who worked at least one hour in the week preceding the survey in metropolitan France, Martinique, Guadeloupe and La Réunion.

Table 4.3. Share of teleworkers by occupation (in %) after 2 months of lockdown in France, May 2020 (source: Inserm-Drees, EpiCov survey, wave 1)

Will the Covid-19 crisis sustain telecommuting? The gain in experience and investment, both by workers and employers, suggests that it will. If telecommuting is expanded in a major and sustained way, then spillover effects may emerge

(O'Brien and Yazdani Aliabadi 2020). They would benefit workers not concerned by telework, with ambiguous effects on geographical inequalities of access to employment or of job quality. For example, the possible peri-urbanization of teleworkers would free up housing in employment-dense neighborhoods for workers with more than one job. This would free up housing in job-dense neighborhoods for workers with less financial and educational capital. The reduced congestion brought about by telework would also allow those who have to work in the office to reduce the burden of commuting, in traveling greater distances for the same amount of time, and thus expand their employment opportunities.

4.6.3. Microwork: equal access but exploitation?

Microwork (otherwise known as “click work”, micro-jobbing or crowd-working) is the archetype of an apparent disappearance of the physical dimension in access to employment, both in terms of geography and identification of the employer or person in charge. With a simple Internet connection, any worker around the world can perform small digital tasks that are then outsourced to digital platforms. A wide range of tasks is offered and requires very different skill levels, from the most basic to the most specialized: from translating or writing pieces of computer code to simply labeling images. Clickers are essential to artificial intelligence (AI), as they feed learning data enriched by humans. AI itself will not be able to replace humans in these micro-tasks for several decades. Microwork is therefore likely to continue to expand in the coming years, especially as needs increase, for example, for long-term objectives, such as autonomous vehicles. Estimates of the number of workers involved are difficult, but potentially number in the hundreds of millions; researchers estimate that there are at least 200,000 microworkers in France (Tubaro et al. 2020).

The first specific surveys underline that microwork allows people who are far from employment to gain access to an activity. Thus, according to data collected by the International Labor Office (Berg et al. 2019), in both advanced and developing countries, one-third of microworkers were unemployed, and one-third were female microworkers caring for children, disabled or dependent persons, who may find it difficult to hold down a “normal” job.

In the absence of any geographical anchor, click workers undertaking such activities do not have any social protection offered by local laws. This does not mean that the geographical dimension is absent: fundamentally, they participate in a

global market where they are in competition¹⁵. The levels of remuneration are low, far below the minimum wages in their place of residence (when they exist), whether in advanced or developing countries. This weakness is not due to the fact that the tasks are without significant added value. As a result of major network effects and non-regulation, the micro-labor segment is concentrated, dominated in particular by the first mover, Amazon Mechanical Turk (AMT). The micro-labor market is thus probably highly monopsonic. In an empirical study on AMT alone, Dube et al. (2020) estimate that microworkers only receive about 20% of the value they create¹⁶. In conclusion, the elimination of the physical dimension in micro-labor produces an increase in the size of the labor market (at a global or regional level), without affecting the importance of the geographical dimension in access to employment. Indeed, working conditions, state protections and assistance, and real wages vary according to where workers live, and it is these geographic inequalities that determine workers' ability to access micro-labor. Increased competition without the necessary protections thus has negative consequences in terms of an unequal access to jobs, at least to good quality jobs.

4.7. Conclusion

Both behavioral models of migration and amenities convey optimistic visions. For the former, residential mobility tends to blur the geographical heterogeneity of employment opportunities within an area of free legal movement of people, that is, essentially within one country. For the latter, differences in terms of employment or remuneration do not reinforce inequalities but, on the contrary, compensate for inequalities in the local supply of amenities.

This chapter has analyzed the weight of geographical processes within countries on the inter-individual inequalities¹⁷ in access to employment in its various dimensions – unemployment, status, alignment with aspirations and skills, working conditions and remuneration, etc. In doing so, it has identified a multiplicity of socioeconomic mechanisms supported by an impressive body of empirical literature in geography, economics and sociology. They question and often refute the relevance of the assumptions and predictions of these models.

15. This borderless nature remains, even if the necessary skills, such as language skills, limit the pool of click workers to essentially one geographical area.

16. It is worth recalling that the share of labor in value added is estimated at between 40% and 70% in most OECD market economies, both emerging and developing.

17. Aggregate inequalities between territories are dealt with in a work by M. Talandier and J. Tallec, to be published in 2022 in the same collection on geographical inequalities.

In particular, they show that, for large segments of the population, the place of residence and the place of work (if any) are not the result of a free choice, or are not even chosen. Overall, the constraints on residential mobility or on commuting follow gradients that reinforce social scales of all kinds, including generational, ethnic, educational, patrimonial or gender-based ones. For example, the prevalence of a male career in the residential choice of a mixed couple limits employment opportunities for the woman; the domestic work of a mother forces her to search for employment in a geographically restricted area, again reducing her opportunities and exposing her to the risk of monopsonic employers. Whether alone or within a household, workers do not have the freedom of residential choice that would allow them to improve their employment opportunities; monetary barriers, discrimination, gentrification and urban segregation disproportionately keep the least qualified, the youngest and people from minority groups from areas rich in high-quality jobs or transportation infrastructure. Far from the initial models which, in fact, do not see space as a source of inter-individual inequalities, this chapter therefore highlights their significance.

From a methodological point of view, should we then enrich the behavioral models of residential migration by integrating the joint residence of couples, discrimination, social networks, etc.? Rather than a cumbersome formal model whose predictions would necessarily be ambiguous and without practical significance, we would argue for further structural, quantitative and qualitative research on the mechanisms of geographical inequalities in access to employment. Notably since, far from erasing physical space, we have seen that the boom in professional networking platforms and the materialization of telework in the wake of technological change, as well as shocks such as Covid-19, are bringing out new interactions between geography and the social characteristics of individuals in terms of employment opportunities. At the same time, the increasing availability of big data, especially on travel and on localized job offers, should reinforce the potential for the production of empirical knowledge.

Two issues are currently insufficiently explored. On the one hand, strategies aimed to reduce inequalities in access to employment in a specific territory – for example, an urban area – can exacerbate competition between territories, ultimately contributing to an increase in inequalities. On the other hand, such strategies, which are often local, and employment policies, which are often centralized, must be linked.

However, the vast body of knowledge, some of which has been articulated in this chapter, could be used empirically. Ex ante simulations and ex post evaluations can

be carried out, at different scales, of the impact of planning, housing and transport policies on the inequalities of access to employment.

4.8. References

- Askenazy, P. (2018). The changing of the French labor market, 2000–2017. IZA World Labor [Online]. Available at: <https://doi.org/10.15185/izawol.412>.
- Askenazy, P. (2021). *Share the Wealth: How to End Rentier Capitalism*. Verso, Brooklyn.
- Åslund, O., Östh, J., Zenou, Y. (2010). How important is access to jobs? Old question – Improved answer. *J. Econ. Geogr.*, 10, 389–422.
- Bastiaanssen, J., Johnson, D., Lucas, K. (2020). Does transport help people to gain employment? A systematic review and meta-analysis of the empirical evidence. *Transp. Rev.*, 40, 607–628 [Online]. Available at: <https://doi.org/10.1080/01441647.2020.1747569>.
- Becker, G.S. (1974). A theory of social interactions. *J. Polit. Econ.*, 82, 1063–1093 [Online]. Available at: <https://doi.org/10.1086/260265>.
- Berg, J., Furrer, M., Harmon, E., Rani, U., Silberman, M.S. (2019). Les plateformes de travail numérique et l'avenir du travail : pour un travail décent dans le monde en ligne. Report [Online]. Available at: https://www.ilo.org/wcmsp5/groups/public/-dgreports/-dcomm/-publ/documents/publication/wcms_721011.pdf.
- Blanchard, O. and Katz, L. (1992). Regional evolutions. *Brook. Pap. Econ.*, 1, 1–75.
- Bonnet, C., Garbinti, B., Solaz, A. (2015). *Les conditions de vie des enfants après le divorce*. Insee Première, Paris.
- Bosch, M., Carnero, M.A., Farré, L. (2010). Information and discrimination in the rental housing market: Evidence from a field experiment. *Reg. Sci. Urban Econ.*, 40, 11–19 [Online]. Available at: <https://doi.org/10.1016/j.regsciurbeco.2009.11.001>.
- Bound, J. and Holzer, H.J. (2000). Demand shifts, population adjustments, and labor market outcomes during the 1980s. *J. Labor Econ.*, 18, 20–54.
- Brandtner, C., Lunn, A., Young, C. (2019). Spatial mismatch and youth unemployment in US cities: Public transportation as a labor market institution. *Socio-Econ. Rev.*, 17, 357–379 [Online]. Available at: <https://doi.org/10.1093/ser/mwx010>.
- Brenner, S., Sivrikaya, S.A., Schwalbach, J. (2020). Who is on LinkedIn? Self-selection into professional online networks. *Appl. Econ.*, 52, 52–67 [Online]. Available at: <https://doi.org/10.1080/00036846.2019.1638497>.
- Büchel, F. and Battu, H. (2003). The theory of differential overqualification: Does it work? *Scott. J. Polit. Econ.*, 50, 1–16 [Online]. Available at: <https://doi.org/10.1111/1467-9485.00251>.

- Calvó-Armengol, A. and Jackson, M.O. (2004). The effects of social networks on employment and inequality. *Am. Econ. Rev.*, 94, 426–454 [Online]. Available at: <https://doi.org/10.1257/0002828041464542>.
- Chetty, R., Hendren, N., Kline, P., Saez, E. (2014). Where is the land of opportunity? The geography of intergenerational mobility in the United States. *Q. J. Econ.*, 129, 1553–1623.
- Christian, T.J. (2012). Trade-offs between commuting time and health-related activities. *J. Urban Health Bull. N.Y. Acad. Med.*, 89, 746–757 [Online]. Available at: <https://doi.org/10.1007/s11524-012-9678-6>.
- Clark, W.A.V., Huang, Y., Withers, S. (2003). Does commuting distance matter? Commuting tolerance and residential change. *Reg. Sci. Urban Econ.*, 33, 199–221 [Online]. Available at: [https://doi.org/10.1016/S0166-0462\(02\)00012-1](https://doi.org/10.1016/S0166-0462(02)00012-1).
- Compton, J. and Pollak, R.A. (2007). Why are power couples increasingly concentrated in large metropolitan areas? *J. Labor Econ.*, 25, 475–512 [Online]. Available at: <https://doi.org/10.1086/512706>.
- Conley, T.G. and Topa, G. (2007). Estimating dynamic local interactions models. *J. Econom., Analysis of Spatially Dependent Data*, 140, 282–303 [Online]. Available at: <https://doi.org/10.1016/j.jeconom.2006.09.012>.
- Cooke, T.J. (2011). It is not just the economy: Declining migration and the rise of secular rootedness. *Popul. Space Place*, 17, 193–203 [Online]. Available at: <https://doi.org/10.1002/psp.670>.
- Diamond, R. (2016). The determinants and welfare implications of US workers' diverging location choices by skill: 1980–2000. *Am. Econ. Rev.*, 106, 479–524.
- Donni, O. and Ponthieux, S. (2011). Approches économiques du ménage : du modèle unitaire aux décisions collectives. *Trav. Genre Soc.*, 26, 67–83.
- Elhorst, J.P. (2003). The mystery of regional unemployment differentials: Theoretical and empirical explanations. *J. Econ. Surv.*, 17, 709–748.
- Frank, R.H. (1978). Why women earn less: The theory and estimation of differential overqualification. *Am. Econ. Rev.*, 68, 360–373.
- Gautié, J. (2020). *Le salaire minimum et l'emploi*. Presses de Sciences Po, Paris [Online]. Available at: <http://journals.openedition.org/lectures>.
- Ghani, E., Goswami, A.G., Kerr, W.R. (2016). Highway to success: The impact of the golden quadrilateral project for the location and performance of Indian manufacturing. *Econ. J.*, 126, 317–357 [Online]. Available at: <https://doi.org/10.1111/ecej.12207>.
- Gimenez-Nadal, J.I. and Molina, J.A. (2016). Commuting time and household responsibilities: Evidence using propensity score matching. *Journal of Regional Science*, 56(2), 332–359.
- Gobillon, L., Selod, H., Zenou, Y. (2007). The mechanisms of spatial mismatch. *Urban Stud.*, 44, 2401–2427.

- Gobillon, L., Magnac, T., Selod, H. (2011). The effect of location on finding a job in the Paris region. *J. Appl. Econom.*, 26, 1079–1112 [Online]. Available at: <https://doi.org/10.1002/jae.1168>.
- Groenewold, N. (1997). Does migration equalise regional unemployment rates? Evidence from Australia. *Pap. Reg. Sci.*, 76, 1–20.
- Hall, M., Crowder, K., Spring, A., Gabriel, R. (2018). Foreclosure migration and neighborhood outcomes: Moving toward segregation and disadvantage. *Soc. Sci. Res.*, 70, 107–114 [Online]. Available at: <https://doi.org/10.1016/j.ssresearch.2017.11.006>.
- Hansson, E., Mattisson, K., Björk, J., Östergren, P.-O., Jakobsson, K. (2011). Relationship between commuting and health outcomes in a cross-sectional population survey in southern Sweden. *BMC Public Health*, 11, 834 [Online]. Available at: <https://doi.org/10.1186/1471-2458-11-834>.
- Hassan, R., Zang, X., McDonnell-Baum, S. (1996). Why families move: A study of residential mobility in Australia. *Aust. N.Z.J. Sociol.*, 32, 72–85 [Online]. Available at: <https://doi.org/10.1177/144078339603200107>.
- Hellerstein, J.K., McInerney, M., Neumark, D. (2011). Neighbors and coworkers: The importance of residential labor market networks. *J. Labor Econ.*, 29, 659–695 [Online]. Available at: <https://doi.org/10.1086/660776>.
- Hellerstein, J.K., Kutzbach, M.J., Neumark, D. (2014). Do labor market networks have an important spatial dimension? *J. Urban Econ., Spatial Dimensions of Labor Markets*, 79, 39–58 [Online]. Available at: <https://doi.org/10.1016/j.jue.2013.03.001>.
- Hervouët, V. (2001). La sémantique périurbaine : ou comment se repérer dans un dédale de mots et d'expressions. Working document, Université de Nantes, Nantes.
- Hook, A., Court, V., Sovacool, B.K., Sorrell, S. (2020). A systematic review of the energy and climate impacts of teleworking. *Environ. Res. Lett.*, 15, 093003 [Online]. Available at: <https://doi.org/10.1088/1748-9326/ab8a84>.
- Hu, L. (2019). Racial/ethnic differences in job accessibility effects: Explaining employment and commutes in the Los Angeles region. *Transp. Res. Part Transp. Environ.*, 76, 56–71.
- Hunt, G.L. (1993). Equilibrium and disequilibrium in migration modelling. *Reg. Stud.*, 27, 341–349.
- ILO (2020). Working from home: Estimating the worldwide potential (Policy Brief). International Labour Organisation (ILO), Geneva.
- Ioannides, Y.M. and Loury, L.D. (2004). Job information networks, neighborhood effects, and inequality. *J. Econ. Lit.*, 42, 1056–1093.
- Jahn, E. and Neugart, M. (2020). Do neighbors help finding a job? Social networks and labor market outcomes after plant closures. *Labour Econ.*, 65, 101825 [Online]. Available at: <https://doi.org/10.1016/j.labeco.2020.101825>.

- Jouffé, Y., Caubel, D., Fol, S., Motte-Baumvol, B. (2019). Dealing with inequality in mobility: Tactics, strategies and projects for poor households on the outskirts of Paris. *Cybergeo Eur. J. Geogr.* [Online]. Available at: <https://doi.org/10.4000/cybergeo.33479>.
- Kain, J.F. (1965). The effect of the Ghetto on the distribution and level of nonwhite employment in urban areas. RAND Corporation, Santa Monica.
- Kline, P. and Moretti, E. (2013). Place based policies with unemployment. *Am. Econ. Rev.*, 103, 238–243.
- Korsu, E. and Wenglenski, S. (2014). Distance physique, proximité sociale et inégalités devant le chômage. In *Ségrégation et justice spatiale, sciences humaines et sociales*, Fol, S., Lehman-Frisch, S., Morange, M. (eds). Presses universitaires de Paris Nanterre, Nanterre.
- Kroft, K. and Pope, D.G. (2014). Does online search crowd out traditional search and improve matching efficiency? Evidence from craigslist. *J. Labor Econ.*, 32, 259–303.
- Krugman, P. (1991). Increasing returns and economic geography. *J. Polit. Econ.*, 99, 483–499 [Online]. Available at: <https://doi.org/10.1086/261763>.
- Kuhn, P. and Mansour, H. (2014). Is internet job search still ineffective?. *Econ. J.*, 124, 1213–1233.
- Kuhn, P. and Skuterud, M. (2004). Internet job search and unemployment durations. *Am. Econ. Rev.*, 94, 218–232.
- Layard, R., Nickell, S., Jackman, R. (2009). *Unemployment: Macroeconomic Performance and the Labour Market*. Oxford University Press, Oxford.
- Le Barbanchon, T., Rathelot, R., Roulet, A. (2020). Gender differences in job search: Trading off commute against wage. *Q. J. Econ.*, 136, 381–426 [Online]. Available at: <https://doi.org/10.1093/qje/qjaa033>.
- Lee, B.S. and McDonald, J.F. (2003). Determinants of commuting time and distance for Seoul residents: The impact of family status on the commuting of women. *Urban Stud.*, 40, 1283–1302 [Online]. Available at: <https://doi.org/10.1080/0042098032000084604>.
- Macaluso, C., Hershbein, B., Yeh, C. (2019). Concentration in U.S. local labor markets: Evidence from vacancy and employment data. Meeting Papers, Society for Economic Dynamics.
- Mang, C. (2012). Online job search and matching quality. Working document, Ifo Institute – Leibniz Institute for Economic Research at the University of Munich, Munich.
- Manning, A. and Petrongolo, B. (2017). How local are labor markets? Evidence from a spatial job search model. *Am. Econ. Rev.*, 107, 2877–2907.
- Marinescu, I. and Rathelot, R. (2018). Mismatch unemployment and the geography of job search. *Am. Econ. J. Macroecon.*, 10, 42–70.

- McQuaid, R.W. and Chen, T. (2012) Commuting times – The role of gender, children and part-time work. *Res. Transp. Econ., Gender and Transport: Transaction Costs, Competing Claims and Transport Policy Gaps*, 34, 66–73 [Online]. Available at: <https://doi.org/10.1016/j.retrec.2011.12.001>.
- Milasi, S., González-Vázquez, I., Fernández-Macías, E. (2020). Telework in the EU before and after the COVID-19: Where we were, where we head to (science for policy brief). *JRC, European Commission*, Geneva.
- Molho, I. (2001). Spatial search, migration and regional unemployment. *Economica*, 68, 269–283.
- Moretti, E. (2011). Local labor markets. In *Handbook of Labor Economics*, Card, D., Ashenfelter, O. (eds). Elsevier, Amsterdam.
- Nafilyan, V. (2019). Gender differences in commute time and pay: A study into the gender gap for pay and commuting time, using data from the annual survey of hours and earnings. Report, Office for National Statistics, London.
- Nisic, N. (2017). Smaller differences in bigger cities? Assessing the regional dimension of the gender wage gap. *Eur. Sociol. Rev.*, 33, 292–3044 [Online]. Available at: <https://doi.org/10.1093/esr/jcx037>.
- O'Brien, W. and Yazdani Aliabadi, F. (2020). Does telecommuting save energy? A critical review of quantitative studies and their research methods. *Energy Build*, 225, 110298 [Online]. Available at: <https://doi.org/10.1016/j.enbuild.2020.110298>.
- Ory, D.T. and Mokhtarian, P.L. (2006). Which came first, the telecommuting or the residential relocation? An empirical analysis of causality. *Urban Geogr.*, 27, 590–609 [Online]. Available at: <https://doi.org/10.2747/0272-3638.27.7.590>.
- Parish, W.L. and Hao, L., Hogan, D.P. (1991). Family support networks, welfare, and work among young mothers. *J. Marriage Fam.*, 53, 203–215 [Online]. Available at: <https://doi.org/10.2307/353144>.
- Parks, V. (2004). Access to work: The effects of spatial and social accessibility on unemployment for native-born Black and immigrant women in Los Angeles. *Econ. Geogr.*, 80, 141–172.
- Peach, C. (1996). Good segregation, bad segregation. *Plan. Perspect.*, 11, 379–398 [Online]. Available at: <https://doi.org/10.1080/026654396364817>.
- Pellizzari, M. (2010). Do friends and relatives really help in getting a good job? *Ind. Labor Relat. Rev.*, 63, 494–510.
- Pissarides, C.A. and McMaster, I. (1990). Regional migration, wages and unemployment: Empirical evidence and implications for policy. *Oxf. Econ. Pap.*, 42, 812–831.
- Schleicher, D. (2017). Stuck! The law and economics of residential stagnation. *Fac. Scholarsh. Ser.*, 78–154.

- Skora, T., Rüger, H., Stawarz, N. (2020). Commuting and the motherhood wage gap: Evidence from Germany. *Sustainability*, 12, 5692 [Online]. Available at: <https://doi.org/10.3390/su12145692>.
- Supiot, A. (1996). Perspectives on work: Introduction. *International Labour Review*, 135(6), 603–614.
- Topa, G. (2001). Social interactions, local spillovers and unemployment. *Rev. Econ. Stud.*, 68, 261–295 [Online]. Available at: <https://doi.org/10.1111/1467-937X.00169>.
- Topa, G. (2019). Social and spatial networks in labour markets. *Oxf. Rev. Econ. Policy*, 35, 722–745 [Online]. Available at: <https://doi.org/10.1093/oxrep/grz019>.
- Tubaro, P., Le Ludec, C., Casilli, A.A. (2020). Counting “micro-workers”: Societal and methodological challenges around new forms of labour. *Work Organ. Labour Glob.*, 14, 67–82 [Online]. Available at: <https://doi.org/10.13169/workorglaboglob.14.1.0067>.
- Tyndall, J. (2017). Waiting for the R train: Public transportation and employment. *Urban Stud.*, 54, 520–537 [Online]. Available at: <https://doi.org/10.1177/0042098015594079>.
- de Vos, D., Meijers, E., van Ham, M. (2018). Working from home and the willingness to accept a longer commute. *Ann. Reg. Sci.*, 61, 375–398 [Online]. Available at: <https://doi.org/10.1007/s00168-018-0873-6>.
- Weinberg, B.A. (2004). Testing the spatial mismatch hypothesis using inter-city variations in industrial composition. *Reg. Sci. Urban Econ*, 34, 505–532.