

Workers' mobility across occupations: Complementary insights from the human capital, migration and social stratification literature.

Ben Hur Francisco Cardoso and Dominik Hartmann
Universidade Federal de Santa Catarina, Florianopolis, Brazil

Workers'
mobility across
occupations

115

Received 10 August 2022
Revised 16 February 2023
Accepted 20 February 2023

Abstract

Purpose – A growing body of literature shows how intragenerational occupational mobility affects economic dynamics and social stratification. In this article the authors aim to carry out a structured review of this literature, outlining a systemic overview for more comprehensive research and public policies.

Design/methodology/approach – The authors use methods from structured literature reviews and network science to reveal the segmented research landscape of occupational mobility literature. The authors made an in-depth analysis of the most important papers to summarize the main contributions of the literature and identify research gaps.

Findings – The authors reveal a segmented research landscape around three communities: (1) human capital theory, (2) social stratification theory and (3) migration studies. Human capital research uses microfounded mathematical modeling to understand the relationship between skills and mobility. Nevertheless, it cannot explain social segregation and generally does not focus on the importance of local labor demand. Social stratification research can explain the social and institutional barriers to occupational mobility. Migration research studies the relationship between migration, labor demand and social mobility.

Originality/value – This paper is the first literature review that uses network analysis to perform a systematic review of the intragenerational occupational mobility literature. Moreover, this review identifies opportunities for mutual learning and research gaps in the research landscape.

Keywords Occupational mobility, Social mobility, Systematic literature review

Paper type Literature review

1. Introduction

The volume of papers on intragenerational occupational mobility grows every decade. And it could not be different. The workers' occupations are a central element in defining their income, social status and well-being in general (Sacchi, Kriesi, & Buchmann, 2016). Consequently, the understanding of which is the individual, institutional and structural barrier to workers' movements between occupations has great importance in developing public policies that aim to make prosperity accessible to all. Furthermore, the costs associated with reallocating workers between occupations are particularly relevant considering the recent literature on labor market polarization, which suggests how technological changes have altered the demand for tasks and how this has impacted social opportunities (Cortes, 2019).

© Ben Hur Francisco Cardoso and Dominik Hartmann. Published in *Economia*. Published by Emerald Publishing Limited. This article is published under the Creative Commons Attribution (CC BY 4.0) licence. Anyone may reproduce, distribute, translate and create derivative works of this article (for both commercial and non-commercial purposes), subject to full attribution to the original publication and authors. The full terms of this licence may be seen at <http://creativecommons.org/licences/by/4.0/legalcode>



Economia
Vol. 24 No. 1, 2023
pp. 115-133
Emerald Publishing Limited
e-ISSN: 2358-2820
p-ISSN: 1517-7580
DOI 10.1108/ECON-08-2022-0115

Several research communities in economics and sociology analyze individual and structural factors that explain the mobility of workers across occupations. However, a structured literature review that (1) identifies different research communities, (2) brings their insights together, (3) outlines what they can learn from each other and (3) reveals which research gaps persist are still missing. This matters because each community focuses on different aspects of occupational mobility and provides different methods; however, policymakers must consider them simultaneously to design effective measures to promote occupational and social mobility.

This work will review articles on intragenerational, rather than intergenerational, mobility. The literature on intergenerational mobility studies the change in occupation from parents to children. On the other hand, the literature on intragenerational mobility explores the change in occupations of the same person throughout their career. The study of intergenerational mobility is extremely important to understand long-term changes and the persistence of social status in the same families. On the other hand, the scope of this article is to review works that study changes in occupations in a person's career. Thus, it seeks to understand the changes in the type of occupations and social status throughout a person's life.

Using methods from structured literature reviews and network science, we identify three (not mutually exclusive) research communities whose previous and ongoing research efforts scrutinize the individual and structural constraints for intragenerational mobility: (1) the economic theory of human capital, (2) the sociological theory of social stratification and (3) migration studies. However, despite a surprisingly low level of cross-citations (See [Figure 1](#)), we show that the different approaches can complement and learn from each other.

The cornerstone of human capital literature is that employers select workers by their productivity, but there is no productive person in general ([Gathmann & Schönberg, 2010](#)). For example, a person can be very productive as an engineer but not as a software developer; in other words, a worker's productivity in a job cannot be fully transferred to other jobs. With this picture in mind, there is a long debate on how much specific human capital belongs to the firm, industry or occupation ([Gueorgui Kambourov & Imanovskii, 2009](#)). This paper will review studies that analyze occupation-specific skills and the consequences of occupational mobility on productivity.

From the perspective of the sociological theory of social stratification, occupations are the fundamental stratification positions by which several inequality patterns are produced and reproduced ([Sacchi *et al.*, 2016](#)). Within this context, occupations are characterized by their status or prestige. So, individuals can only face upward and downward social mobility through occupational mobility. This literature tends to study how individual and institutional factors contribute to the concentration of a group in some occupations rather than others and how these factors constrain the movement of workers among occupations. This line of research also highlights the importance of gender and race barriers to upward occupational mobility.

The migration studies on occupational mobility focus on human capital and stratification aspects ([Simón, Ramos, & Sanromá, 2014](#)). Primarily, they study how immigrants' premigration factors constrain their new occupation opportunities in the host country after migration. Additionally, they study how immigrants can be assimilated into the host country's labor market and which individual characteristics, including human capital, can facilitate it. Generally, they indicate a segmented labor market for immigrants; occupations also stratify immigrants from the native population. There is also literature on the internal migration of workers within the same country ([Fielding, 1992](#)).

The originality of this work lies in the fact that it is the first literature review on intragenerational occupational mobility that uses network analysis to integrate these three different communities of literature – human capital research, migration studies, and social



Source(s): Authors work

stratification and mobility research – showing how they can theoretically and methodologically learn with each other. For this purpose, we identified six literature gaps on how, when resolved, will bring a better and more integrated understanding of the phenomenon of occupational mobility.

From a methodological point of view, both the social stratification and migration literature can learn techniques used by human capital literature to measure the intensity of social and institutional barriers between occupations. From a theoretical point of view, human capital literature can incorporate the importance of the productive structure of each region, as done by migration studies. In addition, it can recognize the existence of the market power of employers, as the social stratification literature does, to understand social segregation. Human capital literature already focuses on how education and human capital matter for occupational mobility. However, institutional barriers (outlined in stratification studies) and local job-supply opportunities also matter for policymakers to promote occupational mobility in times of technological changes.

The rest of the paper is organized as follows. [Section 2](#) presents our motivation, keywords and the structure literature review. [Section 3](#) introduces the data and procedural methods. [Section 4](#) presents the main results, including bibliometric measures, the analysis of the main clusters and publications through the citation network, and the main findings of the in-depth analysis related to the research strategies and scope studied. [Section 5](#) presents a systematic analysis of the main insights of the human capital, social stratification and migration studies communities. [Section 6](#) identifies and discusses the main research gaps on the topic. Finally, in [Section 7](#), we discuss the reasons for the gaps identified in the literature and offer our concluding remarks.

2. Structured literature review – initial considerations

A literature review related to this field leads to many analysis possibilities and challenges, such as issues in understanding what is relevant to an audience, a too-broad or a too-narrow focus. Here, we chose to apply a data-driven approach by identifying a broad set of keywords. In addition, considering the scientific quality required, we decided to work only with peer-reviewed articles curated within a bibliographic database. Moreover, we used different structured literature review techniques that complemented each other to avoid, as far as possible, a subjective or biased approach. In this sense, we broadened our analysis to capture a relatively broad set of articles associated with occupational mobility, as explained in the materials and methods section. This process led to 193 unique documents that adhere to our research objective.

Our bibliometric analysis illustrates the quantitative growth of studies and presents the most cited publications. The network of citations with clusters analysis showed how the research communities in the literature are interrelated. An in-depth content analysis allows for exploring the research strategies and topics addressed within each theme. We found three main research poles on the issues by combining the network analysis and the in-depth analysis of the articles: (1) occupation mobility and its association with skills and human capital, (2) economic mobility and its institutional and social barriers like race and gender, and (3) occupation mobility related to migration.

Our study identified that a structured literature review based on this broader view could identify structural gaps and future research opportunities regarding occupational mobility. In this respect, the bibliometric analysis helped us identify the publication dynamics, the most relevant journals, geographic focus and research clusters. Moreover, a combination of network analysis and an in-depth qualitative analysis of the research contents of core articles helped identify research gaps in data, topics and methods, as well as reveal possibilities for mutual learning between different overlapping or separate areas of the literature. Thus, this survey of the literature, conducted via a structured literature review, presented three specific advantages. Firstly, the technique helped us systematize the analyzed articles' results,

relating them to emerging research topics. Secondly, it allowed us to identify and analyze the most important studies in more detail. Thirdly, it helped us to identify gaps in the literature and reveal challenges for future research.

3. Material and methods

Our study applies common steps in systemic literature reviews to identify and analyze articles (Jabbour, 2013; Lage Junior & Godinho Filho, 2010):

Step 1: Refining the main keywords, using synonyms of “intragenerational occupational mobility”.

Step 2: Search articles in Scopus databases, using the set of keywords established in Step 1.

Step 3: Screening the articles found by reading their titles and abstracts (filter).

Step 4: Scope analysis of all papers selected.

Step 5: Selection of publications for in-depth analysis.

Step 6: Building the scientific production profile of each article selected, identifying the main research strategies.

Step 7: Synthesizes the results obtained in the four analyses conducted (bibliometrics, citation network, research strategies and scope) to identify gaps and research opportunities.

With the keywords defined in Step 2, searches were performed on the Scopus database on January 5, 2022, based on the title, abstract and keywords for peer-reviewed articles, without any time and research area restriction. However, we exclude literature that focuses merely on intergenerational occupational mobility; understanding how occupations are passed from one generation to another, bringing a perspective of long-term mobility, is very relevant, but this is beyond the scope of this work on intragenerational mobility. Accordingly, the search command on Scopus is represented in Figure 2. This search was performed without any language restriction. In the case of articles not published in English-written journals, Scopus searches for the English version of the title, abstract and keywords commonly required from the authors by these journals. However, only six papers found were not written in English. To ensure comparability and scientific quality, our systematic review only considered journal articles, not books, working papers or other types of publications (e.g. theses, blogs, etc).

4. Results

The bibliographic database search process registered 1595 publications on Scopus. We selected only papers with at least one link (citations or cited), resulting in 403 documents. After passing through the filter that analyzed the requirements for adherence to the research by title and abstract reading (filter), 195 unique papers were selected. As seen in Figure 3a, there has been significant growth in publications about occupational mobility. Initially only approached by social science journals, economics journals have published almost half of all articles on the topic in recent years. Finally, it is noteworthy that the decade of the 2010s concentrates more than 50% of total production. 90% of papers were published in Economics or Social Sciences journals.

Journals are essential for disseminating new knowledge, especially to target audiences and communities. Figures 4a and 4b present the number of publications for the most relevant Social Sciences and Economics journals, respectively. *Research in Social*

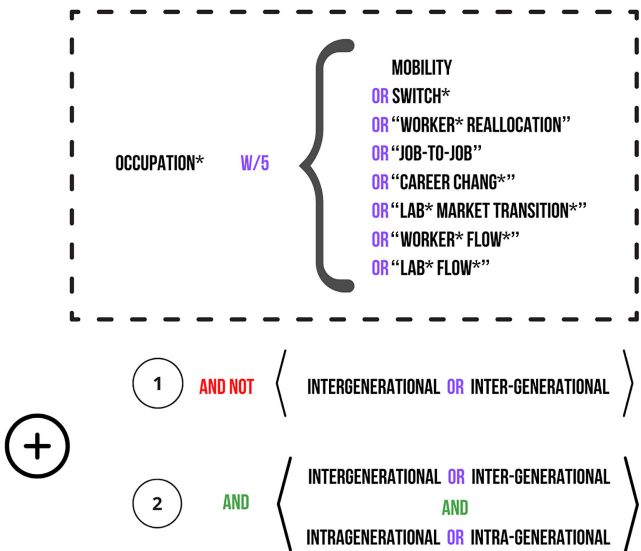
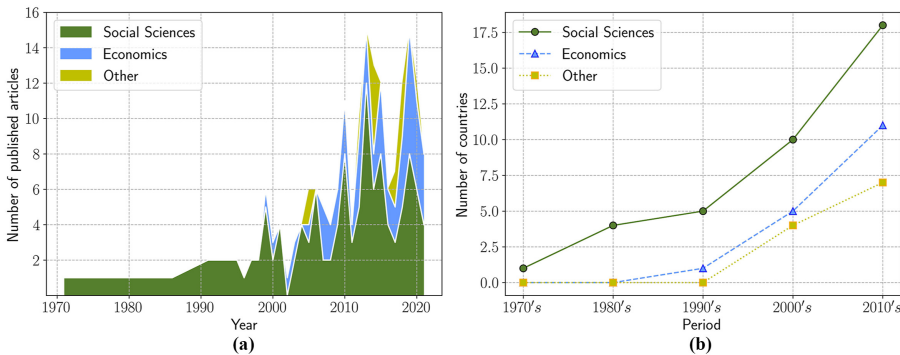


Figure 2.
Keywords used in this
research

Note(s): ‘*’ Replaces one or more characters of a word; for example, “LAB* FLOW*” also includes the expressions “Labor flows” and “Labour flow”

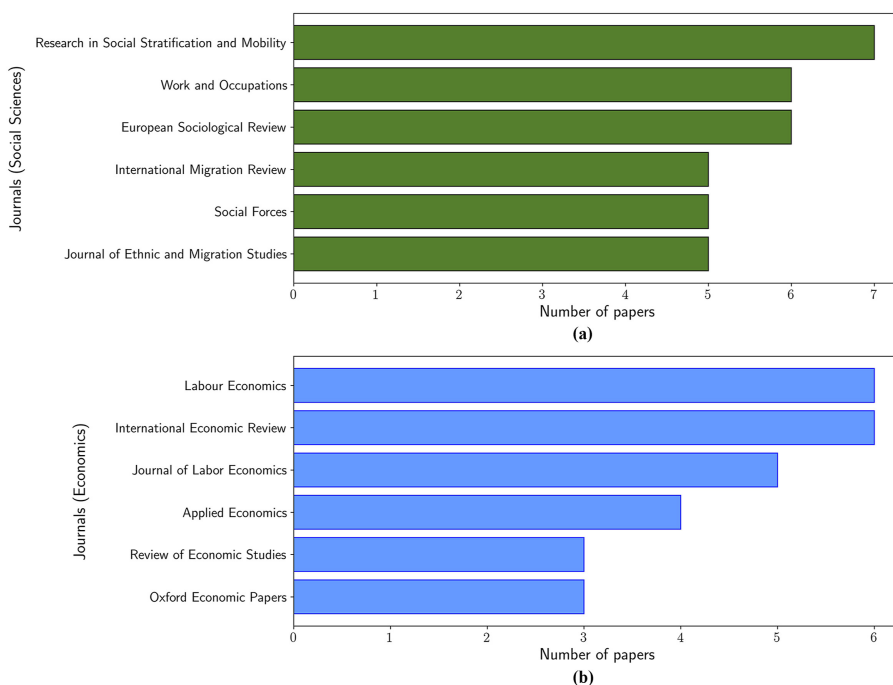
Source(s): Authors work

Figure 3.
Time evolution of the
number of publications
(a) and countries
analyzed (b) by
research areas
according to the
Scopus classification



Source(s): Authors work

Stratification and Mobility, Work and Occupations, and European Sociological Review, within the social sciences journals group, and *Labor Economics, International Economics Review, and Journal of Labor Economics*, within the economics journals group, are approximately 20% of the publications found in each respective research area. Furthermore, there are specific journals focused on migration studies in social science journals; as expected, they concentrate on almost all papers that relate migration with occupational mobility. Notably, 68 journals published just one article, and 15 journals published only two. This fact may indicate that the theme is still dispersed in the literature or linked to several study areas.



Workers'
mobility across
occupations

121

Figure 4.
Most Relevant Journals
about Social Sciences
(a) and Economics (b)

Source(s): Authors work

4.1 Scope analysis

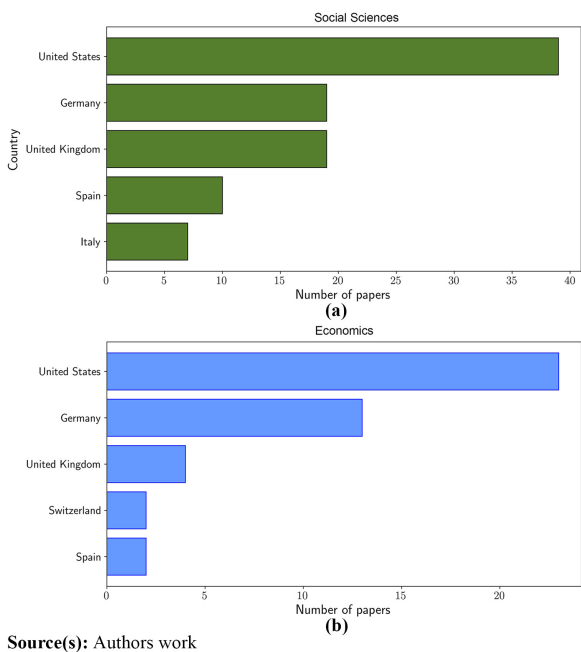
The set of countries analyzed in this literature is quite restricted. Figures 5a and 5b present the number of publications for the five most frequent countries in journals of Social Sciences and Economics, respectively. Studies on the United States, Germany and the United Kingdom represent 75% of all publications. Except for the articles that make a cross-country comparison of many countries (Bachmann, Bechara, & Vonnahme, 2020; Bartlett, 2009; Bisello, Maccarrone, & Fernández-Macías, 2020; Gangl, 2004b, 2006; Pohlig, 2021), the other 13 of the 21 analyzed countries appear at most two times. Furthermore, there are four works on Latin America and the Caribbean, one on Africa and six on Asia. Despite this large concentration of studies in a few countries, the variety of countries analyzed grows every decade in all research areas, as shown in Figure 3b.

4.2 Network analysis

Figure 1 presents the citation network generated from the 193 papers selected. The network analysis identified five clusters. One large cluster represents the research area of human capital. Two clusters represent the research area of social stratification: social and institutional barriers in general and gender barriers in particular. Finally, the migration studies were represented by one large cluster on Immigration and one small one on internal migration. This classification was made through an in-depth analysis of a select sample of papers from each cluster. By definition, there are more links within clusters than between them. Nevertheless, the high number of links between the human capital cluster and the social and institutional barriers cluster is remarkable.

Some publications were considered appropriate for the systematic literature review in-depth analysis. This selection process was necessary to ensure that the number of articles

Figure 5.
Number of papers in
journals of social
sciences (a) and
Economics (b) by
country



to be analyzed represented the most relevant studies in the main research areas. To select a representative sample of the transmission of knowledge between the papers, we choose the 20% of the most cited and citing articles within the network for each community, resulting in a total of 70 articles for the in-depth content analysis. These papers have yellow borders in the citation network (Figure 1).

4.3 Main research strategies

This subsection analyses the primary research strategies of the 70 publications chosen for the in-depth analysis. Firstly, all selected papers work with theoretical and empirical approaches, using numerical-qualitative techniques, like statistical tables or graphs. Only a part of these papers uses econometric techniques, like probit, logit, multinomial logit and ordinary least squares (OLS) regressions. We quantify how many documents in each community use or do not use some econometric technique in Table 1. Differences in the theoretical analyses and in-depth content will be dealt with in Chapter 5.

Table 1.
The number of papers
with and without
econometrics for each
cluster in the citation
network

Cluster	With econometrics	Without econometrics
Human Capital	29	3
Social and Institutional barriers	14	0
Gender barriers	2	2
Internal migration	2	2
Immigration	13	3
Source(s): Authors work		

5. Discussion of main arguments and findings

This section will review and synthesize the theoretical elements and empirical results of the 70 selected articles for in-depth analyses. Each subsection represents a cluster in the citation network. We will start with the human capital theory, represented by a large cluster. After, we will show how the social stratification aspects (found in the social and institutional barriers cluster in general and the gender barriers cluster in particular) can explain several segregations that human capital theory cannot. Finally, we will review the main results of the relationship between migration and social mobility. These migration studies were represented by the immigration large cluster and internal migration small one.

5.1 Human capital

A widely accepted fact in the literature is that workers tend, on average, to move from low-demanded occupations to high-demanded ones. In that regard, it was found that workers tend to migrate from occupations with lower-wage premiums to higher wage premiums (Cortes, 2016, 2019; Gathmann & Schönberg, 2010), frequently estimated by statistically significant occupation fixed effects (Bachmann *et al.*, 2020; Cortes, 2016; Crespo, Simoes, & Moreira, 2014; Roosaar, Mötsmees, & Varblane, 2014; Sacchi *et al.*, 2016). Furthermore, workers tend to leave nonincreasing occupations (DiPrete & Nonnemaker, 1997) for those with new vacancies (Sacchi *et al.*, 2016).

This average behavior, however, is not the same for all people. Workers do not move between occupations just to follow the opening of new job vacancies but also relocate between occupations seeking to improve the match between their skills and the skills required by each occupation (Gathmann & Schönberg, 2010; Gorry, Gorry, & Trachter, 2019; Guvenen, Kuruscu, Tanaka, & Wiczer, 2020; Papageorgiou, 2014; Sullivan, 2010). This movement, in addition to providing better wages to workers, is beneficial to employers by selecting people who are increasingly productive in specific tasks (Fedorets, 2019). In addition, these movements explain why the number of people who change occupation is much greater than the change in the number of workers in each occupation (Gueorgui Kambourov & Manovskii, 2008; Lalé, 2012).

Furthermore, the more specific the human capital of a person in the present occupation, the more costly and less likely it is for the person to change occupations (Dlouhy & Biemann, 2018; Guergui Kambourov & Manovskii, 2009; Moscarini & Thomsson, 2007). This explains why people in occupations with higher skill specificity are less likely to be mobile (Rinawi & Backes-Gellner, 2021). As human capital is learned through experience in the labor market and formal education, it is known that mobility decreases with age (Bachmann *et al.*, 2020; Gabe, Abel, & Florida, 2019; Gathmann & Schönberg, 2010; Roosaar *et al.*, 2014), firm-tenure (Roosaar *et al.*, 2014), having a college/university degree (Parrado, Caner, & Wolff, 2007) and having specific training (Mueller & Schweri, 2015). The possible loss of human capital makes on-the-job seekers (Deng, Li, & Shi, 2022) and workers with solid occupational commitment (Otto, Dette-Hagenmeyer, & Dalbert, 2010) less willing to change occupations.

However, the transfer of human capital is not the same among all occupations, which explains the significant heterogeneity in worker flows from one occupation to another (Harper, 1995; Poletaev & Robinson, 2008; Villarreal, 2020). In this sense, it has been shown that people tend to migrate between occupations requiring similar skills and performing similar tasks (Cortes & Gallipoli, 2018; Fedorets, 2019; Parrado *et al.*, 2007; Poletaev & Robinson, 2008; Robinson, 2017), mitigating the possible loss of specific human capital and, therefore, wage loss (Bachmann *et al.*, 2020; Gathmann & Schönberg, 2010; Poletaev & Robinson, 2008; Robinson, 2017). Furthermore, the skill-similarity between changed occupations tends to be higher among older workers (Forsythe, 2019;

Gathmann & Schönberg, 2010; Guvenen *et al.*, 2020), as the loss of specific human capital would be more significant for them.

Finally, the selective behavior of employers makes upward mobility more feasible for specific groups of workers with human-capital-related characteristics that are better valued by the market. For example, it is generally known that more educated workers are more likely to be upwardly mobile (Bachmann *et al.*, 2020; Gabe *et al.*, 2019; Villarreal, 2020). In addition, workers who stand out within an occupation, having a wage (Groes, Kircher, & Manovskii, 2013) higher (lower) than the occupational average, are also more likely to have upward (downward) mobility.

Regarding this literature on human capital, several articles theoretically justify their regression models through general equilibrium models where workers endogenously choose occupations based on the expected wage they could earn for their characteristics, in addition to other nonpecuniary preferences (Cubas & Silos, 2020; Gathmann & Schönberg, 2010; Gorry *et al.*, 2019; Guvenen *et al.*, 2020; Guergui Kambourov & Manovskii, 2009; Papageorgiou, 2014; Sabirianova, 2002; Sullivan, 2010).

While studies on human capital have made significant advances in classifying and estimating the empirical effects of different types of human capital on occupational mobility, they rarely focus on the importance of social and institutional barriers to occupational mobility in each labor market, that is, in how specific structures enhance the bargaining power of workers. Furthermore, they do not explicitly address the demand side, that is, how the availability of jobs in a region impacts mobility.

5.2 Social and institutional barriers

The human capital literature reviewed above assumes that the economy is generally a perfectly competitive market. This means that neither workers nor employers have market power in hiring. Going beyond this perspective, the literature on social and institutional barriers recognizes the existence of market power. At first, we will review how public policies can react to the market power of employers. Secondly, we will examine how this market power creates mobility barriers for some specific social groups.

It is essential to point out that not every change of occupation is voluntary, as in many cases, it comes from being dismissed (Buchs, Murphy, & Buchmann, 2017). So, the greater the stability of the worker, the greater the probability of only changing occupation when it is positive. In this regard, workers in public jobs have lower occupational mobility and a greater propensity for upward mobility (Sabirianova, 2002; Schultz, 2019; Wilson & Roscigno, 2010, 2016). The significant disparities between the levels of occupational mobility in different countries can be partially explained by differences in employment protection institutions (Gangl, 2004b, 2006).

Moreover, the bargaining power of a worker tends to decrease significantly after being dismissed. Workers tend to accept work in occupations very different from previous ones and accept earning much less just to escape unemployment (Buchs *et al.*, 2017; Gangl, 2004b, 2006). This, though does not apply to cases where a worker leaves work to study (Veira-Ramos & Schmelzer, 2018). This explains why unemployment insurance reduces the occupational mobility of the unemployed and increases their probability of upward mobility (Gangl, 2004b, 2006). In other words, the unemployed worker can wait for a better opportunity, usually in an occupation similar to the previous one, to accept a new job (Gangl, 2004a).

Not human capital only, but rather informal institutions and prejudices inform the selective behavior of employers. For example, it is known that in the United States and Europe, women and nonwhite workers have less occupational mobility (DiPrete & Nonnemaker, 1997; Sabirianova, 2002) and are less prone to upward mobility (McBrier & Wilson, 2004; Sabirianova, 2002; Schultz, 2019; Wilson & Roscigno, 2016). Firstly, part of this problem can be

explained by employer discrimination due to prejudice or because they "statistically" infer less human capital for minority groups (Chang, 2003; Wilson & Roscigno, 2010). Secondly, a hiring process involves several informal aspects, like sponsorship ties, to which more vulnerable groups have less access (Wilson & Roscigno, 2010). So the lower the intensity of these informal aspects, like in public jobs (Wilson, Sakura-Lemessy, & West, 1999; Wilson & Roscigno, 2016), the lower this social gap. This process creates segments in the labor market where vulnerable groups are overrepresented in some generally less paid occupations (Kumlin, 2010; Wilson *et al.*, 1999).

5.3 Gender barriers

Here, we review some additional papers about gender barriers, the smallest cluster of the citation network. In the specific case of gender attributes, women are more likely to spend time on family-related tasks than men and thus have lower job search intensity. In addition to employer bias, this reduces the number of opportunities for women. Consequently, women have much more frequently part-time jobs (Blackwell, 2001). They also have discontinuities in their career and choose low-paid occupations requiring fewer skills learned in the long run (Dex & Bukodi, 2012), making it difficult to acquire human capital (Jacobs, 1999). This problem is, of course, much more significant after childbirth (Jacobs, 1999) and creates gender barriers in a segmented labor market with "male" and "female" jobs (Rosenfeld & Spenner, 1992).

5.4 Internal migration

Since there is a cost of regional mobility within a country, a person's employment opportunities tend to be in the region where they live. However, there is significant evidence that the degree of options varies greatly between regions of the same country (Gordon, Champion, & Coombes, 2015; McCollum, Liu, Findlay, Feng, & Nightingale, 2018). Thus, as the region conditions mobility opportunities, people often move from peripheral regions to central ones, using these as escalators to social mobility (Fielding, 1992; Findlay, Mason, Houston, McCollum, & Harrison, 2009). In this sense, there is evidence of a strong correlation between regional mobility and upward occupational mobility (Findlay *et al.*, 2009), which is higher for more highly educated workers (McCollum *et al.*, 2018).

5.5 Immigration

A similar perspective can be found for international migration. The assimilation theory is the most used hypothesis to understand immigration. This theory argues that immigrants generally suffer diminishing mobility when they immigrate (Chiswick, Lee, & Miller, 2005; Green, 1999; Masso, Eamets, & Mötsmees, 2014; Obućina, 2013; Rooth & Ekberg, 2006). This is due to cultural barriers, licenses, information about the local labor market, language proficiency, etc. (Barbiano di Belgiojoso, 2019; Chiswick, Lee, & Miller, 2003, 2005; Rooth & Ekberg, 2006; Zorlu, 2013). Not every skill of the worker is transferred to the new job in the destination country. And the drop in status is more substantial if this transfer is smaller. After migration, however, immigrants can make some investments to increase the transferability of these skills and investments in new skills. As a result, occupational status increases with duration in the destination, creating a "U-shaped" pattern (Chiswick *et al.*, 2005; Green, 1999; Obućina, 2013; Rooth & Ekberg, 2006).

This recovery, however, is not the same for all individuals. For example, it is known that changes in post-migration upward mobility increase for men (Barbiano di Belgiojoso, 2019; Chiswick *et al.*, 2003; Fellini & Guetto, 2019; Ressia, Strachan, & Bailey, 2017), for high-skilled

6. Temporal analysis and literature gaps

The colors illustrate that the key focus and thus the key terms of research on occupational mobility have changed over time. The older articles in our sample tended to focus on issues associated with issues of immigration. These articles study how the occupational status of immigrant workers in the host country can be impacted by:



Figure 6.

(1) the duration after arrival and (2) the characteristics of the country of origin. This comparison of migrant workers can be made with the workers' first job or with the natives. Later, the research analyzed different types of destination countries and how this can influence upward mobility. Upward and downward mobility were also analyzed in gender and race studies.

More recently, the occupational mobility literature addressed topics more familiar to the economic literature. Firstly, we see the emergence of the literature on human capital and its acquisition through training as well as subsequent micro models on employees' skills, firms and employers. Occupational mobility also has begun to be linked to wage growth. However, this new micro-grounded literature in economics is only weakly connected with older still relevant research topics, such as the labor market segmentation in terms of gender, race and nativity.

The systematic literature review of this study uncovered multiple avenues for future studies on occupational mobility. There are numerous possibilities for how the different research communities can learn from each other, which includes methods, theories and topics.

Regarding methods, all research communities share common econometric techniques, such as binary choice models. Despite this, a methodology applied in the human capital literature has great applicability in the social stratification literature. As we reviewed, occupations – and the movement of workers among them – are segmented in the labor market. Thus, specific transitions between occupations are more frequent than others. From the human-capital viewpoint, the labor market is skill-segmented and there are several papers with a rigorous methodology that explain how the skill distance between two occupations explains the probability of moving between them (Cortes & Gallipoli, 2018; Fedorets, 2019; Parrado *et al.*, 2007; Poletaev & Robinson, 2008; Robinson, 2017). On the other hand, social stratification papers show that occupations are segmented by race, gender, and ethnicity. However, no study shows how social barriers vary between pairs of occupations, which can be done in future work using the methodologies of human capital literature.

It is in theoretical terms where the most significant division within the literature can be found. All works in human capital literature assume that no economic agent (people and firms) has market power. Thus, in this theory, there would be no room for social segregation. Following the social stratification literature and migration studies, human capital literature can overcome this limitation by modeling the real economy as an imperfect labor market. Like specific approaches to understanding wage inequalities in an imperfect labor market (Gerard, Lagos, Severnini, & Card, 2021), future work could incorporate the mobility gap between social groups by generalizing human capital models to imperfect markets where individual skills are valued differently for each social group. In this way, we will be able to understand how market power asymmetries can produce segregation.

Regarding topics, human capital literature can learn an essential element from migration studies. Theoretically, in the human capital literature, the intensity that certain individual factors influence social mobility not only derives from the existence per se of these factors but also from how the demand for labor reacts to them. However, by disregarding regional mobility costs, these human-capital studies do not consider the existence of local labor markets. On the other hand, migration studies focus on regional differences in job opportunities to explain the relationship between migration and social mobility. Thus, future studies relating to how job opportunities impact the human capital-related variables will be very useful in showing which public policies are better to promote mobility: the supply-side ones (such as education and training) or the demand-side ones (such as industrial policies to create specific jobs).

However, some aspects seem to be missing more generally in all research communities. For example, few papers are testing the main findings of occupation mobility in underdeveloped countries of the Global South. There is no paper making a cross-country comparison between developed and underdeveloped countries. On this specific point, no study still shows how labor market informality, widespread in nondeveloped countries, impacts occupational and upward mobility. Thus, studies of this type can understand how the social mobility impact of individual factors varies between poor and rich countries, explaining why immigration can be a source of social mobility. Finally, a very limited number of articles use a network approach, which is increasingly common for the study of industrial mobility (Neffke, Otto, & Weyh, 2017) and other phenomena. An analysis of the mobility network between occupations would bring a mesoscopic view of the problem, bringing essential insights such as the polarization and segmentation of the labor market. This is a possible methodology to be used in all communities.

7. Conclusions

This article reviewed the literature on intragenerational occupational mobility using structured literature review methods and network science techniques. First, our analysis revealed a research landscape fragmented around three major network communities: (1) human capital theory, (2) social stratification theory and (3) migration studies. In addition to a strong co-occurrence of their respective research articles in systemic keyword searches, we found a low level of cross-citation.

Firstly, the human capital literature studies how a worker's productivity in one particular occupation can be transferred to another occupation. Also, this literature examines the effects of education and training on social mobility. Secondly, the sociological theory of social stratification highlights the importance of institutional and social barriers to upward occupational mobility. So, some social groups end up having fewer opportunities for career advancement. Thirdly, migration studies focus on the importance of local job opportunities to social mobility; consequently, migrating to a region with more opportunities increases the possibilities for social mobility. Our theoretical analysis shows that the different approaches identified in this article can complement each other to explain various aspects of occupational mobility. As previously identified, some can be used to cover some literary gaps for potential mutual learning between the three communities. Both the social stratification and the migration literature can learn techniques used by human capital literature to analyze more deeply the intensity of social and institutional barriers between occupations in job-to-job transitions. From a theoretical point of view, the human capital literature can incorporate the importance of the labor demand of each region (as done by migration studies) and the market power of employers (as the social stratification literature does).

This work has two main limitations. First, only a sample of the total number of selected articles entered the in-depth analysis. Moreover, only published articles were selected; thus, current working papers were left out of our research. Therefore, it is possible that some theoretical elements were left out of the analysis. Second, this article only reviews academic papers on occupational mobility. So, we do not profoundly review other essential elements to understand workers' welfare, like wage mobility.

Nonetheless, this article is the first systemic review of the literature on intragenerational mobility using network analysis and identified complementary knowledge and research gaps within and across specialized communities. In practice, decision- and policymakers may need to consider all aspects simultaneously to design effective policies to promote occupational mobility. The same is arguably true for the individual workers whose career choices and occupational mobility are affected by their education and skills, social strata and migration options.

This study was partially financed by the *Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* – Brasil (CAPES) – Finance Code 001. BFC acknowledges CAPES for a scholarship. DH would like to express his gratitude for the financial support of CNPq (406943/2021-4 and 315441/2021-6).

References

- Abraham, A. (2020). International migration, return migration and occupational mobility: Evidence from Kerala, India. *Indian Journal of Labour Economics*, 63(4), 1223–1243. doi: [10.1007/s41027-020-00284-9](https://doi.org/10.1007/s41027-020-00284-9).
- Bachmann, R., Bechara, P., & Vonnahme, C. (2020). Occupational mobility in Europe: Extent, determinants and consequences. *Economist*, 168(1), 79–108. doi: [10.1007/s10645-019-09355-9](https://doi.org/10.1007/s10645-019-09355-9).
- Barbiano di Belgiojoso, E. (2019). The occupational (im)mobility of migrants in Italy. *Journal of Ethnic and Migration Studies*, 45(9), 1571–1594. doi: [10.1080/1369183X.2017.1414585](https://doi.org/10.1080/1369183X.2017.1414585).
- Barbiano di Belgiojoso, E., & Ortensi, L. E. (2015). Female labour segregation in the domestic services in Italy. *Journal of International Migration and Integration*, 16(4), 1121–1139. doi: [10.1007/s12134-014-0384-y](https://doi.org/10.1007/s12134-014-0384-y).
- Bartlett, W. (2009). The effectiveness of vocational education in promoting equity and occupational mobility amongst young people. *Economic Annals*, 54(180), 7–39. doi: [10.2298/EKA0980007B](https://doi.org/10.2298/EKA0980007B).
- Bisello, M., Maccarrone, V., & Fernández-Macías, E. (2020). Occupational mobility, employment transitions and job quality in Europe: The impact of the Great Recession. *Economic and Industrial Democracy*, 43(2), 585–611. doi: [10.1177/0143831X20931936](https://doi.org/10.1177/0143831X20931936).
- Blackwell, L. (2001). Occupational sex segregation and part-time work in modern Britain. *Gender, Work and Organization*, 8(2), 146–163. doi: [10.1111/1468-0432.00126](https://doi.org/10.1111/1468-0432.00126).
- Buchs, H., Murphy, E., & Buchmann, M. (2017). Landing a job, sinking a career? The trade-off between occupational downgrading and quick reemployment according to unemployed jobseekers' career stage and job prospects. *Research in Social Stratification and Mobility*, 52, 26–35. doi: [10.1016/j.rssm.2017.10.001](https://doi.org/10.1016/j.rssm.2017.10.001).
- Chang, T. F. H. (2003). A social psychological model of women's gender-typed occupational mobility. *Career Development International*, 8(1), 27–39. doi: [10.1108/13620430310459496](https://doi.org/10.1108/13620430310459496).
- Chiswick, B. R., Lee, Y. L., & Miller, P. W. (2003). Patterns of immigrant occupational attainment in a longitudinal survey. *International Migration*, 41(4), 47–69. doi: [10.1111/1468-2435.00252](https://doi.org/10.1111/1468-2435.00252).
- Chiswick, B. R., Lee, Y. L., & Miller, P. W. (2005). A longitudinal analysis of immigrant occupational mobility: A test of the immigrant assimilation hypothesis. *International Migration Review*, 39(2), 332–353. doi: [10.1111/j.1747-7379.2005.tb00269.x](https://doi.org/10.1111/j.1747-7379.2005.tb00269.x).
- Constant, A., & Massey, D. S. (2005). Labor market segmentation and the earnings of German guestworkers. *Population Research and Policy Review*, 24(5), 489–512. doi: [10.1007/s11113-005-4675-z](https://doi.org/10.1007/s11113-005-4675-z).
- Cortes, G. M. (2016). Where have the middle-wage workers gone? A study of polarization using panel data. *Journal of Labor Economics*, 34(1), 63–105. doi: [10.1086/682289](https://doi.org/10.1086/682289).
- Cortes, G. M. (2019). The individual-level patterns underlying the decline of routine jobs. *Travail et Emploi*, 2019(157), 45–66. doi: [10.4000/travailemloi.8869](https://doi.org/10.4000/travailemloi.8869).
- Cortes, G. M., & Gallipoli, G. (2018). The costs of occupational mobility: An aggregate analysis. *Journal of the European Economic Association*, 16(2), 275–315. doi: [10.1093/jeaa/jvx006](https://doi.org/10.1093/jeaa/jvx006).
- Crespo, N., Simoes, N., & Moreira, S.B. (2014). Gender differences in occupational mobility - evidence from Portugal. *International Review of Applied Economics*, 28(4), 460–481. doi: [10.1080/02692171.2014.884548](https://doi.org/10.1080/02692171.2014.884548).
- Cubas, G., & Silos, P. (2020). Social insurance and occupational mobility. *International Economic Review*, 61(1), 219–240. doi: [10.1111/iere.12422](https://doi.org/10.1111/iere.12422).

- Deng, L., Li, H., & Shi, W. (2022). Willingness for different job mobility types and wage expectations: An empirical analysis based on the online resumes. *Papers in Regional Science*, 101(1), 135–161. doi: [10.1111/pirs.12636](https://doi.org/10.1111/pirs.12636).
- Dex, S., & Bukodi, E. (2012). The effects of part-time work on women's occupational mobility in Britain: Evidence from the 1958 birth cohort study. *National Institute Economic Review*, 222, R20–R37.
- DiPrete, T. A., & Nonnemaker, K. L. (1997). Structural change, labor market turbulence, and labor market outcomes. *American Sociological Review*, 62(3), 386–404. doi: [10.2307/2657312](https://doi.org/10.2307/2657312).
- Dlouhy, K., & Biemann, T. (2018). Path dependence in occupational careers: Understanding occupational mobility development throughout individuals' careers. *Journal of Vocational Behavior*, 104, 86–97. doi: [10.1016/j.jvb.2017.10.009](https://doi.org/10.1016/j.jvb.2017.10.009).
- Fedorets, A. (2019). Changes in occupational tasks and their association with individual wages and occupational mobility. *German Economic Review*, 20(4), e295–e328. doi: [10.1111/geer.12166](https://doi.org/10.1111/geer.12166).
- Fellini, I., & Guetto, R. (2019). A “U-shaped” pattern of immigrants' occupational careers? A comparative analysis of Italy, Spain, and France. *International Migration Review*, 53(1), 26–58. doi: [10.1177/0197918318767931](https://doi.org/10.1177/0197918318767931).
- Fernández-Macías, E., Grande, R., del Rey Poveda, A., & Antón, J.I. (2015). Employment and occupational mobility among recently arrived immigrants: The Spanish case 1997–2007. *Population Research and Policy Review*, 34(2), 243–277. doi: [10.1007/s11113-014-9347-4](https://doi.org/10.1007/s11113-014-9347-4).
- Fielding, A. J. (1992). Migration and social mobility: South east england as an escalator region. *Regional Studies*, 26(1), 1–15. doi: [10.1080/00343409212331346741](https://doi.org/10.1080/00343409212331346741).
- Findlay, A., Mason, C., Houston, D., McCollum, D., & Harrison, R. (2009). Escalators, elevators and travelers: The occupational mobility of migrants to South-East England. *Journal of Ethnic and Migration Studies*, 35(6), 861–879. doi: [10.1080/13691830902957676](https://doi.org/10.1080/13691830902957676).
- Forsythe, E. (2019). Careers within firms: Occupational mobility over the lifecycle. *Labour*, 33(3), 241–277. doi: [10.1111/labr.12146](https://doi.org/10.1111/labr.12146).
- Gabe, T., Abel, J. R., & Florida, R. (2019). Can workers in low-end occupations climb the job ladder?. *Economic Development Quarterly*, 33(2), 92–106. doi: [10.1177/0891242419838324](https://doi.org/10.1177/0891242419838324).
- Gangl, M. (2004a). Institutions and the structure of labour market matching in the United States and West Germany. *European Sociological Review*, 20(3), 171–187. doi: [10.1093/esr/jch016](https://doi.org/10.1093/esr/jch016).
- Gangl, M. (2004b). Welfare states and the scar effects of unemployment: A comparative analysis of the United States and west Germany. *American Journal of Sociology*, 109(6), 1319–1364. doi: [10.1086/381902](https://doi.org/10.1086/381902).
- Gangl, M. (2006). Scar effects of unemployment: An assessment of institutional complementarities. *American Sociological Review*, 71(6), 986–1013. doi: [10.1177/000312240607100606](https://doi.org/10.1177/000312240607100606).
- Gathmann, C., & Schönberg, U. (2010). How general is human capital? A task-based approach. *Journal of Labor Economics*, 28(1), 1–49. doi: [10.1086/649786](https://doi.org/10.1086/649786).
- Gerard, F., Lagos, L., Severnini, E., & Card, D. (2021). Assortative matching or exclusionary hiring? The impact of employment and pay policies on racial wage differences in Brazil. *American Economic Review*, 111(10), 3418–3457. doi: [10.1257/aer.20181596](https://doi.org/10.1257/aer.20181596).
- Gordon, I., Champion, T., & Coombes, M. (2015). Urban escalators and interregional elevators: The difference that location, mobility, and sectoral specialisation make to occupational progression. *Environment and Planning A*, 47(3), 588–606. doi: [10.1068/a130125p](https://doi.org/10.1068/a130125p).
- Gorry, A., Gorry, D., & Trachter, N. (2019). Learning and life cycle patterns of occupational transitions. *International Economic Review*, 60(2), 905–937. doi: [10.1111/iere.12371](https://doi.org/10.1111/iere.12371).
- Green, D. A. (1999). Immigrant occupational attainment: Assimilation and mobility over time. *Journal of Labor Economics*, 17(1), 49–79. doi: [10.1086/209913](https://doi.org/10.1086/209913).

- Groes, F., Kircher, P., & Manovskii, I. (2013). The U-shapes of occupational mobility. *Review of Economic Studies*, 82(2), 659–692. doi: [10.1093/restud/rdv037](https://doi.org/10.1093/restud/rdv037).
- Guvenen, F., Kuruscu, B., Tanaka, S., & Wiczer, D. (2020). Multidimensional skill mismatch. *American Economic Journal: Macroeconomics*, 12(1), 210–244. doi: [10.1257/mac.20160241](https://doi.org/10.1257/mac.20160241).
- Harper, B. (1995). Male occupational mobility in Britain. *Oxford Bulletin of Economics and Statistics*, 57(3), 349–369. doi: [10.1111/j.1468-0084.1995.mp57003005.x](https://doi.org/10.1111/j.1468-0084.1995.mp57003005.x).
- Jabbour, C. J. C. (2013). Environmental training in organisations: From a literature review to a framework for future research. *Resources, Conservation and Recycling*, 74, 144–155. doi: [10.1016/j.resconrec.2012.12.017](https://doi.org/10.1016/j.resconrec.2012.12.017).
- Jacobs, S. (1999). Trends in women's career patterns and in gender occupational mobility in Britain. *Gender, Work and Organization*, 6(1), 32–46. doi: [10.1111/1468-0432.00067](https://doi.org/10.1111/1468-0432.00067).
- Kambourov, G., & Imanovskii, I. (2009). Occupational specificity of human capital (jan 2008 ver) *industry 2/1digit. *International Economic Review*, 50, 63–115. Available from: http://economics.sas.upenn.edu/~manovski/papers/occupation_specific_HC.pdf
- Kambourov, G., & Manovskii, I. (2008). Rising occupational and industry mobility in the United States: 1968–97. *International Economic Review*, 49(1), 41–79. doi: [10.1111/j.1468-2354.2008.00473.x](https://doi.org/10.1111/j.1468-2354.2008.00473.x).
- Kambourov, G., & Manovskii, I. (2009). Occupational mobility and wage inequality. *Review of Economic Studies*, 76(2), 731–759. doi: [10.1111/j.1467-937X.2009.00535.x](https://doi.org/10.1111/j.1467-937X.2009.00535.x).
- Kumlin, J. (2010). Occupational shifts across sex-type boundaries in the Swedish labour market. *Research in Social Stratification and Mobility*, 28(4), 417–436. doi: [10.1016/j.rssm.2010.06.003](https://doi.org/10.1016/j.rssm.2010.06.003).
- Lage Junior, M., & Godinho Filho, M. (2010). Variations of the kanban system: Literature review and classification. *International Journal of Production Economics*, 125(1), 13–21. doi: [10.1016/j.ijpe.2010.01.009](https://doi.org/10.1016/j.ijpe.2010.01.009).
- Lalé, E. (2012). Trends in occupational mobility in France : 1982 – 2009. *Labour Economics*, 19(3), 373–387. doi: [10.1016/j.labeco.2012.03.005](https://doi.org/10.1016/j.labeco.2012.03.005).
- Masso, J., Eamets, R., & Mõtsmees, P. (2014). Temporary migrants and occupational mobility: Evidence from the case of Estonia. *International Journal of Manpower*, 35(6), 753–775. doi: [10.1108/IJM-06-2013-0138](https://doi.org/10.1108/IJM-06-2013-0138).
- McBrier, D. B., & Wilson, G. (2004). Going down? Race and downward occupational mobility for white-collar workers in the 1990s. *Work and Occupations*, 31(3), 283–322. doi: [10.1177/0730888404266383](https://doi.org/10.1177/0730888404266383).
- McCollum, D., Liu, Y., Findlay, A., Feng, Z., & Nightingale, G. (2018). Determinants of occupational mobility: The importance of place of work. *Regional Studies*, 52(12), 1612–1623. doi: [10.1080/00343404.2018.1424993](https://doi.org/10.1080/00343404.2018.1424993).
- Moscarini, G., & Thomsson, K. (2007). Occupational and job mobility in the US. *Scandinavian Journal of Economics*, 109(4), 807–836. doi: [10.1111/j.1467-9442.2007.00510.x](https://doi.org/10.1111/j.1467-9442.2007.00510.x).
- Mueller, B., & Schweri, J. (2015). How specific is apprenticeship training? Evidence from inter-firm and occupational mobility after graduation. *Oxford Economic Papers*, 67(4), 1057–1077. doi: [10.1093/oep/gpv040](https://doi.org/10.1093/oep/gpv040).
- Neffke, F.M.H., Otto, A., & Weyh, A. (2017). Inter-industry labor flows. *Journal of Economic Behavior and Organization*, 142, 275–292. doi: [10.1016/j.jebo.2017.07.003](https://doi.org/10.1016/j.jebo.2017.07.003).
- Obućina, O. (2013). Occupational trajectories and occupational cost among senegalese immigrants in Europe. *Demographic Research*, 28(March), 547–580. doi: [10.4054/DemRes.2013.28.19](https://doi.org/10.4054/DemRes.2013.28.19).
- Otto, K., Dette-Hagenmeyer, D. E., & Dalbert, C. (2010). Occupational mobility in members of the labor force: Explaining the willingness to change occupations. *Journal of Career Development*, 36(3), 262–288. doi: [10.1177/0894845309345842](https://doi.org/10.1177/0894845309345842).
- Papageorgiou, T. (2014). Learning your comparative advantages. *Review of Economic Studies*, 81(3), 1263–1295. doi: [10.1093/restud/rdt048](https://doi.org/10.1093/restud/rdt048).

- Parrado, E., Caner, A., & Wolff, E. N. (2007). Occupational and industrial mobility in the United States. *Labour Economics*, 14(3), 435–455. doi: [10.1016/j.labeco.2006.01.005](https://doi.org/10.1016/j.labeco.2006.01.005).
- Pohlig, M. (2021). Occupational mobility in Europe during the crisis: Did the social elevator break?. *Research in Social Stratification and Mobility*, 72, 100549. doi: [10.1016/j.rssm.2020.100549](https://doi.org/10.1016/j.rssm.2020.100549).
- Poletaev, M., & Robinson, C. (2008). Human capital specificity: Evidence from the dictionary of occupational titles and displaced worker surveys, 1984–2000. *Journal of Labor Economics*, 26(3), 387–420. doi: [10.1086/588180](https://doi.org/10.1086/588180).
- Ressia, S., Strachan, G., & Bailey, J. (2017). Operationalizing intersectionality: An approach to uncovering the complexity of the migrant job search in Australia. *Gender, Work and Organization*, 24(4), 376–397. doi: [10.1111/gwao.12172](https://doi.org/10.1111/gwao.12172).
- Rinawi, M., & Backes-Gellner, U. (2021). Labour market transitions after layoffs: The role of occupational skills. *Oxford Economic Papers*, 73(1), 76–97. doi: [10.1093/oepp/gp2064](https://doi.org/10.1093/oepp/gp2064).
- Robinson, C. (2017). Occupational mobility, occupation distance and specific human capital. *Journal of Human Resources*, 53(2), 0814–6556R2, June 2010. doi: [10.3368/jhr.53.2.0814.6556r2](https://doi.org/10.3368/jhr.53.2.0814.6556r2).
- Roosaar, L., Mötsmees, P., & Varblane, U. (2014). Occupational mobility over the business cycle. *International Journal of Manpower*, 35(6), 873–897. doi: [10.1108/IJM-06-2013-0130](https://doi.org/10.1108/IJM-06-2013-0130).
- Rooth, D. O., & Ekberg, J. (2006). Occupational mobility for immigrants in Sweden. *International Migration*, 44(2), 57–77. doi: [10.1111/j.1468-2435.2006.00364.x](https://doi.org/10.1111/j.1468-2435.2006.00364.x).
- Rosenfeld, R.A., & Spenner, K.I. (1992). Occupational sex segregation and women's early career job shifts. *Work and Occupations*, 19(4), 424–449. doi: [10.1177/0730888492019004005](https://doi.org/10.1177/0730888492019004005).
- Sabirianova, K. Z. (2002). The great human capital reallocation: A study of occupational mobility in transitional Russia. *Journal of Comparative Economics*, 30(1), 191–217. doi: [10.1006/jcec.2001.1760](https://doi.org/10.1006/jcec.2001.1760).
- Sacchi, S., Kriesi, I., & Buchmann, M. (2016). Occupational mobility chains and the role of job opportunities for upward, lateral and downward mobility in Switzerland. *Research in Social Stratification and Mobility*, 44, 10–21. doi: [10.1016/j.rssm.2015.12.001](https://doi.org/10.1016/j.rssm.2015.12.001).
- Schultz (2019). The wage mobility of low-wage workers in a changing economy, 1968 to 2014. *RSF: The Russell Sage Foundation Journal of the Social Sciences*, 5(4), 159. doi: [10.7758/rsf.2019.5.4.06](https://doi.org/10.7758/rsf.2019.5.4.06).
- Simón, H., Ramos, R., & Sanromá, E. (2014). Immigrant occupational mobility: Longitudinal evidence from Spain. *European Journal of Population*, 30(2), 223–255. doi: [10.1007/s10680-014-9313-1](https://doi.org/10.1007/s10680-014-9313-1).
- Stanek, M., & Ramos, A. V. (2013). Occupational mobility at migration - evidence from Spain. *Sociological Research Online*, 18(Issue 4), 223–255. doi: [10.5153/sro.3134](https://doi.org/10.5153/sro.3134).
- Sullivan, P. (2010). A dynamic analysis of educational attainment, occupational choices, and job search. *International Economic Review*, 51(1), 289–317. doi: [10.1111/j.1468-2354.2009.00580.x](https://doi.org/10.1111/j.1468-2354.2009.00580.x).
- van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, 84(2), 523–538. doi: [10.1007/s11192-009-0146-3](https://doi.org/10.1007/s11192-009-0146-3).
- Veira-Ramos, A., & Schmelzer, P. (2018). Outcomes of unemployment episodes during early career for mismatched workers in the United Kingdom and Germany and the mediating effects of education and institutions. *Research in Social Stratification and Mobility*, 55(July 2016), 99–108. doi: [10.1016/j.rssm.2018.04.005](https://doi.org/10.1016/j.rssm.2018.04.005).
- Villarreal, A. (2020). The U.S. Occupational structure: A social network approach. *Sociological Science*, 7, 187–221. doi: [10.15195/V7.A8](https://doi.org/10.15195/V7.A8).
- Wilson, G., & Roscigno, V. J. (2010). Race and downward mobility from privileged occupations: African American/White dynamics across the early work-career. *Social Science Research*, 39(1), 67–77. doi: [10.1016/j.ssresearch.2009.03.008](https://doi.org/10.1016/j.ssresearch.2009.03.008).
- Wilson, G., & Roscigno, V. J. (2016). Public sector reform and racial occupational mobility. *Work and Occupations*, 43(3). doi: [10.1177/0730888416654203](https://doi.org/10.1177/0730888416654203).

Wilson, G., Sakura-Lemessy, I., & West, J. P. (1999). Reaching the top: Racial differences in mobility paths to upper-tier occupations. *Work and Occupations*, 26(2), 165–186. doi: [10.1177/0730888499026002002](https://doi.org/10.1177/0730888499026002002).

Zorlu, A. (2013). Occupational adjustment of immigrants in The Netherlands. *Journal of International Migration and Integration*, 14(4), 711–731. doi: [10.1007/s12134-012-0264-2](https://doi.org/10.1007/s12134-012-0264-2).

Corresponding author

Ben Hur Francisco Cardoso can be contacted at: benhur.phys@gmail.com

For instructions on how to order reprints of this article, please visit our website:

www.emeraldgroupublishing.com/licensing/reprints.htm

Or contact us for further details: permissions@emeraldinsight.com