

DISCUSSION PAPER SERIES

IZA DP No. 16849

**Labour Market Disadvantages of Citizens  
with a Migration Background in Belgium:  
A Systematic Review**

Louise Devos  
Louis Lippens  
Dries Lens  
François Rycx  
Mélanie Volral  
Stijn Baert

MARCH 2024

## DISCUSSION PAPER SERIES

IZA DP No. 16849

# Labour Market Disadvantages of Citizens with a Migration Background in Belgium: A Systematic Review

**Louise Devos**

*Ghent University*

**Louis Lippens**

*Ghent University and Centre for the Social  
Study of Migration and Refugees*

**Dries Lens**

*University of Antwerp*

**François Rycx**

*Université libre de Bruxelles, Université de  
Mons, IRES, GLO and IZA*

**Mélanie Volral**

*Université de Mons*

**Stijn Baert**

*Ghent University, University of Antwerp,  
Université catholique de Louvain and IZA*

MARCH 2024

Any opinions expressed in this paper are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The IZA Institute of Labor Economics is an independent economic research institute that conducts research in labor economics and offers evidence-based policy advice on labor market issues. Supported by the Deutsche Post Foundation, IZA runs the world's largest network of economists, whose research aims to provide answers to the global labor market challenges of our time. Our key objective is to build bridges between academic research, policymakers and society.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9  
53113 Bonn, Germany

Phone: +49-228-3894-0  
Email: [publications@iza.org](mailto:publications@iza.org)

[www.iza.org](http://www.iza.org)

## ABSTRACT

---

# Labour Market Disadvantages of Citizens with a Migration Background in Belgium: A Systematic Review

Labour markets struggle to be inclusive, while diversity is increasing. This literature review examines labour market challenges faced by first- and second-generation migrants in Belgium. We systematically review articles published between 2010 and 2023 in the Web of Science Core Collection to delineate underlying mechanisms, associated solutions, policy recommendations and literature gaps. The literature reveals that individuals with a migration background generally experience poorer labour market outcomes than natives. These outcomes vary based on specific origin and gender and persist from the first into the second generation. The mechanisms underlying these poorer outcomes are discrimination, individual preferences, and human and social capital differences. Recommendations for employers include implementing anti-discrimination policies, fostering awareness of discrimination, and taking affirmative action. On the employee side, investing in human capital, increasing labour market knowledge, and having competencies formally recognised can help to narrow employment gaps. Our review also advocates for policy refinement to combat biases and suggests that alternative pathways to attaining employment, such as self-employment and volunteering, are promising areas for future research.

**JEL Classification:** J15, J18

**Keywords:** Belgium, migration, labour market, systematic review

**Corresponding author:**

Louise Devos  
Ghent University  
Sint-Pietersplein 6  
9000 Ghent  
Belgium  
E-mail: Louise.Devos@UGent.be

# 1. Introduction

Belgium has a long history of migration. In the 1950s and 1960s, employers recruited unskilled workers of Southern European, North African, and Turkish origins to work in the mining and heavy industry sectors (Lens, 2022). In subsequent decades, labour migration remained an important entry route to Belgium, while family migration increased (Corluy, 2014). From 1990 onwards, the number of asylum seekers rose (Lens et al., 2019), and more European Union (EU) citizens migrated to Belgium following EU enlargements (Myria, 2018).

Migration has profoundly changed the Belgian labour market: individuals with a non-Belgian background now constitute a sizable proportion of the country's population and workforce. As of January 2023, approximately 17.8% of the population in Belgium were first-generation migrants, whereas 16.6% were second-generation migrants. While the gender distribution is fairly even across different origin groups, the age distribution varies markedly. Among first- and second-generation migrants, only 9% are older than 65, whereas this percentage is considerably higher at 26% for the native population (Statbel, 2023).<sup>1</sup>

Amid changes in the ethnic composition of the labour force, Belgium faces a persistent challenge: while the number of people with a migration background is growing, many are not fully integrated into the labour market (Baert & Cockx, 2013; Fays et al., 2021; FPS Employment & Unia, 2022; Grinza et al., 2020; Hoge Raad voor de Werkgelegenheid, 2018; Kampelmann & Rycx, 2016; OECD, 2022). Figure 1 underscores this challenge, revealing that Belgium has one of the largest employment rate gaps between first- and second-generation migrants and natives in the EU (Eurostat, 2023).

< Figure 1 about here >

Existing studies offer valuable insights into labour market dynamics for individuals with a migration background in Belgium. However, the literature misses a comprehensive review grounded in empirical research, which systematically combines and evaluates challenges and potential solutions. By conducting a systematic literature review covering papers published in the Web of Science Core Collection between 2010 and 2023, we provide an overarching view of the disparities in labour market outcomes between natives and first- and second-generation migrants.

---

<sup>1</sup> Own calculations, based on Statbel (2023).

Our contribution to the scientific discourse is fourfold. First, we outline the differences in labour market outcomes between people with a migration background and natives, the underlying mechanisms influencing labour market integration from both employer and employee perspectives, and potential remedies for poor labour market integration. Second, drawing on the literature, we consolidate policy and research recommendations. Third, we discuss the suggested remedies and policy recommendations within the context of the current legislative framework. Last, this systematic literature review reveals gaps in the academic literature. Through these contributions, our study helps to realise the goal of decent work for all. The United Nations has incorporated this objective into its seventeen sustainable development goals (SDGs) to achieve a better and more sustainable future for everyone by 2030.

The structure of our study is as follows: Section 2 provides an overview of the theories underpinning the reviewed literature, along with a brief outline of the Belgian institutional context. Section 3 discusses the methods used. Section 4 presents the results of our literature review. Section 5 synthesises remedies and policy recommendations, discusses these recommendations within the current legislative framework, and suggests areas for future research. Section 6 concludes the review.

## **2. Background**

This section provides background information for readers seeking a deeper understanding of the theories underlying differences in labour market outcomes between individuals with a migration background and native citizens. It also offers insights into the specific Belgian context of our study. The insights and discussions based on our literature review rely on the theories and institutional context presented here.

### **2.1. Employer-side mechanisms**

On the employer side, a possible explanation for differences in labour market outcomes can be found in theories of discrimination. We make a distinction between statistical and taste-

based discrimination. Statistical discrimination occurs when employers rely on group-level statistical information instead of individual characteristics to form judgements regarding an individual. Employers may resort to statistical discrimination when they lack complete information about individuals, and acquiring information is either impractical or costly (Arrow, 1973; Phelps, 1972).

Taste-based discrimination is rooted in preferences rather than information about individual candidates (Arrow, 1973; Becker, 1971). Employers may be reluctant to collaborate with individuals of migrant backgrounds or assume that their employees or customers harbour similar reservations (Lippens et al., 2022). Collaborating with minorities for whom a party harbours such aversions entails a fictitious cost for this party. Employers are likely to engage in taste-based discrimination if this cost of collaboration is sufficiently high. An employer harbouring bias against minority candidates acts as if an hour of labour by a minority candidate incurs higher costs than it truly does. Employees with such biases behave as though their wages are reduced by this perceived cost. Moreover, when employers perceive that customers harbour aversion towards a particular minority, hiring employees from the majority category may be financially advantageous to avoid losing customers or even stimulate sales (Becker, 1971; Borjas, 2020; Combes et al., 2016).<sup>2</sup>

## **2.2. Employee-side mechanisms**

On the employee side, cultural values and socio-cultural adaptability significantly influence labour market outcomes (Borjas, 1992). For instance, cultural disparities in gender patterns, such as work-family responsibilities, continue to the lower labour market integration of women with a migration background (Clark et al., 1991; Kok et al., 2011; Maes et al., 2022). These values and behaviours are components of social capital. According to Putnam's (2000)

---

<sup>2</sup> Theoretical predictions in the taste-based discrimination model hinge on whether prejudice is encountered by the employer, colleagues or customers. Specifically, the short- and long-term outcomes regarding wage discrimination and employment segregation differ. If employers hold prejudiced views, wage discrimination and employment segregation manifest in the short run, but market forces are expected to eliminate these issues in the long run. However, in imperfectly competitive labour markets, as demonstrated by Black (1995), wage discrimination and employment segregation may persist. In cases involving prejudiced colleagues, there is no wage discrimination, but employment segregation persists in both the short and long run. When prejudiced customers are considered, wage discrimination and employment segregation are predicted to occur in both the short and long run (Becker, 1971).

definition, social capital constitutes the collective resources, trust, and reciprocity embedded within social networks and communities. People with a migration background may encounter difficulties establishing qualitative professional networks due to factors such as social isolation and limited access to native networks, especially when the cultural distance between the country of origin and the host country is large. These challenges may lead to less efficient job search strategies and inferior long-term employment outcomes compared to natives (Behtoui, 2007; Parks-Yancy, 2006).

Social capital is closely associated with human capital. Human capital comprises the totality of knowledge and skills an individual possesses, acquired through formal education and training and informal learning experiences (Becker, 1964). According to the classical human capital theory, a rise in human capital increases a worker's productivity, which results in higher wages in a perfectly competitive market (Mincer, 1958).

Disparities in the absolute stock of human capital and associated variations in productivity serve as a first human capital explanation for diverse labour market outcomes. Due to limited educational possibilities in many origin countries, migrants bring lower educational qualifications on average than those required to successfully integrate into the host country's labour market. A second human capital explanation is the imperfect transferability of human capital. Some qualifications from the country of origin may not be recognised in the destination country (Chiswick & Miller, 2009). Third, host country language proficiency is integral to human capital, and the effect of language skills on labour market success is amplified through its interaction with education, training, and labour force experience (Borjas, 1992; Chiswick & Miller, 1992). A fourth human capital explanation relates to the search and match theory (Groot & Maassen van den Brink, 2000). This theory posits that disparities between the skills and knowledge that migrants bring and those needed in the host country can arise due to imperfect information about the host country's labour market. This challenge becomes more pronounced when the country of origin and the host country have significantly different institutional contexts (Chiswick & Miller, 2009).

In many cases, migration is not permanent. This impermanence makes both migrants and their employers hesitant to invest in human capital specific to the host country, and instead, they pursue labour market opportunities that promise quicker returns (Dustmann, 2000). Additionally, the lack of family support for many migrants creates an urgent need for immediate employment to sustain themselves and send remittances to family members

back home. Consequently, they tend to take low-skilled, low-paying, readily available jobs (Kalter & Kogan, 2006; Lens & Oslejšová, 2018).

### **2.3. Assimilation and segmented assimilation**

The integration of migrant labour into host countries' markets is a dynamic process characterised by two main perspectives: assimilation and segmented assimilation (Portes & Zhou, 1993). Both viewpoints acknowledge the labour market challenges faced by migrants in the short term. However, their expectations regarding long-term integration outcomes differ for individuals with a migration background.

The assimilation perspective posits that migrants gradually integrate into the host country's labour market. This viewpoint underscores the diminishing disparities in human capital between migrants and natives as time progresses. Migrants progressively acquire proficiency in the host country's language, pursue local education and training, and experience fewer discriminatory practices as conditions improve. Children of migrants who are educated in the host country, are fluent in the native language and hold recognised qualifications are expected to achieve labour market outcomes comparable to those of native-born children.

In contrast, the segmented assimilation perspective prioritises social mechanisms that sustain migrants' initial disadvantages. For example, despite narrowing human capital disparities, migrants may be confined to secondary labour markets with low-paying jobs and limited upward mobility. Migrant social networks, particularly homogeneous ethnic ties, offer initial job-seeking support, but connections within the native population prove more effective for finding stable and high-paying employment (Kalter & Kogan, 2014; Kanas et al., 2012; Lancee & Hartung, 2012). Discriminatory practices tend to persist over time because biases are challenging to eliminate (e.g., because the cost of preference-based discrimination is not deemed high enough), or because employers believe it to be efficient, even though decisions are often based on inaccurate representations of group characteristics. Therefore, even second-generation migrants face ethnic disadvantages upon entering the labour market (Heath & Cheung, 2007).

## **2.4. Institutional settings**

Labour market disadvantages for individuals with a migration background are closely tied to the host country's institutional framework. Migration policies shape migrant selection based on human capital and skill relevance (Borjas, 1994). An example of such a migration policy is acquiring citizenship in the host country. Citizenship aids in overcoming labour market barriers by removing practical impediments and through the integration signal it conveys. This phenomenon is also called the citizenship premium (Corluy et al., 2011). Research suggests migrants fare better in countries with substantial low-skilled employment sectors and flexible labour markets. Flexibility serves as a risk-mitigating factor: if an ethnic minority candidate proves to be a wrong hire, the candidate can be easily replaced (Baeyens et al., 2020; Kogan, 2006). Furthermore, welfare state policies play a crucial role in influencing labour market prospects for migrants. Countries with restrictive welfare systems may push migrants into secondary labour market positions, while those with extensive support for job seekers may help them secure roles corresponding to their qualifications (Koopmans, 2010).

Scholars emphasise Belgium's rigid labour market as a key factor hindering migrant integration (Baeyens et al., 2020; Lens, 2022; Marx, 2019). Belgium's narrow income distribution, high minimum wage, and robust collective bargaining contribute to this hindrance, making low-skilled labour expensive. Educational prerequisites, especially regarding linguistic ability, and the limited use of atypical work arrangements further restrict employment opportunities for those lacking language skills or recognised qualifications. These factors create barriers for workers with low levels of education, especially among groups with additional challenges, such as first- and second-generation migrants (Høj, 2013; OECD, 2020).

## **3. Methods**

This article provides a comprehensive literature review. We used the SPIDER framework developed by Cooke et al. (2012) to formulate inclusion and exclusion criteria related to the sample, phenomenon of interest, design, evaluation, and research type of each study. Table 1 provides an overview of our specific inclusion and exclusion criteria.

< Table 1 about here >

Our sample includes studies that explore the labour market challenges faced by first- and second-generation migrants in Belgium. Terms such as first-generation migrants, second-generation migrants, migrants, and natives are defined differently in various studies. In this literature review, we consistently employ the following definitions for these terms. First-generation migrants are individuals born abroad who have migrated to Belgium. Second-generation migrants are the offspring of first-generation migrants, with at least one parent who was not born in Belgium. When referring to people with a migration background, this encompasses both first- and second-generation migrants. Last, natives are individuals who were born in Belgium, along with both of their parents.

For the phenomenon of interest, we adopted a microeconomic perspective. We considered (i) labour market outcome differences between natives and people with a migration background, (ii) employer- and employee-side mechanisms underlying these gaps, and (iii) associated solutions that do not transcend the policy level of the Belgian government. We restricted ourselves to empirical research in the form of causal and correlational studies. In so doing, we evaluated the differences in labour market outcomes between natives and first- and second-generation migrants. We considered primary, quantitative, and empirical research. This way, research underlying other systematic reviews was incorporated through recent individual papers.

To ensure temporal relevance, we considered articles published between 2010 and 2023, the most recent fully available year at publication. The initial selection was performed after a systematic Web of Science Core Collection search to include only peer-reviewed articles. We used different combinations of search terms from two topic-related clusters: (i) labour, work, job, employment, wage, overeducation, rent sharing, recruitment, wage, and remuneration; and (ii) migrant, immigrant, migration, immigration, ethnicity, ethnic, race, and racial. In addition, we consistently included a third cluster of geographically-based search terms, which were allowed to appear in all fields of the records under consideration: (iii) Belgium, Belgian, Flanders, Flemish, Brussels, Wallonia, and Walloon.

This process initially resulted in 1,786 records. We further restricted ourselves to articles written in English, French, and Dutch and excluded categories in Web of Science that we did not expect to yield relevant results (see Table A1 in the appendix for a complete list of excluded categories). After this additional filtering, 744 records remained. A second

selection was made by screening the abstracts against our inclusion and exclusion criteria, which resulted in 56 unique records. In the third step, we performed a full-text screening of the 56 studies. During the screening process, 11 studies (20%) were excluded due to a lack of the necessary empirical Belgian context, 2 studies (4%) did not address appropriate migrant generations, and another 8 studies (15%) did not address labour market outcomes. We selected the remaining 35 studies for inclusion in our summary table. In Figure 2, we use Page et al.'s (2021) PRISMA framework to represent the selection process visually.

**< Figure 2 about here >**

Following our selection, we obtained the following information from the papers. For each study, we extracted (a) the bibliographic information, (b) the type of data used in the study, and (c) the main findings on labour market outcomes of people with a migration background. We also captured (d) the underlying mechanisms discussed in each study and (e) the remedies cited. This information enabled us to distinguish between mechanisms for which the study finds evidence and mechanisms that the authors cite as possible theoretical explanations for the results, as well as formulate policy recommendations.

## **4. Results**

In this section, we delineate the key findings from our literature review, starting with an overview of the disparities in labour market outcomes between natives and first- and second-generation migrants. Subsequently, we delve into the mechanisms underlying these disparities, addressing both employer- and employee-oriented perspectives. Information on the included literature can be consulted in Table 2.

**< Table 2 about here >**

### **4.1. Labour market outcomes**

Our analysis covers the likelihood of being unemployed or reliant on social assistance, as well as determinants affecting the quality of employment, such as wage, the probability of experiencing overeducation, and associated rent sharing.

### *4.1.1. Employment*

Upon examining employment probabilities among individuals with migration backgrounds in Belgium, distinct labour market patterns emerge for first- and second-generation migrants compared to natives. Of the 35 studies reviewed, 26 (74%) describe employment outcomes. Among these, 14 studies (54%) detail the employment outcomes of first-generation migrants. Based on the observations from these studies, we conclude that first-generation migrants (i) express reduced expectations regarding employment prospects, (ii) manifest objectively lower probabilities of securing employment, and (iii) display slower exits from social assistance programmes (e.g. Carpentier et al., 2017; Piton & Rycx, 2021; F. Verhaeghe et al., 2017; P.-P. Verhaeghe et al., 2015).

Four out of the 22 studies (18%) that describe the employment outcomes of second-generation migrants in Belgium identify no discernible differences when comparing them to the outcomes of natives. For instance, P.-P. Verhaeghe et al. (2015) report no statistically significant disparities in employment likelihood between second-generation migrants of Turkish, Moroccan, or Balkan origin and natives. However, their study centres on the employment outcomes of a specific target group, namely labour market entrants who graduated from technical and vocational courses. In comparison to first-generation migrants, second-generation migrants appear to fare somewhat better, as illustrated in a study on social assistance by Carpentier et al. (2017).

Nevertheless, 18 out of the 22 studies (82%) concerning employment outcomes of second-generation migrants observe disparities in comparison to natives (e.g. Baert & Cockx, 2013; Baert et al., 2016; Lippens et al., 2023). Second-generation migrants originating from countries further removed from Belgium, both in terms of geographical and cultural distance, appear to fare equally or even less favourably in the Belgian labour market than their parents (Gorodzeisky & Semyonov, 2017; Piton & Rycx, 2021; F. Verhaeghe et al., 2017).<sup>3</sup>

Besides region of origin, the moderator most frequently highlighted in the examined studies is gender. In 10 of the 26 studies (38%) on employment outcomes, gender emerges

---

<sup>3</sup> Being culturally distant from the country of origin is also associated with poorer (self-reported) health outcomes of individuals with a migration background. This association is less pronounced among second-generation migrants than first-generation migrants (Detollenaere et al., 2017).

as an important moderator. First-generation migrant women, particularly mothers, exhibit lower engagement in the labour market than their native counterparts. This trend is particularly evident within non-European migrant cohorts (Maes et al., 2022; Wood & Neels, 2017). However, for second-generation migrants, this effect seems to be less pronounced (Kil et al., 2018; Maes et al., 2022).

#### *4.1.2. Quality of employment*

Of the 35 reviewed studies, 11 (31%) discuss indicators of the quality of employment. This includes evaluations of whether people with a migration background are more likely to be overeducated than natives and whether they are fairly compensated in terms of wages, returns to overeducation and general rent sharing.

Of these 11 studies, 9 (82%) describe indicators of the quality of employment for first-generation migrants. Wage disparities and discrimination exist among first-generation migrants in the Belgian labour market, with notable differences across various migrant subgroups (e.g. Fays et al., 2021, 2023; Grinza et al., 2020). First-generation migrants from developing countries tend to be overeducated and face a higher wage penalty for overeducation conditional on attained education than people born in Belgium and other developed countries (Jacobs et al., 2021, 2022b). Although there is a positive wage premium for an additional year of overeducation conditional on the required level of education for a job, this premium is smaller for people with a migration background compared to native workers (Jacobs et al., 2022a). Furthermore, Fays et al. (2023) demonstrate that economic rents are distributed unfairly based on workers' birth regions. Their study finds that companies positioned higher in the global value chain, bringing in more rents, do not share them equally with people from developed and developing countries. This unequal rent sharing contributes significantly to the wage gap between workers from both groups and is particularly disadvantageous for higher-wage workers from developing countries.

Five of the 11 studies (45%) on the quality of employment describe outcomes for second-generation migrants. Notably, no study meeting our inclusion criteria generates specific quantitative assessments of wage discrimination. Irrespective of origin country and generation, the impact of overeducation on productivity is found to be greater than that on wages. The estimates of Jacobs et al. (2022a) suggest that overeducation generates a

positive gap between productivity and wages, which implies that, given their productivity, overeducated workers are underpaid compared to their well-matched colleagues. Finally, their estimates show that the productivity-wage gap (i.e. underpayment) associated with overeducation is the largest for natives, smaller for second-generation migrants and the smallest for first-generation migrants.

Five of the 11 studies (45%) on employment quality explicitly focus on gender as a moderator. These studies suggest that there is little or no difference between men and women when evaluating the likelihood of being overeducated and the size of the overeducation wage penalty (Jacobs et al., 2021, 2022b).

In addition to the indicators under consideration, other labour market outcomes can be evaluated, including the number of hours worked (Mercan and Karakas, 2019) and pension entitlements (Neels et al., 2017). However, data availability for these aspects is limited, precluding their inclusion in the present discussion.

## **4.2. Underlying mechanisms**

Our focus now shifts to the employer- and employee-side mechanisms underlying the differences in labour market outcomes discussed in the previous subsection.

### ***4.2.1. Employer-side mechanisms***

Discrimination constitutes a key mechanism contributing to variations in labour market outcomes, as noted in 22 of the 35 studies reviewed (63%). 12 of these 22 studies (55%) refer to statistical discrimination, of which 7 (58%) identify statistical discrimination as an underlying theoretical mechanism, and 5 (42%) provide evidence for the presence or absence of statistical discrimination as a mechanism. A commonly employed metric to investigate this phenomenon is employee tenure. Tenure tends to reduce statistical discrimination because asymmetrical information about an employee's true productivity diminishes as their duration of employment with a given company increases (Altonji, 2005; Altonji & Pierret, 2001; Baert et al., 2017; Jacobs et al., 2021, 2022b). The presence of discrimination also appears related to firm and industry characteristics. Research widely acknowledges that larger firms tend to possess more transparent and formalised human

resources practices and greater resources for comprehensive candidate screening, diminishing discrimination (Baert et al., 2018; Jacobs et al., 2022b; Lippens et al., 2023).

Not all studies examining statistical discrimination yield unequivocal evidence for the mechanism. Among the 5 studies that consider evidence for statistical discrimination, 2 studies (40%) find support for its presence, 2 studies (40%) find evidence for its absence, and 1 study (20%) identifies mixed evidence. For instance, Baert and De Pauw (2014) report the absence of a statistical discrimination mechanism, as perceived attitudes regarding statistical discrimination do not differ significantly according to the candidate's origin. Furthermore, Jacobs et al. (2022b) note that persistent origin-based wage penalties to overeducation in comparison to well-matched counterparts among more tenured workers challenge the theory of statistical discrimination. The literature suggests an ambiguous relationship between firm size and discrimination (Baert et al., 2018; Lippens et al., 2023). One study finds that larger firms discriminate less, while other studies find no such relationship. The importance of statistical discrimination as an explanatory mechanism seems to depend strongly on different job, firm and study contexts.

Out of the 35 studies considered, 6 (17%) address taste-based discrimination, with 2 of these studies (33%) referring to the mechanism as a plausible theoretical explanation for their observations and 4 (67%) finding evidence for the presence of taste-based discrimination. This evidence encompasses both general proofs of the existence of taste-based discrimination and specific instances of discrimination, such as colleagues' reluctance to collaborate with individuals of different ethnic backgrounds and the perception that customers are less inclined to seek assistance from someone of a different ethnicity (Baert & De Pauw, 2014; Derous et al., 2016; Lippens et al., 2023). The extent to which taste-based discrimination plays a role appears contingent on firm and industry characteristics. For example, firm-level wage bargaining can mitigate taste-based discrimination by bolstering employees' bargaining power (Grinza et al., 2020). Increased product market competition renders discrimination more costly, reducing its prevalence (Fays et al., 2021), while non-profit organisations exhibit lower levels of taste-based discrimination, presumably due to their socially oriented approach (Lippens et al., 2023).

While discrimination appears to play a role in explaining labour market outcomes, it does not provide a comprehensive explanation. This lack of fully explaining differences in labour market outcomes is further underscored by international comparisons revealing a moderate

prevalence of ethnic hiring discrimination in Belgium, while other international comparisons reveal that the labour market outcomes of people with a migration background are poor (Baert et al., 2022; Baeyens et al., 2020; Lippens et al., 2023; Quilian et al., 2019).

#### *4.1.2. Employee-side mechanisms*

The role of individual preferences and behaviours is a central theme in 9 out of the 35 studies considered (26%), particularly in the context of gender disparities (e.g. Maes et al., 2022; Piton & Rycx, 2021). Of these 9 studies, 8 (89%) refer to the theoretical importance of this mechanism, while one study (11%) provides supporting evidence. People with a migration background, especially those from non-European backgrounds, tend to adhere more strongly to traditional gender roles than natives. This adherence can result in women taking on more household responsibilities, investing less in education, and exhibiting different labour market participation patterns than their male counterparts (Baert et al., 2016). This pattern is observed for both first- and second-generation migrants, with second-generation migrants' preferences appearing to assimilate towards those of natives, depending on their origin (Gorodzeisky & Semyonov, 2017; Kil et al., 2018). Moreover, second-generation migrant women tend to utilise formal childcare services and parental leave schemes less frequently than natives. While this tendency may partially stem from cultural factors, it is notably influenced by the accessibility of work-family reconciliation policies (Maes et al., 2019, 2022). Importantly, preferences can both explain labour market outcomes and be influenced by unequal labour market opportunities, adding complexity to this relationship (Wood & Neels, 2017).

Furthermore, among the 22 studies focusing on first-generation migrants, differences in human capital are highlighted as a theoretical mechanism explaining employment disparities in 5 studies (23%), while 6 studies (27%) find evidence for this mechanism. These disparities encompass four key aspects: (i) educational attainment disparities between native-born individuals and migrants, with migrants having lower levels of education on average (Piton & Rycx, 2021); (ii) the imperfect transferability of human capital, for example, when degrees obtained in developing countries are perceived as of lower quality or less valuable in the destination country, or when degrees obtained abroad are not recognised in the host country (Fays et al., 2023; Jacobs et al., 2022a, 2022b; Piton & Rycx, 2021; F.

Verhaeghe et al., 2017); (iii) skill mismatches, such as a higher likelihood of overeducation among tertiary-educated workers from developing countries (Jacobs et al., 2022b); and (iv) language barriers, as proficiency in the destination country's language enhances the economic returns on work experience gained in the country of origin (Kanas & van Tubergen, 2014; Piton & Rycx, 2021).

For second-generation migrants, the limited transferability of human capital is a less influential factor, as they possess domestic educational and professional qualifications (Gorodzeisky & Semyonov, 2017; F. Verhaeghe et al., 2017). Rather than stemming from the limited transferability of human capital, the labour market disadvantages faced by second-generation migrants are often associated with their social background. This association impacts their employment outcomes directly through factors like social networks and economic resources and indirectly through educational achievements, language proficiency, and orientations towards the labour market. Second-generation migrants continue to have poorer educational performance than natives, with higher dropout rates, lower levels of academic achievement, and higher concentration in vocational education (Gorodzeisky & Semyonov, 2017; Kil et al., 2018; Maes et al., 2019; Phalet & Heath, 2010; P.P. Verhaeghe et al., 2015).

## **5. Remedies and recommendations**

We offer a synthesis of the remedies and policy recommendations from the reviewed studies, together with a discussion on the relationship between these remedies and recommendations and the existing institutional framework. We conclude with suggestions for future research.

## **5.1. Remedies and policy recommendations**

### *5.1.1. Employer- and employee-side remedies*

The reviewed literature discusses various employer-side measures to counteract discrimination. For example, competency-based assessments can be employed to address statistical discrimination, and anonymous résumé screening can mitigate both statistical and taste-based discrimination during the initial recruitment phase. (Derosus et al., 2016). More broadly, standardised formal hiring procedures can decrease discrimination, based on preferences and by preventing inaccurate or insufficient information about an individual candidate (Baekgaard & George, Lippens et al., 2023). Organisations can also focus on improving information and awareness among recruiters (Derosus et al., 2016).

The first employee-side strategy mentioned in the reviewed literature involves enhancing the human capital of people with a migration background. This strategy includes improving their understanding of the destination country's labour market and educational needs. This way, employees can focus more on aligning skill supply and demand to reduce wage disparities. Additionally, investing in language proficiency proves to be essential for better labour market outcomes, and it can be advantageous for employees to have their qualifications and skills recognised more frequently and promptly (Baert & Cockx, 2013; Jacobs et al., 2022b; Lens, 2023; Piton & Rycx, 2021).

The reviewed literature suggests that non-standard forms of employment, such as volunteering and self-employment, can serve as potential pathways to regular employment. Volunteering can improve employment prospects for people with a migration background by increasing human capital and signalling integration to employers, although its signalling value may diminish with increased participation (Baert & Vujić, 2016). Lens (2023) highlights self-employment as a potential strategy for people with a migration background. However, their research reveals that self-employment of people with a migration background tends to be shorter-lived than that of their native counterparts and more often leads to unemployment or labour force exit.

Lens et al. (2023) focus on the Service Voucher Scheme, Belgium's largest subsidised employment initiative. On the one hand, the scheme provides stable job opportunities for low-skilled migrant women. However, it also generates persistent 'lock-in' effects, wherein

migrant women starting as scheme workers face significant challenges in transitioning to other employment opportunities afterwards. This presents a concern, especially considering that a substantial proportion of migrant women participating in the scheme possess higher education qualifications.

A third and final type of employee-side remedy identified in the literature pertains to recognising an employee's assimilation into the Belgian workforce. Obtaining Belgian citizenship positively influences employment outcomes for migrants, as naturalised migrants enjoy a higher likelihood of employment and a lower probability of overeducation. Notably, this citizenship premium is most discernible within the cohort of non-Western migrants. However, it is difficult to accurately quantify the precise value of the citizenship premium, due to inherent endogeneity issues. These complexities arise from the intricate interplay between migrants' level of integration and their propensity to seek and attain Belgian citizenship (Corluy et al., 2011; Jacobs et al., 2021; Piton & Rycx, 2021). Whereas acquiring Belgian nationality may constitute an active labour market integration strategy for first-generation migrants, second-generation migrants often already hold Belgian nationality and continue to experience poorer labour market outcomes than natives.

### *5.1.2. Policy recommendations*

The reviewed literature outlines various policy recommendations, which we discuss here. Just as individuals with a migration background can invest in recognising and enhancing their human capital, policymakers can contribute by simplifying and reducing the costs of procedures related to human capital recognition. Additionally, policymakers can increase awareness about such recognition procedures (Jacobs et al., 2022b; Piton & Rycx, 2021). Similarly, policies can encourage individuals with a migration background to emphasize increased labour market knowledge, training to align skills with demand, and language proficiency. In this context, government support in the job search process can be offered (Baert & Cockx, 2013; Jacobs et al., 2022b; Lens, 2023; Piton & Rycx, 2021).

Notably, disparities in human capital before labour market entry contribute to suboptimal labour market outcomes for second-generation migrants (F. Verhaeghe et al., 2017). Consequently, anti-discrimination policies directed at school students or graduates from ethnic minorities are imperative for bolstering labour market outcomes (Baert et al.,

2017; Laurijssen & Glorieux, 2015). Additionally, there could be further emphasis on anti-discrimination policies in the labour market, potentially with the support of non-discrimination ombudsman's offices (Derous et al., 2016; Grinza et al., 2020).

Policy measures that support the balancing of work and care responsibilities are recommended to enhance the labour market position of women with a migration background. For example, policymakers could promote equal and affordable access to formal childcare and parental leave schemes (Maes et al., 2019; Piton & Rycx, 2021).

Moreover, policy recommendations are proposed at the institutional level. Given the rigidity characterising the Belgian labour market, which results in disparities between labour costs and productivity that may disadvantage employees (Garnero et al., 2020; Kampelmann et al., 2018), more adaptable labour market policies may be advantageous (Jacobs et al., 2022a). Besides introducing flexible labour market policies, competition regulation may positively impact wage discrimination, as Fays et al. (2021) observe that wage discrimination diminishes or disappears as product market competition increases.

## **5.2. Discussion of remedies and policy recommendations**

### *5.2.1. Discussion of employer- and employee-side remedies*

Some of the employer-side remedies mentioned in the considered literature have already been translated into concrete policies. For instance, policymakers in Belgium encourage employers to adopt equal employment policies that promote diversity and inclusion. These policies may include measures to actively recruit individuals from diverse backgrounds, provide training on cultural sensitivity, and foster an inclusive work environment (OECD, 2023). Actiris, the Brussels Public Employment Service, exemplifies this commitment by offering free assistance with recruitment and human resource management to companies dedicated to increasing the diversity of their workforce (Actiris, n.d.). Additionally, Belgium has gone further by implementing wage subsidy programmes to encourage employers to hire individuals from underrepresented groups. These subsidies serve as financial incentives, making it economically more feasible for companies to engage individuals from underrepresented groups in the labour market. Although these programmes do not specifically target individuals with a migration background, such individuals may be eligible

to benefit (OECD, 2023). Nonetheless, jobseekers with foreign nationalities and limited host country language proficiency are underrepresented beneficiaries, and the impact of the subsidies on securing stable employment appears to be limited (Desiere & Cockx, 2022; Desiere et al., 2020).

In the reviewed literature, anonymous screening emerged as a recommended practice. While Belgian evidence regarding the effectiveness of this measure is lacking, it has proven successful in mitigating ethnic hiring discrimination in the neighbouring Netherlands (Blommaert & Coenders, 2023). Furthermore, other literature recommendations and policies, such as implementing diversity campaigns and leveraging technology to counteract bias can serve as inspiration (Cowgill, 2019; McGinnity et al., 2021). However, an evaluation of the effectiveness of these measures within the Belgian context is imperative.

Regarding the employee-side remedies discussed in the literature, concrete policy initiatives are also in place. Belgian regions have updated some procedures to enhance transparency and streamline the process of recognising foreign qualifications. Despite recent improvements, few migrants obtain recognition of their foreign qualifications, emphasising the need for further changes (OECD, 2023). Chakkar and De Cuyper (2019) underscore the importance of diploma recognition for the Flemish labour market. However, for non-regulated professions, they emphasise that the focus of employers during the hiring process primarily rests on job-related competencies.

Furthermore, in all regions of Belgium, civic integration trajectories have been mandatory for newly arrived migrants since April 2022. These trajectories cover civic orientation, language training, and pathways to work, with regional variations in content and execution (EC, 2022). Notably, Flemish civic integration trajectories have been mandatory for the longest time and are the most comprehensive in Belgium. However, their language outcomes remain unsatisfactory, with limited opportunities for non-formal learning and insufficient attention to upskilling, especially for migrants with low levels of education (OECD, 2023). Participation in these integration trajectories serves as a key gateway to labour activation measures, promoting stable, regular employment. Nonetheless, these interventions remain less effective than workplace learning in supporting the direct transition to employment (Wood & Neels, 2020).

In addition to the subsidised employment initiatives mentioned in the reviewed literature, other government programmes also support alternative routes into the labour

market. Social mentoring initiatives, primarily targeting first-generation migrants, aim to enhance social participation and facilitate job search efforts (Actiris, 2023; Crijns & De Cuyper, 2022). While non-governmental organisations and public bodies initially organised such mentoring initiatives, they have been included in Flanders' civic integration programmes since 2023, a unique approach within the OECD. The effectiveness of this policy is yet to be determined, but mentoring projects have been proven to be cost-effective means of integration, both in Flanders and elsewhere (OECD, 2023).

### *5.2.2. Discussion of policy recommendations*

Some policy recommendations from the literature are already evident in current policy implementations. Belgium is recognised for its robust anti-discrimination legislation. Recent legal developments, such as the January 2018 amendment to the Belgian Criminal Code, empower social inspectors to employ anonymous testing methods like mystery calls and fake CVs to assess employers' adherence to anti-discriminatory policies. Despite these efforts, litigating discrimination cases often proves challenging due to difficulty in substantiating claims. Employers frequently provide justifiable explanations for their actions, contributing to the scarcity of cases in the legal system (OECD, 2023). In addition to federal anti-discrimination measures, Belgian regions can implement supplementary policies. An example of these policies is the mitigation of anti-discrimination through sectoral covenants in Flanders (OECD, 2023). However, these measures face criticism that, despite the presence of sectoral codes of conduct, there is insufficient emphasis on tackling discrimination at the organisational level (Lamberts et al., 2020).

Another cluster of policy recommendations pertains to human capital. The European Qualifications Passport for Refugees, developed by the Council of Europe (OECD, 2023), is a promising international tool to encourage the recognition of refugee qualifications and skills. Refugees are a particularly vulnerable group among migrants. Alongside a smoother recognition process for migrant qualifications, a simplified administrative process for work and residence permits for persons not nationals of the Schengen Area (SA) or the European Economic Area (EEA) is identified as necessary. Piton and Rycx (2021) note that the transposition of the EU's Single Permit Directive into Belgian law should contribute to achieving this goal. In addition to existing civic integration programmes, policymakers could

consider providing education opportunities for low-educated migrants to address upskilling and meet labour market needs. To supplement current efforts focused on newly arrived migrants, additional mentoring initiatives could be aimed at improving the labour market knowledge of second-generation migrants (OECD, 2023).

The literature recommendation to focus on the combination of work and care responsibilities contrasts with the Flemish childcare policy reform of September 2023, which restricts childcare availability to dual-earning households and explicitly excludes sole-earner households and couples working part-time (Vlaamse Regering, 2023). This limitation affects many families with migration backgrounds in the secondary labour market. The government could assume greater responsibility for childcare provision, while larger companies struggling to fill their job vacancies may also consider providing in-house childcare for their employees to attract a more diverse workforce.

The initiatives mentioned in this subsection suggest that addressing the disparities in labour market outcomes and underlying mechanisms for individuals with a migration background is a priority in Belgium. Concrete steps are being taken, but evidence of the effectiveness of these measures is limited, and there may be a need to develop new policies (Grinza et al., 2020; OECD, 2023; Piton & Rycx, 2021).

### **5.3. Recommendations for future research**

There is a continued need for empirical research on the labour market position of second-generation migrants in Belgium. For instance, Belgian intergenerational research on clearly identified parent-child pairs is currently lacking, although similar studies have been conducted in other countries (Abramitzky et al., 2021; Ekberg et al., 2010; Hammarstedt, 2009; Hammarstedt & Palme, 2012). The existing evidence for Belgium should therefore be interpreted with caution. Additional Belgian research, particularly on different ethnic origins, is essential for capturing the underlying mechanisms that drive divergent labour market outcomes and formulating targeted policy recommendations.

We identify a research gap in employee-side remedies, especially for second-generation migrants. There is scope for further investigation regarding the influence of having a culturally assimilated first name among second-generation migrants. This proposition is inspired by the research of Chowdhury et al. (2020) on the Australian labour market,

Ghekiere et al.'s (2023) findings of reduced discrimination against those with mixed names in the Flemish housing market compared to those with full ethnic names, and international research on the impact of foreign-sounding forenames on the quality of employment (Arai & Thoursie, 2009). Additionally, future research could explore stigmas related to Muslim women from migrant backgrounds who wear headscarves, as these have been shown to influence employers' perceptions of integration (Weichselbaumer, 2020).

It would be valuable to investigate the extent to which atypical employment can serve as a transitional pathway towards regular and high-quality employment. In general, there is mixed evidence on whether part-time, temporary, fixed-term, casual, seasonal, and self-employed work serves as stepping stones to regular employment for people with a migration background. It may be the case that such forms of atypical employment trap people with a migration background in dead-end unstable careers at the fringes of the labour market (Fuller, 2011; Kogan, 2011; Jahn & Rosholm, 2013; Lamb et al., 2021; Muñoz-Comet & Steinmetz, 2020). Current Belgian research on this topic is limited and ambiguous. The quantity and quality of social capital can help to elucidate the nature of the labour market outcomes associated with atypical employment. However, the quality of social capital in Belgium remains under-researched, particularly regarding second-generation migrants.

To our knowledge, there is a shortage of Belgian firm-level evidence on the intergenerational trajectory of wage dynamics of people with a migration background. Notably, we identified no studies meeting our inclusion criteria that estimated wage discrimination for second-generation migrants. Along with evaluating wage discrimination in general, it would be interesting to examine how rents are shared to scrutinise whether companies equitably distribute profits among native and migrant workers in Belgium. Our literature review indicates that the transferability of human capital presents a substantial challenge for many people with a migration background, often preventing them from securing employment commensurate with their level of human capital. Therefore, assessing the probability of overeducation among workers from different origin countries may be insightful. For first-generation migrants, this would be based on their country of birth, and for second-generation migrants, it would be based on the country of birth of their parents. Furthermore, examining the impact of specific academic disciplines on wage inequalities

among tertiary-educated natives and second-generation migrants may offer valuable insights into wage inequalities among both groups.

## **6. Conclusion**

By systematically reviewing articles published between 2010 and 2023 in the Web of Science Core Collection, we provided a comprehensive overview of the literature on the labour market outcomes of first- and second-generation migrants in Belgium. This review not only addressed the challenges encountered by individuals with a migration background and the underlying mechanisms from both employer and employee perspectives but also identified gaps in the academic literature. Additionally, it provided an overview of remedies and policy recommendations from the reviewed literature and positioned them within the existing legislative framework.

Overall, people with a migration background in Belgium exhibit considerably poorer labour market performance than natives. These inferior labour market outcomes manifest across various dimensions, encompassing unemployment and workforce participation rates and the quality of work, as evidenced by wage disparities and job mismatches. Furthermore, individuals with a migration background are often paid less than their native counterparts, are more likely to be employed below their skill levels, and are more prone to precarious employment situations. These outcomes tend to vary based on country of origin and gender. Individuals from countries more geographically and culturally distant from Belgium often experience worse outcomes, while women are less well-integrated into the labour market than men. These results are driven by various mechanisms operating on both the employer and employee sides, including the role of discrimination, individual preferences, and differences in human capital.

## Declarations

### Ethics approval and consent to participate

Ethical approval or consent to participate is not applicable to this literature review.

### Consent for publication

Consent for publication is not applicable to this literature review.

### Data and code availability

No dataset or code was used for this manuscript.

### Declaration of competing interest

The authors declare that they have no competing interests.

### Funding

We acknowledge financial support from the Belgian Federal Science Office (BELSPO-LAMIE project, grant number B1/233/P3/LAMIE). LL also acknowledges funding from FWO (Research Foundation – Flanders) under grant number 12AM824N.

### CRediT authorship contribution statement

**Louise Devos:** Conceptualisation, Methods, Writing – original draft, Writing – review & editing. **Louis Lippens:** Conceptualisation, Methods, Writing – original draft, Writing – review & editing, Supervision. **Dries Lens:** Writing – original draft, Writing – review & editing. **François Rycx:** Writing – review & editing, Funding acquisition. **Mélanie Volral:** Writing – review & editing, Funding acquisition. **Stijn Baert:** Conceptualisation, Methods, Writing – review & editing, Supervision, Funding acquisition.

## References

- Abramitzky, R., Boustan, L., Jácome, E., & Pérez, S. (2021). Intergenerational Mobility of Immigrants in the United States over Two Centuries. *American Economic Review*, 111(2), 580-608. <https://doi.org/10.1257/aer.20191586>
- Actiris. (2023, December 12). Duo for a job. [actiris.brussels: https://www.actiris.brussels/nl/partners/contactgegevens/4717-duo-for-a-job](https://www.actiris.brussels/nl/partners/contactgegevens/4717-duo-for-a-job)
- Actiris. (n.d.). Een diversiteitsplan op maat. Retrieved December 12, 2023, from [actiris.brussels: https://www.actiris.brussels/nl/werkgevers/diversiteitsplannen/](https://www.actiris.brussels/nl/werkgevers/diversiteitsplannen/)
- Altonji, J. G. (2005). Employer Learning, Statistical Discrimination and Occupational Attainment. *American Economic Review*, 95(2), 112-117. <https://doi.org/10.1257/000282805774670455>
- Altonji, J. G., & Pierret, C. R. (2001). Employer Learning and Statistical Discrimination. *The Quarterly Journal of Economics*, 116(1), 313-350. <https://www.jstor.org/stable/2696451>
- Arai, M., & Thoursie, P. S. (2009). Renouncing Personal Names: An Empirical Examination of Surname Change and Earnings. *Journal of Labor Economics*, 27(1), 127-147. <https://doi.org/10.1086/593964>
- Arrow, K. J. (1973). The Theory of Discrimination. *Discrimination in Labor Markets*, 3-33. <https://doi.org/10.1515/9781400867066-003>
- Baekgaard, M., & George, B. (2018). Equal access to the top? Representative Bureaucracy and Politicians' Recruitment Preferences for Top Administrative Staff. *Journal of Public Administration Research And Theory*, 28(4), 535-550. <https://doi.org/10.1093/jopart/muy038>
- Baert, S., & Cockx, B. (2013). Pure ethnic gaps in education attainment and school to work transitions. When do they arise? *Economics of Education Review*, 36, 276-294. <https://doi.org/10.1016/j.econedurev.2013.07.006>
- Baert, S., & De Pauw, A.-S. (2014). Is ethnic discrimination due to distaste or statistics? *Economics Letters*, 125(2), 270-273. <https://doi.org/10.1016/j.econlet.2014.09.020>
- Baert, S., & Vujić, S. (2016). Immigrant volunteering: A way out of labour market discrimination? *Economics Letters*, 164, 95-98. <https://doi.org/10.1016/j.econlet.2016.07.035>
- Baert, S., Albanese, A., du Gardein, S., Ovaere, J., & Stappers, J. (2017). Does work experience mitigate discrimination? *Economics Letters*, 155, 35-38. <https://doi.org/10.1016/j.econlet.2017.03.011>
- Baert, S., Cockx, B., Gheyle, N., & Vandamme, C. (2015). Is there less discrimination in occupations where recruitment is difficult? *ILR Review*, 68(3), 467-500. <https://doi.org/10.1177/0019793915570873>
- Baert, S., De Meyer, A.-S., Moerman, Y., & Omeij, E. (2018). Does size matter? Hiring discrimination and firm size. *International Journal of Manpower*, 39(4), 550-566. <https://doi.org/10.1108/IJM-09-2017-0239>
- Baert, S., Heiland, F. W., & Korenman, S. (2016). Native-Immigrant Gaps in Educational and School-to-Work Transitions in the 2nd Generation: The Role of Gender and Ethnicity. *De Economist*, 164, 159-186. <https://doi.org/10.1007/s10645-016-9273-4>

- Baert, S., Neyt, B., Derous, E., Van Hoof, S., George, B., Van Hoye, G., & Lippens, L. (2022, May 25). Inactiviteit onder migranten in België: uitgediept via cijfers en studiewerk. *Stories @ UGent @ Work*: <https://www.ugent.be/ugentatwork>
- Baeyens, A., Cornille, D., Delhez, P., Piton, C., & Van Meensel, L. (2020, November). De economische impact van immigratie in België. *NBB Economic Review*. [https://www.nbb.be/doc/ts/publications/economicreview/2020/ecorev2020\\_special.pdf](https://www.nbb.be/doc/ts/publications/economicreview/2020/ecorev2020_special.pdf)
- Becker, G. (1964). *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. University of Chicago Press.
- Becker, G. (1971). *The Economics of Discrimination* (2 ed.). University of Chicago Press.
- Behtoui, A. (2007). The distribution and return of social capital: evidence from Sweden. *European Societies*, 9(3), 383-407. <https://doi.org/10.1080/14616690701314093>
- Black, D. A. (1995). Discrimination in an Equilibrium Search Model. *Journal of Labor Economics*, 13(2), 309-334. <https://www.jstor.org/stable/2535106>
- Blommaert, L., & Coenders, M. (2023). The effects of and support for anonymous job application procedures: evidence from a large-scale, multi-faceted study in the Netherlands. *Journal of Ethnic and Migration Studies*, 1-23. <https://doi.org/10.1080/1369183x.2023.2282385>
- Borjas, G. (2020). Labor Market Discrimination. In G. Borjas (Ed.), *Labor Economics* (8th ed. ed., pp. 299-340). McGraw-Hill Education.
- Borjas, G. (1992). Ethnic Capital and Intergenerational Mobility. *The Quarterly Journal of Economics*, 107(1), 123-150. <https://doi.org/10.2307/2118325>
- Borjas, G. (1994). The Economics of Immigration. *Journal of Economic Literature*, 32(4), 1667-1717. <https://www.jstor.org/stable/2728791>
- Carpentier, S., Neels, K., & Van den Bosch, K. (2017). Exit from and re-entry into social assistance benefit in Belgium among people with migration background and the native-born. *International Journal of Social Welfare*, 26(4), 366-383. <https://doi.org/10.1111/ijsw.12270>
- Chakkar, S., & De Cuyper, P. (2019). De gepercipieerde waarde van diploma-erkenning op de arbeidsmarkt. Een analyse vanuit een werkgevers- en aanvragersperspectief. HIVA-KU Leuven. [https://www.steunpuntwerk.be/files/publications/OW/OW\\_2019\\_2/overwerk\\_2019\\_2\\_10.pdf](https://www.steunpuntwerk.be/files/publications/OW/OW_2019_2/overwerk_2019_2_10.pdf)
- Chiswick, B. R., & Miller, P. W. (1992). Language in the immigrant labour market. In B. R. Chiswick, *Immigration, language and ethnicity: Canada and the United States* (pp. 229-296). American Enterprise Institute.
- Chiswick, B. R., & Miller, P. W. (2009). The international transferability of immigrants' human capital. *Economics of Education Review*, 28(2), 162-169. <https://doi.org/10.1016/j.econedurev.2008.07.002>
- Chowdhury, S., Ooi, E., & Slonim, R. (2020). Racial Discrimination and White First Name Adoption: Evidence from a Correspondence Study in the Australian Labour Market. *IZA Discussion Paper Series, Article 13208*. <https://repec.iza.org/dp13208.pdf>
- Clark, R., Ramsbey, T. W., & Stier Adler, E. (1991). Culture, Gender, and Labor Force Participation: A Cross-National Study. *Gender and Society*, 5(1), 47-66. <https://www.jstor.org/stable/189929>
- Cowgill, B. (2019). Bias and Productivity in Humans and Machines. *Columbia Business School Research Paper Forthcoming*. <https://doi.org/10.2139/ssrn.3433737>

- Combes, P.-P., Decreuse, B., Laouénan, M., & Trannoy, A. (2016). Customer Discrimination and Employment Outcomes: Theory and Evidence from the French Labor Market. *Journal of Labor Economics*, 34(1), 107-160. <https://doi.org/10.1086/682332>
- Cooke, A., Smith, D., & Booth, A. (2012). Beyond PICO: the SPIDER Tool for Qualitative Evidence Synthesis. *Qualitative Health Research*, 22(10), 1436-1443. <https://doi.org/10.1177/1049732312452938>
- Corluy, V. (2014). Labour market outcomes and trajectories of migrants in Belgium. [Doctoral dissertation, Universiteit Antwerpen].
- Corluy, V., Marx, I., & Verbist, G. (2011). Employment chances and changes of immigrants in Belgium: The impact of citizenship. *International Journal of Comparative Sociology*, 52(4), 350-368. <https://doi.org/10.1177/0020715211412112>
- Crijns, M., & De Cuyper, P. (2022). Towards effective social mentoring practices for migrant newcomers. HIVA-KU Leuven. <https://hiva.kuleuven.be/nl/nieuws/docs/towards-effective-social-mentoring-practices-for.pdf>
- Deros, E., Pepermans, R., & Ryan, A. M. (2016). Ethnic discrimination during résumé screening: Interactive effects of applicants' ethnic salience with job context. *Human Relations*, 70(7), 1-23. <https://doi.org/10.1177/0018726716676537>
- Desiere, S., & Cocx, B. (2022). How effective are hiring subsidies in reducing long-term unemployment among prime-aged jobseekers? Evidence from Belgium. *IZA Journal of Labor Policy*, 12(1). <https://doi.org/10.2478/izajolp-2022-0003>
- Desiere, S., Cabus, S., & Cocx, B. (2020). Evaluatie van het Vlaamse doelgroepenbeleid. HIVA-KU Leuven. <https://hiva.kuleuven.be/nl/nieuws/docs/zkd5267-rapport-eind-nl.pdf>
- Detollenaere, J., Baert, S., & Willems, S. (2018). Association between cultural distance and migrant self-rated health. *European Journal of Health Economics*, 257-266. <https://doi.org/10.1007/s10198-017-0881-y>
- Dustmann, C. (2000). Temporary migration and economic assimilation. *Swedish Economic Policy Review*, (7), 213-244.
- Ekberg, J., Hammarstedt, M., & Shukur, G. (2010). Immigrant-native earnings differentials: SUR estimation applied on three generations. *The Annals of Regional Science*, 45, 705-720. <https://doi.org/10.1007/s00168-009-0314-7>
- European Commission. (2022, March 30). Belgium: Integration programmes mandatory in Brussels from April 2022. European Website on Integration: [https://ec.europa.eu/migrant-integration/news/belgium-integration-programmes-mandatory-brussels-april-2022\\_en](https://ec.europa.eu/migrant-integration/news/belgium-integration-programmes-mandatory-brussels-april-2022_en)
- Eurostat. (2023, December 15). Employment rates by sex, age, migration status, citizenship and educational attainment level (%). [https://ec.europa.eu/eurostat/databrowser/view/lfsq\\_erganedm\\_\\_custom\\_9179504/default/table?lang=en](https://ec.europa.eu/eurostat/databrowser/view/lfsq_erganedm__custom_9179504/default/table?lang=en)
- Fays, V., Mahy, B., & Rycx, F. (2023). Wage differences according to workers' origin: The role of working more upstream in GVCs. *Labour*, 37(2), 319-342. <https://doi.org/10.1111/labr.12244>
- Fays, V., Mahy, B., Rycx, F., & Volral, M. (2021). Wage discrimination based on the country of birth: do tenure and product market competition matter? *Applied Economics*, 53(13), 1551-1571. <https://doi.org/10.1080/00036846.2020.1838431>
- Flechner, T. K., Neels, K., Wood, J., & Biegel, N. (2022). Exploring Women's Uptake of Active Labour Market Programmes: The Role of Household Composition Across Migrant Origin Groups. *Social Inclusion*, 2, 117-131. <https://doi.org/10.17645/si.v10i2.4931>

- FPS Employment, & Unia. (2022). Socio-economic Monitoring 2022: Labour Market and Origin. FPS Employment and Unia. [https://www.unia.be/files/Documenten/Publicaties\\_docs/Monitoring\\_2022\\_ENG\\_AS.pdf](https://www.unia.be/files/Documenten/Publicaties_docs/Monitoring_2022_ENG_AS.pdf)
- Fuller, S. (2011). Up and on or down and out? Gender, immigration and the consequences of temporary employment in Canada. *Research in Social Stratification and Mobility*, 29(2), 155-180. <https://doi.org/10.1016/j.rssm.2010.09.001>
- Garnero, A., Rycx, F., & Terraz, I. (2020). Productivity and Wage Effects of Firm-Level Collective Agreements: Evidence from Belgian Linked Panel Data. *British Journal of Industrial Relations*, 58(4), 936-972. <https://doi.org/10.1111/bjir.12525>
- Ghekiere, A., Martiniello, B., & Verhaeghe, P.-P. (2023). Identifying rental discrimination on the Flemish housing market: an intersectional approach. *Ethnic and Racial Studies*, 46(12), 2654-2676. <https://doi.org/10.1080/01419870.2023.2177120>
- Gorodzeisky, A., & Semyonov, M. (2017). Labor force participation, unemployment and occupational attainment among immigrants in West European countries. *PLoS ONE*, 12(5), Article e0176856. <https://doi.org/10.1371/journal.pone.0176856>
- Grinza, E., Kampelmann, S., & Rycx, F. (2020). L'union fait la force? Evidence for wage discrimination in firms with high diversity. *The Journal of Economic Inequality*, 18, 181-211. <https://doi.org/10.1007/s10888-019-09433-7>
- Groot, W., & Maassen van den Brink, H. (2000). Overeducation in the labor market: a meta-analysis. *Economics of Education Review*, 19(2), 149-158. [https://doi.org/10.1016/S0272-7757\(99\)00057-6](https://doi.org/10.1016/S0272-7757(99)00057-6)
- Hammarstedt, M. (2009). Intergenerational Mobility and the Earnings Position of First-, Second-, and Third-Generation Immigrants. *Kyklos*, 62(2), 275-292. <https://doi.org/10.1111/j.1467-6435.2009.00436.x>
- Hammarstedt, M., & Palme, M. (2012). Human capital transmission and the earnings of second-generation immigrants in Sweden. *IZA Journal of Migration*, 1, Article 4. <https://doi.org/10.1186/2193-9039-1-4>
- Heath, A. F., & Cheung, S. (2007). Unequal Chances: Ethnic Minorities in Western Labour Markets. In A. F. Heath, *Proceedings of the British Academy* (Vol. 137). Oxford University Press.
- Hoge Raad voor de Werkgelegenheid. (2018). Immigranten geboren buiten de Europese Unie op de Belgische arbeidsmarkt. Hoge Raad voor de Werkgelegenheid. <https://werk.belgie.be/nl/publicaties/hoge-raad-voor-de-werkgelegenheid-verslag-2018-immigranten-geboren-buiten-de-europese>
- Jacobs, V., Mahy, B., Rycx, F., & Volral, M. (2021). Over-education among immigrants: the role of demographics, time, and firm characteristics. *Applied Economics*, 53(1), 61-78. <https://doi.org/10.1080/00036846.2020.1795070>
- Jacobs, V., Pineda-Hernández, K., Rycx, F., & Volral, M. (2022a). Does over-education raise productivity and wages equally? The moderating role of workers' origin and immigrants' background. *Education Economics*, 31(6), 698-724. <https://doi.org/10.1080/09645292.2022.2156981>
- Jacobs, V., Rycx, F., & Volral, M. (2022b). Wage Effects of Educational Mismatch According to Workers' Origin: The Role of Demographics and Firm Characteristics. *De Economist*, 170, 459-501. <https://doi.org/10.1007/s10645-022-09413-9>
- Jahn, E., & Rosholm, M. (2013). Is temporary agency employment a stepping stone for immigrants? *Economics Letters*, 118(1), 225-228. <https://doi.org/10.1016/j.econlet.2012.10.029>

- Kalter, F., & Kogan, I. (2006). Ethnic inequalities at the transition from school to work in Belgium and Spain: Discrimination or self-exclusion? *Research in Social Stratification and Mobility*, 24(3), 259-274. <https://doi.org/10.1016/j.rssm.2005.10.002>
- Kampelmann, S., & Rycx, F. (2016). Wage discrimination against immigrants: measurement with firm-level productivity data. *IZA Journal of Migration*, 5, Article 15. <https://doi.org/10.1186/s40176-016-0063-1>
- Kampelmann, S., Rycx, F., Saks, Y., & Tojerow, I. (2018). Does education raise productivity and wages equally? The moderating role of age and gender. *IZA Journal of Labor Economics*, 7, Article 1. <https://doi.org/10.1186/s40172-017-0061-4>
- Kanas, A., & van Tubergen, F. (2014). The conditional returns to origin-country human capital among Turkish and Moroccan immigrants in Belgium. *Social Science Research*, 46, 130-141. <https://doi.org/10.1016/j.ssresearch.2014.03.005>
- Kil, T., Neels, K., Wood, J., & de Valk, H. A. (2018). Employment After Parenthood: Women of Migrant Origin and Natives Compared. *European Journal of Population*, 34, 413-440. <https://doi.org/10.1007/s10680-017-9431-7>
- Kogan, I. (2011). The price of being an outsider: Labour market flexibility and immigrants' employment paths in Germany. *International Journal of Comparative Sociology*, 52(4), 264-283. <https://doi.org/10.1177/0020715211412113>
- Kok, S., Bosch, N., Deelen, A., & Euwals, R. (2011). Migrant Women on the Labour Market: On the Role of Home- and Host-Country Participation. *IZA Discussion Paper Series*, Article 5817. <https://doi.org/10.2139/ssrn.1877630>
- Lamb, D., Banerjee, R., & Verma, A. (2021). Immigrant-non-immigrant wage differentials in Canada: A comparison between standard and non-standard jobs. *International Migration*, 59(5), 113-133. <https://doi.org/10.1111/imig.12808>
- Lamberts, M., Vanderstukken, A., De Leebeeck, K., & Vermeersch, L. (2020). Antidiscriminatiebeleid op sector- en organisatieniveau. HIVA-KU Leuven. <https://hiva.kuleuven.be/nl/nieuws/docs/zkd4258-rapport-eind.pdf>
- Laurijssen, I., & Glorieux, I. (2015). Early career occupational mobility of Turkish and Moroccan second-generation migrants in Belgium. *Journal of Youth Studies*, 18(1), 1367-6261. <https://doi.org/10.1080/13676261.2014.933194>
- Lens, D. (2022). Is labour migration hurting migrant labour? Empirical investigations for the case of Belgium. [Doctoral dissertation, Universiteit Antwerpen].
- Lens, D. (2023). Does Self-Employment Contribute to Immigrants' Economic Integration? Examining Patterns of Self-Employment Exit in Belgium. *International Migration Review*, 57(1), 217-264. <https://doi.org/10.1177/01979183221095833>
- Lens, D., & Oslejšová, J. (2018). Arbeidsmarkttransities van immigranten in België. *Tijdschrift voor Arbeidsvraagstukken*, 34(4). <https://doi.org/10.5117/2018.034.004.006>
- Lens, D., Marx, I., & Vujić, S. (2019). Double Jeopardy: How Refugees Fare in One European Labor Market. *IZA Journal of Development and Migration*, 10(1). <https://doi.org/10.2478/izajodm-2019-0008>
- Lens, D., Marx, I., Oslejšová, J., & Mussche, N. (2023). Nice work if you can get it: Labour market pathways of Belgian service voucher workers. *Journal of European Social Policy*, 33(1), 117-131. <https://doi.org/10.1177/09589287221128440>
- Lippens, L., Baert, S., Ghekiere, A., Verhaeghe, P.-P., & Derous, E. (2022). Is labour market discrimination against ethnic minorities better explained by taste or statistics? A systematic review of the empirical evidence. *Journal of Ethnic and Migration Studies*, 48(17), 4243-4276. <https://doi.org/10.1080/1369183X.2022.2050191>

- Lippens, L., Dalle, A., D'hondt, F., Verhaeghe, P.-P., & Baert, S. (2023). Understanding ethnic hiring discrimination: A contextual analysis of experimental evidence. *Labour Economics*, 85, Article 102453. <https://doi.org/10.1016/j.labeco.2023.102453>
- Maes, J., Wood, J., & Neels, K. (2019). Early labour market trajectories of intermediate and second generation Turkish and Maghreb women in Belgium. *Research in Social Stratification and Mobility*, 61, 65-78. <https://doi.org/10.1016/j.rssm.2018.11.001>
- Maes, J., Wood, J., & Neels, K. (2023). Path-Dependencies in Employment Trajectories Around Motherhood: Comparing Native Versus Second-Generation Migrant Women in Belgium. *Journal of International Migration and Integration*, 24, 281-344. <https://doi.org/10.1007/s12134-020-00801-1>
- Maes, J., Wood, J., Marynissen, L., & Neels, K. (2022). The gender division of paid work over family formation: Variation by couples' migration background. *Advances in Life Course Research*, 53, 100497. <https://doi.org/10.1016/j.alcr.2022.100497>
- McGinnity, F., Quinn, E., McCullough, E., Enright, S., & Curristan, S. (2021). Measures to combat racial discrimination and promote diversity in the labour market: a review of evidence. The Economic and Social Research Institute. <https://doi.org/10.26504/sustat110>
- Mercan, M. A., & Karakas, M. (2019). Do immigrants work longer hours than natives in Europe? *Economic Research*, 32(1), 1394-1406. <https://doi.org/10.1080/1331677X.2019.1636700>
- Mincer, J. (1958). Investment in Human Capital and Personal Income Distribution. *Journal of Political Economy*, 66(4), 281-302. <https://doi.org/10.1086/258055>
- Muñoz-Comet, J., & Steinmetz, S. (2020). Trapped in Precariousness? Risks and Opportunities of Female Immigrants and Natives Transitioning from Part-Time Jobs in Spain. *Work, Employment and Society*, 34(5), 749-769. <https://doi.org/10.1177/0950017020902974>
- Myria. (2018). 1997-2017: een balans van twee decennia immigratie in België. Myria. [https://www.myria.be/files/1997-2017\\_een\\_balans\\_van\\_twee\\_decennia\\_immigratie\\_in\\_Belgie%CC%88.pdf](https://www.myria.be/files/1997-2017_een_balans_van_twee_decennia_immigratie_in_Belgie%CC%88.pdf)
- Neels, K., De Wachter, D., & Peeters, H. (2017). The effect of family formation on the build-up of pension rights among minority ethnic groups and native women in Belgium. *Ageing & Society*, 38(6), 1253-1278. <https://doi.org/10.1017/S0144686X17000010>
- OECD. (2022). OECD Economic Surveys: Belgium 2022. OECD publishing. <https://doi.org/10.1787/01c0a8f0-en>
- OECD. (2023). Skills and Labour Market Integration of Immigrants and their Children in Flanders. OECD Publishing. <https://doi.org/10.1787/4ea309cb-en>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T., Mulrow, C. D., Shamseer, L., Tetzlaff, J., Akl, E. A., Brennan, S., Chou, R., Glanville, J., Grimshaw, J., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E., Mayo-Wilson, E., McDonald, S., . . . Moher, D. (2021). The PRISMA 2020 Statement: An Updated Guideline for Reporting Systematic Reviews. *BMJ*, 372, Article 71. <https://doi.org/10.1136/bmj.n71>
- Parks-Yancy, R. (2006). The Effects of Social Group Membership and Social Capital Resources on Careers. *Journal of Black Studies*, 36(4), 515-545. <https://doi.org/10.1177/0021934704273501>
- Phalet, K., & Heath, A. (2010). From Ethnic Boundaries to Ethnic Penalties: Urban Economies and the Turkish Second Generation. *American Behavioral Scientist*, 38(6), 1824-1850. <https://doi.org/10.1017/S0144686X17000010>
- Phelps, E. S. (1972). The Statistical Theory of Racism and Sexism. *The American Economic Review*, 62(4), 659-661. <https://www.jstor.org/stable/1806107>

Piton, C., & Rycx, F. (2021). A Broken Social Elevator? Employment Outcomes of First- and Second-Generation Immigrants in Belgium. *De Economist*, 169, 319-365. <https://doi.org/10.1007/s10645-021-09385-2>

Portes, A., & Zhou, M. (1993). The New Second Generation: Segmented Assimilation and Its Variants. *The Annals of the American Academy of Political and Social Science*, 530, 74-96. <https://www.jstor.org/stable/1047678>

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. Simon and Schuster. <https://doi.org/doi/10.1145/358916.361990>

Quillian, L., Heath, A., Pager, D., Midtbøen, A. H., Fleischmann, F., & Hexel, O. (2019). Do Some Countries Discriminate More than Others? Evidence from 97 Field Experiments of Racial Discrimination in Hiring. *Sociological Science*, 6, 467-496. <https://doi.org/10.15195/v6.a18>

Statbel. (2023, June 8). Diversiteit naar herkomst in België. Statbel: <https://statbel.fgov.be/nl/themas/bevolking/structuur-van-de-bevolking/herkomst>

Verhaeghe, F., Bradt, L., Van Houtte, M., & Derluyn, I. (2017). Structural assimilation in young first-, second- and third-generation migrants in Flanders. *Ethnic and Racial Studies*, 40(15), 2728-2748. <https://doi.org/10.1080/01419870.2016.1260750>

Verhaeghe, P.-P., Van der Bracht, K., & Van de Putte, B. (2015). Inequalities in social capital and their longitudinal effects on the labour market entry. *Social Networks*, 40, 174-194. <https://doi.org/10.1016/j.socnet.2014.10.001>

Vlaamse Regering. (2023). Septemberverklaring. Publicaties Vlaanderen. <https://publicaties.vlaanderen.be/view-file/59813>

Weichselbaumer, D. (2020). Multiple Discrimination against Female Immigrants Wearing Headscarves. *ILR Review*, 73(3), 600-627. <https://doi.org/10.1177/0019793919875707>

Wood, J., & Neels, K. (2017). First a job, then a child? Subgroup variation in women's employment-fertility link. *Advances in Life Course Research*, 33, 38-52. <https://doi.org/10.1016/j.alcr.2016.09.003>

Wood, J., & Neels, K. (red.) (2020). *Wegwijs naar werk. Longitudinale analyse en evaluatie van inburgerings- en activeringstrajecten in Vlaanderen, 2005-2016 (eindrapport VIONA Leerstoel)*. Universiteit Antwerpen. <https://publicaties.vlaanderen.be/view-file/34112>

## Tables and figures

**Table 1**

*Inclusion and exclusion criteria in the SPIDER framework*

Criterion	Description	
	Included	Excluded
Sample	Individuals who can be classified as either first- or second-generation migrants in Belgium.	Individuals from other vulnerable groups (such as older workers) or those belonging to the third- or later-generation migrants, as well as any sample not derived from Belgian data.
Phenomenon of interest	Labour market outcome differences between natives and people with a migration background, employer- and employee-side mechanisms underlying these gaps, and associated remedies at the level of employers, employees, or policymakers in Belgium.	The impact of macro-economic policies and trends, their underlying mechanisms, and potential solutions at levels beyond those involving employees, employers, or the Belgian government.
Design	Causal and correlational research.	Meta-analyses, systematic reviews, case studies, interview-type studies and theoretical papers.
Evaluation	Differences in labour market outcomes between first- and second-generation migrants and natives.	Outcomes not related to employment or quality of employment.
Research type	Primary, quantitative, empirical research.	Secondary and qualitative research.

**Table 2**

*Literature overview - labour market outcomes of people with a migration background in Belgium*

(a) Study	(b) Data type	(c) Main findings concerning labour market outcomes of people with a migration background	(d) Underlying mechanisms discussed	(e) Proposed remedies
<b>A. Studies concerning first-generation migrants</b>				
Corluy et al. (2011)	Survey data	The study finds that obtaining Belgian citizenship benefits the employment prospects of non-Western migrants, particularly men and those with longer residence. However, non-Western-born migrants who obtain citizenship still face lower employment stability and higher unemployment than natives.	The authors suggest that the main findings can be explained by the motivational and psychological effects of obtaining citizenship for migrants and employers, as citizenship signals commitment and helps to overcome labour market barriers.	N/A
Fays et al. (2021)	Administrative and survey data	The study finds varying degrees of wage discrimination across different origin groups, with Asians and Eastern Europeans experiencing the highest discrimination. Discrimination against migrants vanishes as their tenure increases and decreases in highly competitive product markets.	The study provides evidence for discrimination as a substantial part of observed wage differentials between EU15 and non-EU15 workers remains unexplained while specifying a wage-setting equation including a direct measure of worker productivity and numerous controls. The authors suggest that the fact that discrimination disappears with tenure is compatible with statistical and monopsonistic discrimination theories, as (i) tenure increases information about productivity, and (ii) tenured workers are likely to be better informed about the labour market and are therefore less often subject to monopsony behaviour by employers. According to the authors, the decrease in discrimination with increasing product market competition is in line with the prediction that increasing product market competition makes discrimination more costly.	N/A
Fays et al. (2023)	Administrative and survey data	The study finds that high-wage workers from developed countries receive a higher wage premium when employed higher up the GVC. In contrast, workers from developing countries receive less equitable rewards.	The study provides evidence for discrimination in general because the elasticity between wages and firm-level upstreamness differs between workers from developed and developing countries. The authors suggest that the main findings can also be explained by HC and bargaining power disparities, as HC differs by origin and highly educated workers have higher bargaining power.	N/A
Grinza et al. (2020)	Survey data	The study finds that, in most firms, diversity in origin does not result in wage discrimination against migrants. However, wage discrimination is observed in firms with higher diversity levels. Significant wage discrimination effects occur only with abrupt workforce diversity	The authors suggest that their main findings can be explained by discrimination in general, as a high level of diversity can make the internal cohesion of a group of employees less strong, thereby reducing their bargaining power and making them more susceptible to	The authors state that wage discrimination in high-diversity firms could be alleviated through stronger collective bargaining and efforts to de-cluster individuals from countries with a low human development index in these firms. They also see

		changes. Additionally, firms that negotiate wages at the firm level experience a reduced negative impact of diversity on average hourly wages.	discriminatory wages. Simultaneously, the authors suggest that firm-level bargaining diminishes discrimination by strengthening employees' bargaining power.	potential in non-discrimination ombudsman's offices.
Jacobs et al. (2021)	Administrative and survey data	The study finds that workers born in developing countries are more likely to be overeducated, particularly those born in Asia and North Africa and those holding tertiary education degrees. The likelihood of overeducation among migrants from developing countries decreases as tenure and firm size increase. Collective firm-level renegotiations and citizenship acquisition also have similar effects. Gender-based differences in migrants' penalties are modest.	The authors suggest that the main findings can be explained by statistical discrimination, as tenure decreases asymmetric information about the migrant's productivity.	N/A
Jacobs et al. (2022b)	Administrative and survey data	The study finds that overeducated workers, regardless of origin, face a wage penalty compared to well-matched former classmates. This penalty is most pronounced for highly tenured workers from developing countries, especially those born in Africa or the Near or Middle East. Origin-based wage gaps associated with required education diminish with tenure. There is no evidence of a double jeopardy for women from developing countries.	The study provides evidence for the imperfect transferability of HC as a mechanism. This is because returns to education are higher for workers born in developed countries than for those born in developing countries. The study also provides mixed evidence for statistical discrimination, as tenure increases returns to overeducation, but there are persistent gaps in returns to overeducation among more tenured workers.	The authors state three remedies: (i) enhancing recognition of foreign degrees, (ii) improving migrants' understanding of the host country's labour market, and (iii) policies aligning skill supply and demand to reduce the wage gap.
Kanas and van Tubergen (2014)	Survey data	This study finds that Moroccan migrants from former French colonies benefit more from their origin-country education and work experience in French-speaking regions compared to Dutch-speaking regions. Belgian work experience boosts the likelihood of being employed, while foreign work experience lowers employment probability but improves occupational status. Co-ethnic residential concentration positively interacts with work experience in enhancing employment prospects.	The authors suggest that the main findings can be explained by HC differences, as proficiency in the destination country language facilitates HC transferability and reduces employers' uncertainty regarding origin-country work experiences. The length of stay in the destination country appears to strengthen HC and improve labour market outcomes, according to the authors.	N/A
Lens et al. (2023)	Administrative and survey data	The study finds that the subsidised SVS ambiguously affects migrant women's economic integration. On the one hand, the scheme offers stable job opportunities for migrant women who have had limited prior engagement in the labour market. However, it also creates lasting 'lock-in' effects, presenting substantial barriers to shifting to other, non-subsidised employment opportunities. A significant portion of migrant women with tertiary education levels appear to become stuck in the scheme.	N/A	The authors state that greater investment in enhancing the transferability of the HC possessed by migrant women engaged in the SVS would be beneficial. Emphasising initiatives like language training, their aim is to augment these women's prospects for upward mobility.

Mercan and Karakas (2019) <sup>(4)</sup>	Survey data	The study finds little difference between the hours worked by natives and migrants.	The authors suggest that the main findings can be explained by discrimination in general, without providing further details.	N/A
--	-------------	---	--	-----

---

### B. Studies concerning first- and second-generation migrants

---

Carpentier et al. (2017)	Administrative data	The study finds that second-generation migrants exit social assistance more slowly than native beneficiaries. This effect is even stronger for first-generation migrants. However, beneficiaries with migration backgrounds are as likely to move from social assistance to work as native-born beneficiaries, except for asylum seekers and European-born beneficiaries.	The authors suggest that the main findings can be explained by differences in HC and discrimination in general, without providing further details.	N/A
Flechner et al. (2022) <sup>(2)</sup>	Administrative data	The study finds that participation in ALMPs varies based on household type for first- and second-generation migrants. Household composition plays a more significant role for women with a migration background, and those with non-migrant partners show higher ALMP participation. The presence of children affects ALMP uptake more negatively among Turkish- and Moroccan-origin women than Southern European-origin or native women.	The authors suggest that the main findings can be explained by employee-side preferences and behaviour, as views on women's roles in the labour market and use of childcare are origin-dependent.	The authors state that policymakers should prioritise household composition diversity to boost participation in ALMPs. Without specifying, they also emphasise the need for aligned migration and integration policies, with special consideration for challenges encountered by women with a migration background.
Gorodzeisky and Semyonov (2017)	Survey data	The study finds that second-generation European and especially non-European migrants face higher unemployment rates than natives, but have similar high-status employment odds after adjusting for origin and gender. First-generation non-European migrant men have lower high-status employment odds, while the odds of European migrant men are similar to natives. First-generation non-European migrant women exhibit worse employment odds than natives.	The study provides evidence for HC differences as an underlying mechanism, since the outcomes for second-generation migrants are more dependent on HC attributes than on origin. The authors suggest that the main findings can also be explained by discrimination in general, without providing further details. Lastly, they suggest that employee-side preferences and behaviour are also important, as traditional gender roles and gender-segregated occupations may influence outcomes.	N/A
Jacobs et al. (2022a)	Administrative and survey data	The study finds that overeducation, conditional on required education, increases wages. This increase is the highest for natives, lower for people from developed countries, and lowest for people from developing countries. It is also lower for first-generation migrants than second-generation migrants. Nevertheless, overeducated native workers are underpaid to a greater extent than workers with a migration background, when compared to their well-matched colleagues. This is because the differential in productivity gains associated with overeducation between natives and migrants outweighs the corresponding wage premium differential.	The study provides evidence for the imperfect transferability of HC, as overeducation mainly has a positive productivity effect among natives.	The authors state that more flexible labour market policies and stronger wage-bargaining institutions could be possible remedies, depending on the underlying cause of the productivity-wage gap.

Kil et al. (2018)	Administrative data	The study finds that first-generation migrant mothers face a more substantial decline in employment after childbirth than second-generation mothers and natives. Unemployment also rises more for migrant women from both generations, while differences in full-time vs. part-time employment do not exhibit consistently different patterns across groups.	The authors suggest that the main findings can be explained by various factors, including HC, SC, discrimination in general, family policies, and household income, without providing further details. The authors suggest that the main findings for first-generation (second-generation) women can be explained by employee-side preferences and behaviour (socio-demographics and early career challenges), as these differ by origin.	N/A
Lens (2023)	Administrative and survey data	The study finds that people with a migration background already have weaker ties to the labour market before pursuing self-employment. When self-employed, first- and second-generation migrants' self-employment episodes tend to have shorter durations than those of natives, and more frequently lead to unemployment or inactivity after exit. Notably, second-generation migrants demonstrate better outcomes compared to their first-generation counterparts, while migrant women experience more challenging self-employment outcomes than migrant men.	The study provides evidence for HC differences as an underlying mechanism, since controlling for educational attainment and prior work experience strongly reduces differences between natives and people with a migration background.	The author states the importance of enhancing the business skills of individuals with a migration background through specialised training, counselling, and mentorship programmes. Implementing strategies that allow for a gradual transition into self-employment among this group would also markedly improve their self-employment outcomes. Additionally, according to the author, broader labour market integration policies would contribute to reinforcing migrant self-employment, particularly by reducing the proportion of migrants compelled into self-employment out of necessity.
Maes et al. (2022) <sup>(2)</sup>	Administrative data	The study finds significant gender inequality in the division of paid work between first-generation non-EU origin couples, which intensifies after having children. Second-generation non-EU origin couples also display this inequality, especially when both partners are of second-generation non-EU origin. However, the gender division of work between South-EU origin couples is similar to that of native couples.	The authors suggest that the main findings can be explained by pre-birth relative wage potential and employee-side preferences and behaviour, as these depend on origin (of the partner).	The authors state that a life course perspective is needed when designing policies that enhance the labour market participation of women with a migration background.
Maes et al. (2019)	Administrative data	The study finds that generally, women with a migration background have lower pre-birth labour market attachment. However, there are no differences in employment trajectories between native women and women with a migration background among those with low employment rates before the birth of their first child, and only limited differences in employment trajectories around parenthood among women with medium and high pre-parenthood employment rates. These differences are slightly larger for first-generation women than for second-generation women.	The study provides evidence for differences in HC and employee-side preferences and behaviour as underlying mechanisms, since the level of education, language proficiency, and fertility behaviour partially explain ethnic differentials in employment outcomes.	The authors state that policy should focus on pre-birth employment opportunities and equal access to formal childcare.
Neels et al. (2017) <sup>(2)</sup>	Administrative data	The study finds that native women tend to accumulate pension rights primarily through full-time employment, both before and after parenthood. In contrast, first-generation women and second-generation women of	The authors suggest that the main findings can be explained by employee-side preferences and behaviour, as these depend on origin.	The authors state that the combination of work and care responsibilities should be considered when designing pension reform policies. They deem it important to strengthen the pre-parenthood labour

		Turkish and Moroccan descent tend to rely on assimilated periods or derived pension rights post-parenthood. These differences are still present but less pronounced among second-generation migrants of other origins.		market positions of women with a migration background.
Piton and Rycx (2021)	Administrative and survey data	The study finds that first-generation migrants are less likely to be employed than natives. However, naturalised first-generation migrants have higher employment rates than non-naturalised migrants. Second-generation migrants with two foreign-born parents also experience such disadvantages. First- and second-generation female migrants originating from outside the EU face higher employment penalties than their male counterparts.	The study provides evidence for HC differences as an underlying mechanism, since education and language proficiency increase access to employment. The authors suggest that the main findings can also be explained by discrimination in general, as some gaps remain after controlling for a large range of moderators. However, they do not specify the importance of each mechanism.	The authors state that the HC of people with a migration background needs to be strengthened and their diplomas and skills should be recognised more quickly. Simpler procedures for obtaining residence and work permits are also needed, together with more accessible childcare services for people with a migration background. Existing and new active anti-discrimination policies are also needed.
P.-P. Verhaeghe et al. (2015)	Survey data	The study finds that first-generation migrants have higher odds of entering the labour market than native Belgians, but lower odds of having a job when they are in the labour market. There are no significant differences in the likelihood of finding work between second-generation migrants and natives.	The study provides evidence for differences in access to SC as an underlying mechanism, since this depends on origin and influences the likelihood of both entering the labour market and getting a job.	N/A
F. Verhaeghe et al. (2017)	Survey data	The study finds that both generations of non-EU15 migrants have lower expectations of finding a job than natives.	The authors suggest that the main findings can be explained by (statistical or taste-based) discrimination and HC differences, since people with a migration background from non-EU15 countries are often more different from natives than people with a migration background from EU15 countries, and imperfect transferability of HC and language proficiency matter for employment outcomes.	N/A
Wood and Neels (2017) <sup>(2)</sup>	Administrative and survey data	The study finds that first- and second-generation migrant women are more likely than natives to adopt childbearing strategies as an alternative to labour market participation. This strategy is the strongest for non-European migrant groups.	The authors suggest that the main findings can be explained by employee-side preferences and behaviour, as these differ by origin and differences are more pronounced for first-generation migrants.	The authors state that policymakers could invest more in the needs of parents with a non-European migration background.

### C. Studies concerning second-generation migrants

Baekgaard and George (2018) <sup>(1)</sup>	Administrative and experimental data	The study finds that second-generation migrants are more likely to be invited to a job interview by left-wing politicians and less likely to be invited to a job interview by right-wing politicians compared to their native counterparts.	The study provides evidence for statistical (taste-based) discrimination, as second-generation migrants are more likely to be considered competent for a top administrative job. This is because different political ideologies underlie the different probabilities of job interview invitations.	The authors state that introducing standardised formal rules about hiring decisions within public organisations could lower ideology-based discrimination.
Baert and Cockx (2013) <sup>(2,3)</sup>	Survey data	The study finds that native school-leavers are more likely to be employed three months after leaving school than second-generation migrant school-leavers with	The authors suggest that the main findings can be explained by (statistical or taste-based discrimination) as ethnic gaps in educational attainment and school-to-	The authors state that encouraging families with a migration background to use their native language at home has limited effectiveness in reducing labour

		the same observed endowments. Two years after graduation, low-educated native school-leavers are more likely to be employed under a permanent contract than their low-educated second-generation migrant counterparts. The study finds that speaking Dutch at home plays almost no role in closing the ethnic gap in educational attainment and labour market outcomes.	work transitions remain present after controlling for family endowments and schooling delays.	market disparities, especially among highly educated individuals. However, the authors could not control for language quality, which may be important. Therefore, prioritising higher native language proficiency may be more effective.
Baert and De Pauw (2014) <sup>(1)</sup>	Experimental data	The study finds no significant differences in positive callbacks or job interview invitations between native and non-native applicants.	The study provides no evidence (evidence) for statistical (taste-based) discrimination, as perceived attitudes related to statistical discrimination do not differ significantly by the origin of the candidate (as perceived co-worker and customer distaste correlate with non-native hiring chances).	N/A
Baert and Vujić (2016) <sup>(1)</sup>	Experimental data	The study finds that native non-volunteers are more likely to receive positive callbacks and job interview invitations than second-generation migrant non-volunteers. In contrast, there is no difference in treatment between native and second-generation migrant volunteers.	The authors suggest that the main findings can be explained by statistical (taste-based) discrimination, since volunteering may weaken stereotypes concerning productivity, values, and motivation (as volunteering may signal integration, and well-integrated people with a migration background are less disliked).	The authors state that their findings are, to some extent, in favour of governments promoting volunteering among people with a migration background, as often done in particular among the low-educated and women. However, the signalling value of volunteering might decrease if more people with a migration background start volunteering.
Baert et al. (2015) <sup>(1)</sup>	Administrative, experimental, and survey data	The study finds that natives and second-generation migrants are equally likely to receive positive callbacks and job interview invitations if they apply for occupations for which vacancies are difficult to fill. However, second-generation migrants must send out twice as many applications for occupations with low labour market tightness. The study finds more discrimination in better-paid occupations, in line with discrimination by occupational segregation.	The study provides evidence for discrimination in general, as employers discriminate against foreign minorities as long as this does not interfere with profit maximization. The authors suggest that this can be explained by statistical discrimination, as labour market tightness affects the quality of the signal of unemployment duration.	N/A
Baert et al. (2016)	Survey data	The study finds that native school-leavers are more likely to be employed three months after leaving school than second-generation migrant school-leavers with the same observed endowments. This gap is much larger for women and represents a double jeopardy. The difference in school-to-work transitions based on origin is also present after finishing higher education, but in this case, second-generation migrant women perform better than second-generation migrant men.	The authors suggest that the main findings can be explained by demographic behaviours and statistical discrimination, as ethnic gaps in fertility behaviour are large, but become modest and lose their significance for women after controlling for SES and the use of Dutch. However, second-generation migrant women may face statistical discrimination in the transition to employment due to employers' expectations of their early marriage and family formation.	N/A
Baert et al. (2017) <sup>(1)</sup>	Experimental data	The study finds that natives are more likely to receive positive callbacks and job interview invitations than second-generation migrants. However, this difference decreases as candidates gain additional experience.	The authors suggest that the main findings can be explained by statistical discrimination, as experience decreases uncertainty about the actual productivity of an individual.	The authors state that anti-discrimination policies, such as assisting individuals who feel discriminated against in filing a complaint, targeted at graduates from (ethnic) minorities could be useful.
Baert et al.	Administrative	The study finds no significant association between firm	The study provides no evidence for statistical	The authors state that discrimination policies should

(2018) <sup>(1)</sup>	and experimental data	size and ethnic discrimination.	discrimination, as the authors find no significant association with firm size. They suggest that larger firms may exhibit both reduced statistical discrimination (e.g., better HR policies and enhanced candidate screening) and increased statistical and taste-based discrimination (e.g., the need to rely on statistical discrimination to make more hiring decisions and reduced profitability-discrimination trade-off).	not specifically focus on larger or smaller firms.
Derous et al. (2016) <sup>(1)</sup>	Experimental data	The study finds that natives and second-generation migrants are perceived as equally suitable for jobs based on names. However, applicants with darker skin tones receive lower job suitability ratings than those with lighter skin tones, especially in roles involving high client contact/low industry status or low client contact/high industry status positions.	The study provides evidence for taste-based discrimination, as the contextual characteristics of client contact and industry status have a significant effect on job suitability ratings.	The authors state that enhancing recruiter awareness and holding résumé screeners accountable may mitigate discrimination. Potential solutions include anonymous résumé screening, omitting ethnicity-revealing items, and competency-based assessments.
Laurijssen and Glorieux (2015) <sup>(2)</sup>	Survey data	The study finds that differences before and upon entering the labour market are important predictors for the rest of an individual's career. Natives hold jobs with higher SES than second-generation migrants. On the other hand, second-generation migrants exhibit greater progress in terms of occupational status when starting their careers in low-status jobs. Women have lower upward mobility than men.	The authors suggest that the main findings can be explained by statistical discrimination, as second-generation migrants are subjected to more discrimination at the outset of their careers due to uncertainty about their productivity. However, as they gain experience, this uncertainty diminishes, enabling higher upward mobility.	The authors state that policies focused on equal opportunities should take effect before entry into the labour market.
Lippens et al. (2023) <sup>(1)</sup>	Administrative and experimental data	The study finds that second-generation migrants experience hiring discrimination compared to natives. For some nationalities, hiring bias is more pronounced in professions demanding greater colleague interaction and in occupations with low labour market tightness.	The study provides evidence for statistical (taste-based) discrimination, as discrimination is less present in (i) larger firms due to better HR policies, (ii) non-profit firms, since the lack of a profit motive leads to more extensive screening of candidates, and (iii) tight labour markets, since high unemployment does not make productive workers more likely to have minority status. Contrastingly, high unemployment makes productive workers more likely to be long-term unemployed applicants, since the quality of the signal of unemployment duration is affected by tightness (as discrimination (i) is more present in professions with extensive colleague interaction, and (ii) is less present in non-profit firms because of the social character).	The authors state that enhanced formalisation of selection procedures and allocated resources could lead to reduced statistical discrimination at the individual level. According to the authors, job agents equipped with more (accurate) information about the productivity of individual applicants may rely less on their (inaccurate) statistical beliefs.
Maes et al. (2023) <sup>(2)</sup>	Administrative data	This study finds that generally, second-generation migrant women have lower pre-birth labour market attachment than native women. However, there are no differences in employment trajectories between native and second-generation women among those with low employment rates before the birth of their first child, and only limited differences in trajectories among women with medium and high pre-parenthood	The authors suggest that the main findings can be explained by employee-side preferences and behaviours concerning employment trajectories around family formation, as these differ by origin.	The authors state that inequalities before childbearing should be tackled to avoid unemployment and inactivity after motherhood. In addition, they advocate providing universal access to flexible family policies.

employment rates.

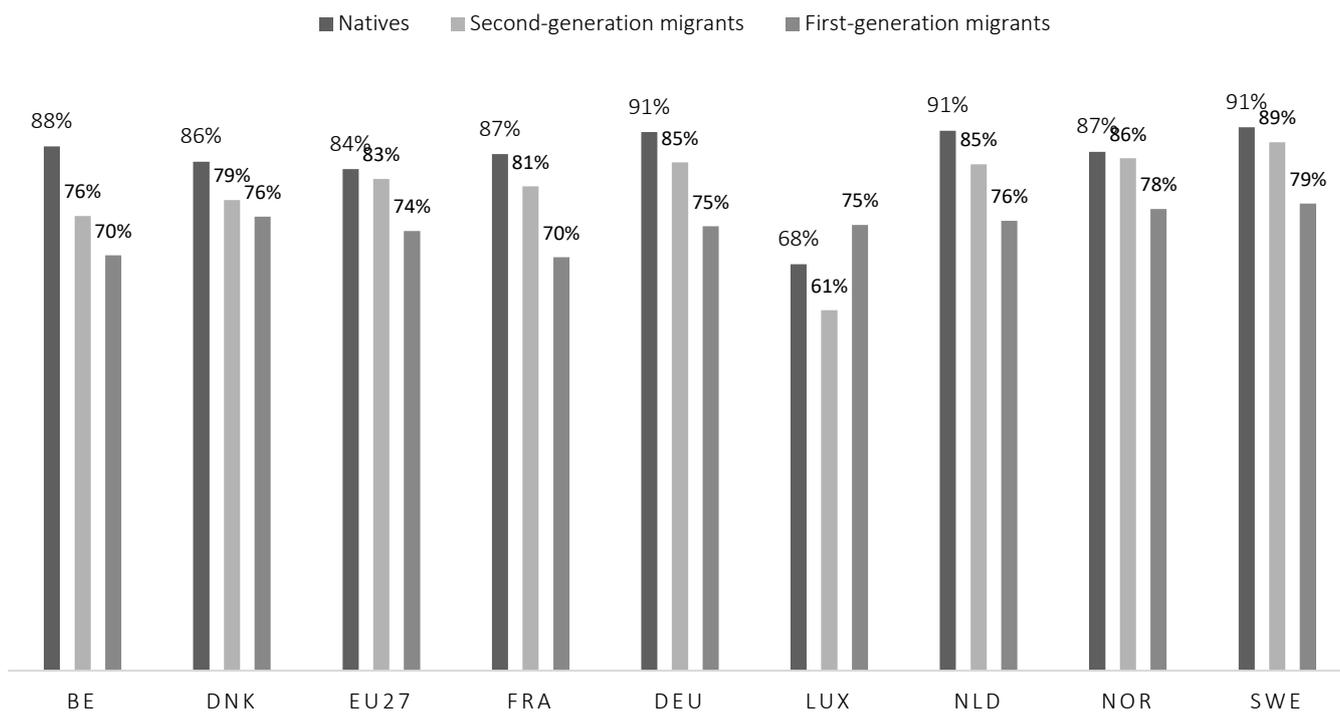
Phalet and Heath (2010) <sup>(2)</sup>	Survey data	The study finds large ethnic penalties for Turkish second-generation migrants in the urban area of Brussels compared to natives, after controlling for HC. However, compared to second-generation migrants living outside urban areas, they are more likely to be in paid work, self-employment and high-end jobs.	The study finds evidence for differences in HC as an underlying mechanism, since there are large origin-based differences in educational attainment, and second-generation migrants in Brussels are on average more educated than their counterparts outside the city centre.	N/A
--	-------------	--	---	-----

---

*Notes.* (1) These experimental studies do not explicitly delineate the migrant generation within their experiments. Instead, they use hypothetical job applicants with ethnic-sounding names and Belgian nationality, allowing us to reasonably infer that the findings from these studies apply to second-generation migrants. (2) These studies rely on nationality to define migrant generations. (3) The study of Baert and Cockx (2013) addresses young people whose maternal grandmothers neither have Belgian nationality, nor any Western nationality. According to our definitions, these individuals can be categorised as first, second, or even third-generation migrants. (4) The study of Mercan and Karakas (2019) does not include a definition for migrants. In cases (2), (3), and (4), we adhere to the terminology employed by the respective authors to order the studies in the overview table and discuss their outcomes in the text. The following acronyms and abbreviations are used: ALMP (active labour market programme), EU (European Union), GVC (global value chain), HC (human capital), HR (human resources), i.e. (that is); N/A (not available), SC (social capital), SES (socio-economic status), SVS (service voucher scheme), and vs. (versus).

Fig. 1

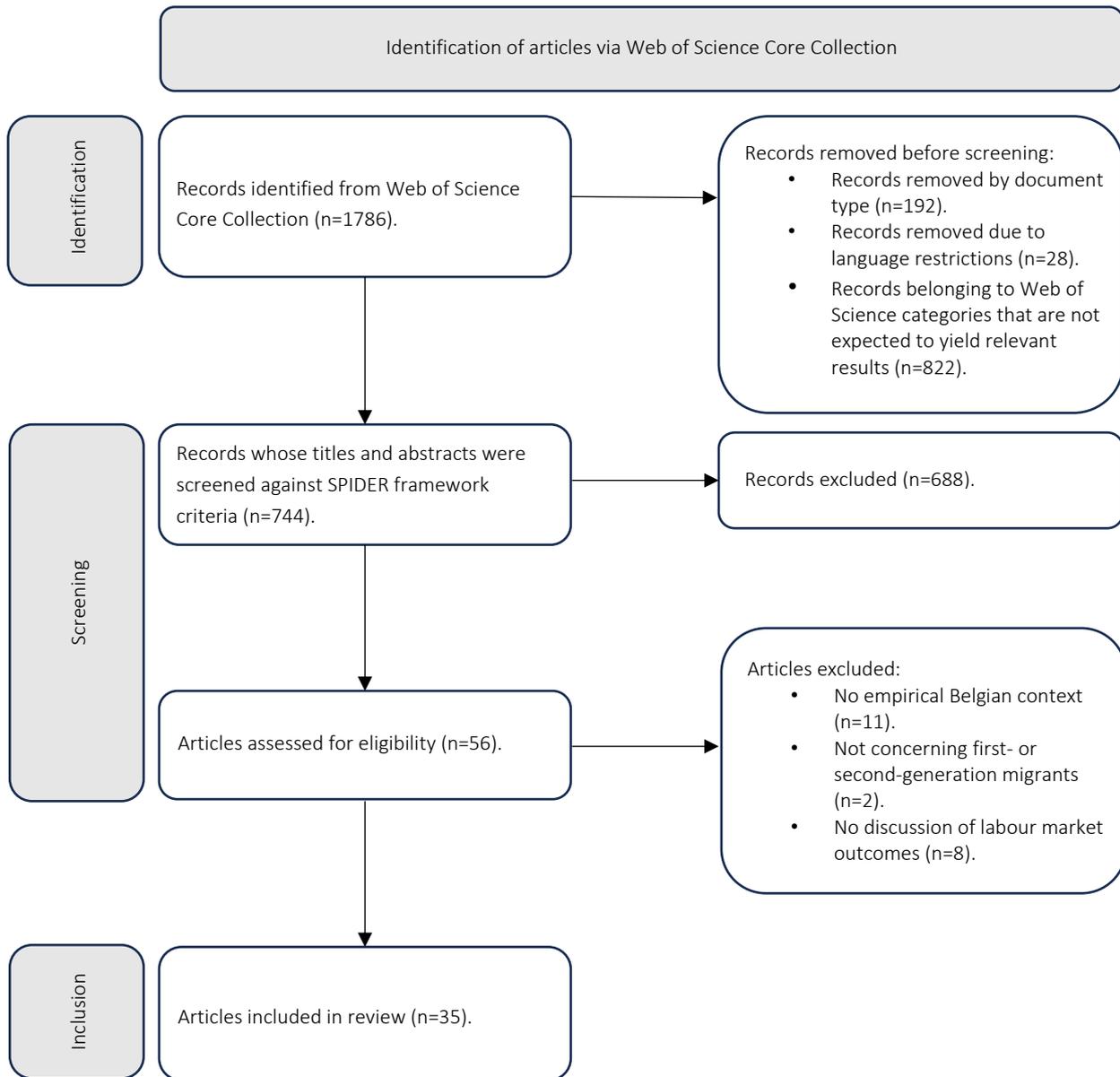
Employment rates by migrant status in Belgium and selected EU27 countries (2023, third quarter)



Notes. This figure depicts employment rates by migrant status for the third quarter of 2023 for Belgium, its neighbouring countries, the EU27 average and the well-scoring Scandinavian countries. We used the following abbreviations: BE (Belgium), DNK (Denmark), EU27 (European Union – 27 countries), FRA (France), DEU (Germany), LUX (Luxembourg), NLD (the Netherlands), NOR (Norway), and SWE (Sweden). Data retrieved from Eurostat on 15 December 2023.

Fig. 2

Study selection flowchart



Note. This figure is adapted from Page et al. (2021).

# Appendix

**Table A1**

*Excluded Web of Science categories*

Category	Number of articles
Public Environmental Occupational Health	84 articles
Materials Science Multidisciplinary	69 articles
Geography	57 articles
Environmental Sciences	43 articles
Chemistry Physical	37 articles
Environmental Studies	36 articles
Nanoscience Nanotechnology	30 articles
Oncology	28 articles
Physics Applied	26 articles
Law	24 articles
Linguistics	22 articles
Medicine General Internal	22 articles
Obstetrics Gynaecology	22 articles
Chemistry Multidisciplinary	20 articles
Ecology	20 articles
Physics Condensed Matter	18 articles
Literature	17 articles
Nuclear Science Technology	17 articles
Cell Biology	16 articles
Health Care Sciences Services	16 articles
Biochemistry Molecular Biology	15 articles
Geosciences Multidisciplinary	15 articles
Food Science Technology	14 articles
Infectious Diseases	14 articles
Neurosciences	14 articles
Regional Urban Planning	14 articles
Chemistry Analytical	13 articles
Astronomy Astrophysics	12 articles
Energy Fuels	12 articles
Health Policy Services	12 articles
Immunology	12 articles
Pharmacology Pharmacy	12 articles
Geochemistry Geophysics	11 articles
Materials Science Biomaterials	11 articles
Metallurgy Metallurgical Engineering	11 articles
Nursing	11 articles
Psychiatry	11 articles
Social Sciences Biomedical	11 articles
Endocrinology Metabolism	10 articles
Engineering Chemical	10 articles
Chemistry Applied	9 articles

Clinical Neurology	9 articles
Genetics Heredity	9 articles
Geography Physical	9 articles
Nutrition Dietetics	9 articles
Physics Atomic Molecular Chemical	9 articles
Transportation	9 articles
Biodiversity Conservation	8 articles
Engineering Biomedical	8 articles
Engineering Environmental	8 articles
Green Sustainable Science Technology	8 articles
Marine Freshwater Biology	8 articles
Microbiology	8 articles
Parasitology	8 articles
Polymer Science	8 articles
Radiology Nuclear Medicine Medical Imaging	8 articles
Tropical Medicine	8 articles
Computer Science Interdisciplinary Applications	7 articles
Developmental Biology	7 articles
Electrochemistry	7 articles
Meteorology Atmospheric Sciences	7 articles
Optics	7 articles
Plant Sciences	7 articles
Reproductive Biology	7 articles
Water Resources	7 articles
Biochemical Research Methods	6 articles
Biotechnology Applied Microbiology	6 articles
Computer Science Information Systems	6 articles
Computer Science Theory Methods	6 articles
Instruments Instrumentation	6 articles
Mechanics	6 articles
Medicine Research Experimental	6 articles
Rehabilitation	6 articles
Sport Sciences	6 articles
Urology Nephrology	6 articles
Veterinary Sciences	6 articles
Agriculture Multidisciplinary	5 articles
Biology	5 articles
Chemistry Medicinal	5 articles
Construction Building Technology	5 articles
Engineering Civil	5 articles
Engineering Electrical Electronic	5 articles
Biology	5 articles
Chemistry Medicinal	5 articles
Construction Building Technology	5 articles
Engineering Civil	5 articles
Engineering Electrical Electronic	5 articles
Oceanography	5 articles
Physics Fluids Plasmas	5 articles
Surgery	5 articles

Zoology	5 articles
Agronomy	4 articles
Evolutionary Biology	4 articles
Gastroenterology Hepatology	4 articles
History Philosophy of Science	4 articles
Materials Science Characterisation Testing	4 articles
Physics Nuclear	4 articles
Toxicology	4 articles
Transportation Science Technology	4 articles
Anaesthesiology	3 articles
Cardiac Cardiovascular Systems	3 articles
Cell Tissue Engineering	3 articles
Computer Science Hardware Architecture	3 articles
Computer Science Software Engineering	3 articles
Engineering Mechanical	3 articles
Fisheries	3 articles
Folklore	3 articles
Haematology	3 articles
Information Science Library Science	3 articles
Literature African Australian Canadian	3 articles
Mathematics Interdisciplinary Applications	3 articles
Medical Ethics	3 articles
Medical Informatics	3 articles
Primary Health Care	3 articles
Spectroscopy	3 articles
Archaeology	2 articles
Biophysics	2 articles
Chemistry Inorganic Nuclear	2 articles
Computer Science Artificial Intelligence	2 articles
Computer Science Cybernetics	2 articles
Dermatology	2 articles
Engineering Multidisciplinary	2 articles
Film Radio Television	2 articles
Integrative Complementary Medicine	2 articles
Materials Science Coatings Films	2 articles
Mathematical Computational Biology	2 articles
Medicine Legal	2 articles
Mineralogy	2 articles
Mining Mineral Processing	2 articles
Ophthalmology	2 articles
Orthopaedics	2 articles
Peripheral Vascular Disease	2 articles
Physiology	2 articles
Remote Sensing	2 articles
Respiratory System	2 articles
Statistics Probability	2 articles
Substance Abuse	2 articles
Theatre	2 articles
Virology	2 articles

Allergy	1 article
Architecture	1 article
Art	1 article
Chemistry Organic	1 article
Classics	1 article
Critical Care Medicine	1 article
Dance	1 article
Dentistry Oral Surgery Medicine	1 article
Engineering Geological	1 article
Engineering Industrial	1 article
Engineering Manufacturing	1 article
Entomology	1 article
Ergonomics	1 article

---

---