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Review Article

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Review Article

What explains the migrant pension penalty? A systematic review and comprehensive model

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Abstract

The number of retired migrants has vastly increased in Western societies and is projected to grow further in the decades ahead. Many of those migrants are more likely than nonmigrants to encounter severe financial hardships during their retirement years, raising the following question: What explains this "migrant pension penalty?" Based on a systematic literature review of 86 articles, this article presents a comprehensive model for understanding the migrant pension penalty. This model is inspired by the life-course framework and shows the most important explanations clustered into four "life course constraints and opportunities." First, there are *institutional constraints and opportunities* such as pension policies. Second, the *economic constraints and opportunities* such as incomes throughout the life-trajectory play a role. Third, *sociocultural constraints and opportunities* such as language skills and cultural norms for saving are an important explanation for the migrant pension penalty. The connections with others such as families and neighbors—known as *linked lives*—constitute the fourth life-course constraint and opportunity. Based on this comprehensive model, we summarize the scientific knowledge on the migrant pension penalty, identify knowledge gaps, formulate a research agenda, and provide policy implications for reducing the migrant pension penalty.

Keywords: cross-cultural issues, diversity and inclusion, financial well-being, sociology, inequality

Over the past years, the number of retired migrants has increased. In some countries, this population even doubled between 2010 and 2022 (Figure 1). Research findings indicate a worrisome pattern: a considerable portion of migrants are financially ill-equipped for their retirement. Specifically, Heisig et al. (2018), relying on data from 16 European countries, reported an average gap of 28% in retirement income between migrants and nonmigrants.[1] In the United States, research found a gap of around 32% (Ye, 2024) and in Canada studies even found a gap of 43% (Nakhaie et al., 2020). Across Western societies, scholars find that migrants are much more likely to live in poverty when they retire than nonmigrants (Gustafsson et al., 2022). We call this stylized finding—i.e., the lower income and higher poverty rate among retired migrants compared to retired nonmigrants—the "migrant pension penalty."

Understanding the root causes of this migrant pension penalty is important for various reasons. First, the precarious economic conditions of retired migrants bear significant negative societal consequences. Many retired migrants lack the economic resources to access healthcare facilities (Angel et al., 2003) or to participate in society (Fokkema & Naderi, 2013), leading to lower levels of well-being (Conkova et al., 2023). In addition, for many migrants it is financially impossible to fully retire (Ayón et al., 2023; Lightman & Akbary, 2023; Lopez & Slavov, 2020). These social disparities between retired migrants and natives may increase segregation in society (Vergolini, 2011). Moreover, the economic inequalities in retirement incomes between migrants and natives could transfer across generations. Economically vulnerable retired migrants often rely on financial support from their children (Ferrer, 2017; Preston et al., 2014; Vega & Aguila, 2017), thereby perpetuating economic hardship across generations.

Second, the retirement of migrants will be an increasing societal challenge in the years ahead. The migrant pension penalty not only concerns the migrants who arrived in the past and have retired or will retire soon.[2] It also continues to play a role as new cohorts of migrants will arrive. For instance, in Europe, increasing numbers of labor migrants are expected

[1]This gap is adjusted for a number of key characteristics, such as occupational status prior to retirement, education, and age. The "unadjusted" gap is likely substantially larger.

[2]For instance, in the United States, demographers estimate that the older immigrant population (65+) will increase from 7.3 million (13.9% of older population) in 2018 to 22 million by 2060 (23.3% of older population) (Mizoguchi et al., 2019).

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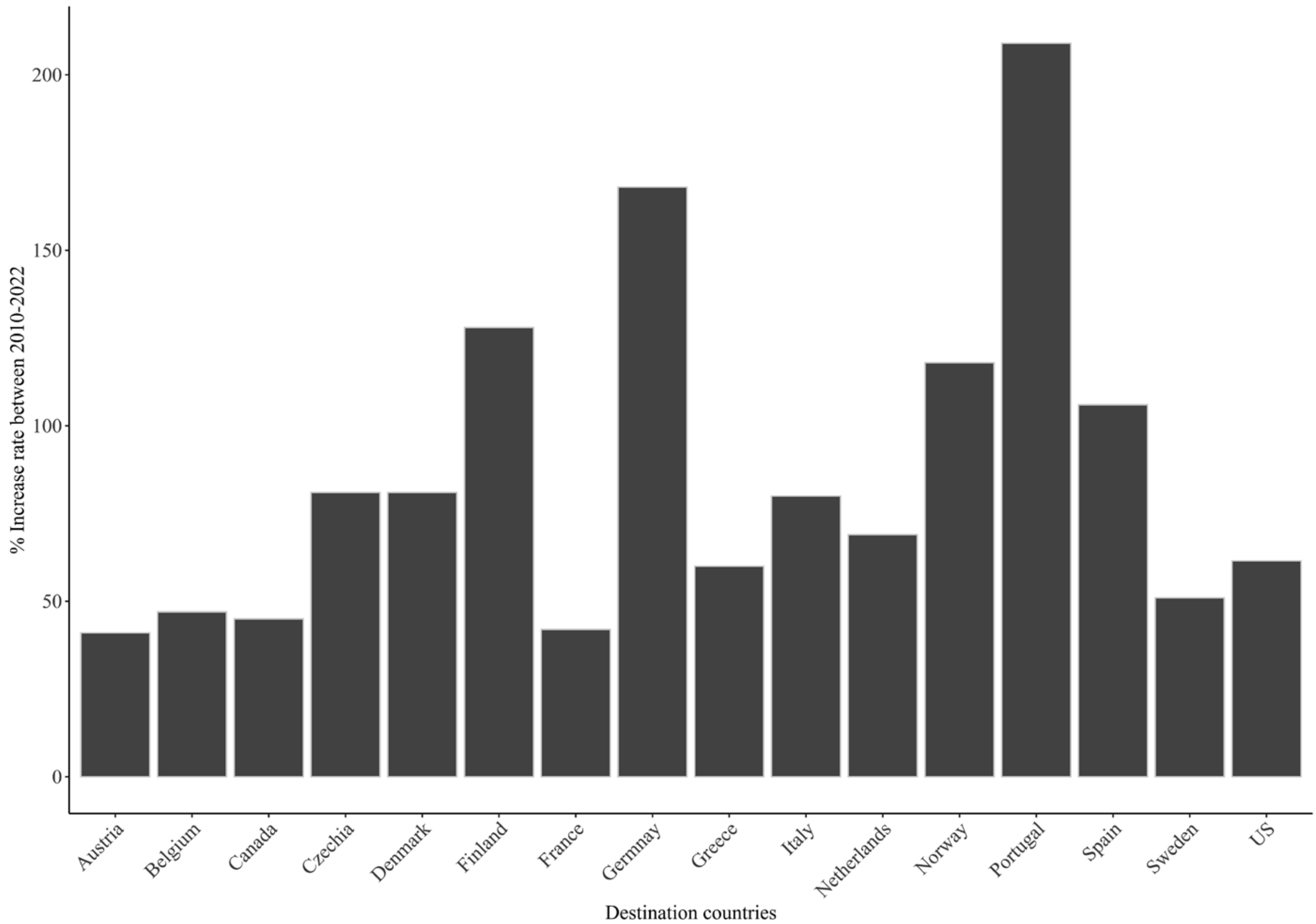

Figure 1. Percentage increase in older migrants (65+) in Western societies between 2010 and 2022. *Sources*: For European countries: Eurostat (2023), for the US: US Census Bureau (2023), for Canada: Statistics Canada (2013, 2023).

from within and outside the EU, to deal with projected labor shortages due to the aging of the population (Turnpenny & Hussein, 2022). Furthermore, a growing number of refugees have arrived over the years, and the United Nations expects sustained refugee inflows in the years to come (United Nations High Commissioner for Refugees, 2024). Many of these labor migrants, but especially refugees, will retire in their destination countries, making the retirement of migrants a pressing and enduring topic in receiving countries. Understanding the root causes of the migrant pension penalty is crucial for developing policies to reduce economic inequalities among older adults along lines of migrant background.

The literature on the causes of the migrant pension penalty is rich, multidisciplinary but also segmented, spanning various fields that offer diverse perspectives (Ciobanu et al., 2017; Hunter, 2018). Research on this topic is rooted in disciplines such as psychology (Topa et al., 2012), sociology (Ginn & Arber, 2001; Ye, 2024), economics (Love, 2019; Sevak & Schmidt, 2014), and demography (Feng et al., 2016). It points to a variety of explanations for the migrant pension penalty, each addressing different aspects of the "puzzle." For instance, retirement scholars focus on labor market experiences, and point to the relevance of the migrants' weaker economic position on the labor market (Bridgen et al., 2022; Kaida & Boyd, 2011). Social policy and welfare scholars highlight the role of retirement policies, including eligibility for state-provided income, the cross-border portability of pensions, and the underutilization of available services (Bridgen & Meyer, 2019; Holzmann, 2016b; Holzmann & Wels, 2020). Economists focus on the lower individual savings for retirement (Fontes, 2011; Gough & Adami, 2013), and sociologists highlight the role of culture in, for instance, familiarity with the pension system in the destination country, and the Islamic prohibition of interest (*riba*) for explaining the migrant pension penalty (Borchgrevink & Birkvad, 2022; Ginn & Arber, 2001). Lastly, migration scholars have examined the impact of cross-border remittances on pension outcomes in the destination country (Kuuire et al., 2016; Shooshtari et al., 2014). These insights have accumulated in important knowledge in understanding the migrant pension penalty from a variety of perspectives.

However, a key limitation of this multidisciplinary and segmented literature is the absence of a comprehensive model explaining the pension penalty. As a consequence, avenues for future research are potentially underexplored, leading to important knowledge gaps and unanswered research questions. In addition, results are often discussed in isolation from other possible (confounding) factors, meaning that some relationships might be less straightforward than initially thought. It could for instance be the case that migrants do not save for retirement because they do not understand the pension system, or because they wish to remit money to their origin country.

This article aims to address this critical knowledge gap by presenting a comprehensive model on the explanations of the migrant pension penalty, and the empirical evidence for these explanations. This model is based on a systematic literature review of 86 peer-reviewed articles on the migrant pension penalty, spanning multiple disciplines, including psychology, economics, and sociology, as well as specialized fields of study such as retirement and migration research. These articles were carefully studied through a life-course lens to build our comprehensive model. This life-course framework serves as the foundation for connecting different explanations, helping us to create a comprehensive interdisciplinary model for understanding the migrant pension penalty. By presenting such a comprehensive model, the understanding of the migrant pension penalty is advanced in multiple ways. First, based on our systematic literature review and comprehensive model, an overview of the literature on the migrant pension penalty is provided. Second, based on this comprehensive model, a research agenda is formulated. Third, this comprehensive model identifies potential policy recommendations that could improve the economic position of retired migrants.

This article is organized in the following way. We firstly briefly explain our s ystematic literature search. Next, w e introduce the most important principles of the life-course framework and how this framework has been used in the migration and retirement literatures. Afterwards, we outline our comprehensive model based on four different life-course constraints and opportunities that explain the migrant pension penalty. While doing so, we review the current knowledge and identify gaps in our understanding. Finally, we apply our comprehensive model to present a research agenda and policy implications and discuss the limitations of our comprehensive model in the discussion.

Methods: literature search, selection, and review

The literature on the migrant pension penalty was searched and reviewed in three steps (for details, see Appendix). First, literature was systematically searched using predefined search terms and databases. We only included articles published since the year 2000, written in English and focusing on a Western destination country. The literature found was snowballed forwards and backwards to search for additional articles. Second, we reviewed the literature, focusing not only on the explanations for the migrant pension penalty but also on the evidence for these explanations. Third, we conducted an additional literature search based on some "underexplored" explanations identified in step two. In total, 86 articles were reviewed. These 86 articles were integrated into a comprehensive model by studying these articles through a life-course lens.

A life-course framework for understanding the migrant pension penalty

We use the life-course framework as the foundation for our comprehensive model. This framework considers the entire life-trajectory and multiple domains of life to understand later-life outcomes (Elder et al., 2002; Szinovacz, 2003). The life-course framework has an interdisciplinary approach, as it integrates insights from various disciplines to understand human behavior (Mayer, 2009). Hence, it provides a fruitful basis for building our comprehensive model to understand the migrant pension penalty.

The core idea of the life-course framework is that social outcomes later in life can be explained by the *life-trajectory*—that is, the combination of relevant experiences between birth and death. How the life-trajectory shapes later-life outcomes is determined by four particular life-course principles: (a) transitions; (b) structure, (c) agency, and (d) linked lives. *Transitions* refer to significant changes or events that alter an individual's roles, statuses, or life circumstances (Elder et al., 2002), for instance: migrating, becoming a mother or retiring. *Structure* refers to external social circumstances that impact a later-life outcome such as social policies and social norms (Damman & Henkens, 2017). *Agency* means that "individuals construct their own life trajectory through the choices and actions they take […]" (Elder et al., 2002, p. 11). In addition, human lives are lived interdependently within a social network, which is known as the principle of *linked lives*. Families, friends, neighbors, and other interpersonal contacts shape the life-course. These four principles do not occur in a vacuum but are intertwined: the structures and linked lives constrain and enable the agency that individuals could employ, and the impact of transitions is affected by structure and linked lives.

In addition, the life-course framework emphasizes that the individual life-trajectory is embedded and shaped by *time and place* (Elder et al., 2002). These contexts can be seen as the driving engine behind the other four principles: when and where someone was born affects, for instance, the policies an individual faces (structure), and when and where a transition occurs impacts later-life outcomes, but also the importance of linked lives is determined by time and place. Below, we will explain how this life-course framework has been used to understand human behavior. We focus on the two most relevant fields to our topic: migration and retirement.

The life-course framework is frequently used in the migration literature (Kley, 2011; Kulu et al., 2019; Wingens et al., 2011). Migration to a new country is a major transition that impacts the life-course. However, the impact of this transition depends on the context. In the life-course framework this context is divided into time and place. The timing is important: migrating to a new country at a younger age makes it easier to learn the language and the culture (Kosyakova et al., 2022), and to integrate into the labor market (Myers et al., 2009). In addition, the "place" matters: those coming from Western countries[3] may perform better on the labor market (Feliciano, 2020), share cultural similarities with the destination country and have more opportunities to get legal documentation of residence. Furthermore, some migrants are, given the origin country and time, forced to leave their country and arrive as refugees. The traumas and unprepared departure make the migration a whole different experience compared to their voluntary migrant counterparts (De Vroome & Van Tubergen, 2010).

The life-course framework is also widely used in the retirement literature (Henretta, 2018; Mortimer & Moen, 2016; Szinovacz, 2003). Retirement is influenced by multiple domains of life (e.g., health, work, and family context),

[3]Naturally, there is also important heterogeneity within the group of Western migrants, as well as within the group of non-Western migrants.

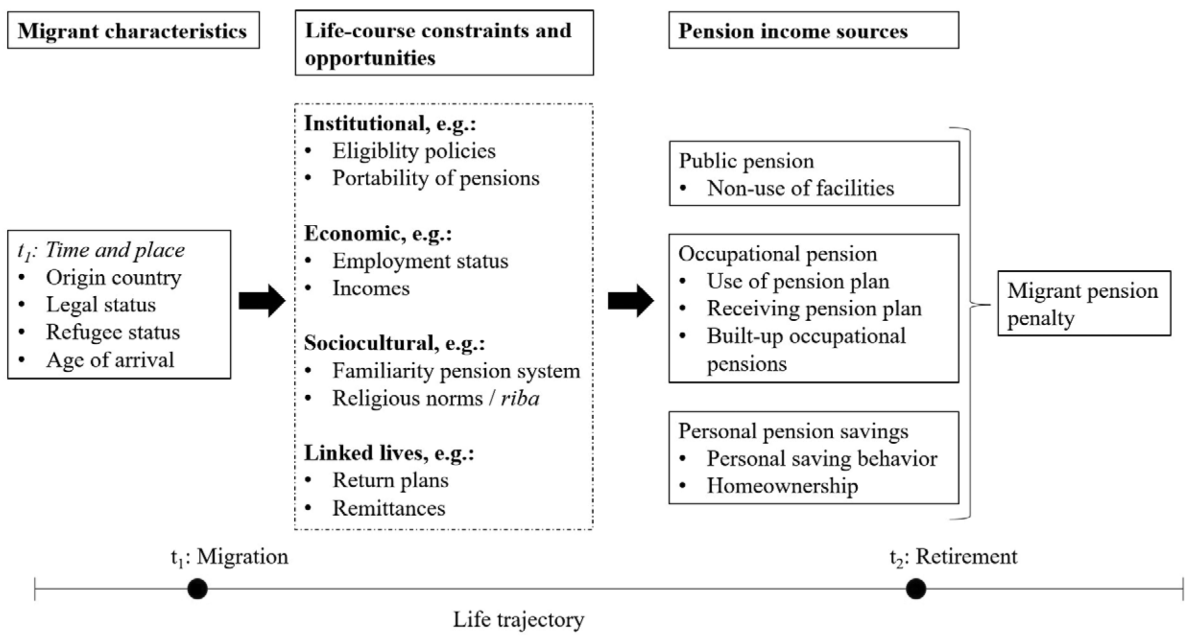

Figure 2. A comprehensive model for understanding the migrant pension penalty by the life-course.

and the pension penalty is the result of accumulated savings and labor participation over the entire life course. Whether someone uses public pensions, participates in occupational pension schemes, works as a self-employed, personally saves for depends on constrained agency over the life course. However, not every person has the same opportunities to employ these agencies (Damman & Henkens, 2017). Institutional pension policies and the economic positions affect opportunities to save for retirement. Social norms, but also discrimination may constrain the participation on the labor market and career development, limiting the economic resources available to build up pensions. Moreover, family obligations such as the caring for younger children or investments in their future could constrain the opportunities to save for retirement.

Building on these core elements of the life-course framework, we carefully studied the literature on the migrant pension penalty to develop our comprehensive model.

What drives the migrant pension penalty? A comprehensive model

Before elaborating on our comprehensive model, it is important to reflect on the migrant pension penalty (the discrepancy between migrants and nonmigrants in their economic position at retirement). These discrepancies manifest as differences in poverty rates or pension income. Importantly, this overall penalty can be partitioned into three different pension income sources.[4] First, migrants and nonmigrants can differ in the income they gain from state-provided publicly managed social securities (hereafter referred to as *public pensions*). Second, there could be disparities in income from the occupational pension system (*occupational pensions*). Finally, personal retirement savings, but also homeownership, could be unequally distributed between migrants and nonmigrants (*personal retirement savings*). Together, the differences in these three income sources make up the migrant pension penalty.

Our comprehensive model for understanding the migrant pension penalty is visualized in Figure 2. At the bottom of this figure, the life trajectory is visualized and two transitions are shown: migration (t_1) and retirement (t_2). The first transition—migration to a new country—has an important impact on the migrant pension penalty. After carefully reviewing the literature, we argue that there are four types of life-course constraints and opportunities that explain how the first transition causes a migrant pension penalty. We highlight the role of (1) *Institutional constrains and opportunities*, such as pension policies, (2) *Economic constraints and opportunities* such as employment status and incomes. In addition, we emphasize the role of the (3) *Sociocultural constraints and opportunities* such as Islamic norms against paying interest (*riba*). Lastly, (4) *Linked lives* could either provide opportunities or constraints for migrants when preparing for retirement. These four constraints and opportunities relate to different aspects of the life-course framework: the role of structure is emphasized, but also constrained agency such as saving behavior and the nonuse of facilities. Importantly, our comprehensive model stresses the principle of time and place: when someone migrated (age of arrival) and where a migrant originated from determines their migrant characteristics and life-trajectory.

Institutional constraints and opportunities

In the framework of the life-course approach, we identify pension institutions as the first explanation for the migrant pension penalty. These institutions operate on a "macro-level" (structure) and have a low degree of human agency,

[4]In the retirement literature, these sources are often known as the three "pillars" or a "three-legged stool" (Worldbank, 1994).

meaning that migrants are strongly limited in shaping the impact of these institutions on their pension penalty. This constraint (or lack of opportunity) means that migrants face institutional barriers in pension policies that nonmigrants do not encounter (Dwyer & Papadimitriou, 2006). Table 1 summarizes the core elements and important institutional explanations.

Specifically, in many Western countries migrants are required to reside for a minimum number of years in the destination country to qualify for a full public pension. In some other countries, this is not dependent on the years of residencebut on years of employment (Lafleur & Vintila, 2020). As many migrants typically arrive in the destination country later during their life-trajectory or engage in back-and-forth migrations, a substantial part does not meet this minimum number of years of residence or participation on the labor market. Especially migrants arriving at an older age receive substantially lower public pension. Moreover, undocumented migrants are not eligible for any state-provided income and are thus particularly vulnerable.

Empirically, studies found that many migrants indeed face the negative consequences of these *eligibility policies*. This includes migrants in Canada (Curtis et al., 2017; Hum & Simpson, 2010; Kaida & Boyd, 2011; Marier & Skinner, 2008), Denmark (Jakobsen & Pedersen, 2017), Sweden (Ekberg & Lindh, 2013; Gustafsson et al., 2019; for a qualitative study: Harrysson et al., 2016), the United Kingdom (Vlachantoni et al., 2017), and the United States (Cohen & Iams, 2007; Gerst, 2009; O'Neil & Tienda, 2014; Sevak & Schmidt, 2014; Sharpe, 2008; Treas & Batalova, 2009).

To compensate for the lower public pension income, migrants have the opportunity to rely on the pensions accumulated in the country of origin, while retiring in the destination country, also known as the (cross-border) *portability of pensions* (see Avato et al., 2010 for an overview). Portability agreements between countries[5] are often seen as an important way to facilitate the portability of pensions. However, there are three important caveats that limit their potential for reducing the migrant pension penalty. First, only 23% of the migrants move between countries with pension portability agreements (Holzmann, 2016a). These migrants mainly migrate between Western countries (Sabates-Wheeler et al., 2011; Taha et al., 2015). For instance, the United States has portability agreements with 25 countries, of which Chile is the only non-Western country. Between Mexico and the United States, one of the biggest migration corridors in the world, there is no portability agreement (Holzmann, 2016b). Second, even when available, portability is often complicated and bureaucratic to accomplish, especially for more "complex" cases, such as the portability of unrecognized widows' pensions, or people migrating to a new country more than once (Holzmann, 2016a). Third, as migrants often originate from countries with lower incomes than in the country of destination, these additional pensions are likely insufficient to compensate for the lower public pension, given the higher cost of living in the country of destination (Bridgen & Meyer, 2019; Meyer et al., 2013; Sabates-Wheeler et al., 2011).

[5]The agreements could either be unilateral agreements (an agreement of the destination country to all origin countries), bilateral (between two countries) or multilateral agreements (between a group of countries such as the European Union regulations) (Taha et al., 2015). In this article, all types of agreements are summarized as "portability agreements."

Table 1. Summarizing propositions and related key literature on the institutional constraints and opportunities.

Summarizing propositions	Key literature
• Because of their noneligibility for a full public pension, migrants experience a pension penalty, particularly migrants who arrive at an older age.	Cohen & Iams, 2007; Curtis et al., 2017; Ekberg & Lindh, 2013; Gerst, 2009; Gustafsson et al., 2019; Harrysson et al., 2016; Jakobsen & Pedersen, 2017; Kaida & Boyd, 2011; O'Neil & Tienda, 2014; Sevak & Schmidt, 2014; Vlachantoni et al., 2017
• The cross-border portability of pensions does not help most migrants. And when it does it mainly benefits migrants from Western countries.	Avato et al., 2010; Bridgen & Meyer, 2019; Holzmann, 2016a; Taha et al., 2015; Verschueren, 2020

Knowledge gaps

The literature has identified institutional pension policies as an important explanation for the migrant pension penalty. However, a limitation of current work is that it remains unclear how much of the migrant pension penalty is explained by these restrictive pension policies. A more comprehensive picture could be created when the relative contributions of these policy constraints and opportunities are compared to other explanations. Another limitation of previous work is that few cross-national comparative studies have been conducted (but see Bridgen et al., 2022; Heisig et al., 2018). Most of the studies use a single-country design, focusing in particular on Canada, the United Kingdom, the United States, and Scandinavian countries. However, countries exhibit variations in the migrants they receive, their migration policies, eligibility policies, portability agreements, and also other retirement policies such as the age of retirement. Hence, more cross-country research is encouraged.

Economic constraints and opportunities

In addition to institutional constraints and opportunities, scholars have studied the migrants' economic constraints and opportunities before retirement, as the pension penalty is a life-course outcome shaped by economic limitations throughout their life trajectory. Table 2 provides an overview of how these economic constraints and opportunities could explain the migrant pension penalty.

Retirement income from occupational pension and personal savings largely depends on the years of paid employment and the earnings accumulated during a working life. However, the migrants' different life trajectories compared to their native counterparts make it harder to accumulate occupational pensions and personal retirement savings. Migrants, especially those arriving at an older age, spend fewer *years in the labor market* in the destination country. Moreover, because of differences in human capital, language skills, but also labor market discrimination, migrants have fewer opportunities (are more constrained) to participate in the labor market, leaving them more often *unemployed* and with *lower incomes* than their native counterparts (Gorodzeisky & Semyonov, 2017; Van Tubergen, 2024). Furthermore, migrants are more likely to hold lower-status jobs that in some countries not always automatically offer *occupational pension plans* (Feng et al., 2016; Vlachantoni et al., 2015). In addition, even when

Table 2. Summarizing propositions and related key literature on the economic constraints and opportunities.

Summarizing propositions	Key literature
• Given their later participation in the labor market, lower employment rates and incomes, migrants receive a lower occupational pension.	Bolzman, 2012; Curtis & Lightman, 2017; Ginn & Arber, 2001; Gustafsson et al., 2022; Nakhaie et al., 2020; Sevak & Schmidt, 2014; Ye, 2024
• Because migrants are less often offered an occupational pension plan, their occupational pensions tend to be lower.	Angel et al., 2014; Feng et al., 2016; Vlachantoni et al., 2015
• Migrants are, given their lower incomes and employment rates, more constrained to save for retirement or to buy a house.	Ayón et al., 2023; Burr et al., 2011; Fontes, 2011; Gough & Adami, 2013; Gough & Hick, 2009; Lewin-Epstein & Semyonov, 2013; Love, 2019
• Migrant women, undocumented, non-Western migrants and refugees receive a lower occupational pension and have lower retirement savings income than their migrant counterparts.	Ayón et al., 2023; Ginn & Arber, 2001; Marier & Skinner, 2008; Neels et al., 2018

offered an occupational pension plan, not all migrants may accept these pension plans (Angel et al., 2014; Feng et al., 2016; Vlachantoni et al., 2015). Prior research indicates a substantial gap between migrants and nonmigrants in accumulated occupational pensions in countries such as Canada (Curtis & Lightman, 2017; Grant & Townsend, 2010; Marier & Skinner, 2008; Nakhaie et al., 2020), Belgium (Neels et al., 2018), Switzerland (Bolzman, 2012), Israel (Lewin & Stier, 2003), the United Kingdom (Feng et al., 2016; Ginn & Arber, 2001; Vlachantoni et al., 2015), the United States (Sevak & Schmidt, 2014; Sharpe, 2008; Ye, 2024), and Sweden and Denmark (Gustafsson et al., 2022).

The life-course framework highlights the role of agency: migrants can actively shape the course of their life-trajectory by the choices they make. Nevertheless these possibilities to employ agency are often highly constrained. One prime example of these constrained agencies is the personal retirement saving behavior and homeownership. Similar to the occupational pensions, it relies on employment and earnings prior to retirement: lower income translates into fewer opportunities for saving for retirement and thus building wealth (Hepburn, 2020). Earlier research supports the observation of lower pension saving rates among migrants compared to their native counterparts in the United Kingdom (Gough & Hick, 2009; for a qualitative study: Gough & Adami, 2013) and the United States (Fontes, 2011; for a qualitative study: Ayón et al., 2023). Studies report lower rates of wealth and personal retirement savings at an older age in Israel (Lewin-Epstein & Semyonov, 2013) and the United States (Love, 2019), as well as homeownership (Burr et al., 2011).

Clearly, some migrant groups are more constrained in the labor market while others have more opportunities. For instance, migrant women are less likely to participate on the labor market than migrant men (Ginn & Arber, 2001; Marier & Skinner, 2008). Racial minorities and Muslims experience more discrimination (Thijssen et al., 2022), and non-Western migrants have lower returns from human capital than other migrants (Feliciano, 2020). In addition, undocumented migrants are more often forced into unregistered cash-paid work without building occupational pensions (Ayón et al., 2023). Refugees are often excluded from the labor market during the first years upon arrival and experience additional problems for participating on the labor market such as health issues (De Vroome & Van Tubergen, 2010). These distinct groups of migrants follow different life trajectories, encountering unique challenges in preparing for retirement, implying important variations in retirement outcomes based on these migrant characteristics.

Knowledge gaps

The literature so far has accumulated important findings on the role of the economic constraints and opportunities over the migrants' life trajectories. However, we would like to point out multiple avenues for further exploration. First, future research could delve into *which* economic obstacles during their working life contribute most to the pension penalty for migrants. Is it primarily due to late arrival, disrupted careers, lower incomes, or because some migrants are not offered a pension plan? Understanding how these economic obstacles impact pension accumulation potentially aids in developing evidence-based policy recommendations. Second, the retirement literature shows that *self-employment* is negatively related to the accumulated pensions, as the self-employed often have no occupational pension (Hershey et al., 2017; Joulfaian, 2018). Simultaneously, migration scholars have extensively studied the self-employment among migrants (Ramos-Escobar et al., 2022; Van Tubergen, 2005). It is, for instance, found that migrants sometimes choose to escape discrimination in the hiring process by being self-employed. However, to what extent can self-employment among migrants explain their pension penalty? And relatedly, how do self-employed migrants use their (constrained) agency: do they anticipate on their lower occupational pension incomes by personally saving more?

Sociocultural constraints and opportunities

Most studies on the migrant pension penalty have predominantly focused on the aforementioned institutional and economic constraints and opportunities. However, other aspects, such as the differences in habits, traditions, and beliefs of migrants—here referred to as sociocultural constraints and opportunities—have been understudied. These sociocultural constraints and opportunities manifest in different levels of language skills, distrust of and familiarity with the pension and financial systems, or a preference for community or familial financial care systems. In the framework of a life-course approach, these elements limit the human agency to prepare for retirement: it is harder to save for retirement and to utilize (state-provided) pension facilities (Njenga, 2016). Table 3 summarizes the most important explanations regarding these sociocultural constraints and opportunities.

In order to *use the pension facilities*, a reasonable understanding of the pension system in the destination country is important. However, migrants often face greater challenges in understanding these systems compared to nonmigrants. This can be attributed to their lack of familiarity with the pension systems in the destination country. Some migrants may come from cultures where it is common for families or communities to financially support older people, leading them to prefer

Table 3. Summarizing propositions and related key literature on the sociocultural constraints and opportunities.

Summarizing propositions	Key literature
• Because of lower language skills, trust and familiarity with the pension system, migrants are less likely to use pension facilities.	Barcellos et al., 2016; Choi et al., 2015; Dietz, 2001; Khan et al., 2023; Nam et al., 2015, 2016, 2019, 2022
• Because of lower language skills, trust and familiarity with the banking system, some migrants are unbanked.	Barcellos et al., 2016; Nam et al., 2019, 2022; Njenga, 2016
• Because of *riba*-prohibitions, Muslim migrants are more constrained to save for retirement and to own a house.	Borchgrevink & Birkvad, 2022; Brekke & Larsen, 2020; Dilmaghani, 2019

family care over available pension facilities (Bilecen, 2019; Blanco et al., 2017; Khan et al., 2023; Khoo, 2012; Liversage, 2023). In addition, countries vary in the level of individual responsibility required for retirement preparations (Gelissen, 2001). Those who do not realize the new responsibilities in their destination country may underestimate the need for their own retirement preparations. In particular, migrants from non-Western countries may be less familiar with a welfare state and refugees may, given their abrupt departure, arrive less prepared in the destination country and could thus be less informed about their pensions.

Additionally, migrants may experience language barriers, particularly those arriving at an older age (Kosyakova et al., 2022). Language barriers may create fewer opportunities to understand the pension system (Dietz, 2001). American studies have shown that older migrants experience severe problems with understanding the pension system (Barcellos et al., 2016; Huang et al., 2015; Lee et al., 2014; Nam et al., 2016; Van Hook, 2000). For instance, Dietz (2001) found that 47% of the Mexican migrants in the United States were not aware of the Social Security Income, and therefore did not participate in this crucial pension facility. Moreover, it is possible that negative experiences over the life-trajectory, such as discrimination from pension institutions could lower the trust in these institutions (Khan et al., 2023). It is, for instance, found that older migrants often distrust banks, and therefore not use their facilities (Nam et al., 2019, 2022).[6]

In addition to underutilizing financial and pension services, migrants are *less likely to save for retirement*. While this is largely due to lower earnings over the life-trajectory, sociocultural factors also play a significant role. As mentioned earlier, language barriers, unfamiliarity, and distrust in financial institutions often leave migrants unbanked, making it much more difficult to save for retirement (Gough & Hick, 2009). In addition, the retirement saving could be affected by religious norms. About 53% of the recent migrants in Europe have an Islamic background (PEW Research, 2017). The Islamic prohibition of giving and receiving interest (*riba*), can complicate the use of Western banks, saving for retirement, and buying a house for Muslim migrants. Brekke and Larsen (2020) found that 74% of higher-educated Muslims in Scandinavian countries agreed that earning and paying interest is against Islamic rules. However, evidence regarding the impact of these norms is mixed: qualitative research from Norway suggests that some Muslim immigrants feel constrained when buying a house (Borchgrevink & Birkvad, 2022), while quantitative research from Canada found that Muslim homeownership is likely not affected by *riba*-prohibitions (Dilmaghani, 2019). Evidence (among Dutch teenagers) showed that Muslims are indeed less likely to save than their non-Muslim immigrant counterparts (Lössbroek & Van Tubergen, 2024).

[6]Barcellos et al. (2016) found that 66% of the Mexican migrants in the United States are unbanked. Other studies report different percentages, and the lower rates of bank accounts among migrants in the United States are likely driven by the undocumented migrants (see Ayón et al., 2023 for an explanation). Nevertheless, the number of unbanked migrants in the United States is substantial and likely an important explanation for the migrant pension penalty.

Knowledge gaps

Significant progress has been made in understanding the sociocultural constraints faced by migrants in preparing for retirement. However, key gaps in our understanding remain. For example, what does the migrants' pension knowledge looks like outside the United States? While most research on the migrant pension penalty has focused on the United States, countries differ in the level of individual responsibility required for retirement planning (Gelissen, 2001). As a result, the migrants familiarity with the pension system might be different in other destination countries. Furthermore, regarding *riba* norms, it would be valuable to study how these religious norms impact other aspects of the pension penalty beyond homeownership. For instance, some migrants may opt out of occupational retirement plans when offered because these plans often involve interest.

Linked lives

In the life-course framework, lives are lived interdependently with shared relationships such as families, friends, and neighborhoods. These "linked lives" could impact the migrant pension penalty. Below we discuss two types of linked lives: the role of the family and neighborhoods.

Family ties could impede the possibility of preparing for retirement (Hunter, 2018). Especially immigrant women originating from countries with more traditional household divisions are more *constrained to participate on the labor market* as they might be more expected to participate in household labor. Consequently, numerous studies highlight the additional constraints migrant women experience (compared to migrant men) when preparing for their retirement (Ginn & Arber, 2001; Marier & Skinner, 2008; Neels et al., 2018). Moreover, for many migrants, parts of their family reside in their origin country. These transnational connections could impact the migrants' future outlook (De Haas & Fokkema, 2011). Both qualitative (Bocker & Gehring, 2015) and quantitative research (Bolzman et al., 2006) show that transnational relations may incentivize the *return migration* to the country of origin at retirement to spend time with their family. Hence, the migrants' investments are possibly oriented more toward the country of origin than the country of destination, by for example *remitting part of their income* to the country of origin (Lucas & Stark, 1985; Tahmaseb Mcconatha & Stoller, 2006). Research shows that about 45% of Hispanic migrants in the US remitted part of their income to their country of origin (Njenga, 2016), whereas this is even 74%

for Somali migrants in Norway (Carling et al., 2012). Based on the life-course framework, differences between migrant groups in remittances are expected. The timing of migration (age of arrival) and the origin country (place) are important to understand the remittance behavior, as those arriving at older age and from non-Western countries are more likely to remit (Carling et al., 2012). The more they remit to their home country, the less they have available for retirement savings in their destination country, if they ultimately decide to retire in their country of destination. Hence, Canadian studies have found that migrants are less likely to own a house (important retirement saving), the more they remitted (Kuuire et al., 2016; Shooshtari et al., 2014).

Lastly, the family plays a role in explaining the migrant pension penalty via *intergenerational wealth transfers* such as inheritances. Because migrants are often from families with fewer economic resources, or because migrants have lost contact with the family, the received inheritances or other wealth transfers are likely to be lower (Lewin-Epstein & Semyonov, 2013).

Next to the family, *the neighborhood* where the migrant resides is an important linked life that could potentially provide fewer opportunities to prepare for retirement. Cities are often segregated and some migrants live in areas with a high percentage of other migrants, known as enclaves. These enclaves could possibly constrain the preparations for retirement in a variety of ways. First, living with other immigrants could limit the information about jobs but also pensions. Second, living in an enclave could mean that social institutions are more distant and less accessible (Feng et al., 2016; Nam et al., 2019). Third, many studies have documented the impact of living in an enclave on being self-employed, which could negatively impact the occupational pension income (Feng et al., 2016). As becomes clear, living in an enclave is related to many of the economic and sociocultural constraints and opportunities mentioned earlier, and could thus possibly enhance the migrant pension penalty.

However, a more nuanced picture of the role of linked lives is created when we focus on the *opportunities* the family and neighborhood provide for reducing the migrant pension penalty (Ferrer et al., 2020). Earlier research shows that retired migrants often receive direct financial help from family members (Kaida & Boyd, 2011). Furthermore, family and friends could assist in other more indirect ways such as helping with translating or applying for social security income (Ciobanu et al., 2017). Importantly, multiple scholars have studied co-residence behavior of retired migrants and found that many older migrants decide to co-reside with their kin (Kaida & Boyd, 2011; Lee & Angel, 2002; Phua et al., 2007). Relatedly, living in an enclave could provide information about nontraditional financial systems, such as Islamic banks. In addition, it is possible that banks in an enclave speak the migrants' language, which could increase the trust in the financial system. Table 4 provides a summary of how these linked lives could explain the migrant pension penalty.

Table 4. Summarizing propositions and related key literature on the linked lives.

Summarizing propositions	Key literature
• The remittances sent to the origin country negatively impact the migrants' retirement savings.	Kuuire et al., 2016; Shooshtari et al., 2014
• Living in a segregated neighborhood could either limit access to or provide information about retirement.	Feng et al., 2016; Nam et al., 2019
• Family ties could mitigate the migrant pension penalty	Ciobanu et al., 2017; Kaida & Boyd, 2011; Phua et al., 2007

Knowledge gaps

In general, we argue that these linked lives have only marginally been studied as an explanation for the pension penalty. In the migration literature, remittances, return plans, and living in an ethnic enclave have been extensively studied. However, the later-life outcome, such as the pension penalty, is still relatively open for future research. The linked lives could either amplify or mitigate the migrant pension penalty. We believe these opposing views are an important avenue for future research: When could the family and neighborhood increase the pension penalty, and when can it decrease the pension penalty? Moreover, it would be interesting to study what direct effects are explained by the neighborhood when the sociocultural and economic constraints and opportunities are controlled for. Additionally, future research could study how these remittances and return plans evolve during the life-trajectory. How do retired migrants spend their—already lower—retirement income: Do retired migrants still remit? And to what extent do migrants invest in expensive travels to their country of origin, after they have left the labor market? What life-transitions causes migrants to remit: do refugees, for instance, remit to assist their family during war times?

Discussion and research agenda

Many migrants are inadequately financially prepared for their retirement and this population is on the rise in the decades ahead. Our comprehensive model, inspired by the life-course framework, explains the migrant pension penalty by focusing on the migrants' life-trajectory. After the transition to a new country migrants experience severe constraints when preparing for retirement. Agency of migrants, such as retirement saving, happens within these structural economic and sociocultural constraints and opportunities. In addition, the linked lives are crucial to understand the migrant pension penalty. This comprehensive model forms the basis for a new research agenda and policy recommendations, both presented below.

Research agenda: how to advance our understanding of the migrant pension penalty?

We advocate for three potential directions that could advance the understanding of the migrant pension penalty: (1) Applying a comprehensive perspective, (2) A stronger focus on the heterogeneity within the retired migrant population, (3) New data-collections specifically designed for understanding the migrants' retirement.

Apply a comprehensive perspective

The comprehensive model presented in this article pinpoints several knowledge gaps and untouched research questions. In particular, the sociocultural constraints and opportunities and linked lives warrant more research to unravel their role in understanding the migrant pension penalty. Understanding the role of linked lives and sociocultural constraints is an interesting insight in itself, but also provides a more nuanced and holistic view on the impact of institutions and economic constraints. Perhaps some explanations found in the literature may be less important than initially believed or certain relationships might be more complex and less straightforward than previously thought. This complexity arises because certain factors are linked to characteristics that are rarely analyzed together in a single model, thereby not showing their interplay and potential (confounding) relationships. For instance, when studying the retirement savings of migrants, the available economic resources are often emphasized, but key factors like remittances and religious norms are underexamined. Maybe migrants do not want to save for retirement because they prefer to send their savings to the origin country, or because it is against their religious norms? (Brekke & Larsen, 2020). Another example: the (lack of) cross-border portability of pensions is undoubtedly an important factor for the migrant pension penalty. But even when portability is available, it is crucial to consider migrants' knowledge of these regulations and return migration plans. If migrants are not familiar with the pension system, will they even use these portability facilities (Timonen & Doyle, 2009)? And perhaps migrants do not use the pension portability facilities because they plan to return to their origin country after retirement.

We see a more comprehensive perspective as a major step forward in understanding the migrant pension penalty. Table 5 presents example research questions that could be answered to advance our understanding of the migrant pension penalty. These questions relate to both the life-course constraints and opportunities, as well as a combinations between these constraints and opportunities, allowing for a more comprehensive perspective.

Table 5. Promising example research questions concerning the migrant pension penalty.

Institutional constraints and opportunities

- How can different pension policies explain country differences in the migrant pension penalty?
- How do undocumented migrants without any state-provided pension income fare in retirement?

Economic constraints and opportunities

- What are the most important drivers behind the lower built-up occupational pensions among migrants?
- To what extent does self-employment among migrants explain the lower built-up occupational pensions among retired migrants?
- How do refugees financially fare in retirement?

Sociocultural constraints and opportunities

- Does the Islamic prohibition of *riba* constrain migrants in participating in a pension plan? Or in personally saving for retirement?
- To what extent do migrants in Europe trust and understand the pension system? And what role does language and familiarity with the pension system play in this effect?
- How can the utilization of pension facilities be increased among migrants?

Linked lives

- How does the migrants' future outlook affect their retirement preparations?
- What are the long-term consequences of remittance sending for the migrants' pension?
- To what extent do older migrants remit part of their—already lower—pension income to their country of origin?

Comprehensive cross-disciplinary

- To what extent are migrants aware of their pension portability rights?
- To what extent does the migrants' future outlook affect an investment in understanding the pension system in the destination country?
- Are Muslim migrants more likely to be self-employed in order to avoid contributions to a pension plan?
- Are self-employed migrants more or less aware of their pension rights?
- Do migrants not participate in an occupational pension plan so they can remit more?

Emphasize the heterogeneity in the retired migrant population

Retired migrants are a heterogeneous group, with individuals following different life trajectories and facing distinct challenges based on migrant characteristics like arrival age and country of origin (time and place). Therefore, it is crucial to differentiate not only the economic positions of retirees *between* migrants and natives but also *within* the migrant population, as emphasized by various scholars (Ciobanu et al., 2017; Gubernskaya & Dobreva, 2023). For instance, migrants arriving at an older age, those from non-Western countries, migrants arriving without legal status or with a refugee status often experience the strongest constraints over their life-trajectory when preparing for retirement (Grenier et al., 2017; Gubernskaya & Dobreva, 2023).

However, this heterogeneity within the migrant population is not always adequately represented in the literature on the migrant pension penalty. Many studies have focused on the gap *between* retired migrants and their native counterparts (e.g., Heisig et al., 2018; Sevak & Schmidt, 2014; Ye, 2024). While valuable, such comparisons risk oversimplifying the older migrant population, thereby potentially over- or underestimating the pension penalty for certain groups.

Even studies examining differences *within* the migrant population often group individuals into broad categories (e.g., "Asian," "Western/non-Western"). Though this is an improvement over comparing migrants solely to natives, more nuanced categories would provide a deeper understanding of the challenges faced by specific migrant groups. For instance, when studying the effects of age of arrival, interesting nonlinear effects could be explored that would be missed when broad categories are used. For instance, a migrant arriving at age 15 may struggle more with the language than a migrant arriving at age 5, but still has the same eligibility for a public pension and the same period to accumulate occupational pensions. A migrant arriving at age 45 rather than 35, however, fares worse on many more aspects.

In addition, during our literature review we noticed that some specifically vulnerable migrant groups are often underrepresented from research on the migrant pension penalty. Undocumented migrants, who are relatively numerous in the United States[7], for instance, face unique challenges: they

[7]Rough estimates indicate that 11 million migrants or 22% of the foreign-born population in 2021 were undocumented in the United States (Passel & Krogstad, 2023).

are not eligible for any public pension, cannot open a bank account and are often forced into unregistered cash-paid labor (Ayón et al., 2023; Flores Morales, 2021). Furthermore, undocumented migrants may have a future outlook that is more insecure than other migrant groups and are thus more likely to invest in a future in the country of origin by sending remittances or by buying a house in the country of origin instead of their country of destination. Refugees also face unique challenges when preparing for retirement: they are often excluded from the labor market, and many cannot return unlike other migrants (Ciobanu & Bolzman, 2021). We believe that a stronger focus on the heterogeneity within the migrant population, and specific vulnerable groups in particular, is crucial for deepening our understanding of the migrant pension penalty and its underlying complexities.

Collect new data

To better understand the migrant pension penalty in a comprehensive way, while acknowledging its heterogeneities, new data collection is essential. Existing research uses various methods such as qualitative interviews (e.g., Cook, 2010; Harrysson et al., 2016), quantitative analyses of register data (e.g., Gustafsson et al., 2022), and surveys (e.g., Bridgen et al., 2022). Each offers unique insights but also has limitations that may hinder a comprehensive and heterogeneous understanding of the migrant pension penalty.

Register (or census) data provide extensive information on the entire population, including migrants' origins, age at arrival, and retirement status. These data help examine the role of institutional (pension policies) and economic constraints and opportunities. However, they often miss unregistered factors like language skills, trust in pension systems, remittance behavior, and return intentions. Hence, the use of register data might provide a limited comprehensive perspective on the migrant pension penalty. Survey data, though more equipped to capture these unregistered aspects, also face challenges in offering a comprehensive view. Due to scholarly segmentation, large-scale surveys tend to focus on either retirement or migration, not both. Retirement surveys often lack migration-specific details (such as remittances or return plans), while migration surveys rarely cover questions about retirement. In addition, current surveys might be limited in addressing the heterogeneity in the older migrant population. As most surveys are not specifically designed for older migrants, they are not oversampled, leading to smaller sample sizes, leaving little to no space for comparisons within the migrant populations. Additionally, many migrants do not want to participate, especially the most vulnerable migrants such as those arriving at older age, not speaking the language or undocumented migrants that want to remain invisible for authorities.

To improve our understanding of the migrant pension penalty, new data collection efforts could link register data with surveys, as demonstrated by Sevak and Schmidt (2014). This could offer a more comprehensive perspective. Additionally, newly designed surveys could address both retirement and migration issues, with oversampling of retired migrants to explore variations within migrant populations. While collecting such data poses challenges (Bilecen & Fokkema, 2022; Seibel & Haan, 2022; Sin, 2004), it holds promise for a more holistic understanding.

Policy implications

Based on our comprehensive model for understanding the migrant pension penalty, several policy recommendations can be made.

First, public policymakers could reconsider eligibility for public pensions, for example, by reducing the number of required years of residence or giving migrants more (fiscal) opportunities to acquire additional public pension rights. Additionally, eligibility rules could be adjusted specifically for the most vulnerable groups. For example, in Switzerland (Bolzman, 2012; Bolzman et al., 2004) and Sweden (Gustafsson et al., 2022), fewer years of residence are required for refugees compared to other migrants. Second, improving pension portability would enhance the economic security of migrants upon retirement. This could involve establishing more international agreements, reducing bureaucratic hurdles, and exploring options for transferring occupational pension benefits across borders. Third, policymakers could focus on improving migrants' position in the labor market. Initiatives such as anonymous job applications, faster labor market integration, and better access to language learning programs could substantially increase their employment opportunities and long-term economic prospects (Van Tubergen, 2024).

Fourth, providing culturally diverse banking options, such as offering services in multiple languages and accommodating Islamic banking practices, would help migrants better manage their finances and secure their future pensions (Brekke & Larsen, 2020). Fifth, migrants could be made aware of their pension rights, preferably long before retirement. This information could, for instance, be spread during integration courses, via the employer, or online (Blanco & Rodriguez, 2020). Sixth, possibilities to continue working after the retirement age could be explored, in particular in countries with mandatory retirement arrangements (Grant & Townsend, 2013). By allowing migrants to work longer, they can accumulate more occupational pensions and spend fewer years relying on these pensions. In fact, evidence from the United Kingdom (Barnes & Taylor, 2006) and the United States (Lopez & Slavov, 2020) suggests that migrants tend to delay retirement more often than their native counterparts, which highlights the potential benefits of such policies. However, despite this potential, these strategies can be hindered by several challenges. Labor market discrimination, poorer health conditions among older migrants (Hansen & Vignes, 2022), and varying retirement regulations across countries often complicate the feasibility of extending work for migrant populations.

We acknowledge that these policy recommendations present significant challenges. The financial burden on pension institutions is increasing due to the rapid aging of populations in many countries, and implementing some of these policies may exacerbate this strain. Moreover, the topic of migration is a politically sensitive and polarized issue, making it difficult to gain consensus and enact these reforms. Nevertheless, addressing the migrant pension penalty is crucial for ensuring the economic security of a growing and diverse elderly population.

Limitations

This article has limitations related to both its scope and the comprehensive model presented. The model is based on Western literature published in English-speaking journals, excluding insights from non-Western countries, state reports, and non-English sources, which may limit its global applicability.

Additionally, by building on the life-course framework, our model focuses heavily on the individual's past experiences and life trajectories, while giving less attention to the active role and agency retired migrants play in improving their current economic situation. Migrants could, for instance, try to work more hours per week while still active in the labor market, or delay retirement. By focusing mainly on the explanations for the migrant pension penalty, their vulnerability may be overemphasized (see Ciobanu et al., 2017 and King et al., 2017 for discussions). Although the pension penalty between migrants and natives is universal and concerning, there are obviously counterexamples. Many (often higher educated) migrants prove to do well on the labor market, invested in their retirement and are in a more comparable position to the retired natives. Hence, we acknowledge that the migrant pension penalty is more nuanced than presented in this article.

Another limitation is the exclusion of return migration. The model, somewhat simplistically, assumes migrants arrive, stay, and retire in the destination country. However, in reality, migration is more dynamic, with more circular migrations and (permanent) return migrations to their origin countries. Some migrants are more likely than others to return to their country of origin. Factors such as legal status, age of arrival, and origin country influence this decision. Importantly, return migration is partly influenced by the explanations for the migrant pension penalty. For example, pension portability agreements incentivize return migration by facilitating the use of pension income from the country of destination in the country of origin, where costs of living are often lower (De Coulon & Wolff, 2010). Furthermore, the migrants' economic position before retiring could affect their chances of returning to their home country. Fewer economic resources might push them to return and avoid financial struggles during retirement, while having more resources could make it easier to afford the costs of returning home. Lastly, sociocultural differences and transnational relations are related to return migration at retirement as well (De Haas & Fokkema, 2011). This selective return migration implies that the retired migrants' economic situation could be even worse than it seems, if there are many successful return migrations, or better than it seems, if the most "successful" migrants in the end decide to retire in the destination country.

Leaving these limitations aside, this article provided a comprehensive model for understanding the migrant pension penalty. This will likely become increasingly important as the older population of migrants will increase in the years ahead, partly due to labor migration in the sixties and seventies but also due to refugee inflows and globalization (Henkens et al., 2018). The disparities do not only translate into economic precarity but also into social and psychological outcomes such as loneliness and mental well-being. Understanding the root causes of these migration-induced inequalities is of paramount importance for Western societies dealing with an aging population.

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Data availability

The data underlying this article will be shared on reasonable request to the corresponding author.

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Appendix: Literature Search, Selection and Review

In order to build our comprehensive model three steps were taken (see Figure A1).

As a *first step*, a systematic literature search was conducted using predefined search terms[8] and inclusion criteria using both Google Scholar and Web of Science. We only included articles based on the following criteria: Articles had to be (a) written in English; (b) published after the year 2000; (c) published in a double-blind peer-reviewed academic journal or academic book; (d) the article should focus on a Western destination country. Importantly, (e) we excluded articles that did not focus on the "migrant pension penalty." This pension penalty may include the poverty rates of retired migrants, their economic position at an older age, migrants' incomes at retirement, or other closely related topics such as retirement saving behavior, being a member of an occupational pension scheme, or receiving foreign income at older age. However, it does exclude articles where the "dependent variable" deviates too much from the pension penalty. For instance, topics such as the migrants' retirement age, return intentions at retirement, or labor market participation before retirement were not part of the review. In addition, we solely focus on migrants that migrated *before* their retirement and not the other way around. Therefore, our review does not cover the topic of retirement migration, i.e. the migration to a new country at retirement for amenity reasons. Interesting as this topic is, its pension penalty and its theoretical underpinnings deviate too much from our topic (for a review on this topic: see Savaş et al., 2023). Finally, our review is limited to those migrating to a foreign country. Hence, it excludes the second generation but also pension penalties for racial minorities without a migration background. Based on these criteria, 61 articles were reviewed and snowballed backward and forward resulting in 20 additional articles. Figure A1 visualizes the process of the literature search.

As a *second step*, we carefully studied these 81 articles. For each article, we extracted the research question(s), dependent and independent variables and explanations for the pension penalty. The outcome was a plurality of research outcomes and explanations.

Lastly, *a third step* was needed to build our comprehensive model. During our study of the literature, we noticed

[8]We used collocated search terms on the title of the article. We used 17 unique search terms related to migration (*migrant*, *migrants*, *immigrant*, *immigrants*, *ethnic*, *ethnicity*, *ethnicities*, *refugee*, *refugees*, *foreign-born*, *origin*, *undocumented*, *migration*, *foreigner*, *Mexican*, *Asian*, *Muslim*) and 15 related to retirement (*pension*, *pensions*, *retirement*, *old-age*, *older-age*, *retire*, *retired*, *retirees*, *ageing*, *aging*, *elders*, *elderly*, *social security*, *later life*). If a combination yielded more than 250 results, search terms related to the economic position were added: (*poverty*, *income*, *economic position*, *resources*, *pillar*, *financial*, *finance*, *poor*, *inequality*).

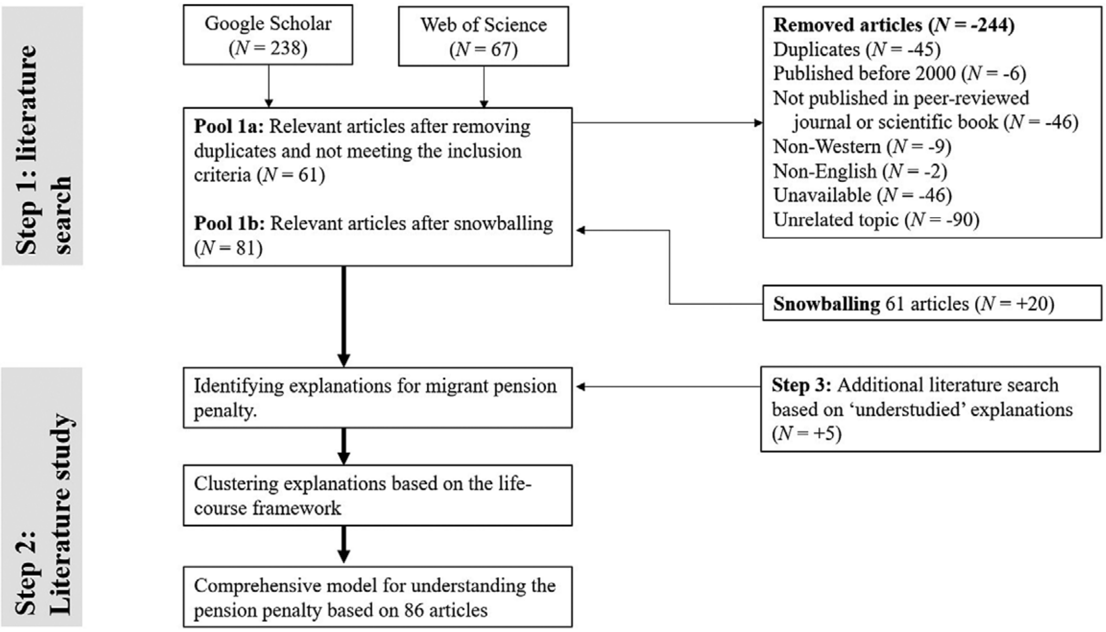

Figure A1. PRISMA flowchart for the systematic literature search.

some explanations were often mentioned, while not often studied or tested. These concerned the effects of remittances and (Islamic) religious norms for retirement saving. Hence, additional literature search was conducted among these "understudied" explanations. In total, five articles were added to our review, making our final review based on 86 articles.

Next, we identified similarities and differences in the explanations based on the core elements of the life-course framework. Some explanations focus on *structure/institutions* (e.g., pension policies), while other explanations highlight the role of *linked lives* (e.g., the family) for the decision to save for retirement or use pension facilities (*agency*). Hence, based on the similarities between explanations, four clusters were identified and labeled as "life-course constraints and opportunities." These life-course constraints and opportunities are the core of our conceptual model which is presented in Figure 2.

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Articles indicated by asterisk (*) are part of the review. All other articles functioned as background articles.

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