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Gender Differences in the Migration Process: A Narrative Literature Review

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Migration scholars agree that migration is a highly gendered process. While the literature on this topic is increasing, the knowledge produced remains fragmentary and has not been synthesized systematically yet. This literature review aims at summarizing the current findings of quantitative migration research comparing migration patterns between genders and highlighting gaps and patterns in the literature over time. Following a reproducible and systematic approach, 6032 articles have been scanned and 170 were considered for in-depth content analysis. The review of the literature revealed that women have a lower propensity than men to realize their migration aspirations conditional on migration intentions. Moreover, many articles analyzing migration flows by gender do not support the common narrative of a feminization of migration. Finally, evidence from the migration literature supports the assumption that migrant women experience a double burden of discrimination in the destination country labor market based on their gender and their migration status. It becomes apparent that gender-based comparisons between migration outcomes have received the most attention in the literature followed by the comparison of determinants. The stage of the journey received only little attention. This literature review also focuses on the data sources used to produce our knowledge on gender differences in the migration process. Thereby, it stands out that the majority of papers rely on survey data for the analysis. Digital trace data are a promising source for gender-disaggregated data and can potentially complement the scarce aggregate migration data landscape.

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Introduction

Migratory movements are highly gendered processes. Migrant women and men exhibit different migration aspirations and determinants, report different experiences throughout their journeys and at the destination, rely on different network structures, and their integration outcomes vary (Van Praag 2022; Buján 2015; Meyer et al. 2019; Ager, Ager, and Long 1995; Curran and Rivero-Fuentes 2003; Hoang 2011; Treuren, Manoharan, and Vishnu 2021; Salikutluk and Menke 2021; Pérez and Freier 2022). While some of the mechanisms for these differences are known, as they have been discovered mainly through qualitative research, quantifying these heterogeneities in migration patterns remains mostly underexplored.

In the late 20th century and early 2000s, there has been a growing effort to better understand women's migration and its unique characteristics. The development of research on women's migration underwent several stages. Initially, there was a lack of research on female migration until the mid-1970s. This was followed by a period when family migration gained attention, but women's presence received limited focus. In the 1980s, significant works emerged highlighting women's agency in migration while recognizing gender differences in the process and settlement. Finally, in the late 1990s onward, the term "feminization of migration" became commonly used to describe the increasing participation of women in migration flows (Casas and Garson 2005). After initial studies in the field had focused on women's migration, by the 1990s a paradigm shift took place acknowledging migration as a gendered process (Christou and Kofman 2022).

In the realm of academic journals, several notable special issues have emerged over the years, highlighting specific topics within the field of migration studies on gender differences. It began in 1984 with the *International Migration Review* on female labor migration (Morokvasic 1984). Then, in 2006, the same journal released another special issue, this time dedicated to gender in migration studies (Donato et al. 2006). Building upon this trend, the *Asian and Pacific Migration Journal* joined the fold, producing its own special issue (Sim 2009). This particular edition showcased various works examining labor migration and the mobility of women in East and South Asia. Later, in 2013, the *Journal of Ethnic and Migration Studies* released a special issue that explored gendered mobilities within the context of Europe (Andall 2013). These and other works have drawn increasing attention to the gender dimension of migration. The interdisciplinary nature of this growing field resulted in relevant publications appearing in various journals addressing different audiences. While viewing sex as a biological categorization and gender as a product of social relations in the origin and destination country of the migrant, the present work aims at connecting and structuring the current state of this research. Thereby, it contributes to the field of demography and migration studies by providing an overview of

the already existing knowledge and by synthesizing the key findings of this heterogeneous research area. Several works have aimed to synthesize the research on gender and migration, including those by Chant (1992), Willis and Yeoh (2000), Curran et al. (2006), Donato and Gabaccia (2015), Fleury (2016), and more recently, Christou and Kofman (2022). All these works serve as important viewing points over the landscape of gender and migration literature. While Chant (1992) and Fleury (2016) collate studies on gender and migration situated in the Global South, other works like ours are not restricted to a geographical area (but tend to focus more strongly on the Global North due to the overrepresentation of this study area in the literature that can be found on Scopus and Web of Science). In their book, Donato and Gabaccia (2015) provide a historical overview of the evolution of migration studies and the inclusion of gender and sex. Unlike Curran et al. (2006) who focus on publications in a number of sociological journals, we cover articles from various disciplines within the social sciences. Christou and Kofman's (2022) book provides an exhaustive overview of gender and migration studies and carves out the gendered dimensions of labor, family, and forced migration.

With the present contribution, we aim to provide a snapshot of the current state of gender and sex in migration research with a close look at differences by gender and sex. By employing a systematic approach to the collection and selection of studies and by limiting our analysis to quantitative research, we hope to complement the existing works by combining an overview of the literature with a discussion of data availability.

This literature review is divided into two thematic parts. In the first part, we aim to outline what quantitative research has found about and gender differences that persist throughout the migratory process and summarize them according to the stages of the migration process (pre-, during, and postmigration stages as defined by Boyd and Grieco 2003). In the second part, we provide an overview of some of the existing sex- and gender-disaggregated migration data sources and carve out the most widely used data types. Therefore, this study aims to address the following questions: (1) What has quantitative research revealed about the role of sex and gender in the migration process? (2) What are the primary data types and sources that have contributed to our knowledge of gender-based differences in the migration process experienced by migrants? A systematic approach to answer this question is crucial for understanding the knowledge gaps persisting in the migration literature as well as the underlying data gaps preventing researchers from closing those gaps.

Our continued interest in the gender dimension of the migration process is best explained in the introduction to Christou's and Kofman's (2022) book. Women do not only makeup almost half of the international migrants but also because "gender is one of the key forms of differentiation within societies which interacts with other social divisions such as age, class,

ethnicity, nationality, race, disability, and sexual orientation” (Christou and Kofman 2022, 1). Consequently, the gender of migrants can influence the migration process in many possible ways. Boyd and Grieco (2003) provided an overview of how migration theories have incorporated gender over time. Thereby, the authors describe potential entry points of gender along the different stages of the migration process. The first stage is the “premigration stage,” where the decision and preparation to migrate takes place at the origin, followed by the “perimigration stage,” the stage of the migration journey from the place of origin to the destination. The third stage in Boyd and Grieco’s framework is the “postmigration stage,” namely the phase of integration and settlement of the migrant in the place of destination. The framework also includes the optional stage of return. This literature review is structured along these stages of migration processes, aiming to provide a comprehensive overview of the extensive body of quantitative research conducted in recent decades. By synthesizing this research and its findings, our goal is to fill in the gaps in knowledge and address unanswered questions in the field.

The relevance of the discipline of demography is apparent. To incorporate migration into demographic projections, demographers need to understand its gendered dimension and composition which impacts fertility and mortality in origin and destination countries.

Therefore, we repeat long-voiced claims of incorporating gender in migration theories by conceptualizing its impact on the selection, realization, and outcomes of migration processes.

Selection process and methods

To ensure transparency and facilitate reproducibility, we employed a systematic article selection approach. This section aims to explain the decision-making process we employed at each step, offering a clear understanding of our methodology. The approach was inspired by the PRISMA guidelines and corresponds to items 2–8 in the associated checklist (Page et al. 2021). First, we retrieved articles from the literature databases *Scopus* and *Web of Science* that matched the following search query:

Title: (women* OR woman* OR female* OR gender* OR sex) AND (migr* OR immigra* OR emigra* OR mobilit* OR relocat* OR mov* OR displac* OR refugee* OR “asylum seeker”) AND NOT (nutr* OR medic* OR migraine OR nurs* OR health* OR diet* OR contraceptiv* OR fertil* OR sexuality)

Abstract: (women* OR woman* OR female* OR gender* OR sex) AND (migr* OR immigra* OR emigra* OR mobilit* OR relocat* OR mov* OR displac* OR refugee* OR “asylum seeker”)

Keywords: (women* OR woman* OR female* OR gender* OR sex) AND (migra* OR immigra* OR emigra* OR mobilit* OR relocat* OR mov* OR displac* OR refugee* OR “asylum seeker”) AND NOT (nutr* OR medic* OR migraine OR health* OR sexuality)

During the first round of scanning, the lead author read the titles and abstracts of the retrieved articles. Using the information contained in the abstracts and titles, we decided based on the predefined eligibility criteria whether to keep the studies for a second round of scanning or not. When the information contained in the title or abstract was sufficient to make a judgment about the eligibility of the article, the article was included or excluded. When the eligibility was not clear from reading the title and the abstract, the article remained on the list for a full-text scan.

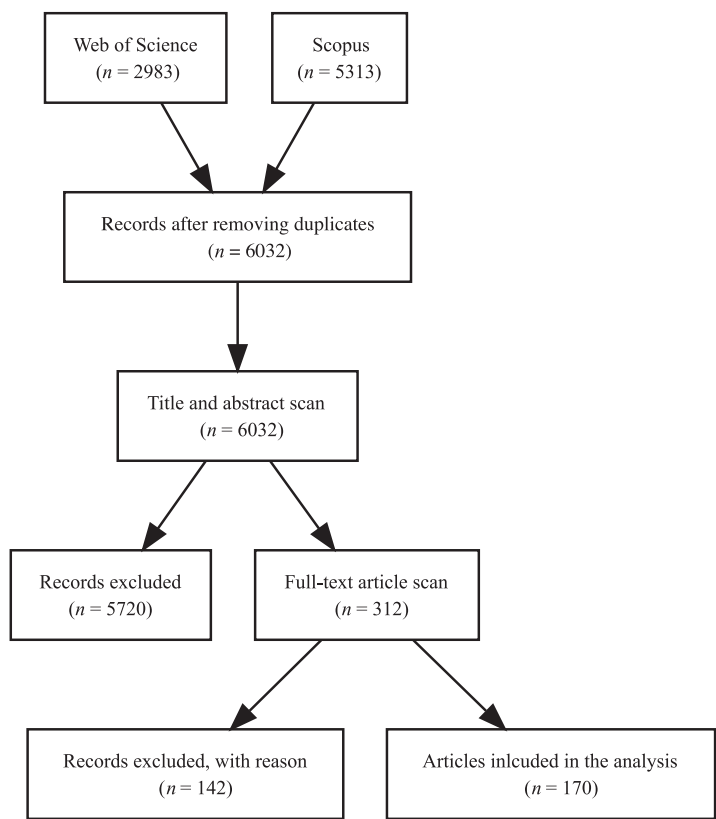
The definition of *migrant* and *migration* applied in this review is based on the combined definitions of migrants as developed by the United Nations Department of Economic and Social Affairs (Recommendations on Statistics of International Migration, Revision 1, 1998) and the International Organization for Migration (IOM 2019). Accordingly, “a person is considered a migrant when they leave their place of usual residence (within or across national borders) temporarily or permanently for a period of at least a year..” We restrict this definition to exclude residential mobility as we expect the experiences of mobility over longer distances to differ notably from those within one’s usual environment.

In the second round of scanning, the remaining articles were subjected to a full-text examination. Thereby, the complete text of each article was consulted to determine its inclusion in the analysis. To ensure consistency in the article selection process, a random subsample comprising 20% of the results was independently reviewed by two of the authors different from the lead author. Figure 1 illustrates the selection process that led to the inclusion of 170 articles in this review.

In order to ensure that the analysis is focused on sex- and gender-based differences with a comparative perspective, it is required that the articles include the outcomes for all genders (usually women and men). Papers that analyze samples that only include women or men were categorically excluded from this review.

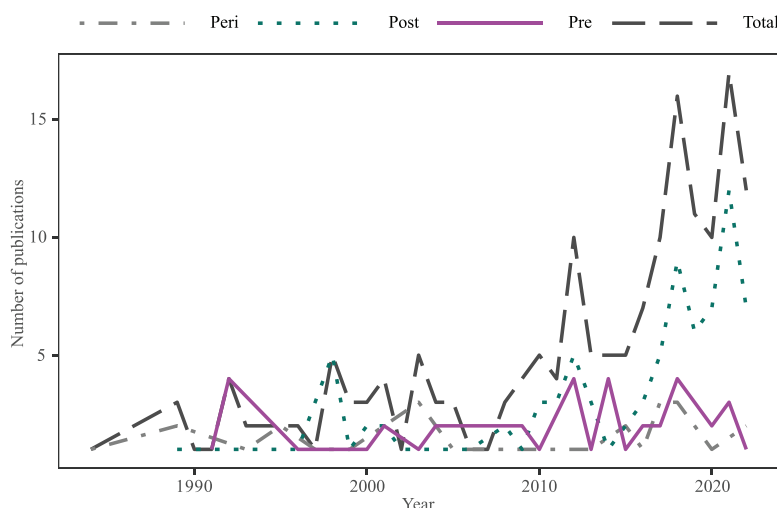
In this review, 9 out of the 170 papers included in the analysis refer in their title or abstract to the term “sex,” 138 use the term “gender,” while 18 refer to both terms. The distinction between gender and sex was initially formulated by second-wave feminists who acknowledge the existence of physical bodily differences between men and women but agree that social conventions dictate behaviors of men and women (Oakley 2016; Butler, 1986). We use the terms “gender” and “sex” in accordance with the World Health Organization’s (WHO) definition. According to the WHO, gender is distinct from sex, and the two terms have different meanings. Sex refers

FIGURE 1 Flow chart illustrating the process of the article selection



to biological and physiological characteristics, whereas gender refers to socially constructed characteristics. By adhering to this definition, we recognize the distinction between biological attributes and socially constructed roles and identities (WHO, n.d.). By referring to both terms, we acknowledge the wider societal discourse around those concepts of social and biological characteristics attributed to men and women. Most migration data either refer to “gender” or to “sex” (usually only allowing for binary classification); therefore, both terms will be referred to in the remainder of this review.

Regarding the synthesis of the results, we chose to follow a narrative approach. This choice was justified to cover the large number of eligible papers and to answer the rather broad research questions that could not be answered by applying a meta-analysis. A direct quality assessment is not part of the article selection process of the present review. We relied on an indirect assessment of the articles’ quality by selecting those that have undergone a peer-review process as well as those listed in the databases Scopus and Web of Science.

FIGURE 2 Number of publications published in each year from 1984 to 2022

Note that this literature review is not meant to be an inventory of all published works that investigate gender differences in the migration process but to highlight some outstanding findings and clear gaps in the literature and to put that into context with the availability of gender- and sex-disaggregated migration data.

Gendered migration patterns: A literature review

Over the last decades, the interest in gender differences throughout the migration process gained momentum. Figure 2 illustrates how the number of yearly publications rose over the years while the postmigration stage received the most attention. The timeline of publications about the pre- and the perimigration stage exhibits no clear trends over time.

The most studied countries of destination and origin across the articles in our sample are Global North (GN) countries. As Table 1 shows, depending on the stage of migration the popularity of study areas changes. Many articles study multiple origin and destination countries at the same time, while others focus on one origin or one destination country for their analysis. Relatively more Global South (GS) countries are studied as migrant origins in the premigration stage (GN: 9, GS: 28) while relatively more Global North countries are studied as destinations in the postmigration stage (GN: 59, GS: 27). This hinges upon the fact that South–North migration has been historically of larger interest to migration scholars and is also reflected by the United States as most studied destination country in the postmigration stage (see Table 2). Nevertheless, some South–South corridors have been studied more extensively by scholars. For instance, China is the most

TABLE 1 Eligibility criteria met by the articles included in the literature review

Year	No time restriction applied
Publication type	Primary research, peer-reviewed and published scientific articles and book chapters
Subject area	Social sciences broadly conceived (excluding health sciences, social work)
Language	No language restriction applied
Migration	As defined in the above paragraph
Method	This review focuses solely on quantitative approaches to assess the differences in migration patterns based on sex or gender (applied in full-text scan)

TABLE 2 List of most studied areas of origin and destination for international migration by migration stage

International migration					
Premigration		Perimigration		Postmigration	
<i>Origin</i>	<i>Destination</i>	<i>Origin</i>	<i>Destination</i>	<i>Origin</i>	<i>Destination</i>
Multiple (7)	Multiple (15)	Multiple (14)	Multiple (5)	Multiple (46)	United States (20)
Mexico (4)	United States (4)	Kazakhstan, Russia (1)	OECD (4)	Mexico (5)	Spain (5)
Thailand (2)	OECD (2)		United States (3)	Argentina, Bangladesh (1)	Canada (4)

NOTE: Numbers in parentheses denote the number of articles that study the respective countries. "Multiple" stands for a heterogeneous group of countries studied at the same time.

TABLE 3 List of most studied areas for internal migration by migration stage

Internal migration		
Premigration	Perimigration	Postmigration
China (3)	United Kingdom (3)	China (10)
Ecuador, United States (2)	United States (2)	Germany, Sweden, United States (2)
Belgium (1)	Australia, Brazil, China, Germany (1)	Colombia, Malaysia (1)

NOTE: Numbers in parentheses denote the number of articles that study the respective countries. "Multiple" stands for a heterogeneous group of countries studied at the same time.

covered area in the pre- and postmigration stage for internal migration which is owed to the fact that the literature on Chinese internal labor migration is growing (see Table 3).

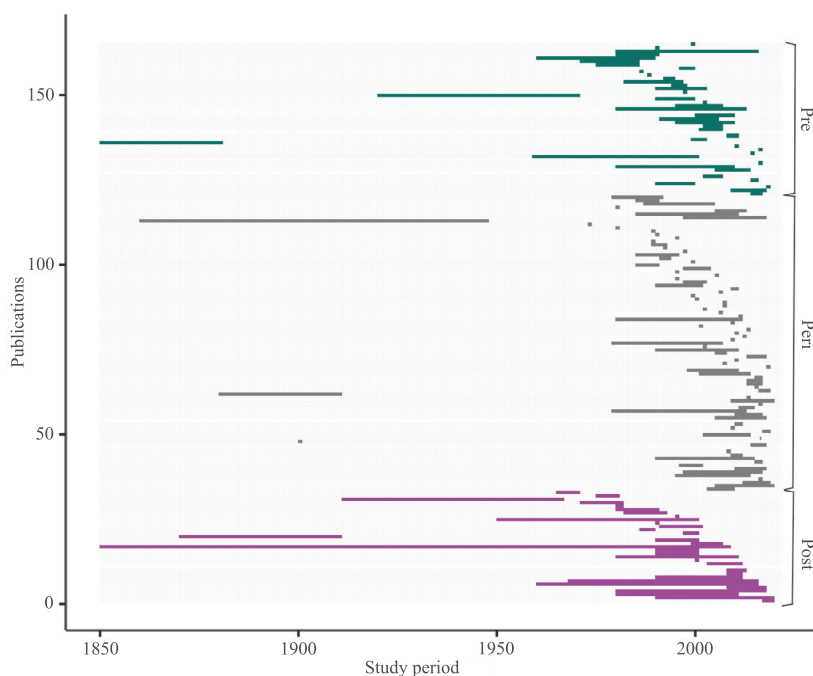
The geographical area and the corridors under study also reflect which migration types have been studied more than others. For example, in the postmigration stage, research to date focuses almost entirely on the labor market integration of migrants therefore the keywords for labor migration appear in 68 out of 87 studies in that stage (see Table 4).

The 170 studies included in this review cover a broad range of time periods in their analyses. As Figure 3 shows, most study periods date back

TABLE 4 Number of articles focusing on the respective types of migration and containing associated keywords in the abstracts

Migration types	Premigration	Perimigration	Postmigration	Return migration
Climate migration	3	0	0	0
Forced migration	0	0	8	1
Labor migration	19	12	68	4
Family migration	2	0	4	0
Demography -related	7	8	6	0
Total = 170	45	33	87	5

NOTE: Clearly many gaps in the literature persist. (Demography reference means any word containing "demograph*.")

FIGURE 3 Time periods covered by each study by migration stage. Some lines connect two waves of survey data collection. Seven studies provided no indication of the time period covered (empty lines)

no longer than the late 1900s. Longer timelines usually belong to studies that use register data for their analysis. Very early periods have been covered by a few studies that rely on historical data sources like shipping records. Clearly, many articles rely on cross-sectional data, usually surveys that cover a short period of time indicated by the single tiles.

Premigration stage

At the start of every migration process, there is a stage called the premigration stage. During this stage, various factors at both macro and micro

levels come into play, shaping the decision of individuals or households to migrate. These factors include broader aspects like living standards, gender roles, and more specific aspects like personal motivations, skill levels, and education. Together, these factors influence the decision-making process behind migration. The extent of such factors and the impact they exert on the decision and realization of an individual's migration can vary by gender (Boyd and Grieco 2003). Throughout this review, we view migration as a gendered and gendering process (Szczepanikova 2006) that begins with the premigration stage. In this stage, understanding migrants as members of multiple underprivileged groups acknowledges the intersectional character of barriers embedded in the social context of the migrants' origins.

Regarding the preparatory stage of migration, the literature found that women's motives for primary migration differ from those of men, as women react differently to adverse labor market conditions in their home community. What serves as a clear push factor for male emigration can constitute a pull factor for the primary migration of women. In the case of Thailand, Singhanetra-Renard and Prabhudhanitisarn (1992) found that the migration of women to urban areas is driven by agricultural transformation which leads to a loss of livelihoods in rural areas, while the internal male migrants are attracted by the agricultural sector in rural areas. However, despite sharing similar intentions to migrate, independently migrating women are hindered by challenges such as rigid gender norms and limited access to resources, resulting in a lower likelihood of actually undertaking migration compared to men (Chort 2014; Litchfield and Reilly 2009). Another striking difference between the two genders is the use of networks for facilitating one's migration. It stands out that migrant women rely mainly on longer established family networks, while migrant men rely on connections to acquaintances in the destination country. This points to different security considerations and precautions undertaken by women and men (Curran and Rivero-Fuentes 2003; Toma and Vause 2014; Heering, van der Erf, and van Wissen 2004). The following section covers selected literature about the premigration stage thematically organized along three main findings. In particular, it covers findings on the gendered nature of push effects of labor markets in the migrant's origin, on gender-specific obstacles for making a move, and findings on the gendered effects networks have on migration decisions.

Are there gendered push effects of labor markets? The neoclassical theories of migration assume that wage differentials between origins and potential destinations determine individuals' migration decisions. Accordingly, potential migrants weigh their benefits from migrating over the costs and decide to migrate based on the returns they obtain. However, these are macro-level theories that consider labor markets in disequilibrium and disregard other structural and economic factors that might drive such a

decision. Thereby, such theories also disregard gendered factors that specifically impact women's migration experiences. For instance, they do not consider gender-specific push factors, such as gender-based discrimination in the local labor market. Similarly, female-specific pull factors, like employment opportunities in the service and care sectors at the destination, are often not accounted for.

The reason why theories neglect the effects of gender segregation in economic sectors is because they were developed based on the perception of migrant women as secondary movers who move mainly for family reasons (Pedraza 1991). This presumption has not only changed simultaneously with changing gender roles over time, but it has also been questioned by historical evidence. Analyses of historical migration flow data have revealed that women have been participating actively in migration, also independently (Greefs and Winter 2016; Donato and Gabaccia 2015).

One of the most theorized and studied types of migration is labor migration. Despite the coinciding motivations of the migrants, this is a highly gendered process due to gender-stratified labor markets and expectations based on gender norms in the communities of origin and in the destination. This has been supported by the findings of Yang and Guo (1999) who studied internal labor migration in China and found that individual characteristics like marital status can play an important role in women's migration decisions while men respond strongly to community-level push factors. Characterizing migration of women compared to men in the second half of the 20th century in Indonesia, Hugo (1992) found that women migrate predominantly as dependents and mainly for education, concluding that female migration in Indonesia was of greater volume and complexity than previously thought. In order to understand sex selectivity of rural-urban migration in Thailand of the same time period, Singhanetra-Renard and Prabhudhanitisarn (1992) found that women move to work in different sectors than men. Women tended to migrate independently to regions with stronger service- and tourism sectors and sex work demand, while men moved to regions with larger manufacturing and construction sectors. The agricultural transformation and industrialization in countries like Thailand have led to a loss of livelihoods for rural women and therefore forced them to find employment in cities (Singhanetra-Renard and Prabhudhanitisarn 1992). Such societal and economic transformations are likely to have caused similar feminization of migration streams in other settings and countries.

Besides different employment prospects, another prominent motive for women to undertake independent moves is to obtain education. Several studies conclude that women tend to state education as motivation to migrate more often than men. This pattern seems to hold especially for rural-to-urban migration in low-income countries like Ethiopia (Yilma and Regassa 2019), Cuba (Rodriguez Rico 2018), and Nepal (Williams 2009). Yilma and Regassa (2019) also found that women make more planned

migratory moves, involving household decisions and family reasons, while men mainly migrate for business and economic-related reasons. A similar finding holds for the case of Mexico where Cerrutti and Massey (2001) found that women tend to migrate together with family members but daughters of migrants exhibit a similarly independent migration agency like their fathers and brothers. This result hints at a possible intergenerational transmission of migration and agency. This is a topic that should be explored by future research.

Such differences in migration motives can indirectly translate into gender ratios of emigration rates. Different motivations between migrant men and women have also translated into higher levels of women emigrating from Fiji since the early 1980s where women constituted a large share of highly skilled emigrants. Besides their high educational attainment, women also stated personal and physical security concerns as reasons for their move (Chandra 2004). Across different studies, the pattern emerges that highly skilled women are more eager to emigrate than their male counterparts (Heering, van der Erf, and van Wissen 2004; Faggian, McCann, and Sheppard 2007; Docquier, Lowell, and Marfouk 2009). In the case of reunified Germany, Kroehnert and Vollmer (2012) explored the high female share in migration flows from rural East to West Germany. They found that the reasons for this gender gap were the comparably higher educational attainment of East German women, a labor market structure in rural areas that favored men, and the implications of these discrepancies on partner selection behavior (Kroehnert and Vollmer 2012).

Macro-level gender inequalities and the resulting differences in access to financial and natural resources in the origin can motivate or prevent women's migration and thereby affect the gender compositions of migration flows from a certain origin area. Neumayer and Plümper (2021) explored international migration to Germany and found that higher economic rights in the origin countries of the migrants reflected a higher share of women in the gender composition of migration to Germany (Neumayer and Plümper 2021). The results suggest that lower gender-based inequality in the migrants' origin country translates into more agency over women's migration action and control over resources that can be steered into realizing the move. *All in all, these findings point to gendered push effects of labor markets that may contribute to differences in the decision to migrate for work.*

Are female and male migrants subject to different obstacles when leaving? As elaborated in the previous subsection, women and men are subject to different obstacles and drivers when they decide about their migratory move. A dominant theme crystallizing across the literature indicates that women are less likely than men to realize their migration intentions. However, no mainstream migration theory addresses this phenomenon. Some studies have tried to discover what is hindering women from realizing their moves

(Chort 2014; de Jong 2000; Smith and Floro 2020). It is likely to be a result of an interplay between socially ascribed roles as caretakers and lower access to economic and social resources and capital to undertake the move.

While gender inequalities on a macro-level can be assumed to drive emigration of women out of their place of usual residence, Baudassé and Bazillier (2014) reached the conclusion that it rather impacts the selection into migration. Improving gender equality in the labor market is positively correlated with high-skilled women's migration, while it is negatively associated with low-skilled men's migration. A possible mechanism behind it is that higher gender equality increases the average educational attainment of women which then influences the selection process into migration (Baudassé and Bazillier 2014).

For one of the largest migration corridors in the world, namely the Mexican–United States corridor, Chort (2014) found that gender influences intentions and actual migration behavior of potential migrants from Mexico. Women's probability of carrying out their migration plans was systematically lower than that of Mexican men due to gender-specific constraints such as having young children. This finding is particularly important for forecasting migration where intentions are treated as good proxies for actual migration behavior. However, they are at risk of overestimating female migration (Chort 2014). Such gender-specific constraints can result from persisting gender norms and roles in society. Similarly, Litchfield and Reilly (2009) reached the conclusion that observable characteristics alone are insufficient to completely explain the gender disparities in migration attempts among Albanians. According to their findings, women demonstrated a much weaker response to adverse labor market conditions compared to men. Also, having younger or elderly dependents in the household limited women's migration while it was positively associated with male migration, again reflecting traditional female roles as caretakers (de Jong 2000). One specific factor affecting migration intentions and preparations is food insecurities, which can act as a constraint rather than a push factor toward migration for women from Low- and Middle-Income Countries. Socially ascribed roles and differences in access to resources and employment opportunities are likely influencing this relationship (Smith and Floro 2020).

In the literature, the question of why women choose not to leave despite having migration intentions is underexplored. Migration theories struggle to provide sufficient explanations for why potential migrants do not move as predicted or intended. Security considerations and limited access to financial means are very probable causes for these differences (Curran and Rivero-Fuentes 2003; Chandra 2004). Nevertheless, no study included in this literature review is concerned with gender differences in determinants of conflict-induced forced migration. Also, gendered effects of climatic change might play a role in migration intentions and are currently underexplored in the literature. Few works included in this literature

review actually analyze how climatic changes impact the migration of women and men differently (Barbieri and Carr 2005; Amuakwa-Mensah, Sam, and Kihui 2019; Weinreb, Stecklov, and Arslan 2020). These works agree that women are more responsive to climatic and environmental changes than men but the underlying mechanisms and effects remain to be further explored. *All preceding findings, hint at the existence of gendered obstacles faced by potential migrants when planning and undertaking a move. Conditional on migration aspirations, women often display a lower propensity to realize their migratory moves compared to their male counterparts.*

What gendered effects do migrant networks have? Gender differences in propensities to realize migration intentions can stem from different preparations and precautions undertaken by men and women. According to the network theory of migration, networks in the destination are seen as social capital that reduces monetary and psychological costs of the migrant (Massey and Espana 1987). Therefore, migrants might rely on various networks influenced by their gender to facilitate and realize their migration plans. For the Mexico–United States migration corridor, Davis and Winters (2001) found that same-sex networks were not more influential than male networks in facilitating female migration. However, for the choice of destination female networks were stronger determinants for migrant women. While women may rely on male networks for safety considerations during the perilous journey to the United States, they often opt for destinations with a presence of female networks to secure employment opportunities and access information (Davis and Winters 2001). Curran and Rivero-Fuentes (2003) reveal for the same migration corridor that male migrant networks are indeed more important for male migrants than for female migrants and vice versa.

A gendered perspective on family networks among Moroccan emigrants revealed that having family networks abroad increased women's migration intentions while the same did not hold for men (Heering, van der Erf, and van Wissen 2004). Moreover, among Moroccan women, particularly those who are more modernized and educated, there was a greater intention to migrate. For men, on the contrary, family networks and higher education seemed less important but local migration culture seemed to matter more (Heering, van der Erf, and van Wissen 2004). In the context of Ecuadorian migration, Gray (2010) found that women's migration was most influenced by family structure and that networks had ambiguous effects on the out-migration of women. Consequently, access to natural capital plays an important role in selectivity into migration and households seem to influence women's migration decisions (Gray 2010). In a similar manner, the effects of gendered social capital on US immigration from four Central American countries indicate that ties to men played a more important role for women who migrated from countries with low gender equity, while

ties to women were more important for migration from countries where gender equity and the number of female-led families were high (Côté et al. 2015). In the case of Congo and Senegal, Toma and Vause (2014) confirmed that men and women rely on different ties suggesting that the mechanisms through which networks affect mobility differ across genders.

Curran and Rivero-Fuentes (2003) also included a comprehensive comparison of the role of networks between international and internal migration in Mexico concluding that female family migrant networks were more important for moves within Mexico than male networks. This opens possible avenues of research exploring how migrant networks matter for internal migration compared to international migration and how their influence varies by gender. *Many of the studies included in this review highlight the importance of gendered social capital and network structures for the decision to migrate. Some evidence agrees that close-kin networks abroad do influence female migration positively while leaving male migration unaffected.*

Perimigration stage

The gendered decision-making process in the premigration stage influences the transition of migrants across borders and thereby shapes the sex composition of migration flows. Furthermore, the national restrictive or protective policies of the origin country as well as immigration laws and regulations of the country of destination influence the gender composition of migration flows additionally to the factors that influence the decision to migrate (Boyd and Grieco 2003). According to Donato and Gabaccia (2015), the composition of flows and their directions are additionally affected by gendered and sex-discriminatory migration systems. On the individual level, the experiences made by migrants along their journeys most likely differ by gender, a topic mainly analyzed and discussed in the social work literature.

Quantifying these transitions by gender is only possible with accurate origin–destination migration data which are rarely provided by statistical offices and have limited geographic and time coverage. The scarcity of data sources from which flows can be derived leads to a homogeneous and narrow quantitative literature strand on the migration transition process.

The main findings of the literature on the transition stage of migration suggest that there was no significant feminization of migration observed toward the end of the 20th century. The gender composition of flows merely mirrors the immigration policies of the destination countries as well as the demand for female labor force (Zlotnik 1995). Some specific cases like the increased out-migration of highly skilled women from former Eastern Germany to the Western part of the country have created the popular perception that skilled women are more migratory than their male counterparts (Kroehnert and Vollmer 2012). However, skilled women are in general not found to be more migratory than skilled men (Docquier, Lowell, and

Marfouk 2009; Docquier et al. 2012). Another major finding highlighted by this review is that migrant women and men tend to respond differently to labor market factors both in their home countries and at their destination (Greenwood 2008; Hofmann and Reiter 2018).

The remainder of this section presents findings from the literature that support the conclusions made above. Thereby, it will answer the questions of whether a notable feminization has taken place in migration and whether this holds true also for highly skilled migrants. Moreover, it seeks to lay out evidence of whether traditional pull and push factors have a gendered impact on the migration process.

Is a feminization of migration taking place? One of the earliest assumptions about female migration was formulated by Ravenstein (1889). Based on the British censuses from 1871 and 1881, he derived a number of hypotheses that formed the basis of migration theory in the past century. In one of the so-called “Ravenstein’s laws of migration,” he stated that females are more migratory than males. After female migrants have been overseen or disregarded as dependents of men, many researchers have started wondering about the actual gender composition of migratory moves. Many scientific papers written in the late 20th century aimed at identifying a potential “feminization” of migration flows. However, in this review 5 out of 170 papers use the term “feminization” in their abstracts.

One of these is the work of Zlotnik (1995). Comparing migration flows from the Global South to Belgium, Germany, the United Kingdom, and the United States, she found that the proportion of women in gross immigration is lower from developing countries than from developed countries. Nevertheless, women surpassed men in terms of net migration but at relatively low levels in the period from 1975 to 1984. Therefore, she concluded that no notable feminization of migration can be traced in the data. These observed trends might be strongly influenced by the immigration policies of the receiving countries as well as the expatriate population in the destination country (Zlotnik 1995). The pioneering work of Zlotnik (1995) plays a crucial role in quantifying the patterns of female migration.

Donato et al. (2011) adopted a historical perspective by using data dating as far back as 1850 to analyze immigration to 27 countries, including the United States. The authors noted that over time, there have been dynamic and complex shifts in the sex ratios of immigrants to the United States and worldwide, rather than a consistent trend toward feminization. However, the authors recorded upward shifts in the female share in immigration for most world regions, except for Africa and North America, from 1960 onwards (Donato et al. 2011). Gender selectivity of international migration has clearly transformed over time, and worldwide immigrant populations have become more female (Donato et al. 2011). This can be due to gender-selective admission policies as well as gendered obstacles and motivations as argued in the section on the premigration stage.

The post-Soviet space with its special gender dynamics and major migration channels was studied by Becker et al. (2003) and Hofmann (2017).

For the case of Kazakhstan, Becker et al. (2003) examined gender ratios in emigration rates 10 years after the dissolution of the Soviet Union. Their analysis revealed a slight gender imbalance in emigration rates, with women from urban areas outnumbering men in the emigration process. However, instead of concluding that women were more migratory than men in this period in Kazakhstan, this gender imbalance in emigration rates might reflect demographic imbalances due to premature male mortality (Becker et al. 2003). Hofmann (2017) looked at the broader picture and profiles of migrants from Azerbaijan, Georgia, Tajikistan, Ukraine, and Vietnam to Russia. The author found no clear evidence that migration flows from these origins to Russia are feminizing over time. However, the sex composition varied depending on the origin as well as on destination country factors (Hofmann 2017). A more recent study by Florinskaya (2022) arrived at a similar conclusion, stating that labor migration to Russia is unlikely to undergo feminization in the foreseeable future.

In order to provide a clearer answer to the question of whether migration has been feminized over the years, it is critical to have a complete time series of migration flow data disaggregated by gender which only very few countries can provide. *Nevertheless, in some migration corridors, women are increasingly participating in migration but an overall feminization cannot be sufficiently supported by evidence with the current state of data.*

Are the gender-based discrepancies in migration trajectories of the highly skilled? Overall, men continue to outnumber women in international migration, indicating that women have not yet surpassed men in terms of overall migration numbers. In the specific case of high-skilled migration, researchers argued that women play a significant role in brain drain, especially from low-income countries (Dumont, Martin, and Spielvogel 2007). This motivated Docquier, Lowell, and Marfouk (2009) to develop a dataset that provides emigration stocks and rates broken down by educational attainment and gender.

Based on this dataset, Docquier et al. (2012) aimed to answer the question of whether skilled women are more migratory than skilled men. Despite the increased participation of women in international migration and their advancements in education, the authors' conclusion suggests that skilled women were less likely to migrate internationally compared to men (Docquier, Lowell, and Marfouk 2009; Docquier et al. 2012). The disparity in the rate of highly skilled migration between genders was closely tied to the discrepancy in educational attainment within the source population, indicating unequal opportunities for education (Docquier, Lowell, and Marfouk 2009).

Even though education crystallized as a stronger driver for female rather than male migration throughout the literature, the country of origin as well as the legal requirements at the country of destination play a gendered role in the gender discrepancies of migration (Hofmann 2017; Donato 2010). One of such origin–destination country factor could be trade. It appears that there is a strong positive association between the intensity of trade and the migration of high-skilled women (Upreti 2020). Upreti (2020) analyzed the drivers of the gender and skill composition of migrants from developing countries to OECD countries. The results indicated that trade seemed to have a more positive correlation with female highly skilled emigration from that country than it had for males (Upreti 2020).

To address data limitations and explore the migration patterns of scholars, researchers utilized bibliometric data. The migration of scholars reflects high-skilled migration only to a certain extent as scientists only constitute a subset of all professionals. This innovative data source is generated by reconstructing scholars' migration histories based on their publications' meta data. Utilizing this data source, Malakhov (2019) compared the international mobility of Russian researchers by gender. The author found that female scientists tended to stay in Russia and their academic networks seemed to be less international than those of their male colleagues. Female scientists seemed to be held back in pursuing international academic careers by their care-taking roles and by their lower participation in STEM disciplines which are more demanded in the international labor market (Malakhov 2019). Bibliometric data opens many new avenues for research of the migration trajectories of scholars and allows for a gender classification based on names. It has been utilized only by one other work included in this review (Zhao et al. 2022).

In contrast to the findings stating that high-skilled women are not more migratory than their male counterparts, UK female graduates have been found to be indeed more migratory than their male counterparts. Based on survey data from 1997 to 2000, Faggian, McCann, and Sheppard (2007) concluded that female UK graduates engaged more in migratory behavior partially to compensate for gender biases in the labor market. This might contrast the previously mentioned findings but considering that young graduates are probably not experiencing gendered mobility constraints due to caring responsibilities to the same extent, the findings do seem complementary. *Overall, the majority of the literature refutes the common assumption that highly skilled women are more migratory than men, likely driven by gender-based labor market discrimination and caring responsibilities.*

Do traditional pull and push factors play a different role for migrant women and men? Traditional gender roles and societal expectations play a significant role in shaping the types of work that women engage in. As a result, the labor market structure in the origin and destination country can impact

the gender composition of the flows (Boyd and Grieco 2003). The neoclassical migration theory accounts for differences in the return to human capital when undertaking migration (Bircan et al. 2020). But it does not consider, like many other theories, the gender wage gaps in the destination and origin of the migrant as well as gendered access to education. Models incorporating pull and push factors therefore neglect the different effects these might have on migrant women compared to men. For instance, migrant women have been found to be less sensitive to traditional determinants such as distance between origin and destination (Beine and Salomone 2013). Job opportunities have been found to be gender-sensitive in migration patterns (He and Gober 2003). Women tended to be more responsive to perceived economic disparities in different regions, particularly in rural areas. Male migrants, on the other hand, were more drawn to job prospects in urban areas and opportunities offered by foreign enterprises. The presence of previous migrants and the development of light manufacturing industries are factors that attracted female migrants more than their male counterparts (He and Gober 2003).

Consequently, such factors can shape the gender composition of migration flows by influencing the sex selectivity of migration corridors. Greenwood (2008) focused on immigration from Europe to the United States in 1870–1910 and found that the sex composition of migration flows from European countries to the United States depended on the labor market structure in the origin country at that time. Where the service sector was well established, female labor force was demanded, and that incentivized men to move abroad in search of traditionally male employment (Greenwood 2008). Using later data on immigrant populations in the United States, Hofmann and Reiter (2018) identified sources of the geographic variation in sex ratios. The variations could be, in some cases, explained by the migrants' age or country of origin but this explanation is insufficient. The authors concluded that potential drivers of these patterns might be gendered networks, the type of jobs available in the destination, the legal status of the migrants, and the quality of life (Hofmann and Reiter 2018).

When reviewing the perimigration literature on gender differences, it crystallizes that the pull and push factors that lead to migration are gendered and might hence differ in their effect size and direction for women and men. A perspective for future research could be to further enhance our understanding of gender sensitivity of traditional pull and push factors.

Postmigration stage

Every migratory move ends (at least temporarily) with the postmigration stage. In this stage, the integration outcomes of migrants can be influenced by several factors, like the migrants' entry status, employment opportunities, and occupational status (Boyd and Grieco 2003). All of these factors

have different effects by gender and are intertwined with the overall migration experience and its outcomes. As in previous stages of the migration process, the main theoretical concept at play in migration outcomes is intersectionality. Migrants experience different forms of discrimination based on their migrant status, gender identity, social class, and other social categories.

While reviewing the literature on sex- and gender-based differences in the postmigration stage, it crystallized that the gender gaps in occupational status persist after granting legal status to migrants as women are more likely to stay employed in the informal sector (Kreisberg and Jackson 2023; Powers, Seltzer, and Shi 1998; Powers and Seltzer 1998; Donato et al. 2008). Moreover, migrant women experience a double disadvantage in the labor market in some countries—a penalty on their earnings for being a woman as well as for having migrant status (Ryazantsev, Rostovskaya, and Peremyshlin 2019; Lopez 2012; Hayfron 2002). The literature agrees that despite the discrimination they experience in the labor market, migrant women tend to remit relatively more in the form of goods and money to their dependents back in their place of origin compared to their male counterparts (Khamkhom and Jampaklay 2020; Osaki 1999). In the following, this section covers selected literature supporting the above-stated findings.

Does legal status have a gendered effect on migrants? As migrant women generally tend to work in more precarious and oftentimes informal occupational arrangements, they seem to benefit less in terms of earnings, occupational status, and occupational mobility from authorization as migrant men do (Powers, Seltzer, and Shi 1998; Powers and Seltzer 1998). The durable disadvantage resulting from being undocumented prior to authorization also varied by gender. Kreisberg and Jackson (2023) found that women had a smaller disadvantage when undocumented than men compared to their documented counterparts, while their predicted durable disadvantage after authorization widened rather than persisted as it did for men. Explanations for this observation can differ depending on the legal pathways and human capital.

Whether migrants start off with unauthorized status in the destination country's labor market depends highly on the respective immigration policies. In the case of Mexico–United States migration, Donato et al. (2008) found that when legal avenues to visas disappeared, female migrants experienced a larger wage deterioration and a stronger push toward informal sector employment than male migrants. Such findings indicate a gendered effect of immigration policies on migration outcomes and thus an increase in migration costs for women.

A closer look at the working conditions of mostly unauthorized women migrants reveals that many suffer from not being registered due to a lack of access to social protection and health care, especially reproductive

health care. This leads to the conclusion that migrant women experience a double burden of discrimination in the labor market of the destination country, one for being a woman and one for being a migrant (Ryazantsev, Rostovskaya, and Peremyshlin 2019).

Gaps in the literature persist as most data used for analysis are about 20 years old. Furthermore, it remains challenging to study a population that is as invisible in records as undocumented migrants are. *However, we can expect that changes in the legal status have a different effect by gender and are further enhanced by gender discrimination in the labor market.*

What are the differences in labor market discrimination based on gender? Upon arrival in the destination country, women and men exhibit different integration trajectories in the labor market. The majority of papers included in this sample analyze labor market outcomes of migrants, namely 68 in the postmigration stage. One commonly observed pattern is a double penalty for migrant women, which occurs as migrant women earn less than local women due to migrant status and less than migrant men due to gender discrepancies in wages. Across many destination countries, namely Norway, United States, Russia, and the Gulf states, consistent findings point to a double earnings penalty experienced by migrant women (Lopez 2012; Hayfron 2002; Alfarhan and Al-Busaidi 2020). In the United States, highly skilled immigrant women have been found to experience a disadvantage in earnings compared to local men of which a larger share could be explained by their immigrant status and only the smaller share could be attributed to gender meaning that migrant men also experienced a sizeable disadvantage in earnings (Lopez 2012). On the contrary, for Norway Hayfron (2002) found that a larger share of disparities was explained by gender than by ethnicity. However, Hayfron also highlighted the important role of the average age of migrant women which was lower than the average age of male natives in the Norwegian labor market (Hayfron 2002). Alfarhan and Al-Busaidi (2020) investigated the contribution to the earnings gap across the income range in the Gulf states and found that the wage gap at the lower end of the earnings distribution could be attributed mainly to immigrant status and hence points to a general disadvantage for migrants while at the higher end of the distribution this effect was declining and even on par with the gender effect. Rebhun's (2008, 2010) work refuted the notion of a double earnings disadvantage in the Israeli labor market. Beyond the gender disadvantage, immigrant women did not experience discrimination in the labor market in Israel. However, this was dependent on their region of origin and their labor force participation there.

As the findings for Israel show, such results highly depend on the status of the immigrant in the labor market and the human capital that a person acquired before migrating. Nevertheless, such relationships should be further investigated as they have the potential to not only improve policy

making but also to improve migration predictions by sex assuming potential migrants take such disadvantages into account. *The findings point consistently toward gender differences in the labor market integration of immigrants, perpetuated through a double burden on migrant women's earnings.*

Are there differences in the remittance-sending behavior of migrants by gender? The literature in development studies has investigated the relationship between remittance sending patterns of migrants and their gender for a long time. The studies consistently indicate that women tend to be more reliable as remittance senders. Women seem to consistently remit a larger proportion of their income, which is typically smaller in comparison to men's income. And they remit more frequently than male migrants (Khamkhom and Jampaklay 2020; Mizanur Rahman 2013; Osaki 1999). Possible explanations argue with women's cultural obligations and social pressure as mothers. Moreover, women are more committed senders due to their ability and the societal expectation to sacrifice for the family and save more (Khamkhom and Jampaklay 2020; Mizanur Rahman 2013). In accordance with the new economics of labor migration theory, households in the Global South use migration as a strategy to ensure their survival (Osaki 1999). *Based on the above studies, migrant women have been found to be more active remittance senders than their male counterparts despite earning less on the destination labor market.*

Since many major migration theories include the labor market and potential outcomes as crucial determinants in the decision-making process in migration selectivity (neoclassical migration theory, new economics of labor migration, dual labor market theory), these economic considerations also become important for demographic projections. The employment prospects in sectors that are traditionally occupied by women (for instance, service and care) can attract more female labor migrants than men. Employment is among the key motivations for migration (Labour Migration 2022). Nevertheless, the gender composition of these flows and their demographic implications on the destination countries remain understudied.

The role of data

In order to reflect the complex nature of the vulnerabilities, mobilities, and gendered findings, migration researchers clearly need to generate more gender-disaggregated data (Kofman 2019). The findings of the literature reviewed above reflect the scarce gender- and sex-disaggregated migration data availability. The need to collect and provide migration data by gender has been acknowledged by researchers and international organizations. The United Nations Secretariat recognized that the "lack of readily available information on the participation of women in international migration

is probably at the root of the conventional view that the typical migrant is a young, economically motivated male" (United Nations 1995, 56). Moreover, they acknowledge that the deficiencies of migration statistics make it difficult to challenge such false conclusions. In 2004, the UN World survey on the role of women in development produced a report with special attention to women in international migration. The report repeatedly points out the dearth of data on migration classified by sex and age which hampers a thorough understanding of the migration process for women (United Nations 2004).

Migration data disaggregated by sex or gender are required by the Global Compact for Safe and Orderly Migration (United Nations General Assembly 2018). Unfortunately, the availability of harmonized aggregated migration data is scarce. Recently, there has been a growing emphasis on the importance of collecting gender-disaggregated data to better understand vulnerabilities, mobilities, and gender-specific outcomes and to inform gender-responsive policy-making (Kofman 2019; Christou and Kofman 2022; Hennebry, KC, and Williams 2021). Multiple studies, including those by Morokvasic (1984), Donato and Gabaccia (2015), and Zlotnik (1995), have contributed to this focus on female migrants, while a separate body of literature has emerged that examines and compares the migration patterns of both female and male migrants.

This increase in attention also mirrors the availability of sex-disaggregated data for migration studies. The first paper presenting data to analyze the potential feminization of migration was written by Zlotnik (1995). These sex-specific migration data provided by the UN Population Division became available to the public in 2002 (Boyd 2021). Gender statistics are necessary for thorough gender analyses; however, sex-disaggregated data are the best alternative at this stage and an essential first step toward gender statistics but they come with availability and quality issues (Bircan and Yilmaz 2022). As Donato and Gabaccia pointed out in their book, collecting bivariate data on sex does not preclude gender analysis per se but it enables researchers to measure the composition of populations (Donato and Gabaccia 2015).

There exist a number of major data sources on sex and international migration at the global level (Hennebry et al. 2021). Namely, the UN Department of Economic and Social Affairs' estimates of international migration stocks for the years 1990–2019, the Counter-Trafficking Data Collaborative providing information on human trafficking cases from the 2000s to 2020, the International Labor Organization's statistics on international migrant workers for the years 1991–2018, and, lastly, the Refugee Data Finder containing estimates of refugees, asylum seekers, other displaced populations from 1951 to 2019 (Hennebry et al. 2021). Besides that, there exists the OECD databank on immigrant populations and international migration

flows for the 28 member countries of the OECD. This dataset also includes some demographic and labor market characteristics of the migrants (Bircan and Yilmaz 2022).

Such datasets can have quality limitations, as countries apply different definitions of international migration in their methodologies for official statistics (Sirbu et al. 2021). Moreover, such methodologies can change over time creating inconsistencies in the measurement. Also, different sources of data can lead to different estimates and measures for similar phenomena. However, compatibility and consistency are crucial to measure inequalities between female and male migrants. That said, striving for improved sex-disaggregated statistics can only be the first step to collect data rather on gender than on biological sex alone (Boyd 2021).

Data in the premigration stage

By reading the literature, it becomes clear that more than half of the papers included in the premigration stage literature review study countries in the Global South. This reflects the South–North dimension of migration and the emphasis on labor migration among all forms of migratory movements in the scientific literature. When assessing the state of a research area, we should also inspect the data sources used by the studies to generate the knowledge. A general observation is that data availability dictates the area under study and data scarcity is the main obstacle, as is usually the case for research on migration.

The study areas covered by the papers include a notable number of countries in the Global South, unlike the peri- and postmigration stage literature. Especially for countries in the Global South, authors relied on small-sample survey data (Yilma and Regassa 2019; Gray 2010) but also longitudinal survey projects like the Mexican Family Life Survey and the Mexican Migration Project (Hughes 2019; Chort 2014; Côté et al. 2015; Curran and Rivero-Fuentes 2003; Cerrutti and Massey 2001). While survey data are prominent and useful for establishing causal relationships and answering narrower research questions, their coverage is usually low and their representativeness threatens the external validity of the findings. Census data as well as register data were used rarely. No study used social media data such as Twitter or Facebook data. However, two works made use of bibliometric data as novel data sources to understand patterns of scholarly migration (Malakhov 2019; Zhao et al. 2022). Two papers in the sample employed online surveys as data collection methods (Orosova et al. 2018; Akopova and Ignatjeva 2012). Some studies combined several data sources for their analysis such as national administrative or survey data together with migration datasets from international organizations (Grönlund and Fairbrother 2022;

Neumayer and Plümper 2021; Hanmer et al. 2020; Kim, Yang, and Torneo 2012).

Data in the perimigration stage

The sex composition of migration flows both internal and international, has direct implications on the demographic structure of the origin and destination regions. The so-called left-over men in rural areas of China and Germany or marriage squeezes in urban areas are results of such gendered movements (Wang, Zou, and Fan 2019; Leibert 2016). That said, it is difficult to capture migration flows accurately as data collection on movements, especially across international borders, highly depends on the level of border control and the definition of migration applied by each country. So far, the data landscape allows for snapshots in the place of origin and destination and these have been utilized by researchers to derive migration flows in order to visualize gendered patterns and trends and to produce data that enable gender-sensitive analyses. Data on migrant stocks, which resemble rather long-term population effects of the migration process, I used to infer flows.

Attempts to overcome data limitations have been undertaken by several researchers. Docquier, Lowell, and Marfouk (2009) used immigration and emigration stocks for the included country and the share of the educated population in the origin country to develop a dataset that provides emigration stocks and rates by educational attainment and gender between 1990 and 2000.

Nawrotzki and Jiang (2015) estimated international net migration flows and generated the Community Demographic Model International Migration Dataset (CDM-IM). This dataset is based on bilateral migrant stock input data from the United Nations Global Migration database on various countries from two years around 2000 and data on fertility and mortality rates. According to the authors, at the time of creation, the CDM-IM dataset was the only data source that would allow for a detailed multicountry analysis of a migration response by specific age- and gender subpopulations (Nawrotzki and Jiang 2015).

By deriving flows from stocks in 10-year intervals between 1960 and 2015 by gender for 226 countries, Abel (2018) finds that the overall trends in global migration flows for men and women followed similar paths with slightly higher male shares and regional variations (Abel 2018). Moreover, Raymer and Wiśniowski (2018) developed a model to forecast international migration flows by age and gender and applied their method to three different country situations and data types to evaluate its performance. Moreover, recent estimates of the age and sex profile for international migrations amongst the countries of the Asia-Pacific region were provided by Shen et al. (2024).

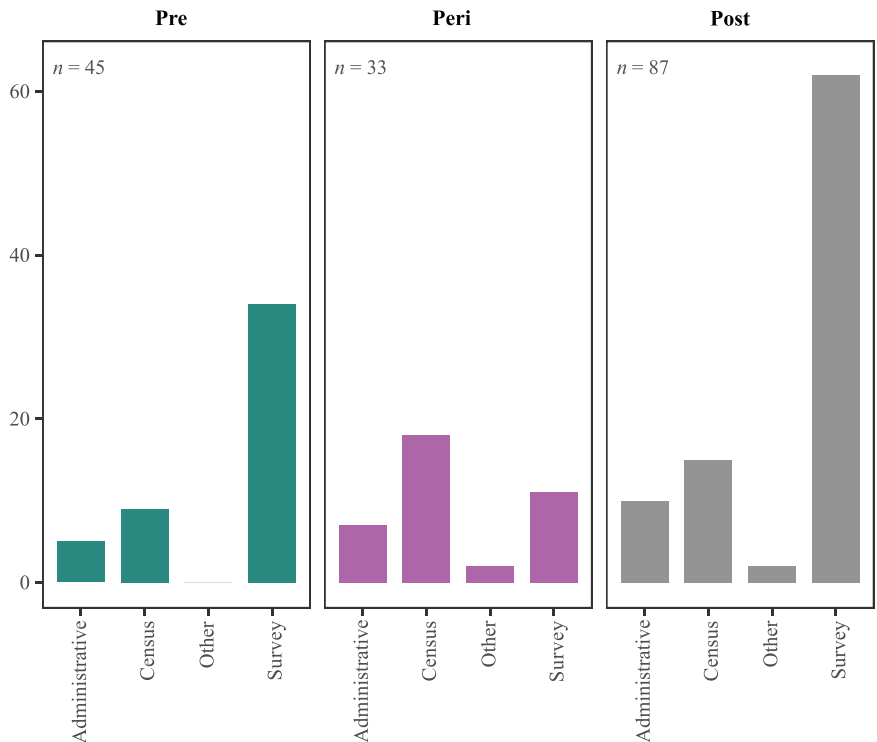
Data in the postmigration stage

As outlined in more detail in the Literature review section, the literature on the postmigration stage mainly analyzed gender differences in the labor market integration of migrants. Therefore, the data underlying their findings stem predominantly from Labor Force or Household Surveys, register data, and censuses. Consequently, the countries and areas covered for analysis usually concentrate in the Global North. Due to data availability and choices of the authors, this concentration of data results in an accumulation of knowledge on labor market integration of migrants in wealthier destination countries while a large number of migrants reside in the Global South. This leaves a giant gap of knowledge about gender differences in migration outcomes in developing countries yet to be explored.

Digital trace data, data that are generated by the interaction of humans with their digital devices, bear the potential to inform migration research by complementing existing official data sources. The recent launch of the Scholarly Migration Database opens ample opportunities for researchers to study the migration of scientists. Other digital trace data, including migration stocks derived from Facebook and Instagram, may potentially complement analyses for countries with limited data availability as they have been used in settings of sudden population movements (Zagheni et al. 2014; Zagheni, Weber, and Gummadi 2017). Nevertheless, such data have to be used with caution. Their promises and pitfalls have been thoroughly discussed in recent migration literature (Sîrbu et al. 2021; Rampazzo, Rango, and Weber 2023; Kim, Zagheni, and Weber 2023).

Figure 4 attempts to summarize the above-elucidated points. From the many surveys used by the reviewed literature, only 12 are actually panels surveying the same individual or household at several points in time. The category “other” encompasses bibliometric data, shipping records, and other nontraditional data sources for migration research. It also stands out that a notable number of the surveys, censuses, and registers used are not provided by official statistics providers like national statistics offices or international organizations. Many widely used surveys like the Mexican Migration Project have been conducted and are provided by academic institutions. While not compromising on the datasets’ quality, this fact highlights the urgent need for richer migration data on the individual level. Universities set up their own data collections for specific migration corridors because these crucial data collections have not yet been institutionalized by policy-makers. The gaps in the literature along the different stages of migration require different types of data to be closed. Research questions regarding the preparatory stage will benefit from representative surveys as many small-scale surveys have been used to study potential migrants. In order to answer research questions about the sex composition of migratory moves sufficiently, gender-disaggregated flow data are indispensable. In this

FIGURE 4 Number of articles using the respective data type. Administrative data refers to register data and other data types collected for administrative purposes. Many of the included studies use several data sources, therefore they appear multiple times in this diagram



case, harmonized migration definitions across statistical offices would improve the quality of the data for this purpose. The postmigration literature is characterized by a richer data landscape. However, this holds true mainly for Global North countries and, consequently, the research explores mainly South–North migration. Therefore, the Labor Force Survey or equivalent representative surveys that encompass the migrant population and their characteristics are urgently needed for migration destinations in the Global South. As capacities of official statistics providers remain limited to provide a wider geographic coverage, Digital Trace Data are currently being explored by researchers to fill those gaps.

Conclusion

The body of research on gender differences in the migration process has grown considerably over the course of the past decades. This narrative literature review summarizes the main findings of the literature and presents them together with an overview of the available data sources. By doing so,

we show that quantitative studies have revealed substantial differences between migrant women and men across the preparatory, transition, and integration stages of the migration process. Nevertheless, these insights have not yet been translated into migration theories.

In the premigration stage, it was found that women's motives and propensities for primary migration differ from those of men due to gender norms and limited access to resources. Furthermore, women tend to rely more on family networks while men rely on acquaintances in the destination country for migration facilitation. In the perimigration stage, no significant feminization could be detected among highly educated migrants. In the postmigration stage, gender differences seem to arise in the occupational status and labor market integration of migrants, where migrant women are more likely to be employed in the informal sector.

These findings reveal important necessities and opportunities for further research. In particular, gendered patterns in refugee migration, climate migration, and internal migration are currently underexplored. Also, the way gender enters migration methods and the bias that can potentially arise from neglecting gender differences in theories and assumptions requires further investigation. However, any type of quantitative research can only be carried out with available data sources that allow for gender-disaggregated analyses. The primary data sources are surveys, followed by census and administrative data. Questions about whether a feminization of migration took place can only be answered with reliable migration flow data disaggregated by gender. The voids in the data landscape of gender- and sex-disaggregated migration data determine the research questions analyzed by the literature and, consequently, shape its findings. As this review has shown, survey data are the dominant data type used for comparing determinants and outcomes of migration by gender. However, deriving accurate migration flow estimates based on such data is challenging if not impossible. Overall, the research area would benefit tremendously from enhanced gender-disaggregated data collection and provision.

Even though this review and the underlying literature have focused mainly on women and men, it should be stressed that enhanced data collection is an opportunity to extent its coverage to migrants of all genders not only those within the gender binary. Such data would provide a deeper understanding of the specific challenges and needs faced by migrants of all genders, enabling policymakers to formulate targeted interventions and support mechanisms. In the meantime, researchers can utilize the resources available in the best possible way. For instance, by checking the consistency of their results across different gender-disaggregated datasets or by carefully exploring unconventional data sources like Digital Trace Data that often include a gender-breakdown. It is clear that also in migration research a combination of different research methods and data will provide the necessary information on migration flows now and in the future (Yildiz et al.

2024). Combining these data sources and having them speak to each other in a meaningful way is challenging, but the only way forward is to advance the field and make sure that international migration and migrants in all their diversity are better captured both in the Global North as well as in the Global South. On a similar note, data on internal migration and international moves need to be linked much better to understand the migration process and decisions made by individuals, families, and households. Including the relations that the individual is embedded in as key factors for the migration move and its outcomes is in this regard fundamental for scientific advancement and policy alike.

In the words of Hania Zlotnik, “the quantification and characterization of female migration is at most a first step on the path to a better understanding of the forces that shape both the international migration of women and international migration in general” (Zlotnik 1995, 230).

Author contributions

This project was conceptualized and designed jointly by the authors. Data were collected and prepared for analysis by AA and the intercoder reliability check was performed by JK and ES. The first draft of the manuscript was written by AA. All authors contributed to the review and editing of the manuscript. All authors have provided substantial feedback and guidance throughout the process.

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Data availability statement

The articles included in this study are listed in the Supporting Information.

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