Gender gap in non-economic migrants' employment trajectories: the role of differences in entering and exiting (first) employment

1 Introduction

The labour market integration of migrants has been a key concern for policymakers across Europe. In a context of accelerated population ageing and shrinking working-age populations, migrants' labour market participation is becoming increasingly important to cover welfare state costs and employment is also considered as a pathway to social and cultural integration. However, research consistently shows that migrants have lower employment levels compared to majority populations, with especially family migrants and humanitarian migrants (so-called "non-economic migrants") exhibiting low employment rates (Bakker, Dagevos, & Engbersen, 2017; Bevelander, 2011; Bratsberg, Raaum, & Røed, 2017; Fasani, Frattini, & Minale, 2022; Lens, Marx, & Vujić, 2018; OECD, 2023; Ruiz & Vargas-Silva, 2017; Zwysen, 2019). Although employment rates of non-economic migrants overall improve with longer durations of residence, persistent differences with the majority population and economic migrants often persist. Moreover, compared to their male counterparts, female non-economic migrants display lower employment rates (Kosyakova & Salikutluk, 2023; Liebig & Tronstad, 2018; OECD, 2023; Ortlieb, Baumgartner, Palinkas, Eggenhofer-Rehart, & Ressi, 2024; Ruiz & Vargas-Silva, 2017; Salikutluk & Menke, 2021). Although an increasing body of literature studies the labour market integration of non-economic migrants and consistently documents gender gaps in employment levels among family migrants and humanitarian migrants, only a limited number of studies specifically focus on the mechanisms behind this gender gap in employment amongst humanitarian migrants, let alone for family migrants (Fossati, Knotz, Liechti, & Otmani, 2024; Kosyakova & Salikutluk, 2023; Ortlieb et al., 2024; Salikutluk & Menke, 2021).

We argue that our understanding of the gender gap in non-economic migrants' labour market integration can be improved by not only documenting group-level employment rates, but also addressing the individual-level transitions between employment positions which give rise to gender differences in employment rates. More specifically, the lower employment rates among female non-economic migrants compared to their male counterparts might result from a relatively high proportion of women who never manage to enter the labour market after arriving in the host country, but might also occur due to less stable employment trajectories with more frequent transitions into and out of employment, resulting in a larger share of women being not employed at any moment in time. This distinction is relevant for policymakers as the implications for social security dependence (unemployment benefits vs. social assistance), poverty risks, and social and cultural integration differ substantially depending on whether the low employment rates among female non-economic migrants primarily reflect a (static) group of women that is structurally excluded from the labour market or a dynamic group characterised by unstable employment positions. However, the underlying transitions of employment entry and exit remain masked, as the vast majority of available studies addresses non-economic migrants' employment rates at specific time points after arrival (Bedaso, 2021). In addition, empirical research on job entry and subsequent labour market transitions of non-economic migrants is scarce, especially among family migrants, and rarely specifically focuses on gender differences (Jestl & Tverdostup, 2023; Lens, Marx, & Vujić, 2019; Weber, 2024). As a result, it remains unclear to what extent gender differences in employment rates upon arrival among family migrants and humanitarian migrants relate to differential entry into first and later jobs, or sooner exists from work among those having a job. This is unfortunate as barriers with respect to entry into employment, and particularly a first job in the host country, differ from determinants with respect to exits from employment (cf. section 3). Hence, disentangling whether the gender gap in non-economic

migrants' labour market participation is mainly related to differences in the probability of entering (first) employment or to differences in the probability of exiting employment will provide a better understanding of the extent to which the employment of female family and humanitarian migrants could be remediated by addressing mechanisms affecting (first) employment entry, or factors affecting the continuation of employment.

To unravel the labour market transitions leading to gender differences in the employment outcomes of family migrants and humanitarian migrants upon arrival, this study adopts innovative multistate hazard and microsimulation models. In a first step, multistate hazard models are used to estimate transition probabilities into and out of employment among male and female non-economic migrants of specific origin groups. In contrast to studies addressing employment positions rather than the underlying labour market transitions, this more detailed and dynamic approach to study employment trajectories aligns better with the theoretical consensus that employment entry and exit are shaped by distinct mechanisms (cf. section 3). In a second step, the estimations of these hazard models are used to simulate group-specific employment trajectories that in turn allow to compare the number of quarters in which male and female non-economic migrants of specific origin groups were employed during the first four years since arrival. By performing counterfactual scenarios in which (first) entry or exit risks of men are assigned to women, we can quantify to what extent gender differences in early employment are related to differences in the probability of (I) specifically finding a first job, (II) entering subsequent employment spells or (III) differences in the probability of exiting employment. The first years after arrival require special attention, as integration trajectories are path-dependent and these early employment trajectories will shape the subsequent labour market integration of non-economic migrants (Bakker et al., 2017; De Vroome & Van Tubergen, 2010).

We use longitudinal administrative microdata of a representative panel of immigrants entering Belgium and subsequently residing in Flanders (the Northern and most populous region) between 2005 and 2016. In addition to data availability, the Belgian case-study is well-suited to assess the gender gap in non-economic migrants' employment trajectories, and of international interest to scholars and policymakers for two reasons. First, Belgium hosts large subgroups of non-economic migrants. Belgium is an old immigration country with large migration inflows starting in the post-WWII era and family migration (i.e. family reunion and marriage migration) thereafter. Similarly, in contrast to some other European countries with relatively restrictive asylum procedures, Belgium has witnessed significant inflows of humanitarian migrants. Second, Belgium exhibits one of the largest gaps in employment between migrants and native-born population subgroups (OECD, 2020). This situation has been interpreted in terms of strong labour market regularisation, with high employment protection and high hiring and firing costs, which is at risk of strengthening gaps between the so-called insiders and outsiders of the labour market (Andersen, 2012; FOD WASO & CGKR, 2013).

2 Belgian context

2.1 Non-economic migrants in Belgium

Over the past decades, family formation and reunification have become the main migration channels to Belgium and the majority of migrants entering Belgium for family reasons are women. During the observation period of this study (2005-2016), family migrants mainly originate from Morocco, Romania, the Netherlands and France (DVZ, 2018; Myria, 2020). However, the composition of family migrants in terms of origin countries is also associated with the inflow of humanitarian migrants, as a substantial share of family migrants are joining a third country national, who are often humanitarian migrants themselves.

Since the 1990s, continuous inflows of asylum seekers and refugees represent an important share of immigration to Belgium. During the observation period in this study, asylum seekers and refugees predominantly originate from Syria, Afghanistan and Iraq (DVZ, 2017). While the majority of asylum seekers are men (e.g. in 2015, 72% of all asylum seekers were men), the approval rate for international protection is overall slightly higher for women seeking asylum than for men, although the gender difference in approval depends strongly on the country of origin (e.g. largely equal approval rate for men and women among asylum seekers of Syria and Iraq, but higher among women than men from Afghanistan or Somalia).

2.2 Integration programme and labour market access

Since the 2000s, Flanders has a civic integration programme, which consists of i) a social orientation course where newcomers learn about life, housing and work in Belgium, ii) a Dutch language course, iii) registration at the Public Employment Service (since 1/3/2022), and iv) a participation programme to strengthen the social network of newcomers through e.g. voluntary work or a buddy project (since 1/1/2023). From 2/3/2008 onwards, the civic integration programme is mandatory for non-EU family and humanitarian migrants and optional for newcomers from EU and European Free Trade Agreement (EFTA) countries, as well as non-EU migrants who come for work or study[1]. The civic integration trajectory starts after migrants obtain a residence permit and are registered in a Flemish municipality. Migrants who are obliged to enrol in the programme must sign up within three months after obtaining their residence permit and can be sanctioned with an administrative fine or lose their social benefits in case they fail to comply.

Regarding non-economic migrants' access to the labour market, all citizens from EU and EFTA countries are allowed to work and do not need a work permit to do so. For non-EU family migrants, employment regulations depend on the nationality of the person they join. In case they join a Belgian or EU citizen, non-EU family migrants are allowed to work from the moment they are registered at the municipality and a work permit is not required in case they are the spouse, (grand)child or (grand)parent of the person residing in Belgium. Non-EU migrants joining a non-EU family member are allowed to work (without a work permit) after having obtained a residence permit. During the application process, they are allowed to work once they receive an certificate of immatriculation', which is granted after a positive residency check. With respect to humanitarian migrants, recognised refugees are allowed to work (without a work permit). During the asylum procedure, asylum seekers are allowed to work after a waiting period of four months after their application, which is a short 'employment ban' compared to other European countries. After this waiting period of four months, asylum seekers are registered in the population register and can also enrol in the civic integration programme.

2.3 The Belgian labour market

Compared to other OECD countries, the Belgian labour market is characterised by relatively high minimum wages and generous unemployment benefits, which influences the labour market structure. Unlike countries with more flexible labour markets (e.g. Denmark) or countries with lower minimum wages (e.g. USA or UK), labour market segmentation in Belgium implies stark differentials in labour market opportunities between insiders with stable careers and better working conditions and outsiders who tend to be either unemployed, or employed in secondary labour market segments with less stable and lower paid jobs (Doerflinger, Pulignano, & Lukac, 2020). This low degree of labour

[1] During the observation period of this study, only sufficient attendance (80%) to the social orientation and language course was mandatory, but the certificate of 'civic integration' was only granted in case the tests were passed. Since 1/2/2022, newcomers for whom the civic integration programme is mandatory are obliged to pass the tests.

market flexibility and the relatively high minimum wages also affect employers' recruitment policies (e.g. being risk averse in recruitment decisions).

As in most OECD countries, family migrants and especially humanitarian migrants exhibit low employment levels in Belgium and are characterized by employment in lower segments of the labour market (Carpentier & Schoumaker, 2018; Lens et al., 2018; OECD, 2023). Compared to their male counterparts, female family and humanitarian migrants display lower employment rates and are more likely to be in temporary employment and to be overqualified for their job. Moreover, this gender gap in employment is larger among non-economic migrants compared to economic migrants and the Belgian population without a migration background.

3 Theoretical framework

Migrants' employment outcomes in the first years after arriving in the host country will depend on their ability to attain a first job, but also on the probability of exiting and re-entering the labour force. This section discusses five theoretical frameworks that shed light on the mechanisms underlying non-economic migrants' first employment entry upon arrival, subsequent employment entries and employment exit: i) micro-economic theories of utility maximisation, ii) human capital theory, iii) signalling theory, iv) social capital theory, and v) sociological theories on gender norms. Following these theories, we will discuss to what extent the probabilities of entering and exiting (first) employment of family and humanitarian migrants might vary by gender.

First employment entry

As micro-economic theories assume that individuals' labour market opportunities (e.g. wage potential) will largely determine the relative utility to be gained from employment versus investing time in other, non-market, activities such as volunteering or providing care for family members (Becker, 1991), the generally lower labour market opportunities witnessed by female non-economic migrants (cf. section 2.3) might steer them towards such other activities to a higher extent than their male counterparts. Additionally, given the fact that non-economic migration and childbearing are routinely found to be strongly related (Milewski, 2009), childcare responsibilities may also constrain female non-economic migrants' free choice regarding time investments in paid work. Especially when women have limited access to childcare (be it as a result of the inaccessibility of formal care or limited informal care in one's social network), childcare responsibilities may be an important barrier to enter employment upon arrival (Kosyakova & Salikutluk, 2023). In countries such as Belgium that are characterised by supply shortages in formal childcare and long waiting lists (European Commission, 2014; Vandenbroeck, De Visscher, Van Nuffel, & Ferla, 2008), difficulties in combining work and family may entail lower probabilities of entering employment among female non-economic migrants compared to their male counterparts.

Human capital theory posits that human capital increases marginal productivity, making job candidates with a higher degree of human capital more attractive to employers (Becker, 2009). For recently arrived migrants, especially their educational level and (host country) language skills will be important determinants of their human capital shaping their likelihood of finding a job. Since employers could be uncertain about the value of foreign (especially non-European) qualifications, the recognition of diplomas is expected to increase the likelihood of first employment entry (in a job that matches with their qualifications). However, this process is long and cumbersome in Belgium and can be difficult for migrants who lack proof of their degrees (OECD, 2023). Although the relevance of host country language skills depends on the sector and type of job, research indicates that a lack of host country language skills is (compared to other OECD countries) a major obstacle to enter employment

for migrants in Flanders, as the overwhelming majority of vacancies require (very) good Dutch language proficiency (OECD, 2023). Consequently, gender differences in the probability of finding a first job in the host country are potentially accounted for by variation in host country language skills and (recognized) educational credentials. Research for Belgium indicates that female refugees are generally lower educated and have lower host country language skills than male refugees (Lens et al., 2018), and male family migrants are also found to exhibit higher Dutch language proficiency in comparison to their female counterparts. Moreover, female migrants are less likely to participate in and complete integration courses shortly upon arrival, which has been related to childcare responsibilities (OECD, 2023).

Signaling theory highlights that employers face uncertainty during the hiring process as they have to rely on the limited observable characteristics to infer job candidates' potential productivity. Especially in labour market contexts with high employment protection and minimum wages such as Belgium, employers may be more cautious with hiring decisions when they lack full information and be more likely to base their decisions on stereotypes associated with specific groups (i.e. statistical discrimination). Following signalling theory, we assume that the lack of information problem is possibly at its worst when considering applications from non-economic migrants shortly after arrival due to limited credentialed skills and no employment experience in the host country. In turn, employers may use gender as an indicator to infer migrants' productivity and might consider women as less committed to their jobs and less reliable than men due to e.g. current or potential caring responsibilities. Gender stereotypes are furthermore likely to differ between origin groups and especially women wearing a headscarf could be perceived as less willing to work aligning with persistent ethnic stereotypes (Salikutluk & Menke, 2021). However, a recent study on Germany, Sweden and Austria indicates that female refugees are preferred over male refugees in the job recruitment process (Fossati et al., 2024), which hampers hypothesising about how the signalling mechanism might operate differently by gender.

Furthermore, social capital theory underscores that social networks and the resources that can be accessed through these networks are crucial to find a job (Granovetter, 1974). Recently arrived migrants may strongly rely on their social networks to find a first job in ethnic enclave economies due to language difficulties or limited knowledge of the local labour market. However, especially contacts with the native-born population are valuable (so-called bridging social capital), as they can provide access to job opportunities in the primary labour market where wages, job security, and working conditions are typically better (De Vroome & Van Tubergen, 2010). Following social capital theory, non-economic migrants' probability of entering first employment may differ by gender as a result of differences in the composition their social networks. In this respect, research indicates that refugee women tend to have fewer contacts with the native-born population than their male counterparts (Kosyakova & Salikutluk, 2023; Salikutluk & Menke, 2021; Schmidt, Jacobsen, & Krieger, 2020). Regarding family migrants, although they may have more elaborate networks than humanitarian migrants, female family migrants (especially of Turkish and Moroccan origin) may be more strongly oriented towards their family or ethnic community compared to their male counterparts, which is likely to entail fewer contacts with the native-born population (Seibel, 2020).

Finally, sociological theories on gender norms highlight that individuals' work-family attitudes are shaped by societal expectations regarding men's and women's labour force participation and childcare responsibilities through socialisation processes (Blumberg, 1984; West & Zimmerman, 1987). Migrants' attitudes in turn influence the extent to which they invest in education (both in the origin and host country), learning the host country language and employment. In this view, gender differences in the probability of entering employment for the first time after arrival may be related to

traditional work-family attitudes among female non-economic migrants (Salikutluk & Menke, 2021). Regarding family migrants, research for Belgium suggests that particularly female Turkish and Moroccan family migrants are selective with respect to work-family attitudes, as second or higher generation Turkish and Moroccan men typically opt for a marriage with a first generation woman as a strategy to adhere to more traditional patrilocal gender norms. In contrast, male family migrants from Turkey and Morocco are often highly motivated to secure employment quickly to fulfil their 'breadwinner role' (Timmerman, 2006). While many humanitarian migrants have been socialised in countries characterised by a high degree of gender inequality, though there are strong differences between origin countries, selection processes may result in more progressive work-family attitudes among female refugees compared to women (and family migrants) of their origin countries. Additionally, the refugee experience itself may modify gender roles (Habash & Omata, 2023).

Subsequent employment entry

As migrants settle into the host country, the dynamics influencing their employment outcomes evolve and entering into subsequent employment spells presumably involves a (partly) different set of gendered challenges and opportunities than the initial transition into the labour market. With respect to micro-economic theories, gender differences in employment opportunities of non-economic migrants may result in women having less incentives to re-enter employment and deciding to invest their time in other activities. However, unlike the first employment entry where women have to manage childcare responsibilities for the first time, we assume that potential incompatibilities between work and family life may diminish over subsequent employment spells. On the one hand, this may be due to increased institutional knowledge or the development of informal networks, which can make childcare more available over time. On the other hand, women who succeeded in entering employment for the first time may represent a selective group who already had access to childcare support. In case this support remains available, gendered constraints posed by childcare responsibilities are likely to be less pronounced in subsequent employment spells.

With respect to human capital, the gender gap in language skills may be more limited among (the selection of) non-economic migrants who have accumulated work experience in the host country. Additionally, particularly work experience gained in the host country becomes a crucial determinant for migrants' subsequent employment entry and more important than the educational level migrants possessed upon arrival. In this view, female migrants may encounter gendered barriers to entering subsequent employment spells, particularly if their work experience has been fragmented or interrupted by caregiving responsibilities shortly after arrival. Hence, while it is likely that gender differences in entering subsequent employment spells are less pronounced than in entering employment for the first time as a result of selection processes, they may persist due to the differential accumulation of work experience at earlier stages after migration.

Following signalling theory, employers may view migrants with a track record of working in the host country as more reliable and capable, diminishing stereotypical biases that may have initially affected migrants' first employment entry. While the signalling functions of ethnicity and gender may continue to entail a lower likelihood of entering employment among women than men, signals connected to host country work experience may entail additional challenges for migrant women to enter subsequent employment spells. In this respect, employers may perceive prolonged unemployment or inactivity as well as interrupted careers, which may be more common among women, as a sign of skill deterioration or lack of motivation.

Regarding social capital, as migrants accumulate more local work experience, they may build "bridging" social capital, which connects them to broader, more diverse networks that include native-

born individuals and employers from various sectors. Gender differences in this process of accumulating bridging social capital may remain significant as a result of occupational segregation and/or potential differences in the duration of their local work experience.

Finally, gendered parenting norms are likely to influence the employment outcomes of non-economic migrants, even in subsequent employment entries. Research indicates that caregiving responsibilities are often exacerbated during periods of parenthood (Baxter, Hewitt, & Haynes, 2008), leading to an intensification of gender-specialized roles within the household. As a result, female migrants may find it particularly difficult to re-enter the labour market after having children.

Employment exit

Micro-economic theories argue that individuals' cost-benefit calculation is influenced by the specific context they experience. Individuals are assumed to exit employment in case the (financial) returns from employment are insufficient to compensate for the costs of employment, which are strongly influenced by the institutional context such as the availability and accessibility of work-family reconciliation policies. In this view, female non-economic migrants may be more likely to exit employment than men as a result of lower net income gains from employment.

From the perspective of human capital theory, signalling theory and social capital theory, gender differences in the probability of exiting employment are assumed to occur due to entry into differential labour market segments. As a result of gender differences in human capital, social networks and/or gender-based discrimination, female non-economic migrants may be more likely than their male counterparts to be employed in lower labour market segments and/or with temporary contracts (Ortlieb et al., 2024). Research for Belgium indicates that female family migrants and refugees are overrepresented in low-skill and low-pay jobs and temporary contracts (Lens et al., 2018)**.** This is in turn expected to entail gender differences in the risk of exiting employment, as the likelihood of exiting employment is generally higher in lower labour market segments.

Finally, following sociological theories on gender norms, social expectations regarding women's labour force participation are likely to change over the life course, particularly once there are children (West & Zimmerman, 1987). In this view, women's likelihood of leaving employment may be affected by changing attitudes and gender role expectations regarding employment after the transition to parenthood, which may contribute to differential employment exit risks between men and women.

In sum, the aforementioned theoretical frameworks indicate that the factors affecting gender differences in first employment entry are different from the factors affecting gender differences in subsequent employment entries and employment exits. Moreover, following these theories, it could be expected that there are especially pronounced differences in the probability of men and women to enter first employment. This paper will therefore address to which extent gender differences in non-economic migrants' early employment trajectories can be attributed to differential probabilities of i) entering first employment, ii) entering subsequent employment spells, and iii) exiting employment. By providing empirical evidence on the relative contribution of these individual-level transitions, this study aims to provide input for scholars and policymakers on the factors that could remediate the cumbersome labour force integration of female family and humanitarian migrants.

4 Data and methods

4.1 Data

This study uses longitudinal data from a representative panel of immigrants aged 18-65 who were registered in the Belgian population register[2] between January 2005 and December 2016 and subsequently resided in Flanders. The panel is disproportionally stratified by admission category, with an overrepresentation of asylum seekers/refugees[3]. Sampled individuals are followed until i) the age of 65, ii) emigration or death, or iii) the end of the observation period on 31 December 2016. Data on newcomers extracted from the population register was linked to i) data from the Crossroads Bank for Civic Integration providing information on individuals' admission category and country of origin and ii) data from the Belgian Social Security Registers which provides information on labour market positions of individuals on a quarterly basis.

This study focuses on family migrants and humanitarian migrants (including asylum seekers, refugees, individuals with residence permits based on subsidiary protection, and regularisation for humanitarian reasons), resulting in an analytical sample of 2913 male family migrants, 5216 female family migrants, 5617 male humanitarian migrants and 2855 female humanitarian migrants. This generates 189,825 person-quarters of observation (35,745 for male family migrants, 64,468 for female family migrants, 57,811 for male humanitarian migrants and 31,801 for female humanitarian migrants). Since family migrants and humanitarian migrants are heterogenous groups in terms of origin countries (cf. Table 1), the analyses are performed separately for each origin group. Both among family and humanitarian migrants, individuals with an unknown origin are excluded from the analyses (accounting for 1.47% to 4.22% among female humanitarian migrants and male family migrants respectively). Additionally, the analyses of humanitarian migrants do not consider the origin groups America/Oceania, Turkey and Morocco due to small sample sizes[4]. As a result, 347 male and 146 female humanitarian migrants are excluded from the analyses (accounting for 6.17% and 5.12% respectively).

Table 1 *Composition of non-economic migrants in terms of origin group by gender.*

	Family migrants		**Humanitarian migrants**	
	men	women	men	women
Europe	18.57	18.65	21.56	40.78
America/Oceania	9.65	9.80	0.53	1.26
Turkey	13.90	8.72	2.24	1.37
Morocco	27.81	20.40	3.40	2.49
Other Asia	10.85	27.03	45.90	25.50
Other Africa	15.00	12.33	23.07	27.15
Unknown	4.22	3.07	3.29	1.47
N persons	2913	5216	5617	2855

[2] All individuals who are authorized to stay in Belgium for a period of more than 3 months are registered in the population register. Asylum seekers are only registered in the population register 4 months after their application (during these first 4 months they are registered in the "waiting register"). As such, asylum seekers are allowed to work from the start of our observation period (cf. section 2.2).

[3] A sampling fraction of 2/9 was used for asylum seekers/refugees and a sampling fraction of 10/96 for newcomers with other admission categories.

[4] Combining Turkish and Moroccan refugees into one group still does not result in large enough sample sizes among women to estimate our models.

4.2 Methods

Modelling transitions into and out of employment

In a first step, we estimate the probabilities of transitioning into employment and out of employment (i.e. becoming unemployed or inactive). As entry and exit probabilities are expected to differ by admission category, origin group and gender, they are estimated for each group separately. For each group, we estimate two discrete-time hazard models using a complementary log-log link function to estimate the (continuous-time) hazard of making a transition in quarter t for an individual i in origin state s. The models on employment entry (Eq. 1) and employment exit (Eq. 2) are conceptually similar, including i) the quarter (t) since the start of the spell (cubic specification), ii) the spell order ($SPELL$) since registration in the population register (quadratic specification), and iii) the interaction between time spent in the spell and the spell order. Parameter estimates for each group are available in Tables 3 and 4 in Appendix. Additionally, Figure 4 in Appendix visualises for each group the cumulative incidence of making the transition to employment and non-employment by spell order.

$$\ln\left[-\ln\left(1-q(t)_{is}\right)\right]=\alpha t_{is}+\beta SPELL_{is}+\beta\, t_{is} SPELL_{is} \qquad s=not\,employed \quad (1)$$

$$\ln\left[-\ln\left(1-q(t)_{is}\right)\right]=\alpha t_{is}+\beta SPELL_{is}+\beta\, t_{is} SPELL_{is} \qquad s=employed \quad (2)$$

Microsimulation of early employment trajectories

For each group, the estimations of the aforementioned hazard models are used to simulate employment trajectories for 10,000 individuals over the first four years after registration in the population register. At the moment of registration, everyone is assigned to be not employed. For each quarter since registration, the hazard models generate the conditional probability of making a transition, given an individual's origin state (employed or not employed), the time spent in the spell and the order of the spell. This probability is subsequently compared to a random value drawn from a uniform distribution to determine whether a transition takes place in the quarter considered. The group-specific employment trajectories that are generated by the microsimulation are then aggregated to yield the number of quarters in which male and female non-economic migrants were employed during the first four years since registration.

To examine the relative contribution of transitions into and out of employment as dynamics underlying gender differences in early employment trajectories among non-economic migrants, four simulations are performed (cf. Table 2). By comparing differences between men and women in the number of quarters in which they are employed during the first four years since registration, according to a base simulation in comparison to three counterfactual simulations, we can quantify the extent to which gender differences in early employment are related to differences in the probability of i) entering first employment, ii) entering subsequent employment spells and iii) exiting employment.

First, we use estimated group-specific employment entry and exit probabilities to simulate migrants' employment trajectories. This base simulation serves as a reference point to compare simulated trajectories of counterfactual simulations. In the second simulation, the estimated probabilities for entering employment for the first time after registration of men are assigned to women of the same admission category and origin group (e.g. the probabilities of male Turkish family migrants are assigned to female Turkish family migrants), while retaining the group-specific probabilities for exiting employment and for entering high-order employment spells. Hence, for each group, this simulation assumes equal probabilities to enter a first employment spell for men and women, but differential probabilities for entering high-order employment spells and exiting employment. Third, we assign

men's probabilities of entering subsequent employment spells to women. Hence, in this simulation, women retain their own specific probabilities for entering employment for the first time and for exiting employment. Fourth, we assign men's probabilities for leaving employment to women, while each gender group retains its own specific entry probabilities.

Table 2 *Overview of the simulations*

Name	Probability employment entry	Probability employment exit
Simulation - Base	Group-specific	Group-specific
Simulation - FIRST entry men	First spell: probability men* Higher-order spells: group-specific	Group-specific
Simulation - LATER entry men	First spell: group-specific Higher-order spells: probability men*	Group-specific
Simulation - exit men	Group-specific	Probability men*

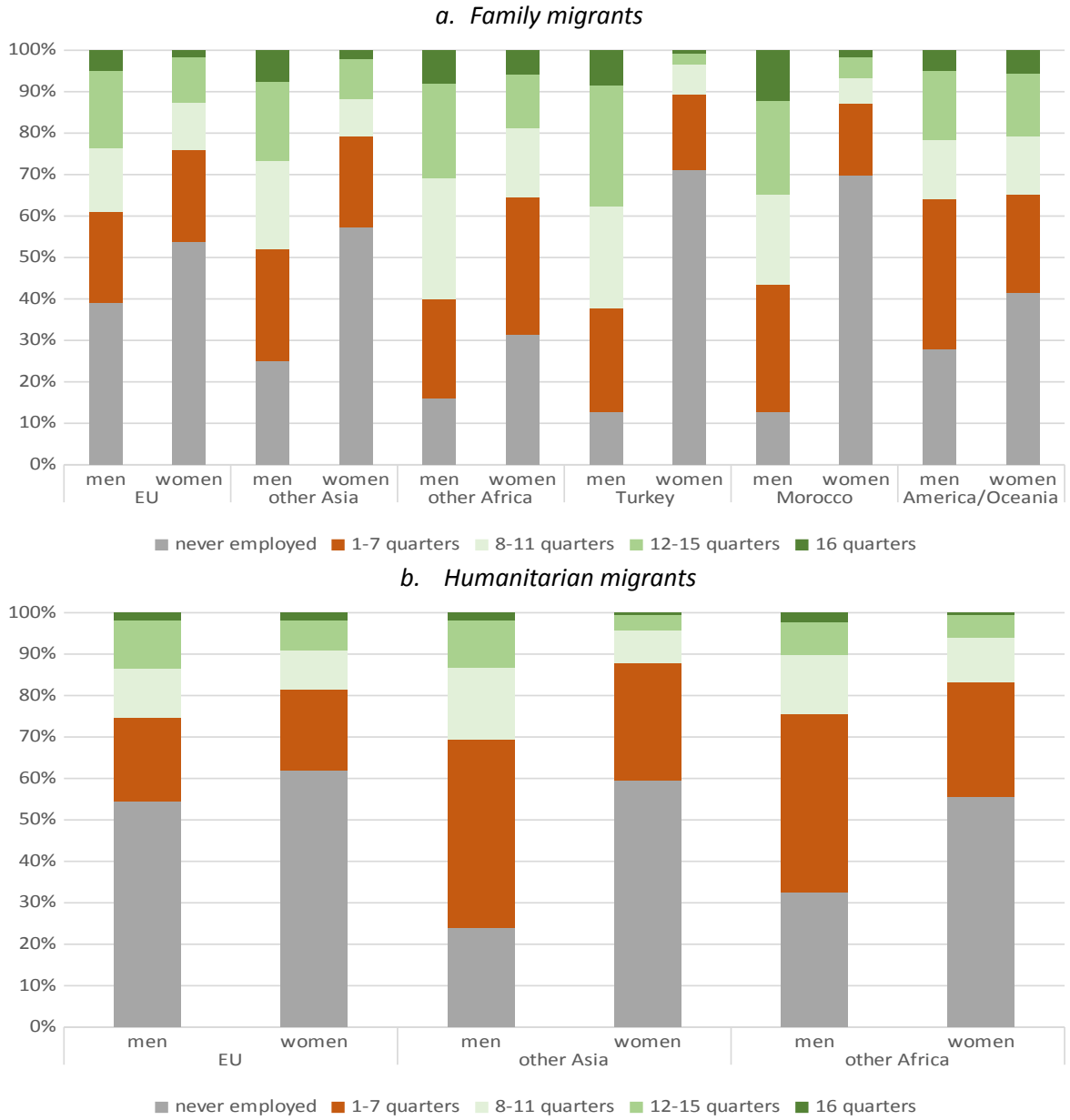
** Probabilities of male family migrants are assigned to female family migrants of the same origin group and the probabilities of male humanitarian migrants are assigned to female humanitarian migrants of the same origin group.*

5 Results

5.1 Descriptive results

Although the overall employment level of female non-economic migrants gradually increases over time, it remains lower compared to their male counterparts (cf. Fig. 3 in Appendix). In order to assess whether this gender gap in employment rates occurs as a result of a higher proportion of women who never manage to enter the labour market or due to less stable employment trajectories, Figure 1 illustrates how many quarters female and male non-economic migrants of different origin groups have on average been employed during their first four years since registration. With respect to family migrants, our results show for all origin groups that a larger share of women never enters employment in the first four years in Belgium compared to their male counterparts (Fig. 1a). This gender gap is particularly pronounced among family migrants from Turkey and Morocco, where 70% of women never enters employment compared to 13% of their male counterparts. In contrast, the share of women who never enter employment is lowest among female family migrants from other African countries (31%) and also only 16% of their male counterparts has never entered employment in these first four years. A similar pattern emerges among humanitarian migrants. The share of women who never enters employment ranges from 56% among those from other African countries to 62% among those from EU countries, which is larger compared to their male counterparts (ranging from 24% for the Asian origin group to 55% for the EU origin group). Furthermore, very few male or female non-economic migrants are employed for all 16 quarters, indicating that direct and stable labour market participation is rare. Among those who do enter employment during their first four years after registration, a significant proportion is employed for less than 8 quarters (i.e. less than 50% of the time), which is particularly the case among humanitarian migrants. Hence, our results indicate a persistent gender gap in early employment trajectories among both family and humanitarian migrants, which seems to be largely driven by the high proportion of women who never enter employment in their first years after arrival.

Fig. 1 *The average number of quarters in which (a) family and (b) humanitarian migrants were employed during their first four years since registration*



Note: Results of the base simulation using group-specific probabilities for both employment entry and exit.

5.2 The role of differential transitions into and out of (first) employment

Our model estimates indicate that the probability to enter and exit employment differs between men and women for all origin groups of non-economic migrants (cf. Fig. 4 in Appendix). Compared to their male counterparts, women are significantly less likely to enter employment, particularly in the first non-employment spell upon registration in the population register. In contrast, gender differences in exit probabilities are relatively small and among some origin groups, women are even less likely than men to exit employment. In order to quantify the relative contribution of these differential hazards of entering and exiting employment to gender differences in early employment for the different groups studied, we use the base simulation with group-specific employment entry and exit probabilities as a

reference point and compare the time spent in employment during the first four years since registration across the base simulation and three counterfactual simulations. This approach will provide empirical insight into whether and to what extent gender differences in early employment are driven by differences in the probability of (I) specifically finding a first job, (II) entering subsequent employment spells or (III) differences in the probability of exiting employment.

The results of the base simulation in Figure 2 show that male family migrants from Turkey, Morocco and other African countries are on average employed for 52-55% of the time during their first four years after registration (i.e. on average 8-9 of the 16 quarters). In contrast, male family migrants from America/Oceania and European or other Asian countries display a lower labour market participation ranging from 34-44% (i.e. on average employed for 6-7 of the 16 quarters), as a larger share of men never enters employment during these first four years among these origin groups (cf. Figure 1). Among female family migrants, the time spent in employment differs strongly by origin group and is especially low among Turkish and Moroccan women (around 13%). As a result, the gender gap is most pronounced among Turkish and Moroccan family migrants and smallest among family migrants from America/Oceania. Compared to family migrants, humanitarian migrants display a low market participation during their first four years in Belgium, with women being on average employed for 15-18% of the time and men for 23-33% of the time. Hence, while female humanitarian migrants display a lower labour market participation than female family migrants, the gender gap is generally larger among family migrants.

In order to illustrate the contribution of differences in entering first employment in explaining the gender gap in non-economic migrants' early employment, we perform a first counterfactual simulation where women are assigned men's probabilities of entering a first employment spell. In this counterfactual simulation (i.e. "FIRST entry men), we find that the gender gap in employment fully disappears for all origin groups of humanitarian migrants and for most family migrants. The only exception is among Turkish and Moroccan family migrants, where women still spend less time in employment than men. This remaining gap is due to the higher exit probabilities among female Turkish and Moroccan family migrants: even when they enter initial employment, they are more likely than their male counterparts to leave employment and less likely to subsequently re-enter employment (cf. Figures 4d and 4e in Appendix). Moreover, among family migrants of European countries or America/Oceania, as well as humanitarian migrants from African countries, women surpass men in the average time spent in employment when assigning men's entry probabilities into first employment. This is due to the fact that once they are employed, women of these groups are less likely than their male counterparts to exit employment, indicating a greater employment stability (cf. Figures 4a, 4c and 4f in Appendix).

In the second counterfactual simulation ("LATER entry men"), where women retain their own probabilities for entering employment for the first time and for exiting employment, but are assigned men's probabilities of entering subsequent employment spells, there is almost no change in their time spent in employment compared to the base simulation across all groups. Although women are overall also less likely than their male counterparts to enter subsequent employment spells (cf. Fig. 4 in Appendix), this simulation indicates that the gender gap in early employment is primary driven by factors related to entering a first job.

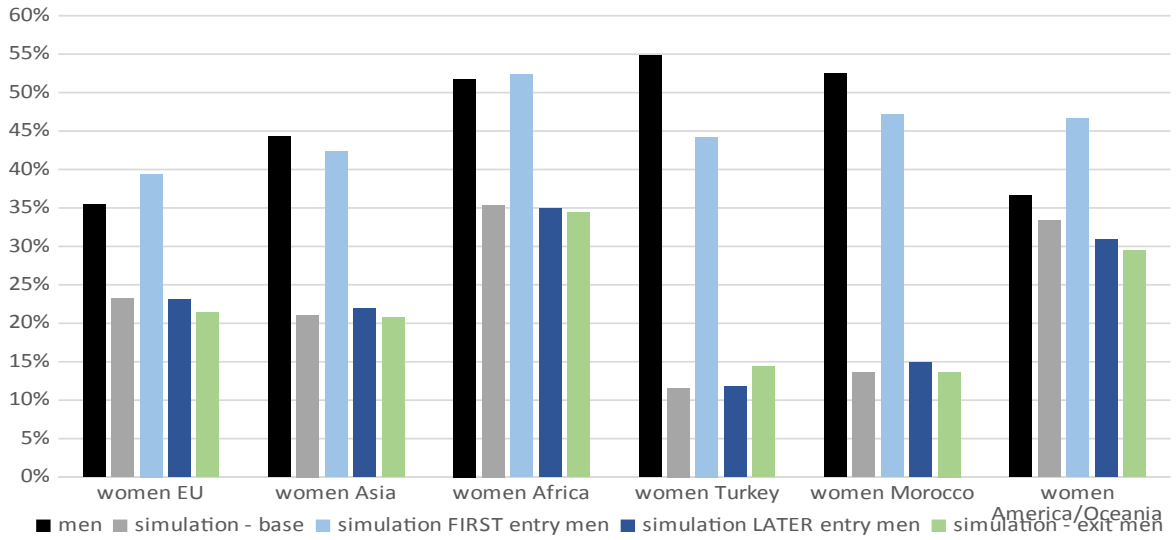
Finally, in the third counterfactual simulation, in which women are assigned men's probabilities of leaving employment, but retain their own (lower) probabilities of entering employment (i.e. the "exit men" simulation), their average time spent in employment hardly changes compared to the base simulation. Moreover, there is even a small decrease in the time spent in employment among humanitarian migrants from African countries (from 18% to 16%) and among family migrants from

European countries (from 23% to 21%) and from America/Oceania (from 33% to 29%). This is due to the fact that women in these groups generally have slightly lower exit probabilities compared to their male counterparts (cf. Figures 4a, 4f and 4i in Appendix).

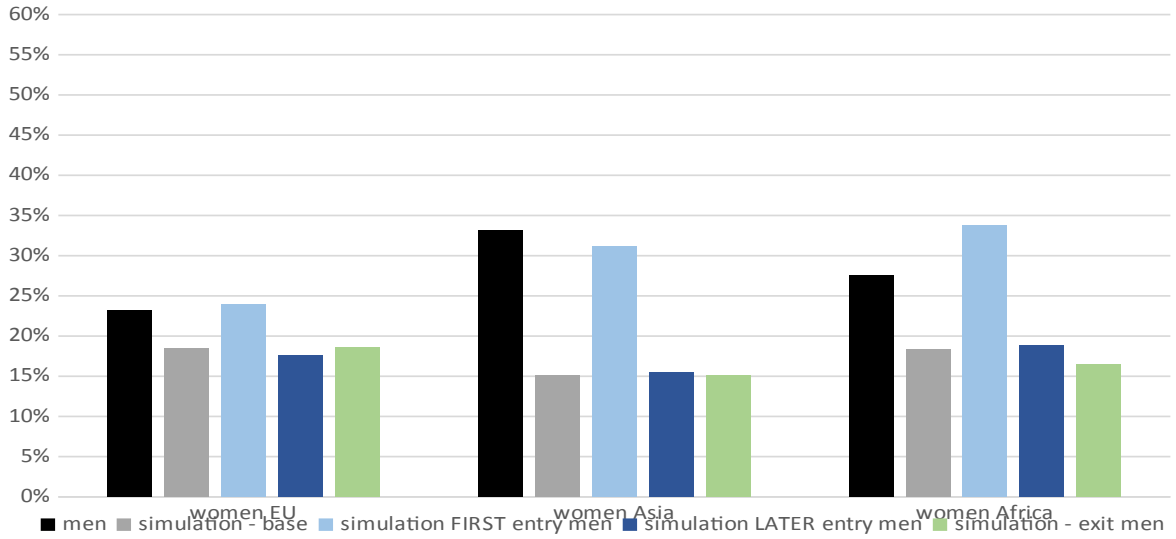
In sum, the results of the simulations highlight that the lower probability of entering first employment among female non-economic migrants compared to their male counterparts fully explains gender differences in early employment trajectories. Only among family migrants of Turkish and Moroccan origin, women's time spent in employment remains lower compared to men when they are assigned men's probabilities of entering a first employment spell.

Fig. 2 *The proportion of quarters in which (a) family and (b) humanitarian migrants were employed during the first four years registration in the population register across four simulations*

a. Family migrants



b. Humanitarian migrants



Note: The base simulation uses group-specific probabilities for both employment entry and exitthe simulation 'FIRST entry men' assigns the entry probabilities of men into the first employment spell to women (within the same admission category and origin group), while each group retains its own specific probabilities for entering high-order employment spells and for exiting employment; the simulation 'LATER entry men' assigns the entry

probabilities of men into second and higher-order employment spells to women (within the same admission category), while each group retains its own specific probabilities for entering the first employment spell and for exiting employment; the simulation 'exit men' assigns men's probabilities for leaving employment to women (within the same admission category and origin group), while each group retains its own specific entry probabilities.

6 Discussion

In most Western and Northern European countries, family and humanitarian migrants (i.e. non-economic migrants) exhibit lower employment levels compared to the majority population and economic migrants (Bevelander, 2011; Bratsberg et al., 2017; Fasani et al., 2022; Ruiz & Vargas-Silva, 2017; Zwysen, 2019). While research consistently indicates that female non-economic migrants display lower employment rates compared to their male counterparts, the differential transition rates between employment positions accounting for this gender gap remain largely unexplored. This paper argues that disentangling whether gender differences in non-economic migrants' early employment primarily arise from differences in entering (first) employment or from differential risks of leaving employment will provide valuable input for policymakers. Empirical evidence on the relative contribution of these individual-level transitions is important, as the factors affecting entry into employment, and particularly a first job in the host country, differ from the determinants with respect to exits from employment. Moreover, whether the gender gap in employment rates occurs as a result of a higher proportion of women who never manage to enter the labour market or due to less stable employment trajectories, entails differential implications in terms of migrants' social security dependence, poverty risks, and broader social and cultural integration. Therefore, this study uses longitudinal microdata for Flanders (Belgium) and applies innovative multistate hazard and microsimulation models to quantify the extent to which gender differences in non-economic migrants' early employment are shaped by differences in the probability of (I) specifically entering a first job, (II) entering subsequent employment spells or (III) exiting employment.

Consistent with previous research on the labour market integration of non-economic migrants (Bevelander, 2011; Bratsberg et al., 2017; Fasani et al., 2022; Lens et al., 2018; Ruiz & Vargas-Silva, 2017; Zwysen, 2019), we find a clear gender gap in employment levels among family and humanitarian migrants in Flanders. Moreover, our results highlight that it is crucial to distinguish family and humanitarian migrants in terms of origin countries, as the time spent by male and female non-economic migrants in employment during their first years in Belgium differs strongly depending on the origin group. Among family migrants, the gender gap is most pronounced among Turkish and Moroccan origin groups: whereas male family migrants from Turkey or Morocco are on average employed for 52-55% of the time during their first four years after registration in the Belgian population register, women are on average employed for only 13% of the time. In contrast, the gender gap is smallest among family migrants from America/Oceania, where the average time spent in employment amounts to 37% and 33% among men and women, respectively. Compared to family migrants, humanitarian migrants display a lower market participation during their first four years in Belgium, with women being on average employed for 15-18% of the time and men for 23-33% of the time. Hence, while female humanitarian migrants display a lower labour market participation than female family migrants, the gender gap is overall larger among family migrants.

By comparing the time spent in employment during the first four years since registration across counterfactual scenarios, our results clearly indicate that gender differences in non-economic migrants' early employment are primarily driven by differences in entering first employment after arriving in Belgium. In the simulation where women are assigned men's probabilities of entering a first employment spell, the gender gap in employment fully disappears for all origin groups of

humanitarian migrants and for most family migrants. Only among Turkish and Moroccan family migrants, women still spend less time in employment than their male counterparts, as they remain more likely to leave their first employment spell and less likely to subsequently re-enter employment. Interestingly, the average time spent in employment in this simulation is higher among women than men among family migrants of European countries or America/Oceania, as well as among humanitarian migrants from African countries. This is due to the fact that once they are employed, women of these groups are less likely than their male counterparts to exit employment, indicating a greater employment stability.

Hence, our results indicate that particularly reducing barriers to women's first employment entry could substantially narrow the gender gap in non-economic migrants' labour market integration in Flanders. However, more research is needed to identify the specific mechanisms behind the gender gap in first employment entry among different groups of family and humanitarian migrants, as well as the relative importance of these mechanisms. Following economic and sociological theories, lower probabilities of entering employment for the first time upon arrival among female non-economic migrants can be related to a variety of factors (cf. section 3). While some of these factors could be remediated by policy interventions, other factors may be related to the (selective) profile of migrants in terms of characteristics that are less susceptible to policy measures, such as educational attainment or attitudes towards work and family life. In this light, we identify four avenues for future research that can support the development of policies aimed at reducing the gender gap in non-economic migrants' employment. First, although childcare responsibilities are frequently suggested to be an important barrier for employment among female non-economic migrants, additional qualitative and survey research is required to disentangle whether the impact of children on women's employment entry is primarily driven by constraints in accessing affordable childcare or by gendered attitudes towards work and family life. To the extent that the first entry into employment of female non-economic migrants is constrained by childcare responsibilities, investing in universal access to flexible and affordable formal childcare could enable migrant women with children to enter the labour market (especially for women with limited access to informal care in their social networks). Since female non-economic migrants tend to be overrepresented in low-wage jobs, the net income gains from employment need to be sufficient to compensate for the financial and practical organisation of combining work and family. However, such policy measures are less likely to reduce the gender gap in first employment entry in case women's low employment entry is largely related to work-family attitudes. In this respect, it is important to note that work-family attitudes are not static, but may be adjusted over individuals' life course, although a shift may only occur in a context without structural barriers to combine work and family.

Second, future research should assess to what extent gender disparities in first employment entry are driven by differences in human capital composition between male and female non-economic migrants. While the profile of male and female non-economic migrants in terms of educational level may be shaped by selection mechanisms and in turn difficult to address by policymakers, re-designing and/or investing in the recognition of educational credentials and language courses could potentially reduce gender differences in non-economic migrants' labour market entry. Although enrolment in language courses is mandatory for non-EU family and humanitarian migrants in Flanders, the target A2-level may be insufficient to reduce gender gaps in employment entry (it may also take longer for women to reach this target if their initial skills are lower compared to their male counterparts). Moreover, as research indicates that female migrants are less likely to complete language courses due to childcare responsibilities, it is important to design integration programmes in a way that they are flexible and compatible with childcare (OECD, 2017).

Third, building on recent research by Fossati et al. (2024), it would be beneficial if future research would assess the extent to which the lower probability of entering first employment among female family and humanitarian migrants compared to their male counterparts is related to gender-based discrimination.

Finally, follow-up research for more recent years and other countries would be valuable, especially in light of differential labour market and policy contexts within and between countries. In Flanders, recent reforms of integration programmes – such as the obligation to pass the social orientation and language course (since 2022), the mandatory registration at the Flemish public employment services (since 2022), and the introduction of a participation programme to strengthen migrants' social networks (since 2023) - may have a positive impact on migrants' first employment entry, potentially also reducing the gender gap in early employment trajectories. Examining whether these policy changes have narrowed the gender gap in first employment entry would provide valuable insights for policymakers. Moreover, it would be fruitful to address whether similar patterns regarding the relative importance of differential entry and exit risks are found in other contexts, such as countries with more flexible labour markets or countries with lower minimum wages.

7 References

Andersen, T. M. (2012). A Flexicurity Labour Market in the Great Recession: The Case of Denmark. *De Economist, 160*(2), 117-140. doi:10.1007/s10645-011-9181-6

Bakker, L., Dagevos, J., & Engbersen, G. (2017). Explaining the refugee gap: a longitudinal study on labour market participation of refugees in the Netherlands. *Journal of Ethnic and Migration Studies, 43*(11), 1775-1791.

Baxter, J., Hewitt, B., & Haynes, M. (2008). Life course transitions and housework: Marriage, parenthood, and time on housework. *Journal of Marriage and Family, 70*(2), 259-272.

Becker, G. S. (1991). *A Treatise on the Family*. Cambridge: Harvard University Press.

Becker, G. S. (2009). *Human capital: A theoretical and empirical analysis, with special reference to education*: University of Chicago press.

Bedaso, F. (2021). *The labor market integration of refugees and other migrants in Germany*. Retrieved from

Bevelander, P. (2011). The employment integration of resettled refugees, asylum claimants, and family reunion migrants in Sweden. *Refugee Survey Quarterly, 30*(1), 22-43.

Blumberg, R. L. (1984). A general theory of gender stratification. *Sociological theory*, 23-101.

Bratsberg, B., Raaum, O., & Røed, K. (2017). *Immigrant labor market integration across admission classes*. Retrieved from

Carpentier, S., & Schoumaker, B. (2018). Socio-demographic profile and socio-economic careers of people granted international protection in Belgium, 2001-2014. *European Migration Network, National Contact Point Belgium*.

De Vroome, T., & Van Tubergen, F. (2010). The employment experience of refugees in the Netherlands 1. *International Migration Review, 44*(2), 376-403.

Doerflinger, N., Pulignano, V., & Lukac, M. (2020). The social configuration of labour market divides: An analysis of Germany, Belgium and Italy. *European Journal of Industrial Relations, 26*(2), 207-223.

DVZ. (2017). *Jaarlijkse statistieken asiel, 2008-2016*. Retrieved from

DVZ. (2018). *Statistieken over de kaarten en verblijfsdocumenten afgegeven in het kader van gezinshereniging, 2010-2017*. Retrieved from

European Commission. (2014). *Key Data on Early Childhood Education and Care in Europe: 2014 Edition*. Luxembourg: Publications Office of the European Union.

Fasani, F., Frattini, T., & Minale, L. (2022). (The Struggle for) Refugee integration into the labour market: evidence from Europe. *Journal of Economic Geography, 22*(2), 351-393.

FOD WASO, & CGKR. (2013). *Socio-Economische Monitoring*. Retrieved from Brussel:

Fossati, F., Knotz, C., Liechti, F., & Otmani, I. (2024). The gender employment gap among refugees and the role of employer discrimination: experimental evidence from the German, Swedish and Austrian labor markets. *International Migration Review, 58*(1), 147-172.

Granovetter, M. (1974). *Getting a job: A study of contacts and careers*: University of Chicago Press.

Habash, D., & Omata, N. (2023). The 'private'sphere of integration? Reconfiguring gender roles within Syrian refugee families in the UK. *Journal of International Migration and Integration, 24*(3), 969-988.

Jestl, S., & Tverdostup, M. (2023). *The labour market entry and integration of refugees and other migrants in Austria*. Retrieved from

Kosyakova, Y., & Salikutluk, Z. (2023). *Gender gap dynamics among refugees and recent immigrants: different start, similar patterns?* Retrieved from

Lens, D., Marx, I., & Vujić, S. (2018). *10. Does migration motive matter for migrants' employment outcomes? The case of Belgium* (Vol. 2): Leuven University Press.

Lens, D., Marx, I., & Vujić, S. (2019). Double jeopardy: How refugees fare in one European labor market. *IZA Journal of Development and Migration/IZA Institute of Labor Economics, 10*(1), 1-29.

Liebig, T., & Tronstad, K. R. (2018). Triple disadvantage? A first overview of the integration of refugee women. *OECD Social, Employment, and Migration Working Papers*(216).

Milewski, N. (2009). *Fertility of immigrants: A two-generational approach in Germany*: Springer Science & Business Media.

Myria. (2020). *Migratie in cijfers en in rechten: Recht op een gezinsleven*. Retrieved from

OECD. (2017). *Making Integration Work: Family Migrants*. Retrieved from Paris:

OECD. (2020). Dataset: Employment, unemployment, and participation rates by place of birth and sex. from OECD

OECD. (2023). *Skills and labour market integration of immigrants and their children in Flanders*. Retrieved from Paris:

Ortlieb, R., Baumgartner, P., Palinkas, M., Eggenhofer-Rehart, P., & Ressi, E. (2024). Employment outcomes of refugee women and men: multiple gender gaps and the importance of high-skill jobs. *Journal of Ethnic and Migration Studies, 50*(20), 4987-5008.

Ruiz, I., & Vargas-Silva, C. (2017). Are refugees' labour market outcomes different from those of other migrants? Evidence from the United Kingdom in the 2005–2007 period. *Population, Space and Place, 23*(6), e2049.

Salikutluk, Z., & Menke, K. (2021). Gendered integration? How recently arrived male and female refugees fare on the German labour market. *Journal of Family Research, 33*(2), 284-321.

Schmidt, K., Jacobsen, J., & Krieger, M. (2020). Social integration of refugees is improving. *DIW Weekly Report, 10*(34), 355-363.

Seibel, V. (2020). Contact to natives among recent Turkish migrants in Germany: Gender differences and potential explanations. *Frontiers in Sociology, 5*, 60.

Timmerman, C. (2006). Gender dynamics in the context of Turkish marriage migration: the case of Belgium. *Turkish Studies, 7*(1), 125-143.

Vandenbroeck, M., De Visscher, S., Van Nuffel, K., & Ferla, J. (2008). Mothers' search for infant child care: The dynamic relationship between availability and desirability in a continental European welfare state. *Early childhood research quarterly, 23*(2), 245-258.

Weber, R. (2024). Gender and Social Contacts: Labour Market Entry Among Refugee and Family Reunion Migrants in Sweden. *Nordic Journal of Migration Research*. doi:10.33134/njmr.664

West, C., & Zimmerman, D. H. (1987). Doing gender. *Gender & society, 1*(2), 125-151.

Zwysen, W. (2019). Different patterns of labor market integration by migration motivation in Europe: the role of host country human capital. *International Migration Review, 53*(1), 59-89.

8 Appendix

Table 3 *Parameter estimates for (i) employment entry and (ii) employment exit by migration background, family migrants.*

i. Employment entry

	EU				**other Asia**				**other Africa**				**Turkey**				**Morocco**				**America/Oceania**			
	men		women		men		women		men		women		men		women		men		women		men		women	
	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
spell time (linear)	-0.382	*	-0.046	n.s.	-0.376	n.s.	-0.161	n.s.	-0.606	***	-0.585	***	-0.302	n.s.	-0.359	n.s.	-0.613	***	-0.427	**	-0.528	*	-0.557	**
spell time (quad)	0.036	n.s.	0.005	n.s.	0.041	n.s.	0.010	n.s.	0.073	*	0.086	***	0.023	n.s.	0.041	n.s.	0.065	**	0.060	*	0.064	n.s.	0.082	*
spell time (cubic)	-0.002	n.s.	0.000	n.s.	-0.002	n.s.	0.000	n.s.	-0.003	n.s.	-0.004	***	-0.001	n.s.	-0.002	n.s.	-0.002	*	-0.003	*	-0.003	n.s.	-0.004	*
spell order (linear)	0.573	n.s.	2.365	***	0.568	n.s.	2.063	***	0.306	n.s.	0.636	*	0.325	n.s.	1.722	***	-0.150	n.s.	2.362	***	0.675	n.s.	0.939	*
spell order (quad)	-0.087	n.s.	-0.552	***	-0.046	n.s.	-0.499	***	-0.082	n.s.	-0.096	n.s.	-0.073	n.s.	-0.344	*	0.034	n.s.	-0.675	***	-0.207	n.s.	-0.139	n.s.
spell time (lin)*spell order (lin)	-0.031	n.s.	-0.516	**	0.364	n.s.	-0.179	n.s.	0.044	n.s.	0.151	n.s.	-0.128	n.s.	-0.092	n.s.	0.235	*	-0.065	n.s.	0.108	n.s.	0.052	n.s.
spell time (quad)*spell order (lin)	0.000	n.s.	0.031	*	-0.049	n.s.	0.009	n.s.	-0.011	n.s.	-0.011	n.s.	0.010	n.s.	-0.015	n.s.	-0.013	n.s.	0.003	n.s.	-0.013	n.s.	-0.011	n.s.
spell time (lin)*spell order (quad)	0.002	n.s.	0.089	n.s.	-0.084	n.s.	0.040	n.s.	0.037	n.s.	-0.029	n.s.	0.043	n.s.	0.078	n.s.	-0.049	n.s.	-0.018	n.s.	-0.010	n.s.	-0.006	n.s.
constant	-1.610	***	-2.953	***	-1.394	***	-2.665	***	-0.810	***	-1.637	***	-1.106	***	-2.987	***	-0.662	***	-2.837	***	-1.306	***	-1.828	***

ii. Employment exit

	EU				**other Asia**				**other Africa**				**Turkey**				**Morocco**				**America/Oceania**			
	men		women		men		women		men		women		men		women		men		women		men		women	
	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
spell time (linear)	-0.568	**	-0.062	n.s.	-0.561	*	-0.475	**	-0.481	**	-0.267	n.s.	-0.383	n.s.	-0.269	n.s.	-0.526	***	-0.087	n.s.	-0.589	*	-0.566	*
spell time (quad)	0.069	*	-0.008	n.s.	0.079	n.s.	0.041	n.s.	0.054	n.s.	0.031	n.s.	0.045	n.s.	0.025	n.s.	0.079	**	-0.003	n.s.	0.066	n.s.	0.053	n.s.
spell time (cubic)	-0.003	n.s.	0.000	n.s.	-0.004	n.s.	-0.001	n.s.	-0.002	n.s.	-0.002	n.s.	-0.002	n.s.	-0.001	n.s.	-0.004	**	0.000	n.s.	-0.003	n.s.	-0.002	n.s.
spell order (linear)	0.233	n.s.	1.066	*	0.161	n.s.	0.070	n.s.	0.077	n.s.	0.555	n.s.	0.421	n.s.	0.885	n.s.	0.080	n.s.	1.133	*	-0.384	n.s.	-0.278	n.s.
spell order (quad)	-0.074	n.s.	-0.217	n.s.	0.025	n.s.	0.034	n.s.	-0.015	n.s.	-0.088	n.s.	-0.111	n.s.	-0.228	n.s.	0.013	n.s.	-0.293	*	0.147	n.s.	0.078	n.s.
spell time (lin)*spell order (lin)	0.160	n.s.	-0.344	*	-0.045	n.s.	0.079	n.s.	0.088	n.s.	-0.273	n.s.	-0.029	n.s.	-0.315	n.s.	0.047	n.s.	-0.417	*	0.328	n.s.	0.173	n.s.
spell time (quad)*spell order (lin)	-0.017	n.s.	0.025	*	-0.002	n.s.	-0.007	n.s.	-0.010	n.s.	0.011	n.s.	-0.001	n.s.	0.017	n.s.	-0.010	n.s.	0.018	n.s.	-0.013	n.s.	-0.018	n.s.
spell time (lin)*spell order (quad)	-0.015	n.s.	0.035	n.s.	0.037	n.s.	-0.029	n.s.	0.004	n.s.	0.073	n.s.	0.011	n.s.	0.106	n.s.	0.003	n.s.	0.114	*	-0.101	n.s.	-0.015	n.s.
constant	-1.479	**	-2.424	***	-1.597	***	-1.416	***	-1.320	***	-1.793	***	-1.718	***	-1.484	**	-1.449	***	-2.112	***	-1.078	**	-1.292	***

*Note: Significant levels: *p < 0.05, **p < 0.01; ***p < 0.001.*

Table 4 *Parameter estimates for (i) employment entry and (ii) employment exit by migration background, humanitarian migrants.*

i. Employment entry

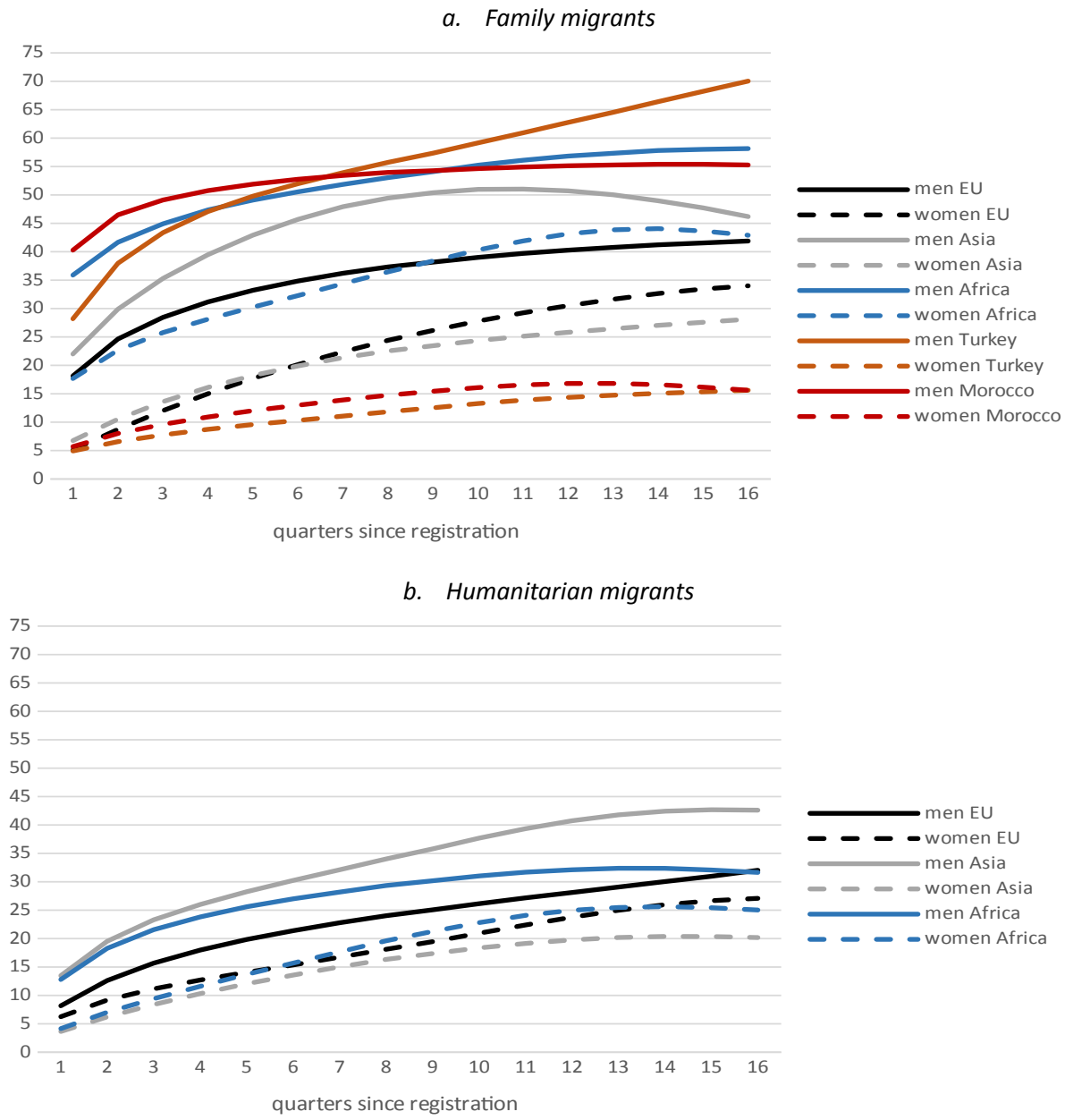
	EU				**other Asia**				**other Africa**			
	men		***women***		***men***		***women***		***men***		***women***	
	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
spell time (linear)	-0.203	n.s.	-0.422	**	-0.351	***	-0.071	n.s.	-0.316	**	-0.111	n.s.
spell time (quadratic)	0.007	n.s.	0.059	*	0.057	***	0.015	n.s.	0.038	*	0.030	n.s.
spell time (cubic)	0.000	n.s.	-0.002	*	-0.003	***	-0.001	n.s.	-0.001	n.s.	-0.002	n.s.
spell order (linear)	0.939	***	1.338	***	0.846	***	2.194	***	0.857	***	1.790	***
spell order (quadratic)	-0.078	n.s.	-0.176	n.s.	-0.163	***	-0.603	**	-0.166	*	-0.357	n.s.
spell time (lin)*spell order (lin)	0.120	n.s.	0.168	n.s.	-0.050	n.s.	-0.214	n.s.	-0.025	n.s.	-0.009	n.s.
spell time (quad)*spell order (lin)	-0.007	n.s.	-0.019	n.s.	-0.010	n.s.	-0.001	n.s.	-0.009	n.s.	-0.015	n.s.
spell time (lin)*spell order (quad)	-0.073	n.s.	-0.040	n.s.	0.023	n.s.	0.091	n.s.	0.003	n.s.	-0.029	n.s.
constant	-2.465	***	-2.743	***	-1.931	***	-3.298	***	-1.988	***	-3.163	***

ii. Employment exit

	EU				**other Asia**				**other Africa**			
	men		***women***		***men***		***women***		***men***		***women***	
	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.	Coeff.	Sig.
spell time (linear)	-0.264	n.s.	-0.236	n.s.	-0.241	*	-0.188	n.s.	-0.093	n.s.	-0.349	n.s.
spell time (quadratic)	0.040	n.s.	0.046	n.s.	0.045	*	0.021	n.s.	0.011	n.s.	0.041	n.s.
spell time (cubic)	-0.002	n.s.	-0.003	n.s.	-0.003	**	-0.001	n.s.	-0.001	n.s.	-0.002	n.s.
spell order (linear)	0.596	n.s.	0.548	n.s.	-0.070	n.s.	0.022	n.s.	0.498	n.s.	0.215	n.s.
spell order (quadratic)	-0.169	n.s.	-0.083	n.s.	0.064	n.s.	0.085	n.s.	-0.092	n.s.	-0.067	n.s.
spell time (lin)*spell order (lin)	-0.059	n.s.	-0.047	n.s.	0.141	n.s.	-0.089	n.s.	-0.122	n.s.	0.302	n.s.
spell time (quad)*spell order (lin)	0.002	n.s.	-0.007	n.s.	-0.004	n.s.	0.006	n.s.	0.000	n.s.	-0.022	n.s.
spell time (lin)*spell order (quad)	0.022	n.s.	0.014	n.s.	-0.061	**	0.048	n.s.	0.043	n.s.	-0.052	n.s.
constant	-1.878	***	-2.079	***	-1.475	***	-1.666	***	-1.706	***	-1.749	***

*Note: Significant levels: *p < 0.05, **p < 0.01; ***p < 0.001.*

Fig. 3 *Employment levels of (a) family and (b) humanitarian migrants since registration in the Belgian population register*

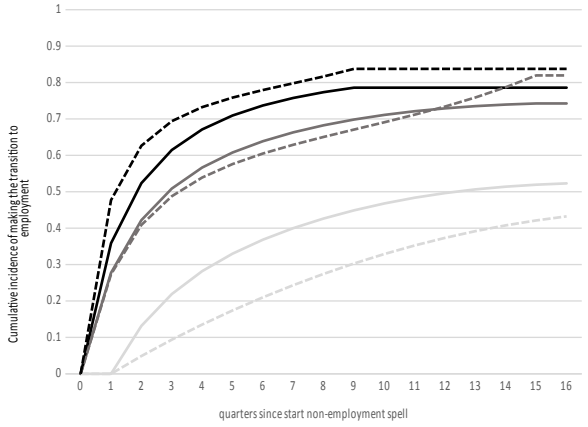


Note: Results of the base simulation using group-specific probabilities for both employment entry and exit.

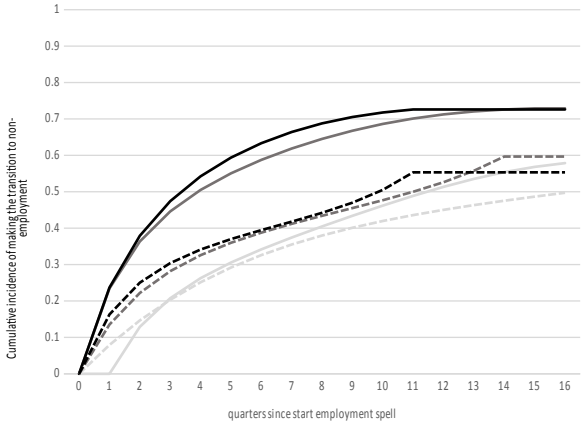
Fig. 4 *Cumulative incidence of making a transition to (i) employment and (ii) non-employment by spell number and gender among non-economic migrants*

a. Family migrants - EU countries

i. Employment entry

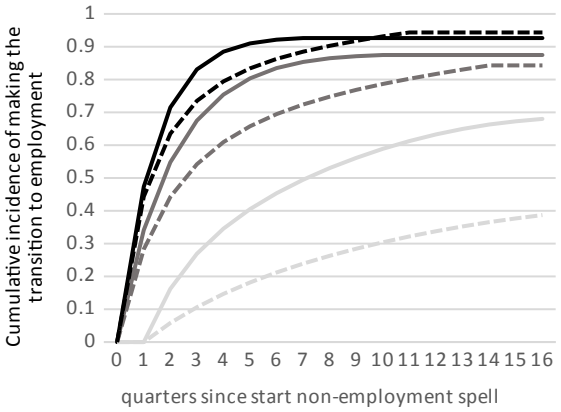


ii. Employment exit

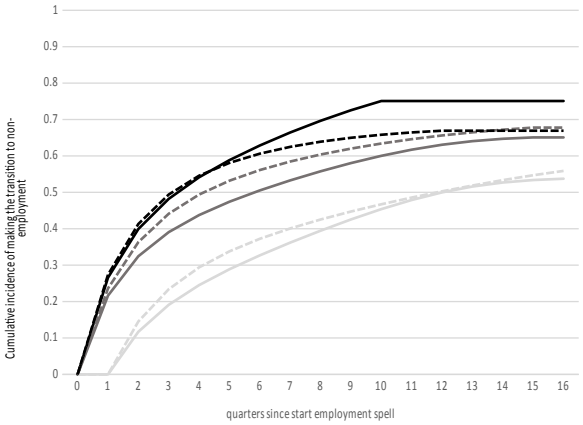


b. Family migrants – other Asian countries

i. Employment entry

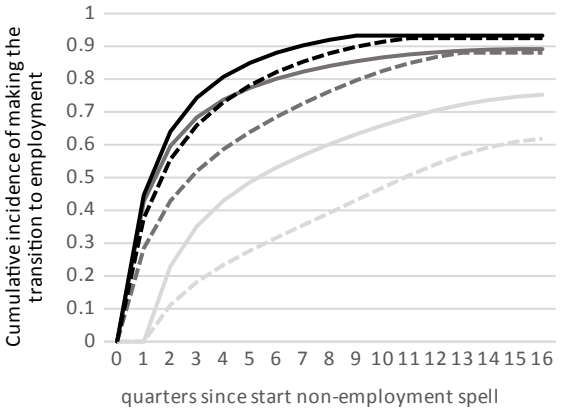


ii. Employment exit

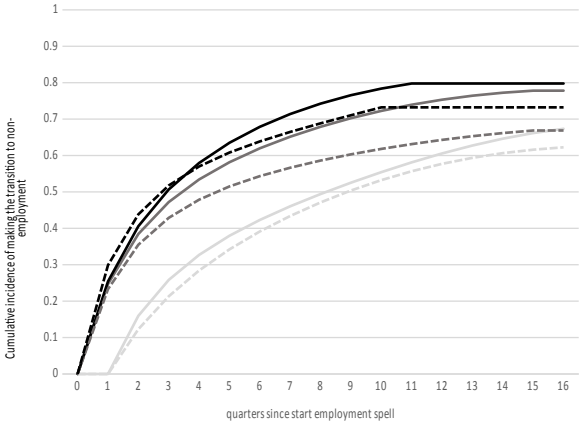


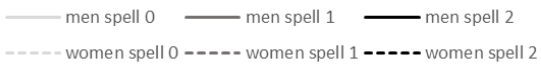
c. Family migrants – other African countries

i. Employment entry



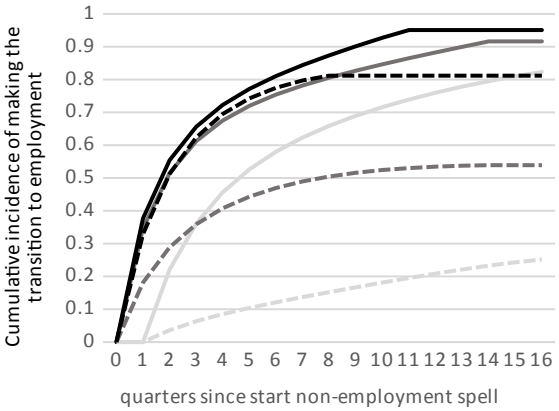
ii. Employment exit



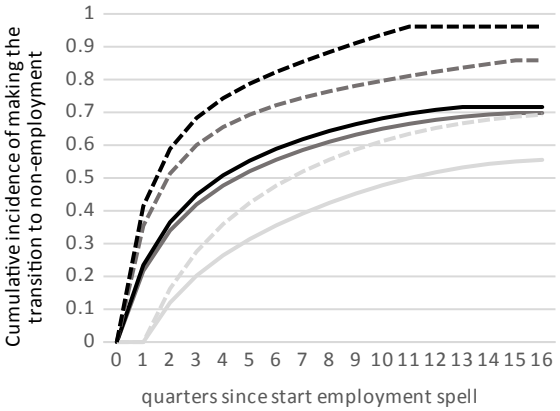


d. Family migrants – Turkey

i. Employment entry

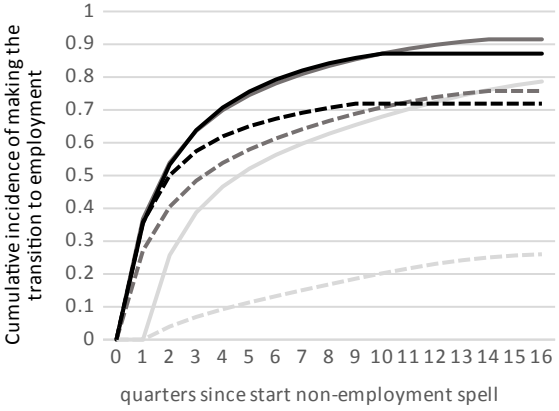


ii. Employment exit

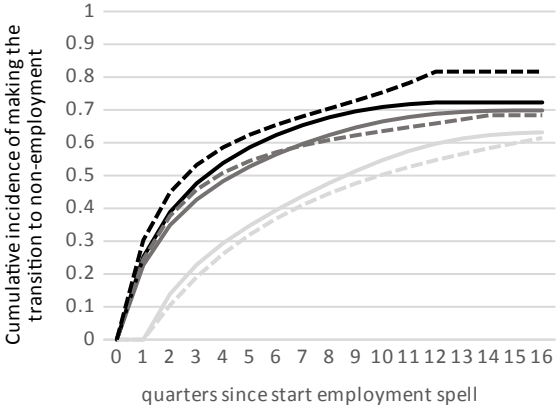


e. Family migrants – Morocco

i. Employment entry

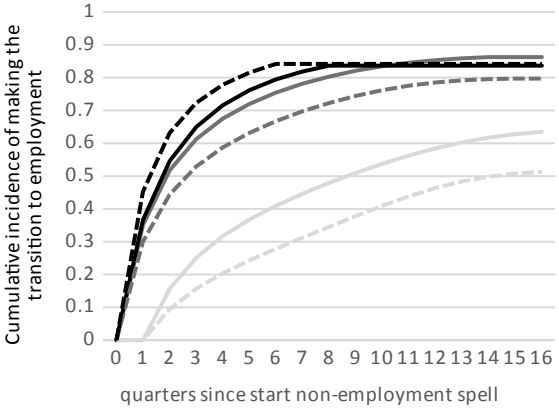


ii. Employment exit

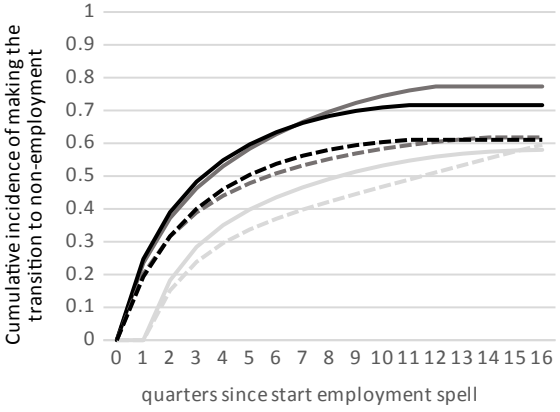


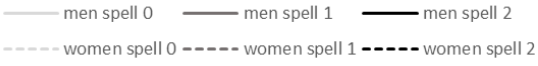
f. Family migrants – America/Oceania

i. Employment entry



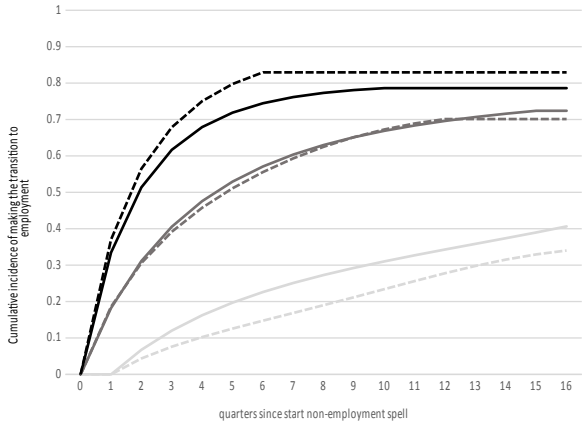
ii. Employment exit



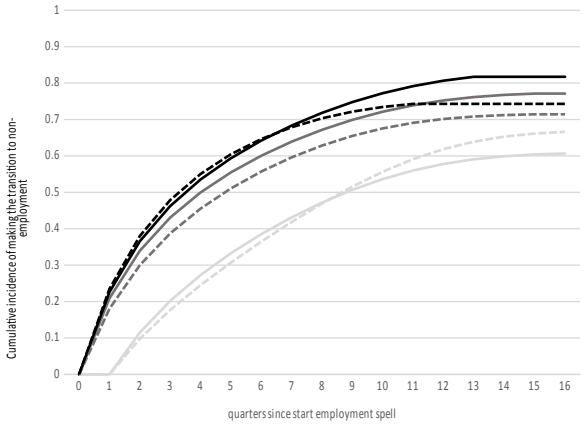


g. Humanitarian migrants – EU countries

i. Employment entry

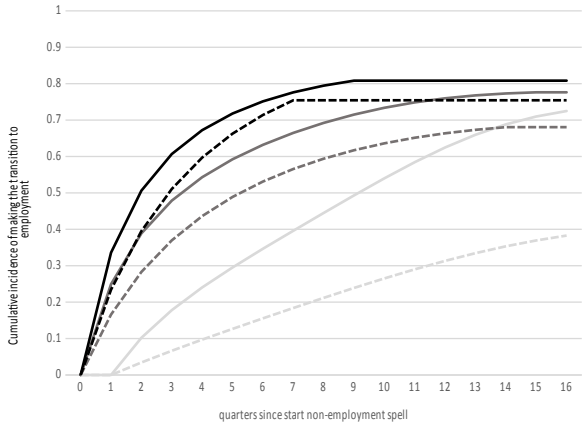


ii. Employment exit

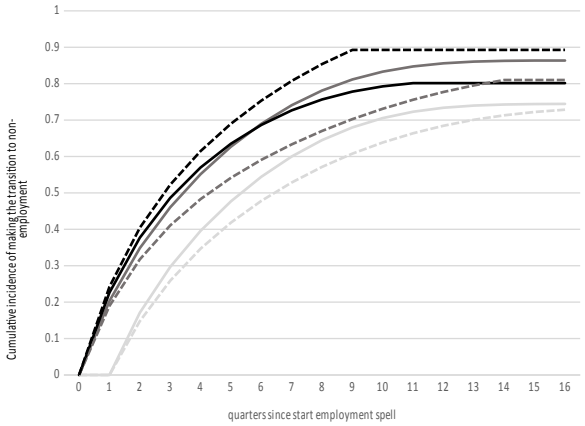


h. Humanitarian migrants – other Asian countries

i. Employment entry

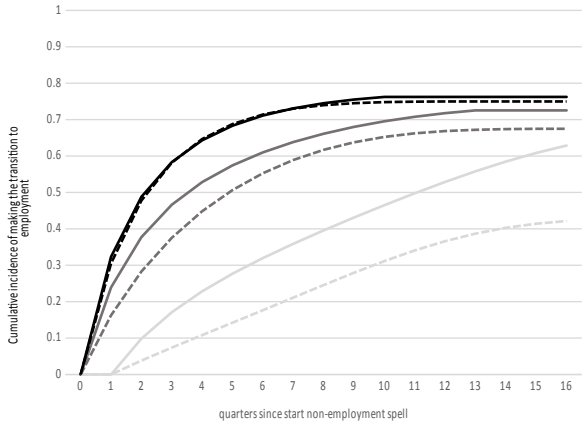


ii. Employment exit

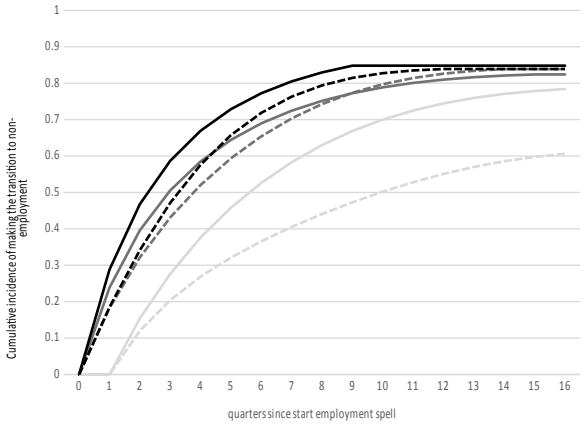


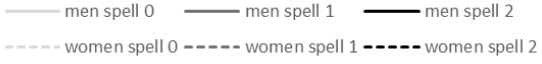
i. *Humanitarian migrants – other African countries*

i. Employment entry



ii. Employment exit





Note: Results of the base simulation using group-specific probabilities for both employment entry and exit.