

Title: The Journey Beyond Reception: Asylum Seekers' Internal Migration Trajectories in Belgium

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Abstract: Research on internal migrations of asylum seekers has focused on contexts of stringent dispersal policies and has highlighted that such policies are often not in line with the subsequent settlement of refugees. However, few studies adopt a quantitative and longitudinal approach to the matter in contexts of less stringent dispersal policies. We examine the internal migrations of asylum seekers and the role of the Belgian reception system. Drawing on National Register data, we use sequence analysis to describe the internal migration trajectories of asylum-seeking migrants who arrived between 2012 and 2016. To assess the extent to which the place of reception allocated determines their subsequent moves, we compare them with migrants having similar sociodemographic profiles but who did not apply for asylum. Results show that asylum seekers are initially more dispersed across Belgium's territory compared to non-asylum seekers and are overrepresented in rural areas and Wallonia. Their residential patterns later converge to those of non-asylum seekers, with a concentration in urban Flanders and Brussels. Nonetheless, we find evidence that being assigned to a rural reception place at arrival slightly increases the chances of staying in rural municipalities. Additionally, allocating to reception places in one region significantly reduces the chances of moving to the opposite region. Although the Belgian reception system differs from countries often studied, the mismatch between reception policy and subsequent settlement is still observed, "delaying settlement in urban areas".

Keywords: asylum seekers, reception system, dispersal policy, internal migrations, sequence analysis

1. Introduction

In many receiving countries, refugees – and immigrants in general – tend to locate in more urbanised areas, at least initially (de Valk & Willaert, 2012; Proietti & Veneri, 2019; Robinson et al., 2003; Schockaert et al., 2020), for several reasons: more employment opportunities, greater transport networks, more affordable accommodation possibilities, as well as already-established immigrants or co-ethnic communities (Åslund, 2005; de Hoon et al., 2021; Haberfeld et al., 2019; Saeys et al., 2018; Vogiazides & Mondani, 2020). However, when facing inflows of asylum seekers, authorities of destination countries adopt various policies to deal with the reception and integration of forced migrants into their society. These policy constraints, which aim to spread the reception of forced migrants throughout a country's territory, alter the settlement trajectories of asylum migrants. Numerous studies have already examined the dispersal policies existing in various European countries, as is the case in Germany (Jähnen & Helbig, 2024; Kordel & Weidinger, 2019), the UK (Brown et al., 2024; Darling, 2016; Stewart & Shaffer, 2015), Denmark (Wren 2003), France (Berthomière et al., 2020), Sweden (Haberfeld et al. 2019; Vogiazides and Mondani 2020) or the Netherlands (de Hoon et al., 2021; van Liempt & Miellet, 2021). These works show that resettlement trajectories often contrast with this initial dispersal, with high mobility rates among refugees granted protection (Glorius & Nienaber, 2022; Stewart & Shaffer, 2015). From this perspective, dispersal policies mainly delay the settlement in urbanised areas of the receiving countries.

Although the Belgian policy differs from stringent dispersal policies commonly studied, the way the asylum reception system works also affects internal migration trajectories (El Moussawi & Schuermans, 2020). Asylum applicants are free to choose whether or not they wish to be hosted in the reception system (which consists of state-provided collective or individual facilities, see more details in Section 3). Still, about 70% of asylum seekers enter this system at the beginning of their stay (Zimmer, 2023). In doing so, they do not choose the

accommodation where they initially live (El Moussawi, 2023). Later, when leaving the reception system, they may choose where to live, in the sense that no dispersal policy exists for recognised refugees. As shown by Wyckaert and colleagues (2020) in a qualitative study, the transition from a reception centre to a permanent housing in the Belgian context faces many challenges. Based on their location (specifically, the region and type of municipality), the life course and integration of refugees can be affected in different ways. Similar conclusions are drawn by El Moussawi and Schuermans (2020). Using register data, they mapped the (im)mobility (“post-arrival geographies”) of Syrian and Iraqi refugees in Belgium. Their study highlighted the gap between the areas where the centres are implemented on the one hand and the areas where the refugees choose to settle on the other hand (El Moussawi & Schuermans, 2020). This proves the relevance of evaluating a diversity of reception strategies, as their impacts might be similar. However, existing research in Belgium has certain limitations. For instance, the report by the Agentschap Binnenlands Bestuur in Flanders – based on Belgian National Register data – only considers recognised refugees and is predominantly focused on the Flemish federal region (Agentschap Binnenlands Bestuur, 2019). Similarly, El Moussawi and Schuermans’ work (2020) concentrates solely on Syrian and Iraqi refugees who have obtained international protection. Other studies, such as those carried out by Wyckaert, Leinfelder, and De Decker (2020), El Moussawi (2023), and Saeys, Vandervoort, and Verschraegen (2018), have also explored the transitions from reception facilities to private housing and the challenges that arise, but from a qualitative perspective.

This paper extends previous work by examining the internal migrations of asylum seekers, from the moment of their asylum application and using longitudinal administrative data. We focus on a cohort of asylum seekers who arrived between 2012 and 2016, in the specific context of the Belgium reception system. The remainder of this article is as follows. We make a brief presentation of existing research on dispersal policies, before presenting the

functioning of Belgium's reception system. Next, we apply sequence analysis to the National Register data and create a typology of internal migration trajectories among asylum applicants. We focus on the 4-year period following the application for asylum, regardless of whether migrants received a protection status or not. To identify the impact of the reception system on these trajectories, we use two approaches. The first compares the internal mobility of asylum applicants with the trajectories observed among individuals having the same sociodemographic characteristics but who did not apply for international protection (hereafter the "twin cohort"). The second approach examines the influence of the initial reception place assigned to asylum applicants on their internal migration trajectory using a multinomial logistic regression. By adopting a longitudinal and quantitative approach to internal migrations and examining the impact of the Belgian reception system, this paper makes a valuable contribution to evaluating the link between reception policies and internal mobility. By analysing the trajectories of all the asylum seekers in Belgium, regardless of their origin or place of residence – including those who eventually did not obtain international protection – our study also provides a comprehensive picture of this question in Belgium and its regions.

2. Reception policies and their implications

Studies in several receiving countries establish similar conclusions regarding the internal mobility of immigrants and/or applicants for international protection. First, existing research often highlights the higher rates of (internal) mobility among recently arrived migrants in comparison to the non-immigrant population (Åslund, 2005; Delaporte et al., 2023; El Moussawi & Schuermans, 2020; Vidal & Windzio, 2012). Where there are no political or administrative constraints, asylum seekers and refugees most often settle in urban areas, large cities, or urban municipalities (Åslund, 2005; El Moussawi & Schuermans, 2020; Proietti & Veneri, 2019). The higher mobility of asylum-seeking migrants may, however, be delayed, and the direction of the moves altered. Indeed, when facing inflows of asylum seekers, authorities

of destination countries adopt various policies to deal with the reception and integration of forced migrants into their society. A significant portion of the literature thus focuses on the role of dispersal policies, which are commonly used by receiving countries to regulate the settlement of refugees (Darling, 2016). They aim to equally share the economic and social “burden” of the reception of forced migrants across the territory of a country (Robinson et al., 2003). For example, in Germany, asylum seekers are allocated accommodation in a reception centre (Kordel & Weidinger, 2019). In Sweden, a dispersal policy was in place in the 1990s, and asylum applicants were also assigned a municipality of residence for the first 18 months of their stay (Vogiazides & Mondani, 2020). A similar regulation has existed in the UK since the early 2000s (Brown et al., 2024; Stewart & Shaffer, 2015). The initial aim was to spread the reception load across the country and to ensure cultural diversity. It is also seen as a way to support the integration process (Haberfeld et al., 2019).

Overall, studies deplore the negative impacts of these policy measures (Brown et al., 2024). Their motivation stems more from the availability of housing rather than a genuine enhancement in integration processes (Stewart, 2012). The consequence is a (temporary) restriction on freedom of movement (Kordel & Weidinger, 2019). It also creates social exclusion (Berthomière et al., 2020), as migrants are distanced from co-ethnic communities or pre-existing networks (Stewart, 2012; van Liempt & Miellet, 2021). Plus, dispersal policies usually consider that dispersed asylum seekers and refugees will permanently settle in their initial location (de Hoon et al., 2021). Subsequent mobilities are in contradiction with this static vision of the settlement of immigrants (Kordel & Weidinger, 2019; van Liempt & Miellet, 2021), and several studies describe a mismatch between dispersal policies and resettlement of refugees later in their life course (Berthomière et al., 2020; El Moussawi & Schuermans, 2020; Glorius & Nienaber, 2022; Proietti & Veneri, 2019; Stewart & Shaffer, 2015). As a result, it is necessary to approach the internal migration of asylum seekers from the perspective of

migration trajectories (Schapendonk et al., 2020) to capture long-term implications of structural constraints and account for the evolving context that influences migration decisions (Bernard, 2022; Vogiazides & Chihaya, 2020).

3. The Belgian context

Belgium is a complex country characterised by a multi-tiered system of governance. It is composed of three distinct federal regions: Brussels Capital Region, Flanders, and Wallonia. Acknowledging their existence is important as they encompass differences in terms of not only languages but also policies, demographic and economic contexts. Flanders is the Dutch-speaking region situated in the Northern part of the territory, whereas Wallonia, in the South, is French-speaking. Brussels Capital Region is officially bilingual (recognising both Dutch and French) and entirely urban. The regions differ in population density, with lower concentrations in Wallonia compared to the other two regions (Statbel, 2022)¹. Consequently, residing in a rural area in Flanders may not necessarily entail the same experience as residing in rural Wallonia. As in the work conducted by Wyckaert and colleagues (2020), we argue that the place of residence plays a key role in the integration processes. They mention that Belgian policies overlook the importance of the spatial context on the social integration of asylum-seeking migrants (Wyckaert et al., 2020).

Since 2007, asylum seekers have had the right to material assistance during their entire asylum procedure in Belgium². They may decide whether to benefit from this assistance or not. The Federal Agency for the reception of asylum seekers, Fedasil, coordinates the numerous reception facilities across the country and assigns a place of reception for the asylum migrants. Although the allocation of the reception place should be tailored as much as possible to the

¹In 2020, the population density was respectively 216 inhabitant/km² for Wallonia, 487 for Flanders and 7,501 for Brussels Capital region (Statbel 2022).

² Law of January 12, 2007 on the reception of asylum seekers and certain other categories of foreigners, M.B. May 7, 2007. Art. 2, 6°.

specific needs of the applicants (Sarolea et al., 2021), asylum seekers are not able to choose their initial place of reception (El Moussawi, 2023), and the availability of reception places often restricts Fedasil's dispatching decision. In the meantime, the applicant is housed for a very short time in the "Petit Château" arrival centre in Brussels (Fedasil, 2022).

There are two types of accommodations for asylum seekers in the reception system: collective and individual structures. The usual practice is to give priority to large-scale facilities, while individual accommodations are intended for vulnerable persons or recognised refugees³. The theoretical pathway is as follows: migrants are first housed in a collective reception structure. When they receive a positive result on their asylum application or when their situation indicates a high probability of being granted protection, Fedasil proceeds with a change of their reception place. Individuals then enter a transitional phase as they prepare to leave the reception system and move into an individual accommodation (Fedasil, 2022). After being recognised, beneficiaries of international protection are free to choose their place of residence in Belgium, as there is no dispersal policy for recognised refugees (El Moussawi, 2023; El Moussawi & Schuermans, 2020). No specific state support helps them find housing (Saeys et al., 2018; Wyckaert et al., 2020), but they benefit from the same social support as any other Belgian citizen. In the event of a denial of international protection, the right to material assistance expires within one month, and Fedasil organises the process of voluntary or forced return to the country of origin (ADDE, 2017). In some situations, individuals may extend their stay in the reception system if they file an appeal following the rejection of their protection request. Likewise, orders to leave the territory are not always executed, and some applicants stay in the country as undocumented migrants.

³ See Zimmer (2023) for a detailed explanation of the reception system in Belgium.

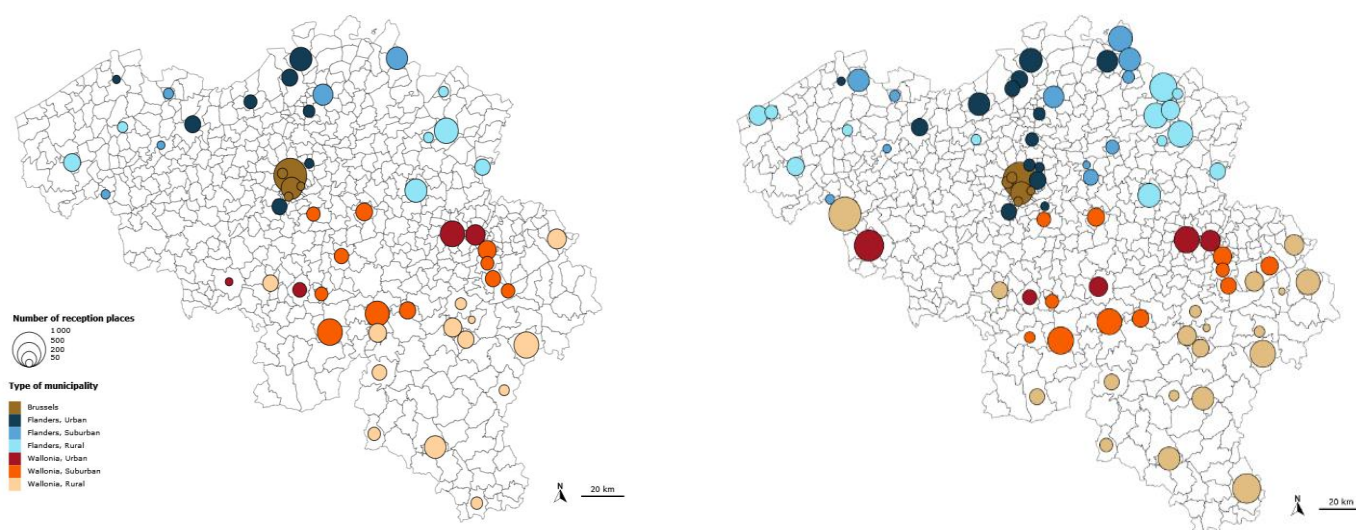
Collective reception centres, also known as “open centres”, are often established in buildings of varying capacity, ranging from approximately 20 places to almost 900 for the arrival centre in Brussels. They are mainly managed by Fedasil itself or the Red Cross. To examine the evolution of reception accommodations across the country, we use an inventory of all existing and former open centres since 2012, using reports made by Fedasil and its partners working for the reception of asylum seekers (Zimmer, 2023). The number of centres (Figure 1) and their spatial dispersal (Figure 2) vary a lot from one year to another. Given that the creation of centres generally responds to emergencies (Wyckaert et al., 2020), their geographical location is not specifically designed to be the most appropriate for the integration of asylum applicants. This phenomenon was also observed, for instance, in the UK (Darling, 2016; Stewart, 2012) and France (Berthomière et al., 2020), where the location of reception places mainly depended on available accommodations.

We observe that around 40% of the reception centres in operation between 2012 and 2020 were located in rural municipalities (Figure 2), whereas only 25% of the resident population actually lived in rural areas in Belgium during the same period (Vanderstraeten & Van Hecke, 2019). In this period, between 35% to 45% of the available beds in open centres were in rural municipalities (Zimmer, 2023). The highest share of places in rural areas peaked in 2015-2016, following the reception crisis. Through time, the inventory also shows a continuously higher proportion of reception places in Wallonia (more than half of all places) compared to the other regions (Figure 2).

Figure 1 - Location of places in open centres for asylum seekers

Fig.1a Belgium 2012

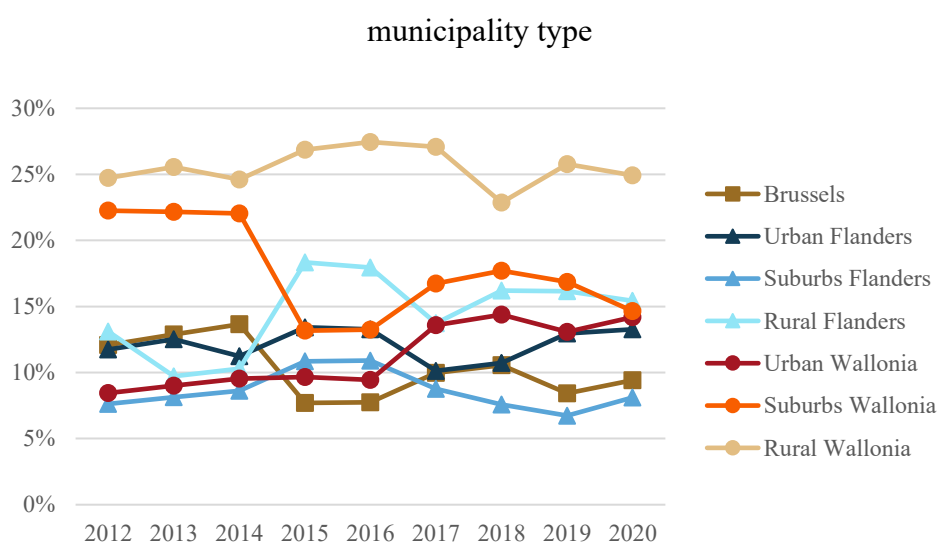
Fig.1b Belgium 2016



Note: The maps represent all the centres that existed in 2012 and 2016, even if they were only open for a few months in that year. There were 59 centres in 2012 and 88 in 2016, respectively.

Source: inventory based on official institution's reports (Zimmer, 2023).

Figure 2 – Evolution of the spatial dispersal of reception places in open centres by municipality type



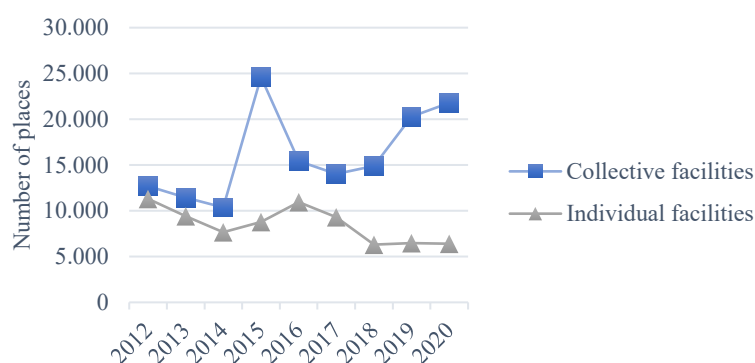
Note: The typology of municipalities used in Figure 2 (as well as in Figure 1) is based on the classification proposed for 2017 by Vanderstraeten and van Hecke (2019).

Source: inventory based on official institution's reports (Zimmer, 2023)

Individual facilities, known as “Local Reception Initiatives” (LRIs), are smaller structures designed to accommodate one person or a family in furnished accommodations, allowing for greater autonomy (Sarolea et al., 2021). They are mainly managed by the Public Social Welfare Centres of each municipality. Those individual accommodations are also spread throughout the Belgian territory. Following a distribution plan based on several criteria, each

municipality has to offer a minimum number of LRI places. The number of individual reception places has varied over time as well. From 2012 to 2020, there was a notable decline in the proportion of individual reception places, from 47% to 23% of the total capacity within the reception system (Figure 3).

Figure 3 - Number of places in the asylum reception system by type



Source: inventory based on official institution's reports (see Zimmer 2023)

4. Research question and hypotheses

Although the dispersal policy is not as stringent as in other countries (as individuals may choose to enter the reception system or not and they are not dispersed after international protection recognition) (El Moussawi & Schuermans, 2020), the current Belgian reception system creates a spatial distribution of asylum seekers throughout the country upon their arrival. In addition, it is expected to have long-lasting effects on their residential patterns and mobility. This leads us to question the impact of the reception system on the spatial distribution and internal migration trajectories of asylum seekers during their first years of stay in Belgium (both during or after the asylum procedure).

Therefore, we investigate the following questions: What is the spatial distribution of asylum seekers at their arrival and how does it evolve over time? How does it differ from non-asylum seekers' dispersal? And to what extent does the reception system impact the internal migration trajectories? To answer these questions, we describe residential trajectories among asylum seekers. The focus here is on the movements occurring between types of municipalities

during the first four years after asylum application. Then, we use two approaches to assess the impact of reception policies on internal migration of asylum seekers.

The first is a comparison of the residential trajectories of asylum seekers with a non-asylum immigrant group (a “twin cohort”). We expect to observe divergent spatial dispersal at arrival across the two groups (H1). On the one hand, asylum seekers would be dispersed throughout the country upon arrival due to the reception system (H1a) (El Moussawi & Schuermans, 2020). On the other hand, we expect non-asylum seekers to settle in urbanised areas at earlier stages of their life course in Belgium (H1b) because they are able to choose their place of residence directly. Additionally, we anticipate that non-asylum seekers will encounter smoother trajectories (H1c) – characterized by a lower number of migrations – given that they would not enter the reception system.

Despite this difference at arrival, we expect both cohorts to converge towards urbanized areas (H2). For this reason, we anticipate that trajectories in which people stay in rural municipalities will be rare (H2a). Residing in a rural area could disadvantage the migrant’s (economic) integration (Saeys et al., 2018), with fewer possibilities to rely on co-ethnic communities, and “feelings of isolation” (de Hoon et al., 2020). On the contrary, urban municipalities present some advantages, like job and/or education opportunities, presence of co-ethnics, etc. (Agentschap Binnenlands Bestuur, 2019; Åslund, 2005; de Hoon et al., 2021; Haberfeld et al., 2019; Proietti & Veneri, 2019). Beyond the simple consideration of attracting factors, migration decisions are impacted by structural evolving constraints. Namely, dispersal policies send asylum migrants to rural areas, which lack experience and infrastructure for specifically welcoming them (Schapendonk et al., 2020; van Liempt & Miellet, 2021; Weidinger & Kordel, 2023). Also, housing market conditions play a key role in influencing internal moves to urban areas and more deprived neighbourhoods (Jähnen & Helbig, 2024). Previous research has shown that difficulties encountered on the housing market push

recognised refugees to settle in poor-quality housing, often located in highly urbanised areas (El Moussawi, 2023). The urban attractiveness would thus hold for both cohorts studied. Similarly, we anticipate moving to or staying in Flanders or Brussels to be more frequent compared to Walloon municipalities (H2b). Strong differences exist across the country regarding integration policies as it falls under regional responsibility (Rea et al., 2014). A qualitative study mentions for instance the opportunity of scholarships offered by the Flemish government (Sarolea et al., 2021).

Our second approach tests the impact of the initial place of reception assigned by Fedasil on the type of internal migration trajectory. We expect to find a mismatch between the places of initial reception and the settlement choices of refugees (H3), as previously observed in other studies (El Moussawi & Schuermans, 2020; Glorius & Nienaber, 2022; Proietti & Veneri, 2019; Stewart & Shaffer, 2015). More specifically, we expect asylum seekers who are allocated to a rural reception place to experience less smooth trajectories and be more likely to move to more urbanised areas (H3a), as urban reception centres offer more integration opportunities, contrary to rural ones (Sarolea et al., 2021). Additionally, we expect that asylum seekers who were allocated to a Flemish reception place may tend to stay in Flanders, while those assigned to Walloon reception places may lean towards Wallonia (H3b). In other words, although we expect Wallonia to have a weaker pull compared to Flanders, we still expect the place of initial reception to have a long-lasting impact on residential trajectories.

5. Methodology

We use data from the Belgian National Register. This centralised administrative database contains sociodemographic information on every legal resident in Belgium (Poulain & Herm, 2013). It provides fine-grained information regarding the residence of the individuals (municipality of residence, date of move within the country), as well as detailed information on asylum application procedures. This source is exhaustive and longitudinal: all the immigrants

who apply for an international protection are accounted for and monitored until they leave the territory, until they receive an order to leave (because they were not granted protection) or until they die. Due to the sensitivity of administrative registers, and more specifically data concerning residential trajectories of immigrants (Schapendonk et al. 2020), access to the data is restricted to authorized researchers, and confidentiality measures are strictly implemented.

5.1. The asylum seekers sample

For this research, we consider asylum applicants who arrived in Belgium between 2012 and 2016 and we monitor them during four years after their arrival. A four-year period is sufficient to observe individuals during their asylum procedure but also during the first years after it ends, as the average duration of the procedure was 312 days in 2016 (Cour des comptes 2017). Between 2012 and 2016, more than 76,500 immigrants applied for international protection. This cohort covers the year 2015 during which Belgium, like other European countries, faced a significant increase in the number of asylum applications: 44,760 individuals submitted a request for protection that year. Two-thirds of the asylum seekers hosted in 2015 were coming from three countries of origin: Iraq, Syria and Afghanistan (Fedasil, 2016).

In this paper, a simple random sample of 7,651 individuals was drawn (10%) for computational reasons (sequence analysis). Individuals who died during the observation period were removed from the sample (N=271). Table 1 presents the main sociodemographic characteristics of the asylum-seekers sample and the twin cohort (details below). The 2015 increase in the number of asylum seekers is represented in our data, as a high share of our sample arrived in that year. Regarding the region of birth, a large share of the sample was born in South and/or West Asia (52% of the sample together). Men represent 70% of the sample. The mean age at the time of arrival is 29 years, with 68.5% of the cohort aged between 20 and 40 years at the time of arrival.

Table 1 - Descriptive statistics for the two cohorts

	Asylum seekers		Non-asylum seekers	
	N=7,651	%	N=7,582	%
Gender				
Male	5,387	70.4	5,328	70.3
Female	2,264	29.6	2,254	29.7
Age group at arrival				
0-19	1,164	15.2	1,165	15.4
20-29	3,337	43.6	3,285	43.3
30-39	1,905	24.9	1,901	25.1
40-49	761	10.0	756	10.0
50+	483	6.3	475	6.3
Year of arrival in Belgium				
2012	1,376	18.0	1,437	19.0
2013	943	12.3	1,327	17.5
2014	1,110	14.5	1,281	16.9
2015	3,073	40.2	1,738	22.9
2016	1,149	15.0	1,799	23.7
Place of birth				
EU	45	0.6	45	0.6
Europe non-EU	1,098	14.4	1,098	14.5
West and Central Asia	2,470	32.3	2,397	31.6
South and South-East Asia	1,561	20.4	1,592	21.0
East Asia	97	1.3	83	1.1
North Africa	246	3.2	246	3.2
Sub-Saharan Africa	2,062	27.0	2,049	27.0
North America and Oceania	6	0.1	5	0.1
Latin America and the Caribbean	48	0.6	48	0.6
Unknown	19	0.3	19	0.3
Country of birth (top 10)				
Syria	1,231	16.1	1,195	15.8
Afghanistan	1,172	15.3	1,171	15.4
Iraq	901	11.8	901	11.9
(Former) USSR	444	5.8	444	5.9
Guinea	352	4.6	352	4.6
Somalia	291	3.8	290	3.8
DR Congo	277	3.6	277	3.7
(Former) Yugoslavia	276	3.6	276	3.6
Albania	225	2.9	225	3.0
Cameroon	155	2.0	155	2.0

Data: Asylum seekers: 10% random sample of all immigrants who applied for an international protection between 2012 and 2016. Non-asylum seekers: twin cohort created using gender, age group and country of birth among immigrants who arrived between 2012 and 2016.

Source: Own calculations based on Belgian National Register

5.2. The non-asylum seekers sample: the twin cohort

To establish meaningful comparisons with non-asylum seekers, we match the sample of asylum seekers to a sample of individuals who arrived in Belgium during the same period (2012-2016). Each asylum seeker is matched with a person who has the same sociodemographic characteristics (country of birth, gender, age group, period of arrival) but who did not apply for international protection. This matching process, inspired by the concept of 1:1 nearest

neighbour matching (Stuart, 2010), aims to create a "twin cohort" that closely mirrors our sample of asylum seekers. This control group enables us to examine what might have happened if the migrant had not applied for asylum, while holding all other observed factors constant. In most instances, a one-to-one match was feasible between each asylum seeker and a non-asylum seeker. However, for some countries of origin, there were not as many non-asylum seekers as asylum seekers⁴. Therefore, some non-asylum seekers could be matched twice or three times to different asylum seekers⁵ using the logic of matching with replacement (Stuart, 2010). For some countries of origin (such as Yemen or North Korea), there were no non-asylum seekers available for matching, and therefore, no twins were included in the analysis for them (N=69). We decided to keep them as part of the sample, but keeping or removing these individuals does not influence the final results. This ultimately led to the creation of a "twin cohort" of 7,582 individuals with similar sociodemographic profiles, except for their asylum application and non-observed characteristics. Their sociodemographic characteristics are also presented in Table 1. Due to the matching method, the two samples exhibit an almost identical sociodemographic distribution. The main difference appears to be found for the year of arrival as this criterion was not used for the matching⁶: 40% of asylum seekers arrived in 2015, whereas the distribution between years of arrival is more homogeneous among the twin cohort. This approach allows for a comparison between those who apply for asylum and those who do not, isolating the effect of the reception system on the spatial distribution of asylum seekers at arrival and over time.

⁴For instance, according to our data, 10,755 individuals born in Syria arrived in Belgium in 2015. Among them, 66.7% applied for international protection. To maintain a consistent sociodemographic distribution in both groups, some non-asylum-seeking Syrians were duplicated once or twice to match several asylum-seeking Syrians.

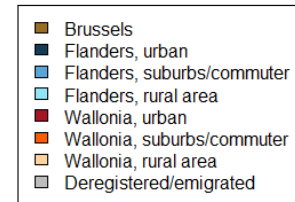
⁵ 398 non-asylum seekers were duplicated once and 211 were duplicated twice. See also illustration in Appendix I.

⁶The uneven distribution across years of arrival among asylum seekers would have complicated the matching with non-asylum seekers. We preferred to simply limit our twin cohort to individuals who arrived between 2012 and 2016 instead.

5.3.Methods

Sequence analysis is used to represent the internal migration trajectories of both groups. This methodology constitutes a simple way to represent and summarize the variety of individuals' trajectories. We use an optimal matching method to group the most similar sequences together (Abbott & Tsay, 2000; Lesnard and Saint Pol 2006; Robette, 2011). To create a typology of typical trajectories, we used Ward's criterion to minimise intra-cluster differences and minimise extra-cluster similarities (Robette, 2011). The approach allows a comprehensive and long-term perspective on migration trajectories as it is not centred on single and separate events (Bernard, 2022; Schapendonk et al., 2020; Vogiazides & Chihaya, 2020).

Figure 4 - Statuses of the internal migration sequences



To build individual sequences (Figure 4), we distinguish between eight statuses based on the characteristics of the municipality of residence. This classification considers the level of urbanisation of the municipalities as previous research found that recently arrived migrants tend settle in urbanised areas (Åslund, 2005; Proietti & Veneri, 2019). Furthermore, a significant part of reception centres is in rural areas in Belgium (Zimmer, 2023). Similarly to what is done by El Moussawi and Schuermans (2020), we thus distinguish between “urban municipalities”, “suburbs and municipalities in a commuter zone”, and “rural municipalities”, using the 2017 classification proposed by Vanderstraeten and Van Hecke (2019). To also account for differences in language, integration policies, and demographic contexts, as well as differences in the labour and housing market across the federal regions of the country, we differentiate between Flanders, Wallonia and the urban region of Brussels, the capital. As some migrants become lost to observation, we considered a specific status in the sequences, “Deregistered/emigrated”. Deregistration refers to the removal from administrative registers of individuals who are presumed to have left the territory (Schoumaker et al. 2022). The analysis

only considers migrations from one type of municipality to another and does not account for intra-municipal moves. We create sequences of 48 months following arrival. For each month, we retain the last recorded place of residence in the administrative data.

Eight different types of internal migration trajectories are identified through the cluster analysis. To further complement this descriptive method, we conduct a multinomial logistic regression using the clusters as dependent variable. Along with *gender*, *age group*, *place of birth*, and *year of arrival*, we use the type of municipality of the *initial reception place* assigned to the individuals as independent variables, to evaluate the impact of the reception system on the trajectories.

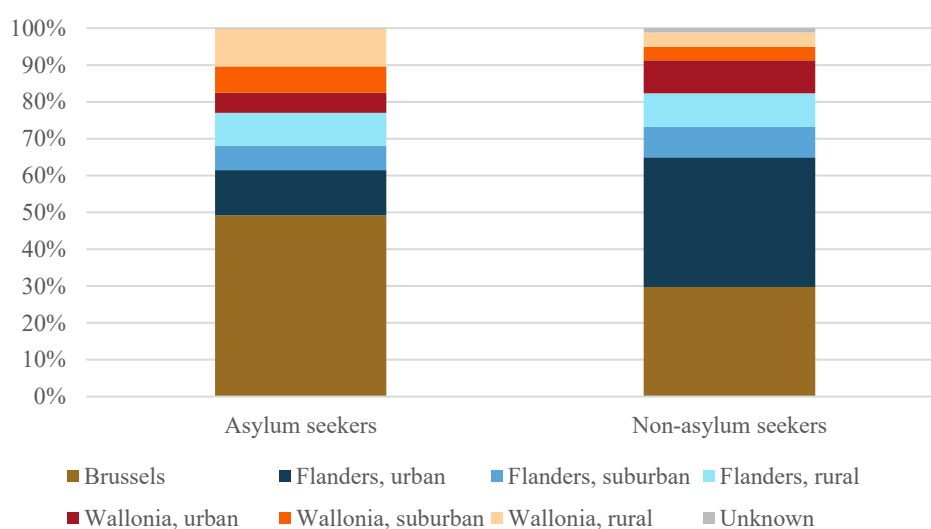
6. Internal migrations of (non-)asylum-seeking migrants

Figure 5 presents the distribution by type of municipality at the end of the first month of stay in our two migrant groups. The right side of the figure depicts low percentages of non-asylum seekers settled in rural or suburban Wallonia just after arrival (together 8.4%). Most of them are equally shared between Brussels (30.0%) and urban Flanders (34.7%), and only a few in urban Wallonia (9.0%). For asylum seekers, on the other hand, significant proportion resides in Brussels during the first month of stay (approximately 50%). Many are indeed first housed shortly in the arrival centre “Petit Château” in Brussels before being transferred to a reception accommodation (Zimmer, 2023). As early as the second month of stay, the share residing in Brussels drops by 20 percentage points (Figure 6). The rest of the sample is more equally dispersed in the other types of municipalities, with slightly higher shares in urban Flanders (12.3%) and rural Wallonia (10.2%). A Pearson χ^2 test confirms that the differences between asylum-seekers and other migrants are statistically significant, supporting our hypothesis (H1a and b). Spatial dispersal at arrival depends on whether the migrant applies for international protection, as it is the main difference between the two groups. As previously shown in another study among Syrian and Iraqi refugees (El Moussawi & Schuermans, 2020), these results show

that Belgium's reception system indirectly imposes a specific spatial dispersal to asylum seekers.

Results from the sequence analysis (Figure 6) show that the trajectories are quite stable for asylum seekers (on average 1.6 transitions per sequence). This could partly be explained by the lengthy asylum procedures during which most of them live and stay in a given reception centre (Sarolea et al., 2021). According to a 2017 report, the average length of stay in a collective accommodation is 13 months (Cour des comptes 2017: 3). Trajectories appear to be even smoother for individuals who do not apply for international protection with a transition rate of 0.75 per sequence on average. Non-asylum applicants tend to be more “immobile” and very often follow trajectories of stay in a same type of municipality during the entire observation period⁷, which supports our hypothesis (H1c).

Figure 5 - Spatial distribution of asylum seekers and non-asylum seekers, at the end of the 1st month of stay (by type of municipality of residence)



Note: Asylum seekers (N=7,651): 10% random sample of all immigrants who applied for international protection between 2012 and 2016 in Belgium. Non-asylum seekers (N=7,582): twin cohort created using gender, age group and country of birth among immigrants who arrived between 2012 and 2016.

Pearson $\chi^2 = 1,700$ ($p = 0.000$); Degree of freedom = 7; Cramer's $V = 0.3297$.

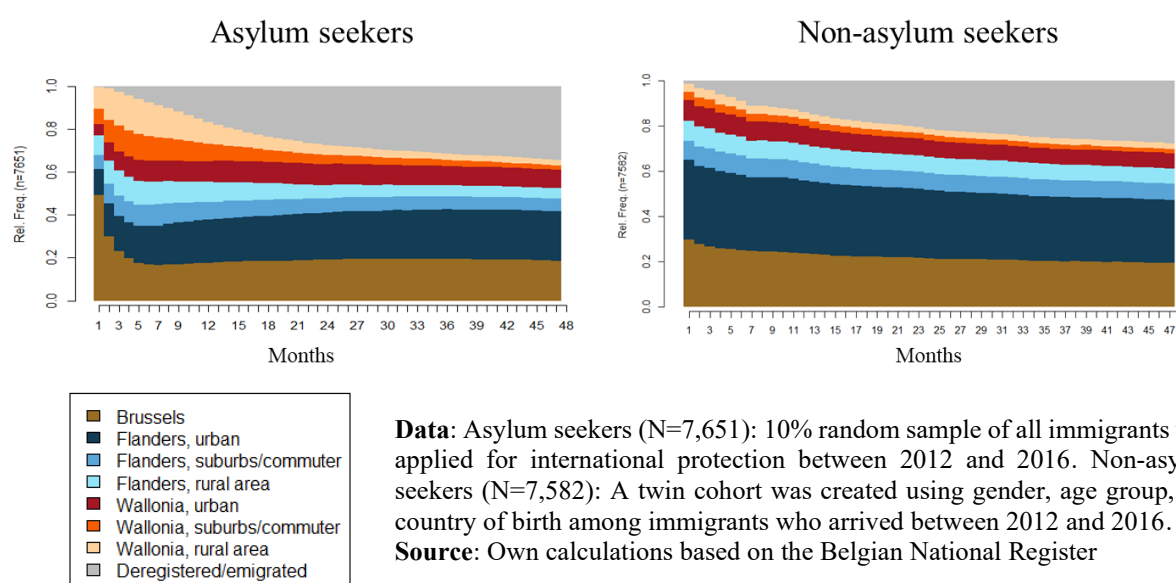
Source: own calculations based on National Register data

⁷This stability needs to be carefully interpreted as our analysis only account for moves between one type of municipality to another type.

Next, we further develop our comparative approach of the spatial dispersal of the two groups to investigate whether the differences described hold in the long term or if both groups tend converge to urban areas (H2). Figure 6 shows that, after the first month, the proportion of asylum applicants living in the capital decreases but quickly stabilizes (on the left). The share residing in rural areas decreases significantly over the 48-month period. This drop is especially visible in rural Wallonia (light orange), from the 5th month onward.

On the other hand, for non-asylum seekers, the distribution remains almost identical during the four years of stay, except for the share of “emigrated/deregistered” (light grey). The latter reaches 28.0% of the non-asylum-seeking group, after 48 months. A similar pattern is observed among asylum seekers: the proportion of individuals who have emigrated or are deregistered increases over time, reaching approximately 35% of the sample. The reason is most probably that asylum applications are rejected, and migrants have to leave the territory. However, some might stay in Belgium as undocumented migrants, which is not captured in our data.

Figure 6 – State distribution plot of both groups, for each month of the four years of observation (after arrival)



The spatial distribution at the end of the observation shows a greater attractiveness of the Northern part of Belgium in both samples. In the last month of observation, 52.1% of asylum-seeking migrants (who may have been granted protection in the meantime) resided in Brussels or Flanders while only 13.4% were in Wallonia. For the twin cohort, the shares are 61.0% for Brussels and Flanders together against 11.1% in Wallonia. If we consider only those who still live in Belgium after four years of stay (Appendix II), the attractiveness of Brussels and Flemish urban municipalities holds for both groups: 28% of asylum seekers still in the country live in Brussels and 35% in urban Flanders. In the twin cohort, the shares are 27% and 39%, respectively. In other words, few individuals reside in rural areas at the end of the observation: 11% of asylum seekers and 13% of non-asylum seekers are in rural municipalities, irrespective of the region. These findings are in line with H2: both groups present a similar dispersal after four years of stay, as they are attracted to the main urban areas. Results further complement our hypothesis by adding that the attractiveness is also higher for the federal regions of Brussels-Capital and Flanders compared to Wallonia. There remain, however, small differences after four years, with a slightly higher representation of asylum seekers in Wallonia (20%) compared to the twin cohort (15%), and especially in urban Wallonia (13% vs. 9%). This suggests a small but long-lasting effect of the initial place of residence among asylum seekers on their residential trajectories: The results suggest that Wallonia is able to retain a small share of asylum migrants, likely among those initially assigned to Walloon reception places. It brings nuance to the idea that dispersal policies contribute to increasing internal migrations (Kaida et al., 2020).

7. Impact of the Belgian Reception System on Internal Migrations

The second part of the analysis further unravels the role of the reception system in internal migrations among our asylum-seeking sample. For this purpose, we examine the impact of allocating a reception place upon arrival on internal moves. We first use a cluster analysis to

distinguish the most common internal mobility patterns among asylum seekers. This results in eight typical trajectories of internal migration (Figure 7), on which we apply a multinomial logistic regression. Descriptive statistics for each cluster are presented in Appendix III.

7.1. Trajectories of rapid exit from the register

Cluster 1 is the most common (26.0% of the sample). It mainly comprises individuals either leaving the country or being deregistered. The exit from the register happens relatively rapidly, with 50% of the cluster being deregistered or having emigrated one year after arrival. Individuals leaving the administrative data are also found in other clusters, but these exits occur much later in the four-year observation period. In cluster 1, asylum seekers spend little to no time residing in Brussels.

7.2. Trajectories staying in or moving to urban municipalities

The second most common trajectories among asylum applicants are in cluster 2 (23.6%). In this cluster, asylum seekers start their stay in different types of municipalities across the country but almost always end up in a Flemish urban municipality. By the end of the observation, about 80% of this cluster lives in urban Flanders. The moves to Flemish agglomerations mainly occur within the first two years of stay in Belgium.

Trajectories in Cluster 3, the third-largest (21.3 %), are almost exclusively spent in Brussels' Capital Region. Some people begin their stay in Wallonia or Flanders but move within the first year and a half to Brussels. On average, this cluster also shows the lowest number of transitions between states (1.2 transitions per individual, while the other clusters range from 1.5 to 2 transitions). Many trajectories show no movement to another type of municipality. Although it does not mean that people did not change residence during the observation period, it shows that they remained in Brussels.

The migration trajectories in Cluster 4 (9.4% of the sample) exhibit similar patterns in or towards urban municipalities: on average, 37 months are spent in urban Walloon municipalities. The moves towards the latter also happen after 12 to 24 months of stay. Very little to no time is spent in Flemish municipalities.

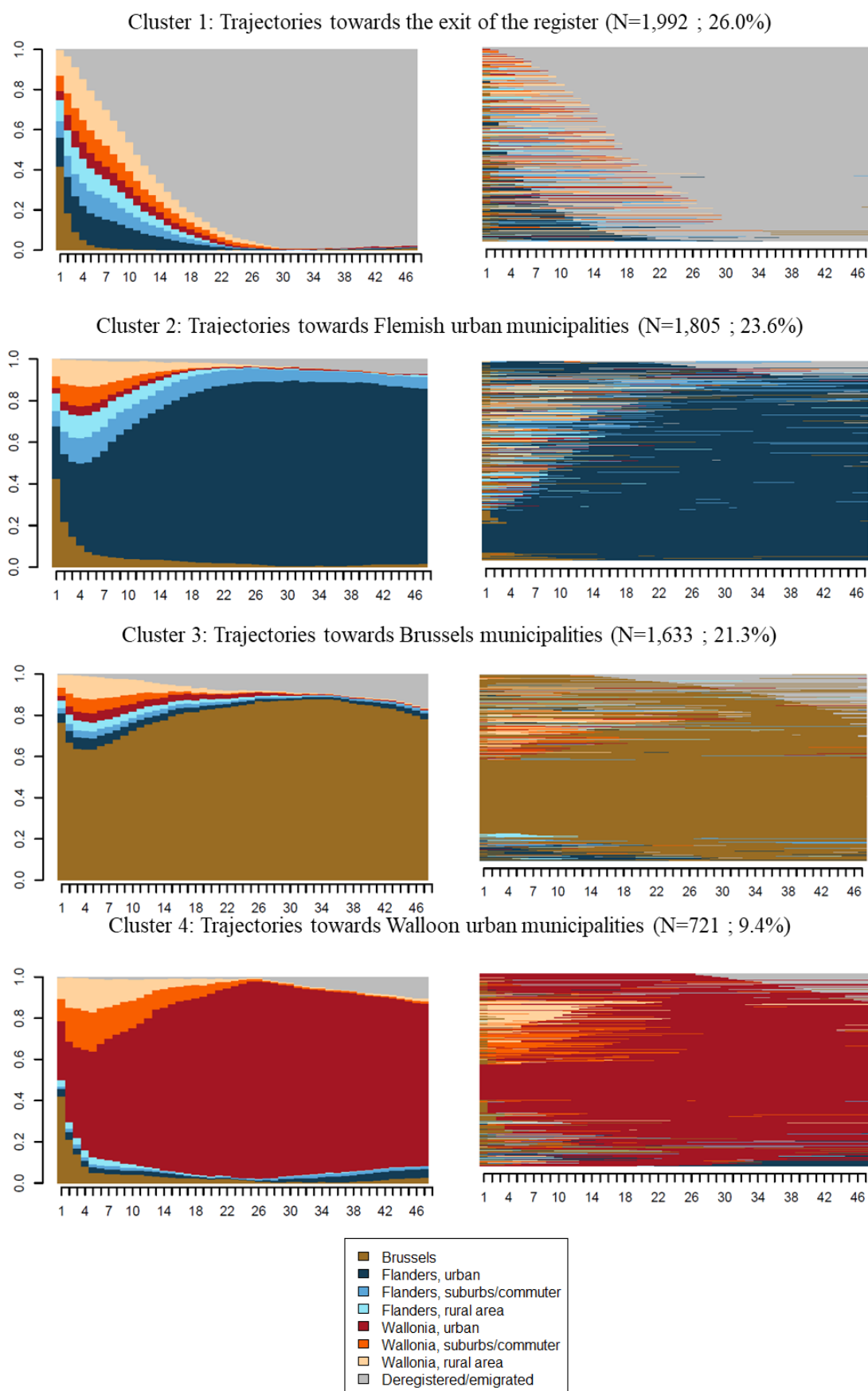
Despite the dispersal observed across Belgium just after arrival, clusters 2, 3, and 4 (54.3% of the sample together) show the expected movements towards urban municipalities (H2a), whether asylum applicants stay in agglomerations or in-migrate from rural or suburban municipalities. Moreover, these clusters also support the idea that Flanders and Brussels are more attractive than Wallonia (H2b), as the most common trajectories are directed to the Northern part of Belgium (Cluster 2) or its capital (Cluster 3).

7.3.Trajectories staying in or moving to less urbanised municipalities

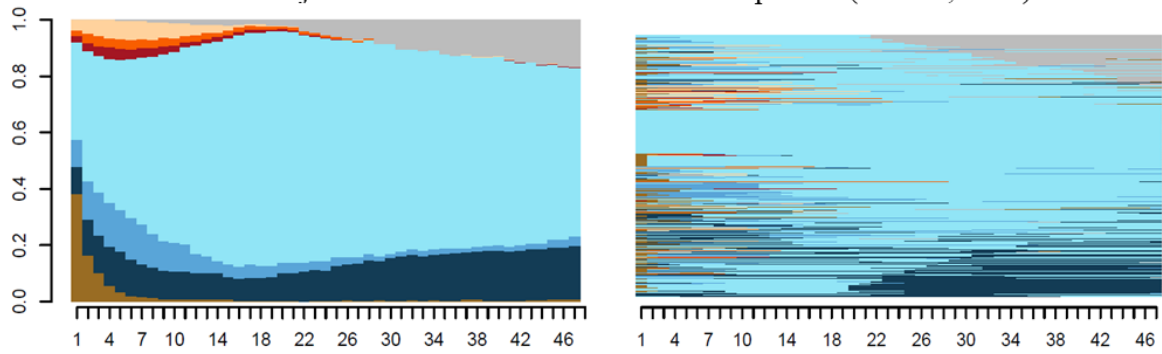
The four remaining clusters of the typology regroup 19.5% of the asylum seekers. They present trajectories in which individuals mainly live in rural municipalities (Cluster 5 in Flanders and Cluster 8 in Wallonia) or suburban municipalities (Cluster 6 in Flanders and Cluster 7 in Wallonia). In Cluster 5, most of the time is spent living in a Flemish rural municipality. However, about a fifth of individuals in this cluster still move on to urban municipalities in Flanders by the end of the observation. Cluster 6 groups trajectories that almost exclusively move to or stay in Flemish suburban municipalities. Both in clusters 5 and 6, a small number of trajectories originate in Walloon municipalities before moving to Flanders. Cluster 7 presents the highest mean number of transitions per sequence (2.0). Most of the time is spent in suburban municipalities in Wallonia. Nevertheless, about a quarter of the cluster moves to Brussels or a Flemish agglomeration at some point in the observation period. Finally, trajectories in cluster 8 are also mainly located in Walloon municipalities but in rural areas: individuals reside in rural Wallonia for an average of 38 months. Very few internal migrations occur towards Flanders in this cluster.

The internal migration pathways are less smooth in these groups, with transition rates of 1.8 per sequence on average overall (Appendix III). As expected, those living in less urbanised areas during the beginning of their stay follow more dynamic internal migration trajectories as asylum seekers tend to move to more urbanised areas (H3a). This element particularly holds for individuals experiencing trajectories mainly in rural Flanders or Suburban Wallonia (Cluster 5 and 7).

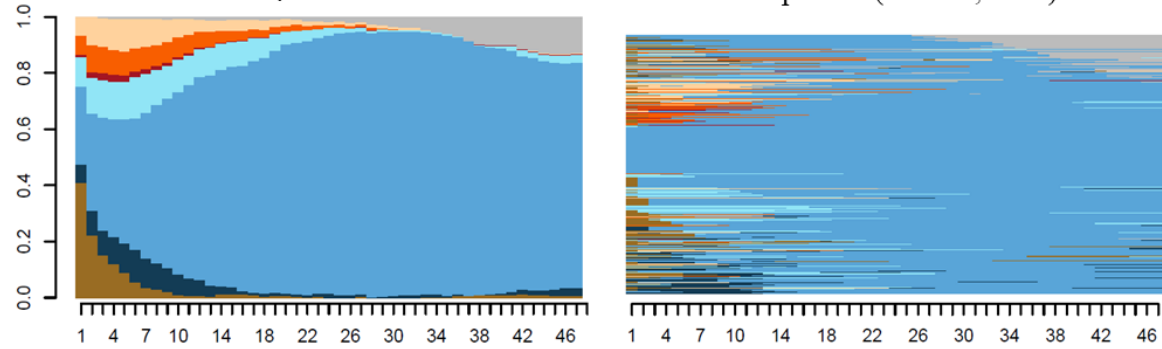
Figure 7 – Descriptive plots for the 8 types of internal migration trajectories among asylum applicants in Belgium



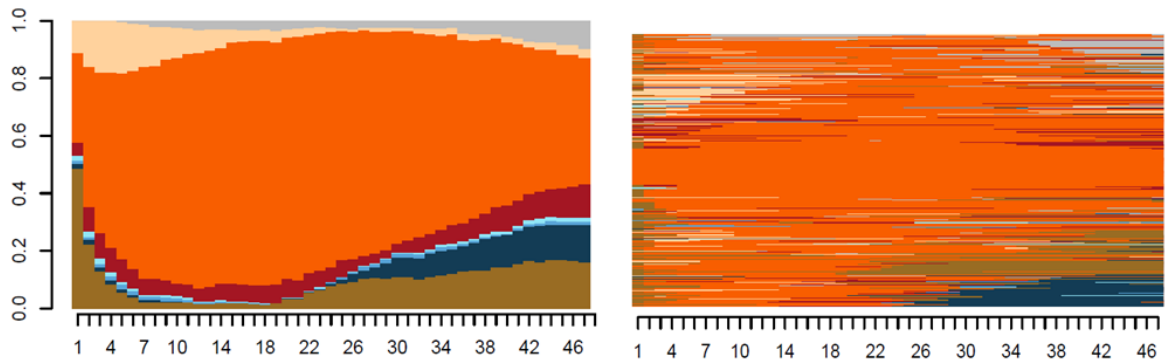
Cluster 5: Trajectories towards Flemish rural municipalities (N=545 ; 7.1%)



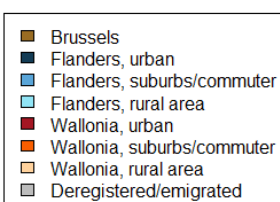
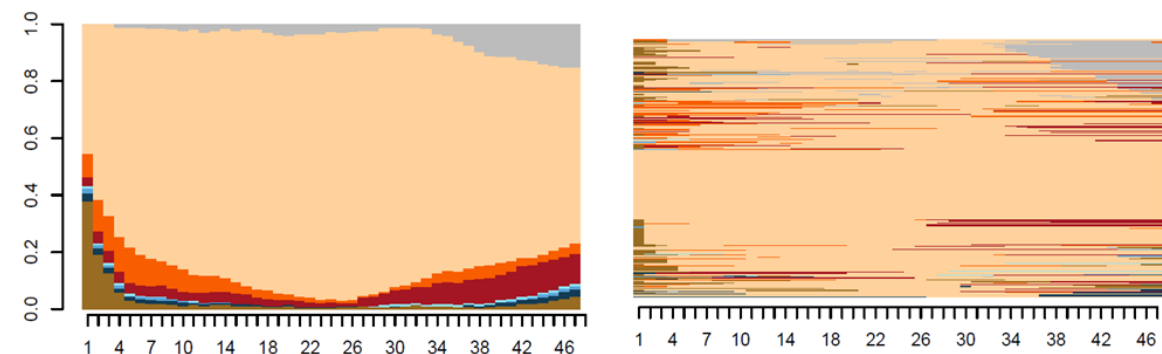
Cluster 6: Trajectories towards Flemish suburban municipalities (N=375 ; 4.9%)



Cluster 7: Trajectories towards Walloon suburban municipalities (N=309 ; 4.0%)



Cluster 8: Trajectories towards Walloon rural municipalities (N=271 ; 3.5%)



Note: The state distribution plots (left) show the distribution across each state at the end of each month. The sequence index plots (right) show all individual trajectories and can be read longitudinally. The sequences are represented by a succession of states recorded at the end of each month (48 months corresponding to the four-year period after arrival).

Source: own calculations based on the Belgian National Register

7.4. Influence of the initial place of reception

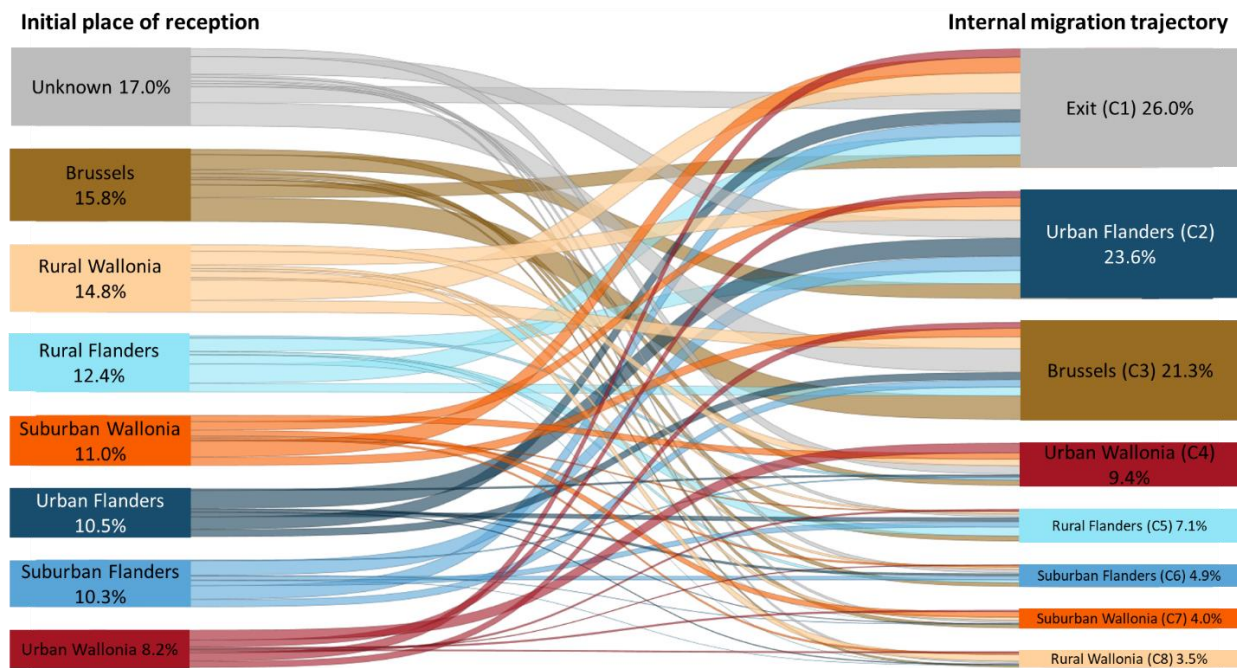
Comparing the typical migration patterns with the first reception place assigned at arrival, we note that 27.2% of the asylum seekers were assigned to an initial reception place located in rural areas (Figure 8 and Appendix IV). In comparison, only 10.6% follow a trajectory in these rural municipalities (cluster 5 and 8). Furthermore, at the end of the four-year observation period, only 7.4% of our sample reside in rural municipalities, in Flanders or Wallonia. These descriptive findings support the hypothesis that there is a mismatch between the initial place of reception and directions of internal migrations (H3). Asylum seekers assigned to a rural reception place tend to leave rural municipalities later. Based on our typology of internal migration trajectories, we expand the analysis of the influence of the Belgian reception system using a multinomial logistic regression. Below, we present the predicted probabilities of being in each cluster, based on the type of municipality initially assigned to the asylum applicant upon arrival (Table 2). Marginal effects drawn from the regression are also presented in Appendix V. 79% of the asylum seekers sample was initially assigned to a collective reception centre, while about 5% received a code corresponding to a Belgian municipality. 9% received a code “no show”. This specific code indicates that migrants are not assigned to a reception accommodation, either because there are no more places available or because they are not eligible to receive material assistance⁸. We also include the missing individuals (7%) in this last category as those individuals are absent from the reception system for the entire observation period.

The regression shows significant differences in the probabilities of being in a specific cluster depending on the municipality of the initial reception. When individuals are not assigned to a reception centre at the start of their stay (code “no show”), their odds of following a

⁸Asylum seekers from EU countries are not entitled to material assistance as well as migrants who apply for a second time to the international protection.

trajectory of residence mainly in Brussels are high (30.0%). They also have high probabilities of experiencing trajectories in urban Flanders (24.9%) or urban Wallonia (10.8%). This is consistent with the idea that, without the reception system's constraint, migrants are more likely to settle in urban areas early on, just as observed in the twin cohort. For those who received a reception place in an urban area, following an internal migration trajectory in the same type of municipality as the one initially assigned is more frequent than following a trajectory elsewhere (as indicated by the black cells in Table 2). For example, among individuals assigned to a Walloon urban municipality, 27.7% follow a trajectory mainly residing in this type of municipality (Cluster 4). In contrast, the probability of being in cluster 4 usually ranges between 2.8% and 13.0% when assigned another initial reception place. If a non-urban municipality is assigned, the most frequent trajectory is then the one from cluster 2, in which individuals move to urban Flanders (cells in bold). Although the attractiveness of urban areas is strong, the type of municipality of initial reception slightly increases the chances of following an internal migration path in less urbanised municipalities during the first four years of stay in Belgium (grey cells). In other words, if someone follows a trajectory mainly in rural areas, there is a high probability that he/she was initially assigned to a rural reception place (Figure 8). This brings some nuance to our hypothesis that individuals assigned to rural reception places systematically move to more urbanised areas (H3a): they are more likely to be in a rural trajectory than others but still do not often stay in rural municipalities.

Figure 8 - Flow diagram of the distribution across clusters by type of municipality of initial reception



Note: Asylum seekers (N=7,651): 10% random sample of all immigrants who applied for international protection between 2012 and 2016.

Source: own calculations based on the Belgian National Register

The analysis also highlights differences across the regions. If one is initially assigned to a municipality in Flanders, the probability of following a subsequent trajectory in the opposite region, i.e. Wallonia, will be low. For instance, individuals assigned to a suburban Flemish reception place have higher probabilities of being in a cluster mainly in Flanders than in Wallonia: respectively 30.3%, 10.8% and 8.4% chances to be in clusters 2, 5 and 6 in Flanders compared to only 2.8%, 1.1% and 0.8% probabilities of being in cluster 4, 7 and 8 in Wallonia. This is visually represented in the flow diagram of Figure 8 and supports our hypothesis H3b: The region of initial reception influences the subsequent settlement patterns. A plausible explanation is the language differences between the two regions. Individuals hosted in a Walloon reception place begin their integration process in the French-speaking part of the country, likely to favour staying in a French-speaking municipality later in life (versus Flanders, where the learning of Dutch is more prevalent).

In the multinomial logistic regression, we also control for gender, age, and place of birth, as these characteristics could also impact internal mobility. The year of arrival also considered

to control for the context of rising inflows of asylum applicants in 2015 and 2016. Mainly the place of birth shows significant differences across clusters. Individuals born in European countries (non-EU) have a stronger probability of being in cluster 1, in which they quickly exit the administrative data. Asian-born asylum seekers, on the other hand, have a high probability of following trajectories mainly residing in Flanders (especially in urban Flanders, with 32.5% in cluster 2). African-born asylum seekers encounter a predicted percentage of 11.9 to be in cluster 4 (trajectories in urban Wallonia). This probability is higher than all the other origins. However, there are no significant differences in the probability of being in cluster 3 (meaning following a trajectory mainly in Brussels) across places of birth. We propose two plausible explanations for these results. First, the language could partially explain this spatial distribution of origin groups. African-born asylum seekers in our sample often come from French-speaking Sub-Saharan African countries. Walloon municipalities could thus be more appealing to them as part of the French-speaking area of Belgium. Secondly, the allocation of asylum seekers by Fedasil to various reception centres could be based on factors such as the migrants' language and/or the desire to group them with co-ethnic migrants to facilitate their integration. However, due to a lack of information on this specific matter, we are unable to test these explanations.

Table 2 -Predicted percentages of asylum seekers by clusters according to initial place of reception and other sociodemographic characteristics from the multinomial logistic regression

	C1 Exit	C2 Urban Flanders	C3 Brussels	C4 Urban Wallonia	C5 Rural Flanders	C6 Suburban Flanders	C7 Suburban Wallonia	C8 Rural Wallonia	
Municipality of initial reception	p<0.01	p<0.01	p<0.01	p<0.01	p<0.01	p<0.01	p<0.01	p<0.01	
No show	19.4 (17.2-21.7)	24.9 (22.3-27.4)	30 (27.3-32.6)	10.8 (9.1-12.6)	4.1 (3.0-5.2)	4.7 (3.5-5.9)	3 (2.1-4.0)	3.1 (2.1-4.0)	100
Flanders urban	26.3 (23.1-29.6)	37.8 (34.3-41.3)	15.9 (13.3-18.5)	3.7 (2.4-5.0)	8.5 (6.6-10.5)	4.7 (3.2-6.2)	1.2 (0.5-1.8)	1.8 (0.9-2.7)	100
Brussel	17.7 (15.4-20.0)	19.8 (17.5-22.1)	36.3 (33.4-39.2)	7.5 (6.0-9.0)	6.5 (5.1-7.9)	5.3 (4.0-6.6)	4.2 (3.1-5.3)	2.8 (1.8-3.7)	100
Wallonia urban	23.6 (20.1-27.1)	15.7 (12.9-18.5)	18.4 (15.2-21.0)	27.7 (24.0-31.4)	3.85 (2.5-5.2)	1.9 (0.9-2.9)	4.7 (3.0-6.4)	4.1 (2.5-5.8)	100
Flanders rural	28.9 (25.1-32.0)	24.8 (21.9-27.7)	16.9 (14.4-19.3)	5.2 (3.7-6.8)	17.5 (14.8-20.1)	5.5 (4.0-7.0)	0.5 (0.0-0.9)	0.8 (0.2-1.4)	100
Flanders suburbs	28.3 (25.0-31.7)	30.3 (27.0-33.7)	17.4 (14.6-20.2)	2.8 (1.6-4.0)	10.8 (8.6-13.0)	8.4 (6.4-10.4)	1.1 (0.4-1.9)	0.8 (0.2-1.4)	100
Wallonia suburbs	27.9 (24.7-31.0)	18.8 (16.0-21.6)	17.2 (14.6-19.9)	13 (10.6-15.3)	2.6 (1.5-3.7)	4.2 (2.7-5.6)	12 (9.6-14.4)	4.4 (2.9-5.9)	100
Wallonia rural	30.2 (27.4-33.1)	19.3 (17.0-21.6)	18.7 (16.3-21.0)	10.2 (8.4-12.0)	3 (2.1-4.0)	3.4 (2.3-4.4)	4.7 (3.4-5.9)	10.5 (8.6-12.4)	100
Gender	p<0.01	p=0.45	p<0.01	p=0.14	p=0.04	<0.01	p=0.05	p=0.16	
Male	30.1 (28.7-31.5)	24.3 (23.0-25.6)	22.1 (20.8-23.3)	8.2 (7.4-9.0)	5.7 (5.0-6.4)	4.2 (3.6-4.8)	2.6 (2.1-3.2)	2.7 (2.2-3.3)	100
Female	18.7 (17.0-20.5)	25.8 (23.8-27.8)	25.5 (23.5-27.5)	9.3 (8.0-10.6)	7.2 (6.0-8.4)	6.7 (5.6-7.9)	3.5 (2.6-4.3)	3.3 (2.5-4.1)	100
Age group at arrival	p<0.01	p=0.11	p<0.01	p<0.01	p=0.16	p=0.20	<0.01	p=0.04	
0-19	16.6 (14.2-19.0)	25.3 (22.6-28.0)	20.1 (17.6-22.5)	13.9 (11.6-16.1)	7.4 (5.8-9.0)	5.8 (4.4-7.2)	6.5 (4.9-8.11)	4.5 (3.2-5.8)	100
20-29	29 (27.2-30.6)	25.9 (24.3-27.6)	22.4 (20.8-23.9)	7.4 (6.4-8.3)	6.2 (5.4-7.1)	4.2 (3.5-6.6)	2.6 (2.0-3.2)	2.4 (1.8-2.9)	100
30-39	28.1 (25.9-30.3)	22.7 (20.6-24.7)	25.6 (23.5-27.7)	7.6 (6.4-8.9)	5.2 (4.2-6.2)	5.3 (4.2-6.3)	2.4 (1.7-3.1)	3.2 (2.3-4.0)	100
40-49	27.5 (24.1-30.9)	22.8 (19.6-26.0)	24.1 (20.8-27.3)	9.1 (7.0-11.2)	6.5 (4.7-8.3)	5 (3.5-6.6)	2.2 (1.2-3.1)	2.8 (1.7-3.9)	100

50+	26.1 (21.8-30.4)	25.4 (21.2-29.6)	23.3 (19.3-27.2)	9 (6.3-11.7)	5.4 (3.4-7.4)	5.5 (3.5-7.5)	2.5 (1.2-3.8)	2.8 (1.4-4.2)	100
Continent of birth	p<0.01	p<0.01	p=0.02	p<0.01	p<0.01	p<0.01	p<0.01	p=0.73	
Europe non EU	44.7 (41.5-47.9)	13.5 (11.4-15.7)	2.2 (19.5-24.7)	6.3 (4.8-7.8)	3.7 (2.6-4.8)	3.2 (2.1-4.2)	3.1 (2.0-4.2)	3.3 (2.2-4.4)	100
Asia	18.8 (17.5-20.1)	32.5 (30.9-34.1)	22.9 (21.5-24.3)	7.3 (6.4-8.1)	7.2 (6.3-8.1)	6.4 (5.5-7.2)	2.3 (1.7-2.8)	2.7 (2.2-3.3)	100
Africa	33.2 (31.1-35.4)	18.6 (16.8-20.3)	21 (19.2-22.9)	11.9 (10.5-13.4)	5.3 (4.3-6.3)	3.3 (2.5-4.1)	3.8 (2.9-4.7)	2.8 (2.1-3.5)	100
Other	26.9 (18.1-35.6)	18 (10.7-25.2)	33.9 (25.1-42.6)	6.2 (2.1-10.3)	5.6 (1.2-10.0)	4.9 (1.0-8.8)	2.6 (0.0-5.2)	2.1 (0.0-4.4)	100
Year arrival	p<0.01	p<0.01	p<0.01	p=0.64	p<0.01	p=0.02	p<0.01	p=0.66	
2012	34.7 (32.0-37.4)	21.2 (18.8-23.6)	24.7 (22.2-27.2)	7.6 (6.1-9.1)	3.3 (2.4-4.3)	3.5 (2.5-4.5)	2.2 (1.5-2.9)	2.7 (1.8-3.6)	100
2013	31.5 (28.4-34.7)	20.5 (17.7-23.3)	27.1 (24.0-30.1)	7.9 (6.1-9.6)	4.5 (3.2-5.9)	3.8 (2.4-5.1)	2.3 (1.4-3.2)	2.4 (1.4-3.4)	100
2014	23.6 (21.0-26.2)	25.5 (22.7-28.3)	28.1 (25.3-30.9)	8.2 (6.6-9.8)	5.2 (3.8-6.6)	4.9 (3.5-6.3)	1.8 (1.1-2.5)	2.6 (1.8-3.5)	100
2015	22.6 (20.9-24.3)	27.4 (25.6-29.1)	19.6 (18.1-21.2)	9.1 (7.9-10.2)	9.1 (7.9-10.2)	5.5 (4.6-6.4)	3.7 (2.9-4.5)	3 (2.4-3.7)	100
2016	25.2 (22.5-27.9)	24.5 (21.8-27.1)	22.5 (20.0-25.1)	8.6 (6.9-10.2)	6.3 (4.8-7.7)	6 (4.6-7.4)	3.6 (2.5-4.7)	3.4 (2.3-4.4)	100

Note: p-values indicate the statistical significance of differences between predicted percentages across categories. 95% confidence intervals are presented in parentheses. N=7,651 asylum seekers who arrived between 2012 and 2016..

Source: own calculations based on National Register data.

8. Discussion and Conclusion

The comparisons between asylum-seekers and their non-asylum seekers counterparts demonstrated strong differences in the spatial distribution at arrival. This likely reflects the impact of the reception system and the location of reception facilities, given that both groups are largely similar apart from their asylum application. The results highlight again the known mismatch between the reception strategies and the settlement choices of migrants, in Belgium and elsewhere (El Moussawi & Schuermans, 2020; Glorius & Nienaber, 2022; Proietti & Veneri, 2019; Stewart & Shaffer, 2015; van Liempt & Miellet, 2021). The sequence and cluster analyses provided insights into the general trends of internal migrations, revealing the expected mobility to urban municipalities: 54.3% of the asylum seekers sample present trajectories of stay in urban municipalities across the three federal regions (clusters 2, 3, and 4). Although presenting a different distribution upon arrival (H1), asylum seekers eventually end up, after four years of stay, with a broadly similar spatial dispersal as non-asylum applicants with the same sociodemographic characteristics. The comparable spatial dispersal of both groups in the host country illustrates the attractiveness of urban regions (H2), which could result from both individual decisions and structural constraints (e.g. difficulties on the housing market (El Moussawi, 2023)). As both groups converge to the same type of municipalities, it indirectly lends support to the idea that newcomers are drawn to co-ethnic communities or immigrant communities (de Hoon et al., 2021; Saeys et al., 2018; Stewart & Shaffer, 2015), which also supports access to housing (Brown et al., 2024). The number of reception facilities located in rural areas contrasts with the attractiveness of urbanised municipalities. The longitudinal perspective adopted in this paper enabled us to outline the long-term impact of the reception system. The latter leads to higher mobility among asylum-seeking migrants, compared to the trajectories followed by immigrants who did not apply for international protection (and consequently did not benefit from the reception system) (H1c).

Furthermore, the allocation of a reception place increases the likelihood that asylum seekers pursue residence trajectories in municipalities they might not have chosen if given the option at their arrival. In that sense, our third hypothesis (H3a: individuals are likely to depart from rural reception centres) received partial confirmation. Even if a limited number of individuals follow trajectories in rural municipalities, being assigned to a rural municipality increases the likelihood of remaining in such an environment. Similarly, even if Flanders seems to be a preferred region of residence, individuals who were initially hosted in Wallonia show higher probabilities of staying in this region (H3b).

This research presents several limitations. First, the data used are retrieved from administrative sources and, therefore, do not capture informal situations among asylum seekers who have become undocumented. Second, we purposely built a twin cohort that is the most similar to our asylum seeker sample. If this strategy allows us to see what might have happened if the migrant had not applied for asylum, all other things being equal, we limit our analysis to specific migrant groups and do not capture trends among all immigrants in general. For instance, the convergence observed in urban Flanders and Brussels could be related to the fact that individuals from our two cohorts may, in fact, have some familial relationship leading them to converge. Third, our methodology accounted only for migrations across municipality types. The relative stability of the trajectories observed does not reflect all the moves within the broad categories.

Future research is needed to clarify the way the dispatching in various reception places works to help explain differences across origin groups. Legally binding criteria such as language, age or family situation, are indeed defined to organise the reception in the most appropriate facility but there is no control over the respect of these criteria (AIDA, 2022). More work could also be done to link internal migration patterns with other aspects of the life course in Belgium (family evolution, employment career, etc.). Nonetheless, this paper contributes to

a better understanding of the impact of reception policies on the internal mobility of asylum-seeking migrants. Although Belgium's reception policy differs from other countries often examined in the literature (e.g., the UK (Brown et al., 2024; Darling, 2016), Sweden (Vogiazides & Mondani, 2020), Germany (Kordel & Weidinger, 2019)), internal migrations of asylum seekers and refugees exhibit similar patterns to those observed elsewhere. Migrations to major cities are frequent in the population studied, and reception strategies should not overlook the elements underlying these migration decisions, if they wish to support an easier integration for recognised refugees.

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Appendices

Appendix I: Illustration of the matching method to create the “twin cohort”

ID	Gender	Age group	Country of birth	Asylum application	Matched with
1	Male	20-29	Syria	Yes	4
2	Male	20-29	Syria	Yes	5
3	Male	20-29	Syria	Yes	4
4	Male	20-29	Syria	No	
5	Male	20-29	Syria	No	

Note: In this fictive example, three asylum seekers have the same sociodemographic characteristics. However, only two individuals have the same characteristics among those who did not apply for international protection. Therefore, in the twin cohort, we duplicate individual 4 so that the sample size of both groups stays consistent.

Appendix II: Spatial dispersal 48 months after arrival among those still registered in a Belgian municipality.

		Asylum seekers		Non-asylum seekers	
		N=4,990	%	N=5,463	%
Type of municipality of residence	Brussels	1394	27.94	1461	26.74
	Flanders urban	1765	35.37	2102	38.48
	Flanders suburban	453	9.08	543	9.94
	Flanders rural	376	7.54	516	9.45
	Wallonia urban	659	13.21	502	9.19
	Wallonia suburban	152	3.05	144	2.64
	Wallonia rural	191	3.83	195	3.57

Note: Asylum seekers (N=4,990): 10% random sample of all immigrants who applied for international protection between 2012 and 2016 in Belgium. Non-asylum seekers (N=5,463): twin cohort created using gender, age group and country of birth among immigrants who arrived between 2012 and 2016. Only individuals who were still registered in a Belgian municipality 4 years after arrival were considered for this analysis.

Pearson $\chi^2 = 61.26$ ($p = 0.000$); Degree of freedom = 6; Cramer's $V = 0.077$.

Source: own calculations based on National Register data

Appendix III: Descriptive statistics for the eight types of internal migration trajectories among asylum applicants

	Cluster 1 Exit from the register	Cluster 2 To urban Flanders	Cluster 3 To Brussels	Cluster 4 To urban Wallonia	Cluster 5 To rural Flanders	Cluster 6 To suburban Flanders	Cluster 7 To suburban Wallonia	Cluster 8 To rural Wallonia	
N	1.992	1.805	1.633	721	545	375	309	271	7.651
%	26,0	23,6	21,3	9,4	7,1	4,9	4,0	3,5	100
Gender (%)									
Male	76,4	72,0	66,5	66,6	71,2	63,5	63,4	65,7	70,4
Female	23,6	28,0	33,5	33,4	28,8	36,5	36,6	34,3	29,6
Age group at arrival (%)									
0-20	8,2	16,7	14,2	21,0	18,9	19,2	28,5	19,9	15,2
20-30	47,3	45,8	41,3	40,1	45,1	36,8	39,2	36,5	43,6
30-40	27,9	22,0	27,3	22,6	20,6	25,6	20,1	27,3	24,9
40-50	10,5	9,0	10,4	10,4	9,9	10,7	7,4	10,3	10,0
50+	6,1	6,4	6,9	6,0	5,5	7,7	4,8	5,9	6,3
Year of arrival (%)									
2012	25,7	13,9	19,7	14,7	9,7	12,8	14,6	14,8	18,0
2013	16,1	9,3	14,5	11,4	8,1	8,5	11,0	9,6	12,3
2014	14,5	13,9	17,5	15,8	9,5	12,5	10,4	15,1	14,5
2015	29,6	48,0	33,5	43,1	58,4	47,5	46,3	43,9	40,2
2016	14,1	14,9	14,9	15,0	14,3	18,7	17,8	16,6	15,0
Place of birth (%)									
EU	0,4	0,3	1,3	0,4	0,0	0,8	1,0	0,4	0,6
Europe non EU	24,1	7,5	16,1	9,3	7,7	9,6	11,7	14,0	14,4
West & Central Asia	17,6	42,2	36,9	31,6	38,5	45,9	20,1	30,6	32,3
South & South-East Asia	18,5	26,5	13,2	15,3	30,6	22,7	25,2	21,8	20,4
East Asia	1,2	1,7	2,0	0,1	0,7	1,1	0,0	0,7	1,3
North Africa	4,8	2,1	3,4	3,9	1,1	2,1	2,9	3,0	3,2
Sub-Saharan Africa	32,4	19,0	25,8	38,6	20,2	17,1	38,8	28,8	27,0
North America & Oceania	0,2	0,1	0,0	0,0	0,2	0,0	0,3	0,0	0,1
Latin America & the Caribbean	0,7	0,5	0,9	0,6	0,7	0,5	0,0	0,4	0,6
Unknown	0,2	0,2	0,4	0,3	0,2	0,3	0,0	0,4	0,3
Mean number of transitions between states	1,7	1,7	1,2	1,5	1,9	1,6	2,0	1,5	1,6

Source: Own calculations based on the Belgian National Register

Appendix IV: Descriptive statistics of the asylum seekers sample, by type of municipality of the initial reception place assigned

	Municipality of the initial reception place assigned								Total
	Brussels	Flanders urban	Flanders suburban	Flanders rural	Wallonia urban	Wallonia suburban	Wallonia rural	Unknown	
N	1210	803	789	947	629	841	1134	1298	7651
%	15.81	10.50	10.31	12.38	8.22	10.99	14.82	16.97	100
Gender									
Male	76.94	69.12	74.65	77.09	78.38	65.16	70.46	57.16	70.41
Female	23.06	30.88	25.35	22.91	21.62	34.84	29.54	42.84	29.59
Place of birth									
Europe non EU	14.38	13.33	15.59	19.11	8.27	10.94	10.41	19.34	14.35
Asia	60.25	54.17	62.74	55.44	59.78	41.85	55.47	45.22	53.95
Africa	24.79	31.01	20.66	24.5	31.00	46.49	33.33	30.74	30.15
Other	0.58	1.49	1.01	0.95	0.95	0.71	0.79	4.70	1.54
Age group at arrival									
0-19	28.93	23.04	12.93	7.50	8.90	7.61	10.85	16.49	15.23
20-29	41.16	38.61	44.49	48.05	54.53	47.68	46.21	35.05	43.62
30-39	19.34	23.54	24.71	27.77	23.37	29.13	26.54	25.50	24.9
40-49	5.79	9.09	11.28	10.14	9.54	10.82	11.20	11.94	9.95
50+	4.79	5.73	6.59	6.55	3.66	4.76	5.20	11.02	6.31

Note: N=7.651; asylum seekers of the 10% sample selected who arrived between 2012 and 2016 and who were assigned an initial place of reception. The unknown category refers to individuals who received a code “no show” (N=684); those who received a reception code for which we could not identify the type of municipality (N=42), and those missing from the code 207 variable (N=572).

Source: own calculations based on National Register data.

Appendix V: Marginal effects and p-values of the initial reception place and sociodemographic characteristics on types of trajectories. from the multinomial logistic regression

	Type of internal migration trajectory															
	C1		C2		C3		C4		C5		C6		C7		C8	
	Exit		Urban Flanders		Brussels		Urban Wallonia		Rural Flanders		Suburban Flanders		Suburban Wallonia		Rural Wallonia	
Municipality of initial reception																
No show	0.02	(p=0.265)	0.05	(p<0.01)	-0.06	(p<0.01)	0.03	(p<0.01)	-0.03	(p<0.01)	-0.01	(p=0.503)	-0.01	(p=0.095)	0	(p=0.662)
Flanders urban Brussels (ref.)	0.09	(p<0.01)	0.17	(p<0.01)	-0.19	(p<0.01)	-0.04	(p<0.01)	0.02	(p=0.117)	-0.01	(p=0.486)	-0.03	(p<0.01)	-0.01	(p=0.168)
Wallonia urban	0.06	(p<0.01)	-0.04	(p=0.037)	-0.17	(p<0.01)	0.19	(p<0.01)	-0.03	(p<0.01)	-0.03	(p<0.01)	0	(p=0.742)	0.02	(p=0.163)
Flanders rural	0.11	(p<0.01)	0.04	(p=0.018)	-0.19	(p<0.01)	-0.02	(p=0.037)	0.11	(p<0.01)	0	(p=0.917)	-0.04	(p<0.01)	-0.02	(p<0.01)
Flanders suburban	0.11	(p<0.01)	0.1	(p<0.01)	-0.18	(p<0.01)	-0.05	(p<0.01)	0.04	(p<0.01)	0.03	(p<0.01)	-0.03	(p<0.01)	-0.02	(p<0.01)
Wallonia Suburban	0.1	(p<0.01)	-0.01	(p=0.643)	-0.18	(p<0.01)	0.05	(p<0.01)	-0.04	(p<0.01)	-0.01	(p=0.269)	0.08	(p<0.01)	0.01	(p=0.082)
Wallonia rural	0.12	(p<0.01)	0	(p=0.909)	-0.17	(p<0.01)	0.03	(p=0.027)	-0.04	(p<0.01)	-0.02	(p=0.027)	0	(p=0.634)	0.07	(p<0.01)
Gender																
Male (ref.)																
Female	-0.1	(p<0.01)	0.01	(p=0.445)	0.03	(p<0.01)	0.01	(p=0.140)	0.02	(p=0.038)	0.02	(p<0.01)	0.01	(p=0.046)	0.01	(p=0.156)
Age group at arrival																
0-19 (ref.)																
20-29	0.12	(p<0.01)	0.01	(p=0.398)	0.03	(p=0.053)	-0.06	(p<0.01)	-0.01	(p=0.179)	-0.01	(p=0.056)	-0.05	(p<0.01)	-0.02	(p<0.01)
30-39	0.11	(p<0.01)	-0.02	(p=0.255)	0.05	(p<0.01)	-0.06	(p<0.01)	-0.02	(p=0.018)	0	(p=0.696)	-0.05	(p<0.01)	-0.01	(p=0.106)
40-49	0.1	(p<0.01)	-0.02	(p=0.357)	0.04	(p=0.033)	-0.04	(p<0.01)	-0.01	(p=0.482)	-0.01	(p=0.554)	-0.05	(p<0.01)	-0.02	(p=0.070)
50+	0.09	(p<0.01)	0.01	(p=0.768)	0.03	(p=0.123)	-0.04	(p=0.014)	-0.02	(p=0.114)	0	(p=0.901)	-0.05	(p<0.01)	-0.02	(p=0.109)
Place of birth																
Europe non-EU (ref.)																
Asia	-0.24	(p<0.01)	0.17	(p<0.01)	0.01	(p=0.651)	0.01	(p=0.221)	0.04	(p<0.01)	0.03	(p<0.01)	-0.01	(p=0.135)	-0.01	(p=0.380)
Africa	-0.11	(p<0.01)	0.04	(p<0.01)	-0.01	(p=0.344)	0.06	(p<0.01)	0.02	(p=0.044)	0	(p=0.925)	0.01	(p=0.411)	-0.01	(p=0.362)
Other	-0.16	(p<0.01)	0.04	(p=0.259)	0.11	(p=0.012)	0	(p=0.973)	0.02	(p=0.416)	0.01	(p=0.423)	-0.01	(p=0.713)	-0.02	(p=0.355)
Year of arrival																
2012 (ref.)																
2013	-0.03	(p=0.121)	-0.01	(p=0.636)	0.02	(p=0.256)	0	(p=0.845)	0.01	(p=0.142)	0	(p=0.745)	0	(p=0.815)	0	(p=0.673)
2014	-0.1	(p<0.01)	0.04	(p=0.038)	0.03	(p=0.093)	0.01	(p=0.536)	0.02	(p=0.031)	0.01	(p=0.142)	0	(p=0.465)	0	(p=0.965)
2015	-0.11	(p<0.01)	0.05	(p<0.01)	-0.05	(p<0.01)	0.01	(p=0.143)	0.06	(p<0.01)	0.02	(p<0.01)	0.02	(p<0.01)	0	(p=0.516)
2016	-0.09	(p<0.01)	0.02	(p=0.150)	-0.02	(p=0.146)	0.01	(p=0.451)	0.03	(p<0.01)	0.03	(p<0.01)	0.02	(p=0.017)	0.01	(p=0.330)

Note: N=7.651; asylum seekers of the 10% sample selected who arrived between 2012 and 2016 and who were assigned an initial place of reception. The unknown category refers to individuals who received a code “no show” (N=684); those who received a reception code for which we could not identify the type of municipality (N=42), and those missing from the code 207 variable (N=572).

Source: own calculations based on National Register data.