Leaving for good or coming back? Identifying long-term internal migration patterns of rural young adults in the Netherlands

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Abstract
To counteract the effects of young adult out-migration on rural areas, there is increased interest in those who return and why. Yet relatively little is known about the migration patterns that unfold after leaving. This paper aims to identify the migration trajectories of rural young adults (aged 11-35 years) using the System of Social Statistical Datasets of Statistics Netherlands. Sequence and cluster analyses of the migration behaviour of rural young adults reveal five clusters of migration patterns, labelled as (1) return migrants, (2) repeat leavers, (3) late leavers (4) onward migrants, (5) one-time migrants, in addition to a group of non-migrants: (6) stayers. We document which life course trajectories are associated with the identified clusters. We find that return migration is more likely when individuals partner with someone from the same area of origin, while having a partner from other areas is linked to continued migration. Men are more likely to be in the clusters of late leavers and stayers. Furthermore, education level, field of study, and parenthood also show clear associations with specific rural migration patterns.

Key words: return migration, rural young adults, rural out-migration, migration trajectories, sequence analysis

1. Introduction

Many rural areas experience high levels of youth out-migration, mostly driven young adults searching for educational and employment opportunities (Haartsen & Venhorst, 2010), which are more widely available in cities (Storper & Manville, 2006). This raises concerns about the future of rural communities. In response, they are increasingly seeking ways to counteract the negative consequences of youth out-migration, paying particular attention to the potential role of return migrants in supporting local development. Importantly, youth out-migration should not simply be seen as young adults not wanting to stay in their home municipality. Instead, shifting preferences in terms of e.g. education, labour market, or lifestyle cause them to move away (Rye, 2006). For rural areas, youth out-migration intensifies existing challenges, particularly in regions already facing high levels of population ageing and depopulation (Stockdale, 2004), such as the North of the Netherlands (Elshof et al., 2014). Many leavers, however, retain a sense of attachment to their rural home region and to rural life more broadly, which may make them receptive to encouragement to return and resettle later in life.

When rural communities focus on attracting return migrants, it is important to recognise that out-migration is rarely a one-time event at the individual level. Instead, leaving is often part of

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an ongoing pattern of migration, driven by mismatches between an individual's current and preferred place of residence (Bernard & Kalemba, 2022; Bernard & Perales, 2021; Coulter et al., 2016). These preferences evolve alongside developments in the life course (Mulder & Hooimeijer, 1999), making migration a dynamic and ongoing process. As such, leaving one's rural home in early adulthood does not necessarily mean young adults have left for good: they may come back. Key life events, such as completing education, entering the labour market, starting a family, or experiencing adverse circumstances can trigger individuals to migrate again (Drozdzewski, 2008; Kooiman et al., 2018; Niedomysl & Amcoff, 2011; Spring et al., 2024; Von Reichert et al., 2014), either by returning or by moving onward.

This paper examines the migration trajectories of rural young adults after they leave their place of origin, focusing on the extent to which they return later in life. We study how these trajectories unfold over the life course, leading either to return migration or to other residential outcomes. The study is situated in the Northern Netherlands, where many rural municipalities face youth out-migration. This area provides a relevant case to explore the long-term mobility patterns of rural leavers and the potential role of return migration. For this research, we use longitudinal register data from Statistics Netherlands.

2. Literature review

After leaving the rural home region to pursue education, gain work experience, or explore new experiences (Drozdzewski, 2008; Mærsk et al., 2023; Pedersen & Gram, 2018; Rye, 2006; Von Reichert et al., 2014), young adults follow varied residential trajectories. Some young adult leavers settle permanently in their new destination (Venhorst et al., 2011), others move onward to move further up the urban escalator (with the option to 'get off' later in life), or return to places where they have previously lived (Fielding, 1992; Findlay et al., 2008; Newbold, 2001). Rural return migration, however, is typically driven by different factors than other types of migration as it involves moving to a place with fewer economic opportunities and a less dynamic labour market (Haartsen & Thissen, 2014; Rérat, 2014; Von Reichert et al., 2014).

Similar to migration in general, the moment of a return move often is instigated by key events in one's life; for example, completing education, starting a family, pursuing employment opportunities, retiring, or responding to adverse life events (Drozdzewski, 2008; Kooiman et al., 2018; Niedomysl & Amcoff, 2011; Spring et al., 2024; Von Reichert et al., 2014). However, there is much more to return migration. This literature review gives an overview of the driving forces behind return migration, the important moments for a return move, and how these interact with each other and unfold throughout the life course.

2.1 Social ties

Family-related reasons are often of key importance in the decision to return to the rural home area (Gillespie et al., 2022; Von Reichert et al., 2014). The presence of siblings and especially parents plays a crucial role in whether a young adult will return. A significant share of young adults returning to their home area do so to live with or close to parents, and receive support, company, or even offer assistance to them (Mulder et al., 2020). Nevertheless, it is important to point out the difference between returning to the parental home or to the parental

neighbourhood. Where returning to the parental home is often related to economic vulnerability and situations such as leaving higher education, entering unemployment, or partnership dissolution (Haartsen & Thissen, 2014; Stone et al., 2014), returning to the home area involves economically independent young adults (Olofsson et al., 2020). When the parents are not living in the home area anymore, young adults show to be much less inclined to return due to a lack of social ties in the region – an important reason to return disappears (Mulder et al., 2020; Von Reichert et al., 2014; Zorlu & Kooiman, 2019).

In addition to family ties, peer groups can play an important role in shaping return decisions, particularly for young adult returnees. Friendships established during youth may foster a sense of belonging, making the rural home area an attractive place to return to, or to stay in without leaving (Haartsen & Thissen, 2014; Rérat, 2014).

The characteristics of a leaver's partner also prove to be important in shaping the likelihood of a return move. Being with a partner means migration is no longer an individual decision but rather a joint decision influenced by both partners' needs, preferences and potential outcomes (Krapf et al., 2022). The likelihood of returning increases when both partners are from the same area. Conversely, having a partner who has primarily lived in another area decreases the likelihood to return, probably due to their lack of familiarity with the area and the absence of an extensive social network, which may fail to create a positive perception or sufficient motivation to move there (Rérat, 2014). Additionally, the likelihood of returning also increases when partners have children together, although this effect is weaker when both partners are highly educated (Amcoff & Niedomysl, 2013; Rérat, 2014).

2.2 Place attachment and belonging

In addition to social ties, place attachment can influence migration destination choices. Whereas attachments to places in urban areas are mainly oriented towards employment opportunities and social relationships, place attachments in rural areas are more frequently focused on the place, the individual's positive memories and family and friends attached to the place (Riethmuller et al., 2021). As place attachment can evolve over the life course and individuals may feel connected to multiple places simultaneously (Di Masso et al., 2019; Tomaney, 2015), aspects of place attachment that seem less important in young adulthood may gain significance later in life, e.g. when raising a family. This shift often leads to stronger attachments during new life phases (Alexander, 2023; Pedersen & Gram, 2018). Such changes are frequently driven by a desire to provide children with a similar upbringing or recreate past experiences, further reinforcing rural place attachment (Riethmuller et al., 2021). In this way, place attachment can influence the intention to return. At the same time, many individuals wait for the 'right moment' when career and relationship goals align and provide an opportunity to return, although this is admitted to be challenging (Alexander, 2023).

2.3 Employment, education, housing

Although the presence of social ties and place attachment can be determining reasons to return to one's home area, economic factors often play a role too. Economic opportunities may facilitate return migration, for example through employment opportunities within the rural area

itself, or alternatively, through the possibility of commuting to jobs in larger urban labour markets from a rural residence (Niedomysl & Amcoff, 2011; Von Reichert et al., 2014). For non-returnees who wish to return, career constraints and limited employment opportunities are typically the primary reason not to return (Von Reichert et al., 2014).

Educational background may also influence the likelihood to return. Higher educated individuals are generally more geographically mobile than others, and tend to be less likely to return to their rural area of origin (Zorlu & Kooiman, 2019), although variations exist across fields of study (Venhorst et al., 2010). However, these patterns are not straightforward, as return decisions across all educational levels are shaped by a complex interplay of factors, as discussed throughout this paper.

Housing availability may also serve as a pull factor for return migration to rural areas. The type and availability of housing in rural regions can re-attract young adult leavers, either to the place of origin or to a different rural area (Stockdale, 2006). Still, the type of housing offered in urban and rural areas differs, so whether housing is a pull factor depends on the needs, life stage and household composition of young adults.

2.4 Adverse life events and 'failed' return migration

Return migration can be a strategy to pursue an advanced quality of life following moments of 'success', but it can also be driven by adverse life events. Moments that are commonly related to a return move are divorce and becoming a lone parent (Niedomysl & Amcoff, 2011; Zorlu & Kooiman, 2019). Additionally, job loss and experiencing chronic physical conditions, which typically discourage moving, also raise the likelihood of return migration (Spring et al., 2024).

While many return migrants have clear motivations and goals when returning, either positive or negative, they do not always succeed in achieving those goals. For example, individuals who return motivated by strong place attachment but without clear career or relational prospects may end up feeling out of place. This may also encourage them to leave again (Alexander, 2023; Pedersen & Therkelsen, 2022), as returnees may find that their acquired lifestyles and outlooks no longer align with rural norms, leading to feelings of ambivalence or disconnection (Pedersen & Therkelsen, 2022).

2.5 Planned return and overcoming stigma

Although return migration often occurs following significant life events, which can be associated with either 'success' or 'failure', Haartsen & Thissen (2014) argue for moving beyond the dichotomy of 'success' or 'failure'. They found that a share of the rural young adult leavers had already planned their return before leaving the rural home area, and that their return was independent of either 'success' or 'failure'. In such cases, most young adults mentally remain attached to their home area and cannot be considered true out-migrants. They continue to view the place of origin as their home and maintain strong ties through, for example, part-time jobs, participation in local (sports)clubs, and other social connections (Haartsen & Thissen, 2014).

Another motivation for rural young adults to leave can be to avoid the stigma of rural places being seen as 'uncool' and lacking opportunities (Mærsk et al., 2023; Pedersen & Gram, 2018). Alternatively, young adults may leave due to the expectation to move, as explained in Farrugia's (2016) mobility imperative, in which young adults have to migrate to 'move up', be it imaginatively or through actual migration. Mærsk et al. (2023) demonstrate how leaving the village may be prompted by the wish to avoid the negative association of being a rural stayer, which may sometimes even be achieved by moving to a nearby university located in the home region. After spending time away, the negative associations with one's rural place of origin (e.g. dullness, limited opportunities) tend to diminish, while positive aspects (family, community, stability) become more valued. Additionally, the time spent elsewhere reduces the stigma associated with staying in or returning to a rural region, making the home region attractive again (Mærsk et al., 2023).

2.6 Migration as a pattern and balancing act of motivations

While previous sections have explored various drivers of return migration, it is essential to acknowledge that these factors rarely act in isolation; instead, they interact and reinforce one another in shaping migration decisions, and also interact with the linked lives of significant others (Elder, 1994; Von Reichert et al., 2014). Return migration is often a complex balancing act, where individuals weigh multiple life goals simultaneously, rather than making decisions based on a single dominant factor (Von Reichert et al., 2014). Past residential experiences also play a role in this process (Bernard & Perales, 2021). Instead of prioritising one life goal over the other, some returnees strategically balance lifestyle or family considerations with professional aspirations by settling in a rural area while commuting to a nearby urban job market (Pedersen & Therkelsen, 2017). This again highlights how return migration is not simply a relocation, but a multidimensional decision in which professional ambitions, personal relationships and lifestyle preferences intersect.

Understanding migration requires looking beyond the initial act of leaving and considering the broader trajectory in which multiple relocations can take place. Migration can be seen as a 'learned behaviour' where past experiences influence future mobility decisions (Bernard & Perales, 2021; Haartsen & Stockdale, 2018). Yet, no single pattern applies to all individuals, and migration trajectories have become increasingly diverse in terms of number, timing, and motivations for moves, reflecting the growing de-standardization of the life course (Bernard & Kalemba, 2022).

2.7 Research questions

This highlights the importance of not limiting analysis on migration to single events such as 'leaving' or 'returning', but instead considering the full pattern of movements: from growing up, to leaving, returning, or onward migration. Therefore, this study investigates what migration trajectories can be observed among rural young adult leavers, and how return migration takes a place within these trajectories.

Based on our literature review, we expect that a share of rural young adult leavers will return to their place of origin, although their journey may vary considerably in the timing and paths

leading to return. Alongside return migration, we foresee a broad range of other trajectories, shaped by a wide range of life course developments. Moreover, we expect that different migration trajectories will be associated with distinct sociodemographic characteristics and life course patterns.

3. Data and methodology

3.1 Data

To follow individuals' migration behaviour over an extended period, we use the Social Statistical Dataset (SSD) provided by Statistics Netherlands. This population register offers the opportunity for longitudinal studies on migration behaviour and allows information to be linked to other registers, providing information on sociodemographic characteristics as well as family ties and geographical context.

We focus on birth cohorts from 1984 to 1987 who grew up in rural municipalities in four out of twelve provinces of the Netherlands: Friesland, Groningen, Drenthe, and Overijssel. These provinces have a relatively high share of rural areas. Following Statistics Netherlands' definitions, we classify municipalities as rural if it has an address density of fewer than 1,000 addresses per square kilometre[2]. Figure A1 (in Appendix) shows which municipalities are included. These municipalities often experience youth out-migration to cities, which has implications for population composition, service provision and liveability in general (Haartsen et al., 2003; Haartsen & Venhorst, 2010).

We define a 'home municipality' for individuals who inhabited a rural municipality for at least four years between the ages of 11 and 16.[3] Individuals who experienced high residential mobility during this period are excluded, as no single municipality can be meaningfully considered their place of origin. We consider this age range a formative life phase, during which individuals typically build social ties, engage in local institutions such as schools or sports clubs, and begin to develop a sense of place attachment and identity. Early residential patterns are known to influence how people experience and relate to places, potentially shaping place attachment later in life (Bailey et al., 2016) which in turn can play a role in motivating return migration (Riethmuller et al., 2021).

For this group of rural young adults, we reconstruct each individual's migration behaviour between the ages of 17 and 35 (19 years in total). To ensure complete data coverage, we only include individuals with available data for the entire period. Individuals who have deceased, emigrated, or have missing information for any other reason for more than two years are therefore excluded from the sample. This results in our final sample of 62,721 individuals, for which we have the complete information on residential history and thus migration trajectory of 19 observations per person. In total, 21,316 individuals (34%) never left their home

[2] See https://www.cbs.nl/en-gb/our-services/methods/definitions/rural-area.

[3] We observe individuals until the age of 16 to determine their 'home municipality', as vocational education typically begins around age 16-17 and may already involve migration. By starting to observe migration behaviour from age 17 onwards, we ensure that early leavers are included in the analysis. Alternative definitions (ages 11-18 and ages 13-18) were tested but did not lead to notable differences in outcomes, results are available on request.

municipality, and are classified as stayers. Since we are interested in the migration patterns of leavers, we focus our migration pattern analysis on the 41,405 individuals (66%) who have moved away from their home municipality at least once during the observation period.

3.2 Sociodemographic and regional characteristics

To analyse the sociodemographic characteristics of the individuals in our sample, we rely on the SSD registers containing information on demographic characteristics, family ties, partners, household composition, educational attainment and geographical context. With this information, we create several background variables that we expect are related to migration patterns.

We explore the nature of residential relocations for all individuals. For this, we create several variables. First, we document an individual's age at their first move. Next, for the first and farthest destinations of migration and municipality of residence at age 35 (end of the observation period), we determine whether these are urban or rural destinations and the distance to the destination, measured from the home municipality. This enables us to gain insights into the types of moves individuals make. This information is absent for stayers.

We analyse a range of sociodemographic variables, including educational background, household situation, family background, and personal characteristics. In this part of the analysis, stayers are also included. These variables reflect life course developments occurring during the same observation period in which migration trajectories are traced. This allows us to assess how specific life course developments, captured through sociodemographic characteristics, are associated with the migration patterns observed over that same period.

For educational background, we include the highest level of education attained and the corresponding field of study. In terms of household situation, we analyse the distribution of time spent in various household types during the observation period. Possible household positions include living in the parental home, single, partnered without children (married and unmarried), partnered with children (married and unmarried), single-parent household, other (referring to private households other than aforementioned, e.g. foster child or friends cohabiting), and unknown. If an individual has been with the current partner (i.e. the partner at age 35) for a substantial amount of time during the observation period (≥5 years), we assess whether the partner originates from the same municipality, a nearby municipality (<40 km), or a distant municipality and whether this municipality is urban or rural. Further, we also consider the age at the time of having a first child, with "no children" as a separate category. Parental income is measured when the individual is 26 years old, using the parents' individual taxable income[4] transformed into quantiles, with an additional category for unknown values. Furthermore, we include international migration background, and dummies for the home municipality.

[4] Using the variable INPBELI (taxable income) from the dataset INPATAB from the SSD of Statistics Netherlands.

3.3 Identifying common migration patterns through sequence analysis

To structure the observed migration patterns, we apply sequence analysis. This statistical method can be used to describe a longitudinal series of states (such as residential locations) as a whole. We use distance algorithms to calculate the similarity between migration trajectories. These sequences are then grouped through cluster analysis, resulting in a typology of migration patterns where trajectories within each cluster are most similar (Abbot & Tsay, 2000).

To prepare the data for sequence analysis, states need to be defined. Since we are interested in whether or not individuals move away or return to their home municipality, we define our states based on the home municipality as an anchor point. For each year, we assign individuals to one of five possible states based on the place of residence: stayed in the home municipality, moved to a first new municipality, moved to a subsequent municipality, returned to the home municipality, or left the home municipality again after returning. After an individual moves, their classification remains based on their most recent state, which facilitates visual interpretation by emphasising the sequence of migration states later on (Bernard & Kalemba, 2022). The resulting sequence matrix contains 19 consecutive columns, each containing the migration state at a specific age between 17 and 35.

Once the sequence matrix for all individuals is defined, we group similar migration trajectories into clusters. Before this is possible, the degree of dissimilarity between the sequences needs to be calculated, using Optimal Matching Analysis (OMA). OMA measures two sequences' differences by determining the minimum number of transformations needed to align them. Calculating these differences requires transformation costs, which represent the 'fees' associated with changing one state in a sequence to another (i.e., the effort needed to make one sequence mirror another). OMA applies three types of transformations: insertion, deletion, and substitution. Each of these operations has a cost, and OMA finds the lowest-cost way to transform one sequence into another. This results in a similarity score, where lower scores indicate greater similarity between sequences (Studer, 2013). In our analysis, we set all transformation costs to be equal, meaning that no single type of modification is considered more difficult or costly than another. This ensures a neutral approach to measuring similarity across migration trajectories.

After sequence similarity is established, we group similar sequences into clusters. Although the number of clusters remains a somewhat subjective decision, we use Hubert's Gamma (HG), Hubert's Somers' D (HGSD), and Average Silhouette Width (ASW) to make an informed decision. HG and HGSD assess how well a partition of the data reproduces the distance matrix based on concordances. A partition is valid if the distances between groups are greater than the distances within groups (Studer, 2013). The ASW evaluates how well an observation fits within its assigned group by comparing its average distance to other group members with its distance to the nearest group (Kaufman & Rousseeuw, 1990; Studer, 2013). After analysing the statistics for various amounts of clusters, we find that five clusters are the optimal number in this analysis.

The clustering of sequences is done according to Partitioning Around Medoids (PAM), aiming to identify the best representative observations of each cluster, known as medoids. A medoid is the observation within a group closest to all the other observations when the distance between the observations is considered. The observation has the smallest weighted sum of distances from the other observations in the same group. This algorithm thus aims to minimise the weighted sum of distances from the medoid. By doing so, PAM effectively forms clusters based on these representative medoids (Studer, 2013)[5].

3.4 Subsequent analyses

The above-mentioned process leads to six groups of rural young adults: five clusters containing individuals that have left their home municipality at least once, and one group of stayers. For each of the six groups, we provide descriptive evidence on the first and farthest move, the municipality of origin at age 35 and sociodemographic variables. Next, we perform multinomial logistic regressions on the associations between cluster membership and socio-demographic life course characteristics.

4. Results: Types of migrants and characteristics

4.1 Descriptive statistics

Overall, 66% of young adults leave their rural municipality of origin at least once between the ages of 17 and 35. Of those who migrate, 71.7% initially relocate to an urban municipality, while 28.3% move to another rural municipality. By the age of 35, 52.6% of all leavers live (again) in a rural municipality: either as a return migrant to the home municipality or in a different rural municipality. A detailed breakdown of migration behaviour is provided in Table 1. Appendix table A1 presents the descriptive statistics for sociodemographic variables.

< Table 1 about here >

4.1 Sequence plots

Mapping all individual migration trajectories as sequences of states provides a general summary of migration patterns in the sample of rural young adults (Figure 1: sequence index plot). Figure 1 consists of 41,405 horizontal lines, each representing the migration sequence of an individual between the ages 17 to 35. The colours correspond to one of five possible states for each year, visually highlighting the age at which each move occurred. The same colour is maintained until a state change occurs. Figure 2 (sequence frequency plot) presents the same data but ordered by state, allowing us to see the most common state by age. For each age (vertical lines), it displays the share of individuals within each of the five states. Both sequence plots show the data prior to clustering.

< Figure 1 about here >
< Figure 2 about here >

[5] Sequence and cluster analysis were performed in R Studio, using the TraMineR and cluster packages.

Figures 1 and 2 reveal that some individuals leave the rural home area as early as ages 17 and 18, although this becomes more common from age 19 onwards. Both return and onward migration also start to appear from this age, indicating that some individuals move to a new municipality for a short period before either returning or moving onward. By the end of the observation period at age 35, some individuals have returned to their municipality of origin, while others have either moved onward, left again after returning, or remained in their first new destination.

4.2. Cluster descriptions

Figure 3 summarises the five clusters of migration behaviour derived from the sequence analysis. For each cluster, the plot on the left presents the sequence index plots, while the one on the right displays the sequence frequency plots. These five clusters represent rural young adults' most common internal migration patterns. Important to note is that individuals within a cluster are not identical but share greater similarities than individuals in other clusters. We label each cluster based on the most common migration patterns. The five clusters are labelled as *return migrants* (17,4% of the total sample of non-stayers), *repeat leavers* (13,9%), *late leavers* (19,4%), *onward migrants* (22,4%), and *one-time migrants* (26,9%). In this section, we describe the descriptive evidence for each cluster separately. Individual and regional characteristics for each cluster are provided in Table 1.

Return migrants

High levels of return migration characterise the first cluster called *return migrants*. These individuals leave their municipality of origin at an average age of 21.4 and often return after a short or, in some cases, extended period. The average distance to the first destination for *return migrants* is 48.4 km. Most of them have found their way back home by age 30. Most returnees move back from their first destination after leaving, with relatively few making multiple moves before returning. While their initial and farthest moves are predominantly to urban areas, they largely return to the rural home municipality.

Repeat leavers

The second cluster consists of individuals who leave their rural municipality of origin, return for a short period, and leave again. This group, called the *repeat leavers*, leaves the municipality of origin for the first time slightly earlier than the return migrants (at age 20.5), most often moving to an urban area (81.6%). By age 35 most (38.6%) of the repeat leavers moved to a rural area. Notably, their first move averages 57.4 km, while the farthest move averages 88.5 km. This pattern suggests that young adults leave, return for a period, and move farther away. By age 35, the average distance decreases to 53.9 km, indicating that while they do not return to their original municipality, they settle closer to it by the end of the observation period.

Late leavers

The third cluster of *late leavers* comprises individuals who stay in their municipality of origin for an extended period before eventually leaving. They leave at an average age of 28.8, and their migration patterns are distinctive. Compared to other clusters, late leavers are most likely

to move to another rural area in their first, farthest, and final move. Additionally, their migration distances are shorter than those of other clusters, indicating that they remain relatively close to their municipality of origin.

Onward migrants
The fourth cluster captures individuals undertaking multiple moves, starting at a relatively young age. Referred to as *onward migrants*, these individuals leave their municipality of origin at an average age of 20.2. They are the youngest leavers, move predominantly to urban areas, and move the longest distances.

One-time migrants
The fifth cluster consists of individuals who leave their municipality of origin in their early twenties and remain primarily in their first destination. These *one-time migrants* leave at an average age of 21.3, typically moving to urban areas. While most individuals in this cluster remain in their first destination, a small proportion eventually move again, with some returning to rural areas (including the original municipality). By the end of the observation period, 60.1% resided in urban areas. The other 39.9% live in rural areas.

< *Figure 3 about here* >

4.3 Associations between migration patterns and life course trajectories
To explore how life course trajectories relate to the migration patterns identified in the cluster analysis, we use a multinomial regression model. This model estimates the probability of individuals belonging to one of six migration clusters, including both stayers and various types of leavers. Table 2 reports the marginal effects of key variables from this regression, showing how the probability of cluster membership is associated with specific demographic and household characteristics. Appendix A2 presents the relative risk ratios of the full multinomial logistic regression, with return migrants as the reference category.

< *Table 2 about here* >

Overall, we find that some characteristics are more strongly associated with differences in cluster membership than others. The location of a partner's home municipality relative to the individual's own stands out, showing the largest differences in marginal effects across clusters. Educational attainment, particularly university-level education, also relates to strong variation in cluster probabilities. In contrast, household position and gender are associated with smaller or less consistent differences.

Below, we describe the distinctive patterns for each migration cluster.

Return migrants
Individuals whose partners did not grow up in the same municipality as their own are substantially less likely to be in the returners cluster. This is irrespective of whether the partner originates from an urban or rural municipality, nearby or far away (marginal effects between -

0.064 and -0.120, $p < 0.01$). This suggests a strong role of having a locally rooted partner in return migration. Associations with household composition are small but mixed, with single-parent households showing a slightly higher probability of returner status. Women also show a modestly higher likelihood of being in the returners cluster compared to men. Earlier age at first childbirth (particularly under 31 years) and fields of study such as agriculture and veterinary medicine are associated with higher probabilities of belonging to this cluster. Higher education levels (applied university and university) are likewise associated with increased returner membership, potentially reflecting moves to urban areas for university education and subsequent return migration, in contrast to middle-educated individuals who more often belong to the stayer cluster (discussed later).

Repeat leavers

In contrast, a distinctive feature of repeat leavers is the strong negative association with having a partner from the same municipality (marginal effects for other partner locations between 0.056 and 0.084, $p < 0.01$). Not having a partner from the same municipality thus relates strongly to moving more than once. Repeat leavers are also more likely to have higher levels of education (applied university, university) and to have studied fields such as personal services, arts and humanities, and health and welfare. Age at first childbirth (especially 26–31) also shows positive associations, while household position effects are small but generally indicate higher probabilities for single-parent households.

Late leavers

For late leavers, it stands out that older age at childbirth is strongly positively associated with the probability of cluster membership (especially 31–35, with marginal effects of ~0.093, $p < 0.01$). This suggests that later family formation especially increases the likelihood of delaying departure from a municipality. Individuals whose partners come from outside the home municipality are also more likely to be late leavers. Household composition shows very small positive effects for "partnered without children", while education level (university) is negatively associated with late leaver membership. Field of study also matters: late leavers are more likely to have studied mathematics, natural sciences, or computer science.

Onward movers

As for the other non-returning clusters, we observe strong positive associations with having a partner from a different municipality and the probability of being an onward mover (marginal effects from 0.075 to 0.203, $p < 0.01$). Higher education (applied university, university) and fields such as general programs, arts and humanities, and mathematics/natural/computer sciences are positively associated with being in this cluster. Household composition effects are small and mixed. Age at first childbirth shows weaker associations, though those with children at younger ages (21–26) show slightly higher onward mover probabilities.

One-time movers

Similar to onward movers, individuals whose partners come from outside the home municipality are more likely to be in the one-time mover cluster (marginal effects ranging from 0.075 to 0.167, $p < 0.01$). Applied university graduates are slightly less likely to be in this

cluster, as compared to middle-educated graduates, but university graduates are more likely to be in this cluster, suggesting applied university-specific dynamics in one-time movers. Fields of study such as arts and humanities, mathematics/natural/computer sciences, and social sciences, business, and law are positively associated with membership in this cluster. Age at first childbirth is also negatively associated for the youngest category (<21).

Stayers

Lastly, having a partner from the same municipality shows strong positive associations with being a stayer (marginal effects for other partner locations between -0.241 and -0.402, $p < 0.01$), underlining that local partner ties are a key feature of this cluster. Middle-educated graduates are more likely to be in this cluster as well, and graduates in fields such as personal services and health and welfare. Gender differences are small but suggest women are slightly less likely to be stayers, while household composition indicates higher stayer probabilities for those partnered with children.

5. Discussion and conclusion

This paper examined the long-term migration patterns of rural young adults using the SSD provided by Statistics Netherlands, covering ages 11 to 35. Our findings reveal that 34% of these young adults stay in their home municipality throughout this period, while 66% leave at some point. The sequence analysis reveals a diversity in migration patterns based on the timing of departure, the duration of stays at different destinations, and the sequence of movements. This highlights that there is no single type of *the* rural leaver or *the* rural returner. Moreover, our findings reinforce the need to view migration as a continuous process rather than a one-time event, as previously emphasised by, for example, Bernard & Kalemba (2022), Bernard & Perales (2021) and Coulter et al. (2016).

This perspective is supported by the subsequent cluster analysis, which identifies five distinct types of leavers based on similarities in migration patterns. *Return migrants (17.4% of total sample of non-stayers)* move back to their rural hometown after leaving, showing that returning is not an unusual decision and that not all leavers are permanently 'lost'. As discussed in the literature review, some return migrants might have planned to return already upon leaving (Haartsen & Thissen, 2014), while for others, the decision to return is more spontaneous, driven by positive life events or adverse circumstances (Niedomysl & Amcoff, 2011; Spring et al., 2024).

Repeat leavers (13.9%) also return but leave again later – some shortly after their return, while others stay longer before moving away once more. Some repeat leavers may already anticipate their return to be temporary, such as a short return to the parental home when transitioning between graduation and employment or relocating between homes, as discussed in Haartsen & Thissen (2014) and Stone et al. (2014).

Late leavers (19.4%) remain in their hometown for an extended period before deciding to leave, suggesting they initially had strong ties to the area but eventually faced factors such as limited job opportunities or changing life circumstances, such as becoming parents, that prompted their

departure. However, some late leavers may not be true leavers in the strictest sense, as they relocate only a short distance from their home municipality and often settle in another rural area. As a result, a portion of this group can be considered 'stayers in the rural region'.

Onward migrants (22.4%) move frequently and often over longer distances. They are likely to be individuals who are 'stepping on' the migration escalator to move upward in the urban hierarchy (Fielding, 1992). However, not all onward migrants might follow a linear path – some may 'get off' the escalator after passing through multiple locations (Findlay et al., 2008) and return to a rural area later in life, making them 'return to the rural' migrants (Bijker et al., 2012).

Finally, *one-time migrants (26.9%)* relocate to a new destination and settle there permanently, showing little inclination to move again. They can be considered as 'stayers' in their new often urban destination, and their decision to remain in their first destination after leaving their rural home municipality may be a deliberate, pre-planned choice or the result of a lack of incentive to migrate elsewhere, aligning with previous research on stayers (e.g. Hjälm, 2014; Stockdale et al., 2018).

It is important to note that while individuals within a cluster exhibit similar migration trajectories, their specific movements still vary. Thus, even within each group, a degree of diversity remains, reflecting the complexity and diversity of migration behaviour and again reinforcing the importance of looking at the complete pattern instead of single acts of migration.

Linking the migration trajectories to sociodemographic characteristics and life course events, our findings show that having a partner from the same municipality of origin is strongly associated with the likelihood of returning or staying, whereas individuals with partners from different municipalities of origin are more mobile. This aligns with findings from previous research (e.g. Mulder et al., 2020; Rérat, 2014; Von Reichert et al., 2014; Zorlu & Kooiman, 2019).

Similarly, parenthood also influences migration behaviour. Particularly when becoming parents before age 31, having children is associated with an increased likelihood of returning to the rural municipality of origin. This suggests that returnees may seek support from family or a local social network, the new life phase leads to renewed place attachment or they may wish to provide their children with a similar upbringing to their own, like suggested in previous research (Alexander, 2023; Mulder et al., 2020; Pedersen & Gram, 2018; Rérat, 2014; Riethmuller et al., 2021; Spring et al., 2024).

Our findings support earlier research showing that university graduates are most frequently found in highly mobile clusters, while middle-educated graduates are often one-time migrants or stayers, representing the less mobile groups (Kooiman et al., 2018).

Also, the field of study appears to play a role. For example, there are more graduates in agriculture and veterinary medicine among the return migrants. These patterns reflect regional labour market structures, where rural economies offer more opportunities in e.g. agriculture-related careers but may lack employment prospects for other fields.

Due to data limitations, we have not been able to conclude the motivations driving migration to specific destinations or the timing of migration. In future research, it would be valuable to use alternative approaches and gain a deeper understanding of these aspects, potentially providing beneficial insights into return migration. In particular, future studies could explore how the role of partners from outside the region influences migration decisions, as our findings suggest that having a partner from the home region is linked to higher return rates. Additionally, further research could investigate where rural leavers typically meet their partners and how partner origins shape return decisions. Another valuable direction would be to examine how study choices are made and whether stronger connections between regional educational opportunities and local labour market structures could support retention or return migration.

Future research could also explore the role of the housing market as a potential obstacle affecting return migration. Availability of suitable housing in rural areas, depending on young adults' life stage and household composition, may hinder their return, while constraints in urban housing markets could alternatively re-attract individuals to rural areas. Understanding how housing availability and suitability shape migration decisions could provide valuable insights. Furthermore, our understanding of how regional labour market structures and individual labour market positions act as potential obstacles to return migration is relatively limited. Additionally, the rise of remote work may reduce the need to live near a workplace, but its role in enabling or limiting return migration needs further exploration.

If rural areas want to explore how they can utilise the potential of return migration to counter the negative effects of youth out-migration and depopulation, our results on the diverse migration trajectories and characteristics of rural young adult leavers can support these efforts. Since leaving is rarely a one-time event and is often followed by additional moves later in life, there is an opportunity to encourage a return migration during these later stages. Consequently, attracting young adult leavers back to their rural home region may require a long-term perspective, targeting potential returnees both shortly after leaving and during later life transitions, such as completing education, finding a partner, starting a family, or reorienting careers. This highlights the importance of return initiatives: policies and interventions aimed at encouraging young adult leavers to return after a period away (Mærsk, 2022; Meister et al., 2022). For rural areas, it is crucial to position themselves as attractive places to live, offering a broad range of opportunities. Equally important is ensuring that potential returnees are aware of what the rural area has to offer, so that when they enter a new life phase, they consider returning. Here lies an important task for rural areas: to maintain their visibility and appeal to leavers throughout the life course.

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Data availability statement

The data that supports the findings of this study are available from Statistics Netherlands. Restrictions apply to the availability of these data, which were used under license for this study.

Figure 1: Sequence index plot

Figure 2: Sequence distribution plot

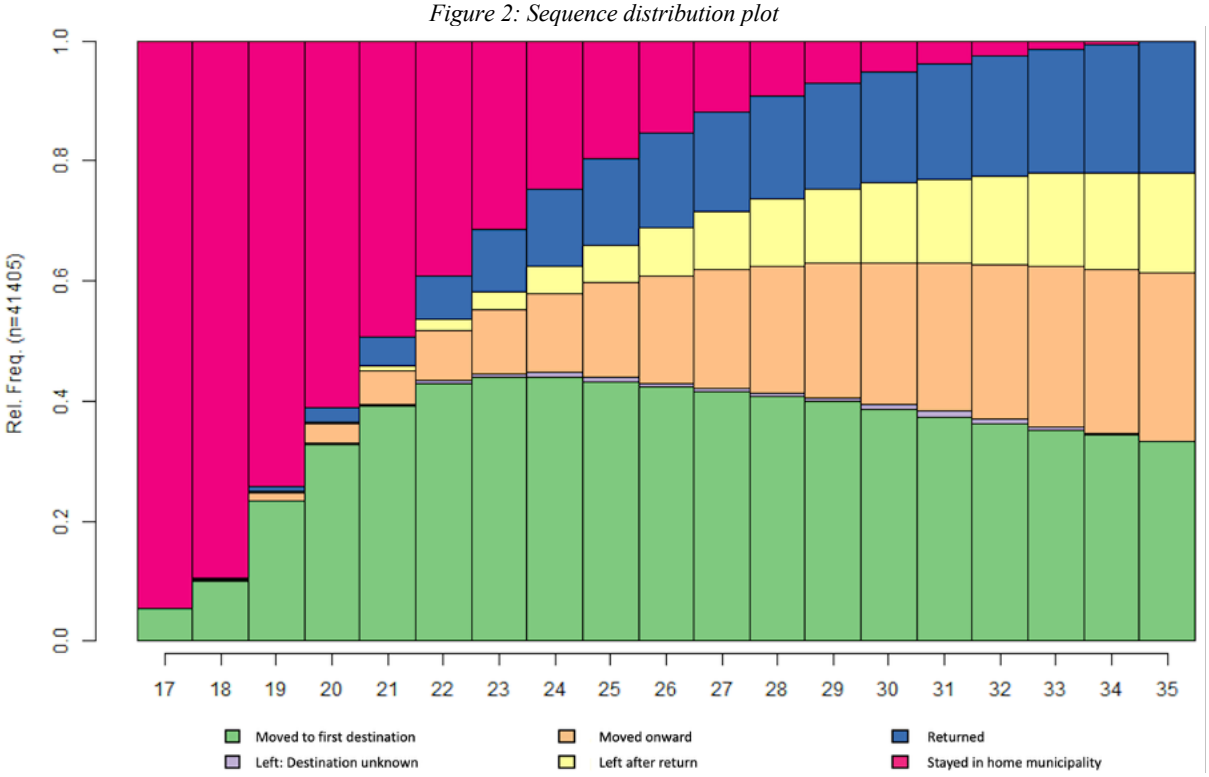


Figure 3: Sequence index and distribution plots for each cluster

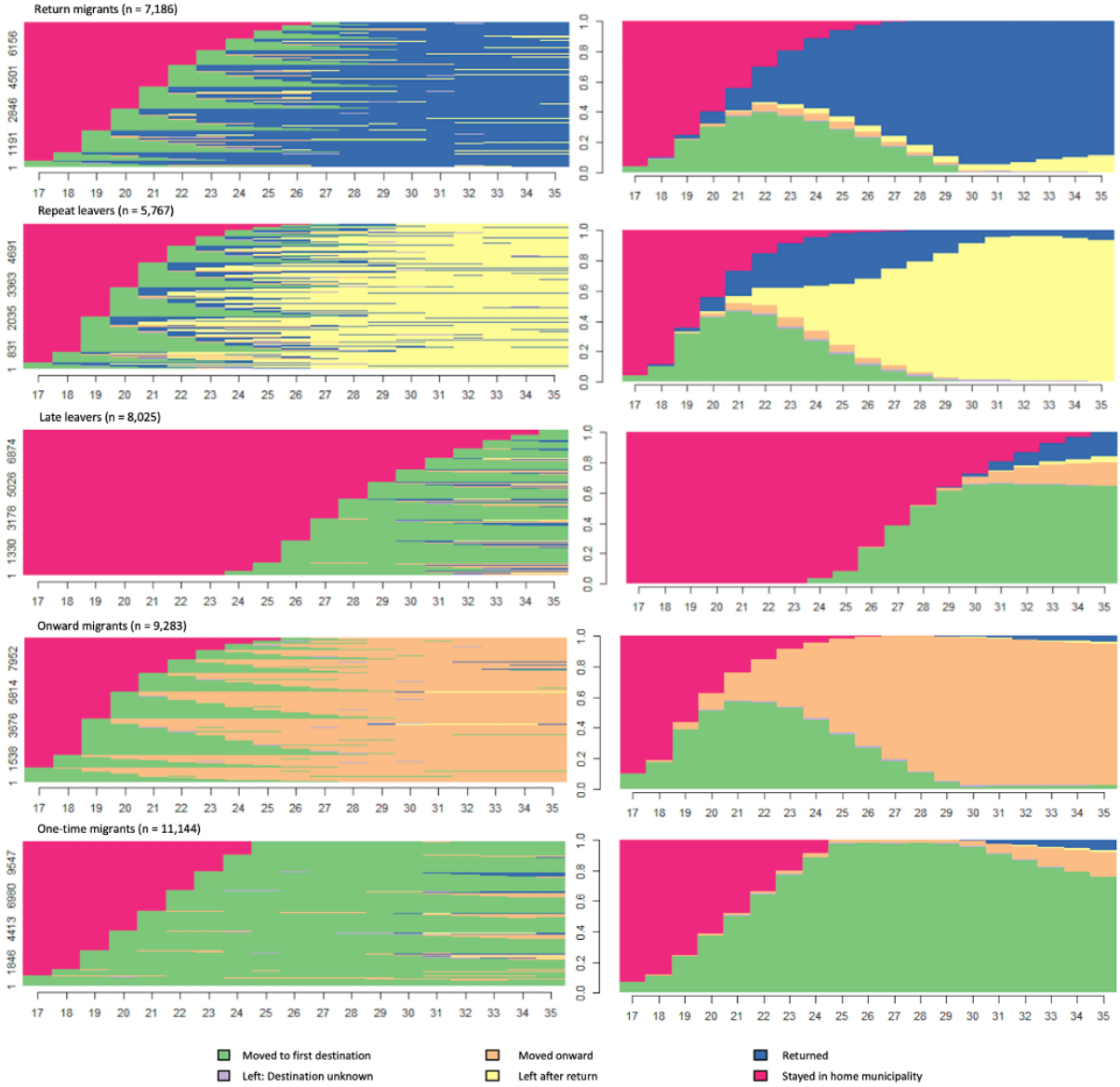


Table 1: Descriptives

	Return migrants	Repeat leavers	Late leavers	Onward migrants	One-time migrants	All leavers	Stayers
N	7,186	5,767	8,025	9,283	11,144	41,405	21,316
% of total sample	11.5	9.2	12.8	14.8	17.8	66.0	34.0
% of leavers	17.4	13.9	19.4	22.4	26.9	100.0	n/a
Age at leaving (mean)	21.4	20.5	28.8	20.2	21.3	22.4	n/a
Urbanity first destination (%)							
Urban	71.8	81.6	52.7	80.7	71.7	71.7	n/a
Rural	28.2	18.4	47.3	19.3	28.3	28.3	n/a
Urbanity farthest destination (%)							
Urban	71.3	78.7	50.8	78.5	67.9	69.4	n/a
Rural	28.7	21.3	49.2	21.5	32.1	30.6	n/a
Urbanity destination at age 35 (%)							
Urban	5.6	61.4	40.2	65.1	60.1	46.5	n/a
Rural	90.0	38.6	59.8	34.9	39.9	52.6	n/a
Distance with home municipality (km)							
First destination	48.4	57.4	32.9	63.0	40.2	48.4	n/a
Farthest destination	54.5	88.5	36.5	105.9	47.7	66.6	n/a
Destination ate age 35	4.2	53.9	29.0	79.0	40.5	41.3	n/a

Notes: Authors' calculations using non-public microdata from Statistics Netherlands (CBS).

Table 2: Marginal effects of multinomial logistic regression on cluster membership

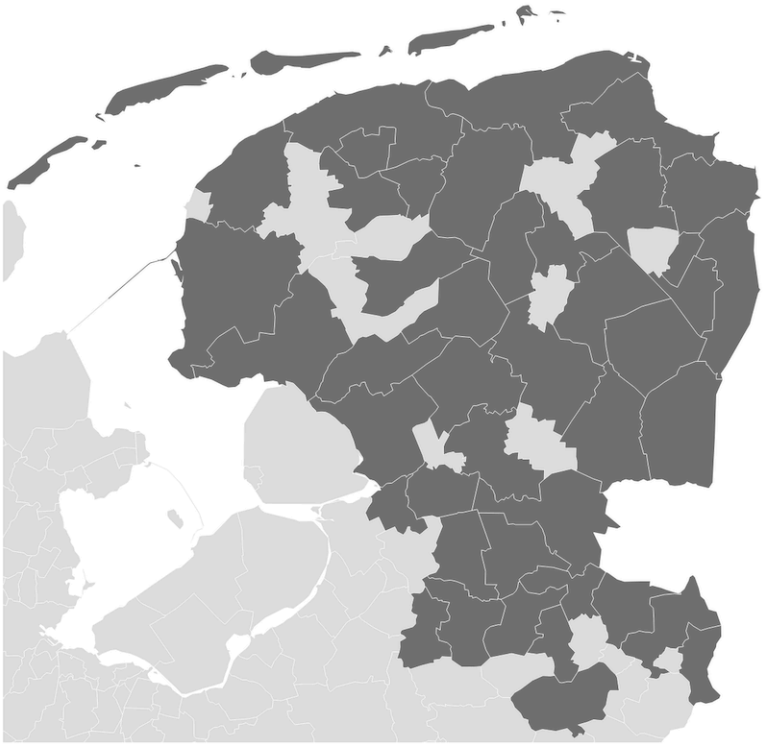
	Leave clusters					
	Return migrants	Repeat leavers	Late leavers	Onward migrants	One-time migrants	Stayers
Gender (ref: male)						
Female	0.009***	0.016***	0.000	-0.006*	-0.003	-0.017***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)
Household position (ref: single)						
Child living at home	-0.000***	-0.001***	0.004***	-0.006***	-0.004***	0.007***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Partnered without children	-0.001***	-0.000***	0.001***	-0.000	0.000	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Partnered with children	-0.000**	-0.001***	-0.001***	-0.001***	0.000**	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Single-parent household	0.001***	-0.000*	-0.001**	-0.001***	-0.001***	0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Other	0.000	0.000	0.000	-0.001***	-0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Unknown	0.014***	0.012***	0.001	0.007***	0.008***	-0.043***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.004)
Home municipality partner (ref: same)						
Nearby						
Urban	-0.109***	0.075***	0.106***	0.177***	0.153***	-0.402***
	(0.007)	(0.007)	(0.009)	(0.007)	(0.008)	(0.009)
Rural	-0.120***	0.084***	0.099***	0.203***	0.130***	-0.395***
	(0.006)	(0.006)	(0.008)	(0.007)	(0.007)	(0.009)
Far						
Urban	-0.073***	0.056***	0.081***	0.101***	0.075***	-0.241***
	(0.008)	(0.007)	(0.009)	(0.007)	(0.008)	(0.010)
Rural	-0.064***	0.060***	0.084***	0.075***	0.106***	-0.260***
	(0.005)	(0.003)	(0.004)	(0.004)	(0.004)	(0.006)
Home municipality absent / unknown	-0.083***	0.061***	0.111***	0.098***	0.167***	-0.354***
	(0.005)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
No partner	-0.095***	0.056***	0.111***	0.086***	0.206***	-0.365***
	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)	(0.007)
Age at first childbirth (ref: no children)						
<21	0.027**	0.014	0.006	-0.004	-0.027*	-0.016
	(0.009)	(0.009)	(0.009)	(0.010)	(0.012)	(0.012)
21-26	0.028***	0.014**	0.027***	0.015**	-0.040***	-0.044***
	(0.006)	(0.006)	(0.006)	(0.007)	(0.008)	(0.008)
26-31	0.016***	0.029***	0.047***	0.009**	-0.042***	-0.058***
	(0.004)	(0.003)	(0.004)	(0.004)	(0.005)	(0.005)
31-35	0.015	0.025	0.093***	-0.060***	-0.090***	0.017
	(0.014)	(0.016)	(0.023)	(0.012)	(0.014)	(0.021)

Level of education (ref: middle-educated (mbo))						
Applied university (hbo)	0.043***	0.052***	-0.006	0.052***	-0.011**	-0.131***
	(0.004)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
University (wo)	0.057***	0.087***	-0.030***	0.115***	0.020***	-0.249***
	(0.006)	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)
Other	0.009**	0.006*	0.005	-0.017***	-0.006	0.004
	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
Field of study (ref: education)						
General programs	0.030***	0.028***	-0.019**	0.060***	-0.006	-0.094***
	(0.008)	(0.008)	(0.008)	(0.010)	(0.009)	(0.010)
Arts and humanities	0.012	0.032***	0.008	0.039***	0.044***	-0.134***
	(0.008)	(0.006)	(0.009)	(0.007)	(0.009)	(0.011)
Social sciences, business, law	0.005	0.015***	0.008	0.014***	-0.000	-0.042***
	(0.005)	(0.004)	(0.006)	(0.004)	(0.006)	(0.007)
Mathemathics, natural-, computer science	-0.001	-0.005	0.024**	0.038***	0.028***	-0.084***
	(0.008)	(0.006)	(0.009)	(0.008)	(0.010)	(0.011)
Engineering and industry	-0.001	0.004	-0.003	0.007	-0.016**	0.008
	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)	(0.008)
Agriculture and veterinary medicine	0.030***	0.007	-0.006	0.011	-0.039***	-0.003
	(0.008)	(0.007)	(0.008)	(0.009)	(0.009)	(0.010)
Health and welfare	0.013**	0.016***	0.009	0.005	0.015**	-0.058***
	(0.005)	(0.004)	(0.006)	(0.005)	(0.006)	(0.007)
Personal services	0.031***	0.040***	0.003	0.014**	-0.024***	-0.064***
	(0.006)	(0.005)	(0.006)	(0.006)	(0.007)	(0.008)
Not specified	-0.035*	-0.000	-0.051***	-0.011	0.046	0.052*
	(0.021)	(0.025)	(0.017)	(0.031)	(0.033)	(0.027)
Observations	62,721					
Pseudo R2	0,212					

*Notes: Authors' calculations using non-public microdata from Statistics Netherlands (CBS). Standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1. Additional covariates included in the model are home municipality fixed effects, father's and mother's income quantiles, and international migration background. See Appendix Table A2 for full results of multinomial logistic regression, with relative risk ratios reported, with return migrants as the base category.*

Appendix

Figure A1: Selected municipalities



Notes: Rural municipalities in the provinces Friesland, Groningen, Drenthe and Overijssel are selected. Municipalities are classified as rural following Statistics Netherlands' definitions, meaning they have an address density of fewer than 1,000 addresses per square kilometre.

Table A1: Descriptive statistics of all variables

	Leave clusters					
	Return migrants	Repeat leavers	Late leavers	Onward migrants	One-time migrants	Stayers
Gender						
Female	56.0	57.6	39.5	59.2	57.6	41.6
Male	44.0	42.4	60.5	40.8	42.4	58.4
Household position						
Child living at home	33.3	29.3	48.8	21.0	26.4	45.1
Single	16.6	25.6	13.9	26.9	21.3	10.1
Partnered without children	21.7	24.1	19.3	28.1	25.1	18.2
Partnered with children	23.9	16.3	15.9	19.7	23.1	24.4
Single-parent household	2.3	1.5	0.9	1.1	1.4	1.3
Other	2.0	2.9	1.2	3.0	2.5	0.9
Unknown	0.2	0.4	n/a	0.3	0.2	n/a
Home municipality partner						
Same municipality	31.5	6.7	9.4	6.4	7.9	41.3
Nearby						
Urban location	5.2	7.2	8.0	7.5	12.1	3.5
Rural location	11.8	14.3	17.5	14.9	20.4	8.3
Far						
Urban location	2.2	7.5	3.5	14.1	6.6	1.4
Rural location	2.2	5.4	3.0	9.7	5.9	1.1
Home municipality unknown / absent	3.2	3.5	2.6	4.5	3.7	2.7
No partner	44.0	55.5	56.0	42.9	43.4	41.9
Age at first childbirth						
<21	12.9	6.4	5.0	7.5	13.5	13.4
21-26	36.1	23.8	24.8	30.2	31.3	34.9
26-31	24.2	34.7	32.0	32.1	23.6	20.6
31-35	1.9	1.1	0.9	0.8	1.5	1.7
No children	24.8	34.1	37.2	29.4	30.2	29.4
Level of education						
Middle-educated (mbo)	34.7	22.3	45.8	19.4	34.2	54.5
Applied university (hbo)	34.9	39.0	27.9	34.5	30.7	19.9
University (wo)	11.6	25.2	6.2	35.3	18.7	2.3
Other	18.9	13.5	20.1	10.9	16.4	23.3
Field of study						
General programs	7.5	6.2	6.6	5.9	6.8	6.8
Education	9.6	9.3	6.7	10.1	9.2	6.6
Arts and humanities	3.7	6.8	3.6	7.7	5.8	1.8
Social sciences, business, law	22.7	28.6	22.3	30.1	24.9	18.7
Mathemathics, natural-, computer science	2.8	3.2	5.0	5.2	4.2	3.0
Engineering and industry	11.7	8.9	19.1	8.4	10.6	24.5

Agriculture and veterinary medicine	4.2	2.4	5.2	2.3	2.5	6.5
Health and welfare	22.3	20.9	17.1	20.8	24.6	17.7
Personal services	15.2	13.5	14.2	9.4	11.0	14.0
Not specified	n/a	n/a	0.2	0.1	0.3	0.5
Income father						
1st quantile	18.7	15.8	18.4	15.5	16.1	18.7
2nd quantile	18.1	15.4	20.9	13.8	17.3	22.0
3rd quantile	19.4	19.1	19.3	16.9	18.3	19.7
4th quantile	17.4	23.6	14.7	24.8	19.7	12.2
Unknown	26.4	26.1	26.7	29.1	28.6	27.4
Income mother						
1st quantile	18.6	16.8	23.3	15.5	18.9	23.8
2nd quantile	19.3	17.1	19.5	16.1	17.2	21.1
3rd quantile	19.6	19.2	18.1	17.9	18.0	18.0
4th quantile	18.6	23.2	14.8	24.8	20.0	12.2
Unknown	23.9	23.6	24.3	25.7	25.9	24.8
International migration background*						
No migration background	90.0	90.0	90.0	90.0	90.0	90.0
First generation	10.0	10.0	10.0	10.0	10.0	10.0
Second generation	10.0	10.0	10.0	10.0	10.0	10.0

*Notes: Authors' calculations using non-public microdata from Statistics Netherlands (CBS). * Due to output disclosure restrictions, figures are rounded and cannot be reported when more than 90% or fewer than 10% of individuals fall within a given cell. As such, the results shown here are intended to illustrate that the vast majority of individuals have no international migration background.*

Tabel A2: Multinomial logistic regression results all variables (relative risk ratios)

	Cluster membership (base: return migrants)				
	Repeat leavers	Late leavers	Onward migrants	One-time migrants	Stayers
Gender (ref: male)					
Female	1.128***	0.920*	0.909**	0.922**	0.856***
	(0.050)	(0.039)	-0.038	(0.036)	(0.032)
Household position (ref: single)					
Child living at home	0.977***	1.043***	0.932***	0.961***	1.047***
	(0.001)	(0.001)	-0.001	(0.001)	(0.001)
Partnered without children	1.000	1.012***	1.004***	1.006***	1.009***
	(0.001)	(0.001)	-0.001	(0.001)	(0.001)
Partnered with children	0.984***	0.998	0.991***	1.002	1.018***
	(0.003)	(0.002)	-0.002	(0.002)	(0.002)
Single-parent household	0.985***	0.992**	0.980***	0.982***	1.008***
	(0.003)	(0.003)	-0.003	(0.003)	(0.003)
Other	0.998	1.002	0.986***	0.996*	1.001
	(0.003)	(0.003)	-0.003	(0.003)	(0.003)
Unknown	1.074***	0.866***	1.019	0.984	0.719***
	(0.015)	(0.020)	-0.015	(0.015)	(0.020)
Home municipality partner (ref: same)					
Nearby					
Urban	11.158***	4.614***	20.137***	11.171***	0.374***
	(1.279)	(0.526)	-2.072	(1.114)	(0.041)
Rural	14.265***	5.128***	27.013***	11.961***	0.455***
	(1.566)	(0.565)	-2.696	(1.169)	(0.048)
Far					
Urban	5.242***	3.159***	6.834***	4.205***	0.653***
	(0.598)	(0.340)	-0.682	(0.395)	(0.056)
Rural	4.991***	2.929***	5.280***	4.626***	0.557***
	(0.372)	(0.186)	-0.358	(0.278)	(0.027)
Home municipality absent / unknown	6.615***	3.830***	8.546***	7.991***	0.404***
	(0.499)	(0.239)	-0.575	(0.466)	(0.020)
No partner	7.189***	4.294***	9.175***	10.685***	0.428***
	(0.662)	(0.344)	-0.766	(0.780)	(0.030)
Age at first childbirth (ref: no children)					
<21	0.922	0.828	0.741**	0.666***	0.742***
	(0.135)	(0.111)	-0.101	(0.081)	(0.082)
21-26	0.946	0.972	0.881	0.629***	0.650***
	(0.090)	(0.084)	-0.079	(0.051)	(0.048)
26-31	1.236***	1.252***	0.954	0.697***	0.681***
	(0.074)	(0.070)	-0.055	(0.038)	(0.035)
31-35	0.953	1.877***	0.352***	0.397***	1.085
	(0.221)	(0.406)	-0.079	(0.076)	(0.186)

Level of education (ref: mbo)					
Hbo	1.494***	0.619***	1.328***	0.790***	0.379***
	(0.075)	(0.028)	-0.063	(0.034)	(0.015)
Wo	2.193***	0.414***	2.344***	1.094	0.149***
	(0.143)	(0.029)	-0.143	(0.063)	(0.010)
Other	0.984	0.957	0.743***	0.861***	0.943
	(0.070)	(0.054)	-0.052	(0.049)	(0.045)
Field of study (ref: education)					
General programs	1.284**	0.590***	1.514***	0.884	0.470***
	(0.149)	(0.063)	-0.167	(0.087)	(0.042)
Arts and humanities	1.610***	0.864	1.640***	1.390***	0.445***
	(0.168)	(0.095)	-0.161	(0.131)	(0.045)
Social sciences, business, law	1.221***	0.984	1.167**	1.010	0.784***
	(0.088)	(0.071)	-0.078	(0.065)	(0.048)
Mathemathics, natural-, computer science	1.092	1.163	1.610***	1.342***	0.684***
	(0.137)	(0.132)	-0.18	(0.143)	(0.071)
Engineering and industry	1.062	0.981	1.059	0.911	1.037
	(0.098)	(0.083)	-0.091	(0.072)	(0.075)
Agriculture and veterinary medicine	0.833	0.723***	0.821*	0.588***	0.765***
	(0.105)	(0.076)	-0.096	(0.062)	(0.068)
Health and welfare	1.169**	0.919	1.028	1.033	0.680***
	(0.086)	(0.068)	-0.07	(0.066)	(0.042)
Personal services	1.292***	0.754***	0.968	0.711***	0.570***
	(0.107)	(0.061)	-0.077	(0.052)	(0.039)
Not specified	1.507	0.883	1.411	1.944*	1.765*
	(0.731)	(0.358)	-0.663	(0.732)	(0.607)
Income father (ref: 1)					
2nd quantile	1.025	0.884**	1.023	0.902**	0.885***
	(0.063)	(0.048)	-0.06	(0.047)	(0.041)
3rd quantile	1.048	0.839***	1.031	0.905*	0.803***
	(0.063)	(0.046)	-0.059	(0.047)	(0.037)
4th quantile	1.106*	0.752***	1.123**	0.963	0.653***
	(0.067)	(0.043)	-0.064	(0.051)	(0.032)
Income unknown	1.062	0.875*	1.045	1.016	0.790***
	(0.093)	(0.071)	-0.085	(0.075)	(0.054)
Income mother (ref: 1)					
2nd quantile	1.081	1.143**	1.062	1.195***	1.140***
	(0.068)	(0.063)	-0.064	(0.064)	(0.054)
3rd quantile	1.145**	1.034	1.079	1.164***	1.049
	(0.070)	(0.058)	-0.063	(0.062)	(0.050)
4th quantile	1.279***	0.976	1.281***	1.272***	0.887**
	(0.079)	(0.058)	-0.075	(0.069)	(0.045)
Income unknown	1.091	1.113	1.248***	1.189**	1.214***

	(0.090)	(0.086)	-0.095	(0.084)	(0.079)
International migration background (ref: second generation)					
No migration background	0.860*	1.043	0.820**	0.895	1.282***
	(0.075)	(0.090)	-0.068	(0.070)	(0.097)
First generation	0.944	0.770	1.685***	1.518***	0.647***
	(0.158)	(0.128)	-0.252	(0.216)	(0.097)
Constant	0.610**	0.108***	3.453***	3.068***	0.854
	(0.142)	(0.025)	(0.761)	(0.639)	(0.179)
Observations			62,721		
Pseudo R2			0.212		

*Notes: Authors' calculations using non-public microdata from Statistics Netherlands (CBS). Standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Additional covariates included in the model are home municipality fixed effects.*