

# **Master thesis: Hometown glory – The benefits of location-specific capital on labour market outcomes for vocational education graduates**

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## **Abstract**

This research examines the influence of location-specific capital on labour market outcomes for relatively immobile individuals, namely vocational education graduates. Additionally, the impact of location-specific capital is explored separately for urban and rural areas. Data from the System of social statistical datasets (SSD) of Statistics Netherlands is used. Location-specific capital refers to local knowledge and networks that develop and accumulate over time, and are bound to a specific place. Three facets of location-specific capital are studied: residential history (categorized as being a stayer, return migrant or newcomer in the residential location), professional networks and personal networks. Notably, individuals who remain in their municipality or region (i.e. stayers) experience more favourable labour market outcomes than newcomers in a municipality or region. Additionally, the presence of personal networks positively contributes to labour market outcomes.

## **Introduction**

In recent years, the concept of staying, or immobility, has gained increased attention in the field of migration studies. Traditionally, immobility used to be associated with limited levels of social capital, lack of educational attainment, and lack of personal development (Holdsworth, 2009). However, more recent research has shown that immobility does not simply mean ‘not moving’, but is often an active and informed choice of people (Haartsen and Stockdale, 2014; Hjälms, 2014; Stockdale et al., 2018).

When one chooses to stay in a place of residence, individuals open the door to the accumulation of what is termed ‘location-specific capital’, or ‘location-specific insider advantages’ (LSIAs). According to Fischer and Malmberg (2001), who use the term LSIA, this refers to specific knowledge and networks that are tied to a place and accumulate over time. According to DaVanzo (1981), on location-specific capital, it refers to assets that are valuable in their current location, but would not be valuable in another place. Examples encompass having a large social network in a specific place, knowledge about job or housing markets in a region (Fischer et al., 2000), or having an existing clientele, specific training and/or other knowledge of an area (DaVanzo, 1981). Location-specific capital, or LSIAs, cannot be transferred to other places. This means that once a move is made, it is likely someone has no or only limited location-specific capital, or LSIAs, at the new place of residence. Such local knowledge and networks show to be especially relevant in rural areas and in peripheral cities, where the number of jobs is smaller than in urban areas and where the network factor is more important (Drejer et al., 2022, Maersk et al., 2021).

In the case of migration, the accumulation of location-specific capital, or LSIAs, in a specific place stops. Nevertheless, (internal) migration is often associated with positive (labour market) outcomes. Research shows that migration leads to higher levels of education, income, and socio-economic status, especially among men (Korpi and Clark, 2017, Mulder and Van Ham, 2005; Rodgers and Rodgers, 2000). Still, it is important to be aware that only a selected group is mobile, who are mostly highly educated individuals (Lundholm, 2007). Additionally, only in selected circumstances migration shows

to be beneficial: young, university educated individuals (e.g. Korpi and Clark, 2017), who are moving towards urban areas (Ahlin et al., 2014; Korpi and Clark, 2017) profit the most from migration, especially when a move is made for non-family reasons (Gillespie, Mulder, Thomas, 2021).

Vocational education graduates exhibit lower levels of mobility than their (applied) university peers. For example, in the Netherlands, large proportions of vocational education graduates continue to reside in the same municipality at age 28 compared to age 16, especially when compared to individuals who obtained applied university or university education (Talent in de Regio, 2023). A potential explanation could be attributed to the relatively even geographical spread of educational institutions and labour markets for vocational education, in contrast to the spatial concentration of opportunities for (applied) university graduates (to be) (Kooiman et al., 2018). Consequently, there is less incentive to move when starting post-secondary school education or during the labour market career. Furthermore, vocational education graduates tend to rely more strongly on family and friends than their (applied) university educated counterparts, increasing the barrier to move and indicating a greater dependence on local networks and knowledge (Faggian et al., 2015).

Despite the extensive body of literature on migration in existing literature and corresponding positive labour market outcomes, it is unclear what the effects of migration (or staying) are on labour market outcomes specific for individuals with vocational education. Due to a stronger reliance on location-specific capital and more geographically balanced labour markets, they show to have a high likelihood of staying in the region of residence. In this research, the aim is to discover how staying, opposed to migration, influences the labour market outcomes of vocational education graduates. As vocational education graduates often show to be stayers, relatively high levels of location-specific capital are likely, what potentially positively contributes to labour market outcomes. Hence, the role of location-specific capital on labour market outcomes will be explored. Additionally, as the importance of location-specific capital might differ between urban and rural areas, the importance of location-specific capital in urban and rural areas will be examined. This leads to the following main research question and sub research question<sup>1</sup>:

“How does location-specific capital influence labour market outcomes of vocational education graduates?”

“How does the impact of location-specific capital on labour market outcomes differ in urban and rural areas for vocational education graduates?”

In section 2, existing literature on the topics of migration, staying, labour market outcomes and location-specific capital will be discussed. In section 3, the methodology will be discussed, followed by the results in section 4. The paper is concluded with the conclusion, discussion, and recommendations for further research (section 5).

## **Theoretical framework**

### **Motives for migration and staying**

Migration plays an important role in economic and social wellbeing, as it allows individuals to pursue their goals and aspirations (Bernard and Bell, 2018). Moreover, migration is regarded as a crucial aspect of labour market flexibility and the development of human capital (Gillespie, Mulder, Thomas, 2021). At the individual level, a move is made when benefits outweigh the costs of migration (Sjaastad, 1962). Furthermore, as articulated by Mulder and Hooimeijer (1999), there needs to be a trigger for a move to take place. Such a trigger may be rooted in a preference for a new location and/or new type of residence.

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<sup>1</sup> This research builds upon the concepts of both ‘location-specific insider advantages’ (Fischer and Malmberg, 2001; Fischer et al., 2000; Maersk et al., 2021) and ‘location-specific capital’ (DaVanzo, 1981). When discussing literature, the terminology used by the corresponding author is used. In the research questions and the context of this specific research, the term ‘location-specific capital’ is used to denote the presence of such local knowledge and networks.

Conversely, there can also be restrictions that limit the opportunities to move (e.g. lack of resources to move, restricted geographic mobility). Triggers and restrictions can arise from different concurrent life course trajectories. The development of one life course trajectory might trigger a move, whereas another life course trajectory might restrict the possibilities to move (Mulder and Hooimeijer, 1999). Nevertheless, all else being equal, the longer one lives at a place, the more costly it gets to move again. One gets tied in place and builds up location-specific capital by spending more time in one place, which cannot (or only very difficult) be moved to a new place (DaVanzo, 1981).

### **Labour market outcomes**

When delving into the role of residential history on individual labour market outcomes, it is widely acknowledged that mobility leads generally to better labour market outcomes, especially in the case of university educated individuals compared to other levels of education (Bernard and Bell, 2018; Kooiman et al., 2018; Faggian et al., 2015; Yankow, 2003), people aged 25-32 years old (Böheim and Taylor, 2007; Yankow, 1999) and when moving to urban core centres (Ahlin et al., 2014; Korpi and Clark, 2017). In addition, men are more likely to experience positive outcomes than women (Lundholm, 2007, Mulder and Van Ham, 2005), although women have higher levels of mobility (Faggian et al., 2007; Lundholm, 2007).

Exploring who is most likely to move and who profits most, it is crucial to acknowledge that the educational and occupational ambitions of young individuals residing in rural regions diverge notably from their urban counterparts. Rural youth tend to have less educational desires compared to urban youth (Howley, 2006). This distinction becomes even more pronounced among rural youth who plan to stay in rural regions in the future (Carr and Kefalas, 2009). Potential explanations for this might be the distance to institutes for higher education (Yates et al., 2011), as well as the dilemma between choosing to move and aim for increased occupational opportunities versus choosing to stay and accept the constraints of the local labour market (Wang et al., 2021). Nevertheless, Wang et al. (2021) also shows that there are young rural individuals who are planning to stay and in parallel plan to follow tertiary education.

Comparing levels of internal migration of vocational educated individuals with (applied) university educated individuals, Kooiman et al. (2018) show that vocational education graduates are much less mobile than their (applied) university graduate peers. However, migration towards urban centres is not solely beneficial for (applied) university graduates. Empirical analysis reveals that wage progression among vocational education graduates is also higher in urban core regions than in other regions in the Netherlands (Kooiman et al., 2018). This aligns with Moretti (2012), who noted limited internal migration among vocational educated individuals, while at the same time wage growth is higher in areas with more (applied) university educated individuals (which are often urban core regions). Despite the higher wage growth rates for vocational education graduates in urban core regions observed in Kooiman et al. (2018) and Moretti (2012), Yankow (2003) shows that migration often is not immediately beneficial, but only after a period of time and should be seen as a long-term investment. This might (partly) explain the absence of high levels of internal migration among vocational education graduates.

Important to consider is that the motivation of moving is highly influential on the outcome of a move. If a move is related to non-economic reasons, labour market outcomes show to be less positive than when a move is made purely for economic reasons (Böheim and Taylor, 2007; Morrison and Clark, 2011). Amongst these other motives (e.g. housing, environment), migration for family is perceived to be especially unfavourable, as social and familial roles and responsibilities might constrain individual choices and possibly restrict opportunities for migration that otherwise might have been beneficial from the perspective of labour market outcomes (Gillespie, Mulder, Thomas, 2021). Nevertheless, migrating towards family can also have positive effects when the family network is used as location-specific capital and helps to access resources at the new location (ibid.).

### **Staying and return migration**

Despite the positive labour market outcomes often associated with moving, many individuals are not mobile at all (Cooke, 2011). Not moving, i.e. staying, used to be considered as a mere reference category

to moving, but Hjälml (2014) shows that staying is an ‘active and informed’ choice, and not something that is ‘just happening’ to people. Additionally, it is a decision that is revisited at several points in time, proving it is indeed an informed decision (Haartsen and Stockdale, 2017; Stockdale et al., 2018). When one decides to stay, this can be because of a variety of reasons, either related to monetary or nonmonetary aspects. Examples of nonmonetary factors influencing migration or staying decisions include access to a pleasant environment, time required to learn about a new location, and loss of social and family support systems (Rodgers and Rodgers, 2000). Other aspects influencing the decision to (not) move can be related to emotional attachment to a place and familiarity with the local dialect (Mulder and Malmberg, 2012), living close to family (Michelin, Mulder, Zorlu, 2008; Mulder and Malmberg, 2012; Zorlu, 2009) and/or friends (Belot and Ermisch, 2009). Finally, Hofstede et al. (2022) show that, for young adults in rural areas, environmental characteristics (e.g. clean, quiet) and a sense of belonging to the area are main reasons to stay.

Next to deciding to stay, one can also decide to temporarily migrate to a new place and subsequently return to the place of origin. This approach can be applied, for example, when individuals seek educational opportunities unavailable in their home region or face difficulties at the new place of residence. Some return migrants have planned to return already before leaving the home region, whereas others decide to return more spontaneously (Haartsen and Thissen, 2014). Return migration shows often to be motivated by social factors (being close to family and friends) (Haartsen and Thissen, 2014; Niedomysl and Amcoff, 2010). Niedomysl and Amcoff (2010) also show that being close to family and relatives is especially important for return migrants in the age group 26-37 years old.

Considering labour market outcomes, returnees who return for employment reasons, are more often successful in terms of having a job than when family and/or friends are the main reason for returning (Haartsen and Thissen, 2014). However, compared to onward migrants, labour market outcomes (wages) are lower for return migrants (Newbold, 1996). A potential explanation for this can be that return migrants are limiting their labour market opportunities by only selecting a specific labour market at a certain place/region, while onward migrants have a greater variety of regions to search for employment. Similarly, Von Reichert et al. (2011) found that negative labour market outcomes are common among migrants returning to rural areas in the United States. Comparing return migrants with stayers, it remains unclear whether returnees and stayers have comparable or distinct labour market outcomes. Despite having access to the same labour market, return migrants often left to pursue educational or job opportunities after completing secondary school (Von Reichert et al., 2011), which might equip them with a distinct skill set compared to stayers. Concurrently, the period of absence might have led return migrants to disconnect from local networks, potentially resulting in a different network composition or lack of information compared to stayers.

### **Location-specific capital**

The presence of a local network shows to potentially influence an individuals’ labour market outcomes after a move. For example, when one knows a place, the local network can be used to find suitable work and housing (Newbold, 2001). Accordingly, well-developed local (social) networks show to be valuable in finding employment, especially for those with the least and most years of education (Behtoui, 2016). When one stays in place, these networks have the opportunity to flourish and strengthen over time. Consequently, location-specific insider advantages are able to develop and accumulate (Fischer and Malmberg, 2001).

Looking more in-depth into location-specific insider advantages and its development, Fischer and Malmberg (2011) have shown that the length of stay in a place of residence shows strong effects on the likelihood of staying. The longer one stays in a place, the more knowledge, network and capital are developed in a specific place. Fischer and Malmberg (2001) regard this as evidence of the existence of location-specific insider advantages. Key to LSIA is the connection to place. Since LSIA are bound to a specific place, they cannot be transferred to another place (ibid.). This means that, in the case of migration, LSIA are left behind. Simultaneously, this means that one can have LSIA at a place that is not the current place of residence, e.g. in the case of return migration. According to Fischer et al. (2000) and Maersk et al. (2021), who also use the term LSIA, LSIA consist of different aspects. Fischer et

al. (2000) and Maersk et al. (2021) show that both professional dimensions (e.g. having a professional social network, knowledge about local firms/organisations and job opportunities) and personal dimensions (e.g. having a private social network, knowledge about housing market) contribute to an individuals' LSIA. This is similar to DaVanzo (1981), on location-specific capital, who defines the concept as "assets that are more valuable in their current location than they would have been elsewhere" (p. 45), which may refer to diverse aspects such as job-related assets, friendships, knowledge of an area but also e.g. home ownership. This is in addition to, as discussed above, the contribution of length of residence (DaVanzo, 1981; Fischer and Malmberg, 2001).

Considering location-specific insider advantages, or location-specific capital, in relation to labour market outcomes, the presence of LSIA has shown to be especially relevant in rural areas or peripheral cities and less in urban core regions. Since the number of jobs is higher in urban regions, the network factor seems to be less important here (Drejer et al., 2022; Maersk et al., 2021 – both on (applied) university educated individuals). Meanwhile, in rural regions, local stayers seem to have an advantage over newcomers, as they are better connected to the labour market, both in terms of having a job besides their study and having general knowledge about the regional labour market (Maersk et al., 2021). Similarly, Drejer et al. (2022) show that having a social network in a place is more important in peripheral cities than in core cities. Especially among entrepreneurs in peripheral cities, having knowledge about the local market and having a strong social network is important. Among urban entrepreneurs, residential history showed not to make a difference in terms of entrepreneurial success (Drejer et al., 2022). In the case of individuals who are employed, urban newcomers and stayers experience similar labour market outcomes. In urban areas, there is thus no premium to being a stayer. When graduates return to their (peripheral) home region after graduation, individuals benefit from returning to their home region and existing networks in terms of wage growth (ibid.). Similarly, considering the role of having knowledge about a place and/or a having local network and its impact on labour market outcomes from an international perspective, country-specific human and social capital (cultural knowledge, language skills, length of residence in a country, connections to family, friends, colleagues, employers) shows to also positively contribute to labour market outcomes in the case of international migration (Chiswick and Miller, 2003; Schaafsma and Sweetman, 2001; Støren and Wiers-Jenssen, 2010).

### **Conceptual model**

Based on the theory discussed in the above section, a conceptual model is developed (Figure 1). The conceptual model shows on the one hand the development of location-specific capital and aspects contributing to the development of location-specific capital. On the other hand, the conceptual model also shows other factors potentially influencing labour market outcomes, such as level of education, gender, and migration background (no migration background, 1<sup>st</sup>/2<sup>nd</sup> generation immigrant). The influence of level of urbanity (urban vs. rural location) is incorporated both in the development of location-specific capital and final labour market outcomes. Altogether, all elements potentially influence one's labour market outcomes to a certain extent, as is shown in the conceptual model.

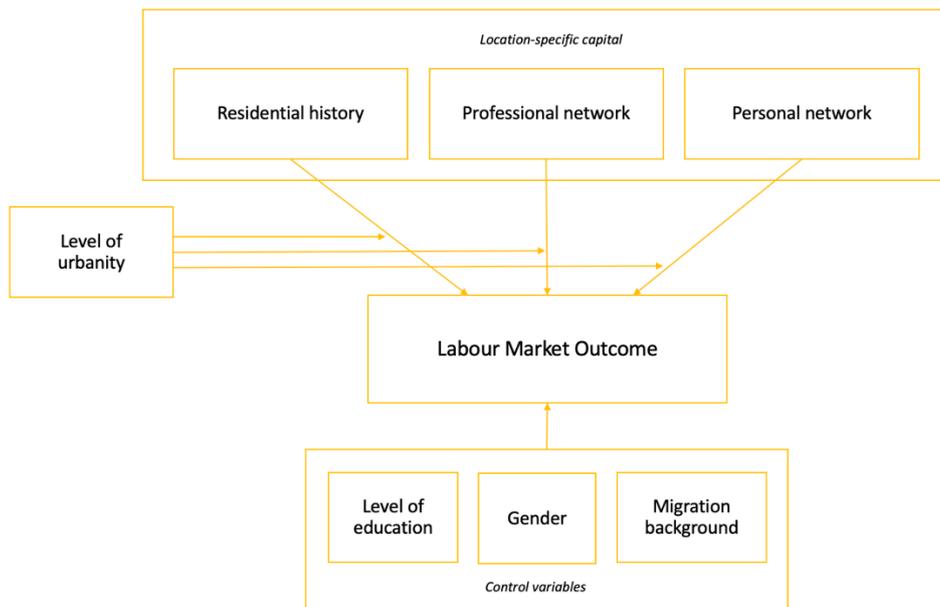


Figure 1: Conceptual Model

### **Hypotheses**

Following from the above sections, the following hypotheses are formulated and will be tested in this study. All hypotheses apply to individuals with vocational level of education. Hypotheses 1-3 each apply to one of the elements contributing to location-specific capital as discussed in the ‘Theoretical Framework’, and its impact on labour market outcomes. Hypothesis 4 refers to urban and rural areas and the role of location-specific capital as an impact on labour market outcomes.

H1a: Being a stayer leads to better labour market outcomes than being a return migrant or newcomer in a region.

H1b: Being a return migrant leads to worse labour market outcomes than being a stayer, but better labour market outcomes than being a newcomer in a region.

H2: Having a professional network in the local labour market positively contributes to labour market outcomes after graduation.

H3: The presence of a personal network has a positive influence on labour market outcomes.

H4: In urban areas, the extent of location-specific capital (residential history, professional network, personal network) does not impact labour market outcomes after graduation, while it does have an impact in rural areas.

### **Methodology**

#### **Dataset and study population**

To study the role of location-specific capital on labour market outcomes of vocational education graduates, data from the System of social statistical datasets (SSD) of Statistics Netherlands is used (Bakker et al., 2014). The SSD contains longitudinal information on the Dutch population, including information on place of residence, education, and jobs.

The study population of this research comprises all individuals from birth cohort 1993 whose highest level of education is at the vocational level. These individuals are followed from age 12 to age 28, and are referred to as anchors in the remainder of this research. Within the Dutch vocational education system, four levels exist (MBO level 1-4) (Rijksoverheid, 2023). MBO level 1 focuses on assistant training, lasting one year and learning to execute tasks. When graduating, students can enter the labour market or apply to MBO level 2. MBO level 2 lasts 2-3 years and offers basic vocational education,

focusing on executive tasks. MBO level 3 lasts 3-4 years and students learn to achieve tasks independently. MBO level 4 also lasts 3-4 years and prepares students for jobs with higher levels of responsibility or applied university education (HBO) (Rijksoverheid, 2023). Individuals with unknown residential locations at age 12 and/or age 28 are excluded. Additionally, individuals with unknown residential locations for more than two years between age 12 and age 28 are excluded. When the highest obtained level of education is unknown, individuals are also removed from the sample.

### **Dependent variable**

The dependent variable is measuring one's labour market outcome. This is operationalised as whether an individual is employed during a year or not. Being employed is defined as being an employee or being an entrepreneur. Students, benefit claimants and other unemployed individuals are considered to be unemployed.

### **Key predicting variables**

The key predicting variables are related to an individual's location-specific capital. Based on literature discussed in the above sections, location-specific capital is operationalised based on three elements: residential history, professional network and personal network. Additionally, level of urbanity is included as independent variable in the combined model (urban and rural combined).

#### *Residential history*

The first key predicting variable is related to residential history. The longer one lives in a region, the more location-specific insider advantages one is expected to have (Fischer and Malmberg, 2001; Fischer et al., 2000). The variable residential history consists of five categories: close stayer, region stayer, close returner, region returner, and newcomer. A close stayer is living in the same municipality at age 28 as he/she lived at age 12, and has lived a maximum of two years in another municipality. A close returner is also living in the same municipality at age 28 as he/she lived at age 12, but has lived more than two years in another municipality between age 12 and 28. A region stayer is not living in the same municipality at age 28 compared to age 12, but is living in a municipality located within 40km from the municipality he/she lived in at age 12. Region stayers have lived a maximum of two years outside a range of 40km of his/her municipality at age 12. A newcomer is living outside a range of 40km from his/her municipality at age 28 compared to age 12.

The cut-off distance of 40km is used, as individuals most often mention non-work related motives when moving this distance, whereas work related motives are common when moving >40 km. (Feijten and Visser, 2005). This would mean someone is losing his/her location-specific capital (or at least partly) when moving over >40 km. Nevertheless, moving for labour specific reasons has shown to have better labour market outcomes than when moving for other reasons (Böheim and Taylor, 2007; Gillespie, Mulder, Thomas, 2021; Morrison and Clark, 2011). Using the 40 km cut-off can have two potential outcomes: labour market outcomes are best within 40 km due to the role of location-specific capital, or labour market outcomes are best >40 km because one is likely to move for employment reasons.

#### *Professional network*

The second key predicting variable pertains to whether an individual was employed while studying. Such local labour market experience has the potential to enhance one's professional network and familiarity with the local job market, as suggested by Fischer et al. (2000) and Maersk et al. (2021). Although the specific location of the employment during the study period is unknown, it is reasonable to assume it was relatively close to the individual's place of residence, given their young age during the study.

#### *Personal network*

To define the locality of one's social network, the residential location of the anchor parents and partner are studied. For parents, the residential location of both parents during a year are included. The two variables consists of four categories: father/mother close (living in the same municipality as anchor in year x), father/mother region (living in a municipality within 40km of the anchor's municipality in year x), father/mother far (living in a municipality >40 km from the anchor's municipality in year x), and location father/mother unknown.

When one has a partner, the partner’s residential location at age 12 is compared to the anchor’s residential location at age 12. If partner and anchor share the same municipality/region of origin, this potentially enhances the accumulation of the anchor’s location-specific capital. This variable encompasses the following categories: partner close (partner and anchor lived in the same municipality at age 12), partner region (partner and anchor lived in municipalities within 40 km at age 12), partner far (partner and anchor lived in municipalities > 40 km at age 12), location partner at age 12 unknown, and no partner. The variable is time-varying, i.e. when the partner changes, the variable also changes. When an individual has no partner, the category ‘no partner’ applies.

The anchor’s position in the household is also included in the analysis to define the extend of one’s social network. If the anchor person shares the household with others, this might contribute to the location-specific capital of this person, as he/she potentially profits from the network of other members in the same household. Potential positions in the household include being single, living at home as a child, being a partner in a couple (unmarried/married, with/without children), single parent in single parent household, reference person in another household, or other member of a household. If the anchor person spends  $\geq 1$  years in an institutional household, all person-years of this anchor are excluded.

#### *Level of urbanity*

Since the role of a local network might differ in urban and rural areas (Drejer et al., 2022; Maersk et al., 2021), level of urbanity at age 12 is also controlled for, as this allows to account for the level of urbanity in which the anchor potentially developed his/her location-specific capital. A municipality is labelled as urban when a municipality houses one thousand or more addresses per square kilometre. A municipality is considered to be rural when it houses fewer than one thousand addresses per square kilometre (Statistics Netherlands, 2023a).

#### **Control variables**

To control for level and field of vocational education, both the highest obtained level of vocational education and the field of education have been included in the model. Furthermore, gender, migration background, and age are included as control variables.

#### **Analytical strategy**

A discrete-time event-history analysis is conducted to study the likelihood of being employed and the influence of location-specific capital on this. A logistic regression on person-years is applied. Three models are estimated: all levels of urbanity combined ( $n = 766,620$ ), living at an urban location at age 12 ( $n = 498,421$ ), and living at a rural location at age 12 ( $n = 267,839$ ). Since most individuals are still in education up until age 18, analysis starts at age 18. Starting analysis before age 18 would include high shares of unemployed individuals, while the majority was still being a student and not truly unemployed.

	Close stayer	Region stayer	Close returner	Region returner	Newcomer
Total sample	57.43%	28.70%	4.73%	0.72%	8.41%
<i>Urbanity</i>					
Rural	55.20%	30.80%	4.50%	0.80%	8.70%
Urbanity	58.60%	27.60%	4.90%	0.70%	8.30%
<i>Gender</i>					
Male	63.20%	25.10%	4.10%	0.60%	7.10%
Female	50.90%	32.80%	5.50%	0.90%	9.90%

*Level of education*

MBO1	61.10%	24.90%	5.20%	1.10%	7.80%
MBO2	60.90%	26.60%	4.70%	0.60%	7.30%
MBO3	59.50%	28.80%	4.40%	0.50%	6.80%
MBO4	54.90%	29.70%	4.90%	0.90%	9.60%

*Table 1: Descriptive statistics  
SSD Statistics Netherlands, own calculations*

**Results**

**Descriptive statistics**

Examining the main descriptive statistics, Table 1 reveals a notable distribution of stayers and returners. Over 86% of the sample classifies as stayer. An additional 5% is considered to be a returner. This means that over 90% of the sample resides, at age 28, in the same municipality or within a maximum of 40 km of the municipality one resided at age 12. Small differences can be observed when studying differences in urbanity, gender and level of education. Another noteworthy observation (not in Table 1) applies to the share of individuals employed during their study, which is about 97%.



*Figure 2: Employment status per age and residential history  
SSD Statistics Netherlands, own calculations*

Figure 2 shows the share of employed individuals per age and residential history. Looking at the overall trend in the graph, at age 18, only a small portion of the sample is employed. Every year, an increase can be observed. Considering residential history, it can be observed that close and region stayers are more often employed than close and region returners and newcomers (Figure 2). This difference in the share of individuals employed decreases, but continues to exist up until age 28. Appendix 1 shows additional information on the share of individuals employed, and differences between gender and level of urbanity.

**Regression results**

*Residential history*

Table 2 shows estimated odds ratios of being employed compared to not being employed for all levels of urbanity at age 12, and separately for urban and rural. When levels of urbanity are combined, it is interesting to observe is that the odds of being employed are significantly higher when one is a close

(municipality) stayer and region stayer (within 40 km), compared to when one is a newcomer, supporting hypothesis 1a. When returning to one's municipality of age 12 after >2 years of absence (close returner), the odds of being employed are not higher compared to newcomers. Returning to one's region of age 12 after >2 years of absence (region returner), decreases the odds ratio by a factor of 0.818 of being employed compared to newcomers. Therefore, hypothesis 1b is partly supported.

#### *Professional network*

Surprisingly, when one gained local labour market experience by having a job during time of study, the odds of being employed at a later age decrease by 0.453 compared to when one does not have prior local labour market experience. This is opposite to what is expected in hypothesis 2.

#### *Personal network*

Looking at the proximity of parents, the odds of being employed are significantly higher if the mother is living in the same municipality or region as the anchor than if the mother is living far away (>40 km of anchor). The same is true for the proximity of the anchor's father. If one has a partner who lived in the same municipality or region as the anchor at age 12, the odds of being employed are higher than when the partner lived in a far municipality at age 12. Interestingly, when the partner lived in a far municipality, the odds of being employed are still about two times higher compared to when one has no partner.

Considering one's household position, being a child living at home and being partner in a couple (unmarried/married, with/without children) increases the odds ratio to be employed compared to when being single. Comparing being single with being a single parent in a single-parent household and, odds ratios to be employed are significantly lower for a single parent.

Since having a personal network positively contributes to the odds to be employed, hypothesis 3 is supported.

#### *Level of urbanity*

When one lived in a rural municipality at age 12, the odds of being employed are 1.127 times higher compared to when one lived in an urban municipality at age 12.

#### *Control variables*

To control for background characteristics, several control variables are added in the analysis. With regards to field of study, when graduated in engineering, industry and construction, agriculture and veterinary medicine, healthcare and welfare, and personal services, odds to be employed are significantly higher to be employed compared to when graduated in education, whereas being graduated in arts and humanities or mathematics, natural and computer science decreases the odds to be employed. MBO levels 2, 3, 4 enhance the odds ratio to be employed compared to MBO level 1. Additionally, males display a higher odds ratio to be employed compared to females and individuals without a migration background or first-generation immigrants increase the odds to be employed compared to second generation immigrants.

	All		Urban		Rural	
	Odds ratio	Std Err	Odds ratio	Std Err	Odds ratio	Std Err
Residential history (ref: newcomer)						
Close stayer	1.132***	0.023	1.095***	0.027	1.224***	0.044
Region stayer	1.207***	0.026	1.251***	0.032	1.145***	0.042
Close returner	1.019	0.031	1.050	0.039	0.963	0.053
Region returner	0.818***	0.052	0.838**	0.065	0.803**	0.089
Urbanity (rural) at age 12 (ref: urban)	1.127***	0.013				
Employed during study (ref: no)	0.453***	0.020	0.551***	0.029	0.294***	0.023
Residential location parents (ref: mom/dad far)						
Mom close	1.295***	0.041	1.244***	0.047	1.388***	0.081
Mom region	1.228***	0.042	1.198***	0.049	1.271***	0.079
Location mom unknown	1.041	0.045	1.041	0.054	1.012	0.081
Dad close	1.399***	0.038	1.365***	0.043	1.448***	0.075
Dad region	1.210***	0.036	1.201***	0.042	1.220***	0.069
Location dad unknown	0.993	0.031	0.961	0.034	1.077	0.068
Residential location partner at age 12 (ref: far)						
Close	1.181***	0.044	1.126***	0.051	1.311***	0.088
Region	1.086**	0.040	1.040	0.047	1.190***	0.077
Location partner unknown	0.665***	0.034	0.676***	0.04	0.629***	0.064
No partner <sup>2</sup>	0.525***	0.026	0.509***	0.031	0.565***	0.049
Household position (ref: single) <sup>1</sup>						
Child living at home	1.117***	0.020	1.067***	0.022	1.239***	0.044
Partner in unmarried couple without children	1.117**	0.049	1.087	0.057	1.186**	0.093
Partner in married couple without children	1.540***	0.082	1.349***	0.085	2.060***	0.21
Partner in unmarried couple with children	0.374***	0.019	0.375***	0.023	0.360***	0.034
Partner in married couple with children	0.439***	0.023	0.427***	0.027	0.452***	0.042
Single parent in single-parent household	0.221***	0.011	0.233***	0.012	0.172***	0.019
Reference person in another household	0.925	0.063	0.974	0.075	0.786*	0.113
Other member of a household	1.023	0.031	0.995	0.034	1.104	0.07
Unknown	0.589***	0.052	0.643***	0.064	0.392***	0.076
Field of study (ref: education)						
Arts and humanities	0.615***	0.026	0.612***	0.032	0.618***	0.047
Social sciences, business and law	1.046	0.040	1.027	0.048	1.096	0.075
Mathematics, natural, computer science	0.584***	0.027	0.622***	0.035	0.501***	0.042
Engineering, industry, construction	2.000***	0.081	1.897***	0.095	2.128***	0.150
Agriculture and veterinary medicine	1.173***	0.052	1.092	0.062	1.214***	0.091

Healthcare and welfare	1.144***	0.044	1.142***	0.053	1.144**	0.076
Personal services	1.261***	0.049	1.270***	0.06	1.228***	0.084
Unspecified	0.966	0.082	0.992	0.096	0.857	0.150
Level of education (ref: MBO 1)						
MBO 2	2.230***	0.134	2.156***	0.148	2.280***	0.277
MBO 3	2.532***	0.150	2.409***	0.163	2.648***	0.317
MBO 4	1.569***	0.093	1.544***	0.104	1.535***	0.183
Gender (ref: male)						
	0.839***	0.011	0.868***	0.013	0.786***	0.019
Migration background (ref: second generation immigrant)						
No migration background	2.163***	0.033	2.185***	0.035	1.850***	0.077
First generation immigrant	0.868***	0.027	0.876***	0.029	0.759***	0.059
Age						
	1.595***	0.003	1.563***	0.004	1.674***	0.007
Constant						
	0.000***	0.000	0.000***	0.000	0.000***	0.000
Observations						
	766,260		498,421		267,839	
Pseudo R2						
	0.294		0.281		0.319	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

*Table 2: Regression results  
SSD Statistics Netherlands, own calculations*

## Urban and rural models

### *Residential history*

Studying the results only for urban municipalities, close and region stayers still show higher odds of being employed than newcomers in urban areas (OR = 1.095 and 1.251). Similar as in the previous model, being a close returner shows not to have a significant effect. Returning to one's urban region also here decreases the odds of being employed, compared to newcomers (OR = 0.838). The model for living in a rural municipality at age 12 shows comparable results. The odds of being employed when being a close stayer or region stayer are respectively 1.224 and 1.145 times higher compared to when being a newcomer in rural municipalities. When returning to one's rural municipality, no differences are observed compared to newcomers. Returning to the rural region of age 12, enhances the odds of finding employment compared to newcomers in rural regions.

### *Professional network*

Again, and surprisingly, experience in the local labour market decreases the odds of being employed in both urban and rural municipalities (OR = 0.551 and 0.294).

### *Personal network*

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<sup>2</sup> An individual's household position can be categorised as 'single' even if they have a partner listed in the variable 'residential location of partner at age 12'. The 'single' household position applies when an individual forms a one-person household and can be observed across all marital statuses (Statistics Netherlands, 2023b).

The proximity of one's mother and the proximity of one's father (same municipality or same region) increase the odds of being employed in both urban and rural municipalities, compared to when the mother or father is living far away.

In urban municipalities, when the partner lived within 40 km but not in the same municipality at age 12, they have no significant effect on the odds to be employed compared to when the partner lived in a far municipality. In rural municipalities, partnering with a person that lived close or in the same region enhances the odds of being employed by a factor of respectively 1.311 and 1.190, compared to when the partner lived in a far municipality.

With regards to the individual's position in the household, when the level of urbanity at age 12 was urban, a child living at home and a partner in a married couple without children show to have higher odds ratios to be employed than single individuals. Being a partner in an unmarried/married couple with children decreases the odds to be employed, as does being a single parent in a single-parent household. Living in a rural municipality at age 12, being a child living at home or being a partner in an unmarried/married couple without children, increases the odds to be employed compared to being single. Being a partner in an unmarried/married couple with children, or being a single parent decreases the odds to be employed compared to being single.

Taking the results for the urban and the rural model together, hypothesis 4 is partly supported. While location-specific capital was expected to impact employment status in rural areas and not in urban areas, location-specific capital increases the odds to be employed in both urban and rural areas.

#### *Control variables*

The control variables in the urban and rural models show similar results as in the model where urban and rural levels of urbanity are combined. Results for control variables can be observed in Table 2.

#### **Additional analyses**

To determine whether the regression results are robust across different specifications, several sensitivity analyses have been performed. First, since birth cohort 1993 turned 28 in 2021, it is possible the COVID-19 crisis impacts the findings. Therefore, the same analysis has been repeated for birth cohort 1993, stopping observations at age 26 (year 2019). This way, potential effects of the COVID-19 crisis (started March 2020) are excluded. Next, the same analysis has also been repeated with a dynamic dependent variable: becoming employed or not – focussing on anchors whose employment status changes from being unemployed to being employed. For this model, two sub models have been estimated: the odds to become employed when the previous status is student, and the odds to become employed when the previous status is unemployed. Finally, a model on the odds to become unemployed has been estimated. Here, the dependent variable refers to becoming unemployed when the previous status is employed. The results of these models can be found in Appendix 2. In general, the results are in line with those of the main model. Across the models, location-specific capital, to varying degrees, plays a significant role in influencing labour market outcomes. Furthermore, residential history, particularly for those who remain in the same location (stayers), has a positive impact on labour market outcomes.

#### **Conclusion, discussion and recommendations**

In this research, the role of location-specific capital on labour market outcomes among vocational education graduates is explored. Additionally, the role of location-specific capital is studied separately for urban and rural areas. Three components of location-specific capital are studied: residential history, professional networks and personal networks. Labour market outcomes are defined as being employed or unemployed.

When studying the overall impact of location-specific capital, the analyses indicate that vocational education graduates with location-specific capital in a particular place tend to experience improved labour market outcomes compared to vocational education graduates with less extensive location-specific capital. Studying the different elements of location-specific capital, a striking result is that being

a stayer in a municipality or a region positively contributes to labour market outcomes, compared to when being a newcomer. This is different from what is usually found for (applied) university educated individuals, where migration (and thus being a newcomer) is associated with positive labour market outcomes, compared to staying (e.g. Ahlin et al., 2014; Korpi and Clark, 2017; Mulder and Van Ham, 2005). Being a close returner does not lead to different labour market outcomes compared to being a newcomer, and returning to one's region leads to worse labour market outcomes compared to when being a newcomer. This is in line with Newbold (1996) and Von Reichert et al. (2011), who found that onward migrants show better labour market outcomes than return migrants. On the other hand, there are also studies showing that return migration can lead to positive labour market outcomes, mainly when the return move is motivated by employment reasons (Haartsen and Thissen, 2014). Nevertheless, return moves in the ages 26-37 years have shown to most often be related to social factors (proximity of family and friends) (Niedomysl and Amcoff, 2010). Although the reason for return migration is unknown in this research, one's residential location at age 28 is studied. Therefore, it might be that the return migrants in this sample are mainly motivated by social factors, and are not prioritizing labour market outcomes.

Noteworthy in this study, is the negative influence of having prior labour market experience on an individual's labour market outcomes. In earlier research, having a professional network (i.e. local job experience) is studied as an element of location-specific capital or location-specific insider advantages, where stayers show to have a stronger professional network compared to non-stayers (Fischer et al., 2000; Maersk et al., 2021). Nevertheless, the unexpected finding in this research might be attributed to a high percentage of individuals who were employed during their study, leaving only a specific group of individuals – potentially with distinct characteristics – unemployed during their studies, which could significantly influence the outcomes. Additionally, only the employment itself is considered, and not the location of the employment. It is therefore unclear whether the employment took place within one's region of residence, or a different place. It could be of interest to observe the result considering the location of employment as well.

Another aspect of location-specific capital or location-specific insider advantages is the personal network (Fischer et al., 2000; Maersk et al., 2021). Since well-developed personal networks have shown to be valuable in finding employment (Behtoui, 2016), the presence of a personal network was expected to positively contribute to labour market outcomes. The results align with these expectations. Specifically, the presence of an individual's father and/or mother in a municipality or region have a positive influence on labour market outcomes compared to when mother/father live far away. Similarly, when one has a partner from the same municipality or region, a positive influence on labour market outcomes is found. This might be attributed to the extension of location-specific capital when a personal network is present. When living close to parents and when from the same region as the partner, an individual's location-specific capital is potentially extended by the network of the other persons in the network.

When examining the role of location-specific capital on labour market outcomes separate in urban and rural areas, similar results are found as for the model encompassing both urban and rural. In terms of residential history, both in urban and rural areas, stayers experience more positive labour market outcomes than newcomers. This means that, in the case of vocational education graduates, staying in a rural area is a beneficial strategy compared to moving, which is opposite of what research has shown for university graduates (Drejer et al., 2022). Interestingly, stayers in urban areas are also more likely to experience positive labour market outcomes compared to newcomers, whereas research on university graduates does not show a premium to stayers compared to newcomers in urban areas (Drejer et al., 2022).

While the analysis addresses many topics, it is important to acknowledge several limitations. In the research, the residential location of return migrants before returning to the place of origin is absent. Including whether differences in labour market outcomes exist based on where return migrants resided during the time away would have added valuable information to the analysis. Also, for the individuals that are not stayers or return migrants, the analysis does not consider the destination of migration, nor

the place of origin. In future research, it might be relevant to e.g. study whether newcomers moved from and/or towards urban or rural areas, and corresponding labour market outcomes. Moreover, in future research, it would be useful to extend the analysis by including additional birth cohorts and explore whether the effects are different over time. With regards to the variable for professional network, an alternative approach is needed. The current operationalization results in a single category encompassing a large portion of the sample, disproportionately affecting the smaller group. Finally, the outcome variable 'labour market outcome' is only studied from the perspective of being or finding employment. In future research, it would be valuable to broaden this scope by e.g. adding income and/or type of contract.

In conclusion, the analyses conducted in this study offers valuable insights into the role of location-specific capital on labour market outcomes for vocational education graduates. Of particular note is the higher likelihood of stayers to be employed, compared to newcomers. This contradicts what has been found in studies on migration or staying and labour market outcomes up until this point, which has primarily focused on (applied) university education graduates. The opposite finding observed in this study might imply a different mechanism in terms of migration behaviour and labour market outcomes for individuals with vocational education compared to individuals with e.g. university education.

From a labour market perspective, the results carry important implications. While migration is often associated with accessing thick labour markets and abundant job opportunities, the analysis reveals that, for vocational education graduates, mobility is related to lower levels of employment compared to stayers. This also illustrates the importance of the findings for policy and practice. During vocational education, fostering the development of relevant networks and connections is crucial, as it significantly enhances graduates' prospects of finding employment after completing their education. Educational institutions should consider this aspect as an essential component of their programs, preparing future graduates to navigate the labour market effectively.

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## Appendices

### Appendix 1: Additional descriptive statistics

Figure 3 and 4 provide additional descriptive statistics on employment status. Figure 3 illustrates the gender differences in the percentage of employed individuals based on their residential history. Figure 4 shows the differences in share of employed individuals based on level of urbanity at age 12 (rural – urban) and residential history.

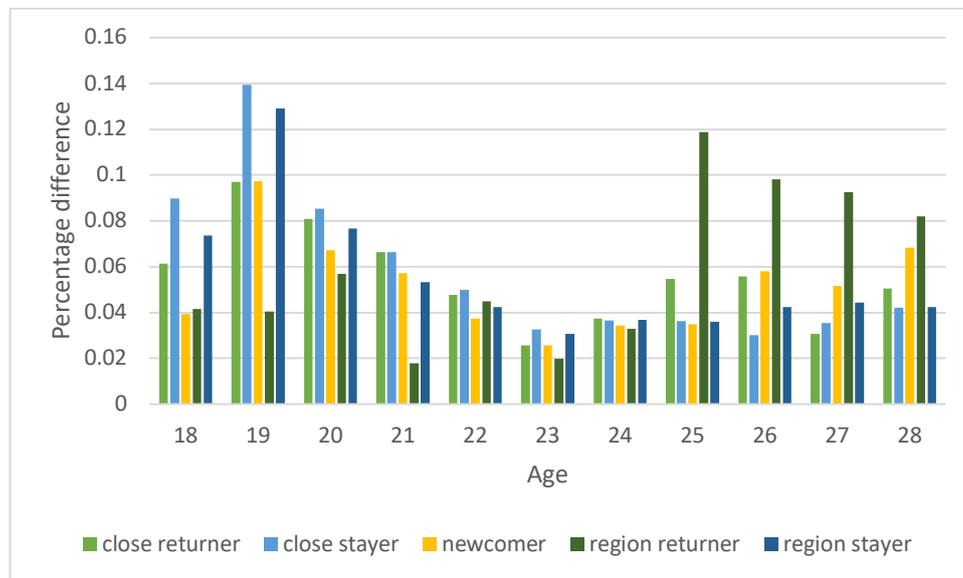


Figure 3: Employment status – Gender differences (male – female)  
SSD Statistics Netherlands, own calculations



Figure 4: Employment status – Urbanity differences (rural – urban)  
SSD Statistics Netherlands, own calculations

## Appendix 2: Additional analyses

### Regression results up until age 26

In this table, the regression results up until age 26 are displayed. Therefore, the years in which COVID-19 played a role, are excluded in this model.

	All		Urban		Rural	
	Odds ratio	Std Err	Odds ratio	Std Err	Odds ratio	Std Err
Residential history (ref: newcomer)						
Close stayer	1.130***	0.024	1.096***	0.028	1.208***	0.045
Region stayer	1.199***	0.026	1.249***	0.034	1.125***	0.043
Close returner	1.034	0.033	1.065*	0.041	0.974	0.055
Region returner	0.816***	0.053	0.812**	0.066	0.838	0.093
Urbanity (rural) at age 12 (ref: urban)						
	1.124***	0.013				
Employed during study (ref: no)						
	0.393***	0.017	0.484***	0.026	0.250***	0.020
Residential location parents (ref: mom/dad far)						
Mom close	1.334***	0.045	1.253***	0.05	1.485***	0.093
Mom region	1.255***	0.046	1.207***	0.053	1.332***	0.088
Location mom unknown	1.094*	0.051	1.067	0.059	1.115	0.095
Dad close	1.414***	0.04	1.382***	0.046	1.452***	0.079
Dad region	1.230***	0.039	1.223***	0.045	1.229***	0.073
Location dad unknown	1.000	0.033	0.963	0.036	1.094	0.072
Residential location partner at age 12 (ref: far)						
Close	1.159***	0.048	1.127**	0.056	1.226***	0.090
Region	1.048	0.043	1.012	0.051	1.136*	0.080
Location partner unknown	0.661***	0.038	0.681***	0.045	0.606***	0.068
No partner	0.554***	0.030	0.539***	0.036	0.593***	0.057
Household position (ref: single)						
Child living at home	1.164***	0.022	1.111***	0.024	1.282***	0.048
Partner in unmarried couple without children	1.124**	0.054	1.083	0.063	1.221**	0.103
Partner in married couple without children	1.647***	0.098	1.361***	0.096	2.523***	0.282
Partner in unmarried couple with children	0.368***	0.022	0.371***	0.026	0.350***	0.037
Partner in married couple with children	0.466***	0.028	0.445***	0.032	0.498***	0.053
Single parent in single-parent household	0.209***	0.012	0.216***	0.013	0.170***	0.022
Reference person in another household	0.817***	0.063	0.843*	0.074	0.742*	0.117
Other member of a household	1.005	0.032	0.966	0.035	1.111	0.074
Unknown	0.508***	0.049	0.541***	0.058	0.362***	0.075

Field of study (ref: education)						
Arts and humanities	0.621***	0.027	0.618***	0.033	0.625***	0.049
Social sciences, business and law	1.088**	0.044	1.066	0.052	1.147*	0.081
Mathematics, natural, computer science	0.566***	0.027	0.601***	0.035	0.491***	0.043
Engineering, industry, construction	2.109***	0.089	1.992***	0.103	2.263***	0.165
Agriculture and veterinary medicine	1.195***	0.055	1.106*	0.065	1.247***	0.096
Healthcare and welfare	1.121***	0.045	1.119**	0.054	1.122*	0.078
Personal services	1.291***	0.052	1.301***	0.064	1.258***	0.089
Unspecified	0.957	0.082	0.977	0.096	0.862	0.152
Level of education (ref: MBO 1)						
MBO 2	2.068***	0.124	2.003***	0.136	2.096***	0.254
MBO 3	2.145***	0.127	2.041***	0.138	2.232***	0.267
MBO 4	1.233***	0.072	1.217***	0.082	1.196	0.143
Gender (ref: male)	0.872***	0.011	0.902***	0.014	0.819***	0.020
Migration background (ref: second generation immigrant)						
No migration background	2.226***	0.035	2.251***	0.037	1.902***	0.081
First generation immigrant	0.837***	0.027	0.850***	0.029	0.716***	0.058
Age	1.766***	0.004	1.730***	0.005	1.849***	0.008
Constant	0.000***	0.000	0.000***	0.000	0.000***	0.000
Observations	626,940		407,799		219,141	
Pseudo R2	0.295		0.283		0.317	
*** p<0.01, ** p<0.05, * p<0.1						

Table 3: Regression results up until age 26  
SSD Statistics Netherlands, own calculations

### Regression results: Transition to employment

In this table, the results for the transition to employment are shown. The dependent variable displays a change in employment status from being unemployed to being employed in a year.

	All		Urban		Rural	
	Odds ratio	Std Err	Odds ratio	Std Err	Odds ratio	Std Err
Residential history (ref: newcomer)						
Close stayer	1.081***	0.019	1.032	0.022	1.200***	0.036
Region stayer	1.177***	0.021	1.184***	0.026	1.178***	0.036
Close returner	1.090***	0.029	1.087***	0.035	1.097**	0.051
Region returner	0.962	0.050	0.984	0.064	0.944	0.081

Urbanity (rural) at age 12 (ref: urban)	1.041***	0.011				
Employed during study (ref: no)	.842***	0.041	.910*	0.051	.666***	0.067
Residential location parents (ref: mom/dad far)						
Mom close	.939**	0.029	0.970	0.037	.853***	0.047
Mom region	0.964	0.033	0.977	0.042	0.918	0.055
Location mom unknown	.882***	0.037	.918*	0.047	.789***	0.059
Dad close	1.092***	0.027	1.069**	0.031	1.130***	0.053
Dad region	0.997	0.028	0.973	0.033	1.054	0.055
Location dad unknown	.916***	0.026	.892***	0.030	0.973	0.055
Residential location partner at age 12 (ref: far)						
Close	1.178***	0.057	1.076	0.063	1.451***	0.127
Region	1.072	0.052	1.01	0.060	1.203**	0.100
Location partner unknown	.873**	0.054	.835**	0.061	0.932	0.112
No partner	1.069	0.083	1.035	0.099	1.126	0.153
Household position (ref: single)						
Child living at home	1.408***	0.030	1.348***	0.033	1.588***	0.069
Partner in unmarried couple without children	1.452***	0.105	1.474***	0.129	1.418***	0.184
Partner in married couple without children	1.266***	0.112	1.261**	0.131	1.248	0.217
Partner in unmarried couple with children	.768***	0.062	.753***	0.073	0.807	0.121
Partner in married couple with children	.638***	0.053	.644***	0.065	.609***	0.091
Single parent in single-parent household	.412***	0.021	.420***	0.023	.351***	0.044
Reference person in another household	1.111	0.091	1.171*	0.110	0.919	0.150
Other member of a household	1.273***	0.042	1.231***	0.046	1.398***	0.096
Unknown	1.818***	0.144	1.679***	0.156	2.293***	0.358
Field of study (ref: education)						
Arts and humanities	.735***	0.026	.750***	0.032	.702***	0.042
Social sciences, business and law	1.078**	0.034	1.077*	0.043	1.089	0.059
Mathematics, natural, computer science	.681***	0.026	.721***	0.034	.596***	0.040
Engineering, industry, construction	1.438***	0.049	1.439***	0.061	1.412***	0.079
Agriculture and veterinary medicine	0.980	0.037	0.956	0.047	0.97	0.058
Healthcare and welfare	1.084***	0.034	1.096**	0.043	1.055	0.055
Personal services	1.266***	0.041	1.296***	0.052	1.199***	0.065
Unspecified	1.096	0.075	1.156*	0.093	0.913	0.123
Level of education (ref: MBO 1)						

MBO 2	2.015***	0.102	2.010***	0.118	1.989***	0.197
MBO 3	2.142***	0.107	2.091***	0.122	2.205***	0.214
MBO 4	1.530***	0.076	1.529***	0.088	1.504***	0.144
Gender (ref: male)	.966***	0.011	0.981	0.013	.937***	0.018
Migration background (ref: second generation immigrant)						
No migration background	1.533***	0.019	1.544***	0.021	1.418***	0.047
First generation immigrant	.910***	0.022	.909***	0.024	.884**	0.054
Age	1.217***	0.003	1.212***	0.003	1.230***	0.005
Constant	.002***	0.000	.002***	0.000	.002***	0.000
Observations	289,816		198,705		91,111	
Pseudo R2	0.0492		0.0494		0.0489	

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

Table 4: Transition to employment  
SSD Statistics Netherlands, own calculations

*Regression results: Transition to employment – student to employment*

This model refers to the transition to employment when the previous status of an individual was student and changed to being employed in a year.

	All		Urban		Rural	
	Odds ratio	Std Err	Odds ratio	Std Err	Odds ratio	Std Err
Residential history (ref: newcomer)						
Close stayer	1.131***	0.021	1.071***	0.025	1.269***	0.042
Region stayer	1.200***	0.024	1.197***	0.029	1.218***	0.041
Close returner	1.104***	0.032	1.101***	0.038	1.114**	0.055
Region returner	0.936	0.054	0.941	0.067	0.949	0.092
Urbanity (rural) at age 12 (ref: urban)	1.062***	0.011				
Employed during study (ref: no)	0.361***	0.024	0.426***	0.033	0.234***	0.031
Residential location parents (ref: mom/dad far)						
Mom close	1.052	0.038	1.067	0.047	1.003	0.067
Mom region	1.039	0.042	1.038	0.052	1.013	0.071
Location mom unknown	0.934	0.046	0.939	0.057	0.911	0.079
Dad close	1.150***	0.032	1.116***	0.037	1.229***	0.066
Dad region	1.044	0.034	1.013	0.039	1.114*	0.067
Location dad unknown	0.926**	0.030	0.897***	0.034	1.007	0.065
Residential location partner at age 12 (ref: far)						
Close	1.131*	0.072	1.047	0.082	1.322**	0.144

Region	1.040	0.066	0.974	0.079	1.16	0.121
Location partner unknown	0.781***	0.065	0.766***	0.076	0.781	0.126
No partner	1.096	0.104	1.092	0.131	1.09	0.172
Household position (ref: single)						
Child living at home	1.217***	0.030	1.188***	0.034	1.278***	0.065
Partner in unmarried couple without children	1.322***	0.115	1.377***	0.148	1.22	0.182
Partner in married couple without children	1.378***	0.168	1.446***	0.204	1.188	0.302
Partner in unmarried couple with children	0.683***	0.076	0.689***	0.092	0.686*	0.145
Partner in married couple with children	0.709**	0.107	0.817	0.143	0.520**	0.148
Single parent in single-parent household	0.359***	0.027	0.362***	0.029	0.336***	0.069
Reference person in another household	0.914	0.091	0.982	0.113	0.733	0.143
Other member of a household	1.118***	0.043	1.072	0.048	1.252***	0.097
Unknown	1.628**	0.339	1.783**	0.414	1.063	0.49
Field of study (ref: education)						
Arts and humanities	0.698***	0.027	0.709***	0.034	0.674***	0.045
Social sciences, business and law	1.139***	0.041	1.149***	0.051	1.123*	0.067
Mathematics, natural, computer science	0.680***	0.029	0.722***	0.038	0.593***	0.044
Engineering, industry, construction	1.482***	0.055	1.469***	0.069	1.478***	0.092
Agriculture and veterinary medicine	1.046	0.042	1.014	0.053	1.038	0.068
Healthcare and welfare	1.116***	0.039	1.134***	0.049	1.074	0.063
Personal services	1.276***	0.045	1.313***	0.058	1.197***	0.072
Unspecified	1.008	0.077	1.046	0.095	0.907	0.129
Level of education (ref: MBO 1)						
MBO 2	1.145**	0.064	1.147**	0.076	1.113	0.117
MBO 3	0.952	0.053	0.934	0.061	0.961	0.1
MBO 4	0.613***	0.034	0.617***	0.04	0.589***	0.061
Gender (ref: male)	1.019	0.012	1.038***	0.015	0.987	0.02
Migration background (ref: second generation immigrant)						
No migration background	1.712***	0.024	1.730***	0.026	1.546***	0.057
First generation immigrant	0.868***	0.024	0.875***	0.027	0.802***	0.055
Age	1.306***	0.004	1.296***	0.005	1.332***	0.008
Constant	0.002***	0.000	0.002***	0.000	0.002***	0.001
Observations	234,778		158,315		76,463	



Reference person in another household	1.294*	0.188	1.413**	0.226	0.852	0.288
Other member of a household	1.345***	0.081	1.376***	0.092	1.156	0.163
Unknown	1.683***	0.160	1.490***	0.166	2.433***	0.456
Field of study (ref: education)						
Arts and humanities	0.949	0.096	0.989	0.118	0.867	0.164
Social sciences, business and law	1.072	0.100	1.038	0.114	1.199	0.211
Mathematics, natural, computer science	0.799**	0.085	0.842	0.106	0.706*	0.144
Engineering, industry, construction	1.666***	0.165	1.691***	0.197	1.608**	0.297
Agriculture and veterinary medicine	0.958	0.101	0.961	0.124	0.948	0.178
Healthcare and welfare	1.116	0.104	1.106	0.121	1.151	0.202
Personal services	1.534***	0.145	1.528***	0.170	1.569**	0.279
Unspecified	1.368***	0.160	1.430***	0.196	1.167	0.265
Level of education (ref: MBO 1)						
MBO 2	2.190***	0.130	2.240***	0.155	2.025***	0.235
MBO 3	3.507***	0.217	3.505***	0.253	3.416***	0.407
MBO 4	3.846***	0.234	3.848***	0.273	3.789***	0.443
Gender (ref: male)	0.836***	0.023	0.845***	0.027	0.809***	0.044
Migration background (ref: second generation immigrant)						
No migration background	1.321***	0.037	1.320***	0.040	1.253***	0.099
First generation immigrant	0.989	0.050	0.972	0.053	1.042	0.153
Age	1.032***	0.004	1.038***	0.005	1.020**	0.009
Constant	0.051***	0.011	0.048***	0.012	0.067***	0.027
Observations	55,038		40,390		14,648	
Pseudo R2	0.054		0.053		0.055	
*** p<0.01, ** p<0.05, * p<0.1						

Table 6: Transition to employment – unemployment to employment  
SSD Statistics Netherlands, own calculations

### Regression results: Becoming unemployed

Up until now, all models focused on changing employment status from a variety of statuses to becoming employed. In this model, the opposite is tested: the odds to become unemployed when the previous status is being employed in a year.

	All		Urban		Rural	
	Odds ratio	Std Err	Odds ratio	Std Err	Odds ratio	Std Err
Residential history (ref: newcomer)						
Close stayer	0.750***	0.021	0.781***	0.026	0.677***	0.035

Region stayer	0.748***	0.022	0.734***	0.026	0.772***	0.04
Close returner	0.947	0.038	0.927	0.045	0.993	0.071
Region returner	1.286***	0.101	1.265**	0.125	1.308**	0.167
Urbanity (rural) at age 12 (ref: urban)						
	0.812***	0.013				
Employed during study (ref: no)						
	1.414***	0.06	1.336***	0.069	1.595***	0.124
Residential location parents (ref: mom/dad far)						
Mom close	0.94	0.039	0.943	0.047	0.93	0.071
Mom region	0.989	0.044	0.975	0.052	1.022	0.082
Location mom unknown	1.094	0.06	1.043	0.068	1.234**	0.124
Dad close	0.784***	0.027	0.784***	0.032	0.793***	0.052
Dad region	0.861***	0.033	0.861***	0.04	0.853**	0.061
Location dad unknown	1.041	0.04	1.053	0.047	1.003	0.077
Residential location partner at age 12 (ref: far)						
Close	0.99	0.046	1.013	0.057	0.961	0.08
Region	1.011	0.047	1.01	0.057	0.997	0.079
Location partner unknown	1.378***	0.089	1.368***	0.102	1.497***	0.19
No partner	1.271***	0.103	1.302***	0.127	1.215	0.177
Household position (ref: single)						
Child living at home	0.939***	0.022	0.955*	0.025	0.897**	0.042
Partner in unmarried couple without children	0.775***	0.059	0.782***	0.072	0.760**	0.104
Partner in married couple without children	0.956	0.078	1.025	0.101	0.823	0.123
Partner in unmarried couple with children	1.450***	0.121	1.389***	0.139	1.660***	0.251
Partner in married couple with children	1.359***	0.111	1.319***	0.13	1.446**	0.213
Single parent in single-parent household	2.174***	0.138	2.133***	0.15	2.496***	0.366
Reference person in another household	1.185*	0.114	1.053	0.116	1.709***	0.334
Other member of a household	1.052	0.044	1.064	0.05	1.015	0.094
Unknown	1.686***	0.215	1.695***	0.238	1.672*	0.506
Field of study (ref: education)						
Arts and humanities	1.553***	0.093	1.675***	0.121	1.319***	0.141
Social sciences, business and law	1.172***	0.064	1.238***	0.082	1.037	0.099
Mathematics, natural, computer science	1.373***	0.089	1.399***	0.109	1.342**	0.159
Engineering, industry, construction	0.598***	0.035	0.668***	0.047	0.488***	0.05
Agriculture and veterinary medicine	0.767***	0.05	0.897	0.073	0.621***	0.068
Healthcare and welfare	0.912*	0.049	0.961	0.063	0.817**	0.077

Personal services	1.000	0.055	1.054	0.071	0.907	0.088
Unspecified	1.121	0.102	1.188*	0.124	1.018	0.19
Level of education (ref: MBO 1)						
MBO 2	0.687***	0.041	0.700***	0.047	0.671***	0.083
MBO 3	0.487***	0.029	0.501***	0.034	0.467***	0.058
MBO 4	0.591***	0.035	0.613***	0.041	0.556***	0.069
Gender (ref: male)						
	1.242***	0.022	1.223***	0.025	1.276***	0.044
Migration background (ref: second generation immigrant)						
No migration background	0.485***	0.009	0.470***	0.009	0.595***	0.03
First generation immigrant	1.102***	0.04	1.082**	0.043	1.299***	0.121
Age						
	0.780***	0.003	0.784***	0.003	0.767***	0.005
Constant	80.894***	11.498	67.003***	11.295	91.866***	24.748
Observations	406,784		254,405		152,379	
Pseudo R2	0.0812		0.0784		0.0757	
*** p<0.01, ** p<0.05, * p<0.1						

*Table 7: Becoming unemployed  
SSD Statistics Netherlands, own calculations*