

Overeducation in the early career of secondary education graduates: An analysis using sequence techniques[†]

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Abstract

Based on monthly observations of their employment and overeducation status in the first seven years after leaving education, we use optimal matching sequence analysis to construct a typology of entry-patterns of Flemish secondary education graduates. We find that for a significant number of young people overeducation constitutes a persistent problem, affecting about half of the sample for nearly the full observation period. Investigating the risk factors shows factors such as having lower human capital endowments or facing job search constraints enhancing the risk of following disadvantageous trajectories. A lower reservation wage seems to make being persistently overeducated more likely. Yet, starting as ‘overeducated’ does not necessarily lead to being stuck in overeducation the rest of the career. About 7% of our sample succeeds in entering an adequate position even after being overeducated for a relatively long period.

Keywords

Underemployment, overqualification, optimal matching, youth labour market

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Introduction

Overeducation – a situation in which workers have more education than usually required to perform their job adequately – is a common phenomenon in youth labour markets (Dolton and Vignoles, 2000). This is worrisome since overeducation has negative effects on workers' welfare and well-being. For instance, compared to similarly educated individuals with a good match, the overeducated earn less (Hartog, 2000) and are less satisfied with their job (Allen and van der Velden, 2001). Evidence also suggests that overeducation increases the risk of skill erosion (De Grip et al., 2008). Moreover, overeducation is often found to be concentrated among particular groups of young people, such as those having lower-quality human capital endowments or those from lower social backgrounds (Verhaest and Omey, 2010). Thus, in addition to differences in unemployment or joblessness risk, differences in overeducation may constitute another cause of labour market inequalities.

These worries would be amplified if overeducation turned out to be a long-lasting or frequently recurring state. Several studies investigated the persistence of overeducation among young workers. Estimating a yearly exit rate from overeducation of approximately 20%, Rubb (2003) finds for the US that the problem is primarily a temporary one. For Dutch young workers, Groot and Maassen van den Brink (2003) reach a similar conclusion. However, in the British and German youth labour market, overeducation is often found to be more persistent (Battu et al, 1999; Dolton and Vignoles, 2000; Büchel and Mertens, 2004). Scherer (2004) concludes that this high persistence is less severe in the UK than in Germany and Italy, due to the higher flexibility of the UK labour market. Some studies investigated also differences in persistence between alternative groups of young people. Pollman-Schult and Büchel (2004), for instance, found that those with lower educational quality are not only more likely to become, but also to stay overeducated.

The extent to which overeducation is a persistent problem for young people thus seems to depend both on contextual and individual factors. However, evidence on this issue remains scarce. Our paper contributes to this literature investigating the extent to which and for whom overeducation is a permanent or recurrent situation in Flanders. Differing from most other studies, targeting the higher educated, our focus is on graduates with a secondary education degree. Evidence suggests that over the past decades technological change has mainly resulted in a drop in the number of jobs in the middle range of the skill distribution (Goos et al, 2009). Hence, we expect overeducation to be rather persistent for labour market entrants with this type of skill. For our sample,

this persistence may even be particularly pronounced, since in Flanders the technologically induced general trend was combined with the following contextual features: a slack economy at the time our respondents left the educational system, a relatively inflexible labour market and a compulsory schooling age set at 18.

Apart from its application to Flemish secondary education graduates, our paper contributes in two more ways to the literature. First of all, relying on monthly career spell data we investigate in much more detail the length and the timing of the overeducation spells in the first seven years of the early labour market career. This approach is interesting for two main reasons. Firstly, relying on more detailed measurements, we reinforce the reliability of the conclusions. Secondly, in comparison to analyses relying on single spell data or on comparing two points in time, it allows to detect a broader range of career patterns. Because of growing labour market flexibility, young people's entry patterns become more protracted and complex (Furlong and Cartmel, 1997) or de-standardized and fragmented (Walther, 2006). For some young people, overeducation may thus be a temporary yet recurrent state. Others may be overeducated for a longer period but ultimately find an adequate job. Still others may start in an adequate job before falling back into overeducation. Hence, long spells of overeducation may not necessarily be problematic, while short spells of overeducation may not always guarantee career success. To explore these different entry patterns, following Schoon et al. (2001), we apply optimal matching sequence analysis (hereafter: OMA; see Abbott and Hrycak, 1990). This allows us, in a first step, to generate an empirical typology of sequences (Halpin and Chan, 1998). In a second step, we investigate the relationship between these career patterns and the characteristics of our respondents.

As a second contribution, we not only distinguish between overeducation and adequate employment, but integrate joblessness¹ in the analysis. This is important for two main reasons. Firstly, overeducation and joblessness have much in common. Both can be conceptualized as forms of underemployment or situations in which not all human resources are fully utilized (Feldman, 1996). Moreover, as will be argued in the paper, several of the sources of their incidence and persistence can be expected to be similar. Therefore, including both states in the analysis makes sense. Secondly, neglecting periods of joblessness may bias the evaluation of career success. After all, it makes much difference whether overeducation spells are followed by joblessness or adequate employment. Further, integrating periods of joblessness overcomes the problem of sample selection bias (Rubb, 2011), arising from excluding those least successful in terms of career development when focussing solely on those employed.

Our paper is structured as follows. Before dealing with data and methodology in the third section and presenting our results in the fourth, we focus on the theoretical framework and formulate our hypotheses. We end with a discussion and some general conclusions.

Theoretical framework and hypotheses

The labour market context

Like joblessness, overeducation is likely to occur and persist depending on the degree of labour market flexibility (Scherer, 2004). In the case of flexible wages, equilibrium would be restored smoothly and speedily since an initial oversupply of educated labour market entrants would suppress the wages in skilled jobs. Overeducation could then be at worst a short episode, either resulting from job search constraints (Dolado et al, 2009), imperfect information (Jovanovic, 1979) or lack of practical experience (Sicherman and Galor, 1990). On the other hand, so-called ‘sticky’ wages, whatever their cause (implicit contracts, efficiency wages policies, ‘equal pay’ legislation or insider–outsider collective bargaining), will prevent supply and demand from adjusting and young people might be forced to stay jobless, stay overeducated or combine both statuses for a longer period (Skott, 2006). In the latter case, even temporary labour market shocks could have long-term consequences for workers, because of a loss of motivation to pursue job search activities, stigmatizing effects (McCormick, 1990) or depreciation of skills (de Grip et al, 2008).

Spatial and occupational mobility provide other potential adjustment mechanisms. However, different obstacles may hinder mobility. For instance, family commitments may impede young people from moving to regions with a higher availability of matching jobs (Frank, 1978). Also, being educated or trained in a very specific field may make finding a job outside one’s field more difficult. An alternative to the mobility of existing workers would be adjusting the composition of labour supply by redirecting educational investments. However, taking time, this does not solve the problem in the short run (Freeman, 1976). Moreover, compulsory schooling laws may prevent the supply in terms of skills to adapt to labour market needs even in the long run. Like rigid wages, lack of mobility and inelastic labour supply increase the likelihood as well as the persistence of joblessness, overeducation or a combination of both statuses.

A final factor impeding labour market adjustment is employment protection legislation (EPL). For instance, if technological change makes the skills of tenured employees redundant, EPL may prevent their replacement by well-matched job seekers. Or, if temporary contracts cannot be used as screening devices, employers will be more inclined to rely on internal promotions. The overall effect is likely to increase the occurrence of joblessness or overeducation among outsiders, like young labour market entrants. Conversely, if EPL fosters stable employment relationships, the likelihood of re-entering joblessness or overeducation after having started in an adequate job will be lower. A similar argument holds for re-entering joblessness after having started as overeducated. Hence, while the persistence of overeducation may be higher, its recurrence is likely to be lower.

Given these theoretical arguments, we expect the occurrence and persistence of overeducation to be higher in labour markets characterized by the combination of a negative demand shock, high levels of labour market rigidities and a labour supply that is relatively inelastic in terms of skills. This seems to have been the context in which the graduates observed in this study started their career (from 1994 to 1997). Indeed, Goos et al (2009) show that a process of job polarization took place in Belgium in the period 1993-2006, with a drop in the employment share for medium-skilled jobs by almost 10 percentage points. Moreover, in the period 1994–1997, Belgium was characterized by low economic growth and relatively high levels of unemployment.² Further, it is well documented that the Belgian labour market is inflexible with relatively rigid wage setting (Du Caju et al, 2007), low labour mobility (Estevão, 2002) and strict EPL (OECD, 2007). Finally, in Belgium the compulsory (part-time) schooling age is 18. Within Europe, this is exceptional and results in a very small group leaving education with a low qualification (Müller and Wolbers, 2003).

Even if overeducation does persist for many individuals in our sample, others may experience status changes. Young workers may leave an adequate job for an overeducated one either involuntarily, because of being laid off, or voluntarily, when opting for a better work–life balance. Conversely, overeducation could function as a stepping stone to an adequate position. Since our analysis concentrates on young workers at the very start of their career, we expect upward moves to be relatively more present than downward moves. This is likely to be reinforced by the particularities of the Belgian EPL, providing strong employment protection for tenured white-collar workers (OECD, 2007). Since white-collar jobs on average have a higher functional level, this legislation is likely to be more advantageous for those in adequate positions

Finally, besides being overeducated or adequately educated, young people can also become jobless. Whereas a matching framework suggests only badly matched workers to leave their job for joblessness, a job search framework expects overeducation positions rather to be short-term contract jobs, accepted while still or further looking for an adequate job. Moreover, joblessness might scar or stigmatize, thus reducing further chances to enter an adequate job. Hence, we expect recurrent periods of joblessness to combine more frequently with recurrent periods of overeducation than with recurrent periods of adequate education. Again, this will be reinforced by the Belgian EPL's favouring tenured white-collar workers.

The labour market entrant's individual background

When labour markets fail to clear, a process of job competition (Thurow, 1975) is likely to take place, resulting in differences in the risk of overeducation and joblessness depending on the characteristics signalling the productivity of young people. In addition, individual job search and mobility behaviour are likely to play a role. Previous research illustrates that, indeed, many of these factors do determine one's likelihood to be overeducated at a particular point in time (Verhaest and Omey, 2010; Rubb, 2014). Our analysis investigates whether the same factors affect length and recurrence of overeducation spells as well as when in the career they become important. Hence, our hypotheses relate these factors to the individual trajectories³.

A first factor to consider are job search constraints, like having imperfect information regarding job opportunities. Increasing the time to find an adequate job, these constraints may result in a higher likelihood of prolonged joblessness at the career start. Constrained individuals may also be expected to combine their initial joblessness with short-term contract jobs at lower functional levels to solve their cash deficits. The evidence suggests that search constraints do indeed influence the likelihood of overeducation in young workers' first jobs (Verhaest and Omey, 2010). In the case of sticky wages, these initial periods of underemployment may be prolonged and even become permanent problems because of scarring effects for those not managing to escape early enough.

H1: Search constraints increase the probability of being underemployed at the career start and of being persistently underemployed.

H2: Search constraints increase the probability of combining periods of overeducation and joblessness at the start of the career.

Besides job search constraints, spatial constraints and poor local employment conditions could influence overeducation incidence. Büchel and Van Ham (2003) find that car owners and those living in or near urban regions are less likely to be overeducated. Hensen et al (2009) report a similar finding for the more mobile and those living in areas with a higher job density. As with job search constraints, spatial constraints may generate temporary effects as well as more permanent effects because of scarring.

H3: Poor local employment conditions and spatial constraints increase the probability of being underemployed at the career start and of being persistently underemployed.

Individuals differ not only in their search and spatial constraints, but also in their reservation wages. Being less choosy when facing a job offer, one will be less likely to be jobless and more likely to accept a job below one's educational level. Moreover, those who are less choosy will also be less inclined to continue their job search while being overeducated. Therefore, we expect them to be more likely to be permanently overeducated.

H4: Greater willingness to accept jobs decreases the probability of being temporarily or persistently jobless and increases the probability of being persistently overeducated.

Finding a job depends not only on the ability to find employers with suitable vacancies, but also on one's place in the job queue. Due to discrimination, the latter may depend on ascribed characteristics such as ethnicity. Since discrimination reduces the number of job offers, finding an adequate job will take more time. Hence, ethnic minorities run a higher risk to be underemployed at the start of their careers and to become permanently underemployed due to scarring. Several studies find, indeed, that ethnic minorities are more often overeducated (Battu and Sloane, 2002; Rubb, 2011). We investigate to what extent this reflects overeducation to be only temporary or more permanent.

H5: School leavers with a non-Western background are more likely to be underemployed at the career start and to be persistently underemployed.

We also expect gender to matter. More than those of men, women's careers may be influenced by family formation and household decisions. According to Frank (1978), women are restricted in their job choices because the family residence is often chosen in function of the husband's career. Similar restrictions may apply for women attaching relatively more value to a good work-family balance. Some studies do, indeed, find a higher likelihood of being overeducated among women (Rubb, 2014). Given that our sample entered the labour market by age 19 at the latest, we expect household effects to occur only some years after starting the career. Taking also into account the possibility of discrimination results in the following hypothesis:

H6: Women are more likely to be underemployed at the career start, to become underemployed later on and to be persistently underemployed.

An important characteristic determining one's place in the job queue is one's human capital endowment. Yet, even if crucial, the educational level captures only one dimension of this endowment. Several studies show higher overeducation amongst those with lower grades or repeated years (Battu et al., 1999; Verhaest and Omey, 2010), those graduating from low-quality educational institutions (Robst, 1995) and those with less work experience (Sloane et al, 1999). Some youngsters may face moderate skill shortages easily compensated by acquiring early in the career experience at a lower functional level. Others, however, may simply lack the necessary abilities required for a job at their level of education and run a higher risk of persistent joblessness or overeducation.

H7: Secondary education graduates endowed with lower-quality human capital are more likely to be underemployed at the career start and to be persistently underemployed.

Apart from the quality of education, we also expect an impact of the educational orientation. When jobs in one's own field are scarce, a very specific and vocationally oriented education may provide fewer outside options. Hence, generally educated graduates might face a relatively lower risk of persistent overeducation. However, they might lack vocation-specific skills. If so, their most efficient career path could be to acquire these skills in an overeducation position before moving to a higher-level job.

H8: Generally educated individuals are more likely to be overeducated at the career start, but less likely to be persistently overeducated.

Data and methodology

Data

Our analysis is based on data from a representative sample of 3000 Flemish young people from each of two birth cohorts, born respectively in 1976 and 1978. Within the framework of the so-called SONAR project, respondents were interviewed a first time at the age of 23; follow up surveys were conducted at the age of 26, with response rates of about 70%. All work and occupational spells were registered on a monthly basis with an occupational change defined as a change in the tasks to be executed either in the same or in a new firm.

In this paper, we focus on those who left the educational system aged 19 at the latest and acquired a lower or higher secondary education diploma. After finishing compulsory secondary education at 18, Flemish young people face three options: entering the labour market, taking an extra seventh year of secondary education or moving to tertiary education. This means that our age criterion captures those entering the labour market directly after leaving the educational system as well as those who took a seventh year and those dropping out during or immediately after their first year of tertiary education. Using data for the 892 respondents who also participated in the follow-up survey enables us to investigate the first seven years of their career. More specifically, the data allow the construction of career sequences consisting of 84 characters, representing the first 84 months after leaving education.⁴

Overeducation measurement

Our overeducation measure is based on job analysis⁵. Occupations are coded following the 1992 Standard Occupation Classification of the Dutch CBS. This classification consists of five complexity levels, corresponding to the levels of required education: less than lower secondary (<LS), lower secondary (LS), higher secondary (HS), lower tertiary (LT) and higher tertiary (HT) education. School leavers with an LS degree are considered to be overeducated if their occupational level is <LS. Similarly, those with an HS degree are defined

as overeducated if they work in an occupation of level <LS or LS.

For the 1978 birth cohort, CBS codes are available for all occupational spells until age 26. For the 1976 cohort, one collected at age 23 only detailed information for the first and last occupational spell; but detailed information is available for all spells between age 23 and age 26. Hence, we are able to track the match status over the full observation period only for 651 of the 892 individuals in our sample. For each individual, we distinguish the following states: ‘joblessness’ (J)⁶, ‘overeducation’ (O), and ‘good match’ (G). In order to include the remaining 241 individuals, we introduce an additional fourth state: ‘unknown match’ (U). A small number of individuals occupying a job with requirements exceeding their educational level are classified as ‘good matches’, as it is usually found that ‘undereducated’ individuals receive a wage bonus (Hartog, 2000) and are at least as satisfied with their job as adequately educated workers with a similar educational background (Verhaest and Omeij, 2009).

Estimation methodologies

To conduct OMA, we define a matrix for the substitution of states. Since no standard theoretical framework regarding the true transition probabilities between the different states exists, substituting a jobless situation (J) for any of the employed states (O , G or U) and substituting overeducation (O) for a good match (G) are both supposed to imply a cost of 1 in our baseline analysis. For substitutions between one of the known employed states (O or G) and an unknown match (U), we propose a cost of 0.5. To check robustness, we perform additional analyses, considering overeducation as an intermediate situation between ‘joblessness’ and ‘good match’. In this alternative matrix, we specify a cost of 0.5 instead of 1 for a substitution between overeducation and joblessness or good match, and a cost of 1 for a substitution between joblessness and good match. For a substitution between unknown match and joblessness and between unknown match and overeducation or good match, we specify alternative costs of 0.75 and 0.25 respectively. In all analyses, we apply cluster analysis to the computed distances to obtain groups with similar careers. The distances are clustered using centroid linkage with the squared Euclidian distance metric. This linkage delivers the most useful results in the case of outliers (Hair et al., 1998), whereas the squared Euclidian distance metric is usually advised when using this linkage.

To examine our hypotheses, we perform a multinomial logit analysis using the overeducation pattern typology as the dependent variable. The job search constraints hypotheses (H1, H2) are tested indirectly by means of two variables: a dummy for starting job search prior to leaving school, accounting for differences in time constraints and job search intensity, and parental years of education as a proxy for informational constraints since more highly educated parents are likely to be more informed about job opportunities and to have more relevant networks. Spatial constraints (H3) are measured by means of three variables: the degree of urbanization of the home municipality, the regional unemployment rate and the possession of a driving license at labour market entry. To assess choosiness in accepting jobs (H4) we use the four-point Likert question: “To what extent do you agree with the following statement: It is better to take any job than to stay unemployed?” Since this question is answered at age 23 and likely to be influenced by prior labour market experience, some caution is needed when interpreting these results⁷. To capture the role of higher-quality human capital endowments (H7) we use five indicators: study results in the final year⁸, repeated years, a seventh-year degree, some participation in tertiary education and participation in student work. Finally, the impact of educational orientation (H8) is operationalized by means of the track and the role of work placement in the curriculum. As control variables, we also include the educational level, province of residence, birth year and month of leaving school. Summary statistics on all variables can be found in the working paper (Verhaest et al., 2014).⁹

Results

Descriptives

Figure 1 reports the incidence of the different states for the entire observation period. It shows the incidence of joblessness falling over time and stabilizing at about 10% after approximately 3.5 years, whereas the incidence of good matches increases monotonically. About 25% of the sample manages to find an appropriate job within the first 3 months after leaving education. Thereafter, the incidence of good matches still grows but at a much slower rate, resulting in 45% of the sample finding a matching job by the age of 26. A final observation concerns the incidence of overeducation. After having risen to approximately 31% during the first 3 months and reached its maximum of around 45% after 63 months, it starts to decrease slowly, resulting in 42% of the individuals remaining overeducated 7 years after leaving school. The concentration of ‘unknown matches’ in the first half of the period obscures the picture a little. Excluding the individuals with an ‘unknown match’, the incidence of

overeducation is much higher (50%) and peaks sooner (after 3.5 years). Assigning the ‘unknown matches’ to ‘overeducation’ and ‘good match’ on the basis of their relative proportions within each month delivers a similar earlier peak.

Conditional on having a job, overeducation incidence approaches a maximum 14 months after leaving school. Then, 58% of the employed have a level of education higher than required by their job. This percentage hardly drops during the next two years. Thereafter, the decrease is slightly more marked, resulting in a conditional incidence of about 48% by the end of the observation period.

‘Figure 1’

Overall, this picture confirms that in our sample overeducation is high. It also suggests overeducation is persistent. Even if nothing indicates that many young people face a career consisting entirely of overeducation, a significant number need several years to find an appropriate job. However, being based on aggregate statistics, Figure 1 disguises considerable heterogeneity. Table 1 illustrates this heterogeneity, using data on the observed individual sequence patterns. The most frequently observed patterns consist of one period of either a good match or overeducation (*G* or *O*), eventually preceded by one or more months of joblessness (*JG* or *JO*). Other patterns combine one type of match with recurrent periods of joblessness (*JOJO*, *JOJOJO*, *JGJG*). Some groups have a stepping stone pattern (*JOG*, *OG*, *JOJG* or *OUG*), while others are downwardly mobile (*JGO*). Note also that a substantial part of the sample consists of sequence patterns occurring very infrequently.

‘Table 1’

What are the different match paths?

The pattern data in Table 1 do not use information about the differences in length of the different states. We included this information in the sequences on which the OMA and cluster analysis are performed. The resulting typology is presented in Table 2.

‘Table 2’

The two-cluster solution delivers one cluster dominated by good matches and another by the two underemployment states. For 44% of the school leavers their early career was dominated by a good match between the level of education acquired and the level required by their occupation. Further decomposition results in three sub-clusters in the 'good match' group and four sub-clusters in the 'underemployment' group. A first sub-cluster within the 'good match' group consists of young people having an appropriate job for almost the whole of their early career. At most, they are jobless for a few months at the very beginning. Almost 30% of our sample enters such a 'good match career'. Another 11% manages to find an appropriate job, but needs a much longer transitional period of joblessness. Young people experiencing a downward career, i.e. initially finding an appropriate job but moving to a lower occupational level afterwards, constitute the third sub-cluster and represent only 3% of the sample. The first sub-cluster in the 'underemployment' group consists of individuals remaining overeducated for nearly their whole early career and contains about 39% of the entrants. Worse off are the 6% in the second sub-cluster, staying jobless much longer before entering a job below their educational level. Better off are the 7% in the third sub-cluster, who are also overeducated for a long period but ultimately manage to progress to an appropriate job. Finally, a fourth sub-cluster consists of 5% of the sample, staying jobless for the greatest part of the observation period.

These findings further corroborate that overeducation is a relatively persistent problem for the individuals in our sample: a large group of young people face a career of overeducation, whilst downward as well as upward movements in and out of overeducation remain relatively small. The observation that relatively more individuals face an upward than a downward career was also anticipated. We also expected that jobless spells would be much more frequently combined with periods of overeducation than with good match periods. The fact that the proportion of individuals transiting slowly to a good match is higher than the proportion transiting slowly to overeducation seems to contradict this. Yet, time spent in joblessness is substantially lower in the former track. Furthermore, the few months spent in employment by those with a career marked by joblessness are in general characterized by overeducation. Finally, that career patterns characterized by joblessness or overeducation appear in the same cluster also suggests that both career states are often combined.

Using the alternative cost matrix to check robustness (Verhaest et al., 2014) does not lead to major changes in the conclusions. The analysis delivers a similar seven-cluster outcome. The percentage of individuals categorized

in the same way as in the baseline analysis is 84%. For some clusters, the incidences differ slightly, being a little higher for the slow transition to an overeducation career (9%) and a little lower for the slow transition to a good match career.

Who ends up in which career?

To investigate the relation between the trajectories and the characteristics of the secondary education graduates, we ran two multinomial logistic regressions, using the two-cluster and the seven-cluster solution respectively. Table 3 presents the results.

‘Table 3’

The two-cluster outcome is in line with *Hypothesis One* regarding *the effects of job search constraints*. Young people starting their job search prior to leaving school are 6 percentage points less likely to enter a career dominated by underemployment, whereas one extra year of parental education decreases this probability by about 1 percentage point. The seven-cluster outcome even shows that these job search constraints can have persistent effects. Surprisingly, their effect on the likelihood to have only a temporary period of underemployment at career start is statistically insignificant. Finally, in line with *Hypothesis Two* on the combination of periods of joblessness and overeducation in the beginning, we find that starting to look for a job early decreases the likelihood of entering into a slow transition to overeducation pattern.

For *Hypothesis Three*, the results are only straightforward with respect to *local labour market conditions*. On the basis of the two-cluster outcome, there is some evidence that a high regional unemployment rate increases the likelihood of having a career dominated by underemployment. Further decomposition shows that low regional unemployment increases the likelihood of entering into good match and downward career trajectories and also decreases the likelihood of following either of the slow transition paths, thus confirming its effect on both temporary underemployment at the start of the career and on more permanent underemployment. Further, although not anticipated, high regional unemployment decreases the likelihood of a downward career as well. With respect to *spatial constraints*, our hypothesis cannot be corroborated. Those living in a big city are more

likely to follow one of the slow transitions paths, whereas we expected them to have more job opportunities. Moreover, we have no evidence that a driving license is important.

Hypothesis Four - the expectation that a greater *willingness to accept job offers* decreases the likelihood to be jobless and increases the likelihood to be persistently overeducated - is corroborated. Our estimates suggest that those who fully agree with the statement that it is better to accept any job than to stay unemployed have an 18 percentage point higher chance of entering an overeducation career compared with those who fully disagree.

In line with *Hypothesis Five and Six*, we also find that *ascribed characteristics such as gender and non-Western background* are important predictors of underemployment. Whilst both characteristics seem unimportant to explain temporary periods of underemployment at the career start, they do have persistent effects. Young people with a non-Western background are less likely to experience the most preferable good match career trajectory, mirrored by the higher likelihood of a jobless career. Women face a 15 percentage points lower chance of entering the good match group. Moreover, they face a high risk of entering the least preferable slow transition to overeducation and jobless career trajectories. Also the higher probability of downward mobility in the case of women, probably due to family formation, was anticipated.

Our results also confirm *Hypothesis Seven* regarding the *quality of human capital endowments*, although the impact differs for the various components. Better study results decreases the chance of entering an overeducation career, whereas an extra seventh year decreases the likelihood of experiencing the least advantageous paths, i.e. a slow transition to overeducation or a jobless career. Further, repeaters are more likely to transit slowly to a good match, whereas those with some experience in tertiary education are less likely to have an upward career. Finally, those with some experience of student work are less likely to transit slowly to overeducation or to enter a jobless career. While not anticipated, we also find that some human-capital endowments decrease the likelihood of a downward career.

Finally, with respect to *Hypothesis Eight* - the importance of *the general versus the specific nature of the educational track* - our results suggest that school leavers from the general track are less likely to enter an overeducation career. Moreover, work placement, which is usually integrated into the vocational track and

almost absent from the general track, negatively affects the likelihood of moving from overeducation to a good match. Hence, general systems seem to lower the risk of overeducation persistence.

Checking robustness with the alternative cost matrix, the results are generally in line with those reported above (Verhaest et al., 2014). However, for specific variables or clusters some differences appear. For instance, regional unemployment and ethnic background remain statistically significant predictors for the seven-cluster outcome but not for the two-cluster outcome. For other variables, some effects on specific sub clusters are no longer statistically significant. The effect of repeating years, for instance, is not significant for the likelihood of transiting slowly to a good match. On the other hand, some variables turn out to be important for some clusters. Individuals living in a big or regional city, for instance, are found to be less likely to have an overeducation career, while a driving license reduces the likelihood of a jobless career. However, only with respect to two hypotheses the results clearly differ. While the analysis using the alternative matrix also suggests generally educated individuals to be less likely to face an overeducation career, there is no clear evidence pointing to them having an upward career. Further, contrary to hypothesis six, gender does not have an impact on the likelihood of a downward career.

Discussion and conclusions

Our paper presented a detailed picture of how overeducation marks the early labour market experience of young people. Using OMA, we constructed a typology of career paths for a sample of Flemish secondary education graduates on the basis of monthly data for their occupational status in the first seven years after leaving education. Next, we explored factors explaining why particular individuals enter a particular career path.

Our main finding is that overeducation does constitute a persistent problem for many young people. Nearly 40% of our cohort remained overeducated for almost the entire seven years after labour market entry. In addition, another 11% combined periods of overeducation with long periods of joblessness or even stayed out of work for almost the complete observation period. The most likely explanation for this main finding is the combination of a general trend, i.e. technological changes that are disadvantageous for the medium educated, with specific Belgian factors, such as a relatively high compulsory education age and a rather rigid labour market. While earlier studies have also shown a relationship between labour market rigidities and overeducation persistence,

they were mostly based on relatively short observation periods and used less detailed career information.

Yet, experiencing an occasional spell of overeducation need not necessarily constitute a problem for the entire career. Despite being overeducated for a relative long period, 7% of the sample still entered an adequate position, illustrating that moving upward is not impossible. Although our indicator distinguishing general and more vocational tracks is rather crude and the outcome is not completely robust, there are indications that overeducation is more likely to function as a stepping stone for generally educated individuals. Research using more detailed indicators of the orientation of study programmes would therefore be welcome.

In line with results from studies using single spell data, we found factors such as job search and spatial constraints, being female, having a non-Western background or having fewer high-quality human capital endowments to increase the likelihood of following some of the so-called underemployment trajectories. Our analysis points out that these differences in the risk of being underemployed constitute for young people not a merely temporary problem. Particularly interesting in this respect is the finding concerning the willingness to accept jobs. Our analysis shows that lower reservation wages increases the likelihood of being overeducated during almost the entire career, whereas higher reservation wages seem to result in joblessness rather than good matches. This suggests that persistent overeducation is not an ‘apparent’ but a ‘genuine’ problem (Chevalier, 2003), related to a lack of suitable jobs. However, our reservation wage indicator being far from perfect, some caution is needed.

With respect to policy, our results point at some clear challenges. The main and most important policy-relevant conclusion is that, even in the longer term, similar educational levels do not necessarily translate into similar labour market outcomes for all those concerned. Secondary education graduates with an ethnic or less favourable social background are more likely to be underemployed than their peers. This does not imply that educational policy is completely ineffective as a tool for equalizing labour market opportunities. But, if labour market rigidities and job search constraints constitute important differentiating factors, as our findings suggest, educational policies should be accompanied by appropriate labour market policies to be effective. We did not look into how different career trajectories affect well-being or wages and, therefore, some caution is needed with respect to the conclusion that the differences observed in career trajectories across groups are really problematic.

Yet, studies relying on single-spell data suggest that the adverse effects of persistent underemployment can be quite severe.

In addition to the need for looking at wages and psychological well-being, our analysis suggests several other interesting directions for further research, like analyses of other labour market segments and the construction of better indicators for the variables we used. However, the most important task is investigating more thoroughly the importance of additional factors potentially explaining the variety of trajectories as well as the factors sorting young people into them. Our first attempt to apply OMA to the analysis of overeducation patterns adopted a rather explorative approach. Research focused on specific factors may deliver further insights, eventually strengthening or weakening our conclusions. Finally, since the literature indicates that different overeducation measures are likely to produce different results analyses also using more subjective measurement approaches would be welcome.

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¹ For a discussion of the use of joblessness instead of unemployment, see Rees (1986).

² According to the OECD, the output gap was always negative during the years 1994–1997, indicating below potential economic activity.

³ We use the term underemployment when factors are expected to have similar effects on overeducation and joblessness.

⁴ Given that individuals differ in birth year and time of labour market entry, the first character should not represent the same calendar month.

⁵ For a discussion of using job analysis in the context of this paper, we refer to the working papers.

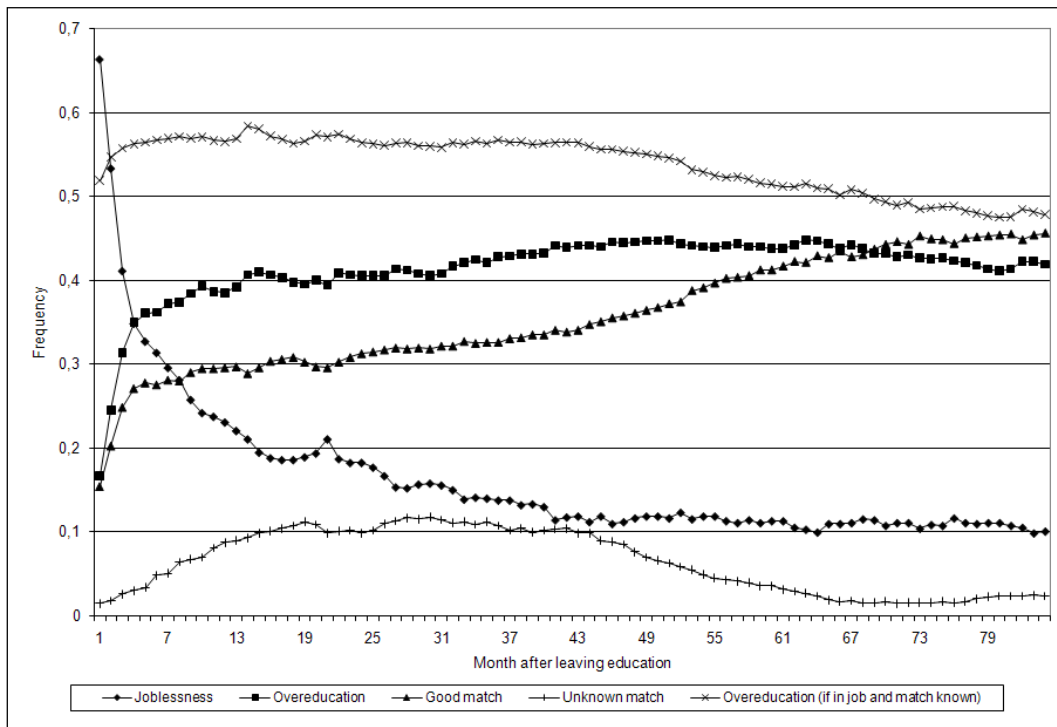
⁶ Maternity and parental leave are not considered to be periods of joblessness in SONAR.

⁷ As a robustness check, we also executed some analyses excluding this variable. These delivered very similar results on the other variables.

⁸ This information is based on subjective assessments.

⁹ For parental education, student work, work placement, and propensity to accept jobs, missing values were imputed by their expected values on the basis of regressions.

Figure 1: Match up to 84 months after leaving school: frequencies[#]



[#]Reported figures are standardised by month of leaving education

Table 1: Most frequent sequence patterns in the sample

Sequence pattern ^(§)	%	Sequence pattern	%
JO	11.7%	JGJG	1.6%
JG	10.1%	JGO	1.5%
G	6.6%	JOJG	1.5%
O	6.4%	OUG	1.3%
JOG	4.3%	OJO	1.2%
JOJO	3.6%	J	1.1%
OG	2.1%	GJG	1.1%
JOJ	2.1%	Other patterns	42.2%
JOJOJO	1.7%		

^(§) These reported patterns neglect spell durations; Period types: J = Joblessness. O = Overeducation. G = Good match. U = Unknown match.

Table 2: Overview results cluster analysis (N=892)

Clusters			Distribu- tion	Average duration time (proportion)				Most frequent sequence patterns		
2 clusters	3 clusters	7 clusters		Jobless- ness (J)	Overedu- cation (O)	Good match (G)	Unknown match (U)	1	2	3
Good match	Good match	Good match career	0.297	0.058	0.017	0.894	0.030	JG	G	JGJG
		Slow transition to good match	0.113	0.280	0.088	0.432	0.200	JG	JOG	JOUG
		Downward career	0.027	0.068	0.398	0.458	0.076	JGO	GOG	GUO
Under- employ- ment	Over- education	Overeducation career	0.388	0.103	0.835	0.013	0.050	JO	O	JOJO
		Upward career	0.068	0.040	0.585	0.323	0.052	JOG	OG	JOJG
	Jobless- ness	Slow transition to overeducation	0.056	0.475	0.362	0.041	0.122	JOJO	JGJO	JO
		Joblessness career	0.050	0.865	0.085	0.036	0.014	J	JOJ	JO

Table 3: Explaining the different career clusters - multinomial logit marginal effects (N=849)

	2 clusters	7 clusters						
	Under-employment	Good match career	Slow transition to good match	Downward career	Overeducation career	Slow transition to overeducation	Upward career	Joblessness career
Start job search prior to leaving school	-0.063**	0.028	0.017	0.010	-0.059*	-0.025**	0.013	0.017
Average years of education parents	-0.013**	0.009	0.004	0.001	-0.004	0.001	0.001	-0.012***
Regional unemployment rate (%)	0.014*	-0.019**	0.014**	-0.008**	0.001	0.008***	0.007	-0.000
<i>Urbanisation (Non-urban = ref.)</i>								
Big or regional city	-0.014	-0.018	0.076*	-0.021**	-0.037	0.042*	-0.040	-0.002
Small city	-0.075*	0.047	0.038	-0.014	-0.068*	0.008	-0.018	0.008
Leaving education with driving licence	-0.060	0.012	0.033	0.017*	-0.052	0.016	-0.011	-0.015
Propensity to accept jobs	0.009	-0.002	-0.014	0.007	0.060***	-0.011	-0.019*	-0.021***
Women	0.122***	-0.146***	-0.000	0.028**	0.032	0.032*	-0.014	0.068***
Non-Western Background	0.118**	-0.119**	0.035	0.036	-0.055	0.011	0.021	0.071**
<i>Relative study results (2nd half = ref.)</i>								
1 st quarter of class in final year	-0.120***	0.100**	-0.014	0.053	-0.130***	-0.016	-0.008	0.016
2 nd quarter of class in final year	-0.007	0.011	-0.028	0.045	-0.017	-0.020	0.008	0.002
Repeating years during education	-0.031	-0.044	0.051**	0.013	-0.027	-0.007	0.010	-0.006
Seventh year degree	-0.101***	0.062	0.033	0.006	-0.024	-0.042***	0.003	-0.038**
Started in tertiary education	-0.063	0.095	0.001	-0.022**	-0.018	-0.007	-0.032***	-0.016
Job student experience	-0.009	-0.017	0.015	0.007	0.032	-0.031***	0.008	-0.014*
<i>Track (Vocational = ref.)</i>								
General	-0.083	0.032	0.039	-0.005	-0.132**	-0.020	0.066	0.020
Technical	-0.085***	0.054	0.024	0.005	-0.033	-0.028	0.026	-0.047***
Apprenticeship	-0.119*	0.040	0.029	0.017	-0.012	-0.036**	-0.014	-0.024***
Work placement during education	-0.002	0.011	-0.005	-0.019	0.013	0.035*	-0.038***	0.002
Pseudo R ²	0.119	0.164						

*: p < 0.10. **: p < 0.05. ***: p < 0.01; also included, but not reported: dummies for higher education degree, school leaving in June, region of residence and cohort.