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Overeducation: concept, theories and empirical evidence

Abstract

The educational expansion experienced in most advanced economies in the past few decades has triggered a thriving debate on overeducation. Research on overeducation has traditionally been addressed from an economic perspective, mainly focusing on wage returns to extra years of education. More recently, the sociological literature has contributed to overeducation research by identifying individual characteristics that help us to differentiate overeducated from non-overeducated workers. Moreover, the sociological perspective has explored more in depth the role of educational and labour market institutions in assessing overeducation incidence and duration across countries. These contributions have eased the path to frame overeducation as a form of social stratification, rather than as an inefficient educational investment in economic terms. The present article reviews the economic literature on overeducation and incorporates the sociological perspective, understanding overeducation as a disadvantageous form of employment.

Key words: overeducation; education institutions; labour market; graduates; returns to education, social stratification

Introduction

Since the publication of Freeman's seminal work *The Overeducated American*, overeducation has been a contested term. The debate on the economic returns to extra years of education posed several questions on higher education expansion and the capability of the labour market to provide high-skilled jobs to fully utilise individuals' and societal educational investment. Consequently, economic research on overeducation mainly focused on the profitability of an extra year of education and its consequences in terms of productivity and job satisfaction.

However, from a sociological standpoint overeducation can be understood as a social phenomenon affecting individuals' social-class position and challenging the role of education as a social mobility mechanism. The literature on labour market stratification has paid a lot of attention to earnings, but fewer efforts have been made to research other labour market outcomes. A range of working conditions, which employees may value in their jobs, defines labour market success and prestige. The utility workers draw from their jobs lies not only in earnings, but also in other aspects of their work (e.g. autonomy, working conditions and prestige). Although some studies show that overeducation has positive results on earnings (Groot & van den Brink, 2000) it does not have such a positive effect on motivation and productivity (Allen & van der Velden, 2001). Overeducated workers may also have a lower motivation towards work, which would have negative consequences for their productivity.

Therefore, I propose to understand overeducation as a new form of labour market stratification, which places overeducated workers in a disadvantaged position in relation to individuals with the same educational level but who are employed in an adequately matched job. My perspective assumes that in a meritocratic society economically active individuals are looking for a job that matches their education. So, from an individual perspective - and assuming that social background and other individual characteristics are not affecting labour market results –two individuals with the same educational level should get a similarly prestigious position in the labour market. The unbalanced presence of overeducation by social background characteristics suggests this is not true. Further, sociological approaches point out to the fact that we cannot assume that social background is of no influence in labour markets.

The main aim of this article is presenting an overview of the state of the art on overeducation showing the contribution of the economic literature to the subject as well as incorporating the social stratification approach to overeducation research and identifying further research steps. The article first defines overeducation and presents different forms of overeducation occurrence. A discussion on the theoretical approaches to overeducation follows, continued by a review of the empirical evidence on overeducation. Finally, the article points to further research on overeducation from a sociological standpoint.

1. What do we mean by overeducation?

Generally speaking, the term ‘overeducation’ can be misleading. One could actually wonder if an individual can get too much education in his/her life. The upgrade in knowledge and skills brought by educational expansion has been regarded as intrinsically good, promoting a knowledge society and positive effects on economic, social, political and health life domains (Hout, 2012; OECD, 2012). However, from an economic perspective a sub-optimal return to human capital investment is a problem both at the individual and the social level; from a sociological perspective, it may deprive education its value as a mechanism for social mobility. Strictly focusing on educational returns in the labour market, some have argued that the benefits of educational expansion reach their ceiling when expansion outpaces the demand for high-skilled positions (Hartog, 2000). Therefore, one’s education can be excessive in relation to the job performed.

Even if the exact definition slightly changes from one article to another, a worker is considered to be overeducated when the education he/she brings to the labour market exceeds that required for his/her occupation or job. Thus, overeducation is basically a mismatch between an individual’s education and the educational requirements to perform the job.

Although this is the most accepted definition, there has been substantial debate on what else overeducation might mean. Economic studies (Freeman, 1976; Rumberger, 1981) first addressed the phenomenon from a human capital perspective, focusing on one of the possible consequences of overeducation, namely, declining economic returns to education. Overeducation has also been understood as the inflation of credentials, meaning that educational requirements to get a job are not rooted in increased technical needs, but in the fact that socialization into the dominant higher-educated culture is a hiring criterion (Burris, 1983). However, this conceptualisation has also been criticised for not considering education as the main source of skills upgrading. Other authors have argued that entry to most desirable jobs is restricted to those who attained very specific academic grades, suggesting that overeducation can be a consequence of professional social closure (Collins, 1979).

Overeducation can also be understood as a form of social stratification. One of the cornerstones of social stratification research is the OED triangle (see Figure 1). If we consider individuals coming

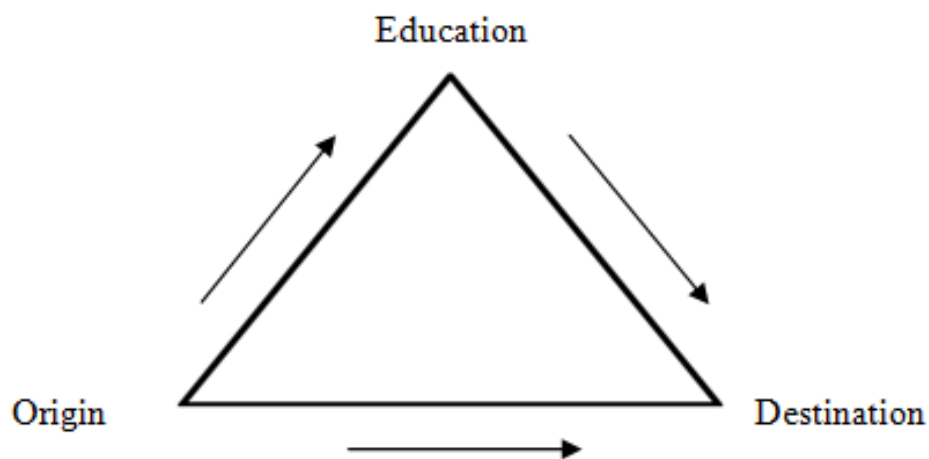
from different social origins attaining the same education results but presenting different labour market outcomes, this is to be considered as a form of social stratification. Individuals' origin (O) still has some influence on the final destination in the labour market structure (D), with education (E) being able to partly mediate social origin influence.

With educational expansion, the relationship between origin and education (OE) has weakened in general terms: all individuals have to invest in education to avoid downward mobility. Inequality in access to education has decreased, but it has been achieved by channelling more disadvantaged students to less prestigious programmes and institutions (Thomsen, 2015; Torche, 2013). According to the 'effectively maintained inequality' thesis, privileged individuals look for qualitative forms to differentiate themselves from others with the same educational level (e.g. enrolling in prestigious institutions) (Lucas, 2001). So, social origin is not only influencing educational level, but also the type of education. Field of study choices also have a lot to do with social background: to avoid downward social mobility, individuals tend to invest in the field of education where they have an advantage based on their father's occupation (van de Werfhorst, 2002). Children from manual-working backgrounds tend to prefer technical fields; children of the self-employed and small employers focus on financial and commercial fields; offspring of farming backgrounds are more likely to enrol in agricultural fields; and children of the service class are more prone to enrol in traditionally prestigious fields with social closure like medicine or law (van de Werfhorst, Sullivan & Yi Cheung, 2003). Therefore, fields of study are influenced by social selectivity and this means different education programmes signal different skills in the labour market. The fact of having a father/mother working in an occupation that matches the studies of the child facilitates the further improvement of knowledge and skills related to the occupation and, therefore, might decrease the probability of later falling into overeducation.

From a sociological perspective, it has been argued that some of the knowledge and skills that are relevant in the labour market can also be gained through family socialization (Jackson, Goldthorpe & Mills, 2005). Evidence provided by employers' surveys shows that some of the most valued skills by employers are non-cognitive ones, such as personal commitment, team working and communication skills (AQU Catalunya, 2015; The Gallup Organization, 2010). Speaking in public, verbal discussion and argumentation are skills that might be learnt at school, influencing

the relationship between education and destination (ED) and, thus, decreasing the probability of overeducation. But non-cognitive skills might be more easily developed and improved in the family environment than at school. If so, this source of skills would influence the relationship between social origins and occupation (OD) and influence the likelihood of overeducation. Therefore, offspring of advantaged families with high educational and occupational attainment might more easily gain these kinds of skills, compared to their counterparts from more disadvantaged social backgrounds (Breen & Goldthorpe, 2001).

Figure1: Origin, Education, Destination (OED) triangle



So far, overeducation has been understood as a form of underemployment (Jensen & Slack, 2003). Similar to fixed-term employment, part-time employment or unemployment, overeducation is to be considered as a disadvantageous situation in reference to adequately matched workers. Individuals may invest on education based on the expected economic returns. However, from a sociological approach, educational investments are not only based on the expected future earnings, but also on the expected social position, type of work and lifestyle. Occupational status is part of individuals' prestige and social position. If some individuals attain a lower position than their peers with similar educational attainment, this is to be understood as a disadvantageous position. These are the main reasons to conceptualise overeducation as a form of social stratification in the labour market.

Overqualification and overskilling are concepts closely related to overeducation. They are often used interchangeably as synonymous terms because they are broadly tackling a similar phenomenon. Strictly speaking, though, they do not refer to the same situation. Overeducation and overqualification address the same phenomenon: the situation in which an individual is working in a position for which he/she has more education than required. The main difference between these two concepts is that overeducation is conceptualised as an excess of educational skills gained in formal education, whereas overqualification sticks to educational credentials.

Overskilling refers to the situation in which workers possess more skills than the ones required to perform the job tasks. The main difference from overeducation is that the focus is on the skills possessed by the individual, regardless of the way they are acquired and the workers' educational credentials. Individuals with the same educational attainment may differ in their skills levels and types. Therefore, an individual could be overeducated, but not overskilled. This would partly justify overeducation from an economic perspective, as individuals' skills would be fully utilised. Nevertheless, from a sociological perspective, it is still unclear why people with the same educational level present different skills levels, strengthening the hypothesis that labour market relevant skills might also be gained in life domains other than schooling, such as family or work experience.

Occupational mismatch, overtraining and underemployment are also closely related terms. The common feature to all of them is that they focus on labour market demand features (occupation, training and employment). Thus, it could be argued that these terms tend to make the demand side (employers and firms) responsible for this mismatch, rather than the supply side (workers and educational institutions). The concept of overeducation has come under scrutiny as it indirectly blames individuals for investing too much in education, while the underemployment literature questions firms for underutilising workers' skills and/or hiring workers for a position they know they are overeducated for, instead of upgrading job tasks to fully utilize them.

Regardless of this conceptual discussion, most of the empirical studies refer to overeducation because they use surveys based on workers' responses (supply side). So far, there is more limited empirical evidence using employers' responses (demand side) or analyses based on information

coming from the jobs or occupations within firms. Therefore, it can be claimed that data availability partly explains why it makes more sense to use the term overeducation over underemployment.

2. Overeducation occurrence

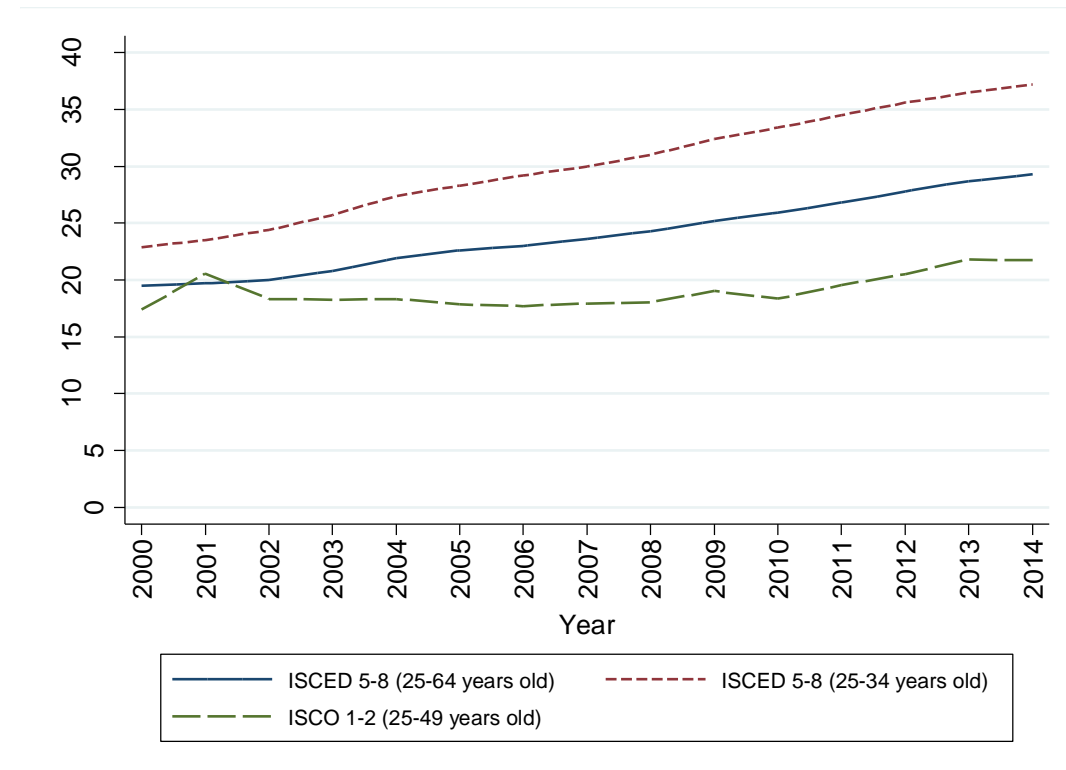
Since the end of World War II, the U.S. experienced an expansion in education intensive industries and occupations, followed by an educational upgrade of the population. During the 1970s it became clear that the pace of individuals' educational upgrading surpassed that of occupations available (Halaby, 1994). This caught the attention and concerns of economists, policy makers, politicians and the younger cohorts who had to balance their educational investments. The new situation raised questions about the positive effect of education on earnings, pointing out that educational attainment had a ceiling in terms of productivity and wage returns (Freeman, 1976). Limited sociological approaches addressed the topic, leaving empirical evidence on overeducation as an economic issue.

Despite these concerns, educational expansion, especially at the tertiary level, is still taking place in most advanced economies. For the past 15 years, European countries have experienced a dramatic increase in the percentage of young workers holding tertiary degrees (ISCED¹ 5-8) (see Figure 2). Concerns about the possible imbalance between supply and demand sides have regained importance given the lower proportion of workers employed in high-skilled positions (ISCO² 1-2 aiming).

¹ International Standard Classification of Education (ISCED). ISCED 5-8 correspond to tertiary education levels, from short-cycle of tertiary education (ISCED 5) to doctoral level (ISCED 8).

² International Standard Classification of Occupations (ISCO). ISCO 1 corresponds to "Managers" occupations and ISCO 2 to "Professionals" occupations.

Figure 2: Evolution of working population and young workers with tertiary educational attainment, European Union (27 members)



Note₁: International Standard Classification of Education (ISCED). ISCED 5-8 correspond to tertiary education levels, from short-cycle of tertiary education (ISCED 5) to doctoral level (ISCED 8).

Note₂: International Standard Classification of Occupations (ISCO). ISCO 1 corresponds to “Managers” occupations and ISCO 2 to “Professionals” occupations.

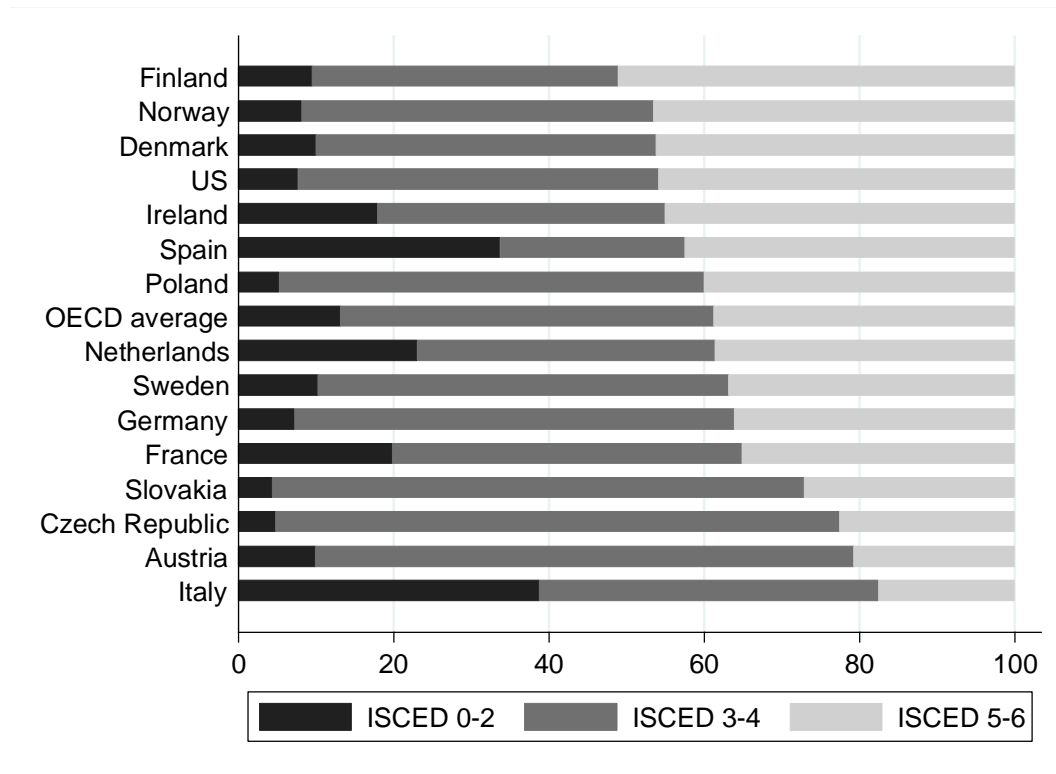
Source: own elaboration, from Eurostat (2015).

However, educational expansion does not necessarily translate into overeducation incidence. Countries not only differ in their supply of educated individuals, but also in the demand for highly educated workers. Larger shares of tertiary educated graduates entering the labour force might increase overeducation figures (Berg, 1970; Livingstone, 2004), but it has also been argued that skills supply (Acemoglu, 1998) and technical progress (Autor, Levy & Murnane, 2003) help to sustain the demand for high skills. Therefore, overeducation incidence does not only depend on the supply of tertiary educated graduates, but also on the labour market demands.

Figures 3 and 4 show the educational attainment of employed individuals and the share of workers employed in high and low skilled jobs by country. This allows us to compare supply and demand sides across countries that differ in their skills strategy. Finland, Norway, Denmark and the U.S. combine above average figures of higher educated workers with a high share of individuals employed in high-skilled jobs. Similarly, Sweden and the Netherlands display close to average figures of higher educated workers with a large share of individuals employed in high-skilled jobs. It has been argued that this high-skills strategy is possible when the welfare state takes an active role as an employer (Esping-Andersen, 1999), although in the U.S. some argue that it is due to skills polarisation (Autor, Katz & Kearney, 2006).

Other countries, such as Spain and Ireland, present above average figures in the percentage of higher educated workers, but their share of workers employed in high-skilled jobs is comparatively lower, which in turn facilitates overeducation occurrence. Conversely, the Czech Republic and Germany present below average percentages of higher educated workers with below average share of workers employed in high-skilled jobs, promoting skills match among medium-skilled workers. Finally, Austria's situation suggests an example of skills shortage: it displays below average figures on higher educated workers, but above average figures on workers employed in high-skilled jobs.

Figure 3: Educational attainment of employed individuals (25-64 years old) by country, 2013

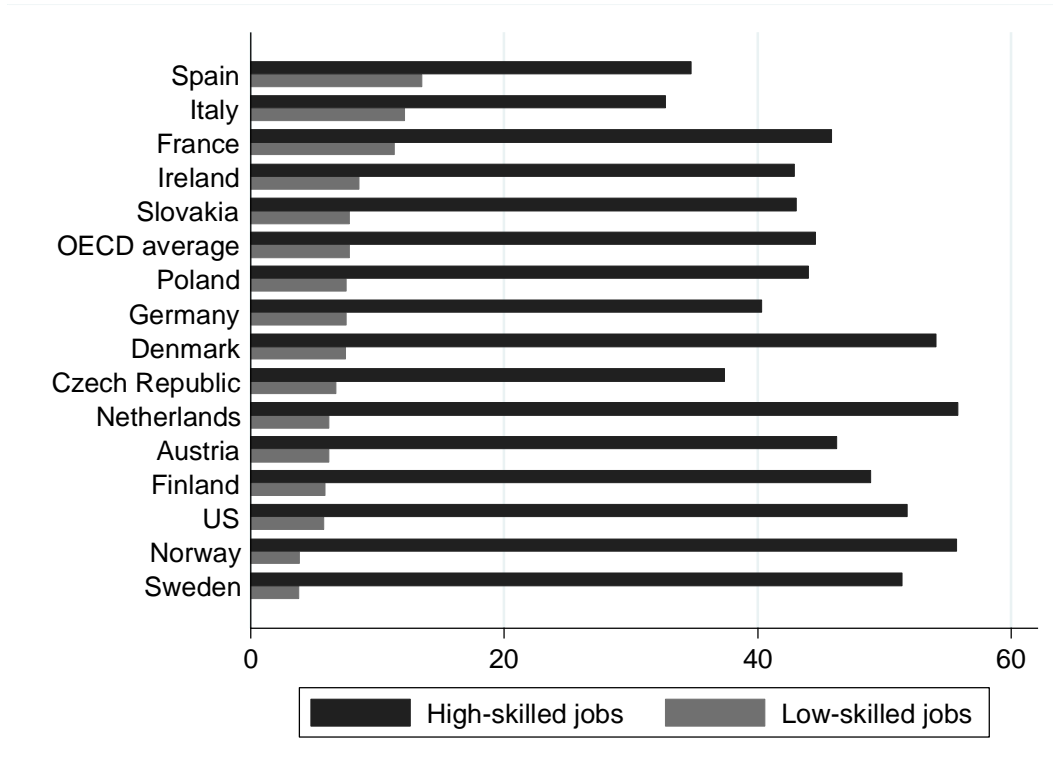


Note₁: International Standard Classification of Education (ISCED). ISCED 0-2 corresponds to lower secondary education levels or below; ISCED 3-4 to upper secondary education level; ISCED 5-8 to tertiary education levels, from short-cycle of tertiary education (ISCED 5) to doctoral level (ISCED 8).

Note₂: Countries ordered in descending order by the percentage of employed workers with ISCED5/6.

Source: own elaboration, from PIAAC (OECD).

Figure 4: Percentage of workers employed in high and low skilled jobs by country, 2013



Note₁: Percentages do not add up to 100% because only high- and low-skilled jobs are shown. Countries ordered in descending order by percentage of workers employed in low-skilled jobs. High-skilled jobs include skilled professions at skill level 4 (ISCED 5-8 required), while low-skilled jobs include elementary occupations at skill level 1 or below (ISCED 1 required).

Note₂: International Standard Classification of Education (ISCED). ISCED 0-2 corresponds to lower secondary education levels or below; ISCED 3-4 to upper secondary education level; ISCED 5-8 to tertiary education levels, from short-cycle of tertiary education (ISCED 5) to doctoral level (ISCED 8).

Source: own elaboration, from PIAAC (OECD).

3. Theoretical approaches to overeducation

So far, theoretical perspectives attempting to explain overeducation occurrence have framed it within existing views of the labour market (McGuinness, 2006). Therefore, it seems that the overeducation literature has served as a way to broaden the human capital framework through the

debate on workers' strategies, preferences and job characteristics to determine wages (Sloane, 2003) rather than developing a single theory addressing overeducation. The sociological contribution to overeducation remains quite modest, although some efforts have been directed at framing overeducation in credentialism and social closure theories.

For the past decades, four approaches have theoretically driven overeducation research from an economic perspective. The core idea and characteristics of these theories are summarised below. They have traditionally been classified in two groups based on the duration of overeducation: those who look at it as a short-term phenomenon and those who understand that it may become a more persistent situation. However, overeducation duration is only one of the characteristics that differentiate them. As summarised in Table 1, I remark that there are other features of these theoretical approaches worth considering: competition with other workers and firms, who is responsible or can solve the mismatch and individuals' preferences.

1. Human Capital Theory (HCT) (Becker, 1964): this theory understands overeducation appearance as a temporary and negligible mismatch due to imperfect information between workers' skills and firms' needs during individuals' job searches. The situation quickly changes because the worker will look for a matched job or the firm will adapt to the worker's education to fully utilize his/her skills and knowledge. HCT assumes that individuals make investments in education in order to use them in the labour market and maximize their utility and wages, while firms are willing to fully utilize workers' skills and knowledge to get the maximum productivity from them. This perspective assumes that both individuals and firms are choosing the best option to get a satisfactory match and no heterogeneity in preferences is contemplated. An extension of HCT is the Matching Theory (Pissarides, 2000), which has the same argumentation but takes firms into consideration in the search process, also making them responsible for the mismatch.
2. Job Competition Model (JCM) (Thurow, 1975): this second theory presents the labour market as constituted by two queues that organise the allocation process: job vacancies and workers. Jobs are ranked hierarchically given the educational level required and other job characteristics. Workers' position in the queue depends on their education level relative to the rest of the workers. Thus, individuals always have more incentives to invest in

education, since they are in a permanent competition for jobs, promoting credential inflation. Individuals with more education get the best jobs, but even workers in the highest positions might be overeducated if there are no jobs left in the queue that match their education level. Overeducation can become quite a permanent state if no new high-skilled jobs are on offer. Thus, the “choice” to have overeducated workers remains as a firm issue, because job characteristics determine workers’ job allocation. One of the underlying assumptions of this model is that all individuals have the same preferences for jobs; and jobs can only be hierarchically ranked in one form.

3. Assignment Theory (Sattinger, 1993): situated between HCT and JCM, the assignment approach stresses that both workers’ and firms’ characteristics play a role in allocating individuals to jobs. As a first step, individuals choose a sector based on their preferences on wage maximization. After this intermediate step, individuals are allocated to jobs based on their educational level, among other personal characteristics. Thus, contrary to HCT and JCM, allocation is based on a non-random distribution of workers in sectors. Overeducation appears when workers’ education exceeds the one required for the job. The mismatch can be solved via individuals’ or firms’ adjustment. Some individuals might be willing to stay in an overeducated position if it maximises firms’ and individuals’ wage and utility. This approach takes into consideration different preferences among workers on their wage maximization, as well as cross-sector and cross-occupation differences in job characteristics.
4. Career/Job Mobility Theory (Sicherman & Galor, 1990): in line with Spence’s Signalling Theory (Spence, 1973), this approach argues that workers become overeducated because they are not able to clearly signal their knowledge and skills, or they are lacking work experience and/or work-specific skills. Overeducated workers may remain in this position shorter or longer, depending on their capacity to clearly signal their skills to employers and/or get their occupation and firm specific skills. So, this approach makes individuals responsible for the mismatch, ignoring the role of job characteristics in the overeducation phenomenon. It also ignores competition among workers. Therefore, it is hard to say if it considers that individuals might have different preferences – for instance for showing or

not showing their skills potential – given different individual situations and strategies of wage and utilisation maximisation.

Table 1: Summary of the main features of overeducation theories

	Authors	Competition with other workers	Nature of the phenomenon	Responsible for mismatch	Individuals' preferences	Main characteristic
Human Capital Theory	Becker (1964)	No	Temporary	Individual (supply side)	Homogeneity assumed	The mismatch can easily be solved via individuals' or firms' adjustment
Matching Theory	Pissarides (2000)	No	Temporary	Individual and firm (supply and demand side)	Homogeneity assumed	Both individuals and firms look for matches
Job Competition Model	Thurow (1975)	Yes	Persistent	Firm (demand side)	Homogeneity assumed	Labour market allocation based on hierarchy of workers and jobs' education level
Assignment Theory	Sattinger (1993)	No	Temporary or Persistent	Individual and firm (supply and demand side)	Heterogeneity assumed	Takes into account individuals' preferences on job/sector/wage maximization

Career/Job Mobility Theory	Sicherman & Galor (1990)	No	Temporary or persistent	Individual (supply side)	No clear assumptions	Individuals unable to properly signal their skills become overeducated
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Nevertheless, reality is far more complex and does not entirely match to any of these ideal models, but might be a mix of them. However, from a conceptual perspective, some have argued that Assignment Theory is the closest model to reality because it takes into consideration job characteristics to understand overeducation occurrence (Kucel, 2011; McGuinness, 2006), while at the same time assuming heterogeneity of preferences among individuals and competition across workers and firms.

From a sociological perspective limited efforts have been directed to explaining the overeducation phenomenon. Credentialism (Burris, 1983) and social closure (Collins, 1979) have been the only approaches to the subject. However, it is urgent to address the subject from a sociological standpoint, as all labour market theories reviewed above lack a clear understanding of the role of social inequality in overeducation. Labour market theories assume that there are no differences among individuals beyond the achieved ones –such as education. They do not take into consideration that ascribed attributes – like social background or gender – might also affect the job searching process, the role of social networks to get a job or the recruitment and hiring process based on opinions, preferences and tastes of employers beyond educational credentials and productivity (e.g. behaviour, manners). Therefore, I believe there is room for contributions to the overeducation literature from a social stratification perspective.

4. Empirical research on overeducation

Empirical research on overeducation initially focused on providing basic statistics at the country level on overeducation incidence and duration to measure the phenomenon. Main concerns were addressed to the economic consequences of overeducation. In fact, in most economic papers overeducation is used as an independent variable because the focus is on earnings as an outcome

variable. Overeducation –understood as extra years of education – was only used to assess how it influences earnings. However, from a sociological standpoint overeducation is usually addressed as a dependent variable: the focus is on the phenomenon itself and in identifying individuals' characteristics that can help us to differentiate overeducated from non-overeducated workers. At the institutional level, the sociological literature focuses on assessing the mediating role of educational and labour market institutions in increasing or decreasing overeducation. In the following subsections, the main research findings from the economic and sociological literature addressing these issues are outlined.

4.1. Overeducation consequences: wage returns and job satisfaction

The Overeducated American (Freeman, 1976) is considered as the seminal work of overeducation academic literature. From a macro-level perspective, Freeman examined the decreasing wage returns to college graduates in the U.S. during a period of higher education expansion (1967-1976). He found that the increasing number of college graduates translated into a surplus of educated workers with regards to the labour market demand. Consequently, wage returns to college graduates decreased. As a labour economist he was mainly focused on wage returns and less worried about other worker outcomes.

Although Freeman predicted further declines in graduates' wage returns, his projections were proven wrong by a number of subsequent studies (Katz & Murphy, 1992; Levy & Murnane, 1992; Smith & Welch, 1978). They suggested that most of the reduction in wage returns experienced by U.S. college graduates during the 1970-80s was due to an increase in the number of individuals in youth cohorts and the slow pace of the labour market to create new jobs (Smith, 1986).

Other American labour economists later addressed wage returns to overeducation from an individual (micro level) perspective (Duncan & Hoffman, 1981; Rumberger, 1981; Sicherman, 1991), followed by other studies providing evidence for Spain (Alba-Ramírez, 1993), Portugal (Kiker & Santos, 1991), the Netherlands (Hartog & Oosterbeek, 1988) and the United Kingdom (Groot & van den Brink, 1997; Sloane, Battu & Seaman, 1999a). Common results to all these studies assessing separately the earnings returns to: a) required years of education (match); b) extra

years of education (overeducation); and c) lacking years of education (undereducation)³ are that wage returns to overeducation are positive, but smaller than to required education. Each year of overeducation provides from one-half to two-thirds of the economic value of one required year of education (Hartog, 2000). The wage penalty is apparently larger for graduates compared to individuals with vocational education and training (Mavromaras, Mcguinness & Fok, 2009), for women (Frank, 1978) and for immigrants (Lindley, 2009), suggesting ascribed characteristics play an important role in overeducation

Besides lower wage returns, overeducation has also been associated with lower productivity and job satisfaction (Allen & van der Velden, 2001; Fleming & Kler, 2008; Green & Zhu, 2010; Verhaest & Omeij, 2010). Based on the negative consequences of overeducation, further interest in the magnitude of the phenomenon and the identification of individuals more prone to experience this situation increased. However, from an economic perspective the interest remained in productivity and wages, rather than in the situation and process of being overeducated and the consequences for workers in terms of social position.

4.2. Overeducation incidence and factors influencing it

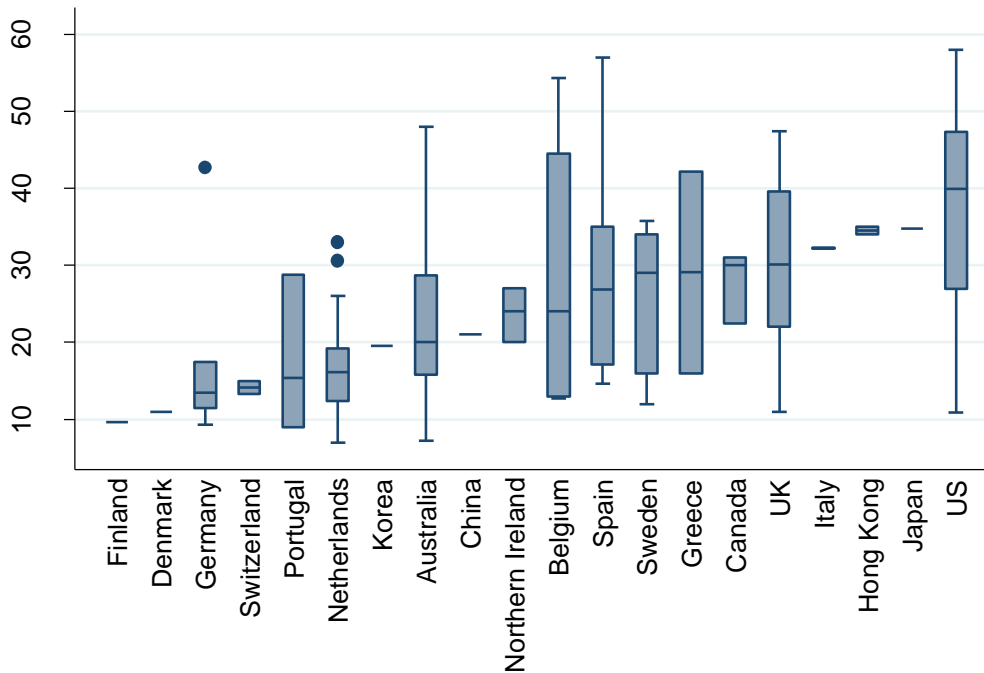
Neither Freeman (1976) nor Rumberger (1981) could demonstrate that wage returns to individuals who attained college degrees were systematically declining, but both showed relevant overeducation figures at the country level, especially among graduates. Since then, several studies have shown that overeducation is a non-negligible phenomenon present in several countries. Drawing from different studies at the national level, Figure 5 illustrates overeducation relevance across countries showing a boxplot for each country with available data. The line in the box shows the median overeducation percentage (Quartile 2) while the two ends of the box show the lower and upper quartiles (Q1 and Q3). The upper and lower lines show the maximum and minimum overeducation percentage registered in the country.

Although part of the cross-national variation can be surely attributed to differences in the time period analysed, the targeted group (either all workers or graduates) and the overeducation

³ In the economic literature, the earnings function separately containing required years of education, extra years of education and lacking years of education is known as the ORU function or model.

measurement employed (objective, subjective, statistical) ⁴, the graph shows that overeducation is a relevant phenomenon across countries.

Figure 5: Overeducation incidence by country



Note: N=108

Source: own elaboration, based on 108 results from 78 studies on overeducation (Groot, W. & van den Brink, 2000; Kucel, 2011; Quintini, 2011a) from different time periods.

Although these figures show the relevance of the phenomenon at the country level, another question remains: who are the overeducated workers? Academic research at the micro individual level has provided empirical evidence of workers' differences based on sociodemographic characteristics such as gender, immigrant background, age, level and type of education and social background. In the following paragraphs the main findings are summarised.

It was first argued that married women would be more prone to be overeducated because they would have to look for a job in a locally restricted labour market, based on their husbands' job

⁴For an extensive discussion on overeducation measurement see Kucel, 2011; Quintini, 2011; Verhaest & Omey, 2006.

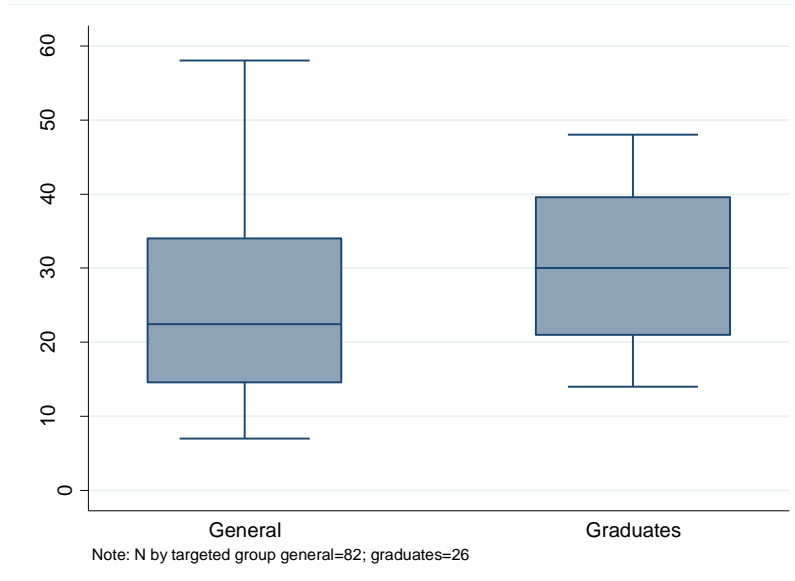
(Frank, 1978). Certainly, there is evidence of more overeducation incidence among married women compared to their husbands, regardless of the size of the labour market (McGoldrick & Robst, 1996). Even when controlling for the possibility to commute women with children are most prone to be overeducated (Büchel & van Ham, 2003). Nevertheless, there are no more up-to-date empirical studies designed to explore gender differences in overeducation. The dramatic increase of women's participation both in higher education and in the labour market might have shaped the incidence of overeducation among women.

Empirical studies also show that individuals with an immigrant background are more likely to experience overeducation (Kler, 2006; Lindley, 2009; OECD, 2008; Storen & Wiers-Jenssen, 2009). Different explanations have been presented to understand this situation. One is labour market discrimination, which can affect immigrants to a larger extent than native workers. Another reason suggested by empirical work is that some immigrants lack or have limited host-country language skills, which makes it difficult to find a job that matches their educational level, especially shortly after their arrival. Last but not least, workers with an immigrant background might encounter some barriers to educational certificate recognition and transferability in the host country, relevant during first job experiences in their new country. The prevalence of any of these might depend on contextual factors.

Evidence also shows that overeducation incidence is more common among young workers (Dekker de Grip & Heijke, 2002; Frei & Sousa-Poza, 2012; Vahey, 2000). Explanations provided by empirical studies include limited working experience and more difficulties in clearly signalling to employers what workers are able to do.

Tertiary educated graduates are one of the groups more likely to experience overeducation for two main reasons: most of them are looking for a job for the first time in their lives and they have the highest educational level. Initial overeducation studies focused on this group. Based on average overeducation incidence, Figure 6 shows that the median overeducation incidence is larger for tertiary educated graduates, compared to the whole working population.

Figure 6: Overeducation incidence by target group



Source: own elaboration, based on 108 results from 78 studies on overeducation (Groot, W. & van den Brink, 2000; Kucel, 2011; Quintini, 2011a) from different time periods.

Differences in overeducation incidence have also been observed among tertiary educated graduates based on different fields of study and institution of graduation. Fields of study have been shown as consistent overeducation predictors in several countries (Barone & Ortiz, 2011; Ortiz & Kucel, 2008; Reimer, Noelke & Kucel, 2008). Scientific and technical fields experience lower overeducation figures, while humanistic and social sciences fields present the larger ones. The main explanation for this differentiated overeducation probability is that while scientific and technical fields tend to provide more occupation-oriented knowledge and skills, humanistic and social science ones tend to equip individuals with general skills not directly transferable to the labour market. Similarly, individuals with vocational education and training experience overeducation to a lesser extent than tertiary educated graduates (Mavromaras & McGuinness, 2012). Credentialism and social closure approaches proposed by sociologists argue that some fields of study - such as medicine or law - are more protected from overeducation because stakeholder groups can regulate the supply of tertiary educated graduates, lowering the demand for that occupation and, consequently, reducing overeducation incidence.

With regard to higher education institutions, empirical evidence demonstrates that those individuals who graduated from higher quality institutions are less prone to be overeducated (Di

Pietro & Cutillo, 2006; McGuinness, 2003; Robst, 1995), which would be in line with the effectively maintained inequality theory (Lucas, 2001). The main explanations are that employers take institutions' quality and prestige as a proxy for tertiary educated graduates' productivity, based on skills and knowledge gained through schooling, but also because of selection criteria. Therefore, according to this reasoning graduates from prestigious institutions are supposed to be the most productive and employers are more likely to hire them in high-skilled positions compared to workers with a similar degree from a less prestigious institution – and probably a more disadvantaged social origin.

Social background has also been pointed to as a factor predicting overeducation probabilities among graduates (Barone & Ortiz, 2011; Mavromaras, McGuinness & Fok, 2009; Mavromaras & McGuinness, 2012). Graduates with higher educated fathers are less likely to be overeducated. Additionally, graduates whose father is a professional are less prone to fall into overeducation. The main explanations are cultural capital, social networks and information attached to their progenitors (e.g. dressing and behavioural codes in interviews, where to look for a job, knowledge of the sector) that facilitates educational job matches. Moreover, the influence of social background varies across fields of study, being more relevant in fields of study providing general skills (e.g. humanities, social sciences) (Capsada-Munsech, 2015).

4.3. Educational institutions and labour market characteristics influencing overeducation

One of the main sociological contributions to the overeducation literature is introducing the role of educational and labour market institutions to address cross-national differences in overeducation (Assirelli, 2015; Barone & Ortiz, 2011; Di Stasio, Bol & van de Werfhorst, 2015; Levels, van der Velden & Di Stasio, 2014; Scherer, 2004; Verhaest & van der Velden, 2013). Tertiary educated graduates with a bachelor's degree are more exposed to overeducation than those who attained a master's degree (Barone & Ortiz, 2011). A master's degree indicates a higher degree of skills and more specific ones, and better signals to employers what the worker is able to do, decreasing the probability of overeducation. This effect is especially accentuated in countries with large numbers of tertiary educated graduates (i.e. the Czech Republic, Norway and Spain). Graduates from vocational colleges are more likely to be overeducated compared to those from universities in

countries where the institutional difference between vocational colleges and universities has been recently implemented and does not fully recognise vocational colleges as tertiary-level courses (i.e. Austria and Finland).

The quality and orientation of the university programme are also relevant predictors of differences in graduates' overeducation probability. Graduates from countries with higher quality programmes and/or more oriented to labour market occupations are less likely to be overeducated compared to countries with a more comprehensive approach to university education (Verhaest & van der Velden, 2013).

Cross-country variation has also been reported on the basis of the vocational orientation of the educational system (Di Stasio, Bol & van de Werfhorst, 2015). Countries with a higher degree of vocational orientation of the education system (i.e. larger share of upper secondary students enrolled in vocational education and training) present lower overeducation figures. These education systems provide specific skills that direct towards an occupation and, thus, reduce overeducation prevalence. However, this is usually at the expense of social inequality, as in these education systems children from a more disadvantageous social origin are more likely to enrol in vocational tracks than children from more socially advantageous families.

Labour market characteristics are also partly associated with variation in graduates' overeducation (Assirelli, 2015; Di Pietro, 2002; Verhaest & van der Velden, 2013). The business cycle and the oversupply of graduates explain some of the cross-country differences in overeducation incidence. Entering the labour market during a recession decreases graduates' probabilities of finding a good match and, thus, falling into overeducation. More inconclusive are results with regard to employment protection laws (EPL): while some argue that strict EPL reduce labour opportunities and, thus, increases overeducation probability (Di Pietro, 2002), others have shown that they have no effect on graduates' overeducation likelihood (Verhaest & van der Velden, 2013). However, more recent research shows EPL is more likely to reduce overeducation probabilities for graduates from occupation oriented fields than for graduates from general fields (Assirelli, 2015). Last but not least, strict regulation of professions is a factor enhancing overeducation among the regulated

fields (e.g. Law, Medicine), while a higher degree of public employment reduces the overeducation incidence differentials across fields of study (Assirelli, 2015).

4.4. Overeducation duration

Theoretical approaches to overeducation differ in their conception of it as a temporary (Robst, 1995; Sichertman, 1991) or a persistent approach (Büchel & Mertens, 2004; Frenette, 2004; McGuinness & Wooden, 2007). Overeducation theories have been empirically tested by a variety of authors who have provided mixed results (Battu, Belfield & Sloane, 2000; Di Stasio, Bol & van de Werfhorst, 2015; Dolton & Vignoles, 2000; Duncan & Hoffman, 1981; Groot & van den Brink, 1997; Sloane, Battu & Seaman, 1999b). Thus, no theory has been stated as prevalent to the others and the debate remains open.

Given these mixed results, some authors have pointed out the possibility that overeducation might be a temporary situation for some individuals, but a long-lasting one for others (Rubb, 2003). This has led to a situation where there is not even a consensus on what is to be considered as a short or long period in overeducation. This in turn has driven the debate as to whether overeducation is a stepping stone to a better job or a trap. The stepping-stone hypothesis has been empirically supported by Frei & Sousa-Poza (2012), who showed that half of overqualified workers in Switzerland move to a matched job within a year. Challenging the previous results, evidence has also been reported supporting the entrapment hypothesis (Baert, Cockx & Verhaest, 2013; Scherer, 2004). Entering the labour market through an underqualified position has a negative influence on subsequent jobs, becoming a trap rather than a stepping stone to more prestigious jobs (Scherer, 2004). This also true for workers who are looking for a job after experiencing a long unemployment spell (Baert, Cockx & Verhaest, 2013).

Further contributions to the overeducation duration debate including educational covariates are still limited (Mavromaras & McGuinness, 2012; Verhaest & van der Velden, 2013). Overskilling is more likely to be a short-term situation for individuals with vocational education and training, but a long-term situation for tertiary educated individuals who fell into an overskilled position (Mavromaras & McGuinness, 2012). Those who graduated from general programmes are more likely to fall into overeducation –compared to those from occupation specific fields. However,

graduates from general fields are more likely to use overeducation as a stepping stone to a matched job (Verhaest & van der Velden, 2013).

Evidence also suggests that overeducation duration varies across countries with different labour market institutions (Scherer, 2004) and university features (Verhaest & van der Velden, 2013). Cross-national differences in overeducation persistence are also present when focusing on graduates (Verhaest & Van Der Velden, 2013). Countries with high overeducation incidence figures experience the highest drop, whereas those with initially low figures experience a more limited reduction. However, there is still room for exploring cross-country differences both in terms of overeducation incidence and duration. Limited attempts have been addressed to classify countries and regions in overeducation typologies.

5. Further steps on overeducation research

Although initial empirical studies on overeducation addressed the phenomenon from an economic perspective, more recent research has analysed the topic from a sociological perspective. Beyond wages and job satisfaction, sociological research on overeducation has provided relevant contributions exploring individual characteristics that help us to identify which workers are more prone to be overeducated. Women, workers with an immigrant background, workers coming from a disadvantaged social origin and young workers are more likely to be overeducated in most countries. Higher educated workers are also more likely to be overeducated, but their probability changes depending on the field of study/programme attained and the prestige of the institution. Moreover, the sociological perspective has also contributed in further assessing the role of educational and labour market institutions in increasing or decreasing overeducation figures across countries and time.

Nevertheless, there are still some gaps to be filled. From a sociological perspective the main concern is placing overeducation at the centre and focusing on the consequences of overeducation in social stratification terms. Further steps can be taken in assessing individual, contextual and structural characteristics that might affect individuals' likelihood of overeducation incidence and persistence. Suggestions for further research can also be organised in these three themes. From an

individual perspective, one of the individual characteristics that remains quite unexplored in relation to overeducation incidence is gender. Gender has not been a major concern among economists, but sociological perspectives can inform empirical and theoretical knowledge on gender differences in overeducation incidence. The issue of duration also remains quite unexplored. From a sociological standpoint, some efforts should be directed to exploring the subjective perspective of overeducated workers to understand if they view overeducation as a stepping stone or a trap and to what extent this varies across individuals with different characteristics.

From a contextual perspective, it is urgent to assess the impact of the recent global economic crisis on overeducation across individuals with different backgrounds and across countries with different educational and labour market institutions. Moving to structural points, recent reforms in the higher education system, such as the Bologna process set in motion in European countries, are also likely to have had an impact on graduates' overeducation. Taken together, these suggestions create the basis for a typology of countries with regards to overeducation incidence and persistence. In sum, the main challenge remains in expanding understanding of overeducation to include individuals' characteristics, contextualizing those characteristics and comparing them across different institutional arrangements to understand overeducation as a form of social stratification instead of an inefficient economic situation in labour market.

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