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There's more to overeducation than a wage penalty: A systematic review of 2011–2021 literature on a vertical job-education mismatch in Europe¹

Abstract

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A massive expansion of education – notably tertiary – has been one of the defining features of the late 20th and early 21st centuries. In parallel, a phenomenon of overeducation emerged as part of employees have been working in jobs below their educational attainment. Current overeducation literature lacks a clear articulation of different contexts that the mismatch is discussed in. Traditionally, the debate about the mismatch has been dominated by the human capital view and focused on its incidence and wage penalty. Acknowledging a broader vision of education and its role, this paper shifts the attention to research directions other than the two fundamental issues. Building on a systematic review of 2011–2021 literature, 11 research lines of overeducation research in Europe were identified and discussed. Results reveal that the 2011–2021 research was focused mainly on migration, persistence, and job satisfaction out of the 11 themes. New research lines were identified and major methodological contributions to existing ones were noted such as using capabilities approach as theoretical framework to assess the interplay between overeducation and well-being. The review also highlights that individual characteristic and a broadly understood environment of the individual impact the risk of entering the mismatch and its consequences. The review provides a fresh perspective on overeducation, emphasizing its complexity and capturing nuances.

Keywords

overeducation; educational mismatch; labor market; education; systematic literature review

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1. Introduction

A massive expansion of education – notably tertiary – has been one of the defining features of the late 20th and early 21st centuries. In developed countries, it has been strongly associated with labor market demands as an economy moved from agrarian to industrial to information based. Developing countries on the other hand have strived for replicating these processes and approaches (Griffin et al., 2012). In parallel, wider purposes of education have been acknowledged in international initiatives such as EFA (Education For All) or MDG (Millennium Development Goals) which hinted at the role of education being a key to the development at a macro-level as well as to the thriving of an individual. Despite that, the actual debate about the purpose of education and its developmental role has been dominated by the instrumental human capital approach. Within it, the argument is reduced mainly to rates of return and the link between years of schooling and earnings, overlooking more humanistic points of view proposed for example by sociology or nonorthodox economic theories (McGrath, 2014).

In most cases along with the educational expansion came a phenomenon of overeducation (Capsada-Munsech, 2019; Groot & Maassen Van Den Brink, 2000) as part of employees worked in jobs below their educational attainment. Unsurprisingly, the debate about overeducation unfolded similarly to the one about education itself. Traditionally grounded in the labor economics perspective, the debate started with Freeman's 1976 book *The Overeducated American* where the author focused on declining rates of return from a college degree in United States which at that time experienced educational boom. Up until today, the incidence and effect on wages remained the main area of interest in the research about overeducation. Since Freeman's seminal work, it became a stylized and frequently reexamined fact that overeducation occurs, tends to be persistent, and entails negative effects to name just wage and job satisfaction penalties (Capsada-Munsech, 2017; McGuinness, 2006).

Nonetheless, the literature about overeducation gradually becomes more diverse. Some researchers look at broader economic questions and incorporate contributions from disciplines other than labor economics in a strict sense - discussing overeducation within various theoretical constructs of economics, sociology, or psychology. This diversity, however, has been paid little attention in to-date review papers. In empirical summaries, reviews gravitate towards the issues of incidence and wage penalty, either fully omitting the broader evidence or mixing it with no clear categorization into determinants and outcomes, subordinate to the incidence (see supplementary table I for the list of reviews).

Like education itself, overeducation deserves a discussion broader than just its impact on the rates of return from additional years of schooling. Acknowledging that, this paper aims to provide a clear roadmap of the current overeducation research other than incidence and wage penalty. Such a roadmap, shifting attention to themes usually at the periphery of the debate, seems necessary to foster future work and promote diverse perspectives on the issue of overeducation.

The paper builds on a systematic review of well-established literature about overeducation in European countries. While the United States has been at the forefront of the expansion of tertiary education (the main reference point in overeducation analyses), the gross enrollment into tertiary education grew in Europe along with a worldwide trend – yet at a sharper pace (World Bank, 2022). Moreover, official targets of the European Union assume further increases in the share of highly educated Europeans (European Union, 2021). This makes a discussion about the overeducation in Europe highly valuable for future prospects while at the same time, the literature is established to the point allowing for a clear categorization. The paper identifies thematic lines of the recent empirical research about overeducation in Europe and synthesizes findings within them. Consequently, it aims to answer two research questions – first about what were the themes of research about overeducation in Europe over the years 2011–2021, and second, what are the key recent contributions within these themes.

2. The concept of (vertical) overeducation

2.1. Definition of overeducation

This paper considers overeducation defined as a situation when one possesses a higher education level than suitable for their job (McGuinness, 2006) – often referred to as *vertical* overeducation. It is narrowed down to the highest level of formal education gained by an individual, meaning that the profile of one's education and the field of study are ignored, just as the knowledge and skills one possessed through non-formal and informal learning.²

² As overeducation is one of many labor market friction types, literature defines mismatches within mentioned areas separately, eg. as field of study mismatch or skill gaps (see eg. [Capsada-Munsech, 2017; McGuinness, Pouliakas et al., 2018] for an overview).

2.2. Theoretical underpinnings

There is no consensus as to the theoretical framework explaining overeducation. It is usually interpreted within chosen economic models – most often human capital, job competition, and signaling – shortly outlined below.

In Becker's *Human Capital Theory* (1964), education reflects an individual's investment in their human capital. One chooses an attainment level that allows them to maximize the present value of future earnings. Firms on the other hand always maximize their profit through maximal utilization of workers' skills. Overeducation is temporal, solved either by an employee switching to a matched job or by a firm adapting to the employee's potential.

Thurow's Job Competition Model (1975), states that most skills needed for a job are acquired through on-the-job training and the role of education is to signal employees' trainability. Labor market allocation happens within two queues of jobs and employees. Individuals with the best competencies will get the best jobs which promotes investment in education (Borjas, 2020). Overeducation happens when the educational requirements in a job queue are below the educational attainment in a workers' queue. Consequently, overeducation might be persistent.

In Spence's signaling theory (1973), education signals individual's capabilities to an employer. Acquisition of a higher education level is costlier for low-productivity workers therefore they resign from achieving it (Borjas, 2020). Consequently, education sorts workers into more and less capable and productive. Overeducation happens when a worker insufficiently signals their value to the employer and persists until they remain unable to do so.

The issue of interpretation within the abovementioned theories is an underlying assumption that individuals are largely equal apart from gained attributes such as education. Overeducation might however interplay with much broader attributes of an individual as well as an employer therefore it is essential to incorporate theoretical approaches from multiple disciplines – especially sociology – in the discourse. To this day, there have been only limited efforts to discuss it within the frames of credentialism (Burris, 1983) and social closure (Collins, 1979) theories of sociology (Capsada-Munsech, 2017).

2.3. Measurement methods

To determine if one is overeducated, a reference attainment level within their occupation needs to be found. Just like in case of theoretical underpinnings, there is no consensus as to how to determine it. It is achieved with different indicators,

broadly classified into three groups: objective (job analysis; relies on official classifications mapping occupations with suitable education levels), empirical (realized matches; finds a reference education level based on a statistical measure calculated from a sample), and subjective (worker self-assessment; relies on questions asked directly to the individual).

There is no consensus as to which measurement approach is superior (see eg. Capsada-Munsech, 2019, Kucel, 2011) for an overview and discussion of methods) however existing reviews suggest that indicators can be considered complementary and yield directionally similar results (Capsada-Munsech, 2019; McGuinness, Pouliakas et al., 2018).

3. Data and methods

The review was designed to identify distinct lines of research within the recent European overeducation literature and synthesize main findings within them. This was achieved with a systematic literature review methodology which allows for structured aggregation, clarification, and interpretation of knowledge (Gessler & Siemer, 2020). The review was guided by a protocol following five stages (Klimas et al., 2020): (1) framing aims and research questions, (2) identifying an initial database of papers, (3) identifying a final database, (4) data analysis and synthesis, (5) data reporting.

In the first stage, existing review articles about vertical overeducation were evaluated to validate research gaps and specify questions. A total of 9 papers published in 2000 or later were identified through a computerized search on Web Of Science, Scopus, and EBSCO. A full list is included in supplementary table 1.

To build an initial database (stage II), Web Of Science was used as a primary source and SCOPUS to further enrich the dataset. The computerized systematic search was run within titles, abstracts, and paper keywords (see details in the table 1). Only peer-reviewed empirical articles were allowed and research areas were narrowed down to business, economics, sociology, psychology, and related fields. An initial search returned 1688 results. Further criteria eliminated duplicates, non-English articles, papers published before 2011, and belonging to an irrelevant field (based on the assigned field of research and title). This step eliminated 60% of records, leading to 689 papers in the initial database.

Table 1*Papers selection process*

STAGE II			
Databases: the Web of Science, SCOPUS			
Keywords: four set of keywords were developed:			
1) (overeducat* OR "over-educat*") NOT horizontal			
2) (mismatch AND (vertical OR education-job* OR job-education OR jobs-education) NOT (horizontal OR undereducat* OR "under-educat*"))			
3) (underemploy* AND (vertical OR education-job* OR job-education OR jobs-education OR overeducat* OR "over-educat*") NOT (horizontal OR undereducat* OR "under-educat*"))			
4) (underemploy* AND (vertical OR education-job* OR job-education OR jobs-education OR overeducat* OR "over-educat*") NOT (horizontal OR undereducat* OR "under-educat*"))			
Inclusion criteria:			
– Search in: title or abstract or keywords			
– Literature type: peer-reviewed			
– Paper type: empirical journal article			
– Language: English			
– Year of publication: 2011–2021			
– Field of research: business / economics / management / social sciences / psychology / mathematics			
	Number of papers		
	Total	WoS	SCOPUS
Total database search results, thereof:	1688	822	866
– <i>duplicates</i>	106	63	43
– <i>duplicates with WOS</i>	466	–	466
– <i>non-English</i>	4	–	4
– <i>published before 2011</i>	388	240	148
– <i>irrelevant field</i>	35	12	23
Initial database:	689	507	182
STAGE III			
Screened through: titles, abstracts and content			
Inclusion criteria:			
– Paper fully focused on the vertical overeducation			
– Paper analyzes European country			
	Number of papers		
	Total	WoS	SCOPUS
Total database search results, thereof:	689	507	182
– <i>job-education mismatch is not a subject</i>	365	248	117
– <i>vertical overeducation is not a subject</i>	49	40	9
– <i>not Europe</i>	93	70	23
– <i>irrelevant based on content screening</i>	61	51	10
Final database	121	98	23

Source: author's research.

In the stage III, screening criteria were applied to the initial database to col- late final set of papers relevant to this study. Three main inclusion criteria are: (i) job-education mismatch is the main research problem, (ii) vertical over- education is analyzed, (iii) European country is analyzed. The screening was performed on titles, keywords, and abstracts respectively. In case this was not enough to classify paper, the content was also screened (mostly data and meth- odology sections). The final database included 121 papers (see supplementary table II for a full list).

In the data analysis stage, papers were organized into thematic lines based on research areas, keywords, main research problems/hypotheses, and variables. Next, thematic synthesis analyses were performed within each research line.

4. Results

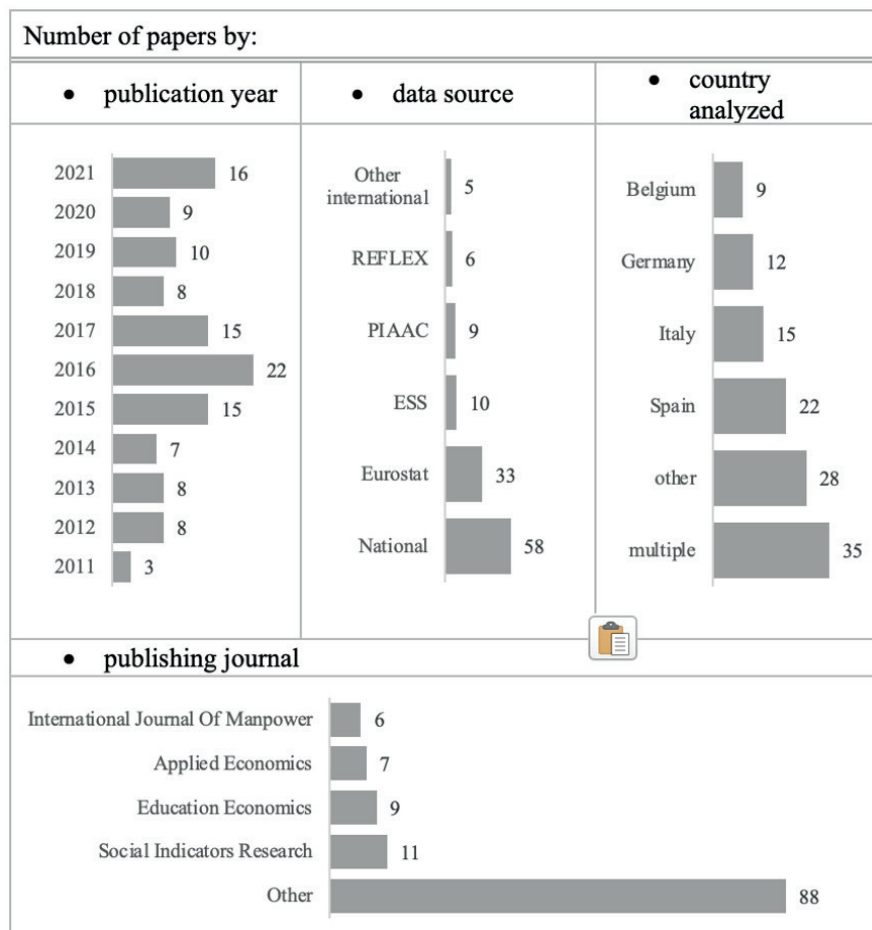
The review allowed to identify 11 distinct lines of research other than overeduca- tion incidence and wage penalty (see table 2 for a quantitative summary). The dis- cussion of results starts with a quantitative overview of the evidence base. Next, the section is organized along the identified themes with each line of research briefly described and synthesized.

4.1. *Quantitative overview of the evidence base*

A quantitative summary of papers included in the final database is shown in the Graph 1. Over the analyzed period, at least 7 articles tackling overeducation in European countries were published each year except 2011. The publishing base is scattered - out of over 70 different journals, only 4 are assigned to more than 5 papers. Also the author's base is highly scattered. Total of 208 authors worked on 121 analyzed papers. The majority (85%) of authors only published one paper while at most 5 papers can be assigned to one person (3 such authors). Official in- ternational and national datasets are equally popular with Eurostat and European Social Survey being a leading source. Most papers are focused only on one country and among countries having a dedicated paper Spain, Italy, and Germany have the broadest coverage.

Graph 1

Quantitative summary of the final papers database (total of 121 papers)



Source: author's research.

Table 2
Quantitative summary of research lines

Theme	Number of papers	Geographies covered ^a	Measurement method (% of papers)				Sources (% of papers)		
			Subjective	Empirical	Objective	Multiple	International	National	Other
Migration	22	Belgium (1), Czech Republic (1), Denmark (1), France (1), Italy (4), Netherlands (1), Spain (3), Sweden (3), UK (2), multiple (5)	23%	55%	14%	9%	50%	45%	5%
Persistence	15	Belgium (1), Cyprus (1), Germany (4), Poland (1), Spain (2), Sweden (1), Switzerland (1), multiple (3)	27%	27%	33%	13%	40%	60%	0%
Job satisfaction	9	Belgium (1), Czech Republic (1), Spain (4), Switzerland (1), multiple (2)	89%	0%	0%	11%	33%	56%	11%
Spatial factors	7	Finland (1), Italy (3), Spain (3)	57%	43%	0%	0%	29%	71%	0%
Health	6	Norway (1), Sweden (2), multiple (3)	0%	17%	17%	67%	50%	50%	0%
Sociological issues	6	Germany (1), Ireland (1), Italy (1), Spain (3)	67%	0%	17%	17%	33%	50%	17%
Life satisfaction	5	Spain (1), UK (1), multiple (3)	60%	20%	20%	0%	80%	20%	0%
Productivity	5	Belgium (4), Germany (1)	0%	100%	0%	0%	20%	100%	0%
Career mobility	2	Germany (2)	0%	0%	100%	0%	0%	100%	0%
Personality traits	2	Germany (1), Poland (1)	50%	50%	0%	0%	50%	50%	0%
Motivation	1	Belgium (1)	0%	0%	100%	0%	0%	100%	0%

^a Number in brackets indicates the of papers covering given geography.

Source: author's own research.

4.2. Overview by research lines

4.2.1. Job satisfaction

Job satisfaction links to overeducation through two main mechanisms. First, educational attainment increases aspirations consequently inflating one's perceived opportunities (Ferrante, 2009). Second, a person-environment mismatch experienced by an overeducated worker might lead to a feeling of comparative disadvantage and dissonance (Voces & Caínzos, 2021).

The analyzed evidence unanimously confirms the negative impact of overeducation on job satisfaction. Across studies, the mismatch is measured subjectively (except Naguib et al. [2019] who check also objective indicator) while job satisfaction both holistically and within detailed dimensions.

Sánchez-Sánchez and McGuinness (2013) run a cross-national analysis on RE-FLEX data concluding that the overall negative impact of overeducation on job satisfaction exists and is not sensitive to any specific competence area. Mateos-Romero and Salinas-Jiménez (2018) run the analysis cross-regionally, finding that the effect is the strongest in Eastern Europe. The overall impact on job satisfaction is confirmed also for Czech Republic (Salahodjaev, 2015) while for Switzerland for subjective but not objective indicator Naguib et al. (2019).

Evidence from Spain points to variations in the overeducation impact when job satisfaction is measured in detailed dimensions (García-Mainar & Montuenga-Gómez, 2020). Lillo-Bañuls and Casado-Díaz (2015) also find a variation with the highest penalty within dimensions of in-company training contentment, promotion options, and monotony-routine (based on 2008–2010 EVCT data). Bedemariam and Ramos (2021) find CSR strategies to alleviate the negative impact on social and extrinsic dimensions of job satisfaction. Another moderator, concluded from Belgian data, is a sense of control at work (Verhaest & Verhofstadt, 2016).

4.2.2. Productivity

The impact of overeducation on productivity was traditionally assessed with proxies: wages or productivity correlates like job satisfaction or turnover. In a 2012 paper, Kampelmann and Rycx introduced a new, direct measure of firm-level productivity being the firm's value added per capita.

Based on 1999–2006 Belgian data, Kampelmann and Rycx (2012) find that empirically measured overeducation positively impacts firm-level productivity and overeducated employees maintain increased productivity throughout their careers. The relationship is especially strong under CSR implementation (promotion of diversity, building long-term relationships with employees) (Giuliano et al.,

2017) as well as certain firm profiles: entities focused on high-skilled jobs, operating in high-tech industry and uncertain environments (Mahy et al., 2015; Vermeylen & Waroquier, 2021). On the other hand, a study of German IAB data indicated no significant impact of overeducation on firm-level productivity (Grunau, 2016).

4.2.3. Career mobility

A career mobility hypothesis states that upward mobility is greater among overeducated workers than matched employees in similar jobs (Robst, 1995). Traditionally operationalized with a proxy - wage dynamics - career mobility has been recently approached directly. Papers within this theme use objective overeducation indicator and leverage German data. Both studies confirm the hypothesis while they use two different benchmark populations.

Grunau and Pecoraro (2017) conclude from 2012–2013 administrative data that overeducated workers are more likely to be promoted to managerial positions (especially early in their careers) than their matched educational peers. This is more pronounced within than across establishments. They also show higher financial gain from promotions. Roller et al. (2020) find a similar pattern when comparing overeducated workers to matched individuals with the same educational attainment (2013–2017 GSOEP data). They measure mobility as a dummy variable stating if one's job requirement level increased and confirm a positive impact of overeducation on mobility and wage growth.

4.2.4. Persistence

This theme tests the hypothesis that overeducation is a stepping stone to matched employment. It builds on career mobility theory stating that overeducation is a temporal tradeoff to enter the labor market and subsequently progress upward professionally (Robst, 1995). Most studies express persistence as a share of workers remaining overeducated in successive periods. Selected works additionally estimate dynamic models determining state dependence.

The evidence indicates that overeducation is a trap, especially early in the career. While exact numbers vary by country and time horizon (see supplementary table III for details), the average persistence rate for 20 European countries is 43% in a 5-year period (Verhaest & van der Velden, 2013). Selected individual characteristics reinforce the probability of remaining overeducated – analyzed papers point especially to graduation from a general program (Verhaest & van der Velden, 2013), being a male or an immigrant (Joona et al., 2014). Tertiary education links to higher persistence risk in the long term while vocational in the short term (Schmelzer & Schneider, 2020).

4.2.5. Life satisfaction

The negative effect of overeducation induced by the aspiration and comparison mechanisms might spill to overall life satisfaction (Piper, 2015). Artés et al. (2014) were first to include an explicit life satisfaction variable in overeducation research.

Evidence confirms a hypothesis that overeducation decreases life satisfaction. Artés et al. (2014) investigate EU-ESS data to conclude that subjective overeducation negatively impacts life satisfaction (measured with two direct questions), relative to similarly educated peers. They find no such impact compared to adequately matched colleagues. The negative effect was later confirmed on the same data by Salinas-Jiménez et al. (2016) and on BHPS data for young Brits using empirically measured overeducation (Piper, 2015).

Ilieva-Trichkova and Boyadjieva (2021) extend the analysis of the impact on life satisfaction leveraging well-being as understood within Sen's capability approach. Using European Social Survey, they examine the impact of subjective overeducation on subjective well-being in multiple dimensions. Overeducated graduates turn out to score lower than matched graduates in terms of autonomy, competence, sense of meaning, and recognition. The effect is more pronounced in countries with higher GDP and fully democratic systems.

4.2.6. Health

While more education is associated with better health (Cutler & Lleras-Muney, 2006), overeducation is researched as a condition limiting this relationship. Papers analyzed within the health theme look at the relationship between overeducation and depressive symptoms, self-rated health (SRH), and sickness absence. Depression symptoms are measured using a shortened Center for Epidemiologic Studies Depression Scale while the SRH is operationalized through a direct question. Most studies leverage objective overeducation measure combined with either empirical or objective.

Bracke et al. (2013) find overeducation to be linked to higher depressive symptoms occurrence. The relationship appears stronger in countries characterized by low economic returns to education (Bracke et al., 2014) or high unemployment rate (Dudal & Bracke, 2019).

Results regarding overall health are less conclusive. In Sweden, Hultin et al. (2016) show no association between overeducation and SHR for men while for women a negative impact occurs only relative to matched female graduates within the same occupation. No impact of overeducation on psychological distress is found. Dunlavy et al. (2016) demonstrate that overeducated migrants in Sweden show a higher probability of poor SHR than matched natives. Finally, Norwegian

data (2003–2013) reveals higher probability of long-term absence among overeducated workers (Madsen & Kittelsen Røberg, 2021).

4.2.7. Personality traits

Personality traits (non-cognitive skills) may affect one's labor market performance through channels such as occupational choices or job searching behaviors while also affecting educational paths. Blázquez and Budría (2012) were the first to examine the impact of personality traits on overeducation. Using 2000–2008 German SOEP they conclude that individuals with high conscientiousness, extraversion, and external locus of control while also low openness have a lower risk of remaining overeducated. The effect is moderated by educational attainment (impact weaker for graduates). Palczyńska (2021) examines Poles in paid employment (2014/2015 postPIAAC data), concluding that contrary to agreeableness, conscientiousness decreases subjective overeducation risk for young workers while personality traits do not moderate overeducation wage penalty.

4.2.8. Motivation

Key theoretical models explaining overeducation assume that participation in higher education is driven purely by the improvement of future position in the labor market. The motivation theme builds on the extension of the neoclassical model of educational demand which states that one's participation is not only due to investment but also consumption (Kodde & Ritzen, 1984).

Sellami et al. (2019) were the first to investigate the relationship between overeducation and motives to participate in tertiary education. They show that the mismatch risk is higher for individuals driven by student life consumption and investment and lower for those driven by educational consumption and social norms. The second part of their analysis reveals that overeducated graduates motivated by educational consumption face stronger job dissatisfaction.

4.2.9. Social background and network

Social origin plays an important role both in educational attainment and occupational position (Kucel, 2011). Education had been long perceived as a channel for social mobility. In line with the human capital theory, the modernization hypothesis states that the socio-economic position of a graduate is independent of their social origin. However, the recent empirical evidence supports a contrary constructs such as reproduction hypothesis (Torche, 2013) which is a premise to investigate social mobility and stratification against overeducation.

The sociological theme investigates social origins, networks, and stratification. The background is proxied either as parental education level or father's occupation. Social networks are measured with a number of ties and frequency of contact.

Higher social origin (employed, highly educated parents) and more extensive social bonding decrease overeducation probability. Marqués Perales and Gil-Hernández (2015) find such a relationship for Spain using REFLEX data and objective overeducation and it is later confirmed with subjective and objective measures on PIAAC data (Capsada-Munsech, 2020). Capsada-Munsech (2015) states that in Italy the relationship is especially strong among graduates of general fields (ISTAT data, subjective overeducation). (Erdsiek, 2016) highlights that in Germany the family background determines the mismatch in early career stages (HIS Graduate Panel, subjective overeducation). Among international graduates in Ireland, possessing more ties with Irish natives allowed international graduates to reduce the mismatch risk (Wang, 2021).

Voces and Caínzos (2021) assessed an impact of subjective overeducation on social stratification image. While they found that job and economic satisfaction are negatively impacted by the mismatch, there was no interplay with the image of social stratification.

4.2.10. Migration

As there is a general agreement that immigrants face a higher risk of overeducation than natives, recent migration literature focuses on explaining this difference (Piracha & Vadean, 2013). Papers within this theme looked at the issue separately for the 1st and 2nd generation of immigrants.

The evidence base generally confirms that 1st generation immigrants face a higher risk of overeducation and wage penalty than natives although this difference declines with the time spent in the host country. In particular, settlers from certain ethnic groups face higher risk (Khoudja, 2018; Rafferty, 2012). In Spain, immigrants from developing countries, with a distant culture and language (the latter confirmed cross-nationally by Cim et al. [2020]) are in a worse position (Sanromá et al., 2015). On the other hand, a cross-country study based on EU-ESS suggests that economic conditions and labor market institutions in the destination country are a more significant factor in terms of the risk of overeducation (Aleksynska & Tritah, 2013). The same study concludes that empirically overeducated immigrants are self-selected – in line with later Novotny's finding concerning subjectively overeducated immigrants to Eastern Europe (Nowotny, 2016).

Some individual characteristics are found to diminish overeducation risk: more professional experience gained in a host country (Nielsen, 2011), a higher level of civic involvement (Griesshaber & Seibel, 2015), searching for a job through a personal network (Meurs & Valat, 2019) or being a native speaker (Cim et al., 2020). Where one works also matters. Working in a skilled occupation (Cim et al., 2020) and in big companies where working conditions are negotiated collectively (Jacobs et al., 2020) lowers the risk of overeducation – similar to self-employment (Ulcuse, 2020).

Separate analyses are dedicated to the 2nd generation. Overeducation probability drops for immigrants' children in Sweden irrespective of their parental composition. The rate diverges to natives for daughters but not for sons (Dahlstedt, 2015). In Netherlands, both genders in the 2nd generation show similar overeducation prevalence to natives (Khoudja, 2018).

4.2.11. Spatial factors

This theme is centered around the assumption that most people look for job opportunities locally. Initiated by Frank's theory of differential overeducation (1978), this stream was further developed by Büchel and van Ham (2003) who proposed a model linking overeducation to local labor market characteristics and spatial flexibility for all workers.

Papers look at two groups of variables. The first is spatial flexibility understood as commuting (car or public transport availability and relative travel time or distance) or internal migration (if one moved to take a job). The second group includes regional labor market characteristics: size, unemployment rate, and job density.

Increased commuting ability (Devillanova, 2013; di Paolo et al., 2017) and living in a large labor market (Jauhiainen, 2011; Ramos & Sanromá, 2013; Romaní et al., 2016) are found to improve job-education match. Car availability is especially helpful for females, as di Paolo et al. (2017) show on 2001 Spanish census data. Results regarding internal migration and unemployment are mixed. Jauhiainen (2011) data proves on 2001 Finnish census that overeducation is negatively affected by internal migration while di Paolo et al. (2017) confirm such a relationship in Germany but only for males. Italian data yield unambiguous results with the effect varying by region (Iammarino & Marinelli, 2015). Local unemployment is found positively related to overeducation for Italian females by di Paolo et al. (2017), contrary to Ramos and Sanromá (2013) findings. Jauhiainen (2011) finds it insignificant.

5. Discussion

In a dominating yet rather instrumentalist rhetoric about overeducation centered around its incidence and associated wage penalty, the case is simple: overeducation is a limiting factor to benefits from educational expansion. In this view, education is purely a way to enhance productivity and ultimately earnings - therefore if not fully utilized in a labor market, it poses a loss for all stakeholders: employee, employer and a state (in case of public education funding). In such an approach, overeducation is undoubtedly a negative phenomenon, associated with lower wages and sunk costs.

Such a perspective is fully justified when looking purely from a labor market perspective however it misses a richer vision of education – a vision that recognizes both its intrinsic and instrumental value as well as its externalities such as the positive effect of having more literate people around or a social capital within families (Hossain & Psacharopoulos, 1994). In a more humanistic approach, education goes beyond years of schooling and higher productivity and has a significant role in enhancing individuals' lives, promoting human capability, shaping societies, or mitigating various crises. It impacts individuals as well as communities and nations. Only once such a full picture and different contexts are considered, should we judge about the nature of overeducation. This paper aimed to create a roadmap of the current overeducation literature in Europe which looks at topics other than incidence and wage penalty in order to stimulate such a broader discussion.

The paper revealed a growing diversity of overeducation research which poses a solid base for future work. Although studies are still focused predominantly on the incidence and wage penalty, the evidence base allowed to identify 11 other distinct lines of research in the recent European literature about overeducation. While part of them is already well-grounded (especially migration, spatial factors, and job satisfaction themes), the last decade marked also new directions of research which could be further explored (e.g. impact of personality traits or the interplay with motives to participate in higher education). Analyzed papers are primarily grounded in economics however contributions from sociology, psychology, and healthcare are also present. This is especially valuable and should be highlighted as collaboration across disciplines is needed to accurately assess what determines overeducation and to what extent its consequences are negative.

The literature reviewed in this paper contributes to recognizing that individuals vary and that those differences do impact the probability of entering the state of overeducation. Overeducation is more prevalent among individuals with certain personality traits while among graduates the risk varies depending on why they decided to follow tertiary education. It clearly shows that overeducation is a state

going beyond the relationship between educational supply and demand. Due to their nature, certain people might be at a higher risk of mismatch even if their education is adequate for the needs of potential employers. Further work aiming to understand how a person's characteristics impact their (mis)match on the labor market will be of huge importance – especially if incorporating the point of view of sociology and psychology. For a full picture, this should be done along with an assessment of overeducation consequences.

Another area to be noted is how the broadly understood individual's environment impacts the overeducation state. The papers included in this review pointed to at least three facets. The risk of entering the mismatch is found to be determined by one's social origin and the strength of social ties. Negative consequences of that state are found to be alleviated by a specific work environment, for example introduced CSR strategies. A national context – economic conditions and labor market institutions – was found to affect the probability of the mismatch among immigrants. These findings highlight how an individual is embedded in a broader context – whether it's a family, work, or a country they live in – and that all these contexts impact their condition. Acknowledging that is a key to understanding what drives overeducation and if it is a negative phenomenon. The perception of experiencing the mismatch might differ dramatically depending e.g. on socio-economic background. An overeducated person from a wealthy family holding diplomas for generations probably experiences overeducation differently from an individual mismatched in the same way but for whom earning a degree itself was a social mobility up. From that perspective, identifying areas that alleviate the negative consequences of overeducation (and on the other hand those which worsen them) is an especially interesting and important research direction.

Last but not least, this review allows for assessing the impact of overeducation in a broader sense than the impact on wages. It is already a stylized fact that overeducated workers are characterized by decreased job satisfaction. Selected research lines identify further negative consequences such as more prevalent depressive symptoms, or more frequent long-term sickness absence. The intensity of these issues seems to depend upon individual context (gender, migration background, country of residence) which even further stresses the need to recognize the interaction between one's background and overeducation consequences. Further, including a capabilities approach in assessing an impact on life satisfaction is a valuable contribution that should be further investigated. And last, while the evidence is still scarce, novel measurement methods suggest that overeducation might be beneficial for career trajectory and firm productivity - further research in this direction might be of huge practical value.

6. Conclusions

Through a systematic literature review, this study provided a clear overview of topics that overeducation literature in Europe focused on in the years 2011–2021. The study confirmed that incidence and wage effect are dominating perspectives in the existing literature, being a main research problem in over 1/3 of all analyzed empirical papers. Based on the remaining texts, this study captured 11 distinct research lines other than the incidence and wage effect, revealing a growing diversity of the overeducation analysis. The paper facilitates a discussion about overeducation acknowledging a broader vision of education than that proposed by strictly human capital approach.

The study revealed several gaps in the existing literature. Given that evidence in selected themes is yet scarce, both measurement methods and geographies could be further diversified. Some themes fully rely on one overeducation indicator (career mobility, productivity, and motivation) while others have modest geographical profiles (in 8 out of 11 themes there is a dedicated study for at most 3 countries). Moreover, novel directions of research were noted and should be continued in the future research. This includes among others the impact of personality traits and motives to participate in higher education as determinants of overeducation. In other, already constituted themes, major contributions such as an explicit measurement of career mobility, the inclusion of public transport in the context of spatial factors or capabilities approach in the discussion around the interplay between overeducation and life satisfaction are a basis to be further developed.

The paper does not remain without limitations. First, it relies only on papers published in English. The impact of the language bias may however be minimal given that publications in peer-reviewed journals are written mainly in English. Other limitations were introduced to operate on a manageable number of papers while maintaining the database informative. The time frame is 2011–2021 – a typical time limit for mature subject reviews (Cronin et al., 2008). Second, grey literature is omitted assuming that if highly valuable, it is ultimately published in a peer-reviewed journal. Finally, papers are assigned to themes based on keywords and the main research problem – selected contributions could have been missed if being a minor element of a paper. While this does not perturb a general review, future papers covering a narrower scope can address this constraint.

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