Why education matters to employers: a vignette study in Italy, England and the Netherlands

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Chapter 1

Introduction
1.1. Why should we study whether education matters to employers?

The fact that education leads to better labour market prospects, certainly in terms of higher earnings and more prestigious occupations, is probably one of the least disputed findings in the social sciences. In particular, the relationship between the possession of educational qualifications and various labour market outcomes has been the focus of a very extensive social stratification literature. Already in the seventies, some authors described education as a great equalizer that would gradually reduce differences in occupational attainment due to ascribed characteristics (e.g. parental background) and possibly pave the way to a more meritocratic society (Blau and Duncan 1967; Treiman 1970; Featherman and Hauser 1978). Scholarly interest in the subject has been stimulated by the dramatic expansion in the educational attainment of the population registered in many countries during the second half of the twentieth century. The gradual transformation of education from an elite institution to an institution for the masses implied that also children from lower classes had access to schools, and presumably to better opportunities, in the workplace and in society at large. In many Western countries, this fact was turned into a political battle cry that promoted education as a legitimate equalizer that would redress inequalities related to the “accident of birth” between members of advantaged and less advantaged groups.

More than fifty years on since the take-off of educational expansion (Schofer and Meyer 2005), the conventional wisdom is somewhat less optimistic, probably due to the alarmingly high level of youth unemployment registered in many OECD countries for low-educated and highly educated alike. In the current times of economic crisis, the prospects of youth in their respective national labour markets appear particularly disheartening, and education is perceived by the many as a far cry from a social mobility escalator. Although the economic downturn has affected different countries to varying degrees, unemployment is a threat looming large for the youngest cohorts of workers. With many businesses closing shop or forced to collective dismissals, last in-first out principles may scar youth for the future. Forecasts show that school leavers currently searching for a job are left with no sigh of relief, due to the strategies adopted by most firms to cope with the crisis: an across-the-board freeze on hiring and a one-sided focus on budget restraints at the neglect of job creation.

Despite the economic unrest, however, much of the political discourse at the national and at the European level hinges on a staunch defence of education. The goals set in the European Commission’s 2020 strategy of 40% of tertiary graduates aged between 30 and 34 and of less than 10% of early school-leavers are particularly telling in this respect. Even at times when the integration of youth into the labour market is visibly under strain, education is regarded by policy-makers as the currency for success. This is a sign that education is still perceived to be an investment for the future which may
improve youth prospects in nowadays knowledge economy.

On aggregate, the crisis has had sweeping effects on the number of available jobs, causing a reduction of turnover at the level of the economy. Yet, the lowest educated have had to bear most of the brunt, a trend reflected in international unemployment statistics. According to Eurostat data, the unemployment rate of youth below the age of 25 in the EU27 was at 22.7% in the last quarter of 2012, with an increase of more than seven percentage points since the beginning of the crisis. Nevertheless, the unemployment rate of youth with less than upper secondary education was almost twice as much the unemployment rate of tertiary degree holders. Even in bad times, education seems to give an edge during the search for a job.

On closer inspection, the more favourable labour market situation of the highly educated displays wide variation across countries, with Germany, Austria and the Netherlands in the lead and the Southern European countries (Italy, Portugal and Greece and Spain in particular) bringing up the rear. In the spring of 2011, Spanish youth took to the street to protest against the high unemployment rate that had left their hopes sorely unfulfilled. The name of the movement, indignados (the outraged), is suggestive of their disillusionment, partly deriving from the fact that the economic crisis had hit low- and high-educated alike. Arguably, the importance of schooling for individuals and for society at large is all the more evident when education seems to have reneged on its promises of labour market success. Yet, at the same time of the Spanish upheaval, Germany and the Netherlands were standing out in international comparison for the exceptionally low number of jobless youth (Eurostat yearbook 2013). A debate originated in policy-making circles about whether the lesson from these countries could pave the way to economic recovery in the most depressed areas of Europe, and even overseas. Is the model of employer-sponsored apprenticeships that has saved many German and Dutch youth from unemployment exportable?

What this question ultimately comes down to is the institutional foundation of youth transitions from school to work, an aspect that has attracted a great deal of scholarly attention in the field of sociology, and one that constitutes the backbone of this monograph. To put it simple, countries are at variance not only with regard to the employment prospects of school leavers, but also with respect to both the education system in which education is attained and the organization of the labour markets in which a job is found. The institutional framework in which the association between education and labour market rewards (or lack thereof) comes about warrants closer investigation. Therefore, the virtuous model of Germany could not so easily be transplanted in Spain.

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1 As an example, in Italy, Germany was considered the gold standard of successful integration of youth into the labour market in the parliamentary discussions that led to the approval of the legislative decree 167/2011 that reformed the existing legislation on apprenticeships (Testo Unico dell’apprendistato).
and the education effect should be properly contextualized.

To begin with, the actors primarily responsible for the allocation of youth into the labour market, i.e. employers, should be the focus of analysis. The education payoff is the outcome of a decision-making process of employers and job seekers, who represent the matching of demand and supply in real labour markets. Hence, when one is interested in why education is associated to labour market gains and how strongly this relationship holds true, the perceptions of those who are placing a premium on schooling are of fundamental importance. Also in practical terms, income and a stable job are necessarily consequential to entering the labour market, a phase during which employers are the gatekeepers. Trying to capture how education features in employers’ decision-making is even more relevant in times of crisis, where jobs are scarce and competition is fierce. Given the large pool of labour to choose from, employers should have ample opportunities to hone their hiring strategies. Employers, however, when surveyed about the employability of school leavers, express widespread concerns about the skills, attitudes, motivations and work-readiness of graduates and non-graduates alike, complaints that do not square well with the high unemployment rates of youth registered all over Europe.

Two observations are in order. First, the term ‘education’ has to be unpacked. Information about one’s education biography comes in many different forms: credentialed in a degree, signalled by a good mark on a school transcript, recognized in an employer-sponsored apprenticeship; but also uncertified in an unfinished diploma, or informally acknowledged through networks of business contacts. Some of these characteristics may be more influential than others in channelling job-seekers into the labour market. In any event, any of these attributes can exert a role only to the extent that employers take it into consideration during the hiring process.

Second, the type of information that employers can gain from these characteristics is dependent on the context in which the hiring process takes place and information is transferred. Specifically, institutions provide the framework within which employers’ hiring decisions take shape. Institutions define the structure of the education system in a given country: the number and type of curricula available to students, the composition of the student population, the timing of the transition between different tracks and the way skills and knowledge acquired in school are relevant for a given occupational domain. Institutions also define the involvement of employers in the provision of on-the-job training, the availability of promotions and options for career advancement within the hiring organization, and the constraints on dismissals pending on employers. This institutional framework is expected to affect the way employers interpret the educational qualifications of prospective employees, and the importance attached to specific educational features (e.g. level of education, field of study, grades, study duration) during the hiring process.
Chapter 1: Introduction

To return to the country comparison discussed above, German employers make their hiring decisions in an institutional context which is fairly dissimilar to the Spanish one. When hiring new employees, the information that German employers can infer from the educational pedigree of applying candidates is qualitatively different than that which is provided to their Spanish counterparts. Employers in the two countries are likely driven by different reasons in placing a premium on education, reasons that depend on the institutional context in which the hiring takes place. The same holds for employers in other countries. Therefore, as argued by Van de Werfhorst (2011a), in order to fully appreciate the education payoff in the labour market, it is useful to relate existing theories to the context where their predictions would be most applicable. Such theorizing, and its empirical testing, is the focus of this book.

1.2. Education and labour market outcomes: conditional support for three matching mechanisms

As anticipated at the outset, the relationship between education and labour market gains has been thoroughly discussed in scholarly research, receiving sustained attention for more than half a century. The general finding that highly educated workers earn, on average, higher wages and are employed in more prestigious jobs has been further qualified in some important ways. As for the outcomes under study, the interest has ranged from income and occupational status of the first job (Breen, Hannan, and O’Leary 1995) to the duration of first job search (Bernardi 2003; Bernardi, Gangl, and Van de Werfhorst 2004), the occurrence of unemployment spells in the early career (Shavit and Müller 2000; Smyth and McCoy 2011), or the likelihood of finding a permanent job (Van der Velden and Wolbers 2007).

Broadly speaking, studies about the relationship between schooling and various labour market outcomes are associated with two types of scholarship which, as argued by Van de Werfhorst (2011a), have developed independently. A first body of literature focuses on the explanatory mechanisms that can account for the education payoff (what the author calls ‘mechanism contest’ approaches). A second group of studies explores how strongly education is rewarded in the labour market in different institutional contexts (the predominant approach of comparative stratification scholars). Studies in the former tradition have compared the predictive power of alternative explanatory mechanisms in a given country (Layard and Psacharopoulos 1974; Groot and

2 Despite the vast literature on the subject, this relationship is not treated uncritically by scholars in the field, nor is it taken for granted. Some authors have challenged the importance of educational qualifications, both as a certifying basis for specific forms of skills or expertise and as a signal of unobservable attributes related to someone’s productivity (Jackson, Goldthorpe, and Mills 2005:10).
Oosterbeek 1994; Jaeger and Page 1996). These contributions are, however, not comparative, and the patterns described might be due to the particular country under study. The opposite approach is found in the second tradition, which explored variation in the size of the education payoff across countries, but neglected the underlying explanatory mechanisms. As an example, the comparative volume on transitions from education to work edited by Müller and Gangl (2003) pays careful attention to the institutional and structural context in which school-to-work transitions occur in a large number of European countries. However, the analysis is based on the strong assumption that "the general mechanisms that lead to job-person matches between an individual school leaver and a job or a series of successive jobs are basically the same in the different countries" (Müller and Gangl: 3).

With regard to the first type of scholarship, a number of explanations have been proposed to clarify what type of information education sends to employers at the moment of hiring. First, human capital theory (Mincer 1958; Becker 1964, 1993) argues that education is rewarded in the labour market because it augments on-the-job productivity of workers. A second perspective argues that productivity cannot be revealed prior to labour market entry and education is a signal of unobservable abilities that are only indirectly related to productivity (Arrow 1973; Spence 1974; Thurow 1975; cf. Weiss 1995 for a comparison of the two approaches). A third interpretation comes from sociologists, who called into question the relationship between education and productivity and argued that, irrespective of productivity gains, education serves the purpose of maintaining and reproducing cleavages in the social structure (Berg 1970; Bourdieu and Passeron 1977; Collins 1979; Weeden 2002). More recently, the debate has attracted the interest of a few scholars (Rosenbaum et al. 1990; Bills 2003; Van de Werfhorst 2011a), who have tried to systematize previous work on the role of education in the labour market. From a demand-side perspective, these theories identify three different mechanisms as to why education matters to employers during the hiring process: 1) productivity-enhancement; 2) signalling of trainability; 3) means for social closure. As the three mechanisms deal with the role of education when job-seekers are matched to jobs, I will refer to them as matching mechanisms\(^3\).

Moving to the second type of scholarship, the institutional foundations of school to work transition systems have been at the core of comparative stratification research for more than twenty years (Allmendinger 1989; Kerckhoff 1995; Hannan, Raffe, and Smyth 1997; Shavit and Müller 1998;)

\(^3\) Matching mechanisms as treated in this monograph should not be confused with theories of job matching that focus on the match between individual productivity and the job as tenure increases, and on the conditions under which employees decide to change jobs once their level of productivity has been revealed (Jovanovic 1979). These theories deal with job turnover and job search decisions of employees after their level of productivity has been revealed on the job and do not address the factors that lead to a job match in the first place.
Chapter 1: Introduction

Müller and Gangl 2003; Mayer and Solga 2008). Institutional arrangements of both the national education system and of the labour market affect youth entry into employment, and the patterns of their labour market integration. According to this view, “individual expectations and actions are dependent on stable institutional settings” (Müller and Gangl 2003: 6). Institutions are enduring sets of arrangements that provide the macro-level opportunity structures within which employers and employees operate. Among the institutions discussed, a central place is commonly taken by the structure of the national education system, the existence of specific curricula for the provision of vocational training, and the regulation of employment relationships and job mobility within the national labour market.

This book departs from studies that have given analytical focus exclusively to the strength of the education effect, while leaving the mechanisms that underlie this effect largely unexplored. As argued by Van de Werfhorst (2011a: 522), “the role of education may well vary strongly across settings, even in cases where the effects are of similar size”. For this reason, it is important to dig deeper into the question why education pays off, while at the same time maintaining comparative breadth. This amounts to provide a “conditional support” (van de Werfhorst 2011b: 1089) to the matching mechanisms, asking the question why employers reward education in a given institutional context. In other words, matching mechanisms are not invariant, but conditional on the institutional framework in which employers and employees are matched, an aspect that will be introduced in more detail in the next section.

1.3. The research questions

A fundamental stage situated at the interface between the education system and the labour market is youth entry into employment: the education effect is most likely stronger at the start of the career, when employers have little to no information about one's performance and rely on education to take a fairly reasonable guess (Bills 1988a). Kerckhoff (1976: 378) raised very crucial questions that should be addressed in order to come to a better understanding of the link between education and labour market entry that, over the years, have remained largely unanswered. First, “what criteria are used by personnel officers besides setting a floor of educational attainment?” Second, “to what extent does one actually learn something in school that is needed on the job?” With my research, I will try to connect these two questions. The extent to which schools impart job-relevant skills is strictly related to the context in which education is acquired and the job is performed: i.e. institutional arrangements of the education system and of the labour market. In turn, these contextual factors are expected to affect the criteria used by personnel officers when interpreting the educational pedigree of job seekers and the reason why they place a premium on education. In other words, the mechanisms why
education matters to employers are expected to vary depending on the context in which the hiring takes place.

In line with the interpretation put forward by Van de Werfhorst (2011b), I will argue the case for bridging the two research agendas introduced in the previous section, in order to provide a conditional support for one or the other explanatory mechanism. Cross-national variation in the role of schooling is not limited to its strength - i.e. how much education pays off in a given context - but it concerns also the underlying mechanisms as to why it does pay off. This insight has been tested empirically by a few, recent contributions (Van de Werfhorst 2009; Bol and Van de Werfhorst 2011; Matković and Kogan 2012) that provide conditional support to the various mechanisms. These studies refer to different countries (the Netherlands, the United States, Serbia, Croatia, and fifteen European countries in the study of Bol and van de Werfhorst 2011), proving that results are not driven by the case selection, and that the argument is solid.

In this monograph, I heavily draw from this recent literature. One important difference, however, is that while the studies cited above have exclusively targeted employees, inferring employers’ behaviour from supply-side data, this book focuses on the decision-making of employers. As argued by Jackson, Goldthorpe, and Mills (2005: 10) “education does not influence the chances of individuals obtaining particular kinds of employment in some quite automatic way, independently, as it were, of human action. Education has an effect in this regard only in so far as it is taken into account by employers (or their agents) in the decisions they make about hiring, retaining, promoting, etc.” Specifically, I will focus on employers’ hiring decisions. Breen et al. (1995), in a study about Irish school leavers, already hinted at the idea that institutions give shape to the decision-making of employers during the hiring process, with an impact on the education components that are perceived as important hiring criteria. It is useful to report a quote from this study, as their intuition corresponds to the research questions that I set out to answer in this book:

“The set of criteria potentially available for use by employers will depend upon the education system, but which is used in any given context will depend upon which aspects of educational performance are perceived to be relevant by those who determine what these rewards will be. This, in turn, will depend, to a large extent, on the nature of the institutional links between the education system and the labour market”.

(Breen et al. 1995: 71)

According to the three matching mechanisms introduced above, employers are said to reward education because it enhances employee productivity (human capital theory), because it signals positive attributes that are associated with lower training costs for the employer (sorting models), or because it is a closure practice (social closure theories). Two types of closure are distinguished:
closure by degrees, when entry into occupations is restricted to holders of specific credentials; and closure by networks, when entry is dependent on school-firm networks or other types of connections between the school and the employer (i.e. internships). In order to capture the prevalence of one or the other mechanism, it is argued that various types of educational features should be simultaneously considered in the assessment of the education effect at entry into the labour market (e.g. grades and years of schooling and study duration). Different mechanisms expect different education-related aspects in the résumé of job applicants to affect employers’ hiring decisions. Therefore, I will formulate a theory that specifies which components of educational attainment should matter to employers at point of hire and under what circumstances, taking into account the institutional framework in which employers operate, as well as a set of structures, incentives and constraints that are internal to their organization.

Drawing from new institutionalism in sociology (Brinton and Nee 1998) and the model of “choice-within-constraints” of Nee and Ingram (1998) and Ingram and Clay (2000), I situate employers’ hiring behaviour within a three-layered analytical framework, which takes into account: 1) the national institutional context; and 2) the organization in which employers’ hiring decisions are formulated. Employers’ interpretation of educational features at the micro-level is embedded within organizations which, in turn, are located in different countries. At the national level, countries vary with regard to their education systems and labour market regimes, and with respect to the arrangements that characterize youth transitions from school to work. At the organizational level, organizations vary with regard to a number of factors that determine whether employment relationships approximate an open or closed form (Sørensen 1983). To name a few, I will focus on the type of job for which the hiring is made, the recruitment channels activated to reach out to potential employees, the amount of training anticipated and provided by the hiring organization, etc. I expect employers’ hiring behaviour to be affected by both the national and the organizational level, thus giving analytical leverage to the meso-level of the organization, which has been neglected by earlier studies.

The following research questions are addressed throughout the book:

i) Which educational features do employers consider important when hiring prospective employees in three markedly different institutional contexts? And which are disregarded?

ii) Which explanatory mechanisms can account for employers’ responsiveness to specific educational features?

iii) Are there (complementary) institutional and organizational arrangements that render one mechanism more plausible than others?
1.4. The design of the research

In order to provide a convincing answer to the research questions introduced in section 1.3, it is important that the research design maximizes the sources of inferential leverage for lending conditional support to the matching mechanisms while at the same time ruling out alternative explanations.

1.4.1. Country selection

The selection of case studies should guarantee sufficient variation in the explanatory variable. As the goal of the research is to investigate whether institutions render one matching mechanism more plausible than others, there should be enough variation in the institutions under study. Hence, the focus is on three European countries characterized by markedly different institutional contexts: Italy, the Netherlands and England. These countries represent three ideal-typical modes of school-to-work transitions identified in earlier research (Gangl 2001; Müller and Gangl 2003).

In the Netherlands, the education system has a strong vocational component, and a high level of employment protection. England scores low on both the indicators, whereas Italy is an intermediate case, with high employment protection but low vocational specificity. Employers in the three countries are expected to respond in different ways to the educational qualifications of job applicants. For instance, horizontal differentiation of education into vocationally specific programmes is likely to be more important in the Netherlands than in Italy or England. The Dutch labour market is characterized by tighter linkages between the occupational structure and vocational education, at both secondary and tertiary levels. Therefore, the enrolment of a candidate in a highly specific vocational track should represent a more reliable hiring screen in the Netherlands than in Italy or England. In the latter countries, vocational programmes are scarcely attuned to labour market requirements and the coupling between educational qualifications and occupational titles is rather weak. These case-studies will be extensively discussed in chapter 3.

1.4.2. Sector selection

In order to emphasize the use of educational qualifications during the hiring process, it is sensible to study sectors of the economy in which education plays a non-negligible role, by truncating the bottom segment of the labour market from the analysis and concentrating on a sector with higher educational

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4 Only England is considered, instead of the United Kingdom as a whole. This is because, as explained by Raffe et al. (1999), the education systems of England, Scotland, Wales and Northern Ireland differ to such an extent that, instead of considering this internal variation as a nuisance, it would be more appropriate to treat them as 'home internationals' and study them separately.
requirements. The Information, Communication and Technology sector (henceforth ICT) seemed to be the most appropriate choice. ICT workers are typically more highly educated than the rest of the labour force, with an average educational attainment of post-secondary education\(^5\). Even more importantly, this choice maximizes cross-country comparability. Distinctive characteristics of the ICT sector are common to the three countries: an industrial landscape mainly composed of small firms, dominated by a few large players and concentrated in regional clusters; a volatile labour demand, dependent on globalization processes and service-oriented; a highly educated labour supply, primarily male, younger than average and characterized by a high turnover rate. Training intensity is a distinctive feature of the ICT sector: the fast pace of technological innovation poses a challenge to the capacity of formal education to provide the skills that are needed at the workplace, heightening the training demands of ICT firms. Arguably, this is the economic sector where the needs related to the skill formation of the workforce are most comparable.

Structural business statistics compiled by Eurostat present data on business demographic variables, input-related variables (e.g. labour input in terms of employment and hours worked) and output-related variables (e.g. turnover and value added) broken down by economic sectors. In order to prove the comparability of the ICT sector across countries, some of these statistics are reported in table 1.1 for NACE code 62 “Computer programming, consultancy and related activities” (which was used as a sampling frame for contacting employers, as explained into detail in chapter 4). As shown in the table, business demographic variables, such as share of enterprises and share of employees, are nearly identical in the three countries, confirming that the industrial landscape for this sector of the economy is very comparable across countries. Small enterprises (employing from 10 to 49 employees) represent about 80% of all enterprises with more than 10 employees. Large enterprises (with more than 250 employees) are only 3% of the total, but they do account for half of the employment in the sector (after excluding micro-enterprises with less than 10 employees). With regard to output, turnover per person employed is comparable in England and the Netherlands, but lower in Italy. Average personnel costs are roughly the same in the three countries and consistently higher than in other non-financial business activities. Wage-adjusted labour productivity is higher in the United Kingdom, the country with the largest share of EU-27 value added for computer consultancy activities and registering the highest profitability across Member States (i.e. gross operating rate). For the Information and Communication Technology sector as a whole, wage-adjusted labour productivity is 177.70 in Italy, 178.5 in the United Kingdom and 170.6 in the Netherlands: compared

\(^5\) This holds also in Italy, a country characterized by a relatively low number of highly educated employees in other sectors of the economy.
to all other economic activities, ICT is the sector with the smallest differentials in wage-adjusted labour productivity across countries.

Besides being similar in terms of size, enterprises in the ICT sector are also distributed in regional clusters in all three countries: in the London area and South East England, in the North of Italy, and in the region of the Randstad in the Netherlands. Employees have a younger age profile than in the rest of the workforce, women are under-represented and entry qualifications are higher than the average in the economy as a whole, as shown in a number of sector-specific reports in the three countries (for Italy: Unioncamere – Ministero del Lavoro, Sistema informativo Excelsior 2012; for England: e-skills UK 2012; for the Netherlands: ICT-Office 2012).
### Table 1.1. Statistics for Computer programming, consultancy and related activities

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<th></th>
<th>Italy</th>
<th>United Kingdom</th>
<th>Netherlands</th>
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<tbody>
<tr>
<td>Number of enterprises</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10-49 employees</td>
<td>2537</td>
<td>4307</td>
<td>1320</td>
</tr>
<tr>
<td>50-249 employees</td>
<td>386</td>
<td>789</td>
<td>267</td>
</tr>
<tr>
<td>More than 250 employees</td>
<td>91</td>
<td>131</td>
<td>44</td>
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</tbody>
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Enterprises as share of the total with more than 10 employees (%)

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<th>Italy</th>
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<th>Netherlands</th>
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<tbody>
<tr>
<td>10-49 employees</td>
<td>83</td>
<td>82</td>
<td>81</td>
</tr>
<tr>
<td>50-249 employees</td>
<td>14</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>More than 250 employees</td>
<td>3</td>
<td>3</td>
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Number of employees

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<tbody>
<tr>
<td>10-49 employees</td>
<td>44896</td>
<td>101528</td>
<td>19194</td>
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<tr>
<td>50-249 employees</td>
<td>38042</td>
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<tr>
<td>More than 250 employees</td>
<td>81181</td>
<td>148853</td>
<td>48838</td>
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Employees as share of the total in enterprises with more than 10 employees (%)

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<th>Italy</th>
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<th>Netherlands</th>
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<tbody>
<tr>
<td>10-49 employees</td>
<td>27</td>
<td>30</td>
<td>20</td>
</tr>
<tr>
<td>50-249 employees</td>
<td>23</td>
<td>26</td>
<td>28</td>
</tr>
<tr>
<td>More than 250 employees</td>
<td>49</td>
<td>44</td>
<td>51</td>
</tr>
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Turnover per person employed (thousand euro)

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<tr>
<td></td>
<td>127.7</td>
<td>141.7</td>
<td>148.7</td>
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Wage-adjusted labour productivity ratio\(^a\)

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<td></td>
<td>112.4</td>
<td>154.9</td>
<td>121.9</td>
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Average personnel cost (thousand euro)\(^b\)

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<tr>
<td></td>
<td>52.9</td>
<td>50.9</td>
<td>58.6</td>
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Gross operating rate (%)\(^c\)

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<tr>
<td></td>
<td>14.6</td>
<td>23.1</td>
<td>14.1</td>
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\(^a\) = Value added divided by personnel costs, which is then adjusted by the share of total employees in the total number of persons employed. As this indicator is based on expenditure for labour input rather than a headcount of labour input, it is relevant for comparison across countries with different incidence of part-time or self-employment.

\(^b\) = Total remuneration, in cash or in kind, payable by an employer to an employee for work carried out. This is divided by the number of employees.

\(^c\) = Indicator of profitability that corresponds to the share of gross operating surplus in turnover. The gross operating surplus is the surplus generated by operating activities after the labour factor input has been recompensed. Turnover is the total of all sales (excluding VAT) of goods and services carried out by the enterprise of a given sector during the reference period.
A focus on one specific sector of the economy is an unusual choice for the study of school-to-work transitions, as this field of research has been “dominated by a form of methodological nationalism” (Raffe 2012: 10). However, institutions are not uniformly spread across sectors and firms within a given country. The tendency to reduce the empirical variety of institutional arrangements to broad typologies or country clusters has been discussed more critically within the varieties of capitalism literature (e.g. Allen 2004). To the extent that economic actors deal with sector-specific challenges within the existing institutional framework, national systems are less variegated than usually assumed (Casper, Lehrer, and Soskice 1999; Casper and Withley 2004; Crouch and Farrell 2004; Crouch, Schröder, and Voelzkow 2009; Lange 2009). Some authors even talk about sectoral models of industrial relations (Bechter, Brandl, and Meardi 2012) or employment models in flux (Bosch, Lehndorff, and Rubery 2009). These studies tested, at the aggregate level, whether certain types of sectors (e.g. high-tech services, such as the software, biotechnology and pharmaceuticals industries) can thrive only if specific institutional arrangements at the national level are present, or whether – in order to cope with sector-specific challenges - deviations from the national pattern may occur (Crouch et al. 2009). Although the focus of my analysis is not at the aggregate level of the economy, I borrow from these approaches the idea that sector-specific challenges can question the usefulness of the institutional context in explaining the decision-making of economic actors, in my case employers’ hiring behaviour.

By choosing this highly comparable sector, the research design approximates a crucial case-study (Gerring 2001), also known as least-likely case-study, as I look for cross-country variation where it is least likely to occur. Berrebi-Hoffmann et al. (2010: 86) follow a similar logic in their four-country comparison of systems of skill formation, industrial relations and career mobility patterns within the IT services. As IT services are a highly internationalised sector, any “argument about the importance of the interaction with the host national employment model, if it holds good, is even more likely to apply to other, less internationalised, knowledge economy sectors”6. Likewise, using a least-likely case study, I set out to explore variation in the role of education in employers’ hiring decisions. While keeping constant sector-specific characteristics and focusing on the economic sector where occupational requirements and skill profiles are most comparable, I can more confidently relate variation in employers’ use of educational qualifications to the institutional and organizational context within which employers operate, thus providing solid conditional support for the matching mechanisms.

6 Indeed, some studies identify in the rise of the service sector and the diffusion of technological innovations new challenges that could place severe strains on national skill regimes (Culpepper and Finegold, 1999; Culpepper and Thelen 2008).
Besides improving analytical leverage, studying employers’ hiring behaviour in the ICT sector is important for substantial reasons. ICT is a relatively recent branch, where the linkages between education and the labour market are still in the making. BusinessEurope, the association of employers at the European level, has publicly voiced its concerns about the shortage of ICT professionals in the economy. The lack of properly qualified personnel in the ICT sector seems to be due, on the one hand, to the low inflow into ICT-related curricula at the tertiary level of education (as demonstrated by the decrease in enrolments rate in countries like Italy and England) combined with a rise in the ICT professionals leaving for retirement; on the other hand, mismatches or skill shortages also result from the constantly changing business needs of this sector (EU Skills Panorama 2012). According to recent estimations, for the year 2010 in Europe there was a lack of 300000 highly skilled ICT professionals, something that clashes with the mounting unemployment rate registered in many countries. This makes the study of employers’ hiring processes within the ICT sector all the more important in order to understand how an optimal allocation of school leavers to the labour market may be pursued.

1.4.3. Selection of the outcome variable

With regard to the outcome under study, the decision to focus on employers’ hiring behaviour can be motivated on different grounds. First, compared to income, entry into jobs is less influenced by variation that is due to wage-setting institutions, and thus more amenable to cross-country comparisons. Second, when studying the income of youth there is a risk of underestimating the education effect, as their earning profiles may be characterized by a gradual increase over time, depending on age and seniority. If so, the overall effect of education on income may be fully appreciated only in the long run. This is not the case when studying job matching. Third, studies that focus on income (especially income derived from earnings) are usually limited to the working population. To the extent that the lowest educated individuals are less likely to be employed, the income gaps are artificially reduced in such analyses (again, the education effect on income would be underestimated). Instead, rejected job applicants should be looked at more closely in order to fully understand the role of education in channelling school leavers into jobs. In order to do so, it is important to include in the analysis those who did not make it through the entire hiring process.

This research considers both rejected and successful applicants, based on a vignette study, a technique introduced in sociology by Rossi and Anderson (1982) and explained in great detail in chapter 4. Using vignettes, a hiring process was simulated with a sample of employers in each of the three countries. A web-based survey provided the interface for the vignette study. Employers evaluated a series of vignettes showing profiles of hypothetical job applicants.
Information about a number of variables of interest (i.e. educational features associated to the three matching mechanisms) was randomly varied across the vignettes. Vignette characteristics (e.g. level of education, field of study, grades) were then regressed on employers’ assessments, to capture the aspects that were more crucial for the hiring decision. In order to explore the influence of variables at the organizational level, a questionnaire was attached to the vignette study, inquiring about structural characteristics of the respondent’s organization, as well as its recruitment and selection practices. To the extent that employers’ decision-making differs systematically across countries and organizations, there is evidence that employers’ interpretation of education vary depending on the context in which the hiring takes place. Overall, I gathered data on more than two thousands vignettes. It is important to stress that hiring decisions were hypothetical, indicating what employers would do in a similar situation if they had to hire someone from the external labour market for a junior position in their organization (i.e. their hiring propensities)\(^7\).

\section*{1.5. Contributions to the field}

This research offers several contributions to the field of sociology of education, and particularly to the literature on school-to-work transitions. First, it provides a comparative insight into the hiring behaviour of employers, one side of the labour market that has been rarely surveyed. Specifically, the focus lies on whether and why employers take the educational background of job applicants into account when formulating a hiring decision. Contributions to this field of research have focused exclusively on the supply-side of the employment relationship. These studies, mostly based on surveys of school leavers, have provided many valuable insights in the school to work transitions of youth in a large number of countries. However, taken together, they have offered only half of the story on job matches. This book fills this gap in the literature by addressing the demand-side, that is, employers, in line with the efforts of a few other authors. Importantly, my research is comparative, whereas all previous works on employers are either one-country or one-organization studies (e.g. Bills 1988b; Miller and Rosenbaum 1997; Fernandez and Sosa 2005; Petersen and Togstad 2006; Fernandez and Mors 2008; Rivera 2011; Gërxtani and Koster 2012) or, when comparative, their effort to relate the findings to the broader institutional context is fairly modest (Arthur, Brennan, and De Weert 2007; De Weert 2007).

Second, this is the first study that quantifies the role of education in employers’ hiring decisions in a way that is highly comparable across countries.

\(^7\) In the following, the terms “hiring decisions”, “hiring judgments” and “hiring propensities” will be used interchangeably, meaning employers’ opinions about what they would do in a hypothetical hiring situation.
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The project empirically tests whether various facets of educational attainment (e.g. level of education, field of study, grades, participation in internships and extra-curricular activities) matter to employers for their hiring decisions, thus better qualifying the education effect. This approach improves on earlier studies on the labour market allocation of school leavers that have focused on a limited subset of individual characteristics, level of education in particular, disregarding other aspects of the educational pedigree (see also: Van der Velden and Wolbers 2007; Smyth and McCoy 2011). In particular, each aspect of a job applicant’s educational background is associated with different mechanisms about the education effect. On the basis of employers’ preference for one or the other aspect, education is interpreted as, respectively, productivity-enhancing, a signal of trainability, or a means for social closure. Depending on which set of criteria employers consider more important, I provide support for one or the other mechanism.

Third, the project bridges two important lines of research that have so far developed separately: a well-developed scholarship that focuses on the influence of the institutional context on the strength of the education effect across countries and a well-established body of literature that explores the mechanisms why education is rewarded by employers but pays little attention to the institutional framework in which employers operate. Emphasis is placed on how complementary institutions of the education system and of the labour market influence the way employers reward education (Van de Werfhorst 2009; Bol and Van de Werfhorst 2011; Matković and Kogan 2012).

Fourth, this research merges economics and sociological perspectives about employers’ hiring behaviour at the micro-level, with both i) a focus on the meso-level of analysis typical of organization studies; and ii) the macro-lenses of comparative institutional analysis. In my theoretical framework, I integrate literatures from economics, sociology and organization studies and distinguish between three levels of analysis: the micro-level of individuals (i.e. employers), the meso-level of the organization, and the macro-level of the country in which employers operate. The focus on organizations in particular adds to earlier studies that have not sufficiently explored within-country variation in the relationship between education and labour market gains, and its underlying mechanisms (but see Bol and Van de Werfhorst 2011 and Van de Werfhorst 2011a).

Lastly, from a methodological point of view, I simulate a hiring process using a vignette study, which allows a comparison of successful applicants with rejected ones. The simulation has been structured as to closely mimic the screening of curricula, the creation of a shortlist after applicant pools have been formed and the invitation to a job interview (following De Wolf and Van der Velden 2001). Thus, I am able to model how several educational features influence employers’ assessments of job applicant at different stages of the hiring process. More broadly, this book illustrates how vignette studies can be
applied to the study of employers' hiring behaviour, a methodology that has not yet entered common usage in the field of comparative stratification (but see De Wolf and Van der Velden 2001).

1.6. Outline of chapters

In chapter 2, I situate the thesis in the current scholarly debate on the reason why education matters for employers' hiring behaviour. After discussing the three matching mechanisms, I review a number of institutional dimensions that have been identified in earlier studies as important moderators of youth entry into employment. The argument of relating mechanisms to institutions is then presented, introducing the idea of conditional support. The meso-level of organizations is then described as the missing link between employers' behaviour at the micro level and the macro-level institutional framework in which hiring decisions are taken. I propose a theoretical model that builds on the distinction between open and closed employment relationships and formulate the conditions at the level of the organization that are more favourable for a given mechanism to operate.

Chapter 3 provides a rich description of the institutional framework that characterizes school-to-work transitions in Italy, England and the Netherlands, and presents the broad working hypotheses that are at the core of the research project. In the first section, the institutional arrangements discussed in chapter 2 serve as analytical toolbox to enhance the distinctive characteristics of each country-specific transition system, and to emphasize their impact on the allocation of school-leavers into the labour market. In the section that follows, data from cross-national surveys of school leavers and from employer surveys and qualitative studies of employers' hiring behaviour are discussed. Comparative findings from these projects are interpreted in light of the three matching mechanisms. Consistencies between the projects' results and the predictions underlying each mechanism are then addressed, leading to the development of hypotheses that relate employers' reliance on specific educational features (e.g. grades, internships, field of study) to the three matching mechanisms.

I argue that the importance attached by employers to particular attributes (and the neglect of others) can be interpreted as the manifestation that a given mechanism is more plausible in one institutional context than in another to explain the education payoff. Hence, human capital theory is more plausible in a country like the Netherlands, where the vocational specificity of the education system is high and there are strong linkages between schools and firms. Sorting models should be more applicable in England and Italy, where the low vocational orientation of the curricular offering has to be compensated with on-the-job training, and employers should be particularly concerned about the expected trainability of prospective hires. Finally, closure processes
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should prevail in the Netherlands - where occupational entry and career progression are based on the possession of a given qualification - but also in England, due to the high share of tertiary degree-holders, which devalue the labour market currency of unfinished schooling.

Chapter 4 lays out the design of the research, introducing the methodological choices that were made while setting up the hiring simulation. I first define who in my research is considered as employer, in order to clarify the decision-makers who were targeted. Next, I compare vignette studies to a range of alternative methods, discussing their main advantages and disadvantages. The operationalization of the vignette study will then be described. I will only gloss over aspects pertaining to the choice of the variables that are included in the vignettes, as their relevance is introduced in chapter 3 and their role will be examined thoroughly in the empirical part of the monograph (chapters 5 and 6). I then turn to the data collection and give an overview of the characteristics of the respondents in the three countries. The estimation technique applied for the empirical analyses is presented next. Hiring judgments expressed at the individual level will be analysed with reference to: 1) the national context within which employers operate, with its defining institutions (chapter 5 and 6); and 2) the organization of the employer and its characteristics, in terms of size of the workforce, training provision, recruitment activities, etc. (chapter 7). Concerns about the validity and reliability of the results obtained from this study are then discussed.

Chapter 5 and 6 present the main findings from the hiring simulation. Chapter 5 refers to the stage of curricula screening and analyses employers’ ratings of job applicants’ résumés. Three outcomes are discussed: 1) the likelihood that the employer would hire the job applicant; 2) the likelihood that the job applicant is perceived by the employer as easy to train, if hired; 3) the likelihood that the job applicant is perceived by the employer as a good fit with the corporate culture of the organization, if hired. Findings are presented separately for each single characteristic mentioned in the vignette. To substantiate the external validity of the findings, a comparison is made between employers’ ratings in the hiring simulation and their reported behaviour in real hiring situations, based on their answers to the accompanying questionnaire. One direct indicator of the matching mechanisms (also taken from the employer questionnaire) is then related to the findings obtained from the vignette study, proving convergent validation.

Chapter 6 discusses the following stages of the hiring process: the creation of a shortlist and the ranking of applicants in view of a job interview. Findings are compared to the ones in the previous chapter. Job interview offers are then analysed with regard to the likelihood that the applicant invited is a vertical match (i.e. has a level of education that corresponds to the one required by the organization to access the job).
Chapter 7 refers to the level of the organization. The theoretical model outlined in chapter 2 is taken as the point of departure to formulate hypotheses about inter-organizational variation in the reason why education matters to employers. Specifically, employment relationships will be described along a continuum that ranges from open to closed systems. Variables at the level of the organization are expected to pull the relationship towards one or the other pole of the continuum, affecting the way employers interpret educational qualifications. The productivity-enhancing mechanism and the trainability-improvement mechanism are expected to operate in, respectively, open and closed systems. Hypotheses are then tested empirically, based on the answers from the employer questionnaire. Some of the organizational characteristics (e.g. anticipated training investment, recruitment channels, formalization of hiring practices, training provision) are also related to the broader national context.

Chapter 8 concludes with a summary of the main findings of the project. Results are summarized from a comparative perspective, both across countries and across organizations. Some methodological considerations are then addressed, with regard to the external validity and generalizability of the findings (both to other countries and to different sectors of the economy). The policy implications of the findings are then presented, before concluding with several suggestions for further research.