Why education matters to employers: a vignette study in Italy, England and the Netherlands
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English Summary
A comparative study of employers’ hiring behaviour

School-to-work transitions, and socioeconomic attainments later on in the career, are largely shaped by the importance that employers attach to education while hiring prospective employees. While the positive association between education and labour market outcomes is well-documented, both in economics (e.g. Weiss 1995; Card 1999; Heckman and Rubinstein 2001) and in sociology (e.g. Breen and Jonson 2005; Mayer and Solga 2008; Hout 2012), the reason why employers reward education is still widely debated. Employers are central actors in the process of labour market stratification (Bills 1992, 2003) and returns to education arise from employers’ use of educational qualifications for their recruitment and selection decisions (Breen, Hannan, and O’Leary 1995). Regrettably, due to data limitations, the available evidence on whether and why education matters to employers during the hiring process is mostly based on employee data (e.g. Müller and Shavit 1998; Müller and Gangl 2003) or international surveys of graduates (Schomburg and Teichler 2006; Allen and Van der Velden 2011). For these reasons, the lack of systematic inquiry into the role of education in employers’ hiring practices can be considered as the most serious limitation of comparative research on school-to-work transitions (Gangl, Müller, and Raffe 2003: 303).

This monograph contributes to the literature by presenting a comparative study of employers’ hiring behaviour in three countries characterized by very different labour market institutions and education systems: Italy, England and the Netherlands. Main focus of the analysis is on the reason why employers reward various facets of educational attainment (e.g. field of study, grades, completion of studies on time) when hiring prospective employees.

Two strands of literature that have largely developed independently are combined in the book. On the one hand, a scholarship that originates from economics and focuses on the mechanisms that explain why education pays off in the labour market. These studies use specific research designs to identify the mechanism with the largest explanatory power, assuming that it would be universally applicable (e.g. Riley 1979; Groot and Oosterbeek 1994; Jaeger and Page 1996). On the other hand, a well-established literature in the field of comparative social stratification that charts the transitions of youth from the school to the labour market in different institutional contexts (Shavit and Müller 1998; Müller and Gangl 2003; Mayer and Solga 2008). These studies analyse variation across contexts in the extent to which education pays off (i.e. the size of the education effect) but do not discuss the mechanisms underlying the matching choices of employers and job-seekers. In line with recent sociological contributions (Bol and Van de Werfhorst 2011; Van de Werfhorst 2011a, 2011b; Matković and Kogan 2012; Bol 2013), these two literatures are combined in order to test whether the reasons why education matters at entry into employment (i.e. the explanatory mechanisms) vary across institutional and organizational settings.
The following research questions are addressed throughout the book:

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

2) Which explanatory mechanisms can account for employers' responsiveness to specific educational features?

3) Are there (complementary) institutional and organizational arrangements that render one mechanism more plausible than others?

Three matching mechanisms for the education payoff

Several explanations have been proposed, in economics and in sociology, to account for the relationship between education and labour market attainments (for extensive reviews: Rosenbaum et al. 1990; Bills 2003; Ballarino 2007; Van de Werfhorst 2011a). These explanations correspond to three overarching theories, differing from one another in the underlying assumption about how the relevant actors (employers, but also job seekers) interpret educational qualifications at point of hire.

First, human capital theory (Becker 1964, 1993; Mincer 1958) argues that education is rewarded in the labour market because it increases the marginal productivity of workers. The theory rests on the concept of rate of return on the education investment: individuals invest time, effort and money in education and receive an earning premium, net of the costs incurred while spending years in education (direct costs and foregone earnings). Schooling imparts skills that are sought after by employers because they render employees more productive. For this reason, the matching mechanism associated with human capital theory can be called a productivity-enhancing mechanism.

Second, according to signalling (Spence 1973, 1974) and screening (Arrow 1973; Stiglitz 1975) theories the productivity of prospective employees can only be estimated indirectly, on the basis of signals. Education is a signal of unobserved characteristics that lower the cost of schooling and that increase on-the-job productivity: e.g. motivation, perseverance, learning potential, etc. The job competition model of Thurow (1975) adds to these perspectives the idea that educational qualifications are indicators of expected trainability, i.e. one’s capacity to learn new skills. Skills are acquired on the job after a period of initial training and employers rely on education to identify the applicants that are more easily trainable. The job matching mechanism implied by this perspective can be described as trainability-improvement mechanism.

Finally, a third group of theories neglects that employers base their hiring decisions on rational calculations of future productivity gains. Education functions as a marker of knowledge; what is important is not that education certifies the acquisition of knowledge, but rather that employers and occupational gatekeepers behave as if it did, legitimizing practices of social
inclusion and exclusion. These theories are referred to as “closure theories”. Specifically, two matching mechanisms are discussed in this book: closure by degrees (Collins 1979; Weeden 2002) and closure by networks (Miller and Rosenbaum 1996; Rosenbaum and Binder 1997; Brinton and Kariya 1998; Rosenbaum 2001). According to the former, obtaining a degree is all that matters to employers, independent of productivity reasons: educational credentials are used by occupational incumbents to restrict access to occupations and generate rents. According to the latter, employers trust educational qualifications only when information is channelled through their own networks: what matters is whether the applicant has secured a linkage with the hiring employer, either via the school or via other contacts.

The three matching mechanisms not only make very different claims with regard to the way employers interpret education, but they also imply that different facets of applicants’ educational attainment should matter to employers. The productivity-enhancing mechanism expects employers to reward education regardless of whether it is certified or not. Increasing years of schooling are associated with different skill levels, and students learn subject-specific knowledge in a job-relevant field of study. With regard to the trainability-improvement mechanism, academic performance (grade point average and study duration) besides mere school attendance should be interpreted by employers as a surrogate for ability (Stiglitz 1975): higher grades and faster study completion give information about someone’s perseverance, effort or motivation to succeed, all unobservable aspects that both lower the cost of schooling and are related to trainability. Lastly, with regard to the mechanism of social closure, obtaining a degree (closure by degrees) or attending a school that is linked to the employer (closure by networks) is all that matters, regardless of productivity reasons. In particular, a distinction is proposed between particularistic linkages, limited to the applicant-employer dyadic relationship (e.g. the applicants have completed an internship at the employer’s premises), and institutionalized linkages, which are not specific to one particular school (e.g. the employer sits on the advisory board of the same type of institute attended by the applicant, but not necessarily in the board of the same school).

By simultaneously considering a wide array of educational features (grades and fields of study and internships and years of education, etc.), this type of analysis fills a gap in the literature on school-to-work transitions, which has usually focused only on levels of educational attainment when discussing the relationship between education and labour market entry (Müller and Gangl 2003; Meyer and Solga 2008; cf. the criticism of Van der Velden and Wolbers 2007). With this approach, the role of education at entry into employment can be better qualified, as the payoff of education is allocated among different dimensions of educational attainment (Rosenbaum and Kariya 1991; Spilerman and Lunde 1991).
Conditional support for the matching mechanisms: the role of institutions

Instead of considering the theories introduced above as competing explanations, this book treats them as conditional, in line with Rubinson and Browne (1994), Van der Velden and Wolbers (2007), Van de Werfhorst (2011a). Hypotheses are formulated that specify the conditions under which a given matching mechanism is more likely to be at play. The three mechanisms are contextualized in light of the institutional framework within which employers operate. Institutions are enduring sets of arrangements that influence the acquisition of skills and knowledge in formal education, their certification and their currency in the labour market. Institutions of the education system and of the labour market are expected to affect the way employers interpret the educational qualifications of prospective hires, and the reason why they attach important to specific educational features during the hiring process. Progress in this direction has already been made by several studies (Van der Velden and Wolbers 2007; De Wolf 2000; Bol and Van de Werfhorst 2011; Van de Werfhorst 2011b; Matković and Kogan 2012).

Instead of focusing on single institutional dimensions, this monograph refers to institutional complementarities, which arise when the functioning of one institution is enhanced by the presence of a second institution (Hall and Soskice 2001). The empirical part analyses whether employers’ hiring preferences are more likely to be consistent with the explanation offered by a given mechanism when certain institutional conditions are simultaneously present. Among the institutions considered, three characteristics of the education system are thoroughly discussed: the degree of stratification, of standardization, and of vocational orientation (Allmendinger 1989; Shavit and Müller 1998; Bol and Van de Werfhorst 2013). These institutional dimensions refer, respectively, to: the number of tracks available in secondary education and the length of the tracked curriculum; the presence of nationwide standards for the composition of the curriculum and the assessment of students; the extent to which the course offering is attuned to the needs of employers. Additionally, labour market institutions relevant to the school-to-work transitions (namely, the degree of employment protection legislation and the degree of labour market segmentation) are also addressed into detail.

With regard to the matching mechanisms, the productivity-enhancement mechanism is more likely to be triggered if vocational orientation is high and there is a clear demarcation between academic and vocational tracks (e.g. the Netherlands). In this system, education imparts job-relevant skills and vocational qualifications cater to a well-developed occupational labour market. Closure by degrees should occur if vocational orientation and standardization are both high and industrial relations are highly coordinated: employers recognize the value of educational qualifications as they correspond to standards set in tripartite concertation (e.g. the Netherlands). As for the expected-trainability
mechanism, employers should be particularly concerned about the trainability of prospective hires when vocational specificity is low and specific skills have to be learned on the job, within internal labour markets (e.g. Italy and England). High levels of employment protection guarantee that the training investment of employees will not be lost and safeguard employers from poaching (e.g. Italy). Finally, with regard to closure by networks, institutionalized networks should especially matter when vocational specificity is high and highly standardized qualifications are portable within an occupationally segmented labour market (e.g. the Netherlands). Particularistic networks, on the other hand, are limited to the dyadic relationship between the applicant and the employer and provide a port of entry into the firm. They should be more influential in countries with weakly developed vocational curricula and a strong reliance on internal labour markets: in these systems, education sends unclear signals to employers and internships serve as screening devices (e.g. Italy and England).

The missing link of organizations

Besides variation across countries, matching mechanisms are expected to vary across organizational contexts. Whereas earlier studies have mainly concentrated on nationwide institutions, the reasons why employers reward education may also vary within a given country, across organizations. Drawing on new structuralism (Baron and Bielby 1980) and new institutionalism in sociology (Brinton and Nee 1998), employers’ hiring behaviour is modelled 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 (cf. the model of “choice-within-constraints” of Nee and Ingram 1998; Ingram and Clay 2000).

Up until now, only a few studies have looked at within-country variation in the mechanisms why education pays off in the labour market (De Wolf and Van der Velden 2001; Van der Velden and Wolbers 2007; Bol and Van de Werfhorst 2011; Van de Werfhorst 2011a). Variation was related to job type, firm size, sector of employment, coverage of collective labour agreements, and inter-industry differences in vocational orientation, and analyses were based from supply-side data. Bills (1988b) focused on the role of education in six different organizations in the United States from the perspective of employers. My study adds to this literature the focus on employers’ recruitment strategies, distinguishing between formal recruitment methods, direct applications and school-based recruitment.

More broadly, this monograph proposes a theoretical model that relates the matching mechanisms to the well-known distinction between open and closed employment relationships (Weber 1978; Sorensen 1983). Employment relationships can be open or closed, depending on whether job matches are established as a result of market-based allocation processes (human capital theory/productivity-enhancement) or within mobility regimes governed by
training and promotion ladders (job competition/trainability-improvement) and/or entry requirements (social closure). In open employment relationships, employers compete to get the most productive applicant at the lowest cost and wages are set to reflect the marginal productivity of individuals; in closed employment relationships, job positions cannot be created at will, unless incumbent employees move to another position and leave the job vacant.

Open and closed employment relationships should be thought of as ideal-types and placed at the extremes of a continuum. Certain characteristics at the organizational level are expected to influence the extent to which employment relationships approximate an open or closed system. Organizational characteristics that may play a role in this respect are: the sector of employment of the hiring organization, public or private; the expected training investment on new hires; the recruitment channels activated to attract job applicants to the organization; the type of job for which a selection is made and the degree of employers’ discretion over the establishment and maintenance of the employment relationship (e.g. employment protection legislation, monitoring costs). The productivity-enhancement mechanism should more likely operate in small organizations, when formalization practices are nearly absent, employers need instant productivity and cannot invest in the training of new hires. Employers are expected to reward education for its productivity-enhancing effect also when individuals apply directly “at the gate”, selling their marketable skills in the external labour market. On the contrary, closed employment relationships should prevail in the public sector or in large organizations, where formalization is high and educational requirements for organizational entry are set centrally. The trainability-improvement mechanism should especially be at play when employers expect a significant training investment in the new hires, or when the job is structured around functions instead of narrowly defined tasks.

The research design

In order to capture variation across institutional contexts, the research targeted three countries characterized by very different arrangements in both the education system and the national labour market: Italy, England and the Netherlands. These countries also correspond to three ideal–typical modes of school-to-work transitions discussed in earlier research (Gangl 2001; Müller and Gangl 2003). The study is limited to the Information, Communication and Technology sector (ICT) in order to look for cross-national variation in the sector of the economy where the occupational requirements, industrial landscape, workforce profile and skill formation needs are, arguably, the most comparable. This decision turns the research design into a least-likely case study (Gerring 2001).

After a careful assessments of the pros and cons of various research methods, a vignette study (Rossi and Anderson 1982; Jasso 2006; Wallander 2009) was
used to answer the core research questions of the project. 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. To increase external validity, the simulation closely replicated the phase of curricula screening, the creation of a shortlist and the decision to invite applicants to a job interview. Employers could choose to hire for one of three types of job: software engineer, database administrator, business consultant.

In the empirical analyses, vignette characteristics (e.g. level of education, field of study, grades) were regressed on employers’ assessments, to capture the aspects that were more crucial for the hiring decision. Multilevel models were applied to deal with the fact that multiple vignettes were rated by the same employer. 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, and its recruitment and selection practices. To deal with these variables, logistic regression models were applied (binary and multinomial), controlling for both country dummies and organizational characteristics.

Main findings from the vignette study

Employers rewarded or penalized specific facets of education attainment in a way that varied systematically across countries, and mostly in line with expectations. In the Netherlands, educational credentials represented a badge for entry into a labour market strongly segmented by qualifications and barely accessible to non-tertiary school leavers. In contrast, in Italy and England access to jobs was open to school leavers from upper secondary education, provided they had obtained good grades (both Italy and England) or followed an internship at the employers’ premises (England).

School-to-work transitions in England and the Netherlands seem to follow very different logics. English employers were rather unresponsive to fields of study and gave applicants from non-matching fields a fair chance; at the same time, they turned to academic achievement to identify the best performers. In particular, the importance of grades was fully mediated by expectations about future trainability. Opposite patterns were observed in the Netherlands, where employers attached great importance to fields of study but were not responsive to grades at the curricula screening and shortlisting phase. Results were less straightforward in the Italian context. Somewhat unexpectedly, employers strongly relied on fields of study, in spite of the low vocational orientation of the Italian education system. Employers were also responsive to signals that are typically related to the trainability-improvement mechanism,
such as grades and study duration, and this was true at any stage of the hiring process.

With regard to closure by degrees, certified learning in the form of credentials was especially important in the Netherlands, in line with expectations: unfinished schooling was more heavily penalized than in other countries and the incidence of vertical matches among the applicants that would be invited to a job interview was the highest. Closure by institutionalized networks was especially relevant in the Dutch context and found some support in England, where the effect for school–firm linkages was limited to the phase of curricula screening. In the ranking phase, closure by networks only occurred in the Netherlands, where both internships and school–firm linkages increased applicants’ likelihood to be ranked ahead of other candidates. No evidence of closure by networks was found in Italy.

**Main findings from the employer questionnaire**

The matching mechanisms were also captured directly in the employer questionnaire. Employers were asked whether they associate education with job-relevant skills or with future trainability. English employers were the most likely to associate education with trainability. At the same time, they were the least likely to consider education a provider of job-specific skills. The opposite was found among Dutch employers, with Italians scoring somewhere in between. These results provide convergent validation to the findings obtained from the vignette study. Dutch employers, if limited information were available about job applicants, would prefer to know about their formal qualifications. In Italy and England, employers would rather have information about applicants’ work experience and job history data, suggesting that education sends a less clear signal to employers in these two countries.

Turning to the analysis of organizational factors, a few aspects seemed to significantly pull the employment relationship towards one or the other pole of the continuum between open and closed employment relationships. These factors are: job type, expected training investment in the new hire and modes of recruitment, i.e. through direct applications or through predominantly formal channels. Employers were more likely to associate education with job-relevant skills when hiring for software engineer jobs, which are task-centred and more narrowly defined. Concerns about trainability were more likely to occur the higher the expected training investment in the new hire. Although this may sound very intuitive, previous studies never controlled for the training needs associated to a given job when testing the trainability-improvement mechanism.

Finally, modes of recruitment also played an important role. When organizations prefer formal recruitment channels (i.e. job ads and employment agencies) over informal methods (i.e. referrals from incumbent employees and referrals from business or professional contacts), information about available
jobs is disseminated to a large volume of applicants and gains high visibility. As a result, employers are constrained by legal requirements or other types of external pressures when selecting new hires and the employment relationship becomes more closed. Conversely, when employees apply directly “at the gate” bilateral negotiations are more likely to occur: employers can negotiate wages and conditions of employment with prospective employees, bypassing the transparency of the formal market and its related educational entry requirements. While moving from the closed to the open ideal-type in the employment relationship continuum, employers will tend to value education for its productivity-enhancing role, instead of considering education a signal of on-the-job trainability in a fixed job classification system.

Contributions of the book

This research offers several contributions to the field of sociology of education, and particularly to the comparative literature on school-to-work transitions. First, it targets employers, one side of the labour market that has been rarely surveyed. 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. Various facets of educational attainment (e.g. level of education, field of study, grades, participation in internships and extracurricular activities) were simultaneously considered, in order to better capture which features matter to employers in a particular context, and why. Third, the project bridges two lines of research that have developed independently from one another: sociological scholarship that studies the strength of the education effect across countries, and a body of literature, mainly from economics, that treats mechanisms as competing explanations but pays little attention to the institutional framework in which employers operate. Fourth, this research integrates several strands of literature from economics, sociology and organization studies and gives analytical leverage to three different levels of analysis: the micro-level of individuals (i.e. employers), the meso-level of the organization, and the macro-level of the country. Finally, from a methodological point of view, this book illustrates how vignette studies, a methodology that has been rarely applied to study the payoff of education in the labour market, can very well capture employers' hiring behaviour.

Several policy implications can be derived from the evidence presented in this monograph. Three, in particular, refer to very current debates at both national and European level about youth employability. First, the findings show that the graduate labour market is not uniformly defined across countries. Competition between tertiary school leavers and leavers without university education is more likely to occur in Italy and England. In these countries, applicants with tertiary education are more exposed to the risk of overeducation, with possible repercussions on their earning profiles, career expectations, and job satisfactions. Thus, discussions about the employability
of European graduates should be attuned to the institutional context of the various countries. Second, sub-degree qualifications - pilot-tested, introduced, or planned in several European countries - may represent an attractive option especially in highly stratified systems, in which students from lower tracks are often diverted from higher education. This type of qualifications may partly decrease the strong social selectivity of labour market attainments in systems with early tracking. Third, increased awareness of the characteristics that are sought after by employers in a particular country may function as an incentive for students to increase their labour market prospects during the course of the studies, for instance by striving for better grades, or selecting fields of study with a strong labour market currency.