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Employers and the governance of inclusion: Disadvantaged youths' access to dual apprenticeships in collective skill formation systems

Wilson Anna

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par

Anna Wilson

Directeur de thèse
Prof. Giuliano Bonoli

Jury
Prof. Daniel Oesch, Université de Lausanne
Prof. Christian Lyhne Ibsen, Michigan State University
Prof. Christian Imdorf, Leibniz University Hannover

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Le Décanat de la Faculté de droit, des sciences criminelles et d'administration publique, sur proposition d'un jury formé des professeurs Giuliano Bonoli, Daniel Oesch, Christian Lyhne Ibsen et Christian Imdorf, sans se prononcer sur les opinions de la candidate, autorise l'impression de la thèse de Madame Anna Wilson, intitulée :

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A. Ladner

Prof. Andreas Ladner
Vice-Doyen de la Faculté de droit,
des sciences criminelles
et d'administration publique

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1. Introduction

In modern society, education is the cornerstone for an independent and robust life course (Checchi and Lucifora, 2004; Brunello, Garibaldi and Wasmer, 2007; Otto et al., 2015; O'Reilly et al., 2018). For a young person, accessing and completing primary and secondary education lays the foundation for the transition into adult life, including labor market entry or continued studies (López Blasco, McNeish and Walther, 2003; Checchi and Lucifora, 2004; O'Reilly et al., 2018). In instances where the young person struggles to obtain satisfactory grades in one or several subjects, the transition from compulsory school to an upper secondary education level risks to be delayed or in worst case fails altogether. Existing scholarship on youth transitions shows that additional risk factors related to difficulties at school are weak socioeconomic status, low educational qualifications, feeble educational labor market status of the parents, and having a migrant background (Jackson, 2009; Protsch and Dieckhoff, 2011; Protsch and Solga, 2015; Imdorf, 2006, 2017; O'Reilly et al., 2018; Zuccotti and O'Reilly, 2018).

Dual vocational education and training (VET) – where an occupation is partly taught through firm-based training and partly through a school-based curriculum – has a longstanding tradition of catering large sections of the young population (Shavit and Müller, 2000; Morrison, 2008; Busemeyer and Trampusch, 2012; Eichhorst et al., 2015). Although many of the occupations taught today and historically in such 'collective skill formation systems' (CSFS) (Busemeyer and Trampusch, 2012) are both technically as well as theoretically demanding, the dual vocational training has *also* been the natural educational trajectory for youths that are less theoretically but more practically gifted and oriented.

In CSFSs, of which Austria, Denmark, Germany, the Netherlands and Switzerland are prime examples, accessing a dual vocational education and training program is essential for setting the young on a trajectory in life that enables employment outlooks and shields from social and economic precariousness (Müller and Gangl, 2003; Dieckhoff, 2008; Protsch and Dieckhoff, 2011; Dietrich, 2012; Ryan et al., 2012; Korber and Oesch, 2019). Transitioning successfully from compulsory school to secondary education – in the case for youth that are bound for vocational education and training, from compulsory school to a firm-based apprenticeship – bolsters the chances to obtain a certified education, which in turn raises the individuals' chances to land a job upon graduation (Ianelli and Raffe, 2007; Dieckhoff, 2008; Meyer, 2009; Kammermann, 2010). Although there are school-based vocational options for vocationally interested individuals who perhaps struggle to find firm-based apprenticeships, studies show that the employment chances upon graduating from upper-secondary vocational education are better for those that followed the firm-based path (Quintini and Manfredi, 2009; Wolter and Ryan, 2011; Busemeyer, 2015, p. 197).

In Table 1, some indicators related to initial VET (IVET) are presented for the key dual VET systems Austria, Denmark, Germany, Netherlands and Switzerland.

Table 1. Overview of selected initial VET indicators in Austria, Denmark, Germany, Netherlands and Switzerland, year 2015.

	IVET students as % of all upper secondary students	**IVET work-based students as % of all upper secondary IVET***	**Share of youths Not in Education, Employment or Training (NEET)**	**Employment rates for IVET graduates (20-34 years old)**
Austria	69.5	46.8	9.3	86.8
Denmark	42.5	99.7	8.4	87.4
Germany	46.8	86	8.7	88
Netherlands	68.5	21.3	6.2	84.1
Switzerland	65.3	90.4	8.8	86.4

*A vocational programme is classified as combined work- and school-based if 25% or more of the curriculum is presented outside the school environment; otherwise it is classified as school-based.

Source: Own compilation of data from CEDEFOP (2018) with data provided by Eurostat, EU labour force survey (2016).

Table 1 shows that the IVET track is the most popular one compared to general upper secondary education in Austria, the Netherlands in Switzerland whereas in Denmark and Germany the participation is slightly lower. Of those students that are enrolled in IVET upper secondary education, a large majority in Denmark, Germany and Switzerland follow a dual program, where at least 25 per cent of the training takes place in workplace environments. In Austria and the Netherlands, on the other hand, the school-based IVET options are more common than the dual ones.

In terms of youth that are not in education, employment or training – so called NEETs – the numbers are quite comparable. This means that a similar share of youth is unsuccessful transitioning from compulsory school into education (or employment), implying that there are no large systemic differences in how the countries are able to integrate this residual group into training.

The employment rates for IVET graduates in these five collective skill formation systems, like the NEET rates, are also high and similar. This implies that the vocational education and training path in the five countries yield quite similar, good, chances of obtaining work upon graduation and should render this educational path with comparable reputations (at least judging by this indicator). In sum, although the IVET option is more common in Austria, Netherlands and Switzerland compared to Denmark and Germany, other key indicators for the configuration of the VET systems, the employment chances of the IVET graduates, the systemic capacity to integrate youths into employment, education and training, are quite comparable.

A successful transition from compulsory school to a dual-based upper secondary education is partly determined by the personal characteristics, socioeconomic origin as well as scholarly achievements of the young individual (Hupka-Brunner, Sacchi and Stalder, 2010; Kohlrausch, 2012; Protsch and Solga, 2015; Imdorf, 2007, 2017; Jackson, 2007, 2009, 2012). In CSFSs, however, where firms provide a part of the training in the form of in-firm apprenticeships, the transition is contingent upon the demands of the employers and their willingness to offer apprenticeship positions and whom they are willing to hire as apprentice (Busemeyer and Trampusch, 2012; Emmenegger, Graf and Trampusch, 2019). Therefore, although collective skill formations are generally characterized as highly inclusive given the association with comparatively low youth unemployment and NEET (Ryan 2001; Bosch and Charest, 2010;

Busemeyer and Trampusch, 2012), exclusion or access barriers pose a serious problem for certain youth groups.

Typically, not all apprentice candidates who are eligible for an in-firm apprenticeship get selected which leads to disrupted transitions and in worst case drop out from education altogether (SBFI, 2017). Those in the group that do not get a position as an apprentice in a firm typically have lower school qualifications, a migrant background and/or whose family has a weak socioeconomic status (see Protsch and Solga, 2015; Imdorf, 2017; Söhn, 2020). The mentioned groups can be gathered under the common term 'disadvantaged' youth.

In this doctoral dissertation, the aim is to understand the extent to which vocational training systems have inclusive intentions towards disadvantaged youth, and the factors and conditions that contribute to a willingness of employers to provide apprenticeships to this group. In the following section I specify my research aim and present how it is addressed through the articles in my dissertation.

2. Research statement

My doctoral project takes place within the framework of the GOVPET (Governance in Vocational Professional Education and Training) Leading House project. Parts of the GOVPET project pay particular attention to a key challenge of CSFSs, namely how private actors consider societal goals in their activities and cooperation with each other. Against this background, the focus of this dissertation is on disadvantaged young people in collective skill formation systems and their access to dual vocational training. The overarching research question is: *What factors enable disadvantaged young people's access to dual apprenticeships in collective skill formation systems?*

This question is broad and can be answered in a variation of ways. It can focus on macro-level conditions for the individual employer, such as national policies, characteristics of the overall national VET systems (e.g. the governance of inclusion) (Culpepper, 2007; Thelen and Martin, 2007; Trampusch, 2007, 2010; Martin and Swank, 2012; Thelen and Busemeyer, 2012; Thelen, 2014). These important contributions have shed light on links between institutional frameworks on the central and decentralized levels, social partners and collective action and outcome in terms of private actors' participation in public policy. The macro-level perspective could as well take into account the economic cycles (Brunello, 2009; Shi et al., 2018) as a constraining or enabling factor for firms' willingness or capacity to carry out public policy tasks, such as training low-qualified youth.

It can be studied from a meso-level perspective, focusing on sectoral and occupational groups of employers, reflecting different skill levels or skill types demanded and the incentives the firms face given these differences (Peters, 1998, p. 117; Stalder, 2011; Wettstein, Schmid and Gonon,

2017; Protsch, 2017). In sectors and occupations where the theoretical skill requirements are lower, it is imaginable that low-achieving school leavers are accepted to a higher extent compared to sectors and occupations with higher skill requirements. Similarly, in some sectors and occupations it is likely that personal fit or social competences are of higher importance than strong school qualifications, although the training itself might be intellectually demanding as well.

Finally, the question can be studied on the micro-level (Peters, 1998, p. 126): in this context, on the level of the firms and the people working with the apprentice recruitment. This could imply the employers themselves and their staff composition (Holzer, 1998). The sociological institutionalism and sociology of conventions literature has contributed significantly to our understanding of the factors that influence the hiring norms in the firm (Imdorf, 2006; Bonoli, 2012, 2016; Imdorf and Leeman, 2012; Leeman and Imdorf, 2015). From this perspective, a certain composition of staff in terms of gender, ethnic background, or values, might increase or decrease the likelihood of hiring someone disadvantaged. Although, certain constraints that the firm is facing such as recruitment challenges and the firms' training capacity (Mohrenweiser and Zwick, 2008; Mohrenweiser, 2012; Protsch and Solga, 2015; Imdorf, 2017; SKBF CSRE, 2018) might have bearing on their willingness to hire disadvantaged candidates.

I argue that these three perspectives mentioned are necessary in order to answer the question. The goal for my dissertation is to get a clearer and more multi-levelled insight in how VET systems try to be inclusive and the possibilities and constraints that firms face in their recruitment of apprentices. Therefore, I tackle the question from both a macro-level focusing on the issue of policy efforts for increased access to in-firm apprenticeship for disadvantaged youth; a meso-level by taking into account sectoral and occupational variations and specific challenges and leeway across these dimensions; and from a micro-level focusing on the firms that provide in-firm vocational training, and the individuals who are responsible for the apprentice training and recruitment.

2.1 Overarching theoretical framework

The overarching theoretical landscape where I locate the dissertation project is the space between rational choice institutionalism and organizational institutionalism (Hall and Taylor, 1996; Campbell, 2004; Greenwood et al., 2008). These perspectives are narrow enough to target firms and organizations as the main unit of analysis (organizational institutionalism) and at the same time account for the instrumental constraints for a firms and recruiters' actions (rational choice institutionalism), such as economic limitations for the firms (Wolter and Schweri, 2002).

Furthermore, the organizational institutionalist perspective is flexible enough to incorporate the importance and role of ideas and their constraining and enable effect on actors. It caters to the

main features of my research question which essentially aims at understanding a phenomenon that in many ways is *irrational*: (stated) selection or preference for a less than 'ideal' candidate for an apprenticeship. One of the central questions in organizational institutionalism is: 'why and with what consequences do organizations exhibit particular organizational arrangements that defy traditional rational explanation?' This central aim corresponds well with the goal in my dissertation to pinpoint the conditions for the providing access to dual vocational training for disadvantaged young.

The other aspect of my dissertation sheds light on the role of national and sub-national governance, rules and sectors for the access of disadvantaged youth to dual training in CSFS. The influence from sociologists and political scientists in the originally economics-based rational choice theory has among other things been the introduction of the concept 'choice-within-constraints' (Campbell, 2004, p. 16). This perspective takes into account the constraints that institutions, including formal rules as well as informal norms, enact on actors' preferences and actions (Alt and Shepsle, 1990, pp. 23-24; Sharpf, 1997). The idea of 'bounded rationality' (Jones, 1999) also contributes to the loosening up of the strict economic rationality assumptions of the rational choice institutionalism and refers more to an idea-sensitive understanding of actors' choices and behavior. The contributions of March and Olsen (1989; 1995) aim to distinguish between a 'logic of appropriateness' and a 'logic of instrumentality' of organizations' behavior. They aver that organizations do not strictly follow an economic rational choice, instrumentality, logic but act in ways they deem legitimate given their institutional setting (Campbell, 2004, p. xviii). In this context, therefore, actors such as firms in dual VET systems can be assumed to not always act in the most economically rational way, in the strict sense of the word.

One implication of this perspective is or could be that apprentice recruiters in firms can consider to not hire the 'top candidate' based on different characteristics often highlighted in the recruitment literature (such as school achievements and cognitive aptitude, but also taste-based considerations such as nationality and socioeconomic status of the applicant (see Arrow, 1973) but to take someone who does not fit the description of the 'top candidate'.

The combination of both perspectives is a necessity to grasp some of the complexity of the research questions. Recently, there has been a tendency towards exchange and pragmatism between the different new institutionalism perspectives (Powell and DiMaggio, 1991; Hall and Taylor, 1996; Elster, 1998; Campbell, 2004; Peters, 2019). Consequently, we need theoretical perspectives that are sensitive to economic rational choice, instrumental and material explanatory factors, but that still enable answers to complex research puzzles. My aim is to approach the research question with theories that can be sorted underneath these overarching

theoretical frameworks, allowing for various factors and logics to have an impact on disadvantaged youths' access to dual VET.

2.2 The outline of the dissertation

The mode for the dissertation that I have chosen is article-based (cumulative) and consists of three articles[1]. In the following section 3, I review the relevant literature for my research topic. I conclude the different subsections by highlighting the gaps in the research – unresolved issues – that I aim to address in my thesis work. The Methodological approach is described in section 4, followed by summaries of the three papers in section 5. Section 6 concludes and discusses the limitations to the thesis and suggestions for future research.

3. Review of the literature on disadvantaged youth in vocational training systems

In this section I present a literature review. The aim is to give an overview of the research field within the study of collective skill formation systems with particular attention to two central issues. First, I discuss the various definitions of the concept of access to apprenticeships for disadvantaged youths and secondly the challenges of transition from school to apprenticeships. Second, I review the literature on employers' behavior and selection rationales in the recruiting process. In doing so, I draw on contributions made in the fields of sociology of education and political science with the common denominators of 'inclusion' – in the sense of providing access to formal and certifying firm-based vocational training – and collective skill formation. Structured around common themes under the three overarching issues, the literature review identifies formative or exemplary contributions to the field both concerning empirical knowledge and theory.

3.1 Defining inclusion

I start out by briefly explaining how I define 'inclusion' in this dissertation[2], and subsequently move to mentioning how this relates to the neighboring concepts of employability and social exclusion (section 3.2).

My use of the concept inclusion is in what ways, under what circumstances and the extent to which, the state and social partners aim to provide access and employers state a willingness to hire such groups. Thus, the way I intend to use the concept of inclusion[3] refers both to the stated

[1] According to the faculty's regulations, three articles, of which one single-authored, are needed for the completion of the dissertation.

[2] One prominent elaboration of the concept of inclusion in education presumes that the aim of it is to "eliminate social exclusion that is a consequence of attitudes and responses to diversity in race, social class, ethnicity, religion, gender and ability" (Ainscow, 2005, p. 109; Vitello and Mithaug, 1998).

[3] Translated into the context of dual VET systems, we may extend the meaning of inclusion to entailing the access to dual apprenticeships in firms. This implies not only the public strategies to increase

willingness and the act of facilitating access to young people in vocational education and training: either through relaxing admission criteria for dual apprenticeships, through actively targeting certain groups/bearers of certain traits associated with disadvantages on the apprenticeship market to offer apprenticeships positions to, *or* through adapting the vocational education and training so that it better suits groups with certain disadvantages.

What I do *not* focus on in this dissertation are youths with such mental and physical handicaps, which would – in most if not all circumstances – render them incapable of completing a dual apprenticeship corresponding to the European Qualification Framework level of 2 or higher on the same terms as peers without these conditions[4]. Notwithstanding the fact that this is also an important issue for a vulnerable population that faces great challenges to fully participate in society, especially through education and labor market entry, I have chosen to limit my scope to youths that do not belong to the above-mentioned groups.[i]

3.2 Perspectives on inclusiveness in VET: employability, trainability and social exclusion

Access to a dual VET implies a double access: the young person enters both the labor market, through the in-firm apprenticeship position, and the education system through the school-based, theoretical, part of the education. Therefore, it is necessary to discuss both aspects of educational transitions and of employability and trainability of the youth, in the topic of access to dual VET.

In this section, I discuss three key terms in the literature as an introduction to the topic of inclusion of disadvantaged youth: employability, trainability and social exclusion. Whereas the concept of social exclusion is to be broadly understood as the factors raising the risks of the young person not to have access to vocational education and training, social inclusion is to be understood as all the factors that lower the same risk (see Kieselbach, 2003). Employability and trainability in this context, as will be further explained in the following, implies the different ways to label and conceptualize different traits and factors influencing the transition from school to work or in between different education levels, which in turn might influence employers' likeliness to include different concerned groups or individuals.

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participation rates but also the employers' inclination and tendency to do so. In terms of disadvantaged young people, inclusion and inclusiveness refers to the different ways in, and extent to, young people that have graduated from the mandatory education have access to and are integrated in different vocational education and training schemes.

[4] 'Disability' may both be defined differently and entitle the 'disabled' to different policy measures and schemes in different countries and is not always easily separable from non-disabled. See Foucault (2002); Powell (2011); Richardson and Powell (2011); and Altermark (2015), for a nuanced discussion on the matter.

3.2.1 Employability

McQuaid and Lindsay (2005) elaborate on 'employability' and attempt to consolidate aspects of supply side and demand side factors into one common understanding of employability that is up to date with the modern outlook of labor markets (primarily from an Anglo-Saxon perspective). This can also be understood from the perspective of apprenticeships in CSFSs (Busemeyer and Trampusch, 2012), even if different factors might affect the chances of different groups in different types of collective skill formation systems. By grouping the different aspects of employability under the sub-categories of 'individual factors', 'personal circumstances', and 'external factors' McQuaid and Lindsay (2005) offer a rich selection of possible factors and aspects to take into consideration when studying the transition from school to work. The interplay between and the combined impact of these factors are the determinants of the transition process, which provides a suitable foundation for the analysis of paths and obstacles in an individual's transition (McQuaid and Lindsay, 2005).

One limitation of the employability concept from a dual vocational education and training perspective relates to the difference between *job* candidates and *apprenticeship* candidates. The apprentice candidate is typically young, around 15 or 16 years, and has few or no merits such as work experience or indeed no degrees, which in the traditional job seeking situation are used as merits (Di Stasio and van der Werfhorst, 2016). Furthermore, the apprentice recruiter is indeed not hiring an employee but an apprentice. Their role in the firm or organization is different from the regular employees. Although, they may be selected on academic credentials and merits it is rather their *trainability* that are taken into account: not the least in the face of the lack of real work experience or other merits relevant for an employment (Wettstein, Schmid and Gonon, 2017).

3.2.2 Trainability

The trainability factor is sometimes discussed in the queuing theory literature as an indicator that employers look for in general education systems where academic credentials (on the upper-secondary level or higher) are ambiguous or fuzzy, as opposed to in stratified education systems (Thurow, 1973; Bills, 1988; Di Stasio, 2014; Di Stasio and van der Werfhorst, 2016). In the context of initial VET, the concept of trainability is equally applicable since the apprentice recruiters have little other information to rely on than academic credentials, as indicators of the apprentice learning capacity and future productivity (Bills, 1988).

Empirical studies of the predictive value of indicators of basic competences (e.g. oral and writing skills, mathematic and problem solving skills etc.) on apprentices' productivity in the training firm show that an array of academic competences have a positive effect (Robertson and Downs, 1979; Aramburu-Zabala Higuera and Casals Riera, 2004; Jansen and Pfeifer, 2017). To the extent that employers make use of such indicators in their apprentice-hiring practices,

academic competences seem to be an important asset for apprentice candidates. However, previous research is inconclusive with regards to the impact of trainability on performance in different vocational programs (for example the more or less manually or technically demanding and the more or less cognitively and theoretically demanding ones).

3.2.3 Social exclusion

If the employability and trainability discussions relate to the individual, but also consider factors beyond the choice or control of the individual, then 'social exclusion' is a theme that departs from the individual's more social circumstances that are determined on a more societal level. It speaks directly to the *inverse* factors of inclusion, but the focus on the mechanisms of social exclusion offers a richer understanding of processes, sources, and outcomes. Additionally, it suggests focus areas and methods for pinpointing the underlying reasons why some people, or groups, are marginalized in society – regardless of individual attributes (Percy-Smith, 2000). In Percey-Smith's overview, social exclusion is explained as something that occurs "when citizens are denied these social rights or they are not fully realized and, furthermore, in such circumstances citizens are likely to experience for generalized disadvantage" (Percy-Smith, 2000, p. 4).

The linkage between social exclusion and inequality and educational attainment is widely confirmed, both in the Swiss and German contexts (Hupka-Brunner et al., 2010; Hillmert, 2013; SKBF CSRE, 2014, pp. 17-18; Falcon and Joye, 2015). Similar ideas are further corroborated by the findings of Becker and Glauser (2015), suggesting that the parents' social status impacts the educational trajectory more than other factors (such as gender-based occupational patterns). Kriesi et al. (2012) investigate the relationship between different components of educational success and the well-being of young Swiss people vis-à-vis personal and socio-emotional circumstances. They find that a successful transition from lower secondary to post-compulsory education matters for later well-being and is sensitive to the status of the lower-secondary educational track.

In sum, the literatures on employability, trainability and social exclusion provide different perspectives within which to discuss and analyze inclusion in VET systems. In some ways, these two perspectives take opposing views on the causes of exclusion (as stemming either from shortcomings of the individual or shortcomings of the employers, the labor market, or society at large in offering VET for these individuals) but can nevertheless be seen as complementary in future research efforts. Primarily because they may equip us with the tools to critically analyze how different actors, e.g. private and public VET providers, representatives of unions or professional associations, or politicians, choose to frame and identify the causes of obstacles of transitions to dual VET among young people with one or several disadvantages.

3.3 Transitioning from compulsory school to dual VET

3.3.1 Youth characteristics as determinants for transition

The general understanding in the body of literature focusing on education and youth transitions is that the dual VET systems (primarily in Austria, Denmark, Germany, the Netherlands, and Switzerland) are the most efficient for transitioning young people from education to employment, through the channels of collective skill formation and cooperation between different actors (Allmendinger, 1989; Gangl, 2001; Müller and Gangl, 2004; Busemeyer and Trampusch, 2012; Thelen, 2014; Emmenegger, Graf and Trampusch, 2019).

The aspect of dual VET systems that I am focusing on, however, is on the groups that still fail to successfully advance in the system and whose characteristics are negatively perceived and even discriminated against by the apprenticeship providers. In this section, I elaborate more on the traits of these groups and characteristics that are associated with difficulties to transition into apprenticeships.

One broad strand of literature covering access to dual training for disadvantaged youth concerns the importance of personal traits; cognitive or non-cognitive skills, behavior and beliefs, achievements, as well as external factors; family background, social class, ethnicity as well as institutional arrangements and educational systems overall (Arulmani, 2010; Gangl et al., 2004). Another important discussion in the sociological literature refers to the aspects of 'achievement' and 'ascription' in attributing social status to an individual, which in turn might have implications on his or her hiring chances or other life outcomes (Ganzeboom and Treiman, 2007; Nock and Rossi, 1978; Reskin, 1979). These categories are closely linked to the aspects of personal traits and external factors discussed previously. However, the notion of achievement-based assessments assigns more agency to the individual in the sense that achievement is something he or she can control or is responsible for him- or herself. Ascription-based categories, such as gender, parents' occupational status, race, sexual orientation or disability, are on the other hand aspects that cannot be changed by the individual, but might nevertheless be basis for assessment of one's quality as a job candidate, for example (Ganzeboom and Treiman, 1996; Reskin, 1979).

The extent to which hiring decisions, or, more broadly, access to dual VET are influenced by either or both of these categories (achievement and ascription) might be contingent upon different factors related to the employer. For example, the same firm might be very willing to hire women (ascribed category) but avoid selecting foreign-born (ascribed category) candidates out of taste-based preferences, at the same time as job candidates with the highest achievements are selected over those with lower achievements despite their ascribed categories. To summarize, it is important to distinguish between the different types of hiring preferences or selection rationale among employers.

In the following sections, I discuss first different aspects of disadvantage that relate to 'ascribed' categories, and then those related to 'achievement'.

3.3.2 Ethnicity

The issue of ethnicity-based discrimination among apprenticeship-providing firms, and on the regular labor market at large, is a well-studied and unfortunately in many cases well-confirmed tendency. Often, employers' discriminatory behavior is taste-based and due to negative stereotypes related to the candidate's ethnicity (Riach and Rich, 2002; Hupka-Brunner et al., 2010; Imdorf, 2017). In their study of apprentice hiring in Norway, Hellan and Støren (2006) look at migrant youths' chances to get hired as apprentices compared to Norwegian candidates. They find that candidates with a migrant background have to outperform national candidates in terms of grades and school performance in order to have an equal chance at getting hired, but even in doing so are they less likely to obtain an apprentice position in a firm (Hellan and Støren, 2006).

3.3.3 Family background

The negative influence of poor and unstable familial circumstances in the childhood on self-esteem and the accumulated effect of this background as well as psychological constraints' negative influence on educational achievement and training opportunities are little disputed in this area of research. Solga (2015) reviews low-achieving school leavers' access to apprenticeship and their returns to participation in prevocational, or basic vocational, training measures and how social inequality is reproduced in the transition phase. The findings show that even if cognitive skills and a strong academic record play an important role and position the applicant in the employers' selection process, 'networks' (friends, family, and people in the young person's immediate surrounding) can help eradicating negative signals for the disadvantaged and thus alleviating discrimination (Solga, 2015; Protsch and Solga, 2015)[5].

3.3.4 Gender

Another aspect of disadvantage that has been highlighted by the literature is gender (Imdorf et al., 2014; Kriesi and Imdorf, 2019). Although girls and young women are over-represented in pre-gymnasial tracks (SKBF CSRE, 2018) and are generally performing well in school compared to boys and young men (Kriesi and Imdorf, 2019), in vocational education there are instances where females are at a disadvantaged compared to males. One example of this is the highly gender-segregated occupational divisions in vocational education and training (Imdorf et al., 2014).

Inasmuch as young women are overrepresented in branches such as social care, health and service programs – vocational programs that cater to youths with medium school achievements

[5] See also Bonoli and Turtschi (2015) and Liechti (2019) for a continued discussion of the importance of networks for other vulnerable groups.

– the male branches primarily in construction and manufacturing cater also to youths with lower school achievements (Imdorf et al., 2014) This could mean that girls who follow the lower educational track (in countries that have the tracking system such as Germany and Switzerland) have a comparatively lower chance at obtaining an apprenticeship in the female-typical, more medium-skilled, occupations (Hupka-Brunner, Meyer, Stalder et al., 2011 in SKBF CSRE, 2014, p. 103). Such tendencies might also interact with aspects such as social and cultural backgrounds, through which girls with an immigrant or working-class background both are likely to have lower educational attainments and to a higher extent opt for gender segregated programs (Kriesi and Imdorf, 2019). In other occupations, such as commerce and public administration, however, the gender balance is more equal and therefore produce more gender-equal chances for apprenticeships compared to more gendered-segregated branches. In sum, gender and stereotypes around might under certain circumstances produce hurdles for youths in accessing vocational training.

3.3.5 Academic achievements, cognitive and non-cognitive skills

Previous research on access to dual VET convincingly shows that academic achievements and performance-based test results are important for the chances of being hired as an apprentice (Di Stasio, 2014; Hupka-Brunner, Sacchi and Stalder, 2010; Protsch and Solga, 2015; Protsch, 2017; SKBF CSRE, 2018). Employers are in general most likely to hire a candidate based on their achievements due to the presumed higher trainability of such candidates (although other, notably ascription-based categories might still come into play in the hiring situations (see Fossati, Wilson and Bonoli, 2020). A strong academic performance can therefore be expected to improve the apprentice candidates' chances substantially.

Solga and Kohlrausch (2012), however, suggest that one or several mechanisms may be in play in different institutional, educational, and political circumstances, which brings us back to the initial discussion about multi-fold issues regarding employability and exclusion. Inasmuch as academic records are regarded as insufficient for the disadvantaged youths that apply for positions in the VET system, proof or demonstration of non-cognitive skills indicate trainability may supersede the lack of other qualification proof (Kalter and Kogan, 2006; Kemshall, 2008; Solga and Kohlrausch, 2012). If non-cognitive skills are observable before hiring, then they can even be considered more relevant for the trainability outlooks than cognitive skills (see Wettstein, Schmid and Gonon, 2017).

3.3.6 Summary

Individual factors are thus important determinants of success and failure in education and training. In dual systems, what matters is a combination of these factors that affect success and failure in education and those that determine access to the labor market. Together with cognitive skills (e.g. as measured by grades), networks, and signals, non-cognitive skills can be expected

to play an important role. In brief, drawing on Solga's extensive work on the matter (Solga, 2002; Solga, 2008; Solga and Kohlrausch, 2012), the indicator 'less educated', as in having dropped out of school before achieving a upper secondary (or lower secondary) school diploma or lacking much or any training or work experience, are more likely to be a reason for exclusion in the hiring process now than before.

3.3.7 Unresolved issue #1

What this section reveals are the main youth determinants, both relating to aspects of achievement- and ascription-based disadvantage, for managing the transition from compulsory school to obtaining an apprenticeship position in a firm. What is lacking from this part of the literature are studies on how different combinations of strengths or weaknesses, skills and capacities, social or personal characteristics and background with the candidate, affect the chances to access an apprenticeship position. Thus, I formulate a first unresolved issue in the literature:

Unresolved issue #1: How different combinations of, or multiple, disadvantages affects the access to dual apprenticeships is understudied.

3.4 Transition factors and policies in collective skill formation systems

In this section I discuss the strand of literature that addresses transition policies and the 'transition regimes' of different skill formation systems. Following Meyer, transitional options in dual VET can be described as having three main functions: a *compensation function*, an *orientation function* and a *systemic buffer function* (Meyer, 2003). The compensation function relates to programs that are intended to help school leavers to make up for lacking knowledge or qualifications; the orientation function intends the guiding aspect for young people who "do not yet know or are fully aware where their abilities and interests lie" (Wettstein, Schmid and Gonon, 2017, p. 195); and the systemic buffer function aims at intervening in the cases where there is an imbalance between supply and demand on the apprenticeship market, for example through policies with a social integration function (see Gertsch, Gerlings and Moetta, 1999). Such transitional options may differ in the extent to which they are effective in helping youths to transition, and similar transitional options may equally differ in effectiveness and success rate across countries (Wettstein, Schmid and Gonon, 2017).

3.4.1 National preparatory VET programs

At the national level, there have been numerous efforts to evaluate the efficiency of transition measures helping young people enter the regular VET as well (Jeon, 2019, p. 57ff, Ryan, 2001). Such measures can be classified as school-based preparatory programs (10^{th} school year) or pre-apprenticeships (in combination with school-based learning as a bridge to regular apprenticeships). These refer both to the *compensation function* and the *orientation function*, as mentioned in the previous section. In Switzerland, for example, there are motivation semesters

(for adolescents with school fatigue) and integration courses for students with immigrant background (Brahm, Euler and Steingruber, 2014, p. 90; Wettstein, Schmid, Gonon, 2017) that aim at support the orientation and integration aspect of transitioning into upper secondary (VET) education. Other measures target more specifically the importance of early contact with firm-based training, through internships or pre-apprenticeships, as opposed to more school-based options as crucial for a successful transition (Nickolaus, 2012; Wettstein, Schmid and Gonon, 2017).

The issue with regards to these programs is the element of selection which is often still present: firms are still free to choose who they like which tends to disadvantage some groups, most notably those with an immigrant background or originating from lower social classes (groups that are overrepresented in transitional options to begin with (Meyer, 2009; SKBF CSRE, 2018; Fibbi, Kaya and Piguet, 2003; Imdorf, 2008). Often the *systemic function* is lacking to a higher extent compared to the *compensation* and the *orientation* functions (Meyer, 2003).

3.4.2 Country-comparisons of youth transitions

In a comparative study of the German and Swiss VET systems in terms of successful transitions between compulsory school and upper secondary level education, Buchholz et al. (2012) find that youth with poor grades from compulsory school have better chances at accessing upper secondary level education compared to their German counterparts. This indicates a high level of flexibility of the Swiss system and comparatively lower stigma of the lower educational tracks, which generates comparatively few cases of youth outside the education system (i.e. NEETs). In another CSFS, Denmark, recent reforms introducing grade requirements for accessing the regular length dual VET programs have made it more difficult for low achievers to follow such a program (Carstensen and Ibsen, 2019). One of the rationales for this 2014 reform was to accommodate the employers' concerns about a dwindling preparedness of school-leavers (ibid). Instead, the Danish state has broadened the school-based vocational training options for those who would not qualify for regular training (ibid). Durazzi and Geyer (2019) study the institutional resources for accommodating the challenge of helping low achievers to transition and access dual VET in Germany and Austria (two CSFSs). They find, among other things, that unions are instrumental in shaping an inclusive agenda, coupled with positive or negative legacies for such policy efforts (in the Austrian case non-firm-based training and in Germany a proposed training levy) which rendered the case of Austria more successful in accommodating also low achievers' training needs, compared to Germany (Durazzi and Geyer, 2019).

3.4.3 Transitions in the Varieties of Capitalism literature

It is, thus, an empirical question which types of programs are suitable given the characteristics of the young having difficulty to transition and given the educational and economic context in the country in question. From the perspective of disadvantaged youth and their transitioning in

dual VET countries, the topic in this dissertation, the contributions by Pohl and Walther (2006; 2007) among others indicate that it might be advisable to consider policy traditions and regimes in other domains than simply 'skill formation'. The contributions in the Variety of Capitalism (Hall and Soskice, 2001) and Varieties of Liberalization (Thelen, 2014) literatures that focus on social policy, industrial relations and labor market policy might provide insights to the puzzle as well, given the many touchpoints between these policy areas and vocational education for disadvantaged youth groups. The notion put forth by Thelen (2014) that different levels of state capacity and employer group coordination paves way for different outcomes in terms of equality in the economy as a whole, including in field of vocational education and training, solidifies the choice to take system- and country differences into account when studying inclusive-enhancing political efforts for disadvantaged youth.

3.4.4 Transitions and the role of intermediaries

One of the formative works covering issues of young disadvantaged people and transition to the education, training and labor market is the anthology by Colley et al. (2007), where numerous labor market and youth scholars elaborate on the nature of social inclusion of this group (Ryan, 2001; Kovacheva and Pohl, 2007; Williamson, 2007; Niemeyer, 2007). The overarching theme is the complexity of post-modern life in relation to the school-to-work transition, which is to be taken into account by the young and which demands great efforts from the public counselling and mentoring system (Kovacheva and Pohl, 2007).

Parts of the scholarship of transition for disadvantaged focusing on the important elements for successful transitions similarly identify career counsellors or other types of advisors working with young people as playing a crucial role. In the cases where an employer is reluctant to hire individuals belonging to certain ethnic or social groups or because he or she perceives that a certain candidate is lacking a particular skill, such intermediary actors can be instrumental (MacDonald and Marsh, 2001; Bretherton, 2011; Kalter and Kogan, 2006; Arulmani, 2010; Leeman and Imdorf, 2012; Imdorf, 2017; Pisoni, 2018). In broader terms, the role of an intermediary between the employer or trainer and the disadvantaged young cannot be omitted, as they may both motivate the young to persist in the transition process due to their familiarity with the youth's biography and perhaps non-cognitive skills and also function as guarantor of the youth's qualities with the employer (Mohrenweiser, 2012; Imdorf and Leemann, 2012; Mohrenweiser and Pfeiffer, 2014).

3.3.5 Transition mechanisms

Many scholars agree that the recent demographic, economic and social developments and changes and in general the diversification and comprehensiveness of the education and training system in many advanced economies have had adverse effects on the most disadvantaged and vulnerable in society (Gabel et al., 2009; Bretherton, 2011; Williamson, 2007; MacDonald and

Marsh, 2001; Mohrenweiser, 2012; Dif-Pradalier et al., 2012). What this literature still misses, I argue, is a closer investigation of the mechanisms and intentions behind the development of interim solutions and few efforts have been made to systematically conceptualize overall national strategies and connect it to the collective skill formation literature and VoC literature. Eurofund's (2014, p. 64) as well as O'Reilly et al.'s (2018) comparative investigations of measures targeting the problem of early-school leaving in Europe, which describes similar measures in some regime-typical countries, provides a good overview of transition measures and youth policies in Europe and their comparative strengths and weaknesses. However, it does not present a conceptual framework for understanding the origin, mechanisms behind, or intentions of these measures.

Similarly, for dual VET programs that are not transitional per se but have the intention to be a potential first stepping-stone towards further training, such as shorter apprenticeships, for youths that have difficulties accessing or completing regular-length apprenticeships, comparative studies are largely lacking. Whereas country studies of the effects and success rates of such dual programs exist on national levels as we have seen (Wiborg and Cort, 2009; Jørgensen, 2014; 2015; and Rambøll, 2016, for Denmark; Braun and Geier, 2013; Euler, 2013 for Germany; and Wettstein, Schmid and Gonon, 2017; Kammermann, Stalder and Hättich, 2018; and Pisoni, 2018 for Switzerland) we lack an overview of key aspects of the governance of such programs that are best obtained from comparative perspectives. Such aspects could be the role of the state versus the role of the employers in ensuring and improving access for disadvantaged youth to in-firm vocational training; the importance of national level governance or more regional, decentralized efforts; or whether these dual programs are primarily conceived to suit the market demands and economic aspects of VET or more towards the needs and preferences of the disadvantaged youth. To address such important aspects of the inclusiveness in dual VET, I argue that comparative country studies can generate insights that single country-studies cannot.

3.4.6 Unresolved issue #2

In conclusion, one main issue regarding transiting policies in collective skill formation systems remains unresolved:

Unresolved issue #2: We lack comparative studies on programs intended to enhance the chances for disadvantaged youth and how they are institutionalized in different collective skill formation systems.

3.5 Firms training disadvantaged youths: characteristics and incentives

Firms are central actors in dual VET systems and in the transition phase from compulsory school to enrolment in VET. But which firms train disadvantaged young people and why?

Furthermore, does the sector type matter for how willing firms are to consider training disadvantaged youth? In this section I review the scholarship addressing these issues.

3.5.1 Sectors and occupations and training of disadvantaged youth

Departing from the sectors, Grotti et al. (2018) investigate on a comparative European level in which sectors young people (age 16-24 years) in general are employed. In Denmark the wholesale and retail sectors employ the largest parts of youths (ca. 30%) whereas in Germany the largest sectors are healthcare and social work among women and manufacturing (among men) (Grotti et al., 2018, pp. 44-46). In Switzerland, the most popular initial dual vocational training programs are business and administration (commercial employee training) (17%), retail (14%) and construction and civil engineering (8%) (OFS, 2019a). The indicated occupations correspond with promising sectors for the low skilled highlighted in the employer-focused literature (Holzer, 1998; Zuckermann, 1999; Martin and Knudsen, 2010; Rivera, 2011; Imdorf, 2013; Castilla et al., 2013). In this sense, wholesale and retail as well as food and accommodation are sectors that do not demand long trainings, are less intellectually demanding (Stalder, 2011), which favors non-cognitive and personal qualities over cognitive skills and are less sensitive to streams of globalization and technological change (O'Reilly et al., 2018, pp. 2-5). Therefore, these are sectors that seem more promising in terms of providing training opportunity for young disadvantaged groups, although further comparative research efforts are needed to properly determine the employers' intention and preferences in different sectors.

3.5.2 Training capacity and training of disadvantaged youth

Many contributions to this strand of literature have studied the characteristics of the firms that are participating in training programs aiming at disadvantaged people or that simply train young people with weaker achievement records. Some findings suggest that firms that have 'greater training capacity' in terms of full-time instructors and facilities are more likely than others to take on disadvantaged applicants. Further, firms that are more willing than others to invest own additional resources into training are more likely to participate in training schemes for low achievers (Mohrenweiser, 2012), which refers to firms that have an extensive training or apprenticeship structure in place already (Mohrenweiser and Pfeiffer, 2014). However, firm size and demand for skilled workers does not affect participation in training schemes according to the results in Mohrenweiser's study (2012).

3.5.3 Firm-size and hiring of disadvantaged job candidates

The labor market literature has paid somewhat more attention to the association between firm characteristics and the likelihood to hire applicants with a disadvantaged background. Some studies from the United States have shown that large companies are less likely to discriminate against ethnic-minority applicants (e.g. Holzer, 1998) and others suggest that companies that use skill-testing are also less likely to discriminate based on ethnicity (Neckerman and

Kirschenmann, 1991). Other studies, focusing on unemployed and on long-term unemployed applicants, found that smaller companies are more likely to hire this type of disadvantaged profiles (Atkinson et al., 1996; Bonoli, 2014). Larger firms, in sum, seem less inclined to discriminate based on 'ascribed' categories compared to smaller firms.

For the Swiss case, Imdorf and others have contributed substantially to the knowledge of firms' traits and recruitment preferences in relation to different types of youth profiles, not the least the negative impact of an immigrant background for the apprenticeship candidates (Imdorf, 2006, 2007a, 2007b, 2007c; Imdorf and Scherr, 2015; SKBF CSRE, 2018). On the basis of these studies, it seems that companies may behave differently in relation to different types of disadvantage. More specifically, the body of literature here reviewed seems to suggest that small companies might be more likely to select candidates based on criteria *other than* achievements, and instead tend to avoid selecting candidates from ethnic minorities (see Imdorf, 2017).

However, Protsch (2017) shows in her work that large employers might have a lower threshold at the initial, screening, phase of apprentice hiring when it comes to inviting lower-achieving candidates for a first interview. This finding does not present a conclusive link between achievement level and hiring chances, but rather the odds of getting a 'foot in the door' (Protsch, 2017).

In sum, smaller firms might be a promising venue for low achievers but less so for candidates with a migrant, or minority, background.

3.5.4 Employer values and training of disadvantaged youth

Similarly, Stalder and Stricker (2009) show that the characteristics of a 'good learner' is not primarily the professional and practical skills and capacities of a young applicant, from the employer's perspective, but rather 'work virtues' such as punctuality and conscientiousness. These findings imply that under certain circumstances, some employers might indeed look past grades and instead consider personal qualities of the young. However, this study does not specify what employer characteristics would be associated with a stronger tendency to relax grade and intellectual capacity in the recruitment process.

3.5.5 Firms' cost-benefit considerations and training of disadvantaged youth

An explanation for less educated individuals' low employment opportunities was provided in previous sections. This research emphasizes the 'logic of selectivity' used by employers and the cost-benefit calculations that they take into consideration in the apprenticeship hiring process. Most studies that access to VET is contingent upon academic performance, reflected in grades and tests, aside from expected net benefit as a necessary condition for a firm's participation in the VET system in general (Acemoglu and Pischke, 1998; Wolter and Schweri, 2002;

Mühlemann and Wolter, 2006; Protsch and Dieckhoff, 2011; Kuczera, 2017; Kübler, Schmid and Stüber, 2019). Based on this 'conventional knowledge', Fuhrer and Schweri (2010) tested the net benefit of firms providing two-year apprenticeships, and find that some occupations (i.e. retail assistant, logistics assistant, tire worker and carpentry assistant) give a net benefit to the firms upon completion of the training. For automotive assistants, domestic assistants, kitchen employee, motel workers and restaurant employees, the costs exceed the benefits, something which is explained by the relatively higher apprentice wages in these occupations (due to collective labor agreements).

Müehlemann, Braendli and Wolter (2013), however, find that in some occupations (retail and administration), in the Swiss context, some employers were indeed prepared to set aside more time and resources for the purpose to compensate for some apprentices weaker skills, but only with the outlook of reaping a financial net benefit in the end. However, they do not look at employers' hiring decisions but studies, ex post, the strategies for handling young with different skill endowments.

Similarly, Kis' study of firms' participation in work-based measures for at-risk youth, finds that private employers need other incentives to take on a disadvantaged youth because of the additional costs associated with training someone who is 'hard to train' (2016, p. 13). She holds, further, that financial incentives (i.e. subsidies for firms), to better prepare youth for apprenticeships and support during apprenticeships are key policy tools to improve firm engagement in (pre-)apprenticeship provision for disadvantaged youth (Kis, 2016). What Kis' 2016 study omits, however, are the characteristics of the employers (if any) that indeed do provide (pre)-apprenticeships without necessarily breaking even, and the approaches used by public bodies to convey firms to participate.

3.5.6 Social norms and training of disadvantaged youth

As the authors Kuhn, Schweri and Wolter show, however, cost is not everything when it comes to apprentice hiring (2018). In their study from 2018 they manage to compare a community-level votes data with firm-level survey data and find that a strong tendency of firms' commitment to apprenticeship provision in communities where the social norms towards private provision of public goods (Kuhn, Schweri and Wolter, 2018, p. 29). Although this study does not provide specific evidence for a certain type of employer to be more likely to offer training to disadvantaged candidates, it leaves the door open for norms and values within a firm or surrounding a firm to play a potentially important role in the shaping of preferences.

3.5.7 Unresolved issue #3

Drawing on the reviewed literature in this section, one last unresolved issue has emerged with regards to disadvantaged youths' access to dual vocational education and training:

Unresolved issue #3: It is not clear what employer characteristics are associated with a (stated) willingness to lower hiring criteria and to be more lenient towards disadvantaged youth.

3.6 My contribution

To conclude this literature review, I present a summary of the unresolved issues that this dissertation aims to address given the identified gaps in the literature and how they are addressed in the three papers. Overall, an option for expanding the understanding of the access to dual VET for disadvantaged youth is to try to combine the benefits of qualitative studies with large-N quantitative studies (something that I explain further in the next section, Methodological approach). As argued in the Introduction, I believe the research question that guides this dissertation invites studies and answers on a system- and meso-level, targeting institutions and actors that are involved in the decentralized cooperation governing the VET programs in different countries. What the research question also requires is studies with a focus on the micro-level, in this case the employers that are responsible for selecting and hiring apprentices for in-firm vocational training. By combining approaches focusing on these different levels of analysis, the descriptive, theory-building and output-oriented answers and insights generated in Papers I and II can to some extent be tested as hypotheses in the more explanatory, outcome-oriented and theory-testing, Paper III.

3.6.1 Unresolved issue #2: Comparative studies of programs for disadvantaged youth

Drawing on the unresolved issues #2 identified in the Literature review section, I briefly explain in the following how Paper I and Paper II each tackle these issues.

Unresolved issue #2: We lack comparative studies on programs intended to enhance the chances for disadvantaged youth and how they are institutionalized in different collective skill formation systems.

By studying dual VET measures that are aimed at disadvantaged youth and the governance of such programs that aim to motivate and cajole firms into providing training to disadvantaged youth in Paper I, I am able to pinpoint some of the relevant system-level conditions for inclusion-oriented policies. Literature on macro-corporatism (Martin and Swank, 2012), worlds of welfare capitalism (Esping-Andersen, 1990), varieties of liberalization (Thelen, 2014), human capital formation regimes (Iversen and Stephens, 2008) and decentralized cooperation in collective skill formation systems (Culpepper, 2003, 2007; Busemeyer and Trampusch, 2012; Emmenegger, Graf and Trampusch, 2019) have provided key insights to the link between institutional configurations and the cooperation between public and private actors. However, the study of dual VET policies aimed at disadvantaged youth requires a combination of theoretical insights concerning all the fields mentioned, covering education as well as labor market and industrial relations research.

In Paper II, the analysis singles out one dual vocational training program, namely the two-year apprenticeships (the *Eidgenössisches Berufsattest* (EBA) in Switzerland, the *Zweijährige Ausbildungsberufe* (two-year programs) in Germany and the *Erhvervsgrundduddannelse* (EGU) in Denmark) to analyze and compare both across and within the cases. Drawing on the insight from Paper I, namely that none of the established political economy theories that are common when collective skill formation systems are analyzed, is enough on its own to fully grasp the multifaceted nature of the 'short-tracks' and their goals, functioning and governing. Therefore, we combined theoretically sociological institutionalism with a political economy perspective in order to fully account for and be able to compare these short-tracks and their institutionalization in three countries, and across the regulative, normative and cultural-cognitive dimensions (Scott, 2014).

The idea in Paper I and Paper II is not to identify the tipping point for, or the limits of, an increased inclusiveness-intention from the state 'at the expense of' the economic efficiency goals of the firms providing the training. Instead, the co-authors and I envisioned ideal typical scenarios where the state – through its linkages and institutional affiliations with social partners (unions and employer associations) and directly or indirectly with the training firms (Martin and Swank, 2012; Thelen, 2014) – is able to broker agreements for a higher inclusion of disadvantaged youths in vocational training and at the same time catering to firms' needs of skills. In such a scenario, a high level of inclusiveness and indeed social equality could theoretically be combined along with a high level of economic efficiency, in the sense that youths with less theoretical and more practical skills *or* youths with lower professional ambitions could be matched with firms with similar needs (see also Carstensen and Ibsen, 2019, for a similar theoretical argument).

In the opposite 'ideal typical' scenario, where neither economic efficiency nor inclusiveness or social equality goals are obtained to any high extent, is imaginable in the case where the state is little involved in using the dual vocational education and training track as a tool for young people to obtain a certifiable education. In such a scenario, similarly, firms are little involved in providing such training opportunities for disadvantaged groups.

One objection towards this idealized concept of high social equality/inclusiveness – high economic efficiency goals in a system would be the lack of empirical evidence or theoretical accounts – in the realm of dual vocational education and training targeting disadvantaged groups. We have learnt from recent studies of VET systems and VET programs (Carstensen and Ibsen, 2019 (Denmark); Durazzi and Geyer, 2019 (Austria and Germany) that in order to preserve the good reputation and high status of VET, some sort of state responsibility or state-based options for unsuccessful apprenticeship candidates has been proven important.

These relevant findings do not preclude the possibility of policy efforts for youths on the lower end of the skill spectrum, or for youths with ascription-based disadvantages (ethnicity, gender, socioeconomic status etc.) that at the same time cater to firm needs. By looking at comparable dual VET programs in three quite different countries from the collective skill formation family – Denmark (universalistic), Germany (corporatist) and Switzerland (liberal-corporatist) – and their designs, regulations, aims and target groups, my aim was to use established political economy theories (Martin and Swank (2012) on macro-corporatism linkages and firms' participation in active labor market policies and Thelen (2014) on possibilities for social solidarity in industrial relations, VET and labor market policy) to take stock of the differences in which countries solve this inclusiveness-efficiency dilemma.

The objective with the approach in the first two papers is not to measure the *actual* inclusiveness outcome, in the sense of accounting for how many of the youth in the target group 'disadvantaged' that access different dual VET programs under different policy and governance regimes. Instead, the aim is to focus on the policy output of the different collective skill formation regimes: what the intentions and aims of the dual programs were in terms of inclusion of disadvantaged youth.

3.6.2 Unresolved issue #1 and #3: Combinations of disadvantages and employer characteristics associated with inclusive hiring preferences

The first two papers in the dissertation thus seek to map policy measures and pinpoint the governance conditions for more or less inclusive-oriented, or social equality-laden, apprenticeship programs. Paper III, however, focusses on firms as the principle actors for providing access to dual training for disadvantaged youth. The preferences of firms, in relation to young people with different disadvantages, is largely understudied in the existing literature (important exceptions are provided by Protsch and Solga, 2015; Protsch, 2017; Imdorf, 2017; Kübler, Schmid and Stübler, 2019). The employers and recruiters, with their preferences, biases, value-systems and rationale, are difficult yet essential actors to get a closer look at in order to tease out the connections between firm traits, sociocultural contexts, and the most likely set of disadvantaged traits that they would choose to hire.

More specifically, it addresses the unresolved issues #1 and #3 identified in the Literature review.

Unresolved issue #1: How different combinations of, or multiple, disadvantages affects the access to dual apprenticeships is understudied.

Unresolved issue #3: It is not clear what employer characteristics are associated with a (stated) willingness to lower hiring criteria and to be more lenient towards disadvantaged youth.

What I contribute to the literature is a research effort that aims at identifying factors behind selection rationales without risking the results being too affected by social desirability bias. Similarly, as some determinants for the transition of disadvantaged young people are presented throughout the literature, I propose to make further efforts to consolidate and test the results against each other in order to try and establish a clearer and more coherent ranking or hierarchy of the different mechanisms. In Paper III, I do this by identifying the threshold criteria for the employers in the hiring decisions[6]. In addition, I ask which of the apprentice candidate's achievements and hobbies (achievement categories), socioeconomic and ethnic background and gender (ascription categories) that supersede others (albeit in an experimental, fictitious, setting)? And, what are the firm traits associated with the higher stated willingness to hire individuals with one or many disadvantages?

In the following section, I discuss the methods used in the three articles that together compose this dissertation.

4. Methodological approach

For this dissertation I have chosen to select and use different methodological approaches that are adapted to the research questions covered in the different papers. This has generated a mixed setup of methods as well as data, covering both small-N case studies approaches as well as large-N quantitative methods using experiments. In the sections that follow I discuss the implications, the benefits and short comings of the methodological choices for this dissertation.

4.1 Comparative case study (small-N)

The first two papers in the dissertation draw on similar methodological approach, namely comparative case studies with few cases (King, Keohane and Verba, 1994, p. 91ff; Peters, 1998). With the aim to map and theoretically account for variation in dual inclusiveness measures targeting disadvantaged candidates in CSFSs, I have chosen, together with co-authors, to address the research questions with qualitative methods (small-N). The rationale for this decision rests mainly on the primary aim of the first two articles in the dissertation to investigate this quite novel and understudied area: dual VET programs that specifically target low achievers and youth groups with ascription-based disadvantages in accessing in-firm apprenticeships (e.g. youths with migrant backgrounds, from families of low socioeconomic status etc.). A systematic mapping of such programs and measures and an analysis of their aims and reliance on firms'

[6] Together with Flavia Fossati and Giuliano Bonoli, another paper based on the same survey was published in European Sociological Review (https://doi.org/10.1093/esr/jcaa020) (Fossati, Wilson and Bonoli, 2020). This paper seeks to investigate the different signals emitted from the various combinations of traits in the fictitious apprentice candidates and finds that for 'ambiguous profiles', e.g. good grades but poor scores at aptitude tests, employers tend to discriminate candidates with a low-skill family background compared to candidates with unambiguous profiles (with consistently good or bad academic performance).

participation was deemed necessary in order to properly understand the variation within the family of collective skill formation systems (Busemeyer and Trampusch, 2012). This issue is addressed in Paper I (Bonoli and Wilson, 2019).

Similarly, but for the purpose of examining one such dual inclusiveness measure more in depth, a comparative approach was needed also in order to address the unresolved issue highlighted in Paper II: how these measures are institutionalized in different collective skill formation systems and what values that underpin this institutionalization (Di Maio, Graf and Wilson, 2019).

In Paper I, the unit of analysis is the different VET policies in three different collective skill formation countries. The approach is not a traditional comparison per se, with the aim to find causal explanations for an observed outcome (King, Keohane and Verba, 1994), but rather a descriptive mapping of existing policies in countries selected to achieve a maximal variation in institutional setup and political economy tradition. The cases in question are Denmark, Germany and Switzerland. We deemed that among the collective skill formation countries, these three reflected different types of political economies – their commonality regarding the education systems aside.

In Paper II, we have also chosen to use three CSFSs – Denmark, Germany and Switzerland – which we argue reflect different political economy and worlds of welfare capitalism traditions, but this time with the aim to compare the systems. What demarks this approach from Mill's traditional logic of difference is that the countries Denmark, Germany and Switzerland precisely all are collective skill formation systems and therefore rather similar (Peters, 1998; Busemeyer and Trampusch, 2012). Not the least in the aspects that concern education tradition and education policy. However, since we argue that issues that concern dual VET — and specifically the aspects of VET that are more closely related to disadvantaged populations — are closely affiliated with other policy areas such as labor market and industrial relations, differences appear between the three cases. Inasmuch as our case selection does not clearly adhere to either comparative logic they lose some of its explanatory value in the aim to identify a causal mechanism, or explaining the observed outcome (in this case, the institutional underpinnings and logics for one specific and similar VET program in each of the three countries). What the three-fold case study enables us to do, however, is to explore a policy in maximally varied contexts and therefore minimize the possibility of omitting other potential variations of policy logics.

The objectives of Paper I and II are consequently to describe and understand the explanatory power of human skill formation and political economy tradition theories in the output and aims of (one) dual inclusiveness program(s). The comparative approach in the papers aspire to understand the variation in inclusion-oriented dual VET programs. This is why we chose as

broad variation of cases as possible in terms of welfare policy traditions: a liberal Switzerland, a corporatist Germany and a Social-democratic Denmark (Esping-Andersen, 1990, p. 74). Although the main aim is *not* to make causal inferences about the effects of regime types and institutional configurations of the VET systems on the inclusiveness efforts for, or inclusion of, disadvantaged youth, this is a link that is of interest to explore in the two papers. The cases were therefore selected based on the independent variable (regime types) and not on the dependent variable (the policy output), which would have potentially biased the case selection and the ensuing results (Collier and Mahoney, 1996; Seawright and Gerring, 2008).

The main methodological tool we used in Paper II was informant interviews with experts in the fields related to the dual short-track programs in Denmark, Germany and Switzerland. The experts were selected based on their professional roles in organizations or institutions, both on a central and regional level, that are involved in the provision and/or governance of short-track programs. The objective with the interviews was to get as clear picture as possible about the intentions, implementation and functioning of the short-track from different actors involved (King, Keohane and Vera, 1994, p. 227; Martin, 2013). For this purpose, informant interviews lend themselves well, given the rich accounts and more comprehensive ideas the semi-structured interview can generate. In particular, the possibility to follow up unclear answers and unexpected interesting topics that may occur in the conversation (Leech, 2002; Esaiasson et al., 2007, chapter 13). For that purpose, we relied on a standardized questionnaire, but with certain aspects reserved for specific actors (e.g. questions about the policy design in the implementation phase were reserved for actors at the central level who were involved in this phase of the short-track).

The interviews were semi-structured and lasted for about one hour each. My contribution in this part of the data collection for Paper II was to interview the Danish short-track actors. The interviews were carried out face-to-face and through video calls and the interview languages was Danish, Swedish and, in one instance, English.

For Paper III, in which the main analysis is based on the survey experiment described below, interviews were equally a part of the methodological setup and we carried out eight in total. The purpose of the first three interviews were to acquire some knowledge about what information a typical apprenticeship application contains. This information we used in the construction and design of the vignette in the vignette survey. The other five interviews were carried out after the vignette survey data collection was completed with the aim to interpret some of the results and to enrich the understanding of the selection rationale of apprentice recruiters. These eight interviews can be classified as informant interviews (Esaiasson et al., 2007, pp. 258-9), similarly to those selected for Paper II.

The first three interviewees were largely selected for reasons of convenience: two of the vocational trainers were employed at the University of Lausanne which made them easy to approach and to convince to participate. The third, a career counselor, was known by a colleague with affiliation to the lower secondary school where the interviewee was employed. The five remaining interviewees were participants in the vignette survey who had agreed to be contacted for potential follow-up studies. They were selected randomly from this population to avoid potential selection biases (King, Keohane and Verba, 1994).

4.2 Vignette survey experiment (large-N)

The second method employed in this dissertation is a vignette survey experiment, sent out to 1129 individuals, currently registered with the Cantonal Department for Post-compulsory Education in Vaud as vocational trainers (often involved in the apprentice selection), in the Canton of Vaud in Switzerland. Paper III in this dissertation draws on the findings that this vignette survey experiment yielded (i.e. full responses from 840 individuals). With this approach, Paper III addresses the micro-level aspect of the dissertation research question (*What factors enable disadvantaged young people's access to dual apprenticeships in collective skill formation systems?*) namely apprenticeship-providing employers and their preferences for apprentice candidates.

The reasons for conducting the survey in Switzerland are motivated both by theoretical relevance and by convenience reasons. The former reason is due to the prominent role of the dual VET system in Switzerland (although in the canton of Vaud the participation in dual VET is lower compared to the German-speaking regions (SKBF CSRE, 2018)) and its high esteem among youths, parents and in the economy. The vocational training in Switzerland is highly standardized, the degrees are portable and recognized within occupations across the country and have a high general value (as opposed to more firm-specific trainings) on the labor market (Wettstein, Schmid and Gonon, 2017). Due to the good reputation of the VET system, and its importance for providing employers and the economy with a skilled labor force, the system is also known to be quite selective – not the least with regards to training in the commercial occupation (Stalder, 2011). I argue that it is an interesting case to study employers' preferences since Swiss employers have little constraints with regards to whom they hire as apprentices.

The latter reason for selecting Switzerland, and the canton of Vaud, for conducting the survey, is due to convenience. I conduct my doctoral studies at the Swiss University of Lausanne and together with the colleagues Flavia Fossati and Giuiano Bonoli, also based in Lausanne and are both Swiss nationals, we agreed that the survey experiment would best be conducted in a Swiss context that we knew well. Furthermore, through a visit at and through correspondence with the Cantonal Department for Post-compulsory Education, we were able to obtain the contact details

to apprentice recruiter in the commercial occupation. This paved way for a timely preparation and execution of the vignette survey experiment.

A vignette survey experiment is a survey which presents vignettes, short descriptions of persons or scenarios containing dimensions (e.g. gender, age) with different levels (e.g. boy/girl; 15 years old/18 years old) that vary and are assigned randomly to the survey respondents (Auspurg and Hinz, 2015).

This approach addresses a number of methodological aspects that the comparative, small-n studies used in Paper I and Paper II is not able to address. Firstly, for the sake of testing hypotheses related to (stated) employer preferences (in this case vocational trainers in the commercial employee domain) the online survey mode is more cost and time efficient than it would have been to interview a critical number of employers (Esaiasson et al., 2007, p. 264).

Secondly, the experimental survey mode enables us to control for confounding variables that normally plagues observational studies and other non-experimental survey designs (Esaiasson et al., 2007, Chapter 19; Auspurg and Hinz, 2015). More specifically, by asking the respondents to rate fictitious candidates (whose characteristics we control) we can be sure that it is 'only' the personal preferences of the respondents that we capture and not circumstantial, external variables (e.g. personal contact, asymmetric information etc.) that could alter the selection decision.

Thirdly, an advantage with the experimental survey is that it enables a factorial analysis of the data generated from the respondents' rating of several fictitious candidates, which means that we in detail can determine which aspect / characteristics of a candidate that matters more in the decision and which matter less (or not at all) (Auspurg and Hinz, 2015). In observational studies of similar hiring situations, we would never be able to know for sure what aspect of a candidate that tipped the selection in the one direction or the other, both due to social desirability behavior of the observed recruiter and/or simply the difficulty to consciously extract and rank different candidate characteristics.

The survey experiment method naturally also comes with some caveats. Despite careful attention to the survey design and particular efforts to create vignettes that are realistic containing information that resemble those that recruiters would have access to in real life (Jackson and Cox, 2013), the external validity of the vignette experiment can never fully replicate real life hiring scenarios.

Furthermore, there is a risk of answer bias due to the fact that the respondents are aware that it is an experiment and that their responses will be visible to the researchers. This bias risk is particularly present in the case where one vignette dimension (constituting one characteristic of

the fictitious candidate) is too dominant in comparison with the others, for example if it is overly positive or negative. The vignette dimensions, therefore, must be well-balanced and not too conspicuous.

Lastly, although the survey experiment used in this dissertation aims to map the preferences of vocational trainers and apprentice recruiters with regards to apprentice candidates, it does not capture real life behavior. We can therefore not know for sure that they would act the same way in reality as they do in the experiment (although some studies postulate that the behavior in experimental studies correspond well with real life behavior, see de Dreu et al. (2001) and Webb and Sheeran (2006)).

With regards to the selection of cases in the vignette survey experiment in this dissertation, the canton of Vaud, one can ask whether this is a case that we can generalize from? On the one hand, one can argue that it resembles the situation in other collective skill formation systems more than German-speaking Switzerland inasmuch as the vocational track has a less good reputation among the education alternatives (Wettstein, Schmid and Gonon, 2017). The employers are aware that it is not the highest achievers that are drawn to this track, primarily, which is comparable to the situation in for example Denmark and Germany. On the other hand, the cultural difference in esteem of the dual VET system in the French- versus German-speaking regions within Switzerland to some extent may impede the generalizability of the results. For example, the share of people with a migration background is higher in the canton of Vaud than in many German-speaking cantons (SKBF CSRE, 2018, p. 89; OFS, 2019b, pp. 12-13), which means our study might have *underestimated* ethnic-based discrimination tendencies if we were to generalize the findings to the country-level.

The choice to look at commercial training was partly motivated by the rapid expansion of the service sector in most if not all advanced industrialized economies. When manufacturing industries are off-shored or out-competed by low-wage countries primarily on the Asian continent, the service and retail sectors are growing in the European advanced economies (O'Reilly et al., 2018, pp. 2-4). Globally, the required training is often shorter and less academically demanding compared to other education tracks (Holzer, 1998; Martin and Knudsen, 2010) and therefore suitable for individuals with weaker academic records and or lower career ambitions. Surveying the commercial training program and its apprentice recruiters therefore sheds important light on the potential avenues for disadvantaged, VET-oriented individuals in the administration, service and retail sectors.

However, in comparison with other VET programs, the commercial training in Switzerland, especially the extended program, is seen as one of the more demanding ones (Stalder, 2011; Profils d'Exigences, 2020). This aspect would make the choice of commercial training

recruiters as the gatekeepers in a study of disadvantaged youths' access to dual VET a *least likely* case for high inclusion.

The case of commercial training, therefore, is complex and multifaceted but also slightly difficult to interpret. We therefore included two different apprenticeship programs in the commercial field in the vignette survey: the more demanding extended commercial training programs (3.5 years) and the less demanding retail assistant program (2 years). We asked the respondents to imagine recruiting for each of these two programs and with the different levels of demandingness in mind try to rate their own willingness to hire a given fictitious candidate. We did this with the intention to avoid making inference based on ratings of candidates for only one type of occupation and could therefore obtain a global result for willingness to hire candidates regardless of the demandingness of the vocational program.

5. Paper summaries

In the following, I provide summaries of the three papers in this dissertation. In table 1 below I present an – even briefer – overview of the papers, the research puzzles they address, their research design and main findings, in my dissertation. The table intends to highlight the complementarity of the three papers upon which the dissertation is based, both in terms of research design and type of research aim.

In sum, I aver that Paper I aims for an analytical description of the policy landscape in three CSFSs and Paper II sharpens the theoretical tools and sets a more precise diagnosis of the value-orientation of the institutionalization of one prototypical dual VET program targeting disadvantaged youth in the same collective skill formation systems as in Paper I. All the while, Paper III shifts the focus onto employers in Switzerland in order to identify factors that are associate with egalitarian (stated) hiring preferences.

5.1 Overview over the three papers in the dissertation

Table 1. Overview over the three papers in the dissertation

	Type of research aim	Research question	Type of research design	Logic of case selection	Method for empirical analysis	Main theories	Main findings
	Research puzzle		**Unit of analysis**	**Type of data**			
Paper I	Descriptive and theory-using Output-oriented	Which measures and tools have been developed with the intention to increase inclusiveness in the three countries (DK, DE and CH)? To what extent are firms expected to participate in these 'inclusiveness measures'?	Comparative case study	Within a most-similar-cases context (collective skill formation systems), most different cases selected (DE, DK and CH)	Qualitative text analysis, analysis of the inclusiveness measures' intentions and the policy-makers' motivations behind	Macro-corporatism (Martin and Swank, 2012); historical institutionalism (Thelen, 2014); worlds of welfare state capitalism (Esping-Andersen, 1990), comparative political economy (Hall and Soskice, 2001)	The existing inclusiveness measures in the three countries are quite similar: DE and almost to the same extent DK show the most commitment to dual-based inclusion measures and CH to a lesser extent shows commitment to inclusiveness measures for the disadvantaged youth
	What type of overall commitment and initiative for disadvantaged groups in collective skill formation systems from the states do we observe?		Dual — partly firm-based, partly school-based – vocational education and training measures aimed to enhance inclusiveness in Denmark, Germany and Switzerland	Primary written material (official policy and legal documents), secondary material (scientific publications)			
Paper II	Descriptive and theory-building Output-oriented	How are economic and social goal dimensions institutionalized in short-track dual training programs?	Comparative case study	Within a most-similar-cases context (collective skill formation systems), most different cases selected (DE, DK and CH)	Qualitative text analysis of semi-structured expert interviews (transcribed verbatim) and comparison of answers cross-cases	Comparative political economy (Thelen, 2012; Streeck, 2009; Hall and Soskice 2001; Culpepper 2007) and sociological institutionalism (DiMaggio and Powell, 1992; Scott, 2014)	In DK the social equality dimension is dominant across laws, standards and ideas for the short-tracks. In DE, economic efficiency dominates the standards and ideas but social equality dominates the law. In CH we observe the inverse tendency compared to DE: the laws emphasize social equality and the standards and ideas emphasize economic efficiency.
	For a measure that clearly straddles both the economic and social aspect of dual VET, which of these aspects is emphasized the most?		'Short-tracks' (two-year dual VET programs) and their institutionalization across legal frameworks national, sectoral/occupational, regional standards and key actor groups (state, employers, unions) in the three countries	Primary written material (official policy and legal documents), expert interviews (N=20), secondary material (scientific publications)			
Paper III	Explanatory and theory-testing Outcome-oriented	What characteristics are conducive for apprentice recruiters' stated willingness to hire a disadvantaged candidate?	Large-N factorial vignette survey experiment	Commercial training program: least favorable condition for inclusion Canton of Vaud: convenience sample	Simple and multi-level linear regression analysis, estimation of direct effect (independent variable(s): vignette characteristics, dependent variable: ratings of vignette) and interaction effects between respondent-level characteristics and vignette-level characteristics and vignette ratings	Organizational characteristics (Barber et al., 1999; Reskin et al., 1999; Protsch, 2017), institutional theory (Culpepper 2011; Martin and Swank, 2012; Thelen, 2014) and person-organization-fit / decision-making theory (Akaah and Lund, 1994; Adkins et al., 1994; Fritzsche and Oz, 2007)	Employers that are located in the public sector have more lenient attitudes towards academically disadvantaged candidates, and those recruiters with egalitarian values (both in the private and public sectors) are also more lenient towards academically disadvantaged candidates. The recruiters do not seem to have a negative bias towards candidates with foreign background and/or low socioeconomic status.
	In an overall 'less inclusive' policy-oriented dual VET context (CH), what employer characteristics – if any – are associated with inclusive attitudes towards disadvantaged candidates?		In-firm vocational trainers (with recruitment capacities) in firms / organizations that provide commercial business vocational training in the canton of Vaud, Switzerland	Survey data (n=840), informant interviews (N=8)			

5.2 Paper I summary

This paper offers a mapping of policy measures in Denmark, Germany and in Switzerland that aim at supporting and improving or providing the possibilities to access dual VET for disadvantaged young people (Bonoli and Wilson, 2019). The questions that motivate and guide this paper are, is there an emphasis on policy measures located externally to the dual system, and thus does not per se rely on firm involvement? Or, are they located internally and place a high expectation on firms to participate in the objective to provide training for low-achieving or otherwise socioeconomically disadvantaged individuals? Asking these questions help us advance our understanding of system differences in the family of CSFSs in terms of inclusiveness efforts and access provision to dual training. Furthermore, it provides a starting point to closer analyses of inclusiveness-enhancing measures in the dual VET countries, their governance and institutional underpinnings, as well as the relation and balance of influence between the state, the employers and the organized labor.

By formulating assumptions based on the Worlds of Welfare Capitalism (Esping-Andersen, 1990), macro-corporatism (Martin and Swank, 2012) and Varieties of Liberalization (Thelen, 2014), the aim was to determine to what extent existing political economy theories are able to account for the variation in collective skill formation countries' efforts to provide dual training options for young candidates facing problems accessing VET. More specifically, our intention was to take stock on the extent to which the countries in our comparison relied primarily on 'external measures', meaning policy measures and program that to a lesser degree depend on firms' involvement as training providers, or on 'internal measures', meaning policies and programs that to a higher degree depend on firms' involvement.

The findings show that although all three countries display great similarities in the overall provision of dual VET measures targeting disadvantaged youth, they also showcase differences that are not fully accounted for by the political economy theories employed in the analysis. Whereas for the Danish case, the expectation was that the strong state would be able to pressure the employers' camp into providing training options for disadvantaged youth, we indeed find strong state involvement but largely at the expense of the firms' role as training providers (see a more nuanced account of the development in Danish VET by Carstensen and Ibsen, 2019). In Switzerland, a more liberal country with a history of little state involvement in the decentralized cooperation governing the VET system, similarly to Denmark, relied more heavily on school-based, external measures that to a lesser extent depend on firms.

In contrast to Denmark, however, policy tools such as firm subsidies incentivizing inclusive hiring of disadvantaged candidates as apprentices are not on the policy menu in Switzerland. In fact, Germany proved to be the country where the policy measures went the farthest in counting

on firms taking a social responsibility by providing training for disadvantaged youths, acting in line with its corporatist, Christian democratic, regime-type path.

This paper has a largely descriptive approach, which is motivated by the lack of systematized knowledge and overview over the policies and measures put in place in collective skill formation systems. With such a systematized mapping in place, guided by political economy theories, more theory-building and cautiously explanatory attempts are made possible (see Paper II and Paper III).

5.3 Paper II summary

Educational institutions, especially those facilitating VET, face the challenge to combine social goals such as the provision of quality education for a broad share of the population with rising economic utility demands. However, we know little how VET systems institutionalize these different demands, thus how social equality and economic efficiency goals are actually institutionalized in VET. This paper aims to further unpack this puzzle by analyzing short-track dual vocational training programs in Denmark, Germany, and Switzerland. While combining on-the-job and school-based training, these short-tracks target candidates who face difficulties entering full-length dual programs. Thus, short-tracks are prime examples of training institutions located at the nexus of economic and social demands.

In our institutional-comparative analysis, we bridge the political economy of collective skill formation and sociological institutionalism literatures. We draw on Scott's (2014) institutional dimensions (regulative, normative and cultural cognitive) to fully capture the nature of the institutionalization of the short-tracks in the three countries. Our methodology entailed 20 expert interviews and analysis of official documents, transcripts from parliamentary sessions and the available secondary literature. We find that the goal-orientation of the short-tracks in VET not only differs across countries, but we also observe variation *within* the national VET systems.

Our analysis reveals that VET regulations, regional and sectoral standards and the legitimization of key actors can differ greatly in their institutionalization of social and economic goals. More specifically, our findings show that the short-tracks in Denmark are predominantly oriented towards social equality, both in terms of regulations in place but also in the norms and ideas about these programs expressed by the actors involved. In contrast, in the Swiss and German cases we observe a stronger orientation towards economic efficiency goals in terms of short-tracks, where business interest as well as the strategy from the governmental actors reflect an inclination to not cater to social equality at the expense of economic interest. With regards to these different orientations, a lower engagement of firms in Denmark contra a relatively higher

engagement of firms providing short-tracks in Germany and Switzerland appears to be linked to the social equality vis-à-vis the economic efficiency dominance.

5.4 Paper III summary

In dual VET systems, school-leavers in their mid-teens who wish to pursue vocational certificates through in-firm apprenticeships are subjected to the training providers' quite selective hiring-process. Previous research shows that youth with weak school performances are one of the groups that have the largest difficulties being hired as apprentices. Less investigated in the literature is what employer characteristics that are conducive for their willingness to hire a disadvantaged apprentice: both on the level of the organization and of the recruiter. The aim of the paper is to try to establish a link between factors on the level of the firm and of the recruiter and their attitudes regarding low-achieving apprenticeship applicants. I draw on organizational and institutional literature and on person-organization fit and ethical decision-making theory to formulate hypotheses regarding the preferences of the organizations and recruiters.

The applied method is a vignette survey experiment administered to in-firm vocational trainers that recruit apprentices in the commercial business profession in the canton of Vaud in Switzerland. This experimental survey enables a nested analysis of the variables related to the training firms and in-firm vocational trainers' (with apprentice recruitment capacities). More specifically, the hypotheses I test in the paper are: *Large employers, public sector employers, employers that are members of an employer association and/or training networks have a higher willingness to hire academically disadvantaged candidates* and *The more egalitarian-oriented the recruiter, the more willing s/he will be to hire an academically disadvantaged candidate*.

The findings show that public sector employers are more lenient towards candidates with weaker academic achievements than employers in the private sector. Compared to private sector employees, all things being held equal, public sector employees pay less heed to an apprentice candidate's French grades, educational track and aptitude test scores. Furthermore, public sector employees rate candidates from low-skill family backgrounds and candidates with an Albanian background more positively compared to private sector employees. Moreover, respondents with a more egalitarian outlook on the access to vocational training for disadvantaged youths tend to lower their thresholds for the candidates' academic achievements. This tendency is salient even when accounting for sector type, which suggests that an apprentice recruiter's personal values and beliefs have more bearing on their candidate selection than the structural context of the sector where they are employed.

6. Concluding remarks and outlook

This outline of my dissertation has presented some insights and answers to the overarching research question*: What factors enable disadvantaged young people's access to dual*

apprenticeships in collective skill formation systems? It has addressed the question on a broader macro- and meso-level as presented in Paper I and II and on a micro-level, as presented in Paper III. These insights and answers are discussed in the following, concluding, sections of this dissertation.

6.1 The state as inclusion-driver and inclusive employer

A first common conclusion to the question addressed in this is that efforts to include disadvantaged young people in in-firm vocational training are largely contingent upon the public sector and the state. In Paper I we show that the engagement and involvement of firms in such endeavors are less extensive than the state-driven, 'external', measures (i.e. those not depending on firms' involvement to a large extent). In Paper II, one of the main conclusions put forth refers to the state as the main driver of the social equality aspect of the short-track programs, whereas the employers' camp is keener on utilizing them for economic purposes.

Furthermore, on the local and regional levels, as studied in Paper II, municipal workers and school actors (youth counsellors in Denmark) play an important role in approaching employers to convince them to provide the program and in motivating and supporting the short-track apprentices (or those aspiring to follow a short-track program).

Furthermore, in Paper III, employers active in the public sector are more lenient towards disadvantaged youth as apprentice candidates than those in the private sector. In the latter study, against the expectations, neither training network nor employer association affiliation – factors that have been shown to have a positive effect on willingness to fulfil a social policy role before (see Imdorf and Leeman, 2012; Martin and Swank, 2012) – correlates with a more lenient hiring attitudes towards disadvantaged apprentice candidates.

In sum, and perhaps a little unsurprising, we see that the state is the crucial driver of inclusive-enhancing initiatives to take place, even in the dual VET domain where firms play a central role. Trying to enhance access to disadvantaged youth, put simply, would most likely be less frequently occurring and not institutionalized through programs and measures the way we see it today. Looking back at the initial attempts in this dissertation to locate the theoretical contribution somewhere between the economic rational choice institutionalism and organizational institutionalism, the findings seem to strengthen the former perspective rather than the latter. Although examples certainly exist of private firms that are willing to provide access for young individuals with a 'harder to train' profile, the economic rationales appear to come in first-hand.

6.2 The 'limits of decentralized cooperation'[7]?

The finding discussed above links to the three-country study in Paper II. In Paper II, Denmark, the case with the most social equality-oriented short-track dual VET program, the recurring judgements surfacing in the expert interviews was that more important than the sector or occupational field was the contact person in the firm for the firm's willingness to participate in the training. In addition to the high importance of the individual youth counsellor and his/her ability to motivate firms to participate in the short-tracks.

There are, however, reasons to be prudent in the characterization of Denmark and the inclusiveness of its dual VET system as fully oriented and adapted for the weakest learners. We observe in Paper I how there are, against the expectations, clear limits to how far the state and the social actors are willing to go to accommodate disadvantaged individuals through dual channels in Denmark. In particular, the reform in 2014 which introduced grade requirements to the regular VET tracks posit a natural barrier for segments of school-leavers with weaker academic records and is in all a reform influenced by the Swiss model, with more limited access to vocational training (Petmesidou and Menendéz, 2018, pp. 172-173; Carstensen and Ibsen, 2019; Nyen and Tønder, 2020). In sum, whereas the 'regular VET' tracks in Denmark are largely employer-influenced and self-regulatory, with little involvement from the state (Nyen and Tønder, 2020), I have together with the co-authors shown that the optic differs when focusing on disadvantaged groups and their access to dual apprenticeships, which relies heavily on the state.

Furthermore, as the co-authors and I show in the case study of short-tracks in Switzerland (Paper II, and in the deeper case study in Di Maio, Graf and Wilson, 2020), it was possible for the state to broker an agreement with the employers' camp which aimed to create training opportunities for disadvantaged, practically-oriented youths. This despite the tradition of a little involved state and a strong reliance on decentralized cooperation, which is widely believed to be a cornerstone in the strength and robustness of the VET system in general (see Busemeyer and Trampusch, 2012; Bonoli and Emmenegger, 2020). The Swiss short-tracks have amounted to equality in opportunity and to some extent also in outcome for youths experiencing difficulties accessing regular length apprenticeships – but not as pronounced as can be observed in the case of short-tracks in Denmark. In order to reach the more disadvantaged, therefore, state involvement seems like a necessary condition (see Bonoli and Emmenegger, 2020, for an illustration of the inclusion and competition goals that the 'collective action' in VET need to balance).

[7] I attribute this neat phrase to Bonoli and Emmenegger's 2020 contribution.

Common across the countries, thus, is the role of the state and to some extent unions as the vanguards of the interest of disadvantaged youth vis-à-vis the employers and the market, in a broad sense. Although, the room for maneuver of the state differs according to path dependency and to some extent due to the unity or fragmentation of the employers as a group. This finding challenges a central tenet in the Varieties of Capitalism literature, namely that coordinated market economies are able to solve societal problems through coordination with private actors (Hall and Soskice, 2001; Busemeyer and Trampusch, 2012; Thelen, 2014).

Further, this dissertation calls into question the notion that decentralized cooperation can ensure strong and far-reaching intentions for inclusiveness of disadvantaged youth. Instead, and partly in line with recent work on collective skill formation systems in particular (Carstensen and Ibsen, 2019; Durazzi and Geyer, 2019; Di Maio, Graf and Wilson, 2020), these findings corroborate the indispensability of the state's presence and actions both as a provider of preparatory measures for low achievers (Paper I), as a driver and negotiator of policy change towards higher inclusion of disadvantaged youth (Paper II), and as an employer and training-provider itself (Paper III).

In Switzerland, the apprenticeship-providing firms vary greatly according to size and sector which inhibits their possibility and capacity to speak with a unified voice in VET matters[8]. The role of the state, however, is historically more passive also in the governance of vocational education and training (Mach and Trampusch, 2011; Gonon and Maurer, 2012) which taken together paves way for quite cautious and non-intrusive inclusion policies and programs that to a little extent challenges the economic efficiency-orientation of VET. The Danish system both has a long history of strong*er* state presence in education including in dual VET, compared to other CSFSs, and an employers' camp that is made up by small and medium-sized employers predominantly in the crafts and public sector (Nelson, 2012). These factors have likely paved way for equality- or inclusion-enhancing initiatives by the state. In Germany, the state has historically battled with the employers' camp over the issue of providing dual apprenticeship programs to accommodate disadvantaged, low-qualified, youths. The employers' camp, however, is dominated by large firms with significant importance for German industrial relations and economy in general (Thelen and Busemeyer, 2012; Durazzi and Geyer, 2019). Therefore, the state is more obliged to seek compromises with this segmented employers' camp which has, similarly to Switzerland and contrary to Denmark, led to *less* extensive efforts to accommodate VET policies and programs to the needs of disadvantaged youth.

One potential effect of the far-reaching social equality-enhancing apprenticeship program-orientation for the short-tracks in Denmark, however, was the slightly more marginalized role of

[8] This is explored in greater detail in a paper by Di Maio, Graf and Wilson (2020).

employers compared to Germany and Switzerland (see also Hall and Thelen, 2009, for a similar observation). Thereby, also a disengagement of parts of the VET-providing firms in terms of offering training to disadvantaged groups. In Switzerland, on the other hand, the employers have had comparatively more influence over the VET policies which and it took an efficiency-oriented approach. The apprenticeship-providing firms, thus, are at complete liberty to select their apprentice of choice who in turn will follow the curriculum and learn the skills prescribed by the employers in the given occupation. The barrier for entering the Swiss short-tracks are higher than both in Germany and in Denmark, although the social equality-aspect is catered to by the offering of apprenticeships in certain low-skilled occupations. This shows that economic efficiency and some level of social equality can be reached at once, although the target group for the short-track programs in Switzerland do not cater to the least advantaged candidates (as was the case in Denmark).

The findings in this study shed some light on the tendency to provide short-track training in different sectors and occupations and the support measures around the short-tracks that might stimulate such provision. What it did not do was to specify which *firms* more specifically that are more likely to hire disadvantaged youth to their dual training programs.

6.3 Importance of personal values and 'goodwill'

Although state efforts seem to be a significant force behind the provision of and access to training for low achievers and other disadvantaged groups, there are also private employers that do indeed show a higher willingness to select disadvantaged youth for apprenticeships (short or regular in length). Findings from Paper II and Paper III show, in different ways, that the attitude of the recruiter, regardless of sector, has a determining impact on the willingness to offer training for disadvantaged and on preferences for specific candidates. However, the impact of the public sector (Paper III) and support from the state (Paper II) often are important scope conditions for inclusive-enhancing policy efforts to take place.

In Paper III, when zooming in on the more egalitarian individuals who are active in the private sector in the commercial business sphere in the canton of Vaud, there is a tendency to attribute less importance to aptitude test scores as well as the educational track. This shows that the sector type, indeed, does not explain *all* the variation in egalitarian stated behavior, but that individual recruiters who are willing to lower the bars for low achievers exist in the private sector as well. One important aspect to highlight, moreover, is the absence of negative effects of having a migrant background or a low socioeconomic family background among the main effects observed in Paper III.

Although, when separating the public and private sectors and interacting the sector type with egalitarian values, it becomes clear that the public sector egalitarian-oriented vocational trainers

not only are comparatively more lenient on low achievers, they also rate candidates with a migrant background and candidates from a lower social class better than their private sector colleagues. There seems to be a compensation behavior at work among the public sector employees in general. This could either be linked to a lower pressure to please customers and to avoid possible language difficulties, as shown by Imdorf (2017), or out of a sense of democratic and social equality duty that likely applies more in the public sector than in the private (see Protsch, 2017, for a similar argument).

Similarly, as some of the interviewees mentioned in Paper II, most notably in Denmark, the public sector is a commonplace provider of short-tracks in different occupations (i.e. daycare assistant, auxiliary nurse, etc.). For private firms, however, it was not possible to make any generalizations based on occupations or sectors, or firm-size or institutional affiliation, in terms of likelihood and willingness to participate in short-track training provision.

Firms' financial situation might be one intervening factor, which may lead to the withdrawal of some firms that feel like they simply cannot set aside the resources to train a 'hard-to-train' candidate (see also Fuhrer and Schweri, 2010). If there was a concrete need for skills in a certain area in the firm, the hurdles to provide short-track training were much lower, both in Denmark, and even more pronounced in Germany and Switzerland. The common denominator aside from financial considerations among private firms, however, many interviewees agreed, are the personal relation between the municipal intermediary working with short-track issues and the firm and the personal inclination to 'act for the good of society' of the management and/or apprentice recruiter in the firm. The connection between values and personal beliefs and behavior, as we thus have seen both in Paper II and Paper III, seems strong.

Drawing on the organizational institutionalism versus economic rational choice institutionalism spectrum, mentioned in the Introduction and in the initial section of the Conclusion, the findings discussed in this section seem to lend themselves to the historical institutionalist perspective. Given some financial and structural constraints that employers face to more or less extent, the attitudes and personal values of the apprentice recruiter seem to be one important contributing factor for the willingness to hire a disadvantaged candidate – counter rational choice considerations. This tendency, we must conclude, therefore is more likely to play out in the favorable employer settings – i.e. where profit-making is less of a concern, where resources are available for training, and/or in the instances where the training is not too theoretically demanding.

These findings strengthen the case for actors' having a certain leeway within a 'bounded rationality', where the logic of appropriateness is compatible with the logic of instrumentality (March and Olsen, 1989; Imdorf, 2017). Ultimately, the arguments put forth in this doctoral

project would rather land in a historical institutionalist landscape (Hall, 1993; Scott, 2004, p. 27; Campbell, 2004) where these two logics are necessary to understand actors' behavior.

6.4 Limitations and future research

This dissertation is not without caveats and limitations. The research question asked at the outset *What factors enable disadvantaged young people's access to dual apprenticeships in collective skill formation systems?* is, deliberately, open, and an exhaustive answer to it has not been provided through this thesis. In the following I discuss some notable shortcomings and finish with some suggestions for future research.

6.4.1 Limited accounting for contributing factors of inclusion-enhancing efforts

To begin with, I am convinced that not all contributing factors to an enabled access for disadvantaged youth has been accounted for. Drawing on the methodological choices and constraints in Paper III, which is focused on *one* dual vocational training program in *one* canton in Switzerland, there are reasons to suspect that employers providing training in other occupations would have different considerations when selecting apprentices. For instance, the commercial training is both popular and reasonably intellectually demanding (Stalder, 2011; OFS, 2018). Therefore, it is possible, even likely, that school-leavers with weak academic records or with lower occupational ambitions would not consider this training and instead apply to other vocational programs. Although individual employers were not interviewed in Paper II, for example, we still received strong indications from other professionals working with the short-track programs in Denmark, Germany and Switzerland, that less theoretically demanding occupations were more likely to offer this training.

6.4.2 Descriptions of employer characteristics

Secondly, despite some data gathered about the firms which apprentice recruiters responded to our survey (Paper III), we do not have all the information about the employers necessary to fully control for all factors possibly impacting hiring decisions. For instance, we cannot know for sure the pool of applicants that each firm has to choose from, or is used to having to choose from, in their selection procedures. Despite asking the control question 'to what extent have you experienced difficulties hiring an adequate candidate the last 12 months', we could be sure that a 'high difficulty' is due to a lack of candidates altogether, a lack of good candidates, or an unusually low quality of the applicants. With hindsight, further inquiries about the perceived difficulties to hire adequate candidates would perhaps have helped unpacking the firms' experiences further and improve our understanding of their hiring preferences.

In addition, the variables 'member of employer association' and 'member of training network', which were based on questions asked to the factorial survey respondents, have a rather limited theoretical link to inclusive or egalitarian (stated) hiring preferences. The motivation behind including them as controls in the analysis was to test the assumptions put forth in other works

on firms and social policy participation (e.g. Martin and Swank, 2012; Thelen, 2014) about the important role of intermediary associations to foster and encourage social responsibility in companies. In the context of training network participation, however, such linkages do not strongly support or suggest an increase in actual 'inclusive' hiring of disadvantaged youth (see Imdorf and Leeman, 2012 and Leeman and Imdorf, 2015) which renders the inclusion of such assumptions in the analysis redundant and slightly misleading.

6.4.3 Omitted collective skill formation countries in country comparative studies

Thirdly, the countries sampled in the two first papers are not all examples of collective skill formation systems. We cannot comfortably assume that an inclusion of also Austria, or perhaps the Netherlands, would not have generated other and more nuanced insights to the research puzzle. Not the least in the light of recent research on Austria by Durazzi and Geyer (2019) showing the importance of strong unions and the state in paving way for vocational workshops for low achievers. The scope conditions for the data collection impose some limitations on this dissertation's scientific contribution.

6.4.4 Lack of cross-temporal perspective

Fourthly, there are constraints in the time aspects of the three papers included in this dissertation. They are all focused on relatively contemporary policies, program implementations, and actor preferences. Not only does this format deprive the contribution of potential explanatory, causal attempts, but it also constraints the findings to the particularities of the present.

When the data and material was collected, starting from 2015 through 2019, the global business cycle was relatively strong (IMF, 2020; World Bank, 2020). Many studies of firm behavior and vocational training have previously linked provision of apprenticeships and firm involvement in vocational training with the economic cycles (Wolter and Schweri, 2002; Müehlemann, 2019; Lüthi and Wolter, 2020). It is likely that the post-COVID-19 apprenticeship landscape will look different from the one that was present during my doctoral studies. We can cautiously assume in the light of the likely economic recession that will ensue, that employers at large will offer fewer apprenticeships and that the competition of these fewer available ones might be won by the academically stronger ones.

6.4.5 Validity and generalizability issues

Lastly, the chosen methodology has implications on the validity and generalizability of the results. The factorial vignette survey experiment is quite useful when targeting employers and the issue of their preferences in sensitive issues such as disadvantaged groups. The experimental setting is known to reduce social desirability biases that sometimes plague non-experimental methods, and the factorial vignette survey gives a more nuanced picture of employers' preferences compared to item-based surveys. However, the preferences that are revealed

through the factorial experiment are stated and not actual preferences confirmed by actions in real life (in this case, by hiring decisions) (Pager and Lincoln, 2005). This fact must be seen as a limitation to the external validity of the findings.

6.4.6 Future research avenues

Notwithstanding the limitations of the factorial survey experiment, it has provided some valuable insights in the framework of this dissertation. One of the main findings of Paper III was that an egalitarian outlook on the firm's role in providing training also to less gifted and less ambitious students revealed a correlation between these attitudes and a more lenient view on grades, educational track and test results. What the study does not answer is the issue of what causes such beliefs in individuals, and is there a way to foster them within organizations? Future research avenues would likely benefit from drawing on the organizational psychology literature in order to pinpoint drivers of such attitudes and fortify the link between values and actual (recruitment) behavior (see Wiener, 1988).

Another possible research avenue that could be explored departing from this dissertation is, in a broader sense, the causal mechanisms behind inclusive hiring behavior among employers. Some findings this dissertation has generated may be used as starting points for hypotheses that can be tested in a non-fictitious setting. For instance, we have strong indications proposing that the public sector tends to be more inclusive towards low achievers and candidates with an immigrant background or low socio-economic status. However, large and highly visible firms are often held to a high moral standard in the sense of acting in a socially responsible way (Murillo and Lozano, 2006; Branco and Rodrigues, 2006; Arvidsson, 2010).

Given the insight from Paper II that employers in low-skilled occupations are more likely to offer apprenticeships to lower-achieving youths, it is not unimaginable that certain scope-conditions could lead to inclusive hiring on a broader scale also outside of the public sector. Such scope conditions could be the state driving inclusive-oriented policies, social responsibility pressure on firms *and* the provision of less theoretically demanding training programs. A research project with that aim that would get closer to determining the mechanisms behind inclusive hiring would be a tremendous milestone in the pursuit of overcoming precariousness in the young population.

7. References

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8. Paper 1: Bringing firms on board. Inclusiveness of the dual apprenticeship systems in Germany, Switzerland and Denmark

Giuliano Bonoli, Anna Wilson

Swiss Graduate School of Public Administration (IDHEAP) University of Lausanne, Lausanne

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Corresponding author:

Giuliano Bonoli
(Giuliano.Bonoli@unil.ch)
Work phone: +41 21 692 68 90
University of Lausanne, Bâtiment IDHEAP
Rue de la Mouline 28
1022 Lausanne, Switzerland

Abstract

In dual vocational education and training (VET) systems, the state and employers collaborate in order to meet a country's needs in terms of education for youth and professional skills for the labour market. These systems are considered as effective tools to lower youth unemployment. However, since firms in dual VET system select the apprentices, not every candidate gets access to in-firm training. Consequently, governments develop measures that try to make their dual VET systems more inclusive. We present a categorisation of the different measures used to enhance inclusiveness in three dual collective skill formation countries (Switzerland, Germany and Denmark). We show that inclusiveness measures exist in each of the three countries but are limited in the extent to which firms are expected to play an active role in them. We conclude that the type of measures adopted is related to political economy traditions and the country's level of macro-corporatism.

Introduction

Vocational education and training (VET) systems based on a combination of school-based and in-firm training, generally known as 'dual systems', have a good reputation: apprentices learn professional skills in a real-world context, and employers' involvement in the system ensures that the skills taught reflect their needs (Ryan, 2001). These collective skill formation systems are based on a combination of strong state commitment to vocational training and high firm involvement (Busemeyer & Trampusch, 2012; Thelen & Busemeyer, 2012).

These systems, however, can be rather selective. Apprentice candidates need to find an apprenticeship position in a firm, and these are allocated by firms on a competitive basis. As a result, not everyone will obtain a training position in a firm. This selectivity can be problematic from the point of view of social policy and social cohesion. Those who cannot access vocational training are likely to lag behind the rest of society throughout their life-course and possibly to depend on the welfare state. Consequently, countries with dual VET systems have developed side measures that aim at increasing the inclusiveness of these systems. Rather than allowing the matching between candidates and apprenticeships positions to depend on a labour market logic only (see Ianelli & Raffe, 2007), the state intervenes in order to facilitate access to the dual VET systems for disadvantaged groups by developing what we call 'inclusiveness measures'.

However, developing such measures is a difficult exercise. Dual VET systems are based on delicate equilibria among not necessarily converging interests of employers, employees and the state (Busemeyer & Trampusch, 2012; Thelen, 2004). Intrusive state regulation, for example limiting companies' ability to select apprentices, may destroy the delicate equilibrium on which

cooperation rests ('decentralised cooperation', see Culpepper, 2003). As a result, governments wishing to maximise the inclusiveness of their dual VET systems must find more subtle ways to intervene that do not jeopardise the whole system.

This article looks at how three countries, Denmark, Germany and Switzerland, attempt to make their dual VET system inclusive for disadvantaged young people[1] by examining eight types of inclusiveness interventions. By looking at these three cases, displaying variations in welfare regime type (universalistic, corporatist and liberal) as well as variation in dual VET system (Denmark being more state-driven, Germany and Switzerland being more employer-driven) (Imdorf et al., 2017; Walther, 2006), we aim to understand how different institutional configurations have implications for the way inclusiveness is promoted.

We have two main objectives: first, on an empirical level, we describe the measures and tools that have been developed to increase inclusiveness in the three countries. Second, on a more theoretical level, we attempt to account for the variation in terms of type of interventions that we can observe across our three-country sample: particularly in the extent to which firms are expected to participate in inclusiveness measures and thus fulfil a social policy function.

Theoretical framework and empirical strategy

Conceptually, we can think of an ideal typical dual VET system, where matching between training firms and apprentices takes place exclusively on the basis of a labour market-logic with an equilibrium reached where supply meets demand (Ianelli & Raffe, 2007). Such a system will inevitably leave some youths without an apprenticeship position. We can then expect public policy to aim at minimising the number of those who are excluded.

Starting from the assumption that highly intrusive measures, such as limiting the ability of training firms to select candidates are unlikely in the context of a market economy, we can think of two alternative ideal typical ways of expanding access to dual VET that differ in the extent to which firms are *expected* to contribute to this effort.

Inclusiveness measures can be located external to the dual system. For example, disadvantaged youths who fail to secure an apprenticeship position are offered remedial education or some form of coaching so that that they will be more successful in future attempts. In such a context, there are no specific expectations placed on firms.

At the opposite extreme, inclusiveness measures may be based on active firm support or participation and thus be located internal to the dual system. For example, subsidies may be paid to firms who accept to hire disadvantaged youths or to those who offer pre-apprenticeship

programmes for youth who fail to obtain a proper training position. In these cases, firms are expected to adapt their behaviour to produce a more inclusive outcome.

The political economy of inclusiveness in dual VET systems

Our dependent variable, inclusiveness measures in dual VET system, is located at the intersection of three macro-institutions: the labour market, the welfare state and the education system. In order to develop hypotheses with regard to cross-national variation in inclusiveness measures, we need to consider scholarship on political economy traditions, state-market relationships as well as on the role of organised interests, particularly employers.

In this respect, the three countries covered in this study share similarities but also display crucial differences. Switzerland, Germany and Denmark are generally considered as countries with a relatively high degree of employer coordination and are accustomed to corporatist forms of interest intermediation (see e.g. Kenworthy 2003). In the varieties of capitalism literature, these three countries are also considered 'coordinated market economies', reflecting precisely the important role played by encompassing employer organisations and their influence in policy making (Hall & Soskice, 2001).

Looking beyond broad similarities, however, these three political economies display also some crucial differences which in our view can account for the way in which they seek to make their collective skill formation systems more inclusive. Historically, differences in the balance of political power between key parties and ideologies have produced different political economy traditions. The result is that Switzerland is a more liberal country in relation to state–market relationships than the remaining two. Germany, instead, is a country shaped more by Christian democracy, and its political economy *pendant*, i.e., corporatism. Lastly, Denmark, which has been historically dominated by the Social democrats, hence the presence of a stronger concern for equality and acceptance of a larger role for the state.

These differences in the role played historically by key ideologies and political parties have influenced many institutions which, like our inclusiveness measures, are located at the intersection of public policy and the labour market. Most notably, this has been the case in relation to social policies in general, and it is precisely for this reason that these three countries have developed rather different welfare states. According to the best known categorisation of welfare regimes, Switzerland belongs to the liberal cluster, Germany to the corporatist family, and Denmark is an example of a Social democratic welfare state (Esping-Andersen, 1990). Even though the welfare state typology was developed for social insurance, the factors that explain cross-national divergence, i.e., differences in state–market relationships, are likely to be relevant

determinants of our dependent variable, i.e., inclusiveness measures in collective skill-formation systems.

The three countries, although they belong to the 'coordinated market economies' cluster, differ in the extent to which economic interests, particularly firms, are organised. Martin and Swank (2012), for example, studied this in relation to active labour market policies. The degree of business organisation but also the place organised interests had in policy making turned out to be crucial in explaining employers' support and role in the expansion of redistributive and equality-oriented labour market and social policy change. Among the high macro-corporatist countries, the authors place Denmark, among the medium macro-corporatist countries Germany, and among the low they place Switzerland. In Thelen's (2014) contribution, she similarly uses the concept of the level of 'encompassingness of producer group coalitions' and state capacity to try and forecast the possibility of the state to broker deals with the employers' side (p. 22).

On this basis, we constructed three ideal types with the hypothesised expectations on firms' involvement in inclusiveness in dual VET system.

- A liberal approach. Here the VET system functions very much in accordance with a labour market logic, and the equilibrium is found where supply meets demand. The state is relatively weak and unable to impose firms' involvement in the provision of inclusiveness measures. In addition, employers are moderately well organised and peak associations unable to make credible promises to the government with regard to their members' involvement in pro-inclusiveness efforts. Unions are comparatively weak; thus, the capacity to use the macro-corporatism avenue to produce policy change is limited. However, the state intervenes through measures external to the dual system to support youths in their search for an apprenticeship position and there are low expectations on firms to be involved in inclusiveness measures. We expect to locate Switzerland in this ideal type.

- A corporatist approach. Here we expect the state to play a slightly more prominent role than in the liberal ideal-type, but most interventions are under the responsibility of organised interests and firms. The state may support firms with subsidies, and labour market actors play a key role in making the dual VET system more inclusive. High encompassingness of producer group coalitions ensures a good reach of the inclusiveness measures developed in this context. However, given the limited extent of state involvement, the success of inclusiveness depends very much on the extent to which firms accept to play this social policy role. We expect to locate Germany in this ideal type.

- A universalistic approach. In this case we expect to find the universalistic model in countries with a high degree of macro-corporatism and high encompassingness of producer group coalitions. Under such circumstances, state public polices can provide the type of external support that is typical of the liberal approach. In addition, however, we can expect countries in this group to rely strongly on firms' involvement, which is facilitated by the high degree of encompassingness of employer organisations and by a strong state that is able to cajole firms into the provision of a social policy function through measures located internal to the dual system. We expect to locate Denmark in this ideal type.

These approaches are understood as ideal-types: although we expect each one of the countries studied to mainly reflect one approach, we expect to find elements of each in every country. We should also note that this model focuses only on dedicated policy measures meant to improve the inclusiveness of a system. However, the extent to which a dual VET system is effectively inclusive will depend on many contextual variables, such as the inclusiveness of the compulsory education system or the functioning of the labour market.

The inclusiveness measures and empirical strategy

Through a compilation and empirical analysis of the existing programmes in the main dual VET countries aiming at increasing access and inclusion in dual VET systems, we have defined eight types of interventions that reflect our conceptual definition of an 'inclusiveness measure'. We focus only on current (or recent) tools that concern dual VET, i.e., where training includes some time spent in a firm. We do not cover fully school-based options that exist alongside the dual system.

The measures presented are organised according to the extent to which they entail an expectation on firms to collaborate with the state in the provision of vocational training for disadvantaged youths (low, intermediate, or high).

Our empirical strategy is to identify the measures in place in the three countries through secondary material, reports, public documents, official statements from policy actors. While doing this, we pay particular attention to the explicit or implicit expectations on firms that they entail and compare them with the ideal-types formulated in 2.1.

[Table 1 to feature here]

The measures *10th school year*, *Non-firm-based pre-apprenticeship programmes*, and *Non-firm-based workshops* are external to the system and do not expect firms to play any significant social policy function. Regarding the *Matching services*, we argue that some cooperation between public actors and the social partners is needed in this measure, and their link to the training enterprises implies some expectations on firm involvement. *Supported apprenticeships* and *Lower ambition certificate* hinge on and allow for a higher degree of firm involvement − the former because it relies on firms to accept the young as apprentices or interns for the workplace-based part of their education, and the latter because the introduction of such a certificate is motivated essentially by social policy objectives. However, the main certificate − its content and valu − remains unaffected, so the degree of expectations on firm involvement is considered as intermediate.

For *Firm-based pre-apprenticeship programmes*, the firms are very much involved in the training of the disadvantage, through the provision of pre-apprenticeship positions, under otherwise similar terms as the regular apprentices, only with the difference that this measure does not lead to a certificate. *Subsidised apprenticeships* are also charged with expectations on firms as they are expected to accept youths who they would not otherwise accept for training, especially to the extent that these subsidies are nationally available for all training enterprises.

The case studies

In the following section, we examine the key inclusiveness measures provided in Switzerland, Germany, and Denmark, to what extent they exist and/or are widely established and to what extent there are expectations from the state actors in VET on the firms to participate in the inclusiveness measures.

Switzerland

Promoting inclusiveness in the Swiss dual VET system is a challenge in many respects. In Switzerland, the apprenticeship system has been traditionally dominated by small and medium-sized enterprises (Gonon & Maurer, 2012) which may be less amenable to take on social policy functions due to lower training capacity (see Mohrenweiser, 2012) than their larger counterparts. In addition, Switzerland has a strong liberal tradition in terms of managing its political economy with a traditionally strong employer influence (see Emmenegger et al., forthcoming; Schmitter & Streeck, 1999). Circa two thirds of Swiss youth enrol in VET after compulsory school and around 10% end up in transitional measures (CSRE, 2014).

Given the federal character of the country's political institutions, inclusiveness measures to help the transition of these youths can be found both at the national and the cantonal level. This leads to a large number of measures at either level.

10th school year. There is no standard measure that is equal to a 10th school year after compulsory school in Switzerland, although the 10th school year exists as an option for those who have scholar lacunae and are in need of complementary schooling before transitioning into VET (CSRE, 2014). In the canton of Vaud, for example, the transitional school OPTI (*Organisme de perfectionnement scolaire, de transition et d'Insertion*) offers vocational branches and classes with extra support for those with academic deficits, including internships at firms (DGEP, 2014).

Non-firm-based pre-apprenticeship programmes. Following the previous section regarding the 10th school year, the non-firm-based pre-apprenticeship offers in Switzerland make out a part of the overall 'interim solutions' for those who do not transition directly into upper secondary education (CSRE, 2014, p. 110). These may be possible in a dual scheme, under circumstances that are similar to the regular apprenticeship, but with emphasis on basic and preparatory training (DGEP, 2014). It may also take place in vocational schools and through the support of the cantonal offices which offer extra support for those youths who have difficulty transitioning into post-compulsory education.

Non-firm-based workshops. Non-firm-based workshops, i.e., provided by non-profit organisations, exist in Switzerland, mostly for recipients of disability insurance. The professional associations organise inter-enterprise workshops as a (mostly) compulsory part of the regular vocational training, but it has no specific purpose to enhance inclusion (DGEP, 2014).

Matching services. The *Case management* system, partly funded and overseen by the cantons from 2011 and fully from 2016, is the primary support for the young at risk of falling between the cracks following weak educational attainment from lower secondary school (Hoffman & Schwartz, 2015; Pedró et al., 2009). Hence, the case management system functions as a safety net for those who have not caught by the 10th school year or the other bridge measures. Additionally, there are efforts at the cantonal level to maintain bonds with training firms in the region in order to enhance the chances of those without apprenticeship (DGEP, 2014).

Supported apprenticeship. There are no such measures at the federal level. However, some cantons have developed schemes where disadvantaged youth who obtain an apprenticeship place are then coached for the duration of the apprenticeship (see Dif-Pradalier et al., 2012; Pisoni, 2015). Other examples of cantonal efforts to support and integrate socially disadvantaged youths are inter-enterprise training networks with an integration mission (Leeman & Imdorf, 2015; Leeman et al., 2016), where the public lead agency recruits the apprentices and allocate them to participating firms (who have the right to veto the apprentices, see BBT, 2008, p. 11).

Lower ambition certificate, On a broad scale, the rather recent introduction of the 'Federal VET Certificate', the less ambitious, two-year VET alternative to the three- or four-year 'Federal VET Diploma', can be seen as a programme meant as a less ambitious alternative for youths on the VET market (Dubs, 2006, p. 199; Educa, 2015). The VET law from 2002 supports this type of educational enlargement which endorses increased opportunities for young students who fail to qualify to upper secondary school through interim solutions (LFPr, 2002). Further, the two-year vocational students have the right to individualised support from a tutor if s/he risks not completing the programme.

Firm-based pre-apprenticeships. In Switzerland, there is no formal pre-apprenticeship programme. However, pre-apprenticeship programmes offered by non-governmental organisations generally entail internships in firms for part of the time and several cantons offer similar measures (see e.g. Arbeitsintegration Winterthur, 2016).

A nation-wide case of firm-based pre-apprenticeships is the *Speranza foundation* which aims at giving access to vocational training for disadvantaged youth, through coaching, networking (OFFT, 2012), and a network of enterprises (La vie économique, 2007). The social partners, on both employers' and the union's side, broadly supported the initiative which functioned as a link between the young, firms, and the state (OFFT, 2012).

Subsidised apprenticeships. Compared with other countries where state subsidisation is used as a tool to motivate employers to participate in vocational training, Swiss employers are, by and large, do not face such incentives. Subsidies have been made available at the cantonal level but in relation to specific programmes (see OFFT, 2012, pp. 25−32).

In addition to these measures, there are in Switzerland several private and decentralised initiatives aimed at helping disadvantaged youth to avoid unemployment, run by non-profit actors but funded by private companies. An example is 'Check your chance' funded by Credit Suisse, which features different partner organisations whose aims are to support these groups (Check your chance, 2016; Neuenschwander, 2014).

Summary: Switzerland. As expected, in Switzerland the bulk of the effort to make dual VET more inclusive takes place outside the VET system and puts limited expectations on firms. There are no nationally institutionalised firm-based pre-apprenticeship programmes, few supported apprenticeship programmes (in some cantons), and subsidies for firms who hire disadvantaged youth are rare (exist in some specific programmes). At the same time, however, some firms are indirectly involved in the dual system by funding initiatives that help youth to find an apprenticeship position, along with the support for youths who are pursuing a two-year certificate. However, rather than a commitment to dual VET, these initiatives resemble more exercises in corporate social responsibility.

Germany

The VET system in Germany plays a key role, with some 47% of all students being in vocational training and 40% in the dual system (OECD 2017, p. 258). An important aspect of the governance structure with relation to social policy goals in Germany is the tripartite Federal Institute for Vocational Education and Training (BIBB) which is an essential institution for building consensus between the different actors involved in VET (CEDEFOP$_A$, 2014). The employers' camp as well as the trade unions have influence, and are influenced by state policies through this institution.

In Germany, there is a shortage of training slots and a large minority of German youth fail to enter tertiary education or VET (in firms or school-based) and end up on preparatory courses that do not lead to a diploma but are meant to facilitate access to VET. Collectively, these courses are called the 'transition system' (*Übergangsystem*). In 2012, some 30% of youths ended up in the transition system (Braun & Geier, 2013; Euler, 2013). While most of those in the transition system do not eventually obtain an apprenticeship (Thelen & Busemeyer, 2012, p. 77), the extent of imbalance between supply and demand risks undermining the incentives for disadvantaged pupils to work hard, as they know they will probably not get a training position (Thelen & Busemeyer, 2012).

It is also worth noting that some important differences exist between the former GDR and West Germany. With unification came an attempt to transfer the dual VET system to the new *Länder*. This proved difficult (Culpepper 2003), so the Federal government introduced a range of subsidies. These were meant to be temporary but dual VET remains more heavily subsidised in the East (Busemeyer 2015, p. 107).

10th school year. The *Länder* provide a 10th school year to youths who have not found a training solution. At the federal level, the preparatory vocational year (*Berufsvorbereitungsjahr*) is meant for youths who have not completed compulsory education or those who have but with low grades. It is provided by professional schools and provides practical professionally oriented training. It lasts one year and may be used by those who have not completed compulsory education to obtain an equivalent diploma (BMBF, 2016).

Non-firm-based pre-apprenticeship programme. Several measures are meant as a preparation for an apprenticeship. These include the *Berufsgrundbildungsjahr*, which is provided by professional schools and prepares for a given profession. If the programme is completed successfully, it can be counted towards obtaining a standard apprenticeship certificate (BMBF, 2016; Schmidt, 2010).

On state-levels, many similar projects have been set to sail. One project in Bavaria, for instance, offers companies favourable loans for hiring disadvantaged youths and other monetary firm-support schemes.

Non-firm-based workshops. Youths who fail to obtain an apprenticeship position with a company can access dual vocational training where the practical side is provided by a subsidised entit, such as a social enterprise or a non-profit organisation. This system, known as 'External training' (*Ausserbetriebliche Berufsausbildung*), is financed and supervised by the federal employment agency (*Bundesagentur für Arbeit*, or BA). In 2015, some 31,000 youths profited from this opportunity. Youth can remain in the subsidised entity until the end of the apprenticeship or transition into a firm after one or two years (BMBF, 2016, p. 97).

Matching services. Career guidance is provided by the education system. In addition, the BA provides career guidance and matching services for youth looking for an apprenticeship position. Recently, dedicated programmes for youth who have difficulty finding an

apprenticeship position have been developed, under such names as 'Educational Chains' (*Bildungsketten*) and 'Job Start Coaches' (*Berufseinstiegsbegleiter*) (CEDEFOP$_{A,}$ 2014).

In Germany, the government along with the social partners have committed themselves to provide an activation guarantee for young people as a part of the broader EU initiative launched in the wake of the 2008 crisis (Eurofund, 2014). A common goal to strive for more apprenticeship positions, as well as preparatory apprenticeships and a more extended guidance and counselling service for inactive youths, has been established between the parts involved in VET in the wake of the 2007/8 crisis (Eurofund, 2011, p. 19).

Supported apprenticeship. A range of programmes aim at supporting weak candidates who enter the dual system so that they will have a better chance to succeed. Youths who are at risk of failing receive social and pedagogical support from qualified professionals. This is the case, for example, with the 'Assistance during training' (*Ausbildungbegleitende Hilfen)*, a programme from which benefitted some 41,000 youths in 2015 (BMBF, 2016, p. 96).

Lower ambition certificate. For about a tenth of occupations, there are two-year programmes available since 2003 (Trampusch, 2009). The introduction of these new and shorter diplomas, often named 'modularisation' in broader terms, was criticised by the trade unions and small firms in Germany, whereas more influential large firms along with the state supported the change (Li & Pilz, 2017; Thelen & Busemeyer, 2008).

Firm-based pre-apprenticeships. Another measure is the 'Entry qualification' (*Einstiegsqualifizierung* or EQ), an internship programme lasting between 6 and 12 months, for youth who are without a training solution. The companies that take on these young people receive a Federal subsidy of about 200€ a month, which is not to be regarded as a full subsidy but rather an incentive to the firms to participate. In some cases, if the programme is successfully completed, it can count towards a full apprenticeship diploma.

Subsidised apprenticeship. Inclusiveness measures that rely on firm involvement can be supported by federal subsidies (see Vogler-Ludwig & Stock, 2010). For example, subsidised apprenticeships are also available for SMEs that hire youth with a migration background, known as 'Welcoming guidance' (*Willkommenslotsen)* (BMBF, 2016, p. 100) which was a part of the broader Pact on Apprenticeships established in 2004. The goals of this pact on behalf of

the employers include increasing EQ positions in firms by 20,000, as a step towards improving the pathways to VET qualifications for weaker students who have difficulty making this transition themselves The pact was renewed in 2015 with the adoption of the 'Alliance for initial and further training' which brings together the main relevant actors and aims to maintain employers' involvement in VET particularly with a view to improve inclusiveness (Vogel, 2015).

Summary: Germany. In comparison with Switzerland, the German approach is based on a bigger involvement by firms. Firms are expected to provide pre-apprenticeship places with the EQ. The existence of a supported apprenticeship programme also puts clear expectations on firms, as it reiterates the primacy of firm-based solutions whenever possible. The German approach, however, remains non-intrusive despite high state involvement, as firms are under little obligation to participate in any of these programmes.

Denmark

Notwithstanding the fact that the Danish VET system is highly collective in the sense that the social partners (national and local trade committees encompassing employers, union and teacher representatives (CEDEFOP$_B$, 2014) are broadly and deeply integrated in the governance of VET, the state is still the leading actor and, in many ways, the strongest driver of the inclusion aspects of VET policy (Albæk, 2009; Jørgensen, 2014; Juul & Jørgensen, 2011; Nelson, 2012).

The one defining characteristic of the Danish VET system is the close and multi-tier relationship between the educational institutions, the municipalities, and the social partners, and the active involvement of the central government in its steering, reforming, and financing of the system (Nelson, 2012). The popularity of the VET track is comparatively lower in Denmark than in Germany and Switzerland: About half of all students leaving compulsory school choose the dual track (CEDEFOP$_{B,}$ 2014; Jørgensen, 2014).

The financing arrangement for the Danish VET differs from the Swiss and German examples, which are only partly government-funded and are largely financed by the training firms themselves. In Denmark, firms are obliged to contribute to the common 'Employers' reimbursement fund' (*Arbejdsgivernes Elevrefusjon*, or AER) which is then used to pay trading firms (CEDEFOP$_{B,}$ 2014).

10th school year. The vocationally oriented 10th school year (*EUD10*) is a feature of the Danish education system that signifies an additional year in between the compulsory/lower secondary school and upper secondary that serves to prepare the young for post-compulsory vocational education (Carstensen & Ibsen, 2015).

As of 2015, the Danish municipalities are required to engage the graduates from the 9th year in any sort of academic or vocational activity as a part of the Youth Guarantee in order to avoid exclusion and dwindling human capital (Jørgensen, 2015). Further, all students enrolled in the 10th year are obliged to participate in a bridge programme to facilitate the transition to upper secondary education, either in a general programme or in the vocational training domain, through unpaid apprenticeships. In this measure, the social partners play a part in facilitating the communication and cooperation between municipalities and job centres, schools, and vocational trainers (private or public) (Beskæftelseministeriet, 2014; UVM, 2015).

Non-firm-based pre-apprenticeship programme. A number of measures target young who are considered to be vulnerable on the labour market due to both low educational performance, social background, cognitive skills, and other challenges. One example of a pathway for people under 25 without complete upper secondary diplomas is the 'Production schools' (*Produktionsskole*) where basic vocational training is provided and the possibility of obtaining practical experience through internships is given. This path, however, does not lead to a VET certificate per se but is rather a channel for accessing other educational channels.

Non-firm-based workshops. The institutionalisation of the Training Centres (*Praktikcentre*) at the VET colleges as a complement to the dual apprenticeship won ground in the wake of the 2008 crisis, as a platform for training those youths who had not found a workplace-based apprenticeship (Carstensen & Ibsen, 2015; Jørgensen, 2015). Further, it was intended to provide a more general training complement to the content of the training allocated to the firms in as far as the workplace-based training was becoming more specialised (Jørgensen, 2015).

Matching services. Through the Youths' Education Guidance centres (*Ungdommens Uddannelsesvejledningscenter*, or UU) (Beskæftigelseministeriet, 2011), the matching between placement-seeking youths and training providers (public or private) is facilitated as the staff at these centres are in contact with the vocational schools, the training-providing enterprises, as well as with trade committees, which strengthens their coordinative position. There are also the Youth units that are established on a decentralised level as a complement to the UUs for young people who have difficulty entering education or employment. Their teams are made up of

representatives from the UUs, the health care, social affairs, as well as the education sector (Beskæftigelseministeriet, 2014).

Supported apprenticeship. The apprentice instructors in training firms are strongly encouraged to keep in close contact with the counsellors at the vocational colleges, the UUs, or the Youth Units, both before and during the placement and the apprenticeship period of the youths, and to use the counsellors, called 'Learning and apprenticeship position consultants' (*Lære- og praktikpladskonsulent)*, as an intermediary who can match the employer with the 'right' candidate (Metropol, 2014).

Lower ambition certificate. Basic Vocational Training (*Erhvervsgrunduddannelse*, or EGU) is a two-year vocational programme that targets young people and aims at developing their vocational and also personal skills, and thus ameliorate their chances to acquire employment. This shorter training alternative was introduced in 2004 as a way to reduce the high dropout rates and create an alternative for those youths who would not be able or motivated to fulfill a longer training (Juul & Jørgensen, 2011). The social partners, however, had limited influence in the reform and the current enrolment and firm involvement is rather limited (Jørgensen, 2014).

Firm-based pre-apprenticeships. Aside from opportunities for shorter in-firm internships for students of, for example, Production schools, the 10th form, or other school-based alternatives for students who have difficulty pursuing regular VET programmes, the firm-based pre-apprenticeship alternative is lacking in Denmark, to the best of our knowledge.

Subsidies for firms. Since 2016, firms that offer vocational training for refugees or for students who follow the EGU are eligible for bonuses per apprentice (Beskæftigelseministeriet, 2016). Previously, through the Youth Package of 2011, subsidised training jobs in firms for young people who had difficulty accessing in-firm vocational training were made available (Carstensen & Ibsen, 2015).

Summary: Denmark. Denmark stands out in our sample as the country with the clearest state commitment to extending access to VET training. Rather than relying on a multitude of local and private initiatives, in Denmark the state seems to be clearly in the driving seat of the efforts that are made to improve the inclusiveness of the system. Of course, firms' involvement is

needed, but it seems to be the case that in reality the government's capacity to cajole firms into expanding access to VET is limited. In contrast, the government relies on subsidies and on an extensive system of support, where disadvantaged youths are assisted by various interlocutors and support staff throughout their apprenticeship.

Summary of the case studies

Table 2 shows the summary of the country case studies.

[Table 2 to feature here]

Discussion and concluding remarks

Our comparative analysis reveals the existence of substantial similarities in what dual VET countries do to make their systems more inclusive (see Table 2). Most of the measures included in our list exist in each of the three countries. In all three countries, there is a strong presence of both externally and internally located measures, which shows that even in the more liberal and corporatist settings (Switzerland and Germany) a substantial part of the inclusiveness system as a whole is constructed as an integral part of the dual aspect of vocational training.

A more in-depth analysis, however, reveals some important differences among the three countries that go in the expected direction. In Switzerland, most of what is done is external to the system and there are limited expectations placed on firms. Typical solutions that require firms' involvement, such as firm-based pre-apprenticeships, supported apprenticeship, or subsidised apprenticeships, do not exist on any significant scale. These solutions are sometimes found within single cantons or as part of (limited) public–private initiatives. However, unlike the other two countries, there are no national programmes that fulfil these functions.

The fact that some large companies, either directly or through foundations, support initiatives aimed at including disadvantaged youth in the dual system does not contradict this conclusion. In fact, these private initiatives have little to do with the logic of decentralised cooperation, but more with a corporate social responsibility objective. Some of these initiatives are more a contribution to society than an involvement in the VET system with a social policy function. They are reminiscent of Katzenstein's (1984) observation of the Swiss political economy, noticing 'a tendency to compensate privately for economic change' (p. 99), partly fulfilling functions that the weak (federal) state cannot provide.

In Germany, the state provides highly institutionalised external measures, but also puts clear expectations on firms with regard to their role. This is clear in programmes such as the EQ, a subsidised pre-apprenticeship scheme in firms, or the supported apprenticeship programme. Of

course, companies are under no obligation to participate in these programmes, but they are eligible for subsidies if they do. Moreover, initiatives are adopted that put some pressure on them to participate, such as the tripartite 'Pact on Apprenticeships' or the subsequent 'Alliance for initial and further training'. As opposed to the Swiss approach and more in similarity with the Danish, however, much if not most of the expectations on firms are coupled with the provision of subsidies from the state.

Lastly, the Danish case shows a strong commitment to high levels of inclusiveness, especially in light of the strong institutionalisation of the external measures. In addition, a substantial effort is made within the social services sector. Coaching, mentoring, social pedagogues, and individualised learning plans are ways to focus on the individual and his/her employability instead of raising the pressure on firms and their supply on apprenticeship positions (Jørgensen, 2015). Contrary to our expectations, we found little evidence that Denmark uses a macro-corporatist avenue to 'cajole and coerce' (Thelen, 2014, p. 22) firms into a more inclusive behaviour. Instead, the state has taken over more and more of the provision of training of disadvantaged youth. In line with Thelen, we found that Danish universalism depends increasingly on the state and less on the social partners, which leaves private actors free to follow a more meritocratic and selective approach (Thelen, 2014).

Overall, the picture presented in our case studies reveals less variation than we expected, and more of a gravity towards the middle-way approach to inclusiveness with measures located both externally and internally to the dual system and moderate expectations on firms across the board. At the same time, the very different political economy traditions of these three countries, whether in terms of welfare regime or in terms of the role of organised interests in the pursuit of public policy objectives, are shaping the solutions that have been developed to make their cherished dual VET systems more inclusive.

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Table 1. Inclusiveness measures in dual VET systems

Inclusiveness measures	***Expectations on firm involvement***
10th school year	
Additional preparatory school-year for youths who do not find an apprenticeship place at the end of compulsory school.	Low
Non-firm-based pre-apprenticeship programmes	
Youth who do not manage to obtain an apprenticeship position, can enrol in a pre-apprenticeship programme, provided by the public or the non-profit sector, facilitating transition in a later stage.	Low
Non-firm-based workshops	
Non-firm based workshops provide an opportunity to receive practical training and as a result remain in the dual system. Non-firm based workshops are subsidised and provided by public or non-profit organization or social enterprises.	Low

Matching services (case management, PES)	
State-provided platforms that facilitate matching between firms who are recruiting apprentices and youths looking for training.	Intermediate
Supported apprenticeship	
Dual programmes where the young participant is supported throughout by a social assistant or other pedagogical worker throughout her/his apprenticeship.	Intermediate
Lower ambition certificate	
Shorter (commonly 2-years), less ambitious and practically oriented training programmes, which will nonetheless lead to a nationally recognized certificate.	Intermediate
Firm-based pre-apprenticeship programmes	
Pre-apprenticeship programmes are provided by firms to youth who failed to land a regular apprenticeship position, against a subsidy or un-remunerated.	High
Subsidised apprenticeship	
Firms who accept to hire as apprentices disadvantaged youths are entitled to a subsidy.	High

Table 2. Expectation on firm involvement in Switzerland, Germany and Denmark

Inclusiveness measures	***Expectations on firm involvement***		
10th school year	*Switzerland*	*Germany*	*Denmark*
Additional preparatory school-year for youths who do not find an apprenticeship place at the end of compulsory school.	Low	Low	Low
Non-firm-based pre-apprenticeship programmes			
Youth who do not manage to obtain an apprenticeship position, can enrol in a pre-apprenticeship programme, provided by the public or the non-profit sector, facilitating transition in a later stage.	Low	Low	Low
Non-firm-based workshops			
Non-firm based workshops provide an opportunity to receive practical training and as a result remain in the dual system. Non-firm based workshops are subsidised and provided by public or non-profit organization or social enterprises.	Low	Low	Low
Matching services (case management, PES)			
State-provided platforms that facilitate matching between firms who are recruiting apprentices and youths looking for training.	Intermediate	Intermediate	Intermediate
Supported apprenticeship			
Dual programmes where the young participant is supported throughout by a social assistant or other pedagogical worker throughout her/his apprenticeship.	Intermediate	Intermediate	Intermediate
Lower ambition certificate			

Shorter (commonly 2-years), less ambitious and practically oriented training programmes, which will nonetheless lead to a nationally recognized certificate.	**Intermediate**	**Intermediate**	**Low**
Firm-based pre-apprenticeship programmes			
Pre-apprenticeship programmes are provided by firms to youth who failed to land a regular apprenticeship position, against a subsidy or un-remunerated.	**Intermediate**	**Intermediate**	**Low**
Subsidised apprenticeship			
Firms who accept to hire as apprentices disadvantaged youths are entitled to a subsidy.	**Low**	**High**	**Intermediate**

9. Paper 2: Torn between Economic Efficiency and Social Equality? Short-track Apprenticeships in Denmark, Germany, and Switzerland

Gina Di Maio, Lukas Graf, Anna Wilson

Abstract

Educational institutions, especially those facilitating vocational education and training (VET), face the challenge to combine social goals such as the provision of quality education for a broad share of the population with rising economic utility demands. However, we know little how VET systems institutionalize these different demands, thus how social and economic goals are actually institutionalized in VET. Our paper aims to further unpack this puzzle by analyzing short-track dual vocational training programs in Denmark, Germany, and Switzerland. While combining on-the-job and school-based training, these short-tracks target candidates who face difficulties entering full-length dual programs. Thus, short-tracks are prime examples of training institutions located at the nexus of economic and social demands. In our institutional-comparative analysis, we bridge the political economy of collective skill formation and sociological institutionalism literatures. We find that the institutionalization of goals in VET not only differs across countries but we also observe great variation within the national VET systems. Our analysis reveals that VET regulations, regional and sectoral standards and the legitimization of key actors can differ greatly in their institutionalization of social and economic goals.

Introduction

The governance of educational institutions increasingly faces the challenge to combine social goals with rising economic utility demands (Thelen, 2014; Felouzis et al., 2013). Educational reforms strengthening the marketization and privatization of education (Whitty and Power, 2000), including the European Union`s promotion efforts to strengthen the link between education and companies (European Commission, 2014), fuel the debate on the question to what extent market mechanisms and private actors should be part of educational governance. Traditionally, the governance of dual vocational education and training (VET) is closely aligned with the world of work and economic goals. The satisfaction of skill demands of employers is often linked to a strong involvement of business interests in the development of curricula, the selection of candidates, and the provision of training (López-Fogués, 2012). At the same time, VET systems are aligned with social goals such as equal access to quality education, the provision of transferable vocational skills and certificates and a smooth school-to-work transition also for those young people seen as disadvantaged (Granato and Ulrich, 2013; Hupka-Brunner et al., 2010; Jackson, 2009). Thus, dual VET is a prime example to study the interplay and tension between economic and social goals.

Duality in education and especially in dual vocational training, however, is present at different levels. On the one hand, dual apprenticeships refers to the combination of the two learning locations of the school and the firm. In order to align school-based training with work-based training, public (e.g. ministries, schools) and private actors (e.g. employer associations, firms) need to cooperate. This is why the governance of dual vocational training is referred to as 'collective governance'. The involvement of public as well as private actors links dual VET to another level of duality, namely the interplay and tension between economic (serving the labor market) and social goals (providing quality education to a large share of youth) in education. In our study, we focus on this latter aspect in the governance of VET, which however is rooted in the dual character of the learning sites.

Even though dual vocational training systems are described as being part of one family of 'collective skill formation systems' by the political economy literature (e.g. Busemeyer and Trampusch, 2012), national VET systems differ. For example, the engagement of firms in the selection process or content definition can vary across countries and thereby influence the role and effect of VET. The more the selection process is left to the firms, the harder it might be for students that score lower at school to enter the training system. Furthermore, business influence on the curricula might shift the training content towards marketable vocational-specific skills at the expense of general knowledge, which might, in turn, influence the stratification effect of

vocational education (see Nylund and Virolainen, 2019). This variation can potentially have an influence on the inclusive character of dual vocational training.

The tension between economic and social goals is especially tangible in short-track dual training programs (short-tracks). Short-tracks usually last only two years instead of three to four years – but still lead to standardized certificates. They are located within dual VET while targeting candidates seen to have poor or lacking general education or academic credentials. Short-tracks focus on theory-reduced, applied dual training. They address young people that face problems entering 'regular' three- or four-year trainings. Short-tracks are typically allocated to the European Qualification Framework (EQF) levels 2-3.[1] Similar to the regular-length programs, the employers voluntarily select the apprentices while usually not receiving specific subsidies. Short-tracks fully qualify for entry into the labor market which distinguishes them from (most) transition measures, and often count towards longer VET programs. To provide the first systematic comparative institutional mapping of short-tracks, we ask: How are economic and social goal dimensions institutionalized in short-track dual training programs?

We have identified three VET systems that offer short-tracks: Denmark (Basic Vocational Training (*Erhvervsgrunduddannelse*)), Germany (Two-year training program (*Zweijährige Ausbildungsberufe*)) and Switzerland (Federal Vocational Certificate (*Eidgenössische Berufsatteste*)). Due to pressure on the apprenticeship market, all three VET systems strengthened short-tracks in reform processes in the 1990s and early 2000s. From a global perspective, the VET systems of Denmark, Germany, and Switzerland can be considered to be most similar (Hall and Soskice, 2001; Ebner, 2013). They are all located in a coordinated market economy cluster, with a long and strong tradition of dual apprenticeship training. Against this backdrop, we zoom in on the lower level within these VET systems, the level that aims at opening the door for those students that are seen as less qualified for regular apprenticeships.

In order to operationalize the social and economic goal dimensions, we discuss key concepts in the relevant political economy literature. Historical institutionalism distinguishes between the 'Williamsonian' approach in which economic efficiency stands in focus and the 'Durkheimian' perspective which underlines the social equality aspect of institutions (Streeck, 2009; Thelen, 2014; Höpner, 2007; Carstensen and Ibsen, 2019). Most studies on the institutional underpinning of VET focus on the regulative framework of training and how it is continuously (re-)shaped by various stakeholders. Our research applies a complementary perspective by incorporating also the normative and cultural-cognitive dimension of the institutionalization of VET. We apply sociological institutionalism (Scott, 2014; DiMaggio and Powell, 1991; Powell et al., 2012), which allows us to offer a fine-grained account of the

institutionalization along the regulative (rules), normative (standards), and cultural-cognitive (ideas) dimensions of short-track dual training. In this context, we concentrate on the legal framework, the degree of standardization and the legitimizing arguments of the key stakeholders. We apply this extended framework because we argue that economic and social goals in training are not only rooted in the regulations but that standards and ideas regarding training are equally important.

This theoretical framework allows us to gain new insights as it focuses on how the three institutional dimensions (regulative, normative, and cultural-cognitive) may systematically vary within one case with regard to their respective economic versus social goal orientation. This differentiated approach is particularly relevant in the case of short-tracks, because partly opposing goal dimensions are at play (López-Fogués, 2012). Our research suggests that the important question to what extent VET systems, and other educational systems, meet their social goals can be answered in greater detail if all three institutional dimensions are considered individually as well as in combination.

Our comparative analysis builds on document analysis and 20 expert interviews with representatives of employers, employees, the federal state, the regions and national VET institutes in all three countries. The methodology section specifies further how we collected and analyzed the data.

The following section elaborates on our theoretical approach, including a discussion of the two key goal dimensions in educational governance. We then present our methods and data. The subsequent section focuses on the case studies, namely short-track dual training in Denmark, Germany, and Switzerland. The two final sections discuss our key findings from a comparative perspective and conclude.

Analytical framework: goal dimensions and institutionalization

In this section, we summarize the institutional framing of economic efficiency and social equality in comparative political economy. On this basis, we next outline the key characteristics of social and economic goals in education. In the final part, we present our conceptualization of the social equality and economic efficiency dimensions in the institutionalization of the short-tracks, combining the political economy perspective with sociological institutionalism.

The institutional framing of economic efficiency and social equality in comparative political economy

Comparative institutionalists from different disciplines are interested in institutional differences and their societal and economic implications (Martin and Swank, 2012; Thelen, 2014; Iversen and Stephens, 2008; Gonon and Maurer, 2012; and Powell et al., 2012). In this paper, we concentrate on two key institutional dimensions of education – economic efficiency and social equality – to investigate central institutional underpinnings of educational systems. Here we draw on insights from recent institutionalist literature in political economy that discusses the distinction between Williamsonian and Durkheimian institutions (Streeck, 2009; Thelen, 2012). Williamsonian institutions are tailored towards economic efficiency by focusing on providing employers with an adequately skilled labor force (Hall and Soskice, 2001; Culpepper, 2007). On the other hand, Durkheimian institutions aim at equality through the inclusion of a broad share of the population, including societal groups seen as disadvantaged, into the labor market (Thelen, 2004; Nelson, 2012; Martin and Thelen, 2007; Carstensen and Ibsen, 2019).

This two-dimensional space is broadly reflected in the more general political economy debate on different cooperation patterns and their outcomes, for instance, in collectively governed training systems. Thus, Thelen (2014) distinguishes between an *equality* dimension on the one hand and a dimension measuring the *'strategic' employer coordination* on the other hand. Trampusch (2007) highlights the importance of industrial relations that include collective agreements, which can be seen to represent the degree of *social solidarity* in a policy field. Höpner (2007) concentrates on the "status of firms in society" (p. 5) and distinguishing between *coordination* and *organization* within non-liberal capitalism. Here, coordination is seen as a means to maximize the rational firm's individual profit. In contrast, organization "obliges firms to act in accordance with collective interests" (p. 9).

This short review shows that the political economy literature offers different but related concepts that can help to capture differences in the economic and social institutional underpinnings of socio-economic systems. In the following section, we specify the concepts of economic and social goals in the context of education.

Two goal dimensions of education: economic efficiency and social equality

The importance of education as a highly political arena is often underlined. Investments in skills are essential for competitiveness and economic growth (Busemeyer and Trampusch, 2012; Cedefop, 2017) and one of the most important means to achieve both economic and social

welfare. In our paper, we are specifically interested in the underlying **economic** and the **social goal dimension**.

In our analysis, the **economic goal dimension** of education (Williamsonian perspective), refers to education as a means to provide the labor market with the skills that are currently required by employers. We stipulate that employers represent the demand side while graduates are seen as the supply side. Employers demand 'marketable' skills to sustain their economic success (Ferrier and Anderson, 1998). In our economic goal dimension, education is oriented towards the market and needs of employers (Nylund and Virolainen, 2019) and aims at the 'employability' of the young (see Brunila et al., 2017) and the production of human capital (see Becker, 1993). From our economic goal perspective, skills serve to boost economic growth and efficiency (of the national economy). In other words, when we identify an educational institution as oriented towards the economic goal dimension, we mean that its key objective is to enhance **economic efficiency**.

In contrast, when we address the **social goal dimension** (inspired by a Durkheimian perspective), we put the needs of the young and society in focus and expect that education serves to meet encompassing societal goals. This includes the usage of VET as a means to prepare (a broad share of the) citizens for political and social participation in society – even those lacking strong academic credentials (Solga, 2005; Protsch, 2014). This implies that this educational institution should not depend on market mechanisms but is a right to every citizen (Bernhard, 2017). Furthermore, in our social goal dimension, education functions as an entrance ticket (for the individual) to the labor market and, importantly, decent living wages (e.g. Busemeyer, 2015), ideally promoting individual social *and* economic welfare. Another important aspect is that being allowed into VET, increases social justice because the students' sense of belonging not only within education but also in society more generally plays a key role (Li and Dervin, 2019). In sum, in our analysis an institution is seen to be oriented towards the social goal dimension if it meets the needs of the individuals and society as a whole by promoting greater **social equality.**

It is important to note that the Durkheimian literature on education also discusses the hierarchical relationship between vocational/practical (lower) skills and general/academic (higher) skills (Canning, 2012; Walford, 1998). In our case of short-tracks, vocational skills (attained through on-the job training) are combined with general skills (attained through theory-focused school-based training). Even though we argue that short-tracks enable youths perceived as disadvantaged, to enter the training system and later the labor market, we want to underline that short-tracks do not provide the same level of general skills as academic and mainly school-based training would do. Thus, short-tracks are limited in their capacity to provide full and

equal access to social and political participation (see Nylund and Virolainen, 2019; Canning, 2012; Young, 2009; Walford, 1998). However, we focus on a youth group that is at risk of not accessing any adequate training, were it not for the short-track programs. Therefore, our use of the Durkheimian perspective relies on the assumption that access to the short-tracks *enhances* their chance at equal social and political participation compared to the alternative of a collective skill formation without such an offer.

It should be emphasized that social and economic goals can go hand in hand, thus a system can score high on both aspects. For example, apprentices with skills that are demanded by the labor market will find it easier to enter a well-paid job after training. But in other cases, the social and economic perspective contradict each other. For example, the more selective the access to education is, the lower it scores on social equality. At a very basic level, our argument is that educational governance has to find a way to combine economic and social goals at the same time.

Conceptualizing the institutionalization of economic efficiency and social equality in short-track dual training

In this section, we conceptualize more concretely the institutionalization of the short-track programs. Short-tracks in Denmark, Germany, and Switzerland have not yet been systematically compared from an institutionalist perspective. This also implies that we lack a systematic account of the social versus economic orientation of these programs. Literature on the institutionalization of dual VET has mainly focused on 'regular' three- and four-year apprenticeships. Thus, this study contributes to two main puzzles. On the one hand, it adds to a better understanding of varieties within dual vocational training programs and specifically, of the differences in dual VET programs targeted towards disadvantaged candidates. On the other hand, we develop a framework that helps capturing the institutionalization of two central goal dimensions in education: economic efficiency and social equality. In this context, we aim to contribute to the abovementioned political economy literature.

To uncover and map in detail how short-tracks straddle the boundary between economic efficiency and social equality, we consider the important regulative institutional dimension but complement this view with the normative and cultural-cognitive dimension. We propose this extended view as we expect that in the complex case of short-tracks there is a high likelihood to observe multiple and partly divergent institutionalizations in terms of how short-tracks are framed by laws, standards, and legitimizing arguments. Thus, in the following conceptualization, we link the regulative, normative, and cultural-cognitive institutional dimensions typically associated with organizational sociology and sociological institutionalism

(Scott, 2014; DiMaggio and Powell, 1991) with key concepts in the political economy of collective skill formation – for instance, on decentralized cooperation (e.g. Culpepper, 2003; Busemeyer and Trampusch, 2012) and Williamsonian and Durkheimian institutions (Streeck, 2009; Thelen, 2012).

That is, our point of departure is the regulative (rules), normative (standards), and cultural-cognitive (legitimation arguments and ideas) institutional dimensions (Scott, 2014), which we combine with the economic and social goal dimensions discussed in the previous section. This framework, summarized in Table 1, then guides our qualitative cases studies of Denmark, Germany, and Switzerland, enabling us to explore relevant within- and cross-case variation for short-tracks.

First, we view the **regulative dimension** as referring to the legal definition of short-tracks. In other words, we focus on the relevant law(s) and regulations with regard to short-tracks training programs and whether they are oriented more towards economic efficiency or towards social equality (or balance both perspectives equally). We follow Emmenegger et al. (2019) in arguing that six areas reflect the core governance functions that a collective VET system needs to perform to enable successful cooperation in vocational training both in economic and societal terms (see also Streeck et al., 1987; Wegge and Weber, 1999; Busemeyer and Trampusch, 2012). The six task areas (Emmenegger et al., 2019; adapted for short-tracks) are:

(1) **System development**: strategic development of the short-track system, including its steering at the macro level;

(2) **Content definition**: concrete formulation of the contents of learning in short-tracks (e.g. ordinances, vocational profiles and curricula);

(3) **Organization of training provision**: implementation and administration of short-tracks and of the concrete means and processes needed to put training to work (e.g. instructor training, teaching material and learning site cooperation) and, crucially, any supporting measures for students who risk leaving school with poor academic credentials.

(4) **Matching of supply and demand**: organisation of processes that link individual educational aspirations and employers' needs for skilled labor in the domain of short-tracks; this refers especially to the options through which students (including those seen as disadvantaged) may gain access to short-tracks;

(5) **Financing**: distribution of resources and costs, regulation of apprentices' wages; given the potential 'social policy' nature of short-tracks, we also look at possible state subsidies for short-tracks;

(6) Monitoring, examination and **certification**: quality control as well as maintenance of transparency of short-track qualifications. Given the role of short-tracks as a potential 'stepping stone' to advance education opportunities for disadvantaged students, here we focus especially on how short-track certificates allow a transition to further educational programs (such as the 'regular' apprenticeship programs).

While the core task areas (1) and (2) reflect the stages of cooperation that define the structure for short-tracks, the areas (3) and (4) are mainly concerned with the actual operation of the short-track system. Area (5) is about the financing of the different elements of the system, whereas area (6) represents the 'final' stage of system and quality control.

Second, regarding the **normative dimension**, we investigate the key organizational standards. In collective VET systems, national legal frameworks provide significant scope for multi-layered cooperation and related standards at the decentralized levels of the occupation, sector, or region (see Emmenegger et al., 2019; Culpepper, 2003). In other words, countries with dual training systems differ with regard to the implementation of national-level regulations at the subnational level (see Rauner, 2009). That opens the possibility of significant differentiation with regard to the goal orientation of standards at the key subnational levels. Therefore, we suggest to analyze each of these levels individually. More specifically, 'below' the **national level**, we expect that relevant standards for short-tracks can be systematically structured by three key decentralized governance levels, namely **occupations**, **sectors** (e.g. related to industries dominated by large firms vs. crafts sectors dominated by small firms), and **regions** (e.g. related to states, municipalities, industrial regions etc.). This conceptualization allows us to evaluate whether a specific short-track system displays variation between these governance levels.

Finally, third, we conceptualize the **cultural-cognitive dimension** as the ideas and cultural concepts behind the short-tracks. We ask, how are the short-tracks culturally framed? To which ideals are they connected? Here we focus on the key actors' ideas, values, and legitimation arguments. Given the corporatist nature of apprenticeship training, the three key actors we focus on are **state agencies** (federal and subnational level), **employer associations**, and **unions**.

Thus, in each of the country cases, we explore short-track laws, short-track standards, and short-track legitimation arguments in relation to economic efficiency and social equality in a systematic way (Table 1). Ultimately, we visualize aggregate values for each institutional dimension for each country in a two-dimensional table (see Figures 1, 2 and 3; x-axis: economic efficiency, y-axis: social equality) and compare and interpret our findings in the discussion section.

[insert Table 1 here]

Methodology

Our comparative-institutional study applies a case study design. This allows us to delve into the case of short-tracks and thereby reveal the complex interplay of social and economic aspects (George and Bennett, 2005: 20).

Our empirical analysis is based on desk research of official documents, transcripts from parliamentary sessions and the available secondary literature. Additionally, we complement our research with the help of 20 semi-structured expert interviews (Leech, 2002) (see list of interviews in Table 2 in the appendix). This strategy allows us to compare and cross-check information gained from the different sources (Martin, 2013). For each country, we selected interview partners representing key actor groups in the governance of the short-track programs. We talked to representatives from the umbrella organizations of unions and employer associations, the national ministerial level as well as national/federal VET institutes. Furthermore, we interviewed national representatives from the countries' regional organs for VET governance, as well as academic experts in the field. In Denmark, we also interviewed representatives from youth centers and production schools, which are key local actors for the implementation of the short-track programs.

We structured and formulated our interview questions along the different key dimensions in our theoretical framework. The first group of questions addressed the regulation of the short-tracks. The second group of questions targeted the actual standards (variation) in place for short-tracks. Lastly, we asked questions aiming at capturing the actors' perception of the ideas, ideals and goals of the short-tracks, thus the cultural-cognitive institutional pillar. The interviews lasted on average about one hour and were conducted between October and December 2017.

After the data collection, we analyzed the data along the different theoretical aspects that we described in the previous section. In order to systematically compare short-tracks in the three countries, we applied the three main theoretical dimensions (regulative, normative and cultural-cognitive) and their specific sub-aspects to each country. We used the data generated through the interviews and the document analysis to develop a thick description of each dimension and for each case. In the following, we present the results of our analysis. The case studies are organized by country cases in order to get a better understanding of the country-specific institutionalization of the short-tracks. Subsequently, we offer a cross-national comparative perspective.

Case studies

Denmark

The Danish short-tracks are the Basic Vocational Training programs (*Erhvervsgrunduddannelse* (EGU)). Although other two-year precursors date back to 1956 (Sørensen and Jensen, 1988: 54; Sigurjonsson, 2002: 17, 40-42), the EGU was initiated by the government in 1993 (Jørgensen, 2014; Retsinformation$_a$, 2018). It was the Social-Liberal minister of education, member of a broad coalition led by the Social Democratic party, who was the main architect of this law and its adjacent school reform named 'Education for all' (*Uddannelse til Alle*). Presently the participation rate in the short-tracks, relative to the total number of students in VET, is around 2% (Undervisningsminsteriet, 2017).

Laws (regulative dimension)

The EGU law, thus the **system development**, is overseen and reformed by the Ministry of Education together with the National Council for Vocational Training (DK2, 5; Retsinformation$_a$, 2018). The law gives quite some freedom to the involved actors, since it delegates the responsibility of implementation of the short-tracks to the municipalities (DK1, 2, 4). It is also on the national state level that the program was conceived, as a response to the high level of drop-outs from the regular programs and the increase in youths not in education or training (Blaksteen, 1994).

The short-track training is highly individualized, given that the curriculum is adapted to the apprentice's social, personal, and vocational capacity (Retsinformation$_a$, 2018). As opposed to the regular length programs, the social partners are not part of the curriculum development (Martin and Knudsen, 2010; Undervisningsministeriet, 2017). Every short-track contract is uniquely adapted to the young and their agreement with the training firm, regardless of occupation or sector. Thus, **content definition** is not primarily oriented to the labor market needs but rather to social equality.

The municipal level is clearly defined in the law to be responsible for the **organisation of the short-track training provision** and to instigate contact with other actors. The youth education centers and the production schools are the ones with knowledge both about the young person in question, his or her profile and capacity, and the local labor market (DK1, 2, 4, 5). It is also the schools who engage with the local firms through outreach and therefore **matching the supply** of the labor market with the **demand** from the target group (Rambøll, 2016).

The **financing** structure of the short-tracks is similar to the regular system, with the common Employers' Reimbursement Fund that all employers contribute to, which finances the apprentice wages (Cedefop, 2014). The state has however initiated subsidies for firms participating in these short-track programs (Retsinformation$_b$, 2018) in order to incentivize their participation in such a measure (DK5, 6, 7).

The Danish short-track **certificates** are largely used as stepping stones to further training (Wiborg and Cort, 2009), but they do not automatically qualify the graduates for it (DK2). However, the short-track training agreement can be individually adapted to help and prepare the young as much as possible for the transition (DK5, 6). The transferability of the short-track certificates is therefore a multifaceted issue: regardless of the region, occupation or sector, they are crafted to suit the individual.

From a regulative point of view, the short-track programs clearly have a social organizational logic. Their very intention is to cater to those who are not ready for a regular training program, but who will be prepared for transitioning into regular programs or jobs through the short-track participation. In this sense, the economic aspects on a sectoral level, for instance, are not in focus.

Standards (normative dimension)

The emphasis on the local level in the **national** short-track regulation in Denmark implies great **regional** (municipal) variation (Wiborg and Cort, 2009). One drawback with this, mentioned in the interviews, is that there are very few individuals enrolled in short-tracks in some municipalities, despite the overall approval of the short-tracks and its mission to reintegrate disadvantaged youths. Another interviewee states that when the local economy struggles, then it is more difficult to make employers agree to take on short-track apprentices (DK5). The local variations in effort and orientation of the short-tracks are therefore large.

The target group for the two-year programs often do not have the necessary grades to be considered for a regular track program (DK1, 2, 3, 4, 5): this is how the law defines the target group. Most firm-provided short-track training therefore entails quite simple tasks, for example, in retail, maintenance and simpler auto-mechanic work (DK5) or in the social welfare and healthcare fields (Nielsen and Cort, 1997: 68).

The issue with the short-track certificates and their low standardization is that the employers' recognition of their value seems limited. The training is rather seen as work experience or probation time in the firm than an indicator of portable skills (DK6, 7). On the other hand, the short-track contracts initiated between the young and the firm reflect both a demand for a

specific type of skills from the employers' side, while they at the same time are adapted to the capacity of the young. The outcome on an aggregate level is a small share of firms providing short-tracks and relatively few contracts, but a high level of 'matching' between the young and the training (DK2, 3). We conclude that the standards for the short-tracks reflect a mix of economic efficiency and social equality orientation among the firms but that, overall, the **sectoral** and **occupational** perspectives have little relevance in the Danish case.

In sum, however, the standardization of the short-tracks on the sub-national levels is following the social equality-orientation stipulated in the regulative dimension quite closely, although with the side-effect that the possibilities to train for firms is limited due to the high specialization of the training according to the apprentices needs.

Legitimizing arguments and ideas (cultural-cognitive dimension)

For **state actors** at the national level the idea seems to be that although municipal rule is good in order to secure the social aim of the short-tracks, the quality varies across the country (DK1, 2). Other than that, the satisfaction with the short-tracks is currently high and so is the consensus surrounding the legitimacy of its social orientation (DK2; Wiborg and Cort, 2009: 93).

However, the **employers'** camp is critical of the pressure to produce more short-track apprenticeship positions (DK1, 3; Nergaard-Holm, 2008), since it costs as much as training regular apprentices but takes more effort. From the employers' perspective, participation in short-track programs is largely based on individual firms' willingness to take on social responsibility (DK1, 2, 3, 4, 5). That the work tasks suit the capacity of the young is a necessary condition for participation, but then a sense of social responsibility is a key condition for the firms to take on a short-track apprentice (Rambøll, 2016: 23). The social responsibility argument is often used by the youth center counsellor in their approach to cajole the firm to provide short-tracks (DK5). Short-track training is still a quite limited program and not all employers are aware of it (DK3).

Taken together with the firms' demand for apprentices that can carry out the simpler tasks compared to the regular track apprentices, we see that although the social equality norms are strong, there is a degree of economic logic in play for Danish training firms (DK1, 5).

The **unions'** interest in the two-year programs, compared to the employers, is high and has gone up over time, as it is seen more and more as a measure that provides skills and good working and salary conditions for a those in society that lack academic credentials. Especially the Danish Confederation of Trade Unions (LO) is of this opinion (DK1). Furthermore, LO was the

architect behind the collective wage agreements of the short-tracks (covering all EGU apprentices) and the access to the unemployment insurance for short-track graduates (Rambøll, 2016: 23).

Regarding the cultural-cognitive dimension, the idea of the short-tracks as a social equality tool prevails amongst the different actor groups involved. What differs is the ways in which the actors are trying to reconcile this idea with their own interest: employer associations by leaving it up to the sense of social responsibility of the individual firms, and the unions by trying to ameliorate the labor agreements for those that enter the short-tracks.

Summary

Social equality is decidedly the key dimension for the Danish short-tracks, illustrated below in Figure 1, and this orientation is firmly established through the law (regulative dimension), which is free from substantial elements of economic efficiency. In the normative dimension, the short-tracks' standards are based on a slightly mixed logic of strong regional variation in implementation strategies, social responsibility aspects and appropriate provision of low-skilled tasks, since the training content is highly individualized. It is however mostly in line with what the short-track regulations stipulate. This leads us to place the 'standards' highest up on the social equality axis, but one step closer to economic efficiency compared to the regulative dimension. From a cultural-cognitive perspective, the support for the short-tracks and its social orientation is broad, but the rather limited social partner interest and engagement bears witness to difficulties reconciling a high level of social equality focus with an economic goal-orientation. The placement of 'ideas' is therefore in the same box as the standards.

[insert Figure 1 here]

Germany

Two-year programs have a long tradition in Germany. While the number of short-track programs has been dropping since the 1950's, in the beginning of the 21st century, they have been growing once again (Uhly et al., 2011: 11). In 2011, there were 40 two-year programs (ibid: 10). In the 2015, two-year programs made up a share of 8.6% of all new training contracts (BIBB, 2016: 39)[1].

Laws (regulative dimension)

The two-year programs are governed like the regular dual training programs through the vocational training act and the crafts code, and the corresponding social partnership mechanisms (**system development**). In other words, the German VET law does not distinguish between two-year, and the three- or three-and-a-half- year long apprenticeships. Even on the final certificate and during the graduation ceremony, the fact that these apprenticeships are only two years long is not made explicit. The situation that short-tracks, in terms of their **content definition**, are today often framed as theory-reduced has evolved in the normative and cultural-cognitive dimension, not in the regulative dimension (DE4, 6).

With regard to the **organization of the training provision** (e.g. supporting measures), the law as such offers no special provisions for short-tracks. As with 'regular' apprenticeship, when it comes to the **matching of supply and demand**, employers' skills demands are clearly emphasized (DE2, 3, 5); two-year programs are only implemented if there is a demand by the employers. In terms of access, there are no formal entry requirements except that one has to have reached nine or ten years of compulsory school education[1]. The law offers no special provisions for short-tracks in terms of **financing** (or state subsidies). At the formal level, two-year apprenticeship certificates are recognized at the national level just like the traditional apprenticeships. However, whether this **certification** allows holders to transition to a 'regular' length apprenticeship program is not stipulated by the law and represents one of the major sources of variation in terms of standardization.

In sum, considering the content of the law, two-year apprenticeships are located at the nexus of economic cooperation and social policy in the same way as traditional apprenticeships. In both cases, the economic efficiency perspective, rather than the social equality perspective, represents the key organizing logic.

Standards (normative dimension)

While the VET law institutionalizes short-tracks at the **national level**, we observe significant variation in the occupational, sectoral, and regional dimensions. With regard to the **occupational level**, there are just a few occupational training programs that account for the vast majority of all apprentices in two-year programs[1]. While the two-year programs are state-recognized, the understanding of what these short-track programs are is sometimes vague and, for example, whether they are intended for candidates lacking academic credentials or youth perceived as disadvantaged or offer similarly complex curricula as three-year programs – just in a shorter time (Esser, 2009). Furthermore, the situation is rather fuzzy when it comes to the

distinction between two-year programs that are 'standing on their own' and those that are supposed to be part of a step-by-step 'modular' dual training approach (both leading to an official certificate) (Protsch, 2014: 34-37). In these 'staged apprenticeships' (*Stufenausbildung*), there is first a less demanding stage and then a decision, by the employer (rather than the apprentice) on whether the apprentice can continue with the second stage (see Thelen and Busemeyer, 2012). Out of the 40 two-year programs, 23 foresee a transition into a regular dual training program – with prior learning being recognized (Uhly et al., 2011: 10).

Similarly, there are specific **sectors** in which two-year programs are most relevant given the demand by the employers in that sector. A search in the BIBB's online database for state-recognized training programs yields the result that as of today around 78% of the short-track programs are located in industry and commerce and 12% in the crafts sector[1]. Interestingly, the employers' camp is to some extent split on the issue of two-year apprenticeships. The Chamber of Commerce and Industry is in favor, whereas the Chamber of Craft Trades is usually opposed. Given the respective skill requirements, in certain industries such as retail the two-year programs are attractive to employers, whereas employers in the crafts sector often favor traditional apprenticeships (DE5, 6; see also Thelen and Busemeyer, 2008). In this context, it should be noted that the Chamber of Commerce and Industry is purely employer based, whereas the Chamber of Craft Trades also represents employees to some extent.

Regional variation then also occurs depending on where such a sector is located in Germany. Generally, the proportion is higher in labor market regions in which the offering of regular dual study programs is rather low (Uhly et al., 2011: 34). There are stark differences between Western and Eastern Germany (DE5). For instance, in the economically more powerful Western part, there are (a) fewer two-year programs and (b) these are less often or less strongly state-subsidized. Interestingly, while the number of training contracts in the two-year format expanded in the 1990's until around 2010 (see Ebner, 2013), it stagnated or slightly decreased since 2010 (BIBB, 2016: 145). One reason for this decline is that in Eastern Germany, two-year programs have been expanding in 1990's when most of these programs were publicly financed in this region (Uhly, 2011), but then declined again when state subsidies were reduced (BIBB, 2016: 145).

In sum, the degree of standardization of two-year programs is limited, with varying quality of programs and significant differentiation along occupational, sectoral, and regional lines (several interviews). The occupational level is essential in structuring variety with regard to the standardization of two-year programs, with most short-tracks being offered in occupations where short-tracks serve employers to reduce their investment in training (economic efficiency). Similarly, we find significant sectoral differences if we consider which sectors are more

involved expanding two-year programs. Furthermore, in the implementation of these programs, there are important regional differences, for example, considering the differences between Western Germany (focus: economic efficiency) and Eastern Germany (focus: social equality). Overall, in the normative dimension, the economic efficiency perspective is more prevalent than the social equality one.

4.2.3 Legitimizing arguments and ideas (cultural-cognitive dimension)

Broadly speaking, (large) employers are pro two-year apprenticeships, unions against. At the request of the employers, the federal **state**, in the person of the minister of economics, can decide in favor of the introduction of short-tracks against the will of the unions, and has occasionally done so in the past (e.g. Busemeyer, 2009: 195). However, traditionally, the state has left it mainly to the social partners to decide about the introduction and implementation of short-tracks.

While **unions** acknowledge that two-year apprenticeships can also serve as a stepping stone to traditional programs, they see the risk that employers use them as a way to exploit apprentices (especially disadvantages students) as cheap labor and tailor the programs more to their specific skills demands (DE1, 4). In this sense, unions tend to favor alternatives such as assisted apprenticeships or even full-time vocational schooling (DE3, 4). More generally, even if short-tracks are more accessible for disadvantaged youth, from a trade union's perspective, the shorter and the less encompassing the training, the less empowered are workers vis-à-vis capital (see Solga, 2009).

The **employers'** side argues that two-year apprenticeships should not per se be about integrating youths that lack academic credentials (social policy). In other words, it is not so much the target group that is in the minds of the employers that push for two-year programs, but rather their own (i.e. the firms') skills demands (DE1, 5). Also, some employers see two-year programs as an extended probation time (DE4). However, on both the employer and employee side, there seems to be a general preference not to frame two-year apprenticeships as special programs that carry less value. These programs are supposed to either prepare people for an occupation or to serve as a stepping-stone to a traditional apprenticeship. For both purposes, it would not be helpful to culturally frame them as social inclusiveness measure, which might weaken their attractiveness both for employers and potential apprentices (DE6).

In short, we observe that social equality arguments, that are largely absent in the regulative dimension in the German case, come to the fore in the cultural-cognitive dimension. Yet, also in cultural-cognitive dimension, the economic efficiency dimension is overall more prevalent. As

one may expect for differently positioned actor groups within a given socio-economic system, the relevant groups often draw on the social equality dimension in different ways. In the case of Germany, the (large) employers and the state refer to it to legitimize short-tracks, and unions and small firms rather to discredit them.

Summary

As Figure 2 illustrates, in the German case we find a discrepancy between the regulative dimension and the two other dimensions (normative and cultural-cognitive). The VET law is not explicitly mentioning social goals for the short-tracks (hence the location in the bottom-right corner), while social goals partly enter the scene when it comes to the relevant standards and ideas around the short-tracks (hence, these are located in the center between economic efficiency and social inequality).

[insert Figure 2 here]

Switzerland

Since the 1970's, informal and individual training plans (*Anlehre*) enabled students who are struggling to access regular training programs to receive short-track vocational training in Switzerland. The VET reform in 2004 introduced a standardized two-year VET level that replaces the informal training plans (Wettstein and Gonon, 2009: 98). Graduates from the two-year programs receive nationally recognized Federal VET Certificates (*Eidgenössische Berufsatteste* (EBA)). About 6% of apprentices in Switzerland are enrolled in a short-track program (SBFI, 2016).

Laws (regulative dimension)

The short-tracks are part of the national Swiss VET system as they are anchored in the national VET law and lead to nationally standardized certificates., The State Secretariat for Education, Research and Innovation (SBFI) issued a non-binding guideline (2005, updated 2014) on the implementation of the short-tracks. The governance and **system development** of the Swiss VET system is characterized by the strong involvement of the so-called Organisations of the working world (*Organisationen der Arbeitswelt* (OdAs)). Most of the OdAs represent employer's interests organized along sectoral lines. The OdAs are the key drivers of the development of the

short-tracks. They initiate new occupations and they are responsible for the **content definition**. Thus, the development of the short-tracks is driven mainly by the market perspective.

However, the VET law underlines that the short-tracks should take account of the apprentice's individual competences (BBG, 2002, Art. 17). Also, the VET law establishes the means of individual support measures (*fachkundige individuelle Betreuung* (FIB)) to help apprentices in short-tracks to successfully complete the training. These measures are the main distinguishing feature of the **organization of the training provision** of Swiss short-tracks in contrast to three- and four-year trainings. Even though the federation "may support" these measures (BBG, 2002, Art.18), the responsibility to implement them is delegated to the cantons (SBFI guideline 2014). This emphasis strengthens the social goal dimension of the short-tracks.

Short-tracks are, as stated by the VET law, targeted towards 'practically talented' youths (*praktisch Begabte*). Even though the VET law leaves open how to interpret 'practically talented', one of the state-orchestrated evaluations argues that short-tracks are important in offering certified vocational training to those students that do not perform well at school (Bundesrat, 2019: 4). In the public debate, short-tacks are also often referred to as a tool to enable "as many youths and adults as possible" to enter vocational training (Bundesrat, 2019).

While the term `practically talented´ is not clearly defined, in reality, we find a very heterogeneous population in the short-tracks with a high share (about 30%) of migrants (SBFI, 2016: 31; CH3). All interview partners agreed that it is not those students perceived as the weakest who make it into short-tracks. This might be related to the still selective access to short-tracks. Employers are the key gatekeepers, just as in the three-and four-year programs. Thus, the **matching of supply and demand** is largely driven by economic efficiency.

In addition, when it comes to the **financing**, the legislative documents do not distinguish between short-tracks and three- and four-year trainings. We do not find specific structural short-track subsidies. The interview partners underlined that short-tracks 'stand on their own'. The **certification** represents an independent occupation which is demanded by the labor market. However, especially the SBFI guideline emphasizes that short-tracks should also enable the transition to further educational programs. Yet, the responsibility to guarantee permeability lies with the employer-dominated OdAs who develop the short-tracks.

In a nutshell, the regulative dimension is influenced by the interest of the labor market. However, the regulations underline that short-tracks are a means to allow 'practically talented' to enter the VET system and therefore also introduce individual support measures to enhance inclusiveness. These features strengthen the social goal of short-tracks in Switzerland.

Standards (normative dimension)

Short-track graduates receive certificates that are standardized at the **national level.** However, the implementation is characterized by great variation at the **sectoral level**. Traditionally, sectoral organizations, such as the OdAs have a strong influence on the Swiss collective training system (Gonon and Maurer, 2012). While some OdAs welcome the possibility to implement short-tracks, others see no use in it (CH3), pointing to a dominance of the economic efficiency logic. This leads to great variation at the **occupational level** with 53 short-track programs facing 181 three- and four-year tracks as of April 2018 (SBFI, 2018). The interview partners agreed that the main motivation of an OdA to develop a short-track is the demand by the employers for specific (lower) skills (CH3, 4). The state actors do not want to interfere too much in the development process because traditionally, the governance of VET in Switzerland is mainly shared between business and the state. Therefore, all actors seem to accept this sectoral variation.

When it comes to the participation of employers in short-tracks (offering training spots), we find not only sectoral but also great variation at the **regional level**. After the reform in 2004 introducing short-tracks, some cantonal actors directly approached local employers to offer short-tracks. One interview partner described this as "selling from door to door" ("*Klinkenputzen*") (CH4). However, especially along the language borders, the share of short-tracks (in all apprentices) differs greatly. In the French and Italian speaking parts, short-tracks play only a minor role with a participation rate of 1% (SBFI, 2016). In contrast, the canton of Basel-Stadt has one of the highest participation rates (5.3%) due to very active cantonal actors who cooperate with the local employers (CH4).

Also, when it comes to the implementation of the individual support measures, we find great regional and even local variation (Stern and von Dach, 2018). The initial idea of the SBFI's national guideline was to streamline and guarantee a minimum of cantonal support measures (CH5). However, the cantons "interpret very freely" how to implement the measures (CH5). One interview partner argued that this variation undermines the inclusiveness function of the short-tracks because the support depends on the canton the apprentice lives in (CH3). To what extent cantons invest in individual support measures depends on their social policy agenda (CH3). Also, while the national VET law states that the cantons are responsible, it is often the local schools that get engaged in the support measures (CH5).

In sum, we find significant sectoral, occupational and regional variation when it comes to the standards applying to short-tracks in Switzerland.

Legitimizing arguments and ideas (cultural-cognitive dimension)

For **state** actors, the delegation of central tasks of short-track governance to business actors is important (CH1, 4). The state wants short-tracks to be tailored towards the needs of the labor market. At the same time, the initial motivation to introduce a standardized option for disadvantaged students in the VET system came from state actors (CH1, 2, 6). The state actors wanted to strengthen the social equality aspect, which is why the national VET office developed the abovementioned guideline for the support measures (CH3). The guideline aimed at strengthening the social and inclusiveness character of the short-tracks and, in fact, the state actors initially hoped to establish a binding guideline (CH3). However, the state did not aim at creating a safety net for a big share of the youth (CH5). Several interview partners underlined that there are "other ways" for those seen as being the most disadvantaged share of the youth (CH4, CH5). For the cantons, short-tracks also have a social function which is why they try to prevent business from dropping them (CH4). Also, the state actors pay close attention to the short-tracks' function as a 'stepping stone' to further training options (CH4). One interview partner admitted that the short-tracks carry a "contradiction in terms" ("*Widerspruch in sich*") (CH5), thus a "split between standardization and individualization" (CH3).

Employers view short-tracks as means to provide (lower-level) skills that are needed on the labor market. The aim of the development (of the content) of the short-tracks is to create an independent occupation that the labor market needs (CH7). Similarly, the decision to offer track training spots and the selection process of apprentices is driven by the idea to create a (demanded) trained labor force rather than the idea to provide training for vulnerable groups (CH5). For the **unions**, the permeability to further training options is an essential feature because they view the short-tracks as a social tool to integrate youths that may lack academic credentials into the system (CH2). However, also the support by the unions focusses on the employability of the apprentices.

All interview partners agreed that the implementation of the short-tracks is very successful. They referred to the evaluations that show that a high share of the graduates continues in further training (40%) (SBFI, 2016)[1]. Overall, all actors (state, employers, and unions) support the key role of employers and the orientation towards the labor market. However, zooming in on the motives, we find that the state and the unions also try to support short-tracks as a means to bring students with lower grades into training but without interrupting the close private-public cooperation.

Summary

In a nutshell, the Swiss national VET law provides the frame for a social interpretation and implementation of short-tracks through the individual support measures. However, the cantons vary greatly in their effort to enhance the inclusiveness-character of short-tracks. This is why we situate the regulative dimension of Swiss short-tracks in the middle of the social equality axis (see Figure 3). The further institutionalization of the Swiss short-tracks is mainly guided by the economic goal to produce skilled labor that is demanded by the labor market. Especially the standards of the implementation and the ideas behind the institutionalization are dominated by market mechanisms and a strong dependency on employers. This leads us to characterize the institutionalization through the standards and ideas as very much driven by economic efficiency while scoring low on social equality (Figure 3).

[insert Figure 3 here]

Comparison and Discussion

Our analysis allows us to compare the institutionalization of short-tracks along three lines; (1) along the overall goal orientation between the countries (cross-case), (2) along the three institutional dimensions (across the countries), and (3) within one country (within-case). The following section concentrates on the comparison along the three institutional dimensions across the countries. After this, we will turn to the cross-case and within case variation.

Short-tracks and the law (regulative dimension)

The comparison of the regulative frameworks mirrors the different social and economic ambitions in the three countries. The Danish regulative framework places the social orientation at the center. The curricula orientation towards the apprentices' abilities and state subsidies for firms largely decouple the short-tracks from market mechanisms. The targeting of youths who are seen as disadvantaged moves the Danish regulative dimension clearly towards the social goal dimension. In contrast, the German and Swiss regulative dimension grants great competences to the business actors. Employers have a heavy say in the content definition and function as gatekeepers to short-tracks. Technically, the German VET law does not even refer to short-tracks as a specific program for students who do not meet certain thresholds. This is different in the Swiss case. The Swiss national VET law underlines the social ambitions of short-tracks and establishes a frame for individual support measures. A non-binding guideline is supposed to strengthen this social dimension. Overall, we see that the Danish regulative

dimension clearly targets the social goal dimension while the Swiss regulative dimension touches upon both social equality and economic efficiency. Seen from the regulative dimension, the German case is least oriented towards social equality.

Short-tracks and standardization (normative dimension)

With regard the normative dimension, we find that the Danish case is the one most oriented towards social equality, and most consistently across the three decentralized governance levels (sector, occupation, and region). In Germany and Switzerland, the economic efficiency dimension is more dominant than in Denmark. In the German and the Swiss case, standardization across the various governance levels is more limited. Thus, for instance, in Eastern Germany short-tracks are leaning more towards the social dimension (as opposed to Western Germany). In Switzerland, cantonal and school actors in certain regions are key in pushing the social dimension of short-tracks. Interestingly, in both these examples, state actors play a crucial role in driving institutional variation when intervening within the regional economy within decentralized systems. However, crucially, the limited standardization across governance levels of short-tracks in Germany and Switzerland, which to some extent limits their overall social equality orientation, seems to raise employers' participation in the short-track programs.

Short-tracks and legitimizing argument (cultural-cognitive dimension)

One interesting finding is the difference in how the social partners legitimize the short-tracks in the cultural-cognitive dimension. As the German and Swiss employers have a big stake in the short-tracks due to their demand-driven configuration, they are quite active in the process of keeping them oriented towards economic efficiency. In the German case, this initially even led to a break with the consensus principle between the social partners. In Denmark, on the other hand, the employers have more or less resigned from trying to shape the programs to their advantage and thereby 'allow them' to be socially oriented. In exchange, though, the latter are participating less in the programs, which contributes to the modest coverage of the short-tracks. The social equality idea of the Danish short-tracks permeates also the employers' side but leaves it up to the sense of social responsibility of each firm to decide whether to participate or not. Looking to the case of Switzerland where the unions are playing a more marginal role, the employers' side has more leeway to set the terms for the training without 'risking' conflict with the unions or the state. Concerning the state actors, we observe that in all three countries the state underlines the role of short-tracks as social policy means. Especially in Denmark is this the

case. In Switzerland however, the policy orientation along market mechanisms is far more present among the state actors, who view economic efficiency as a precondition for a successful social policy tool.

Conclusion

The aim of this paper was to understand how the economic and social goal dimensions are institutionalized in short-track dual training programs in Denmark, Germany, and Switzerland. Therefore, we drew on the institutionalist literature – combining sociological institutionalism and political economy perspectives. So, are short-tracks torn between economic efficiency and social equality? We find that both goals play into the institutionalization of short-tracks and that each institutional dimension and each country develops its own way of speaking to both goals. The systematic comparative-institutional analysis of our three cases revealed interesting variations between the countries, between the three institutional dimensions but also within the countries.

In Denmark, the employers have relative little influence over the content definition of the training programs, which is highly individualized to adjust for specific needs of apprentices. The support structure around the apprentices is strong, with youth counsellors that help matching the young with the firms. The state, unions, but also the employers understand short-tracks as a means to offer academically and socially disadvantaged youths the opportunity to receive vocational training. In Switzerland and in Germany, on the contrary, the definition of the training curricula is rather oriented towards the market needs. The economic goal dimension of the Swiss short-tracks overall is relatively strong, especially in the normative and cultural-cognitive dimensions. In Germany, the normative and cultural-cognitive dimensions have a slightly stronger social equality orientation than the regulative framework prescribes. However, the view of the short-tracks as an economically oriented and quite similar program to the regular-length programs, is more pertinent in Germany than in both Switzerland and Denmark.

It follows that the goal orientation of the short-tracks shows clear traits of Williamsonian (more in Germany and Switzerland) and Durkheimian (more in Denmark) institutions. Although in Switzerland the state was the main driver of the short-track reform, as opposed to Germany where it was the employers' camp, it adopted an employer-oriented focus albeit mixed with a social equality orientation. Switzerland provides the example where the balance between the two dimensions is most pronounced in the three-country comparison. Despite the three countries' adherence to the collective skill formation family, our findings suggest that there are elements of welfare system types, industrial relations and social policy tradition in general

(Esping-Andersen, 1990; Iversen and Stephens, 2008) that might – at least partly – explain the observed variation and that offer a promising starting point for further research.

Our analysis also reveals that the countries not only differ in their overall goal orientation, but that different institutional dimensions vary in their orientation towards a more social or more economic understanding of training programs. In Denmark, the three institutional dimensions seem to be the most homogenous, with a clear focus on the social function of short-tracks in all three institutional dimensions. In Germany, we see that the regulative dimension clearly differs from the other two dimensions. While the regulative framework focuses on the economic efficiency of training, the standards and ideas related to short-tracks reveal a social goal orientation of German short-tracks. Compared to Germany, the Swiss institutionalization is inverted. In Switzerland, the regulative dimension highlights the social aspect of short-tracks while this impression fades away when looking at the strong economic orientation in the normative and cultural-cognitive dimensions.

Overall, our analytical strategy to combine sociological institutionalism with comparative political economy concepts and, more specifically, the economic efficiency and social equality perspectives has allowed us to move beyond written rules and grasp variation between the three key institutional dimensions: regulative, normative, and cultural-cognitive. This provides an important basis for a better understanding of how complex institutional configurations are put into practice in strongly decentralized governance systems and to uncover the specific normative and cultural underpinnings of collectively organized work-based educational programs. Indeed, our findings suggest that normative and cultural elements seem to be tightly connected (in all three countries), while decoupling can occur between these two dimensions' goal orientation and that of the regulative dimension (as found in Germany and Switzerland).

Even though collective skill formation systems and especially short-tracks are limited in the extent to which they provide general skills (often seen as key to social and political participation), we find that these systems differ in their approach how to combine social and economic demands. While some countries mainly rely on the voluntary engagement of business – the backbone of dual vocational training – other countries stretch these boundaries further and put the apprentice perspective more in the focus. The extent to which one or the other way is more apt to enhancing social inclusion is a question for further empirical research. Also, further analyses are needed to explore the extent to which these findings travel beyond the case of short-track training in collective skill formation. The remaining puzzle is how the institutionalization of the short-tracks has come about and developed over time into what they are today. Our study could only touch upon the question why we observe the current emphasis on economic versus social goals in short-track vocational training. Further research could focus

on the historical development of short-tracks, exploring in greater detail the intricate and dynamic interplay between actors and institutions at the intersection of social and economic policies associated with short-track apprenticeships.

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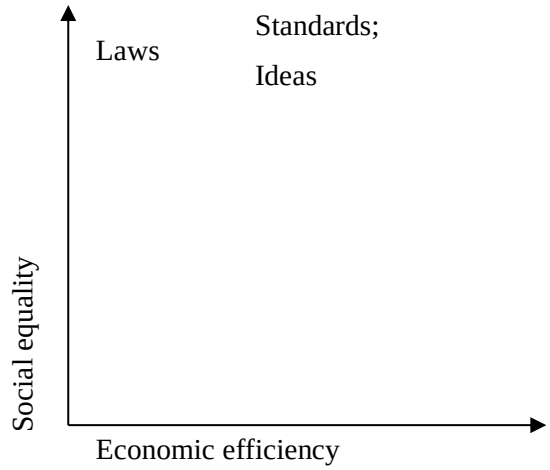
Appendix: List of Interviews

Table 2. Overview interviews (chronologically sorted for each country case)

Code	**Actor Type**	**Date**	**Place**
DK1	Trade union	19.09.2017	Copenhagen
DK2	National State Actor	21.09.2017	Copenhagen
DK3	Education think-tank	29.09.2017	Copenhagen (telephone interview)
DK4	Youth guidance center	02.10.2017	Copenhagen (video interview)
DK5	Production School Association / Production school	26.10.2017	Korsør (video interview)
DK6	Youth guidance center	31.10.2017	Copenhagen (video interview)
DK7	Youth guidance center	31.10.2017	Copenhagen (video interview)
DE1	National research institute	03.10.2017	Berlin
DE2	Employer representative	13.10.2017	Berlin
DE3	Federal VET institute	17.10.2017	Bonn (written answers to interview questions)
DE4	Trade union	23.10.2017	Frankfurt (telephone interview)

DE5	National economic chamber	27.10.2017	Berlin
DE6	National state actor	03.11.2017	Bonn (telephone interview)
CH1	National state actor	15.3.2017	Bern
CH2	Trade union	24.09.2017	Bern (written email statement)
CH3	National research institute	04.10.2017	Zollikofen
CH4	Regional State Actors organised on the national level	04.10.2017	Bern
CH5	National state actor	23.10.2017	Bern
CH6	National state actor	26.10.2017	Münsingen (telephone interview)
CH7	National employer association	24.11.2017	Zurich

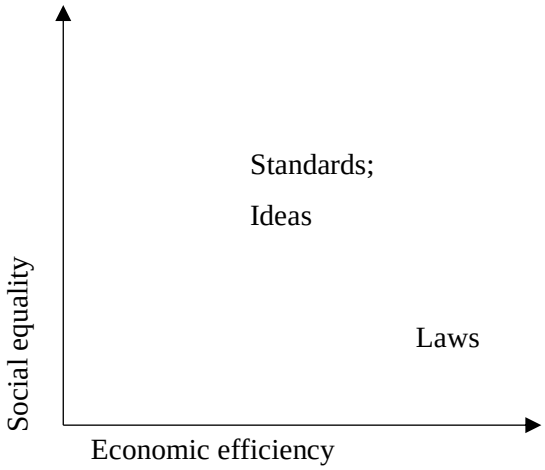
Figure 1. The institutionalization of short-tracks in Denmark between economic efficiency and social equality



Source: Authors' own, based on synthesis of qualitative institutional analysis

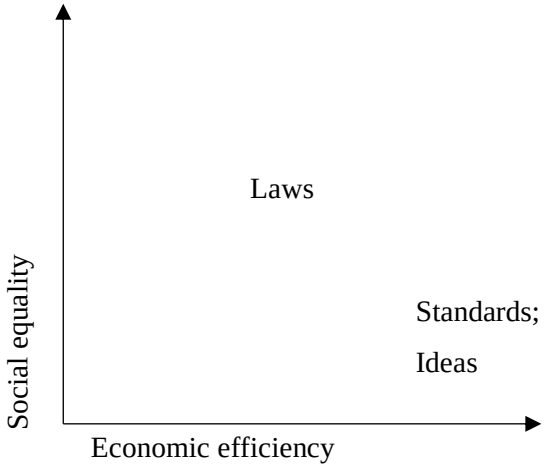
Note: 'Laws' refer to regulative institutional dimension, 'standards' to normative dimension and 'ideas' to cultural-cognitive dimension

Figure 2. The institutionalization of short-tracks in Germany between economic efficiency and social equality



Source: Authors' own, based on synthesis of qualitative institutional analysis

Figure 3. The institutionalization of short-tracks in Switzerland between economic efficiency and social equality



Source: Authors' own; based on synthesis of qualitative institutional analysis

Table 1: Institutional dimensions and their conceptualization

	Regulative dimension	**Normative dimension**	**Cultural-cognitive dimension**
Key institution	Laws	Standards	Legitimating arguments and ideas
Guiding question	How does the law define the key governance tasks?	To what extent do we observe differentiation in the standards along the key governance levels in dual VET?	How do key actors legitimize short-tracks? What ideas and values do they have?
Key units of analysis	Laws referring to: System development; Content definition; Organisation of training provision; Matching of demand and supply; Financing; Certification	Standards at the: National level; Occupational level; Sectoral level; Regional level	Legitimation arguments and ideas by: State agencies; Employers and their associations; Unions

Source: Authors' own, based on review of relevant institutionalist and VET literatures

10. Paper 3: A silver lining for disadvantaged youth on the apprenticeship market: An experimental study of employers' hiring preferences

Anna Wilson

IDHEAP, University of Lausanne, Lausanne, Switzerland

GOVPET (Governance in Vocational Professional Education and Training), University of Lausanne, Lausanne, Switzerland

Anna Wilson (Anna.Wilson@unil.ch) University of Lausanne, Bâtiment IDHEAP, Rue de la Mouline 28, 1022 Lausanne, Switzerland.

Anna Wilson is a PhD student of Giuliano Bonoli's social policy chair at the Swiss graduate school for public administration at the University of Lausanne. Her doctoral studies make part of the Swiss State Secretariat for Education, Research and Innovation's (SERI) Leading House project Governance of Vocational and Professional Education and Training (GOVPET). Her work is mainly focused on firms' role in including disadvantaged young people in dual vocational education and training systems and how different governance set-ups might influence their willingness and capacity to do so.

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Word count: 8217

Abstract

In dual vocational education and training (VET) systems, school-leavers in their mid-teens who wish to pursue vocational certificates through in-firm apprenticeships are subjected to the training providers' quite selective hiring-process. Previous research shows that youth with weak school performances are

one of the groups that have the largest difficulties being hired as apprentices. Less investigated in the literature is what employer characteristics that are conducive for their willingness to hire a disadvantaged apprentice: both on the level of the organisation and of the recruiter. I draw on organisational and institutional literature and on person-organisation fit and ethical decision-making theory to formulate expectations regarding the preferences of the organisations and recruiters. The applied method is a vignette survey experiment administered to in-firm vocational trainers that recruit apprentices in the commercial business profession in the canton of Vaud in Switzerland. The findings show that public sector employers are more lenient towards candidates with weaker academic achievements than employers in the private sector. Moreover, respondents with a more egalitarian outlook on the access to vocational training for disadvantaged youths tend to lower their thresholds for the candidates' academic achievements.

Keywords: in-firm apprenticeship, disadvantaged youth, employer preferences, factorial vignette survey, commercial business training

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Disclosure statement

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Introduction

In dual vocational education and training, young people with weak academic records often have difficulties getting hired as apprentices (Caspi et al. 1998; Jackson 2007; Imdorf 2006; Hupka-Brunner et al. 2010; Jackson 2012). Firms that offer apprenticeships often have certain demands on the candidates' academic performance and prior merits, since they are cost sensitive and want to hire the most easily trainable candidate (Ryan et al. 2012; Moretti et al. 2017). A young

individual with poor academic records who fails to get an in-firm apprenticeship risks dropping out of education altogether. Repeated failures to transition in the educational system may in the long-term lead to a life-time of unemployment and welfare dependence, to a great personal and societal cost (Masdonati et al. 2010; Wolter and Ryan 2011).

Although employers often can be assumed to hire the candidate with the strongest educational credentials (Di Stasio 2014; Bills et al. 2017; Protsch and Solga 2015), they may under certain conditions be willing to lower their hiring criteria and be more lenient to candidates with a profile indicating a lower trainability (Mohrenweiser 2012; Martin and Swank 2012; Dettman and Gunther 2013). Previous research has shown that there are factors associated with lowering an organisation's requirements for hiring a less advantaged candidate for an apprenticeship, or actively facilitating the hiring of someone with a disadvantaged profile.

Whereas employers' preferences for apprentices and the decision whom to hire is influenced by many factors, the literature insufficiently addresses the question what how the personal features of the recruiter and the organisational features of the firm relate to one another in their conduciveness for hiring a disadvantaged apprentice candidate. I aim at closing this gap by investigating the importance of different factors that influence the decision to hire an apprentice: both on the organisation level and on the level of the recruiter.

Knowing what type(s) of training firm(s) that tend to be more inclusive towards candidates with a weaker academic profile, and which are not, would enhance the candidate-to-firm matching and prevent delayed or failed transitions to vocational education on the upper secondary level for apprentice candidates. Furthermore, if we can identify the specific features of the employer that is associated with a more lenient and open-minded attitude towards disadvantaged candidates in the hiring situation, we would be able to direct appropriate focus and resources towards how to stimulate or encourage such attitudes among apprentice recruiters. For this purpose, I draw on organisational theory as well as person-organisation fit and ethical decision-making theory and address both factors related to the hiring decision that are located on the firm-level and the level of the recruiter. The question I intend to answer is, what characteristics are conducive for apprentice recruiters' willingness to hire a disadvantaged candidate?

The dual vocational and education literature sheds some light on the firm- and recruiter-level factors that may be conducive for the hiring of candidates with a disadvantaged profile. Firstly, employer associations may be important instigators for a firm's efforts to hire disadvantaged individuals (Martin and Swank 2012; Mohrenweiser and Pfeiffer 2014). Likewise, support that firms receive from the state or from other types of inter-organisational cooperation (such as inter-firm training networks) might alleviate recruitment difficulties of more 'hard to train' groups (Holzer 1996; Mohrenweiser 2012; Martin and Swank 2012; Dettman and Gunther 2013).

Secondly, the size of the firm is often brought to the fore as a factor facilitating the inclusion of disadvantaged apprentice candidates (Mohrenweiser 2012; see also Holzer, 1996). This is both due to the higher visibility and importance of maintaining a positive public image for larger employers, as well as the stronger resources and training capacity (through apprenticeship trainers, equipment etc.) of large employers compared to smaller ones (Mohrenweiser and Pfeiffer 2014; Protsch 2017). Public organisations, thirdly, have shown to have lower thresholds at the screening phase for apprenticeship candidates of various academic records compared to the private sector (Protsch 2017). A public sector organisation would, hence, be more open to young apprentices that demand more time and supervision since it is not as subjected to the same market pressure as the private sector firms.

Other scholars stipulate that differences related to the individual recruiter, his or her own values and experiences play a great role in the hiring decisions, and that some value-orientations may be more conducive for the likelihood to hire someone from a disadvantaged group (Acker 1990; Connerly and Rynes 1998; Kristof-Brown 2000; Weichselbaumer 2000; Jenkins 2008). If the recruiter sympathises with disadvantaged individuals and believes in the equal access to vocational education for everyone, the tendency is to be more willing to hire such candidates.

Through an experimental vignette survey, I test whether the institutional affiliation, the training capacity, the firm size, the sector type or the recruiters' personal values has an impact on the recruiters' willingness to hire a disadvantaged apprentice candidate. My analysis shows that whereas firm size and institutional affiliations does not have an impact on the recruiters' willingness to hire disadvantaged candidates, public organisations are more lenient towards these candidates than private companies are. Furthermore, I aver that recruiters with a more egalitarian-oriented attitude towards disadvantaged youths in the dual VET system are more likely to lower the bar for these apprentice candidates.

The focus of this paper is on the in-firm vocational trainers that recruit apprentices in commercial business (*employé(e) de commerce*) in the French-speaking canton of Vaud in Switzerland. More than 60 percent of students leaving lower secondary school choose the in-firm vocational education track in the canton of Vaud, and on a national level the rate is over 70 percent (CSRE 2018, 103) which makes it the largest post-compulsory school option. Furthermore, commercial business is the most popular apprenticeship program, around 17 percent of all in-firm apprenticeships take place in this track (OFS 2018). This makes the profession and as well as the region a representative case to study apprentice recruitment behaviour.

The paper proceeds as follows. In the next section I discuss apprentice hiring in the literature and develop some hypotheses on the factors that are related to a more lenient and inclusive hiring behaviour by employers. I put forth the expectations on employers both with

regards to the organisational characteristics and to the person responsible for the apprentice hiring in an organisation. After that, the selection of case and method is discussed in closer detail, followed by the discussion of the results of the empirical analyses, discussion and conclusion.

Theory

Overview of employer preferences in apprentice hiring

In dual VET systems, the employers are at liberty to select the candidate they want without any legal constraint, in a manner similar to the regular labour market. Previous research on employer behaviour and employer preferences, such as signalling and human capital theory, convincingly suggests that indicators such as academic background matters for a candidate's hiring chances (Di Stasio 2014; Bills et al. 2017). In the case of apprentices, then, employers are assumingly more likely to hire a high-achieving candidate based on prior merits (e.g. school performance, test scores, school track) than a lower-achieving candidate (Becker 1964; Moss and Tilly 1996; Jackson 2009; Hupka-Brunner, Sacchi and Stalder 2010; Rivera 2011). Employers often believe these factors to be related to higher trainability and productivity in the firm, which is a goal for the profit-maximising and cost-minimising organisation (see Di Stasio 2014). This form of selection may lead to statistical discrimination (see Arrow 1973), meaning that truly productive and trainable candidates with poor school records would not be selected, assuming that trainability is a key factor that employers look for in a candidate.

I draw on the above discussed literature of taste-based discrimination explaining employer preferences in order to adapt categories for those that are can be considered *disadvantaged* on the apprenticeship market. In this paper, I focus mainly on individuals that are *academically disadvantaged* in the context of hiring chances in dual vocational education and training. This relates to the problems concerning transitioning from compulsory school to post-compulsory education as a result of poor grades, poor scores on other forms of aptitude tests and/or having followed a lower educational track in compulsory school (Ryan 2001; Hupka-Brunner and Stalder 2004; Protsch and Dieckhoff 2011; Brahm et al. 2014).

The impact of organisational characteristics on apprentice hiring

Since employers are free to offer apprenticeships in dual VET system countries it is reasonable to assume that the hiring is done with a profit-maximising rationale in mind (see Ryan et al. 2012; Moretti et al. 2017). Assuming that employers act in an economically rational way, a training organisation, on average, needs the benefits of the dual training to outweigh the costs (Mohrenweiser and Zwick 2008; Moretti et al. 2017). Otherwise, they are likely to withdraw

from apprenticeship training. Thus, the apprentice needs to be as apt and trainable as possible in order to keep the training efforts low and the productivity high in the firm (Hupka-Brunner et al. 2010; Di Stasio 2014; Di Stasio and Van de Werfhorst 2016).

The public sector, however, in general operates less under the profit-making rationales as the private sector does. Therefore, organisations that provide apprenticeships in the public sector, in contrast to private sector training firms, are not under the same pressure to screen for candidate's academic achievements, their assumed trainability or productivity. Instead, they can 'afford' to select based on other criteria, or even lower their thresholds. Taken together with its obvious affiliation with the state and its imperatives to ensure a level of social solidarity (see Thelen 2014; Martin and Thelen 2007; Trampusch 2007), it is likely that public sector apprentice training providers have more social inclusion motives than counterparts in the private sector. This would make the public sector a more favourable venue for disadvantaged candidates to get a chance at an apprenticeship.

Furthermore, as Protsch argues and proves in her German study (2017), public organisations, similar to large organisations, are more publicly visible and therefore likely to employ more formalised hiring practices. This means that private, smaller, firms are more likely to hire through informal channels which might exclude equally suited or better candidates that do not have access to the same channels (Ibid.; see also Reskin et al., 1999). This is because the public organisations seek to maintain a positive public image that reflects their social commitment and fair hiring processes, in order to increase their legitimacy vis-à-vis the citizens (Reskin et al. 1999, 342-3).

For similar reasons, large employers are likely to have the same inclination to have fair and more including hiring practices than their smaller counterparts (Barber et al. 1999; Protsch 2017). Larger firms often have a more formalised hiring process for apprentices, with more stages of screening (Protsch 2017). Although this does not necessarily cause these employers to hire disadvantaged candidates, it is likely to generate a larger pool of applicants to choose from and accordingly a larger group of applicants in the first screening stage.

Furthermore, large employers often have a stronger capacity to train apprentices than smaller employers do (Mohrenweiser 2012; Mohrenweiser and Pfeiffer 2014). The larger firms often have access to resources and manpower specifically devoted to apprentice training, workshops or training equipment at the workplace or support from the state or training networks, which contributes to better possibilities to devote supervision and help if needed for the apprentice (Mohrenweiser and Zwick 2008; Mohrenweiser 2012; Mohrenweiser and Pfeiffer 2014; Imdorf and Leeman 2012). Furthermore, recent research carried out in Switzerland have shown how training networks, where firms pool their resources and rotate the training responsibilities for apprentices, has tended to decrease discriminatory practices for disadvantaged candidates (Imdorf and Leeman 2012; Leeman et al. 2015).

Finally, firms' membership in employer associations establishes a stronger link to the state and accordingly state policies aiming at enhancing employment or training for vulnerable groups. Martin and Swank convincingly sheds light on this linkage for the case of firms' involvement in active labour market programs in Denmark and the United Kingdom and their affiliation with employer associations and unions (Martin and Swank 2012). Furthermore, for employers to offer apprenticeships, employer association affiliations could be instrumental for influencing, for example, a firm's willingness to hire less advantaged apprentice candidates (see Culpepper 2000, 2011). Taken together, we can assume that these factors ameliorate the employers' willingness to hire academically disadvantaged candidates.

These organisational characteristics are therefore forming the first hypothesis: *Large employers, employers located in the public sector or employers that are members of an employer association and/or training networks have a higher willingness to hire academically disadvantaged candidates.*

Recruiters' personal values and the effect on behaviour

Researchers in the field of ethical behaviour in business, as well as scholars exploring the link between personal and organisational values as predictors of actual behaviour, have examined the issue of the effect of values on the ethical behaviour of the employed (Bommer et al. 1987; Akaah and Lund 1994; Hemingway and Maclagan 2004; O'Fallon and Butterfield 2005; Fritzsche and Oz 2007). Akaah and Lund (1994) show in their study that it is the organisational values, in contrast to the personal values of the individuals, which presents itself in decision-making situations. By contrast, Hemingway and Maclagan (2004) show that it is rather the individual's beliefs and convictions that has an effect on a company's social corporate responsibility, rather than the values of the corporation itself. This highlights the importance of individual agency, to the extent that they have discretionary power. Correspondingly, Fritzsche and Oz (2007) explore the link between personal values and actual behaviour and find correlation between altruistic values and ethical decision-making, as well as between more egoistic personal values and unethical decision-making.

Other strands of literature explore the importance of the recruiter's personal values and beliefs and the 'person-organisation fit' logic in the recruitment process (Adkins et al. 1994; Rivera 2015). In a nutshell, the recruiter is not only influenced by the impetus to try to find the person 'best fit' for the job according to productivity or employability standards, but also by a motivation to make a recruitment that goes in line with his or her personal beliefs. In other words, they strive for *work value congruence* (Rynes and Gerhart 1990; Adkins et al. 1994). This mechanism, the literature holds, is positively reinforced when a good fit happens in the recruitment and is attributed to the value-based part of the hiring decision. I seek to test this

theoretical assumption, along with the personal values and ethical decision-making theories, in relation to the apprentice recruiter's willingness to hire someone with an academically disadvantaged profile. I argue that the recruiters whose personal values are of an 'egalitarian' nature, meaning the idea that all young people should have the same chance to obtain vocational training, are more likely to want to hire someone with a disadvantaged profile. This, because it would be an action in line with their core beliefs which recruiters strive to stay close to in their hiring.

It cannot be ruled out that the recruiters' preferences are, in turn, affected by the organisational culture and conventions in the workplace (Imdorf and Leeman 2012). A person who is active in an organisation that either pertains to the public sector, and/or where the management has more permissive and inclusive attitudes towards academically disadvantaged individuals might herself adapt values that align with those of the employer. On the other hand, it is equally possible that a person that harbour these values are going to keep having them and acting on them regardless of the conventions within the workplace. However, it is possible that the workplace offer more or less constraint for the recruiter to act on these values.

Drawing on the reasoning in this theoretical section, I formulate the second hypothesis: *The more the egalitarian-oriented the recruiter is, the more willing will s/he be to hire an academically disadvantaged candidate.*

Case selection

In this study, the focus is on the commercial business vocational training in the canton of Vaud in Switzerland. The reason to focus on this geographical area and sector was manifold: firstly, it was possible to obtain the contact details to the in-firm vocational instructors in a timely manner. We were able to obtain their contact details from the official centralised registry in collaboration with the General Direction for Post-Mandatory Education (DGEP) in Lausanne. Secondly, the commercial training is the most popular option among the vocational tracks (OFS 2018) which we expected would increase the chances to obtain enough responses to generate valid and generalisable results from multilevel regression analysis of the responses. Aside from that, testing the employers' willingness to hire disadvantaged individuals in this 'least-favourable' context makes the commercial training a hard case for inclusion: if we observe inclusive behaviour in this field, we can assume to find it in less competitive and intellectually demanding fields too. Furthermore, the commercial training covers organisations operating in a wide variety of sectors (see Table S2 in the Supplementary material) and therefore provides a broad and heterogeneous sample of employers.

Method

Experimental set-up

Directly observing employers' hiring behaviour and identifying their true preferences is difficult and can be prone to social desirability biases. Using an experimental setting is a suitable alternative approach to study research questions linked to recruitment in general and to recruitment of apprentices in particular. This paper uses an experimental factorial survey design, conceived to confront apprentice recruiters with recruitment scenarios that are difficult to observe in reality (de Wolf and van der Velden 2001; Biesma et al. 2007; Di Stasio and Gërxhani 2015; Di Stasio 2014; Blinded 2). The respondents were asked to rate their own willingness to hire fictional candidates with varying socioeconomic and ethnic features as well as academic achievements. It was thereby possible to test the respondents' stated willingness to hire the apprenticeship candidate depending on the variation of candidate characteristics and relate these preferences to characteristics on the respondent level: both of the organisation and the apprentice recruiter.

The online-based factorial survey experiment was implemented between March and June 2017. Links to the survey was sent out to all vocational trainers active in the commercial business profession in the canton of Vaud and the respondents were confronted with fictitious apprentice candidates with varying characteristics (so-called *vignettes*). After presenting the respondents with general questions on the firms they work for, we asked them to express their hiring preferences for two types of apprenticeships located in commercial business. More specifically, the question was: *To what extent would you be willing to hire this* [fictional] *candidate as an apprentice?*

The respondents could evaluate the two sets of five vignettes each[9] (totally 10 vignettes), rating them on an 11-point Likert scale (values 0-10). The descriptions of the fictitious candidate approximate the information about the candidate that the apprentice recruiter is likely to obtain from candidates applying for positions in the field. Nine variables (dimensions) that varied on three levels each made up the vignettes (explained closer in the next section). The apprentice recruiter's evaluation of the vignettes evidently did not directly measure the real outcome (an actual hiring), rather it is a recruiter's stated willingness hire a candidate. Put differently, it is an indirect evaluation of the expected suitability of an applicant. However, studies such as the ones by Webb and Sheeran (2006) and De Dreu et al. (2001) show that there is a high correlation between stated and actual behaviour.

[9] Randomly varying the type of apprenticeship in commercial business and included one which lasts two years (shop-assistant, AFP) and one three-year program (commercial employee extended profile, CFC).

The survey relied on a d-efficient (90.03) sample of 325 vignettes from all 19683 possible combinations to maximise the orthogonality of the nine dimensions. Before, and after, the vignette experiment part of the survey, the respondents were asked to answer questions related to their workplace, its characteristics and themselves. These variables, related to the respondent and employer characteristics, were then used in order to carry out a factor analysis through multilevel modelling design (Skrondal and Rabe-Hesketh, 2008; Auspurg and Hinz, 2015). I chose this model since each respondent rates several vignettes and the multilevel model accounts for this correlation in the error term. I estimated the main effects of, and interaction effects between, the respondent level variables (independent variable) and the vignette ratings (dependent variable). This analysis enables an estimation of each vignette dimension and its effect on the rating, while controlling for factors on the level of the respondent.

Prior to introducing the five vignettes for each of the two apprenticeship positions, we explained the evaluation setting mentioning that each candidate should be rated independently form one another and giving some general information about the candidate. In particular, the respondents were informed that the fictitious candidates are 16-year-olds, all motivated to start an apprenticeship position and have obtained their education in Switzerland. To ensure transparency we disclosed that the study aimed at exploring employers' hiring preferences in dual vocational training and that the project was funded by the Swiss State Secretariat for Education, Research and Innovation (SERI).

Vignette dimensions and operationalisation

When recruiters screen candidates they rely on the information disclosed by the candidate's application. The application conveys information such as school grades, educational track and similar indicators of academic achievement and cognitive capacity (Siegenthaler 2011; Solga and Kohlrausch 2012; Protsch and Solga 2015). The vignette dimensions are constructed to approximate the information that the apprentice recruiters are likely to obtain in real life.

The impact of nine different dimensions that provide key information on candidates' socioeconomic background, ethnicity and academic achievements were analysed as well as hobbies and vary the values of the dimensions randomly (see Table S2 for a list of all the dimensions and levels and Table S4 for correlations between the vignette variables in the Supplementary material). These nine variables were selected based on seven preparatory interviews with practitioners in vocational training in the region, who possessed the inside knowledge and experience of reviewing candidates' applications and CVs in order to obtain a high external validity.

The variables of interest for this paper are the ones reflecting the academic achievement. The academic achievements are operationalised through four different variables

that reflect the Math and French grades, 4 (reference category), 4.5 or 5; the Multicheck results, 40 (reference category), 50 or 60 and the educational track; basic track (reference category), intermediate track and high track.

Multicheck is a commonly used Swiss standardised aptitude test provided by a private company that offers occupation-specific tests for prospective, young apprentice candidates (Siegenthaler 2011). The educational track (in Switzerland students are placed in basic or expanded educational track upon entering lower secondary school) is partly an indicator of academic achievement (Neuenschwander and Garrett 2008; Hupka-Brunner, Sacchi and Stalder 2010). However, the track the youth is placed in has also be proven to depend on their socioeconomic class (Kronig 2007; Hupka-Brunner, Sacchi and Stalder 2010), where students from a lower class with non-academic parents are more likely to be placed in the basic track. It is therefore possible that this variable captures both academic achievement as well as socioeconomic background, although the former is likely the dominant signal.

The choice to include the father's profession as an indicator of socioeconomic background (Bourdieu and Passeron 1977; Kalter and Kogan 2006; Jackson 2012) was partly based on information obtained through practitioner interviews. In dual VET systems, it is common that the apprentice recruiter has access to information regarding the family situation of the candidate (Hupka-Brunner, Sacchi and Stalder 2010; Int1, 2, 3). Either information regarding the parents' profession is included in the application letter, or it is disclosed in the interviews with the candidates where parents are often invited to join (Int7).

The 'egalitarian values' variable is created through the respondents' rating on the following statement presented to them: *The firms* [in the Swiss VET system] *should provide all young a chance to obtain a vocational training, regardless of their competence level or ambition.* This statement captures the respondents' attitude towards inclusion of weaker students in the dual system and I argue that it is a suitable approximation of how they also view their own role as recruiters in the Swiss system. I recoded the variable into a dummy, where the responses 'Fully disagree' and 'Disagree' were coded as 'Non-egalitarian' and the responses 'Agree' and 'Fully agree' were coded as 'Egalitarian'. I omitted the responses in the category 'Neither agree nor disagree'.

The data analysed in this paper is based on 840 respondents' vignette ratings. This yields a response rate of 63 per cent, which is exceptionally high for independent online surveys without incentives.

What do employers want?

The hiring preferences of the people charged with screening and recruiting apprentice candidates is a complex and difficult phenomenon to study and has to some extent long

remained a black box. Through the experimental survey carried out in the framework of this project, it is possible to get a closer and more precise view of what apprentice recruiters actually want and value in an apprentice candidate. To begin with, I present the general results from the survey in Figure 1 (see full model in Table A1 in the Appendix), indicating the vignette variables that had a significant effect on the apprentice recruiters' rating. The results are estimated through a multilevel linear regression of the ratings of the vignettes, controlling for the factors that were presented in the theory chapter (e.g. membership in employer association or training network, firm size, public/private sector and recruiters' egalitarian values) plus the respondents' gender. The scale of the figure is identical to the 0-10 points Likert scale used in the experiment, meaning that the value of 1 in the figure (from the baseline) equals 1 point in the vignette rating (see Figure S3 in the Supplementary material).

[Figure 1 about here]

We can observe a tendency among the apprentice recruiters in commercial training to value the academic achievements above the socioeconomic and ethnic factors, as well as over gender and hobbies. The educational track, especially the highest (VP), have a strong positive effect on the vignette ratings, as well as the Multicheck results and the French grades. The Math grades also have a positive impact, but less so than the mentioned ones. Among the control variables, we notice that whereas the public sector and the egalitarian values ones expectedly have an overall positive effect on the average ratings, the employer association and training network variables are insignificant but tend to be associated with lower vignette ratings. The firm size variable is neither significant but as opposed to the employer association membership it tends to be associated with higher vignette ratings, on average.

In a closer analysis of the interaction of the employer association membership and the firm size variables with the vignette ratings, I do not find any significant effects on any of the vignette dimensions. We can therefore leave these factors aside and conclude that they do not have the expected influence on the willingness to hire disadvantaged candidates. These preliminary insights of the effects of the hypothesised factors behind inclusive hiring behaviour among the training organisations brings the analysis to the next sections, where I focus on the impact of the sector and the impact of the recruiters' egalitarian values.

Hiring preferences in public and private sector

In hypothesis 1, I proposed that employers located in the public sector would be more willing to hire candidates with low academic achievements than those in the private sector. Consequently, I interacted the vignette variables with the independent dummy variable Public/Private sector to

determine whether the differences in ratings between the sectors were significant (see Figure 2 below). The analysis shows, further, that the public sector is rewarding candidates with a construction-working father and with an Albanian background, compared to the Swiss candidates with a father who is a doctor. Although this socioeconomic aspect of a candidates' profile is not the main focus of the paper, it suggests that the public sector is more prone to hiring candidates with a foreign and/or working-class background.

The interaction of the Public/Private variable with the vignette ratings yields another interesting difference between the sectors. For the public sector employers, the Multicheck results and the educational track matter significantly less for their candidate rating compared to their private sector counterparts. This is in line with the expectations that the public sector relaxes their demands on high academic performance from their apprentices. They place a lower importance in these results as an indicator of fit for the commercial occupation training and are therefore more lenient towards academically disadvantaged students.

Perhaps more pertinent is the negative interaction effect of the highest educational track variable with the public sector (Figure 2). As discussed in the theory section, this variable likely conveys signals of a candidate's academic achievement, but also of their socioeconomic background. Taking into account that both the French grades and the Math grades are insignificant in the interaction, and the Multicheck strongly negative, it is possible that the public sector employers interpret the educational track more as a socioeconomic indicator than one reflecting true academic achievement, compared to the private sector firms.

[Figure 2 about here]

Do recruiters' values matter?

Further, I investigated how recruiters' egalitarian values affect candidate ratings. By asking the respondents to indicate whether they agree or disagree with the statement that 'the firms [in the Swiss VET system] should provide all young a chance to obtain a vocational training, regardless of their competence level or ambition' I sought to differentiate between candidates with a more or less egalitarian on view on the dual VET system and the effect that this has on the ratings in interaction with the different factors in the vignettes. These personal values and beliefs, I argue, would ultimately have an effect on how they value candidates and who they in reality would prefer to hire as an apprentice. I proposed that the more the egalitarian-oriented the person in charge of apprentice training and hiring is, the more willing will s/he be to hire an academically disadvantaged candidate.

Examining the interaction between the degrees of agreement with the statement described in hypothesis 2 and the vignette variables, I find several effects (Figure 3 below, full

model in Table A3 in the Appendix). The findings show that the more a respondent agrees with the statement that the firms' role in the dual VET system is to provide all young people vocational training, the less important they find academic merits: French, Multicheck and educational track. These findings are well-aligned with hypothesis 2, and we can conclude that there is a connection between the recruiters' attitudes towards the access opportunities for less advantaged and their own behaviour in a (albeit experimental) choice situation.

[Figure 3 about here]

Following these insights, the intuitive questions arises whether the 'egalitarian recruiters' to a higher degree are hired in the public than in the private sector? And, whether the sector the recruiter would then influence for his or her evaluation of the candidates. Attempting to address this concern, firstly, a chi2 test shows that the distribution of egalitarian-oriented people in the public sector is higher than in the private sector (see Table S7 in the Supplementary material). Subsequently, I carried out the same interaction models while separating the public and the private sectors. The results (see Tables A4 and A5 in the Appendix) show that although the highest educational track is still valued less when considering the recruiters' egalitarian values, however the effect is stronger in the public sector. In the same sector, the second highest educational track is equally significantly negative, and not in the private sector. However, the Multicheck score's negative interaction effect with the egalitarian values disappears for the public sector when the sectors were split but remains for the private sector. In conclusion, the difference between the egalitarian recruiters in the public and private is in all essential similar in the sense that the preferences for apprentice candidates do not differ for the egalitarian-oriented in either sector.

Discussion

The main aim of this paper was to find which employers were more inclusive towards young academically disadvantaged individuals. Examining the effect of the sector (public/private), thus, we see that the private sector employers' preferences are more driven by academic achievements compared to public sector employers'. In the context of Swiss dual apprenticeships, the contrast between the preference of private and public sector may partly be explained by the arguments of legitimacy and representativeness issues that the public sector is exposed to as vehicles for more inclusive hiring practices in the public sector (see Protsch 2017). The finding further highlights that the private sector is more selective and tends to have higher barriers for certain social groups compared to the public sector. The public sector might have a higher social commitment due to its affiliation with the state and pressures to represent

the population at large through its staff – so also for the apprentices.

However, the findings of this vignette experiment do not suggest that any discrimination on ethnicity or socioeconomic background that is playing a determining role in the apprentice recruitment in the commercial occupations. That contradicts findings presented in other studies covering apprentice recruitment (see Hupka-Brunner and Stalder 2004; Hupka-Brunner, Sacchi and Stalder 2010; Imdorf 2017) and recruitment in general (Blinded 1) showing direct ethnic-based discrimination among recruiters. Whether the findings in this paper are an effect of less discriminatory behaviour amongst the commercial training recruiters in the canton of Vaud, Switzerland, compared to other regions or occupations, we cannot tell without further research.

In contrast to what previous research has argued (Imdorf and Leeman 2012; Culpepper 2011), however, neither firm size, training network affiliations nor employer association are associated with a higher willingness to hire disadvantaged apprentice candidates. In fact, neither of these factors have a significant effect on the vignette ratings. Although the findings from this study might be too limited, seeing that it focuses on one training program only and does not include all occupations (nor all firms) involved in the dual system, they nevertheless weaken the theoretical link between firm size, memberships in networks and employer associations and higher hiring chances for disadvantaged candidates.

The egalitarian values yield a few interesting effects on the respondents' ratings: the French grades, educational tracks and Math grades had a smaller importance for the overall rating the more egalitarian the respondent. This finding confirms the expectation that the individual values of the recruiter matters, and it contributes to the strengthening of this strand of argument in the labour market and hiring literature.

Interestingly, when separating the private from the public sector, recruiters in the examination of the effects of egalitarian values, the coefficients are stronger for the public sector than the private. This implies that the most lenient recruiters, in terms of the candidate's academic achievement, are active in the public sector. This could be a result of self-selection of already egalitarian-oriented individuals, who prefer to work in the public sector than the private. It is also possible that the sector type fosters certain attitudes and values, which in this case is expressed through the public sector recruiters' preferences. This finding aligns well with Protsch's (2017) results showing that public organisations are more likely to invite apprentice candidates a follow-up selection stage, compared to private firms. What we still do not know is whether it is the organisation type that affects the values of the recruiter, or if it is simply the level of discretion or other constraints related to the organisation, that spurs this difference. This remains to be shown in future studies.

Conclusion

The issue of employers' willingness to hire disadvantaged young as apprentices needs to be addressed with a multileveled perspective. A person can have one or several attributes that place her in a disadvantaged position, but the disadvantage may play out differently depending on what it is and in what context. The approach in this paper to account for both personal attributes and values of the recruiter and for the characteristics and particularities of the organisation in an experimental setup gives a unique chance to understand what factors are conducive for disadvantaged candidates and which are not. In sum, a multilevel perspective on employer preferences is a useful tool to fully grasp the complex issue of inclusion and exclusion on the apprenticeship market. With the help of the experimental setup, furthermore, it is possible to observe behaviour of the key actors in apprentice training and recruitment without suspicions of bias of the control and treatment group, as can be the case in non-experimental studies.

What message can we provide the actors involved in vocational education and training with, both in Switzerland and in other dual system countries? To the extent that egalitarian values and beliefs have a positive effect on the hiring chances of disadvantaged youths, can these be learnt by or taught to the recruiters? Or, is it rather a personal characteristic that you either have or not? It is beyond the scope of this paper to answer this difficult question. One presumption is that the structural conditions that the public sector offers, without the pressure for profit-making and with indirect or direct plight to ensure equal treatment and access to the population, might foster a certain inclusive attitude amongst the employees.

Taken together, thus, apprentice candidates with weak school records, as well as candidates from the working class or with a foreign background, would have better chances applying to positions in the public sector. Or, could the private sector apprenticeship providers be alleviated of some of the financial pressures that might prevent them from more inclusive hiring practices? The direct positive impact of employer association membership was not confirmed in this study, but the importance of institutional support to employers is nevertheless strengthened by the shown inclusiveness of the public sector. Thus, solutions to the issue of improved chances for disadvantaged groups might include more targeted institutional support and encouragement, financial incentives or information campaigns targeting employers (see Martin and Swank 2012; Mohrenweiser and Pfeiffer 2014; Emmenegger et al. 2018; Moretti et al. 2017) as a starting point is to identify and specify the nuances of the issue at hand.

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Appendix

Figure 1. Vignette ratings with controls.

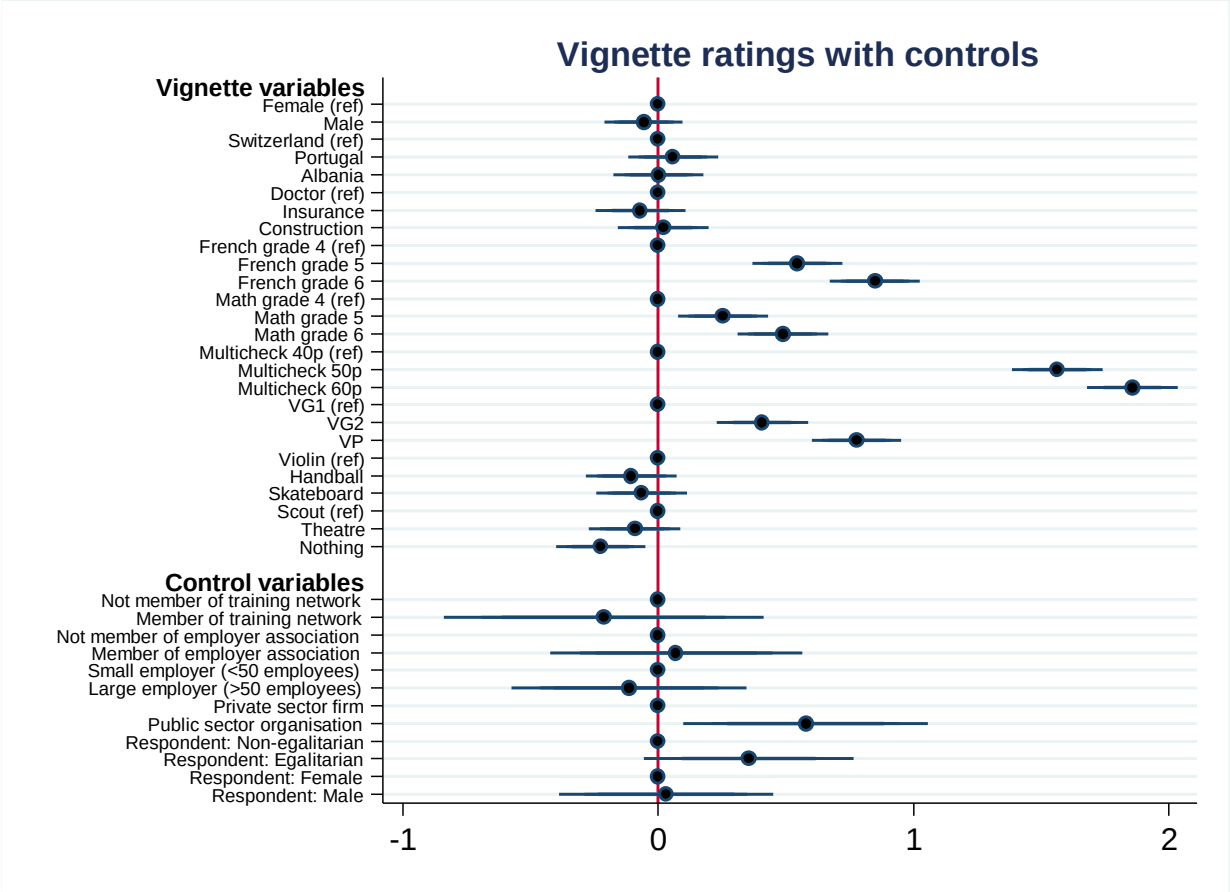
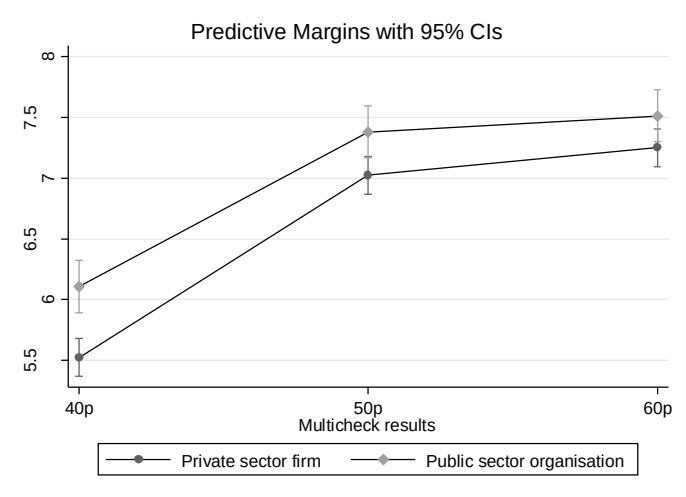


Figure 2. Interaction effects of public sector and vignette variables



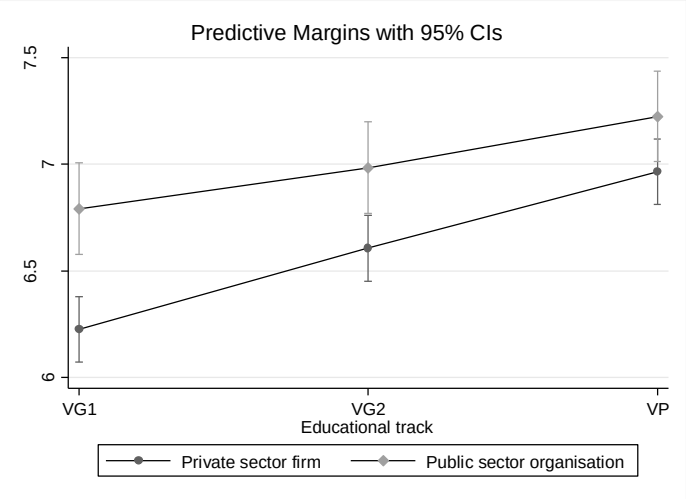
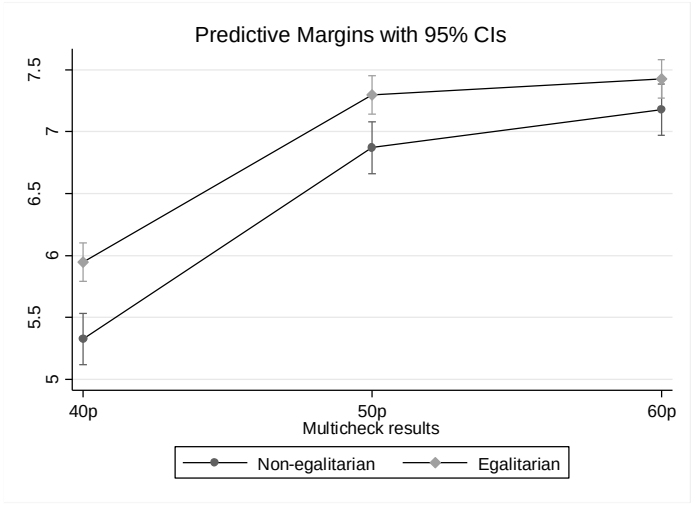
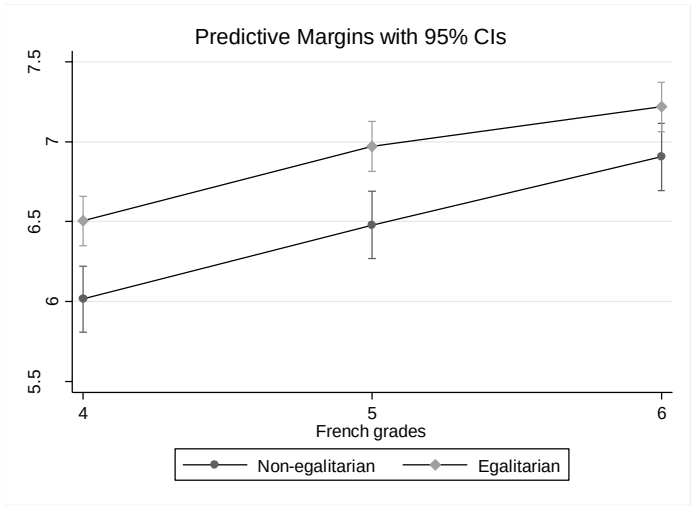
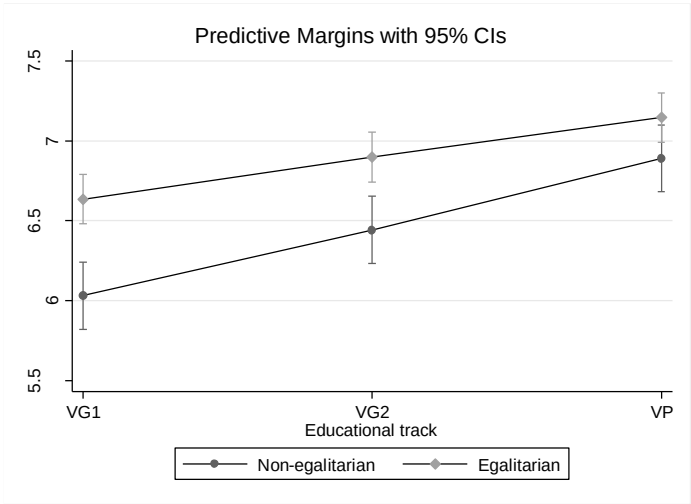


Figure 3. Interaction effects of respondents' level of egalitarian values and vignette variables







Supplemental material

Table S1. General model with controls for respondent characteristics and firm characteristics

Vignette variables	**Coefficient**	**Standard dev.**
Socio-demographics		
Female (ref)	0.000	(.)
Male	-0.057	(0.060)
Switzerland (ref)	0.000	(.)
Portugal	0.058	(0.068)
Albania	0.001	(0.068)
Doctor (ref)	0.000	(.)
Insurance	-0.070	(0.068)
Construction	0.019	(0.069)
Academic records		
French grade 4 (ref)	0.000	(.)
French grade 4.5	0.544***	(0.068)
French grade 5	0.849***	(0.068)
Math grade 4 (ref)	0.000	(.)
Math grade 4.5	0.254***	(0.068)
Math grade 5	0.488***	(0.069)
Multicheck 40p (ref)	0.000	(.)
Multicheck 50p	1.562***	(0.069)
Multicheck 60p	1.856***	(0.069)
Track VG1 (ref)	0.000	(.)
Track VG2	0.408***	(0.069)
Track VP	0.777***	(0.068)
Hobbies		
Violin (ref)	0.000	(.)
Handball	-0.104	(0.069)
Skateboard	-0.064	(0.069)
Scout (ref)	0.000	(.)

Theatre	-0.091	(0.069)
Nothing	-0.226***	(0.068)
Firm characteristics		
Not member of training network (ref)	0.000	(.)
Member of training network	-0.213	(0.243)
Not member of employer association (ref)	0.000	(.)
Member of employer association	0.071	(0.192)
Small employer (<50 employees) ref.	0.000	(.)
Large employer (>50 employees)	-0.114	(0.178)
Private sector firm (ref)	0.000	(.)
Public sector organisation	0.577**	(0.186)
Respondent characteristics		
Non-egalitarian (ref)	0.000	(.)
Egalitarian	0.354*	(0.159)
Female (ref)	0.000	(.)
Male	0.031	(0.163)
Constant	4.140***	(0.190)
lns1_1_1	0.215***	(0.047)
lnsig_e	0.376***	(0.014)
N	2775.000	
aic	10612.771	
bic	10766.910	
ll	-5280.386	
r2		
ar2		

Standard errors in parentheses

° p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table S2. Public sector interaction effects

	Gender		Parents' nationality		Father's profession		French grades		Math grades		Multicheck results		Educational track		Hobby 1		Hobby 2	
Public sector	0.401**	(0.126)	0.308*	(0.135)	0.288*	(0.136)	0.393**	(0.135)	0.443**	(0.136)	0.583***	(0.136)	0.567***	(0.136)	0.288*	(0.136)	0.263°	(0.136)
Female (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Male	-0.048	(0.052)	-0.050	(0.042)	-0.049	(0.042)	-0.050	(0.042)	-0.052	(0.042)	-0.048	(0.042)	-0.049	(0.042)	-0.048	(0.042)	-0.049	(0.042)
Switzerland (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Portugal	0.020	(0.048)	-0.011	(0.060)	0.021	(0.048)	0.020	(0.048)	0.019	(0.049)	0.020	(0.048)	0.021	(0.048)	0.020	(0.048)	0.019	(0.048)
Albania	0.014	(0.048)	-0.051	(0.059)	0.016	(0.048)	0.014	(0.048)	0.013	(0.048)	0.013	(0.048)	0.016	(0.048)	0.013	(0.048)	0.012	(0.048)
Doctor (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Insurance	-0.073	(0.048)	-0.070	(0.048)	-0.116°	(0.059)	-0.073	(0.048)	-0.072	(0.048)	-0.072	(0.048)	-0.073	(0.048)	-0.073	(0.048)	-0.075	(0.048)
Construction	-0.014	(0.049)	-0.012	(0.049)	-0.087	(0.060)	-0.013	(0.049)	-0.013	(0.049)	-0.013	(0.049)	-0.016	(0.049)	-0.013	(0.049)	-0.015	(0.049)
French grade 4 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
French grade 4.5	0.466***	(0.048)	0.466***	(0.048)	0.468***	(0.048)	0.450***	(0.060)	0.465***	(0.048)	0.463***	(0.048)	0.469***	(0.048)	0.470***	(0.048)	0.469***	(0.048)
French grade 5	0.776***	(0.048)	0.775***	(0.048)	0.776***	(0.048)	0.785***	(0.060)	0.776***	(0.048)	0.776***	(0.048)	0.780***	(0.048)	0.777***	(0.048)	0.780***	(0.048)
Math grade 4 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Math grade 4.5	0.267***	(0.048)	0.266***	(0.048)	0.268***	(0.048)	0.266***	(0.048)	0.270***	(0.059)	0.269***	(0.048)	0.266***	(0.048)	0.264***	(0.048)	0.267***	(0.048)
Math grade 5	0.519***	(0.049)	0.519***	(0.048)	0.518***	(0.048)	0.519***	(0.049)	0.561***	(0.060)	0.520***	(0.048)	0.517***	(0.048)	0.516***	(0.049)	0.521***	(0.048)
Multicheck 40p (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Multicheck 50p	1.421***	(0.048)	1.421***	(0.048)	1.421***	(0.048)	1.422***	(0.048)	1.420***	(0.048)	1.499***	(0.059)	1.419***	(0.048)	1.421***	(0.048)	1.420***	(0.048)
Multicheck 60p	1.614***	(0.048)	1.615***	(0.048)	1.614***	(0.048)	1.615***	(0.048)	1.614***	(0.048)	1.725***	(0.060)	1.612***	(0.048)	1.614***	(0.048)	1.612***	(0.048)
VG1 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
VG2	0.317***	(0.049)	0.317***	(0.049)	0.319***	(0.049)	0.316***	(0.049)	0.317***	(0.049)	0.315***	(0.049)	0.381***	(0.060)	0.317***	(0.049)	0.318***	(0.049)
VP	0.635***	(0.048)	0.633***	(0.048)	0.636***	(0.048)	0.635***	(0.048)	0.634***	(0.048)	0.633***	(0.048)	0.740***	(0.059)	0.634***	(0.048)	0.633***	(0.048)
Violin (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Handball	-0.032	(0.048)	-0.032	(0.048)	-0.032	(0.048)	-0.031	(0.048)	-0.031	(0.048)	-0.031	(0.048)	-0.031	(0.048)	-0.094	(0.060)	-0.034	(0.048)
Skateboard	0.001	(0.048)	0.001	(0.048)	0.003	(0.048)	0.002	(0.049)	0.002	(0.049)	-0.000	(0.048)	0.001	(0.048)	-0.051	(0.060)	-0.002	(0.048)
Scout (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Theatre	-0.064	(0.049)	-0.065	(0.049)	-0.065	(0.049)	-0.064	(0.049)	-0.065	(0.049)	-0.061	(0.049)	-0.063	(0.049)	-0.066	(0.049)	-0.151*	(0.060)
Nothing	-0.164***	(0.048)	-0.164***	(0.048)	-0.164***	(0.048)	-0.165***	(0.048)	-0.164***	(0.048)	-0.163***	(0.048)	-0.160***	(0.048)	-0.166***	(0.048)	-0.219***	(0.059)

Respondent: gender	-0.125	(0.124)	-0.126	(0.124)	-0.125	(0.124)	-0.125	(0.124)	-0.125	(0.124)	-0.125	(0.124)	-0.126	(0.124)	-0.126	(0.124)	-0.124	(0.124)
Firm size	0.212°	(0.120)	0.213°	(0.120)	0.211°	(0.120)	0.212°	(0.120)	0.212°	(0.120)	0.212°	(0.120)	0.211°	(0.120)	0.212°	(0.120)	0.212°	(0.120)
Egalitarian values	0.432***	(0.119)	0.431***	(0.119)	0.432***	(0.119)	0.432***	(0.119)	0.432***	(0.119)	0.433***	(0.119)	0.432***	(0.119)	0.432***	(0.119)	0.431***	(0.119)
Male # Public	-0.006	(0.088)																
Portugal # Public			0.090	(0.102)														
Albania # Public			**0.186°**	**(0.101)**														
Insurance # Public					0.124	(0.101)												
Constr. # Public					**0.215***	**(0.102)**												
French 4.5 # Public							0.046	(0.102)										
French 5 # Public							-0.026	(0.101)										
Math 4.5 # Public									-0.011	(0.101)								
Math 5 # Public									-0.122	(0.102)								
MC 50 # Public											**-0.227***	**(0.101)**						
MC 60 # Public											**-0.322****	**(0.102)**						
VG2 # Public													**-0.189°**	**(0.102)**				
VP # Public													**-0.308****	**(0.101)**				
Handball # Public															0.180°	(0.102)		
Skateboard # Public															0.153	(0.102)		
Theatre # Public																	**0.251***	**(0.102)**
Nothing # Public																	0.160	(0.101)
Constant	4.401***	(0.140)	4.434***	(0.141)	4.437***	(0.141)	4.402***	(0.141)	4.388***	(0.141)	4.337***	(0.141)	4.342***	(0.141)	4.440***	(0.141)	4.451***	(0.141)
lns1_1_1	0.233***	(0.034)	0.233***	(0.034)	0.233***	(0.034)	0.233***	(0.034)	0.233***	(0.034)	0.234***	(0.034)	0.233***	(0.034)	0.233***	(0.034)	0.234***	(0.034)
lnsig_e	0.368***	(0.010)	0.368***	(0.010)	0.368***	(0.010)	0.368***	(0.010)	0.368***	(0.010)	0.367***	(0.010)	0.367***	(0.010)	0.368***	(0.010)	0.368***	(0.010)
N	5493.000		5493.000		5493.000		5493.000		5493.000		5493.000		5493.000		5493.000		5493.000	
aic	20881.781		20880.358		20879.347		20883.281		20882.028		20873.250		20874.331		20880.170		20877.588	
bic	21047.062		21052.250		21051.239		21055.173		21053.920		21045.142		21046.222		21052.062		21049.480	
ll	-10415.890		-10414.179		-10413.673		-10415.64		-10415.01		-10410.63		-10411.17		-10414.09		-10412.79	

Standard errors in parentheses, ° p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table S3. Egalitarian values interaction effects

	Gender		Parents' nationality		Father's profession		French grade		Math grade		Multicheck results		Educational track		Hobby 1		Hobby 2	
Egalitarian values	0.443***	(0.123)	0.483***	(0.132)	0.509***	(0.133)	0.489***	(0.132)	0.460***	(0.133)	0.620***	(0.133)	0.608***	(0.132)	0.343**	(0.133)	0.403**	(0.133)
Female (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Male	-0.028	(0.070)	-0.051	(0.042)	-0.050	(0.042)	-0.050	(0.042)	-0.050	(0.042)	-0.050	(0.042)	-0.050	(0.042)	-0.050	(0.042)	-0.050	(0.042)
Switzerland (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Portugal	0.020	(0.048)	0.051	(0.081)	0.020	(0.048)	0.020	(0.048)	0.020	(0.049)	0.021	(0.048)	0.020	(0.048)	0.020	(0.048)	0.020	(0.048)
Albania	0.013	(0.048)	0.083	(0.081)	0.012	(0.048)	0.014	(0.048)	0.013	(0.048)	0.015	(0.048)	0.013	(0.048)	0.013	(0.048)	0.014	(0.048)
Doctor (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Insurance	-0.073	(0.048)	-0.074	(0.048)	-0.007	(0.080)	-0.075	(0.048)	-0.073	(0.048)	-0.073	(0.048)	-0.072	(0.048)	-0.072	(0.048)	-0.073	(0.048)
Construction	-0.014	(0.049)	-0.014	(0.049)	0.069	(0.082)	-0.014	(0.049)	-0.014	(0.049)	-0.013	(0.049)	-0.013	(0.049)	-0.013	(0.049)	-0.013	(0.049)
French grade 4 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
French grade 4.5	0.466***	(0.048)	0.466***	(0.048)	0.467***	(0.048)	0.464***	(0.080)	0.466***	(0.048)	0.470***	(0.048)	0.471***	(0.048)	0.465***	(0.048)	0.466***	(0.048)
French grade 5	0.776***	(0.048)	0.776***	(0.048)	0.776***	(0.048)	0.890***	(0.080)	0.776***	(0.048)	0.777***	(0.048)	0.777***	(0.048)	0.776***	(0.048)	0.775***	(0.048)
Math grade 4 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Math grade 4.5	0.266***	(0.048)	0.267***	(0.048)	0.265***	(0.048)	0.265***	(0.048)	0.280***	(0.081)	0.268***	(0.048)	0.265***	(0.048)	0.269***	(0.048)	0.267***	(0.048)
Math grade 5	0.519***	(0.049)	0.519***	(0.049)	0.519***	(0.049)	0.518***	(0.048)	0.559***	(0.081)	0.521***	(0.048)	0.522***	(0.048)	0.520***	(0.049)	0.519***	(0.049)
Multicheck 40p (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Multicheck 50p	1.421***	(0.048)	1.422***	(0.048)	1.422***	(0.048)	1.421***	(0.048)	1.421***	(0.048)	1.545***	(0.081)	1.421***	(0.048)	1.420***	(0.048)	1.421***	(0.048)
Multicheck 60p	1.614***	(0.048)	1.614***	(0.048)	1.614***	(0.048)	1.614***	(0.048)	1.614***	(0.048)	1.851***	(0.081)	1.614***	(0.048)	1.616***	(0.048)	1.614***	(0.048)
VG1 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
VG2	0.317***	(0.049)	0.316***	(0.049)	0.317***	(0.049)	0.318***	(0.049)	0.318***	(0.049)	0.317***	(0.049)	0.427***	(0.082)	0.317***	(0.049)	0.316***	(0.049)
VP	0.635***	(0.048)	0.635***	(0.048)	0.635***	(0.048)	0.634***	(0.048)	0.636***	(0.048)	0.635***	(0.048)	0.859***	(0.080)	0.635***	(0.048)	0.635***	(0.048)
Violin (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Handball	-0.032	(0.048)	-0.031	(0.048)	-0.032	(0.048)	-0.033	(0.048)	-0.032	(0.048)	-0.037	(0.048)	-0.032	(0.048)	-0.138°	(0.081)	-0.031	(0.048)
Skateboard	0.001	(0.048)	0.001	(0.048)	-0.000	(0.048)	0.002	(0.048)	0.001	(0.049)	-0.003	(0.048)	0.002	(0.048)	-0.064	(0.081)	0.001	(0.048)
Scout (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Theatre	-0.063	(0.049)	-0.064	(0.049)	-0.065	(0.049)	-0.061	(0.049)	-0.064	(0.049)	-0.061	(0.049)	-0.065	(0.049)	-0.062	(0.049)	-0.102	(0.081)
Nothing	-0.164***	(0.048)	-0.165***	(0.048)	-0.165***	(0.048)	-0.162***	(0.048)	-0.164***	(0.048)	-0.161***	(0.048)	-0.162***	(0.048)	-0.163***	(0.048)	-0.183*	(0.081)

Respondent: gender	-0.125	(0.124)	-0.125	(0.124)	-0.126	(0.124)	-0.126	(0.124)	-0.125	(0.124)	-0.126	(0.124)	-0.124	(0.124)	-0.125	(0.124)	-0.125	(0.124)
Firm size	0.212°	(0.120)	0.212°	(0.120)	0.211°	(0.120)	0.211°	(0.120)	0.212°	(0.120)	0.212°	(0.120)	0.213°	(0.120)	0.211°	(0.120)	0.212°	(0.120)
Public sector	0.399**	(0.122)	0.400**	(0.122)	0.400**	(0.122)	0.399**	(0.122)	0.399**	(0.122)	0.401**	(0.122)	0.399**	(0.122)	0.399**	(0.122)	0.399**	(0.122)
Male # Egalitarian	-0.034	(0.087)																
Portugal # Egal.			-0.048	(0.101)														
Albania # Egalitarian			-0.107	(0.100)														
Insurance # Egal.					-0.103	(0.100)												
Construction # Egal.					-0.127	(0.102)												
French 4.5 # Egal.							0.003	(0.100)										
French 5 # Egal.							**-0.177°**	**(0.100)**										
Math 4.5 # Egal.									-0.021	(0.101)								
Math 5 # Egal.									-0.062	(0.101)								
MC 50 # Egalitarian											**-0.194°**	**(0.100)**						
MC 60 # Egalitarian											**-0.370*****	**(0.101)**						
VG2 # Egalitarian													**-0.172°**	**(0.102)**				
VP # Egalitarian													**-0.350*****	**(0.100)**				
Handball # Egal.															0.164	(0.101)		
Skateboard # Egal.															0.100	(0.101)		
Theatre # Egalitarian																	0.059	(0.102)
Nothing # Egal.																	0.029	(0.100)
Constant	4.394***	(0.141)	4.369***	(0.145)	4.354***	(0.144)	4.365***	(0.145)	4.383***	(0.145)	4.278***	(0.145)	4.285***	(0.145)	4.458***	(0.144)	4.420***	(0.145)
lns1_1_1	0.233***	(0.034)	0.233***	(0.034)	0.233***	(0.034)	0.233***	(0.034)	0.233***	(0.034)	0.234***	(0.034)	0.233***	(0.034)	0.233***	(0.034)	0.233***	(0.034)
lnsig_e	0.368***	(0.010)	0.368***	(0.010)	0.368***	(0.010)	0.368***	(0.010)	0.368***	(0.010)	0.367***	(0.010)	0.367***	(0.010)	0.368***	(0.010)	0.368***	(0.010)
N	5493.000		5493.000		5493.000		5493.000		5493.000		5493.000		5493.000		5493.000		5493.000	
aic	20881.632		20882.635		20882.003		20879.645		20883.395		20870.325		20871.445		20881.117		20883.447	
bic	21046.913		21054.527		21053.895		21051.537		21055.287		21042.217		21043.337		21053.009		21055.339	
Ll	-10415.82		-10415.32		-10415.00		-10413.82		-10415.70		-10409.16		-10409.72		-10414.56		-10415.72	

Standard errors in parentheses, ° p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table S4. Public sector: Egalitarian values interaction effects

	Gender		Parents' nationality		Father's profession		French grade		Math grade		Multicheck results		Educational track		Hobby 1		Hobby 2	
Egalitarian values	0.306	(0.217)	0.480*	(0.233)	0.414°	(0.234)	0.389°	(0.233)	0.271	(0.235)	0.449°	(0.234)	0.653**	(0.234)	0.314	(0.235)	0.224	(0.233)
Female	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Male	-0.111	(0.126)	-0.056	(0.069)	-0.057	(0.069)	-0.058	(0.068)	-0.058	(0.069)	-0.059	(0.068)	-0.052	(0.068)	-0.058	(0.069)	-0.059	(0.069)
Switzerland	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Portugal	0.068	(0.079)	0.242°	(0.145)	0.071	(0.079)	0.072	(0.079)	0.068	(0.080)	0.069	(0.079)	0.072	(0.079)	0.068	(0.079)	0.070	(0.079)
Albania	0.139°	(0.078)	0.285°	(0.147)	0.138°	(0.078)	0.146°	(0.078)	0.137°	(0.078)	0.138°	(0.078)	0.146°	(0.078)	0.137°	(0.078)	0.140°	(0.078)
Doctor	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Insurance	0.024	(0.078)	0.025	(0.078)	0.127	(0.146)	0.020	(0.078)	0.022	(0.079)	0.023	(0.078)	0.022	(0.078)	0.022	(0.079)	0.026	(0.078)
Construction	0.127	(0.080)	0.129	(0.080)	0.199	(0.147)	0.128	(0.080)	0.127	(0.080)	0.123	(0.080)	0.116	(0.080)	0.126	(0.080)	0.125	(0.080)
French grade 4 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
French grade 4.5	0.510***	(0.079)	0.513***	(0.079)	0.511***	(0.079)	0.463**	(0.148)	0.508***	(0.079)	0.511***	(0.079)	0.509***	(0.079)	0.509***	(0.079)	0.510***	(0.079)
French grade 5	0.782***	(0.078)	0.787***	(0.078)	0.781***	(0.078)	0.947***	(0.145)	0.782***	(0.078)	0.786***	(0.078)	0.783***	(0.078)	0.783***	(0.078)	0.780***	(0.078)
Math grade 4 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Math grade 4.5	0.266***	(0.079)	0.277***	(0.080)	0.264***	(0.079)	0.260**	(0.079)	0.214	(0.150)	0.267***	(0.079)	0.266***	(0.079)	0.268***	(0.079)	0.266***	(0.079)
Math grade 5	0.439***	(0.080)	0.444***	(0.080)	0.442***	(0.080)	0.434***	(0.080)	0.364*	(0.147)	0.442***	(0.080)	0.453***	(0.079)	0.442***	(0.080)	0.440***	(0.080)
Multicheck 40p (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Multicheck 50p	1.273***	(0.079)	1.270***	(0.079)	1.271***	(0.079)	1.274***	(0.079)	1.273***	(0.079)	1.355***	(0.146)	1.268***	(0.079)	1.271***	(0.079)	1.269***	(0.079)
Multicheck 60p	1.408***	(0.079)	1.406***	(0.079)	1.407***	(0.079)	1.412***	(0.079)	1.407***	(0.079)	1.575***	(0.147)	1.403***	(0.079)	1.408***	(0.079)	1.404***	(0.079)
VG1 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
VG2	0.188*	(0.080)	0.188*	(0.080)	0.190*	(0.080)	0.193*	(0.080)	0.188*	(0.080)	0.189*	(0.080)	0.440**	(0.149)	0.189*	(0.080)	0.190*	(0.080)
VP	0.421***	(0.079)	0.424***	(0.079)	0.421***	(0.079)	0.422***	(0.078)	0.420***	(0.079)	0.420***	(0.079)	0.837***	(0.144)	0.422***	(0.079)	0.422***	(0.079)
Violin (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Handball	0.094	(0.079)	0.093	(0.079)	0.097	(0.079)	0.089	(0.079)	0.097	(0.079)	0.090	(0.079)	0.105	(0.079)	0.035	(0.148)	0.093	(0.079)
Skateboard	0.097	(0.080)	0.090	(0.080)	0.097	(0.080)	0.096	(0.080)	0.098	(0.080)	0.092	(0.080)	0.110	(0.080)	0.118	(0.148)	0.094	(0.080)
Scout (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Theatre	0.087	(0.080)	0.088	(0.080)	0.086	(0.080)	0.090	(0.080)	0.088	(0.080)	0.088	(0.080)	0.081	(0.079)	0.087	(0.080)	-0.021	(0.146)
Nothing	-0.058	(0.079)	-0.058	(0.079)	-0.059	(0.079)	-0.053	(0.079)	-0.058	(0.079)	-0.051	(0.079)	-0.053	(0.079)	-0.056	(0.079)	-0.179	(0.147)

Respondent: gender	-0.243	(0.218)	-0.244	(0.218)	-0.245	(0.218)	-0.248	(0.218)	-0.243	(0.218)	-0.244	(0.218)	-0.246	(0.218)	-0.245	(0.218)	-0.244	(0.218)
Firm size	0.417*	(0.193)	0.417*	(0.193)	0.416*	(0.193)	0.415*	(0.193)	0.418*	(0.193)	0.417*	(0.193)	0.420*	(0.193)	0.417*	(0.193)	0.419*	(0.193)
Male # Egalitarian	0.075	(0.150)																
Portugal # Egal.			-0.245	(0.174)														
Albania # Egalitarian			-0.207	(0.174)														
Insurance # Egal.					-0.144	(0.173)												
Construction # Egal.					-0.102	(0.175)												
French 4.5 # Egal.							0.065	(0.175)										
French 5 # Egal.							-0.232	(0.172)										
Math 4.5 # Egal.									0.070	(0.177)								
Math 5 # Egal.									0.107	(0.175)								
MC 50p # Egal.											-0.119	(0.174)						
MC 60p # Egal.											-0.235	(0.175)						
VG2 # Egalitarian													**-0.356***	**(0.176)**				
VP # Egalitarian													**-0.591*****	**(0.172)**				
Handball # Egal.															0.082	(0.175)		
Skateboard # Egal.															-0.032	(0.175)		
Theatre # Egalitarian																	0.153	(0.174)
Nothing # Egal.																	0.171	(0.174)
Constant	4.772***	(0.254)	4.644***	(0.262)	4.696***	(0.261)	4.712***	(0.262)	4.799***	(0.263)	4.672***	(0.261)	4.517***	(0.262)	4.767***	(0.262)	4.832***	(0.262)
lns1_1_1	0.219***	(0.057)	0.219***	(0.057)	0.219***	(0.057)	0.219***	(0.057)	0.219***	(0.057)	0.219***	(0.057)	0.220***	(0.057)	0.219***	(0.057)	0.219***	(0.057)
lnsig_e	0.326***	(0.017)	0.326***	(0.017)	0.326***	(0.017)	0.325***	(0.017)	0.326***	(0.017)	0.326***	(0.017)	0.323***	(0.017)	0.326***	(0.017)	0.326***	(0.017)
N	1900.000		1900.000		1900.000		1900.000		1900.000		1900.000		1900.000		1900.000		1900.000	
aic	7102.128		7102.063		7103.649		7101.146		7104.000		7102.572		7092.457		7103.914		7103.207	
bic	7235.319		7240.803		7242.389		7239.886		7242.741		7241.313		7231.197		7242.654		7241.948	
ll	-3527.064		-3526.031		-3526.825		-3525.573		-3527.000		-3526.286		-3521.228		-3526.957		-3526.604	

Standard errors in parentheses, ° p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table S5. Private sector: Egalitarian values interaction effects

	Gender		Parents' nationality		Father's profession		French grade		Math grade		Multicheck results		Educational track		Hobby 1		Hobby 2	
Egalitarian values	0.517***	(0.149)	0.510**	(0.161)	0.602***	(0.161)	0.549***	(0.161)	0.548***	(0.161)	0.682***	(0.161)	0.586***	(0.161)	0.386*	(0.162)	0.525**	(0.162)
Female (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Male	0.011	(0.084)	-0.038	(0.053)	-0.038	(0.053)	-0.037	(0.053)	-0.037	(0.053)	-0.037	(0.053)	-0.038	(0.053)	-0.039	(0.053)	-0.037	(0.053)
Switzerland (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Portugal	-0.009	(0.061)	-0.019	(0.097)	-0.011	(0.061)	-0.009	(0.061)	-0.007	(0.061)	-0.005	(0.061)	-0.008	(0.061)	-0.009	(0.061)	-0.008	(0.061)
Albania	-0.049	(0.060)	-0.003	(0.096)	-0.050	(0.060)	-0.050	(0.060)	-0.049	(0.060)	-0.046	(0.060)	-0.050	(0.060)	-0.050	(0.060)	-0.049	(0.060)
Doctor (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Insurance	-0.115°	(0.060)	-0.116°	(0.060)	-0.042	(0.095)	-0.117°	(0.060)	-0.116°	(0.060)	-0.114°	(0.060)	-0.115°	(0.060)	-0.113°	(0.060)	-0.116°	(0.060)
Construction	-0.087	(0.061)	-0.086	(0.061)	0.048	(0.099)	-0.087	(0.061)	-0.087	(0.061)	-0.082	(0.061)	-0.084	(0.061)	-0.083	(0.061)	-0.088	(0.061)
French grade 4 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
French grade 4.5	0.454***	(0.061)	0.454***	(0.061)	0.455***	(0.061)	0.475***	(0.096)	0.453***	(0.061)	0.459***	(0.061)	0.458***	(0.061)	0.452***	(0.061)	0.455***	(0.061)
French grade 5	0.788***	(0.060)	0.787***	(0.060)	0.787***	(0.060)	0.874***	(0.096)	0.787***	(0.060)	0.787***	(0.060)	0.788***	(0.060)	0.785***	(0.060)	0.789***	(0.060)
Math grade 4 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Math grade 4.5	0.269***	(0.060)	0.268***	(0.060)	0.267***	(0.060)	0.269***	(0.060)	0.305**	(0.096)	0.270***	(0.060)	0.268***	(0.060)	0.271***	(0.060)	0.268***	(0.060)
Math grade 5	0.559***	(0.061)	0.558***	(0.061)	0.558***	(0.061)	0.558***	(0.061)	0.629***	(0.097)	0.559***	(0.061)	0.559***	(0.061)	0.560***	(0.061)	0.559***	(0.061)
Multicheck 40p (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Multicheck 50p	1.494***	(0.060)	1.493***	(0.060)	1.496***	(0.060)	1.492***	(0.060)	1.494***	(0.060)	1.610***	(0.097)	1.494***	(0.060)	1.491***	(0.060)	1.492***	(0.061)
Multicheck 60p	1.720***	(0.061)	1.720***	(0.061)	1.722***	(0.061)	1.719***	(0.061)	1.720***	(0.061)	1.949***	(0.096)	1.720***	(0.061)	1.722***	(0.061)	1.720***	(0.061)
VG1 (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
VG2	0.381***	(0.062)	0.381***	(0.062)	0.383***	(0.061)	0.383***	(0.062)	0.383***	(0.062)	0.384***	(0.061)	0.427***	(0.098)	0.385***	(0.062)	0.384***	(0.062)
VP	0.737***	(0.060)	0.737***	(0.060)	0.740***	(0.060)	0.737***	(0.060)	0.738***	(0.060)	0.739***	(0.060)	0.866***	(0.096)	0.739***	(0.060)	0.738***	(0.060)
Violin (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Handball	-0.094	(0.061)	-0.094	(0.061)	-0.097	(0.061)	-0.094	(0.061)	-0.095	(0.061)	-0.100	(0.061)	-0.097	(0.061)	-0.199*	(0.098)	-0.096	(0.061)
Skateboard	-0.053	(0.061)	-0.053	(0.061)	-0.058	(0.061)	-0.052	(0.061)	-0.055	(0.061)	-0.056	(0.061)	-0.055	(0.061)	-0.140	(0.097)	-0.054	(0.061)
Scout (ref)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)	0.000	(.)
Theatre	-0.147*	(0.061)	-0.148*	(0.061)	-0.154*	(0.061)	-0.146*	(0.061)	-0.149*	(0.061)	-0.145*	(0.061)	-0.150*	(0.061)	-0.145*	(0.061)	-0.123	(0.098)
Nothing	-0.215***	(0.060)	-0.217***	(0.060)	-0.219***	(0.060)	-0.213***	(0.060)	-0.215***	(0.060)	-0.216***	(0.060)	-0.216***	(0.060)	-0.213***	(0.060)	-0.180°	(0.097)

Firm size	0.073	(0.153)	0.074	(0.153)	0.073	(0.153)	0.073	(0.153)	0.073	(0.153)	0.074	(0.153)	0.074	(0.153)	0.073	(0.153)	0.074	(0.153)
Respondent: gender	-0.064	(0.150)	-0.064	(0.150)	-0.064	(0.150)	-0.064	(0.150)	-0.064	(0.150)	-0.065	(0.150)	-0.063	(0.150)	-0.063	(0.150)	-0.064	(0.150)
Male # Egalitarian	-0.079	(0.108)																
Portugal # Egalitarian			0.019	(0.125)														
Albania # Egalitarian			-0.075	(0.123)														
Insurance # Egalitarian					-0.120	(0.123)												
Construction # Egal.					**-0.217°**	**(0.126)**												
French 4.5 # Egalitarian							-0.036	(0.123)										
French 5 # Egalitarian							-0.142	(0.124)										
Math 4.5 # Egalitarian									-0.058	(0.124)								
Math 5 # Egalitarian									-0.117	(0.125)								
MC 50p # Egalitarian											-0.192	(0.124)						
MC 60p # Egalitarian											**-0.381****	**(0.124)**						
VG2 # Egalitarian													-0.073	(0.125)				
VP # Egalitarian													**-0.211°**	(0.123)				
Handball # Egalitarian															0.171	(0.125)		
Skateboard # Egal.															0.142	(0.125)		
Theatre # Egalitarian																	-0.042	(0.126)
Nothing # Egalitarian																	-0.059	(0.124)
Constant	4.391***	(0.166)	4.396***	(0.170)	4.343***	(0.170)	4.371***	(0.170)	4.372***	(0.170)	4.286***	(0.171)	4.348***	(0.170)	4.468***	(0.170)	4.386***	(0.170)
lns1_1_1	0.237***	(0.042)	0.237***	(0.042)	0.237***	(0.042)	0.237***	(0.042)	0.237***	(0.042)	0.238***	(0.042)	0.237***	(0.042)	0.237***	(0.042)	0.237***	(0.042)
lnsig_e	0.383***	(0.012)	0.383***	(0.012)	0.383***	(0.012)	0.383***	(0.012)	0.383***	(0.012)	0.382***	(0.012)	0.383***	(0.012)	0.383***	(0.012)	0.383***	(0.012)
N	3593.000		3593.000		3593.000		3593.000		3593.000		3593.000		3593.000		3593.000		3593.000	
aic	13774.677		13776.573		13774.208		13775.808		13776.338		13767.814		13774.169		13775.071		13776.977	
bic	13923.159		13931.242		13928.877		13930.476		13931.007		13922.482		13928.838		13929.740		13931.646	
ll	-6863.339		-6863.286		-6862.104		-6862.904		-6863.169		-6858.907		-6862.085		-6862.536		-6863.489	

Standard errors in parentheses, ° p<0.1, * p<0.05, ** p<0.01, *** p<0.001

Table S6. Vignette dimensions and levels

	Dimensions	Levels
1	**Gender**	Boy | Girl | Girl
2	**Parents' nationality**	Swiss | Portuguese | Albanian
3	**Father's profession**	Doctor | Insurance agent | Construction worker
4	**French grades**	5.0 | 4.5 | 4.0
5	**Math grades**	5.0 | 4.5 | 4.0
6	**Multicheck results (overall)**	60 (Surpassed) | 50 (Comfortably passed) | 40 (Just passed)
7	**Educational track**	Voie Prégymnasiale (Pre-gymnasial track) (VP) | Voie Génerale (General track) level 2 in French and Math (VG2) | Voie Génerale (General track) level 1 in Math and French (VG1)
8	**Hobby 1**	Violin | Handball | Skateboard (for Gender: Boy) or hiphop dance (for Gender: Girl)
9	**Hobby 2**	Scout leader | Member of a theatre group | Nothing

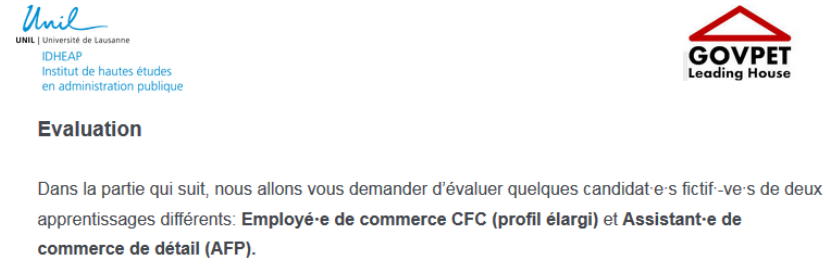
To what degree would you be willing to hire this candidate? Not at all willing (0) - Very willing (10)

Text phrases for the different dimensions (French)

Le candidat(e) est un(e) (1) garçon/fille/fille avec des parents d'origine (2) suisse/portugais/albanais. Le métier de son père est (3) médecin / conseiller en assurances / ouvrier de la construction. Ses notes de Français sont (4) 5.0/4.5/4.0 et ses notes de maths sont (5) 5.0/4.5/4.0. Dans un test d´ aptitude Multicheck, elle a obtenu une valeur de 60 comme résultat global, indiquant qu´ il/elle a dépassé les exigences pour un apprentissage dans la profession concernée / 50 comme résultat global, indiquant qu´ il/elle a atteint confortablement les exigences pour un apprentissage dans la profession concernée / Dans un test d´ aptitude Multicheck, il a obtenu une valeur de 40 comme résultat global, indiquant qu´ il a à peine atteint

les exigences pour un apprentissage dans la profession concernée. Dans l'école, il/elle a suivi (7) la voie pré-gymnasiale / la voie générale niveau 2 en maths et français / la voie générale niveau 1 en maths et français. Dans ses temps libres, il/elle (8) joue du violon/ joue au handball / fait de la planche à roulettes [fait de la danse hiphop]. De plus, il/elle est un(e) (9) chef(fe) scout/ membre d'une troupe de théâtre / rien.

Figure S1: First screen, vignette experiment



Announcing the evaluation of two different apprenticeship positions

Figure S2: Second screen, vignette experiment

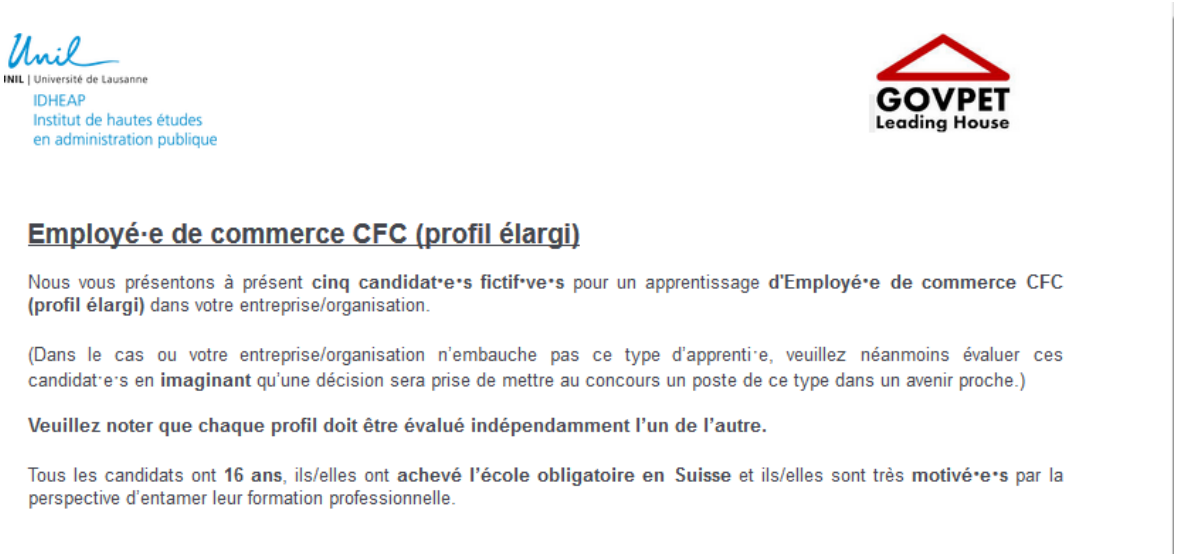


Figure S3: Third to seventh screens (i.e., 5 candidate descriptions)

This experiment was followed by a second experiment for the second apprenticeship position (order is randomised)

Table S7. Descriptive statistics

Variables	N	Percent	Variables	N	Percent
Member of employers' association			**Receiving subsidies for voc. training**		
Not member	374	46.46	Yes	81	10.00
Member	176	21.86	No	575	70.90
Don't know	255	31.68	Don’t know	154	19.01
Sum	*805*	*100*	*Sum*	*810*	*100*
Members of inter-firm training network			**Sector organisation is active in**		
Not member	519	63.9	Healthcare	30	3.42
Member	77	9.49	Tourism	15	1.71
Don’t know	210	25.89	Construction and building maintenance	36	4.11
Other	5	0.61	Education	18	2.05
Sum	*811*	*100*	Law and public notary	16	1.83
Number of employees in organisation			Media and PR	6	0.68
1 to 9	175	20.91	Auto mechanics	9	1.03
10 to 49	316	37.75	Hotel and restaurant	8	0.91
50 to 249	235	28.08	Crafts	10	1.14
More than 250	111	13.26	Charity	2	0.23
Sum	*837*	*100*	IT and informatics	*7*	0.80
Private and public sector			Private transport	3	0.34
Private	453	64.62	Culture and entertainment	6	0.68
Public	248	35.37	Laundry and cleaning	3	0.34
Sum	*701*	*100*	Public administration	194	22.15
Gender of respondent			Private insurance	38	4.34
Male	247	30.49	Bank	24	2.74
Female	563	69.51	Commerce and retail	93	10.62
Sum	*810*	*100*	Fiduciary and real estate	*89*	10.16
Nationality of respondent			Industry	49	5.59
Swiss	712	81.65	Service and administration	197	22.49
French	46	5.27	Public transport	5	0.57
German	4	0.46	Chemistry and engineering	3	0.34

Austrian	1	0.13	Other	15	1.71
Italian	63	7.22	*Sum*	*876*	*100*
Other	46	5.27			
Sum	*872*	*100*			

Table S8. Correlation matrix for all candidates and for higher skilled (CFC) and lower skilled (AFP) positions

CFC position	Gender	Nationality	Profession	French	Math	MC test	Track	Hobby 1	Hobby 2
Gender	1								
Nationality	0.00	1							
Profession	0.03	0.00	1						
French	-0.01	0.00	0.01	1					
Math	0.01	0.00	0.02	0.01	1				
MC test	0.01	-0.01	0.00	0.01	0.01	1			
Track	-0.01	-0.01	0.04	0.01	-0.01	-0.01	1		
Hobby 1	0.01	0.00	-0.03	0.00	0.01	0.00	-0.01	1	
Hobby 2	-0.01	0.02	-0.01	-0.02	-0.02	-0.01	0.01	0.00	1.00
AFP position	Gender	Nationality	Profession	French	Math	MC test	Track	Hobby 1	Hobby 2
Gender	1								
Nationality	0.04	1							
Profession	0.04	-0.01	1						
French	0.00	-0.01	-0.01	1					
Math	0.00	0.01	0.01	0.01	1				
MC test	0.01	0.00	0.02	0.01	0.03	1			
Track	0.01	-0.01	0.02	0.02	0.00	0.01	1		
Hobby 1	0.01	0.00	-0.02	-0.02	0.02	0.01	0.00	1	
Hobby 2	-0.01	-0.01	0.02	-0.02	-0.03	-0.01	-0.01	0.01	1.00

All candidates	Gender	Nationality	Profession	French	Math	MC test	Track	Hobby 1	Hobby 2
Gender	1								
Nationality	0.01	1							
Profession	0.01	0.00	1						
French	0.00	0.02	0.01	1					
Math	-0.00	0.00	-0.00	0.01	1				
MC test	-0.00	0.01	-0.00	0.00	0.02	1			
Track	0.01	0.01	0.03	0.00	0.03	-0.01	1		
Hobby 1	-0.01	0.01	-0.01	-0.00	0.01	0.0018	-0.02	1	
Hobby 2	-0.02	-0.01	0.00	0.01	-0.02	-0.01	0.01	0.01	1

Figure S4. Distribution of dependent variable (vignette rating) for all candidates and by position

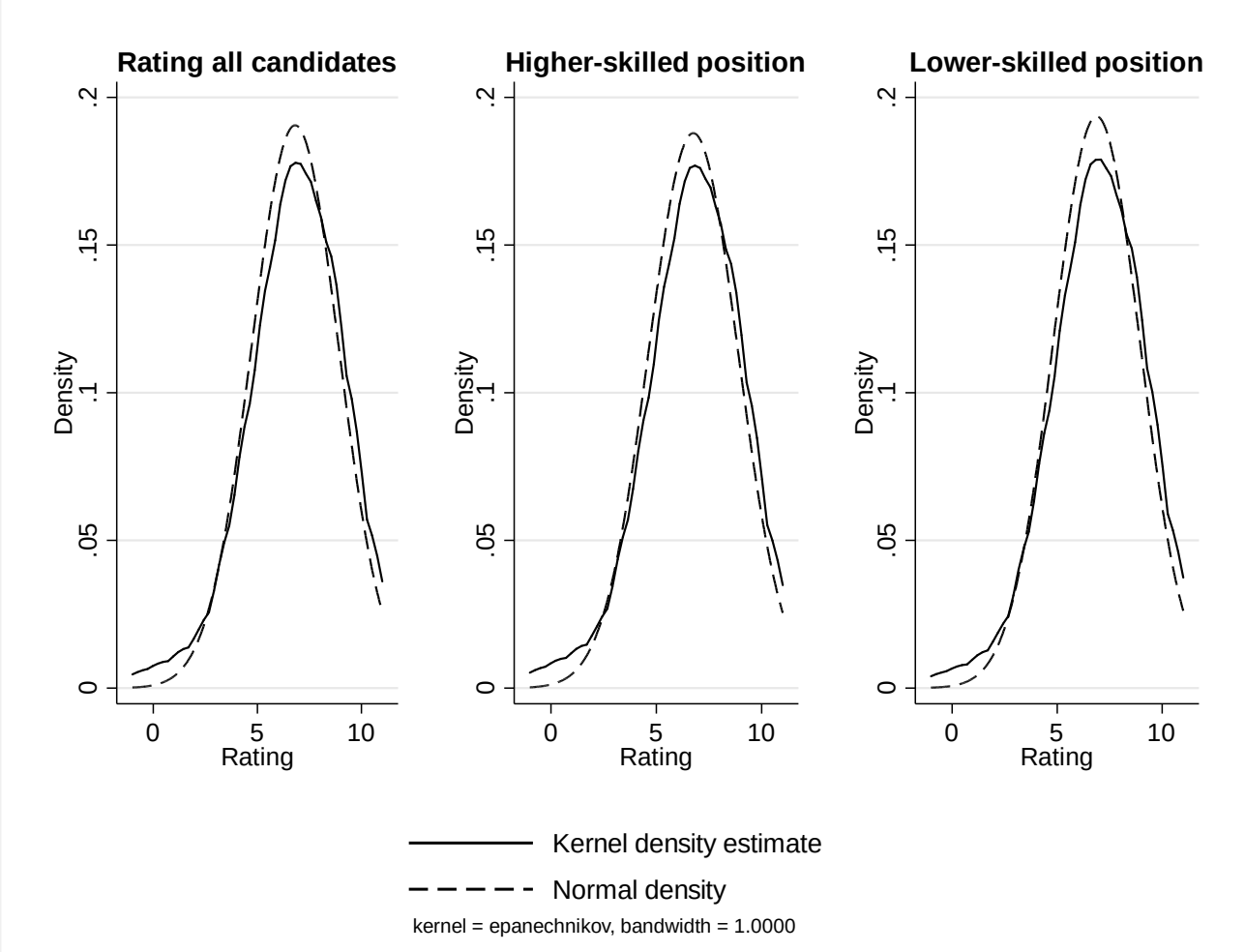


Table S9. Experimental protocol

Date	**Step**
3 March 2017	Postal letter announcing the survey
8 March 2017	Electronic survey link
14 March 2017	Reminder to those who had not yet responded
3 April 2017	Second reminder to those who had not yet responded
Ca 20 June 2017	Survey closed
Response rate	63.20 per cent (based on completed vignette ratings: 840 of 1329)

Table S10. Interview partners

Interviewee code	Interview mode	Date of interview	Interviewee gender	Interviewee's professional role	Firm / organisation characteristics
Int1	Face-to-face	25.05.2016	Female	Apprentice coordinator	Public sector, Public administration
Int2	Face-to-face	16.06.2016	Female	In-firm vocational trainer	Public sector, Public administration
Int3	Face-to-face	27.09.2016	Female	Career counsellor	Public sector, Education

Table S11. Pearson Chi-square test of egalitarian values and Public/Private sector

Egalitarian values	**Private sector**	**Public sector**	*Total*
Non-egalitarian	144	57	*201*
Egalitarian	225	139	*364*
Total	*369*	*196*	*565*

Pearson chi2(1) = 55.2137 Pr=0.000

[i] The main reason for this choice is that individuals with mental and physical handicaps are in most modern welfare states often are entitled to alternative educational as well as labor-market oriented pathways that are specially adapted to the needs of such groups[i] (Greve, 2009; Watson, 2012; Moore and Slee, 2012). Similarly, private sector corporate social responsibility policies and initiatives target (in most cases) groups with the special status (Greve, 2009) which in itself might be commendable and helpful for the individual cases but may in first-hand be driven by sheer marketing logics (Sandoval, 2015; Vogel, 2010; Yoon et al., 2006). What interests me and motivates this dissertation – and what I will show is largely missing from education and labor market research contemporaneously – is the sources of inclusiveness behavior when corporate social responsibility (CSR) considerations are not overtly present. In other words, when firms are willing to offer apprenticeships to a disadvantaged candidate – knowingly or unknowingly alike – without the pretexts of a CSR strategy. True (stated) inclusive or egalitarian behavior, I argue, is not motivated by marketing strategies with the aim to generate profit or public goodwill, although it might be that this is a (welcomed) side-effect from the firm's perspective. Therefore, I choose to focus on youths that are not entitled to special policies or educational pathways, in order to omit, to the extent that it is possible, that the inclusiveness behavior is not motivated by CSR logics or by government policies targeting the disabled.