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Work Hard or Play Hard? Degree Class, Student Leadership and Employment Opportunities

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ABSTRACT

Work Hard or Play Hard? Degree Class, Student Leadership and Employment Opportunities*

We investigated the impact on first hiring outcomes of two main curriculum vitae (CV) characteristics by which graduates with a tertiary education degree distinguish themselves from their peers: degree class and extra-curricular activities. These characteristics were randomly assigned to 2,800 fictitious job applications that were sent to real vacancies in Belgium. Academic performance and extra-curricular engagement both enhanced job interview rates by about 7%. The effect of a higher degree class was driven by female (versus male) candidates and candidates with a master's (versus a bachelor's) degree. We did not find evidence for these CV characteristics to be substitutes or to reinforce each other's effect.

JEL Classification: J23, J24, I23, C93

Keywords: degree class, extra-curricular activities, hiring, field experiment

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1. Introduction

Across Organisation for Economic Co-operation and Development (OECD) countries, the proportion of labour market entrants who hold a tertiary education degree has massively increased over the past several decades. Between 2000 and 2016, the proportion of 25- to 34-year-olds with such a degree has risen from about 38% to 48% in the United States, and from, on average, 24% to 40% in the 22 European OECD countries (OECD, 2017). As a consequence, holding a tertiary education degree has become less of a distinction for labour market entrants. The scientific literature has determined two main strategies being pursued by students to better fit future employers and distinguish themselves from their peers with the same degree: spending more time on intra-curricular activities to obtain a high degree class (DC)[1] or investing in visible extra-curricular activities (ECA), such as partaking in student clubs or leading a student union.[2,3] This article contributes to the literature on the (relative) effect of these strategies on the transition to employment success.

From a theoretical perspective, there are several reasons why both strategies could be fruitful. First, both intra- and extra-curricular activities may enhance the human capital of

[1] This is the final degree awarded to students successfully completing university. In Belgium, the country where we conducted our experiment, just like at many North American universities, these classes are Greatest Distinction (*summa cum laude*), Great Distinction (*magna cum laude*), Distinction (*cum laude*) and Satisfactory. Similarly, at many British universities, degrees are classified as First Class, Upper Second Class, Lower Second Class, Third Class and Pass (Feng & Graetz, 2017).

[2] A review of the literature showed that there is no universal definition of ECA, potentially because their modalities are highly dependent on the context in which they take place. However, definitions in common include that ECAs are (i) structured and (ii) non-obligatory activities undertaken by students (iii) in their leisure time with (iv) positive personal and interpersonal development experiences (Klemenčič, 2012; Nuijten, Poell, & Alfes, 2017; Rynes, Orlitzky, & Bretz, 1997).

[3] Besides these two main 'player' strategies, students may also invest in student jobs (Baert, Rotsaert, Verhaest, & Omey, 2016; Pinto & Ramalheira, 2017) or extra-curricular internships (Nunley, Pugh, Romero, & Seals, 2016) to fit future employers.

the students. Following human capital theory (Becker, 1962), ECA may endow individuals with soft skills, such as communication, leadership, creativity, time management and self-promotion (Kuhn & Weinberger, 2005; Lau, Hsu, Acosta, & Hsu, 2014; Pinto & Ramalheira, 2017; Roulin & Bangerter, 2013; Rubin, Bommer, & Baldwin, 2002) that may enhance their productivity in the workplace (Feldman & Matjasko, 2005; Lundin, Skans, Nordström, & Zetterberg, 2018). Confronted with limited time to judge job applications containing limited information, employers may thus use the ECA on one's curriculum vitae (CV) as a proxy for the soft skills that are acquired through these experiences (Lange, 2007). For similar reasons, a higher DC is likely to be used as a proxy for higher levels of hard skills gained by candidates during their intra-curricular activities, such as cognitive- and domain-specific skills and knowledge.

Second, even when neither type of activity enhances human capital, they may improve labour market outcomes if they signal pre-existing abilities and characteristics. In line with Spence's (1973) signalling theory, participation in ECA, such as being chair of a student union, may signal talents such as leadership qualities and the ability to combine various tasks and activities. In addition, employers may perceive these engagements as signalling other characteristics, such as prosocial behaviour and a primary orientation to work rather than to school (Cole, Rubin, Feild, & Giles, 2007; Pinto & Ramalheira, 2017). Similarly, a higher DC may signal higher intelligence (Protsch & Solga, 2015; Roth & Bobko, 2000), higher overall ability (Furnham, Chamorro-Premuzic, & McDougall, 2003; Kuncel, Hezlett, & Ones, 2004), greater motivation (Imose & Barber, 2015; Roth & Bobko, 2000), better communication and mathematical skills (Brown & Campion, 1994) and enhanced trainability (Bernardi, 2003;

Devaraj & Babu, 2004; Di Stasio, 2014).[4]

A third point, which is more relevant to the explanation of the labour market effects of ECA than of DC, is related to the acquisition of social capital. In line with social network theory (Granovetter, 1973), ECA may be associated with high-level contacts with peers and decision-makers, inside and outside university, helping graduates to find a better job match more quickly (Baert et al., 2016; Kramarz & Skans, 2014; Lundin et al., 2018; Merino, 2007). In a similar vein, business-oriented ECA (e.g. company presentations at campus or sponsor recruitment events) may be used by employers to screen potential future workers (Stiglitz, 1975).

Several studies have confronted these theoretical expectations with the empirical reality. Almost all studies have investigated the labour market effects of DC making abstraction of ECA and vice versa. In addition, the majority of the empirical work has been based on observational data, relating higher DC to more beneficial labour market outcomes, such as a faster transition from education into work, and higher wages and earnings (Feng & Graetz, 2017; Freier, Schumann, & Siedler, 2015; Khoo & Ost, 2018; Naylor, Smith, & Telhaj, 2016; Walker & Zhu, 2011).[5] In addition, ECA have been associated with higher employability, a faster school-to-work transition and higher wages (Chia, 2005; Derous & Ryan, 2008; Di Pietro, 2017; Jones & Jackson, 1990; Kim & Bastedo, 2017; Kuhn & Weinberger, 2005; Lau et al., 2014; Lleras, 2008; Lundin et al., 2018; Tchibozo, 2007; van

[4] From a broader perspective, all arguments related to the returns to hard versus soft skills may apply here (Lievens & Sackett, 2012; Lindqvist & Vestman, 2011; Velasco, 2012).

[5] Other studies have related the more fine-grained measure of grade point average (GPA) to beneficial labour market outcomes (Bertrand, Goldin, & Katz, 2010; Kuncel et al., 2004), while Di Pietro (2010) did not find an effect of DC on top of GPA.

Ophem & Chin, 2017).[6] The most important challenge for contributions to this literature based on observational data is to control for confounders. That is, DC and ECA may correlate with other determinants of labour market success (such as the aforementioned characteristics they may signal; Kuhn & Weinberger, 2005). Moreover, they may correlate with each other (Mahoney, Cairns, & Farmer, 2003; Marsh, 1992). Although several of the (recent) empirical contributions have applied convincing identification strategies, such as matching, difference-in-difference estimators and regression discontinuity designs (Feng & Graetz, 2017; Freier et al., 2015; Khoo & Ost, 2018; Lundin et al., 2018), their results can only be given a causal interpretation under substantial assumptions.

Somewhat comfortingly, the positive findings based on observational data have been confirmed by results from vignette studies. In these experiments, fictitious job applications, in which candidate characteristics were manipulated, were evaluated by participants in a laboratory context. Studies following this approach have found that applications with a higher DC (Cole et al., 2007; Di Stasio, 2014; Humburg & van der Velden, 2015; McKinney, Carlson, Mecham, D'Angelo, & Connerley, 2003; Nemanick & Clark, 2002; Pinto & Ramalheira, 2017; Thoms, McMasters, Roberts, & Dombkowski, 1999) or more ECA (Cole et al., 2007; Nemanick & Clark, 2002; Pinto & Ramalheira, 2017) were evaluated as more employable.[7] These experiments offer two major advantages to quasi-experimental designs. First, the results can be given a causal interpretation without having to rely on strict exogeneity assumptions. Second, because the focus of these experiments is on the application for jobs outside one's network, they allow to isolate human capital and signalling

[6] Shulruf, Tumen, and Tolley (2008) did not find a significant association.

[7] In addition, Protsch and Solga (2015) found a positive association between GPA and access to apprenticeships in Germany.

effects from the effects resulting from networking and screening. However, the main criticism with respect to these studies is the lack of clarity as to whether behaviour in the laboratory has predictive validity for behaviour outside the laboratory. That is, participants may act differently—in particular, in a socially desirable way—when not exposed to the urgency of real-life decision-making (Di Stasio, 2014; Van Belle, Di Stasio, Caers, De Couck, & Baert, in press).

In the present study, we complement the existing research by conducting a field experiment. In this experiment, 2,800 fictitious job applications are sent to real vacancies in Belgium. Several levels of DC and several forms of ECA are randomly assigned to these applications. The effect of these characteristics on job interview invitations, as measured in the field instead of in an artificial setting, can be given a causal interpretation. By combining manipulations of DC with manipulations of ECA, we are able to measure their relative value in signalling both pre-existing and acquired human capital. This is important because spending more time on one activity inevitably comes at the cost of time spent on other activities. Looking at both intra- and extra-curricular activities thus allows us to assess more directly the real-life trade-offs that individual students face in this respect. Moreover, the only two studies we are aware of that compared their importance (based on a vignette approach) provided mixed evidence; Pinto and Ramalheira (2017) found that DC is more important than ECA, while Cole et al. (2007) suggested the opposite.

Our experimental data also allow us to investigate how DC and ECA interact in influencing hiring outcomes. In this respect, the literature suggested that, while students see ECA as a substitute for high academic performance (Roulin & Bangerter, 2013; Thompson, Clark, Walker, & Whyatt, 2013), employers (may) believe that high-level productivity can only result from a combination of hard and soft skills, so that high DC and

ECA may complement each other (Andrews & Higson, 2008; Chia, 2005; Cole et al., 2007; Thompson et al., 2013).[8] We directly test whether their effects are simply additive or whether they work as complements or substitutes. Finally, we contribute to the literature by investigating how the premium of DC and/or ECA varies by candidate characteristics (gender and educational level and field) and vacancy characteristics (contract type and labour market tightness).

In summary, the following research questions are answered:

R1. Do DC (R1a) and ECA (R1b) affect graduate job interview invitation rates?

R2. Are DC and ECA complements or substitutes in affecting graduate job interview invitation rates?

R3. Which candidate (R3a) and vacancy (R3b) characteristics moderate the relationship among DC, ECA and job interview invitation rates?

2. Methods

2.1 Correspondence Experimentation Framework

We ran a field experiment that extended the correspondence experimentation framework of Bertrand and Mullainathan (2004). In general, in this type of experiment, fictitious job applications are sent to real vacancies. The applications essentially differ only in the

[8] Ramalheira and Pinto (2017) indeed found that ECA positively affected one's employability only when they were combined with good study results. In contrast, Cole et al. (2007) did not find any significant interaction effects between academic performance and ECA.

experimentally manipulated characteristics. By monitoring the subsequent job interview invitations, unequal treatment in first hiring decisions by these characteristic can be measured and given a causal interpretation (Baert, 2018; Neumark, 2018).

In the beginning, correspondence experiments were exclusively applied to the investigation of hiring discrimination on grounds based on which unequal treatment is forbidden, such as ethnic or gender discrimination (Baert, Cockx, Gheyle, & Vandamme, 2015; Bertrand & Mullainathan, 2004; Oreopoulos, 2011). More recently, however, scholars have employed this kind of experiment to study the causal impact on employment opportunities of other CV characteristics, including educational credentials and labour market-related activities (Darolia, Koedel, Martorell, Wilson, & Perez-Arce, 2015; Deming, Yuchtman, Abulafi, Goldin, & Katz, 2016; Eriksson & Rooth, 2014; Kroft, Lange, & Notowidigdo, 2013; Nunley et al., 2016; Verhaest, Bogaert, Dereymaeker, Mestdagh, & Baert, 2018). From a methodological viewpoint, our study is close to the latter set of studies. However, we are not aware of any correspondence experiments testing the effect of DC and ECA on job interview invitation rates.

2.2 Data Gathering

We conducted our experiment between November 2015 and April 2016 in the labour market of Flanders, i.e. the northern part of Belgium. The labour market in Flanders has the following two main characteristics. First, the competition for human capital is, in comparison with other regions in Europe, relatively high. In 2015, the job vacancy rate was 2.5% in Flanders,[9] while it was 1.7% in the European Union (source: Eurostat). Second, labour

[9] The job vacancy rate is defined as the proportion of the number of vacancies expressed as a percentage of this number and the number of occupied jobs.

market contracts are heavily regulated (Cockx, Picchio, & Baert, in press). Overall, the employment rate for the whole population aged 20–64 years in Flanders was 67.5% in 2015, while it was 65.6% in the European Union (source: Eurostat).

Four fictitious applications of job candidates were sent to vacancies in the database of the Public Employment Agency of Flanders, i.e. the region's main job search channel. These vacancies were randomly selected among those targeting graduates from 10 tertiary education programmes. We distinguished between three business programmes (Bachelor in Office Management, Bachelor in Communication Management and Master in Business Economics), four technical programmes (Bachelor in Agro- and Biotechnology, Bachelor in Chemistry, Bachelor in Electromechanics and Master in Industrial Engineering) and three programmes in health care (Bachelor in Nursing, Bachelor in Remedial Education and Master in Rehabilitation Sciences and Physiotherapy).[10] Testing diverging jobs by targeted educational level and field enabled us to avoid the danger inherent in many former correspondence experiments in which one selected a particular occupation with, potentially, a low (or high) premium of the tested characteristic. In addition, this design allowed us to investigate R3, with respect to graduate educational level and field.

For each programme, we constructed four application templates ('type A', 'type B', 'type C' and 'type D') comprising a CV and a motivation letter matching the general requirements of starter jobs targeting graduates with degrees related to these programmes. To ensure that our applications were realistic and representative, examples from the Public Employment Agency of Flanders were calibrated to our purposes. All fictitious applicants were born and lived in Antwerp, Ghent, Louvain or Hasselt, i.e. four of the largest cities in

[10] The master level is the second highest of eight levels in the International Standard Classification of Education (ISCED) of 2011—the highest one being the doctoral level. The bachelor level is the third highest level.

Flanders. The city closest to the workplace mentioned in the vacancy was chosen. They had graduated from the same type of college or university, with comparable reputations, in the summer of 2015.

In addition, we added the following features to all the applications: a typically Flemish-sounding first name and surname; a random day and month of birth; the Belgian nationality; a telephone number and an email address from major providers; a postal address with an existing street name, but a non-existent house number in a middle-class neighbourhood; adequate computer skills; adequate Dutch, English and French language skills; a driver's licence; and some sports and cultural interests. All of the motivation letters mentioned that the job applicant: (i) found the vacancy in the database of the Public Employment Agency of Flanders; (ii) had graduated with the requisite qualifications; (iii) was motivated to start the job; and (iv) was looking forward to attending a job interview. The four templates for each programme, which are available on request, differed concerning inessential peculiarities (e.g. a variety of common wording was used for the educational degrees) and layout in order to avoid detection.

For each vacancy, we randomly assigned a high DC to one applicant, substantial ECA to another, a combination of both to a third and neither to a fourth applicant.[11] Due to this randomisation procedure, the correlation between these four experimental conditions and the CV template types was close to 0; we return to the actual correlation below. As a consequence, the minimal differences between the four job application templates could not bias our measures of the job interview differences between these conditions.

The high DC assigned to half of the applicants—so, those in the experimental conditions

[11] This, and later, randomisations were realised via the random number generator in Microsoft Excel.

with only DC or DC combined with ECA—was 'great distinction' or 'distinction' (randomly determined, both with a probability of 0.50).[12] The control applicant and the applicant with only ECA did not mention any DC.[13] In addition, four types of ECA were randomly given (with a probability of 0.25) to those in the experimental conditions with only ECA or ECA combined with DC: membership of the faculty's student union (defending the interests of the students in the college or university), chairmanship of the faculty's student union, membership of the executive committee ('presidium') of the faculty's student club (organising social activities) and chairmanship of the faculty's student club (being 'preses').

In addition, in view of answering R3, we alternated between male and female quartets of candidates. Earlier evidence with respect to gender differences in DC and ECA premiums was mixed. While Pinto and Ramalheira (2017) reported the positive effects of both CV qualities with respect to employability to be homogeneous by gender, Feng and Graetz (2017) found a higher DC effect on wages for males.

We sent the quartets of job candidates in a random order to the employers, with a 6- to 24-hour delay between two applications. To avoid detection, and for ethical reasons, we only applied to the same employer with one pair of applications. Reactions from the employers were received via email and telephone voicemail. To minimise the inconvenience to these employers, we terminated the application procedure after getting a positive reaction. All call-backs received later than 30 days after the date of application submission

[12] At Ghent University—the university that occurred most frequently in the fictitious applications—29.9% of the regular master's degrees in the academic year 2017–2018 were handed out with a satisfactory degree, 41.2% with a distinction degree, 24.4% with a great distinction degree and 4.6% with a greatest distinction degree.

[13] A sample of human resource managers confirmed that not mentioning any DC is more realistic than mentioning a satisfactory degree.

were discarded.[14] In line with the literature, the outcome variable of our analyses was of a binary nature: it was 1 in the case where a fictitious applicant got (immediately) invited to a job interview and 0 otherwise.

Finally, related to R3, we merged the experimentally gathered data with vacancy characteristics that could be derived from the posted advertisement. Firstly, we registered the offered contract type, i.e. temporary versus permanent jobs, and part-time versus full-time jobs. Secondly, we constructed a proxy of the regional labour market tightness. By means of the work location mentioned in the vacancy, we assigned each vacancy to one of the 23 Flemish districts ('arrondissementen'). For each of these districts, the ratio of the number of vacancies and the number of unemployed could be calculated based on data from the Public Employment Agency of Flanders. As in Baert et al. (2015), we hypothesised that employers would be less selective (in terms of DC and ECA) when filling temporary and part-time jobs, and in times of high labour market tightness.

This research procedure was approved by the Ethical Committee of the Faculty of Economics and Business Administration of Ghent University at its meeting on 9 July 2013, largely based on the arguments mentioned in Riach and Rich (2004). The four CV templates used (in Dutch) are available on request.

2.3 Summary Statistics

Table 1 describes the data analysed in Section 3 to answer R1, R2 and R3. As can be seen from Panel A of this table, overall, 761 (27.2%) of the 2,800 applicants got an invitation to a job interview. In addition, Panel B shows that the distribution of the DC and ECA conditions

[14] This turned out to be an unnecessary restriction, as we hardly received any (positive) responses after 30 days.

accords with the experimental design discussed above. Importantly, the random assignment of the experimental conditions to the CV template types, and the order in which the applications were sent out, worked. That is, actual correlations among DC, ECA and the variables capturing the template type and application order were fairly low. Nevertheless, these small correlations are controlled for in our regression analyses that are discussed below. Finally, by design, there was no correlation among DC, ECA and factors that were constant at the vacancy level, such as the gender of the candidate, the programme and the vacancy characteristics.

<Table 1 about here>

3. Results

3.1 Overall Effects

Figure 1 presents the interview rates by experimental condition. Overall, these histograms go in the expected direction. While applicants in the control condition were invited to a job interview in 25.3% of their applications, the job interview rate was 27.4% both for applicants mentioning a high DC (but no ECA) and for applicants mentioning ECA (but no high DC). So, these CV characteristics enhance the job interview rate by 2.1 (= 27.4 – 25.3) percentage points, or 8.3% (= 27.4 / 25.3 − 1). Applicants mentioning both a (great) distinction and student leadership got invited in 28.6% of their applications, i.e. a premium in job interview rate of 3.3 percentage points, or 13.0%. As can be seen from the two right histograms in Figure 1, these premiums are somewhat more dominant among the fictitious female (compared to male) candidates. To measure the independent effect of DC and ECA, we

discuss several regression analyses.

<Figure 1 about here>

In Table 2, we present the results of five regression models, in which being invited to a job interview is regressed on mentioning a high DC (distinction or great distinction), mentioning ECA (one of the four aforementioned types of student leadership) and an increasing number of control variables. In model (1), no additional controls are added. Next, in model (2), the observed candidate and vacancy characteristics are included. Having graduated from a business programme is the implicit reference category with respect to the candidate's educational field. In model (3), controls for the CV template type used (reference category: CV type D) and the order of sending (reference category: fourth sent application) are included. Finally, in models (4) and (5), we additionally control for random and fixed effects at the vacancy level, respectively. Control variables that are constant at the vacancy level are saturated after including vacancy fixed effects.[15] As they are adequate to use with binary dependent variables (Angrist & Pischke, 2008), and easy to interpret, we conduct linear probability models with standard errors corrected for clustering at the vacancy level. However, logit and probit models yield exactly the same empirical conclusions.

<Table 2 about here>

The regression results in Table 2 are very similar across models (1)–(5). In fact, the estimates with respect to our main independent variables only change (to a negligible

[15] In addition, models additionally controlling for (i) indicators of all 10 master's programmes, (ii) indicators of all 23 districts and/or (iii) an indicator of districts with a labour market tightness above the mean (instead of a continuous variable capturing labour market tightness) were estimated. This yielded the same empirical conclusions.

extent) after including controls for CV template type and order of sending. This is not surprising, as, by construction, DC and ECA are orthogonal to all variables that are fixed at the vacancy level. From model (3) on, the independent effects of a (great) distinction and student leadership are 0.018 and 0.016, respectively. That is, mentioning a (great) distinction increases the job interview probability by about 1.8 percentage points, and mentioning student leadership increases this probability by about 1.6 percentage points, *ceteris paribus*. The former effect is statistically significant at the 5% level (p = 0.036); the latter one is significant at the 10% level (p = 0.063). Not surprisingly, given that their values are very close to each other, the equality of both coefficients cannot be rejected by means of an F-test (p = 0.906).

In summary, with respect to R1, we find (weak) evidence for comparable premiums of high DC and ECA, as operationalised in our field experiment, in the 2,800 tested vacancies. This finding holds the middle between the results of Cole et al. (2007) and Pinto and Ramalheira (2017) mentioned in Section 1. The relatively higher DC premium in Pinto and Ramalheira (2017) is not surprising, given that they seemed to compare relatively extreme DC cases: a GPA of 18 out of 20 ('high GPA') versus a GPA of 11 out of 20 ('low GPA'). Also, the relatively higher ECA premium in Cole et al. (2007) can be explained by their operationalisation: the fictitious job candidates in their vignette experiment mentioned up to five such engagements (compared to one in our case). Of course, the institutional context also may drive this difference in the findings—we return to this issue in Section 4.

In terms of economic significance, the measured effects of mentioning a (great) distinction and student leadership turn out to be rather small when compared with that of related CV characteristics in the same (Flemish) context. First, the premium, in terms of job interview rate with a high DC or ECA, is substantially smaller than the premium of a master's

degree (versus a bachelor's degree) for graduates applying for a vacancy at the bachelor's level, as found in a smaller correspondence experiment in Flanders in 2014–2015 (i.e. about 3.9 percentage points; Verhaest et al., 2018). Second, the surplus from a high DC or ECA is lower than the surplus in terms of job interview rate, found for recent graduates over candidates with an unemployment duration of one year after graduation of 3.4 percentage points by Baert and Verhaest (in press), who ran their field experiment in Flanders in 2013–2014.

Before focusing on the answers to R2 and R3, we discuss some secondary regressions results. First, regression models (2)–(4) show that, overall, quartets with a master's degree received substantially more invitations than quartets with a bachelor's degree. This suggests that the competition for workers is fiercer for jobs requiring higher levels of cognitive skills. Second, candidates from a caring or technical programme received more invitations than candidates from a business programme. This might be explained by the relatively high numbers of bottleneck vacancies (with a high labour market tightness) in these occupations (Baert et al., 2015). Third, and not surprisingly, given the small differences between the CV template types, invitation rates do not substantially vary across these types. Fourth, in line with, for instance, Baert et al. (2016), invitation rates are lower for the quartet members that are sent latest.

3.2 Substitutes or Complements?

In our benchmark regression analysis, we implicitly assumed DC and ECA not to be complements or substitutes. That is, no interactions between our main independent variables were included. In model (1) of Table 3, we re-estimate model (5) of Table 2, after including such an interaction. However, this interaction turns out to be insignificant, both in

statistical terms (p = 0.620) and in economic terms (b = −0.009). So, with respect to R2, we cannot reject that the effects of DC and ECA, as operationalised in our field experiment, are additive.

<Table 3 about here>

The results of model (1) of Table 3 closely mimic the differences presented in Figure 1. For instance, the premium of both a high DC and ECA is 3.4 (= 2.2 + 2.1 − 0.9) percentage points, compared to the control condition of no such characteristics. This is virtually equal to the 3.3 percentage point difference mentioned when discussing Figure 1. Model (2) of Table 3 is even closer to Figure 1, as it includes restricted versions of our main independent variables: '(great) distinction but no student leadership' instead of '(great) distinction' and 'student leadership, but no (great) distinction' instead of 'student leadership'. Due to this respecification, the premiums of the three 'treated' conditions, after controlling for CV template type and order of sending, appear (and are very close to the ones derived from Figure 1).

Models (3) and (4) of Table 3 present the results of additional analyses, with alternative independent variables. In model (3), the relative premium of the two high DC types (great distinction and distinction), and the relative premiums of the four ECA types, are investigated. Having graduated with a distinction and being a regular presidium member are the reference categories for which the premiums are captured by the estimates of '(great) distinction' and 'student leadership'. In model (4), the four ECA types are clustered in two categories ('student union membership' and 'presidium membership', irrespective of whether one had been a member as a president). In the latter model, 'presidium membership' is the reference category, for which the premium is captured by the estimate

of ‘student leadership’.

Clearly, the overall effect of high DC and ECA reported in Table 2 is not driven by its most prestigious categories (mentioning a great distinction or engagement as a head of the student union or engagement as a head of the presidium).[16] The premium of mentioning a distinction (b = 0.025) is insignificantly higher than that of a great distinction (b = 0.025 – 0.015). In addition, the premium of regular membership of the student union (b = 0.001 + 0.033) is the highest among the ECA subcategories. Finally, as can be seen from model (4), the differences in premium between the two clustered ECA categories is virtually 0 (b = 0.002; p = 0.887).

3.3 Moderators on the Candidate and Vacancy Sides

Finally, to address R3, we extend model (5) of Table 1 with interactions between our main independent variables and the observed candidate and vacancy characteristics. In models (1)–(6), these interaction variables are included separately. In model (7), they are adopted jointly. In what follows, we focus on the discussion of model (7).

It is important to stress that, while the estimates in bold in Tables 2 and 3 can be given a causal interpretation due to the random assignment of our independent variables, this is not the case for most of the interaction variables in Table 4. More concretely, the candidate’s degree (and, therefore, the kind of occupation for which (s)he applied) and the observed vacancy characteristics may correlate with unobserved vacancy characteristics that may also determine invitation rates. As a consequence, except for the interactions with

[16] This finding is, to some extent, in line with Baert and Vujić (2018), who reported that the premium of volunteering in the Flemish labour market is homogenous by the number and type of engagements undertaken.

female gender, the coefficients of the interaction variables should be seen as associations.

Two dimensions of heterogeneity in the DC effect are found. Firstly, in line with what was observed in Figure 1, we find weakly significant evidence that a high DC is relatively more beneficial for female candidates (p = 0.095). This is a curious finding, and contrasts with that of Feng and Graetz (2017), who determined a higher DC premium for males, based on a regression discontinuity analysis of data from the United Kingdom. Secondly, we find evidence for a higher premium of a high DC for graduates with a master's (versus a bachelor's) degree (p = 0.050). This pattern is also observed in the raw experimental data (Figure A1 in Appendix A). To the extent that jobs requiring a master's degree are likely more complex jobs, this higher DC premium may be explained by the fact that the value of cognitive skills increases with the complexity of the job—this is less the case for the social skills signalled by ECA. Alternatively, some employers might aim at hiring graduates at the top of the cognitive skills distribution (as proxied by a master's degree in combination with high scores).

Remarkably, the effect of ECA is homogenous by all candidate and vacancy characteristics. That is, all interaction variables with ECA in model (7) of Table 4 are statistically insignificant. We believe this is not due to limited power. That is, the interaction effects are identified based on quite high numbers of observations in each cell by candidate and vacancy characteristics. The lowest number of observations is observed for vacancies offering a temporary contract: 504 fictitious applications to 126 vacancies.

<Table 4 about here>

4. Conclusions

In this article, we investigated the fruitfulness of two main strategies used by students in tertiary education to distinguish themselves from their peers in view of a successful transition from education into the labour market. That is, we estimated, by means of a field experiment, the relative premiums of a high degree class (DC) and extra-curricular activities (ECA) in terms of job interview invitation rates. More concretely, we analysed employer reactions to 2,800 fictitious job applications, to which three levels of DC (great distinction, distinction or lesser degree) and five levels of ECA (regular student union membership, being head of the student union, regular student club membership, being head of the student club or no such engagement) were randomly assigned. As a consequence, we complemented former contributions, based on observational and laboratory experimental data, which merely focused on one of both CV characteristics in isolation of the other.

A high DC or ECA turned out to increase graduate interview rates to a similar and moderate extent, suggesting that both strategies are equally effective for distinguishing oneself from other graduates. The premium of a high DC was driven by our subsamples of female job candidates and job candidates with a master's (versus a bachelor's) degree. In contrast, the premium of ECA was homogenous by all observed candidate and vacancy characteristics. Finally, our results suggested that both CV characteristics affect these rates additively. This is consistent with the idea that employers use high DC and ECA as signals for distinct types of skills (cognitive versus social).

We end this article by acknowledging some limitations to our study. First, while we benefitted from a research design that guaranteed causal measures, this came at the cost of giving up on scope. That is, by analysing job interview invitation rates, we focused on the

very first stage of school-to-work transitions. Indeed, our measures cannot be translated into divergences in final job offers (let alone in wages) by DC and ECA. One could expect, however, that increased interview rates translate into increased job offers, as being invited for a job interview is a necessary first step, and because employers are expected to invite only candidates with a substantial chance of finally getting the job (Baert et al., 2016; Bertrand & Mullainathan, 2004).

Second, but related, we only measured the premium of DC and ECA in terms of the transition to work success in jobs in the particular context of Flanders. As the measured premiums cannot be easily generalised to other contexts, we are in favour of future studies with similar fieldwork in other contexts. However, the fact that we did not find evidence for the measured premiums to be heterogeneous by labour market tightness in the district, or by the particular high DC or ECA mentioned, may indicate that these premiums are rather context-independent.

Third, while our empirical findings are supported by the seminal theoretical frameworks discussed in Section 1, our experimental design did not allow us to disentangle which pre-existing candidate characteristics, or which aspects of acquired human capital, were signalled in particular to the employers by means of DC or ECA. In our opinion, unravelling which signals are sent, in practice, by DC and ECA, thereby getting a deeper insight into why they are fruitful investments, is the logical next step to take.

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Appendix A: Additional Figures

<Table A1 about here>

Figure 1. Invitation rates by experimental condition and gender

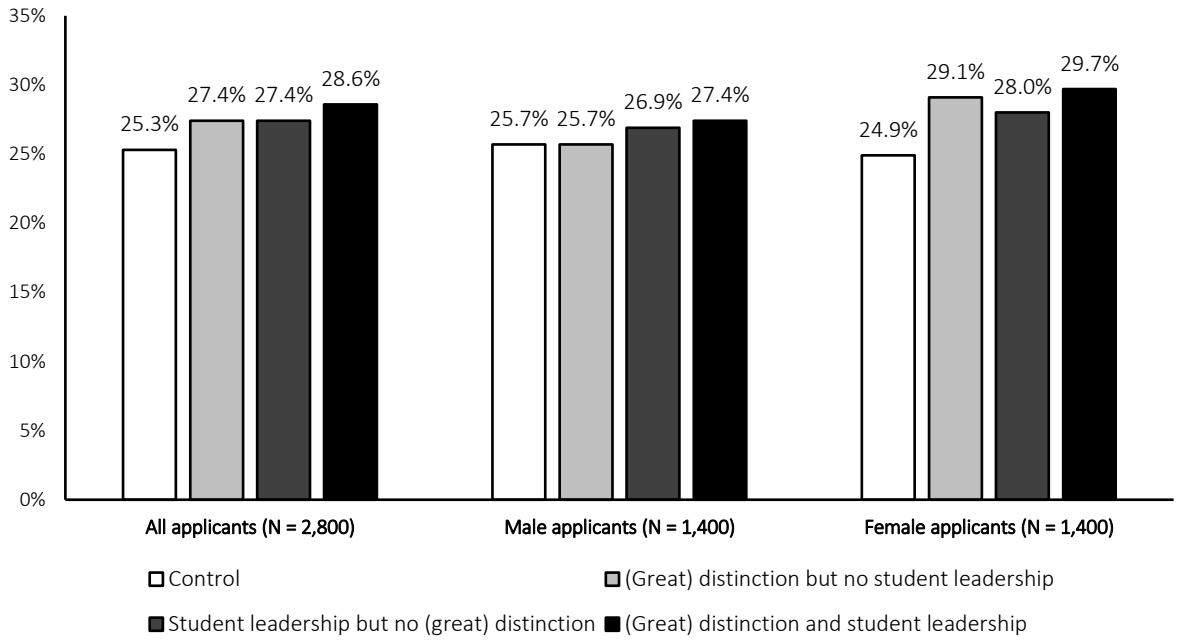

Figure A1. Invitation rates by experimental condition and degree level

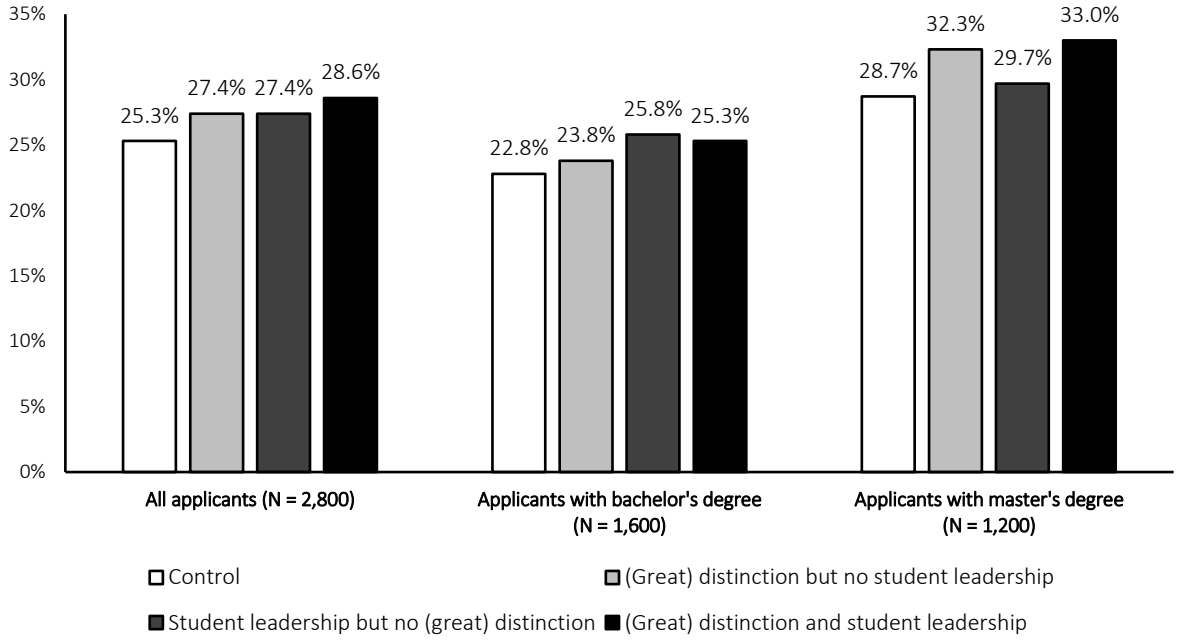

Table 1. Summary statistics

	Mean [standard deviation]	Pearson correlation coefficient between variable and (great) distinction	Pearson correlation coefficient between variable and student leadership
A. Dependent variable			
Interview invitation	0.272 [-]	0.019	0.019
B. Independent variables			
(Great) distinction	0.500 [-]	1.000	0.000
(Great) distinction but no student leadership	0.250 [-]	0.577***	-0.577***
Great distinction	0.251 [-]	0.579***	-0.021
Distinction	0.249 [-]	0.576***	0.021
Student leadership	0.500 [-]	0.000	1.000
Student leadership but no (great) distinction	0.250 [-]	-0.577***	0.577***
Student leadership: student union member	0.242 [-]	-0.008	0.566***
Student leadership: head of union	0.118 [-]	-0.007	0.366***
Student leadership: regular union member	0.125 [-]	-0.003	0.377***
Student leadership: presidium member	0.258 [-]	0.007	0.589***
Student leadership: head of presidium	0.133 [-]	0.001	0.391***
Student leadership: regular presidium member	0.125 [-]	0.009	0.378***
(Great) distinction and student leadership	0.250 [-]	0.577***	0.577***
C. Control variables			
Female	0.500 [-]	0.000	0.000
Master's degree	0.429 [-]	0.000	0.000
Caring programme	0.357 [-]	0.000	0.000
Technical programme	0.286 [-]	0.000	0.000
Vacancy: temporary contract	0.180 [-]	0.000	0.000
Vacancy: part-time contract	0.224 [-]	0.000	0.000
Vacancy: labour market tightness in district	0.195 [0.639]	0.000	0.000
CV type A	0.250 [-]	0.010	-0.036*
CV type B	0.250 [-]	0.013	-0.013
CV type C	0.250 [-]	-0.005	0.038**
First sent application	0.250 [-]	0.003	0.010
Second sent application	0.250 [-]	-0.046**	-0.041**
Third sent application	0.250 [-]	-0.010	0.026

Notes. See Section 2 for a description of the included variables. No standard deviations are reported for binary variables. *** (**) ((*)) indicate significance at the 1% (5%) ((10%)) significance level. No significance levels are reported in cases of perfect correlation.

Table 2. Effect of DC and ECA on the probability of a job interview invitation: Benchmark regression analysis

	(1)	(2)	(3)	(4)	(5)
(Great) distinction	**0.016* (0.009)**	**0.016* (0.009)**	**0.018** (0.009)**	**0.018** (0.009)**	**0.018** (0.009)**
Student leadership	**0.016* (0.009)**	**0.016* (0.009)**	**0.016* (0.009)**	**0.016* (0.009)**	**0.016* (0.009)**
Female		0.016 (0.029)	0.016 (0.029)	0.016 (0.029)	
Master's degree		0.061** (0.030)	0.061** (0.030)	0.061** (0.030)	
Caring programme		0.189*** (0.041)	0.189*** (0.041)	0.189*** (0.041)	
Technical programme		0.081** (0.036)	0.081** (0.036)	0.081** (0.036)	
Vacancy: temporary contract		−0.070* (0.041)	−0.070* (0.041)	−0.070* (0.041)	
Vacancy: part-time contract		0.071 (0.045)	0.071 (0.045)	0.071 (0.045)	
Vacancy: labour market tightness in district		−0.053 (0.213)	−0.053 (0.213)	−0.053 (0.213)	
CV type A			−0.015 (0.012)	−0.015 (0.012)	−0.015 (0.012)
CV type B			−0.010 (0.013)	−0.010 (0.013)	−0.010 (0.013)
CV type C			0.001 (0.013)	0.001 (0.013)	0.001 (0.013)
First sent application			0.039*** (0.014)	0.039*** (0.014)	0.039*** (0.014)
Second sent application			0.032*** (0.012)	0.032*** (0.012)	0.032*** (0.012)
Third sent application			0.008 (0.012)	0.008 (0.012)	0.008 (0.012)
Intercept	0.255*** (0.016)	0.137*** (0.049)	0.123** (0.051)	0.123** (0.051)	0.241*** (0.013)
Random effects at vacancy level	No	No	No	Yes	No
Fixed effects at vacancy level	No	No	No	No	Yes
N	2,800	2,800	2,800	2,800	2,800

Notes. See Section 2 for a description of the included variables. The presented statistics are linear probability model estimates (in bold for the independent variables) and robust standard errors (clustered at the vacancy level and in parentheses). The dependent variable is being invited to a job interview. Control variables that are constant at the vacancy level are saturated after including vacancy fixed effects. *** (**) ((*)) indicate significance at the 1% (5%) ((10%)) level.

Table 3. Effect of DC and ECA on the probability of a job interview invitation: Regression analysis with alternative independent variables

	(1)	(2)	(3)	(4)
(Great) distinction	**0.022* (0.012)**		**0.025** (0.011)**	**0.025** (0.011)**
(Great) distinction but no student leadership		**0.022* (0.012)**		
Great distinction			**−0.014 (0.014)**	**−0.014 (0.014)**
Student leadership	**0.021* (0.012)**		**0.001 (0.014)**	**0.015 (0.011)**
Student leadership but no (great) distinction		**0.021* (0.012)**		
Student leadership: student union member				**0.002 (0.013)**
Student leadership: head of union			**−0.003 (0.019)**	
Student leadership: regular union member			**0.033* (0.019)**	
Student leadership: head of presidium			**0.027 (0.020)**	
(Great) distinction and student leadership	**-0.009 (0.018)**	**0.034*** (0.012)**		
CV type A	−0.016 (0.012)	−0.016 (0.012)	−0.015 (0.012)	−0.015 (0.012)
CV type B	−0.010 (0.013)	−0.010 (0.013)	−0.011 (0.013)	−0.010 (0.013)
CV type C	0.000 (0.013)	0.000 (0.013)	0.001 (0.013)	0.001 (0.013)
First sent application	0.039*** (0.014)	0.039*** (0.014)	0.039*** (0.014)	0.039*** (0.014)
Second sent application	0.032*** (0.012)	0.032*** (0.012)	0.032*** (0.012)	0.032*** (0.012)
Third sent application	0.008 (0.013)	0.008 (0.013)	0.008 (0.013)	0.008 (0.012)
Intercept	0.239*** (0.014)	0.239*** (0.014)	0.241*** (0.013)	0.241*** (0.013)
Random effects at vacancy level	No	No	No	No
Fixed effects at vacancy level	Yes	Yes	Yes	Yes
N	2,800	2,800	2,800	2,800

Notes. See Section 2 for a description of the included variables. The presented statistics are linear probability model estimates (in bold for the independent variables) and robust standard errors (clustered at the vacancy level and in parentheses). The dependent variable is being invited to a job interview. Control variables that are constant at the vacancy level are saturated after including vacancy fixed effects. *** (**) ((*)) indicate significance at the 1% (5%) ((10%)) level.

Table 4. Effect of DC and ECA on the probability of a job interview invitation: Regression analysis with heterogeneous effects

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(Great) distinction	**0.004 (0.012)**	**0.004 (0.011)**	**0.032*** (0.012)**	**0.019** (0.009)**	**0.026*** (0.010)**	**0.019 (0.027)**	**0.011 (0.033)**
(Great) distinction × Female	**0.029* (0.017)**						**0.029* (0.017)**
(Great) distinction × Master's degree		**0.032* (0.017)**					**0.033** (0.017)**
(Great) distinction × Caring programme			**−0.033 (0.021)**				**−0.021 (0.025)**
(Great) distinction × Technical programme			**−0.007 (0.020)**				**−0.012 (0.020)**
(Great) distinction × Vacancy: temporary contract				**−0.007 (0.023)**			**0.009 (0.024)**
(Great) distinction × Vacancy: part-time contract					**−0.036* (0.021)**		**−0.030 (0.026)**
(Great) distinction × Vacancy: labour market tightness in district						**−0.005 (0.131)**	**−0.026 (0.130)**
Student leadership	**0.015 (0.013)**	**0.022* (0.011)**	**0.020 (0.013)**	**0.016 (0.010)**	**0.016 (0.010)**	**−0.004 (0.029)**	**0.001 (0.034)**
Student leadership × Female	**0.003 (0.018)**						**0.003 (0.018)**
Student leadership × Master's degree		**−0.012 (0.018)**					**−0.012 (0.019)**
Student leadership × Caring programme			**−0.003 (0.020)**				**−0.003 (0.026)**
Student leadership × Technical programme			**−0.009 (0.022)**				**−0.007 (0.022)**
Student leadership × Vacancy: temporary contract				**0.002 (0.023)**			**0.000 (0.024)**
Student leadership × Vacancy: part-time contract					**0.004 (0.022)**		**0.005 (0.028)**
Student leadership × Vacancy: labour market tightness in district						**0.104 (0.148)**	**0.107 (0.148)**
CV type A	−0.016 (0.012)	−0.015 (0.012)	−0.016 (0.012)	−0.015 (0.012)	−0.016 (0.012)	−0.015 (0.012)	−0.016 (0.012)
CV type B	−0.010 (0.013)	−0.010 (0.013)	−0.010 (0.013)	−0.010 (0.013)	−0.010 (0.013)	−0.010 (0.013)	−0.010 (0.013)
CV type C	0.000 (0.013)	0.000 (0.013)	0.000 (0.013)	0.001 (0.013)	0.000 (0.013)	0.001 (0.013)	−0.000 (0.013)
First sent application	0.039*** (0.014)	0.040*** (0.014)	0.039*** (0.014)	0.039*** (0.014)	0.039*** (0.014)	0.039*** (0.014)	0.040*** (0.014)
Second sent application	0.032*** (0.012)	0.031*** (0.012)	0.031*** (0.012)	0.032*** (0.012)	0.031*** (0.012)	0.032*** (0.012)	0.031*** (0.012)
Third sent application	0.008 (0.012)	0.009 (0.012)	0.007 (0.012)	0.008 (0.012)	0.008 (0.012)	0.008 (0.013)	0.009 (0.012)
Intercept	0.241*** (0.013)	0.241*** (0.013)	0.241²** (0.013)	0.241*** (0.013)	0.241*** (0.013)	0.241*** (0.013)	0.241*** (0.013)
Random effects at vacancy level	No	No	No	No	No	No	No
Fixed effects at vacancy level	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2,800	2,800	2,800	2,800	2,800	2,800	2,800

Notes. See Section 2 for a description of the included variables. The presented statistics are linear probability model estimates (in bold for the independent variables) and robust standard errors (clustered at the vacancy level and in parentheses). The dependent variable is being invited to a job interview. Control variables that are constant at the vacancy level are saturated after including vacancy fixed effects. *** (**) ((*)) indicate significance at the 1% (5%) ((10%)) level.