

DISCUSSION PAPER SERIES

IZA DP No. 12431

**What Do Student Jobs on Graduate CVs  
Signal to Employers?**

Eva Van Belle  
Ralf Caers  
Laure Cuypers  
Marijke De Couck  
Brecht Neyt  
Hannah Van Borm  
Stijn Baert

JUNE 2019

## DISCUSSION PAPER SERIES

IZA DP No. 12431

# What Do Student Jobs on Graduate CVs Signal to Employers?

**Eva Van Belle**

*NCCR, Ghent University and Université de  
Neuchâtel*

**Ralf Caers**

*KU Leuven and University of Seychelles*

**Laure Cuypers**

*Ghent University*

**Marijke De Couck**

*Vrije Universiteit Brussel and Odisee  
University College*

**Brecht Neyt**

*Ghent University*

**Hannah Van Borm**

*Ghent University*

**Stijn Baert**

*Ghent University, Research Foundation-  
Flanders, University of Antwerp, Université  
catholique de Louvain, IZA and IMISCOE*

JUNE 2019

Any opinions expressed in this paper are those of the author(s) and not those of IZA. Research published in this series may include views on policy, but IZA takes no institutional policy positions. The IZA research network is committed to the IZA Guiding Principles of Research Integrity.

The IZA Institute of Labor Economics is an independent economic research institute that conducts research in labor economics and offers evidence-based policy advice on labor market issues. Supported by the Deutsche Post Foundation, IZA runs the world's largest network of economists, whose research aims to provide answers to the global labor market challenges of our time. Our key objective is to build bridges between academic research, policymakers and society.

IZA Discussion Papers often represent preliminary work and are circulated to encourage discussion. Citation of such a paper should account for its provisional character. A revised version may be available directly from the author.

ISSN: 2365-9793

IZA – Institute of Labor Economics

Schaumburg-Lippe-Straße 5–9  
53113 Bonn, Germany

Phone: +49-228-3894-0  
Email: [publications@iza.org](mailto:publications@iza.org)

[www.iza.org](http://www.iza.org)

## ABSTRACT

---

# What Do Student Jobs on Graduate CVs Signal to Employers?\*

Due to the prevalence and important consequences of student work, the topic has seen an increased interest in the literature. However, to date the focus has been solely on *measuring* the effect of student employment on later labour market outcomes, relying on signalling theory to explain the observed effects. In the current study, we go beyond measuring the effect of student work and we examine for the first time what exactly is being signalled by student employment. We do this by means of a vignette experiment in which we ask 242 human resource professionals to evaluate a set of five fictitious profiles. Whereas all types of student work signal a better work attitude, a larger social network, a greater sense of responsibility, an increased motivation, and more maturity, only student employment in line with a job candidate's field of study is a signal of increased human capital and increased trainability.

**JEL Classification:** C91, I21, J22, J24

**Keywords:** student employment, signalling, hiring chances, vignette study

**Corresponding author:**

Eva Van Belle  
Université de Neuchâtel  
Rue Abram-Louis-Breguet 2  
2000 Neuchâtel  
Switzerland  
E-mail: [Eva.VanBelle@unine.ch](mailto:Eva.VanBelle@unine.ch)

---

\* We are grateful to the participants of the 4<sup>th</sup> Leuven Economics of Education Research Conference and the 24<sup>th</sup> Spring Meeting of Young Economists for their constructive suggestions and feedback that helped improve the quality of the manuscript.

# 1. Introduction

Combining full-time tertiary education with paid work is a reality for many students in OECD countries. More specifically, 47% of students in Europe and 49% of students in the US work while attending tertiary education (Beerkens, Mägi, & Lill, 2011). The main motivation for students to combine their studies with paid work is the short term financial benefits they receive (Watts & Pickering, 2000). Besides these financial benefits of work, students also take other factors into consideration when deciding to take on a student job, such as the effect of combining work and studying on their educational attainment<sup>1</sup> and whether the student job enhances their résumé. Given both the high prevalence and potential important consequences of student work, these questions have triggered the interest of the scientific community in recent years. Furthermore, over the past few years, student employment also got the attention of policy makers, with many OECD countries supporting and incentivising students to combine study and work (Alam, Carling, & Nääs, 2013; Baert, Rotsaert, Verhaest, & Omey, 2016). However, to make effective policy decisions, more research on the effects of student work and – more importantly – the underlying mechanisms remains to be done.

Indeed, to date the literature has focussed on *measuring* the effect of student work on later employment outcomes. A majority of these studies found a positive effect on labour market outcomes such as employment rates, wages, job quality, and job match quality (Ruhm, 1997; Light, 2001; Brennan, Blasko, Little, & Woodley, 2002; Hotz, Xu, Tienda, & Ahituv, 2002; Häkkinen, 2006; Joensen 2009; Geel & Backes-Gellner, 2012; Jewell, 2014; Passaretta & Triventi 2015), while, some studies on the other hand found no effect of student employment on later labour market success (Hotz et al., 2002; Baert et al., 2016). It is nevertheless important to note that the type and timing of the student work plays a non-negligible role. Multiple studies have shown that student jobs in line with the students' field of study have significantly larger positive effects on later labour market outcomes compared with student work with no relation to the field of study (Brennan et al., 2002; Geel & Backes-Gellner, 2012; Jewell, 2014; Passaretta & Triventi, 2015). Additionally, the timing of the student work (i.e.

---

<sup>1</sup> See Neyt, Omey, Verhaest, and Baert (2019) for an overview of the literature on the effect of student work on educational attainment.

whether the student job was performed only during summer or also during the academic year) has been shown to be important as well (Baert et al., 2016).

While quantifying the relationship between student work and labour market outcomes is a crucial first step, a question that largely remains unanswered is *why* this relationship exists. The current study therefore takes the logical next step in the literature by examining the underlying mechanisms of the effect of student work on labour market outcomes and more specifically on hiring probabilities. For this purpose, we conduct a vignette experiment among human resource professionals in Flanders,<sup>2</sup> who were asked to evaluate a set of fictitious job candidates. This is not only relevant from an academic point of view, but also for policy makers. Indeed, to make adequate policy recommendations, understanding the mechanisms behind certain observations is of crucial importance.

Previous literature has suggested a number of theoretical mechanisms that could explain the relationship between student work and labour market outcomes, situated both on the demand- and supply-side of the labour market. Supply-side theories, such as human capital theory (Becker, 1964), social network theory (Granovetter, 1973), and screening theory (Stiglitz, 1975) could help explain why students with work experience are more likely to get hired by the same employer where they did their student job or why these students earn more.<sup>3</sup> In the present study, however, we look only at the probability of being hired when applying for a job with a different employer. Therefore, the only relevant theory for our study is signalling theory (Spence, 1973). According to this theory, the relationship between student employment and hiring chances could be explained by the signal that is sent to potential employers by including student work in one's résumé. In the context of a hiring decision, signalling theory argues that employers are confronted with limited information and therefore use the available information on the résumé as signals of unobserved factors (Van Belle, Di

---

<sup>2</sup> The Northern, Dutch-speaking region of Belgium.

<sup>3</sup> Human capital theory (Becker, 1964) argues that student employment allows students to develop both hard, marketable skills and soft, transferable skills such as work attitude, sense of responsibility, and respect towards authority (Ruhm, 1997; Light, 2001; Hotz et al., 2002; Baert et al. 2016). Social network theory (Granovetter, 1973) states that students who combine their education with a student job build a larger network than their peers who do not, which might facilitate their future job search. Screening theory (Stiglitz, 1975) finally claims that employers might use student work as an inexpensive screening device to assert someone's unobservable productivity (Baert et al., 2016).

Stasio, Caers, De Couck, & Baert, 2018). Nevertheless, in the case of student employment, it is not clear what exactly is being signalled and whether these signals are positive and/or negative. Indeed, while we can make some hypotheses on possible signals associated with student work based on theoretical reasoning (as reviewed in Section 2), the empirical relevance of these signals has not yet been tested. To the best of our knowledge, we are the first to empirically assess these different potential signals.

The remainder of this study is structured as follows. Section 2 gives an expansive overview of the potential signals that could be sent by including student employment in one's résumé as predicted by the economic and sociological literature. Section 3 gives a detailed outline of the experimental setup and data gathering process. The subsequent data analysis is presented in Section 4. Section 5 concludes and proposes directions for future research.

## **2. Possible signals of student employment**

As mentioned in the introduction, the signal sent to prospective employers by revealing a student job in one's résumé may be an important explanation of the effect of student work on later hiring chances. Indeed, when employers screen a set of job applicants, they use signals to form an idea on unobservable characteristics. Therefore, signalling will play an important part in the initial stage of the hiring process, which is in itself a crucial step towards employment. However, it remains unclear what exactly is being signalled by student work experience, as student work can send a number of different signals – both positive and negative – to prospective employers. In the next four paragraphs, we review the four most important groups of signals student employment may send to potential employers and how this might influence the perception of employers on a job candidate.

First, human capital theory (Becker, 1964) has been applied by several scholars to explain the relationship between student employment and later labour market outcomes (Ruhm, 1997; Hotz et al., 2002; Baert et al., 2016). To the extent that the effect of student work on an individual's human capital (an individual's skills and knowledge) is directly observable by potential employers, this might directly alter the job candidate's hiring chances. However, it could also be the case that the effect of student employment on one's skills and knowledge is

not (entirely) directly observable, but that employers nevertheless believe that holding a student job has an effect on the job candidate's skills and knowledge. Participating in student work could, in other words, be a *signal of human capital* to employers, which in turn may influence their hiring decision. Further, it is likely that the extent of this signal of human capital depends on the type of student job. More specifically, employers may assume that student work in line with the student's field of study has a different effect on this student's human capital compared to student work with no relation to this student's field of study (Brennan et al., 2002; Geel & Backes-Gellner, 2012; Jewell, 2014; Passaretta & Triventi, 2015). Finally, the timing of the student job might have an impact as well. As stated by the zero-sum theory (Becker, 1965; Kalenkoski & Pabilonia, 2009; 2012) every hour spent on student work is necessarily one hour less spent on study activities. Therefore, the human capital accumulated by performing a student job could be (fully) offset by the human capital foregone by not studying. This could be particularly true when the student job was performed during the academic year rather than during the summer holidays.

Second, following social network theory (Granovetter, 1973), work experience as a student may lead to an enlargement of this student's social capital. This may consist of establishing personal relationships and acquiring valuable labour market information which in turn may facilitate the job finding process (Häkkinen, 2006; Geel & Backes-Gellner, 2012; Baert, Neyt, Omeij, & Verhaest, 2017). Like human capital, this social capital could have a direct effect on a student's hiring chances, if this student would exploit her/his social network in the job application process. However, again as with human capital, there could also be an indirect effect through the *signal of a social capital* to employers. Indeed, if employers believe that students who held a student job have enhanced social skills and a larger social network – factors which could help the candidate in the execution of their tasks – this could positively influence their hiring decision.

Third, queuing theory (Thurow, 1975) argues that the most relevant skills for a job are obtained via on-the-job training. Therefore, in order to minimise their training costs, employers will look for the most trainable applicants. For this means, employers rank applicants based on their (perceived) trainability, with the most (least) trainable applicants at the top (bottom) of the ranking. Only applicants above an imaginary line within this ranking will be taken into consideration and will be invited for a job interview (Di Stasio, 2014; Di Stasio & Van De Werfhorst, 2016). However, the trainability of an applicant is not directly visible from her/his

résumé. Nonetheless, an individual's trainability is likely to be closely linked to her/his level of education and previous work experience, both elements which are influenced by whether an applicant worked as a student. Therefore, student employment could be a *signal of trainability*.

Fourth, student employment might be a *signal of attitude*. For example, employers may interpret student employment as a signal of motivation (Joensen, 2009) and ambition (Beerkens et al., 2011). This is even more applicable for student work performed during the academic year because it shows that the student was motivated/ambitious enough to (successfully) combine full-time education with working (Baert et al., 2017). Further, having some previous work experience in the form of a student job could send a signal of greater maturity (Piopiunik, Schwerdt, Simon & Woessmann, 2018), a larger sense of responsibility, and more respect towards authority (Baert et al., 2016). In addition, prospective employers could have the perception that recent graduates with some student work experience had the opportunity to develop a work attitude, which their colleagues without this experience did not. As all of these important characteristics are difficult to infer from a job candidate's résumé, it is likely that employers will resort to signals sent by the applicant, among which her or his inclusion of student work in their résumé (Archer & Davison, 2008; Lowden, Hall, Elliot, & Lewin, 2011).

### **3. Experimental design**

To quantify the importance of the abovementioned potential signals of student work, we conducted a vignette experiment. A vignette experiment is an example of a factorial survey (Rossi & Nock, 1982; Auspurg & Hinz, 2014) and is often used to study human judgements and beliefs (Jasso, 2006). Moreover, vignette experiments are nowadays commonly used to study hiring decisions (Baert & De Pauw, 2014; Di Stasio, 2014; Van Belle et al., 2018; Van Borm & Baert, 2018; Damelang, Abraham, Ebensperger, & Stumpf, 2019).

In a vignette experiment, participants are asked to make a series of judgements based on a set of fictitious descriptions (vignettes), which vary randomly or systematically on a pre-defined number of factors (vignette factors). When used to study hiring decisions, these vignettes typically consist of résumés of fictitious job candidates, varying on a set of characteristics.



The main advantage of vignette experiments as opposed to non-experimental methods is that in a vignette experiment, the correlation between different vignette factors can be minimised to practically zero, allowing for a causal interpretation of the relation between vignette factors and outcomes of interest (Auspurg & Hinz, 2014). Furthermore, vignette experiments also have an advantage compared with résumé-based audit studies where two sets of false résumés are sent to real job openings (only varying on the treatment of interest). That is, the researcher is able to ask the participants to make several judgements about the job candidates as opposed to a binary hiring decision. Next to this, the researcher is also able to collect much relevant additional information about the participants themselves. However, the fact that participants are aware that they are partaking in an experiment has potential caveats. We come back to these caveats in Section 5.

### **3.1. Vignette design**

As mentioned above, the vignettes used in vignette experiments to study hiring decisions, typically consist of résumés of fictitious job candidates. In our experiment each participant was shown a set of five vignettes (a ‘deck’). Each vignette contained brief information on one fictitious job candidate and varied in five vignette factors over a defined number of levels (vignette levels), meaning that there were five characteristics of the fictitious candidate that could vary among the different vignettes.<sup>4</sup> An overview of the vignette factors and corresponding levels can be found in Table 1.

< Table 1 about here >

The most important factor in our vignettes is the one concerning student employment performed during tertiary education. We chose to not only make a distinction between candidates with and without student work experience, but also with respect to the period in which student employment was performed and whether the student job was in line with the applicant’s field of study. This resulted in four vignette levels for this particular factor (i.e. none,

---

<sup>4</sup> This choice for five vignette factors was driven by the findings of Sauer, Hinz, Auspurg, and Liebig (2011) who argued that this is the minimum amount of factors needed when conducting vignette experiments. In addition, following the research of Van Belle et al. (2018) we decided to stick to this minimum to minimise the bias due to participants’ fatigue, as they also had to assess several statements about each fictitious job candidate related to the potential signals of student employment.

during the summer holidays with relation to field of study, during the summer holidays without relation to field of study, during both the summer holidays and the academic year without relation to field of study). The decision for these four levels rather than a binary variable was motivated, first and foremost, by the fact that we can expect different signals of student employment depending on the job content and timing. Moreover, the aforementioned literature also often took (one of) these different aspects of student employment into account (for example Brennan et al., 2002; Geel & Backes-Gellner, 2012; Jewell, 2014; Passaretta & Triventi, 2015; Baert et al., 2016; Baert et al., 2017). In addition, we believe that using these four levels instead of a factor with only two levels, mimics a real-life hiring decision more closely. Besides the student employment factor, the other factors varying across vignettes were (i) gender (male or female), (ii) delay in study duration in tertiary education (none or one year), (iii) obtained grade in tertiary education (none, cum laude, magna cum laude, or summa cum laude), and (iv) extra-curricular activities (none, sport activities, fraternity, or volunteering). Again, these factors and their levels were chosen based on a review of the relevant literature (Di Stasio, 2014; Pinto & Ramalheira, 2017; Baert & Vujić, 2018) and aimed to make the fictitious hiring decisions mimic real-life as closely as possible. Next to this, we chose our factors and their levels so that no implausible or illogical combinations of vignette factors could occur (Auspurg & Hinz, 2014).

All possible combinations of the vignette levels resulted in a total vignette universe of 256 ( $2 \times 2 \times 4 \times 4 \times 4$ ) vignettes. Ideally, we aimed to have each vignette evaluated about five times, requiring a total sample of 1,280 ( $256 \times 5$ ) observations for each of our three chosen job vacancies (*infra* Subsection 3.2.). As this is not realistic due to participants' fatigue, we instead opted for a D-efficient design to draw vignettes out of the vignette universe (Auspurg & Hinz, 2014). A D-efficient design selects these combinations of vignette levels that have the most statistical power, resulting in a more efficient design where one needs fewer vignette judgments (i.e. vignettes per participants, participants, or a combination of both) to achieve the same amount of statistical power as a less efficient design. We followed the algorithm in Auspurg and Hinz (2014) to select 65 vignettes out of the vignette universe, which resulted in a substantially high D-efficiency of 99.882.

After the 65 vignettes were selected, these vignettes were grouped in 13 decks of five vignettes (again using the same algorithm (Auspurg & Hinz, 2014)). In order to assure maximum randomisation, each participant was first randomly assigned one of three job descriptions

(*infra* Subsection 3.2), and subsequently one of the 13 decks, in a way that the same 13 decks could be evaluated with the same probability for each of the three vacancies. Looking at the resulting correlations (reported in Table A–1 in Appendix) between the different vignette factors for the final sample, it is clear that our D-efficient randomisation was successful, as all remaining correlations are fairly small and not significantly different from zero

### **3.2. Data collection**

The vignette experiment was conducted via an online tool and invitations to participate were sent via email to a total of 2,148 human resource (HR) professionals living in Flanders (the Northern, Dutch-speaking region of Belgium). These HR professionals were part of a larger list of individuals who selected themselves into a database of people interested in research in human resources (in response to calls online and via email). From this larger database, those individuals who had indicated in an earlier study (see Van Belle et al., 2018) to be familiar with the hiring process were withheld to participate in the current survey experiment. These HR professionals came from all Flemish provinces and from various social backgrounds, providing a database not biased by geographical location or social class. All HR professionals declared to be responsible for the recruitment and selection of staff in their organisation. The data collection took place over the course of May 2018.<sup>5</sup> We sent out one initial invitation, followed by one reminder six days later. The invitation to participate, the reminder, and the questionnaire itself were all administered in Dutch. After closing the online questionnaire, 242 of the 2,148 HR professionals (hereafter: ‘the participants’) completed the entire experiment, yielding a common response rate of 11.3%.<sup>6</sup> As they each rated five vignettes, this resulted in a total of 1,210 observations (242 × 5).

In the invitation it was explained to the participants that they were selected to participate in a scientific study on hiring decisions in Flemish enterprises, deliberately remaining vague about the purpose of the study, as to not bias the participants. The participants were assured of the confidentiality of their responses and the voluntary nature of participation in this study.

---

<sup>5</sup> To rule out misconceptions and uncertainties we performed a pilot study with twelve people of different ages and backgrounds, which did not reveal any important issues with the vignette design.

<sup>6</sup> In order to maximise the response rate, we put in place an incentive to participate by means of three gift vouchers of 50 euro (a total value of 150 euro) that were distributed among participants by means of a lottery.

They were given the option to have their contact information removed from the database and were provided with an email address they could use to transmit questions or remarks.<sup>7</sup> Finally, it was mentioned that the experiment would take at most 15 minutes and that all responses were of great value for the scientific knowledge on the hiring process.

At the beginning of the survey experiment, the participants received clear experimental instructions. They were informed about their fictitious position as head of recruitment in a made-up firm. In this role, they had to make hiring decisions for one of three possible vacancies: human resources consultant, project engineer, or physiotherapist. We selected these vacancies as these were the most frequently occurring vacancies – requiring tertiary education and no previous experience – on the job portal of the Flemish Public Employment Service (PES). Next to this, we selected vacancies for jobs in three very distinct sectors, to improve the generalizability of our experiment. Every participant only got to see one of the three vacancies, following random assignment. Each vacancy was constructed in a similar way and mentioned the required capabilities of the potential hires. The requirements for each of the three vacancies are reported in Table A–2 in Appendix. Eventually, out of the 242 participants, 103 were shown the vacancy of physiotherapist, 70 participants received the job description for a human resources consultant, and 69 participants were shown the vacancy of project engineer.

After the participants were shown the vacancy, they were told that the five candidates they had to evaluate were pre-assessed by an administrative secretary. In addition, it was asserted that the candidates were all suitable for the position and that a tabulated summary of the most important characteristics (i.e. the five vignette factors as described in Subsection 3.1) of each candidate could be found on the following screens. After viewing the summarising table of a candidate, the participants were asked to rate twelve statements for that candidate. It was always possible to navigate back to the table with the candidate's characteristics. In addition, the participants could jump between the different candidates and adjust their ratings when desired. All statements were rated on a seven-point Likert scale, by means of which the participants indicated on a range from one (completely disagree) to seven (completely agree) to what extent they (dis)agreed with the proposed statement.

---

<sup>7</sup> A total of 15 participants contacted us with questions and/or remarks. All of their questions were answered within three hours. There were no critical incidents.

The first two statements surveyed the probability with which the participants would (i) invite the applicant for a job interview (hereafter: 'interview scale') and (ii) hire the applicant for the job (hereafter: 'hiring scale'). These two statements thus allow us to replicate (and expand) the existing correspondence experiments. Next, ten additional statements had to be rated on the same, seven-point Likert scale. These statements surveyed the importance of the possible signals student employment sends to prospective employers, stemming from the economic and sociological literature on student employment as described in Section 2. An overview of the ten statements is reported in Table 2. The first two statements were linked to the *signal of human capital* as derived from human capital theory. More concretely, we asked the participants whether they thought the candidate had (i) enough knowledge and (ii) enough skills in order to perform properly in the job. Next, linked to social network theory and to capture a *signal of a social capital*, we questioned participants whether they thought that the candidate had a strong enough social network to perform properly in the job. Subsequently, to question the *signal of trainability* derived from queuing theory, we asked participants whether they thought that the person was adequately trainable in order to perform properly in the job. Finally, six statements tested for a *signal of attitude*. Here, the participants had to answer whether they thought that the candidate had (i) the right work attitude, (ii) enough maturity, (iii) enough responsibility, (iv) enough respect towards authority, (v) enough motivation, and (vi) enough ambition to perform properly in the job. In some of the analyses reported below, the statements linked to the same signal are combined into one scale, i.e. the human capital scale ( $\alpha = 0.805$ ), the social capital scale ( $\alpha = 1.000$ ), the trainability scale ( $\alpha = 1.000$ ),<sup>8</sup> and the attitude scale ( $\alpha = 0.903$ ), respectively.

< Table 2 about here >

As a final step, the participants were asked to leave their fictitious role as a recruiter and complete a post-experimental survey in their own identity. We first wanted to assure that all our participants were indeed familiar with the real-life hiring process. To do this, we asked them to indicate on a seven-point Likert scale to what extent they felt professionally capable of making the earlier hiring decisions. We use the answers to this question in a robustness test in the next section. In addition, they were asked to provide some personal information, including their gender, age, nationality, highest obtained degree, and work experience as a

---

<sup>8</sup>For both the social capital and trainability scales, only one statement was used.

recruiter. Finally, we asked them about their own experience with student employment. Table 3 gives the descriptive statistics of these characteristics for our sample of participants. In addition, this table shows the results of t-tests testing the differences in means of these characteristics between participants who were asked to rate candidates with student employment experience and participants who evaluated candidates without this experience. As none of these differences are statistically different from zero, this again indicates that our randomisation was successful, as in to the correlations in Table A-1.

< Table 3 about here >

From Table 3, it is clear that our participants closely matched the target population. The vast majority of participants (81.4%) indicated to feel competent to make hiring decisions. Moreover, 21.6% even felt completely competent. Another fact demonstrating the credibility of our participants, was their experience within the field. A great majority of 72.3% indicated to have more than five years of experience in recruiting.

## **4. Results**

The data collected in our vignette experiment is used to answer two questions. First, in Subsection 4.1, we examine whether student employment, when shown on a résumé, has an effect on hiring chances because of its signal of unobservable characteristics to prospective employers. In other words, we look whether our vignette experiment is able to replicate the findings of earlier correspondence experiments. Second, and more importantly, in Subsection 4.2, we investigate what exactly is signalled by student employment.

### **4.1. The effect of student employment on hiring chances**

To have a first idea of the effect of student work experience on later hiring chances, we split our sample of fictitious job candidates into two groups: those who had student work experience and those who had not. The bar charts left of the vertical line in Figure 1 show the average rating of the fictitious job candidates on the interview and hiring scales. It becomes clear that a job candidate with student work experience (compared with a job candidate

without such experience) has a higher chance of both being invited for a job interview (difference = 0.306,  $p = 0.000$ ) and being hired for the position (difference = 0.195,  $p = 0.002$ ).<sup>9</sup>

< Figure 1 about here >

Given our experimental design, this finding is in itself already very informative on the (positive) signalling value of student employment. As a next step, we examine the effect of student employment on the probability of being invited for a job interview or being hired for the position while controlling for several candidate and participant characteristics. For this means, we estimate the following equation:

$$Y = \alpha + \beta CC + \gamma PC + \delta SE + \varepsilon \quad (1).$$

*SE* reflects a job candidate's student employment experience, either in one dummy variable or in three dummy variables for four levels (*supra*, Subsection 3.1). *CC* (*PC*) is the vector of candidate (participant) characteristics. *Y* is the dependent variable and can be either the interview or the hiring scale.  $\beta$ ,  $\gamma$ , and  $\delta$  are the vectors of parameters associated with *CC*, *PC*, and *SE*. Lastly,  $\alpha$  is the intercept and  $\varepsilon$  is the error term which is corrected for clustering of the observations at the participant level. In later steps, we will introduce interactions between *SE* on the one hand, and *CC* (*PC*) on the other hand to analyse what moderates the relationship between student employment and hiring outcomes.

The results of these linear regressions<sup>10</sup> are reported in the first and the sixth column (for the interview and the hiring scales, respectively) of Table 4. Again, it is clear that having student work experience has a significantly positive effect on both the probability of being invited for a job interview and the probability of being hired for the position. Additionally, having a delay in study duration negatively impacts job interview invitations and hiring chances, while having obtained a higher grade or mentioning extra-curricular activities on one's résumé positively impacts both these outcomes. Regarding the characteristics of the participants, lower educated participants are more lenient and more likely to invite a job candidate for an interview, while this cannot be said for the decision to hire a candidate for a position.

---

<sup>9</sup> To check whether the differences are significantly different from zero, we ran t-tests.

<sup>10</sup> We estimate Equation (1) using OLS, as this provides us the most intuitive results. By means of a robustness test we have re-estimated Equation (1) using an ordered logit model, and our results are robust to the use of this estimator. The results of the ordered logit estimations are available upon request.

< Table 4 about here >

Column 2 and 7 (3 and 8) report similar regressions, where the dummy of student employment is interacted with the candidate (participants) characteristics. As none of these interaction terms is significantly different from zero at the 5% confidence level, this indicates that the effect of student employment is not moderated by any of the candidate or participants characteristics. This finding might be slightly counterintuitive. Indeed, we might have expected student employment to be even more positive for those applicants graduating with a higher grade or who reported extra-curricular activities, as this might have taken away any suspicion that the time spent working had a negative influence on educational outcomes.

As stated in Subsection 3.1, we introduced four different levels of the variable 'student employment' in our vignettes. Columns 4 and 9 of Table 4 show the results of the regressions where these different types of student employment are introduced separately. A first interesting observation is that student employment that took place both during the summer and the academic year does not increase hiring chances as opposed to no student employment. This suggests that employer's perceptions are guided by zero-sum theory as introduced in Section 2. Indeed, the results could point to the fact that employers believe that student work during the academic year leads to lower educational attainment or lower participation in extra-curricular activities and, as a result, does not make a candidate more attractive than a similar candidate without student work experience. Note however that following zero-sum theory, we would also have expected to find significant interaction effects between student work and educational attainment, which, as reported above, we do not find. We come back to this when looking at the specific signals of student employment. Next, both student employment during summer holidays with and without a relation to the field of study increases the probability of being invited to a job interview and being hired for the position, compared with no student work experience. Nevertheless, and as predicted by the existing literature, the effect of student employment in relation to the field of study is more than double the effect of student employment unrelated to the field of study ( $F(1, 241) = 10.23, p = 0.002$ ).

Finally, remember that we had three different fictitious job vacancies that participants were asked to fill. Column 5 and 10 of Table 4 report the results of regression analyses where we interact our variable of interest, i.e. whether someone reported student employment, with the different vacancies, where the vacancy of project engineer is taken as the reference category.



We find that student work experience is significantly less beneficial for the vacancies of physiotherapist and HR consultant when considering the probability to be invited for a job interview.

## **4.2. The signal of student employment**

In the previous subsection, and in line with the literature, we found clear evidence that student employment sends a positive signal to prospective employers. In this subsection we examine what exactly is signalled by student work experience on one's résumé. As in Subsection 4.1, we start by plotting the average scores on the ten statements regarding possible signals of student employment. This is demonstrated in the bar charts on the right of the vertical line in Figure 1 for both students with and without student employment experience. As for the hiring and interview scale, we again used t-tests to test whether these differences in means were significantly different from zero. It is clear that candidates with student work experience score, on average, better on all ten statements as compared to candidates who did not have this experience. These differences were statistically significant for all statements apart from the statement concerning the knowledge of the fictitious candidate. In other words, employers had the perception that candidates with student work experience had significantly more skills, had a significantly larger social network, were easier to train, and had a better work attitude, maturity, sense of responsibility, respect towards authority, motivation, and ambition than comparable candidates without student work experience. Looking at the size of the differences, the differences between both groups of candidates seem upon first glance largest for the signals of attitude, and especially for the statements related to 'work attitude', 'sense of responsibility', and 'maturity'.

Again, we examine these effects of student employment while controlling for both candidate and participant characteristics. We do this by re-estimating Equation (1), but use the possible signals of student employment as the outcome variable, rather than the interview and hiring scale. The results of this exercise are reported in Table 5.<sup>11</sup> Column 1, 3, 5, and 7 of Table 5 show the results – with each of the scales as an outcome – when estimating the effect of student employment with one dummy variable. We find that student employment has a large

---

<sup>11</sup> See footnote 10.

positive effect on the human capital, social capital, and attitude scale; and a smaller and marginally significant effect on the trainability scale. When looking at the individual statements, as reported in Table A–3 in Appendix, we find that the effect on the human capital scale is solemnly driven by the positive signal of skills. For the attitude scale, the rating on all statements is positively influenced by including student employment in one’s résumé, but we find by far the largest effects for work attitude, followed by sense of responsibility, motivation, and maturity. These findings are in line with the evidence from Figure 1.

**< Table 5 about here >**

As before, we look whether the type and the timing of the student employment impacts these findings. Columns 2, 4, 6, and 8 of Table 5 show the regressions results when estimating the effect of student employment with three dummy variable for four levels. Interestingly, only student employment during the summer and in line with the field of study appears to be better than no student employment with regards to the human capital scale. This finding is in line with human capital theory, as student employment in line with the field of study should provide students with better opportunities to enhance their job-relevant skills. It is also in line with zero-sum theory, given that employers do not value student work during the academic year more than no student work. This again suggests that employers believe that student work during the academic year must interfere with study time and thus negatively impacts educational attainment. Relatedly, for the trainability scale, again only student employment during the summer and in line with the field of study appears to send a positive signal of trainability, as opposed to no student employment. When looking at social capital and attitude scales, all types of student work are better than no student work for the signals related to these theories. These findings are confirmed when we look at the individual statements as outcomes rather than the four scales, as reported in Table A–4 in Appendix.

As mentioned in Section 3, we asked our participants whether they felt competent to make hiring decisions. As a robustness test, we exclude participants who only scored this statement a four or less (on a seven-point Likert scale) and therefore indicated that they did not feel (very) competent to make hiring decisions. This resulted in the exclusion of 45 participants or 225 (45 × 5) vignettes. The results of this exercise are reported in Table A–5 in Appendix. Our results are robust to the exclusion of these participants.

## 5. Conclusion

This study established what student employment exactly signals to prospective employers. For this means, we conducted a vignette experiment where we asked HR professionals not only to make fictitious hiring decisions, but also to indicate to what extent they agreed with several statements linked to possible signals that could be sent by including student work in one's résumé. These possible signals were chosen on the basis of a thorough review of existing theories and literature concerning student employment and later labour market outcomes and can be separated into four main groups: signals of (i) human capital, (ii) social capital, (iii) trainability, and (iv) attitude.

We add to the existing literature on student employment by quantifying – to the extent of our knowledge for the first time – in a causal way what exactly is being signalled by student employment. Indeed, in order to design an adequate policy response and to give correct advice to future student workers it is not only crucial to know what the effect of student employment experience is on hiring chances but also what exactly is signalled by this experience.

In line with previous studies finding a positive effect between student employment and labour market outcomes, we find that student work increases both the probability of being invited for a job interview and the probability of being hired for the job

. However, this effect is only present when student work is done during the summer only (and not when it is combined with study activities during the academic year). Next, with regard to the signals of student work, we again found that there exist remarkable differences between different types of student work experience. Any type of student work experience allows job candidates to signal to potential employers that they possess a better work attitude, a larger sense of responsibility, more maturity, an increased motivation, and a larger social capital. On the other hand, we find that student employment does not signal more knowledge, and especially not when this student employment was performed during the academic year. Moreover, only student work in line with one's field of study is a positive signal of increased skills and trainability. These findings indicate that job applicants with student work experience should benefit from highlighting how this experience has increased their (job-specific) knowledge. For applicants who performed student work during the academic year, it could be important to signal that their primary orientation was towards school rather than towards work

(see Baert, Marx, Neyt, Van Belle, & Van Casteren, 2017). For job applicants without student work experience on the other hand, it might be beneficial to underscore different experiences that provided them the necessary work attitude and social capital.

We end this article by discussing several limitations of the current research and making suggestions for future research. A first limitation of our study is that our experiment took place in the lab, meaning that the data collection did not happen under real-life circumstances. This implied that the participants knew that they were being surveyed, which might have led to socially desirable answers. However, this restraint can be minimised for two reasons. First, this experiment did not measure opinions or decisions on ethical subjects so there might not necessarily be a socially desirable answer in this case. Second, the participants only assessed a fraction of the vignette universe which means that they did not see all the possible combinations of vignette factors. This made it almost impossible for them to determine what the most socially desirable answers were (see also Van Belle et al. (2018)). A second limitation of this study is that our results are not easily generalisable to settings different from the one in this study. We only surveyed a specific sample of employers concerning three specific vacancies. Given the large prevalence of student work and the increased interest in the subject, both from an academic and policy point of view, more systematic research into the subject should be encouraged.

## References

- Alam, M., Carling, K., & Nääs, O. (2013). The effect of summer jobs on post-schooling incomes. *IFAU Working Paper Series, no. 2013:24*.
- Archer, W., & Davison, J. (2008). *Graduate employability: What do employers think and want*. London: Council for Industry and Higher Education.
- Auspurg, K., & Hinz, T. (2014). *Factorial Survey Experiments*. Thousand Oaks: Sage.
- Baert, S., & De Pauw, A. (2014). Is ethnic discrimination due to distaste or statistics? *Economics Letters, 125*(2), 270–273.

Baert, S., Marx, I., Neyt, B., Van Belle, E., & Van Casteren, J. (2018). Student employment and academic performance: An empirical exploration of the primary orientation theory. *Applied Economics Letters*, 25(8), 547–552.

Baert, S., Neyt, B., Omev, E., & Verhaest, D. (2017). Student work, educational achievement, and later employment: A dynamic approach. *IZA Discussion Paper Series*, no. 11127.

Baert, S., Rotsaert, O., Verhaest, D., & Omev, E. (2016). Student employment and later labour market success: No evidence for higher employment chances. *Kyklos*, 69(3), 401–425.

Baert, S., & Vujić, S. (2018). Does it pay to care? Volunteering and employment opportunities. *Journal of Population Economics*, 31(3), 819–836.

Beerens, M., Mägi, E., & Lill, L. (2011). University studies as a side job: Causes and consequences of massive student employment in Estonia. *Higher Education*, 61(6), 679–692.

Becker, G. S. (1964): *Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education*. New York: National Bureau of Economic Research.

Becker, G. S. (1965). A theory of the allocation of time. *Economic Journal*, 75(299), 493–517.

Brennan, J., Blasko, Z., Little, B., & Woodley, A. (2002). *UK Graduates and the Impact of Work Experience*. London: HEFCE.

Damelang, A., Abraham, M., Ebensperger, S., & Stumpf, F. (2019). The hiring prospects of foreign-educated immigrants: A factorial survey among German employers. *Work, Employment and Society*, 0950017018809897.

Di Stasio, V. (2014). Education as a signal of trainability: Results from a vignette study with Italian employers. *European Sociological Review*, 30(6), 796–809.

Di Stasio, V., & Van De Werfhorst, H. G. (2016). Why does education matter to employers in different institutional contexts? A vignette study in England and the Netherlands. *Social Forces*, 95(1), 77–106.

Geel, R., & Backes-Gellner, U. (2012). Earning while learning: When and how student employment is beneficial. *Labour*, 26(3), 313–340.

Granovetter, M. (1973). The strength of weak ties. *American Journal of Sociology*, 78(6), 1360–1380.

Häkkinen, I. (2006). Working while enrolled in a university: Does it pay? *Labour Economics*, 13(2), 167–189.

Hotz, V. J., Xu, L. C., Tienda, M., & Ahituv, A. (2002). Are there returns to the wages of young men from working while in school? *Review of Economics and Statistics*, 84(2), 221–236.

Jasso, G. (2006). Factorial survey methods for studying beliefs and judgments. *Sociological Methods and Research*, 34(3), 334–423.

Jewell, S. (2014). The impact of working while studying on educational and labour market outcomes. *Business Economics Journal*, 5(3), 1–12.

Joensen, J. S. (2009). Academic and labor market success: The impact of student employment, abilities, and preferences. *SSRN Electronic Journal*, no. 1352077.

Light, A. (2001). In-school work experience and the returns to schooling. *Journal of Labor Economics*, 19(1), 65–93.

Kalenkoski, C. M., & Pabilonia, S. W. (2009). Does working while in high school reduce US study time? *Social Indicators Research*, 93(1), 117–121.

Kalenkoski, C. M., & Pabilonia, S. W. (2012). Time to work or time to play: The effect of student employment on homework, sleep, and screen time. *Labour Economics*, 19(2), 211–221.

Lowden, K., Hall, S., Elliot, D., & Lewin, J. (2011). *Employers' Perceptions of the Employability Skills of New Graduates*. London: Edge Foundation.

Neyt, B., Omeij, E., Verhaest, D., & Baert, S. (2019). Does student work really affect educational outcomes? A review of the literature. *Journal of Economic Surveys*, 33(3), 896–921

Passaretta, G., & Triventi, M. (2015). Work experience during higher education and post-graduation occupational outcomes: A comparative study on four European countries. *International Journal of Comparative Sociology*, 56(3–4), 232–253.

Pinto, L.H., & Ramalheira, D.C. (2017). Perceived employability of business graduates: The effect of academic performance and extracurricular activities. *Journal of Vocational Behavior*, 99, 165–178.

Piopiunik, M., Schwerdt, G., Simon, L., & Woessmann, L. (2018). Skills, signals, and employability: An experimental investigation. *Mimeo*.

Rossi, P. H., & Nock, S. L. (1982). *Measuring Social Judgements: The Factorial Survey Approach*. Thousand Oaks: Sage.

Ruhm, C. J. (1997). Is high school employment consumption or investment? *Journal of Labor Economics*, 15(4), 735–776.

Sauer, C., Hinz, T., Auspurg, K. & Liebig, S. (2011). The application of factorial surveys in general population samples: The effects of respondent age and education on response times and response consistency. *Survey Research Methods*, 5(3), 89–102.

Spence, M. (1973). Job market signaling. *Quarterly Journal of Economics*, 87(3), 355–374.

Stiglitz, J. E. (1975). The theory of "screening," education, and the distribution of income. *American Economic Review*, 65(3), 283–300.

Thurow, L. C. (1975). *Generating Inequality*. New York: Basic Books.

Van Belle, E., Di Stasio, V., Caers, R., De Couck, M., & Baert, S. (2018). Why are employers put off by long spells of unemployment? *European Sociological Review*, 34(6), 694–710.

Van Borm, H., & Baert, S. (2018). What drives hiring discrimination against transgenders? *International Journal of Manpower*, 39(4), 581–599.

Watts, C., & Pickering, A. (2000). Pay as you learn: Student employment and academic progress. *Education + Training*, 42(3), 129–135.

## **Appendix A**

<Table A–1 about here>

<Table A–2 about here>

<Table A–3 about here>

<Table A–4 about here>

<Table A–5 about here>

<Table A-6 about here>



**Table 1.** Vignette factors and vignette levels.

<b>Vignette factors</b>	<b>Vignette levels</b>
Gender	Male Female
Delay in study duration	None One year
Grade obtained	None Cum Laude Magna cum laude Summa cum laude
Student employment experience	None During summer holidays; with relation to field of study During summer holidays; without relation to field of study During both the summer holidays and the academic year; without relation to field of study
Extra-curricular activities	None Fraternity Sport activities Volunteering

**Table 2.** Survey statements and corresponding scale of signals of student employment.

Scale	Statement
Interview probability	I will invite the candidate to a job interview.
Hiring probability	There is a high probability that I would actually hire the candidate.
Human capital	I think this person possesses enough <b>knowledge</b> to perform properly in this job. I think this person possesses enough <b>skills</b> to perform properly in this job.
Social capital	I think this person possesses a sufficiently strong <b>social network</b> to perform properly in this job.
Trainability	I think this person is sufficiently <b>trainable</b> to perform properly in this job.
Attitude	I think this person possesses the right <b>work attitude</b> to perform properly in this job. I think this person possesses enough <b>maturity</b> to perform properly in this job. I think this person possesses enough <b>sense of responsibility</b> to perform properly in this job. I think this person possesses enough <b>respect towards authority</b> to perform properly in this job. I think this person possesses enough <b>motivation</b> to perform properly in this job. I think this person possesses enough <b>ambition</b> to perform properly in this job.

**Table 3.** Descriptive statistics of participants.

	(1)	(2)	(3)	(4)
	Full sample (N = 1,210)	Student employment (N = 920)	No student employment (N = 290)	Difference (2) - (3)
Female	0.430	0.432	0.424	0.008 [0.533]
Age	48.905	48.972	48.693	0.279 [0.969]
Belgian nationality	0.975	0.975	0.976	-0.001 [0.209]
Highest degree obtained				
Secondary education or lower	0.087	0.086	0.090	-0.004 [0.448]
Tertiary education outside university	0.376	0.377	0.372	0.005 [0.352]
Tertiary education at university	0.537	0.537	0.538	-0.001 [0.069]
Frequency of hiring: weekly	0.260	0.257	0.272	-0.015 [1.210]
Experience as HR professional: ≥ 5 years	0.723	0.727	0.710	0.017 [1.261]
Competent to evaluate job candidates	0.814	0.811	0.824	-0.013 [0.506]
Student employment	0.905	0.908	0.897	0.011 [1.151]

Notes. The statistics in column 4 are t-statistics with standard errors corrected for clustering of the observations at the participant level in parentheses. \* (\*\*) (\*\*\*) indicates significance at the 10% (5%) ((1%)) level.

**Table 4.** Regression results with interview and hiring scales as outcome variables.

	Interview					Hiring				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>A. Candidate characteristics</b>										
SE (ref. = none)	0.254*** (0.069)	0.223 (0.430)	0.901** (0.425)		0.493*** (0.143)	0.162*** (0.059)	0.439 (0.329)	0.559 (0.369)		0.270** (0.108)
SE in summer and academic year				0.132 (0.082)					0.076 (0.068)	
SE with relation to field of study				0.435*** (0.086)					0.281*** (0.076)	
SE without relation to field of study				0.193** (0.082)					0.128* (0.069)	
Female	0.050 (0.057)	0.042 (0.214)	0.056 (0.059)	0.046 (0.058)	0.046 (0.057)	0.091* (0.049)	0.247 (0.162)	0.088* (0.049)	0.088* (0.049)	0.093* (0.048)
Delay in study duration	-0.192*** (0.059)	-0.395 (0.249)	-0.184*** (0.060)	-0.201*** (0.058)	-0.199*** (0.058)	-0.125*** (0.050)	-0.337* (0.195)	-0.121** (0.051)	-0.131*** (0.050)	-0.131*** (0.050)
Grade obtained (ref. = none)										
Cum laude	0.374*** (0.090)	0.259 (0.263)	0.372*** (0.090)	0.342*** (0.089)	0.368*** (0.090)	0.259*** (0.072)	0.335* (0.202)	0.259*** (0.072)	0.237*** (0.071)	0.259*** (0.072)
Magna cum laude	0.570*** (0.089)	0.720** (0.327)	0.566*** (0.090)	0.531*** (0.086)	0.572*** (0.088)	0.485*** (0.077)	0.686*** (0.243)	0.482*** (0.077)	0.458*** (0.075)	0.487*** (0.076)
Summa cum laude	0.591*** (0.091)	0.647** (0.292)	0.579*** (0.091)	0.575*** (0.090)	0.594*** (0.091)	0.447*** (0.082)	0.571** (0.243)	0.442*** (0.083)	0.436*** (0.082)	0.446*** (0.083)
Extra-curricular activities (ref. = none)										
Fraternity	0.319*** (0.086)	0.392 (0.390)	0.319*** (0.086)	0.339*** (0.085)	0.312*** (0.086)	0.238*** (0.077)	0.503* (0.304)	0.239*** (0.077)	0.251*** (0.076)	0.232*** (0.077)
Sport activities	0.433*** (0.080)	0.438 (0.354)	0.432*** (0.079)	0.451*** (0.081)	0.425*** (0.079)	0.306*** (0.068)	0.517** (0.262)	0.306*** (0.068)	0.317*** (0.068)	0.301*** (0.067)
Volunteering	0.490*** (0.089)	0.790*** (0.266)	0.494*** (0.090)	0.498*** (0.089)	0.477*** (0.089)	0.349*** (0.078)	0.639*** (0.216)	0.349*** (0.079)	0.354*** (0.078)	0.341*** (0.078)
SE × female		0.001 (0.231)					-0.176 (0.179)			
SE × delay in study duration		0.274 (0.267)					0.244 (0.214)			
SE × cum laude		0.141 (0.287)					-0.091 (0.230)			
SE × magna cum laude		-0.208 (0.364)					-0.242 (0.275)			
SE × summa cum laude		-0.090 (0.330)					-0.159 (0.271)			
SE × fraternity		-0.022 (0.465)					-0.256 (0.358)			
SE × sport activities		0.053 (0.405)					-0.195 (0.305)			
SE × volunteering		-0.352 (0.326)					-0.344 (0.269)			
SE × physiotherapist					-0.335** (0.168)					-0.136 (0.139)
SE × HR consultant					-0.356* (0.183)					-0.179 (0.152)
Physiotherapist					0.722*** (0.252)					0.429** (0.188)
HR consultant					0.428 (0.274)					0.004 (0.195)

**Table 4.** Regression results with interview and hiring scales as outcome variables (continued).

	Interview					Hiring				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>B. Participant characteristics</b>										
Female	-0.042 (0.181)	-0.036 (0.180)	-0.236 (0.212)	-0.043 (0.181)	-0.059 (0.179)	-0.253* (0.153)	-0.250 (0.152)	-0.218 (0.172)	-0.254* (0.153)	-0.263* (0.147)
Age	0.002 (0.009)	0.002 (0.009)	0.008 (0.012)	0.002 (0.009)	0.001 (0.009)	-0.002 (0.007)	-0.002 (0.007)	0.003 (0.009)	-0.002 (0.007)	-0.004 (0.007)
Highest degree (ref. = TE at uni.)										
Secondary education or lower	0.591*** (0.209)	0.581*** (0.206)	0.833*** (0.243)	0.588*** (0.210)	0.514** (0.221)	0.121 (0.223)	0.110 (0.220)	0.307 (0.266)	0.119 (0.223)	0.072 (0.222)
TE outside university	-0.179 (0.182)	-0.189 (0.182)	-0.074 (0.221)	-0.181 (0.181)	-0.194 (0.182)	-0.177 (0.137)	-0.180 (0.137)	-0.154 (0.158)	-0.178 (0.137)	-0.215 (0.135)
Frequency of hiring: weekly	-0.265 (0.229)	-0.285 (0.230)	-0.137 (0.277)	-0.263 (0.229)	-0.221 (0.230)	-0.064 (0.170)	-0.077 (0.171)	0.020 (0.204)	-0.063 (0.170)	-0.026 (0.167)
Exp. as HR professional: ≥ 5 years	0.195 (0.193)	0.205 (0.194)	0.149 (0.233)	0.193 (0.193)	0.199 (0.195)	-0.113 (0.150)	-0.107 (0.152)	-0.269 (0.167)	-0.115 (0.150)	-0.098 (0.153)
SE	-0.305 (0.273)	-0.295 (0.272)	-0.041 (0.373)	-0.314 (0.273)	-0.260 (0.267)	0.074 (0.217)	0.082 (0.220)	0.166 (0.311)	0.068 (0.217)	0.119 (0.208)
SE × female gender			0.256* (0.134)					-0.045 (0.114)		
SE × age			-0.007 (0.008)					-0.007 (0.006)		
SE × secondary education or lower			-0.307* (0.169)					-0.245 (0.203)		
SE × TE (any)			-0.133 (0.142)					-0.026 (0.121)		
SE * frequency of hiring			-0.164 (0.182)					-0.107 (0.153)		
SE × exp. as HR professional			0.060 (0.169)					0.203 (0.141)		
SE (participant) × SE (candidate)			-0.351 (0.218)					-0.117 (0.184)		
N	1,210									

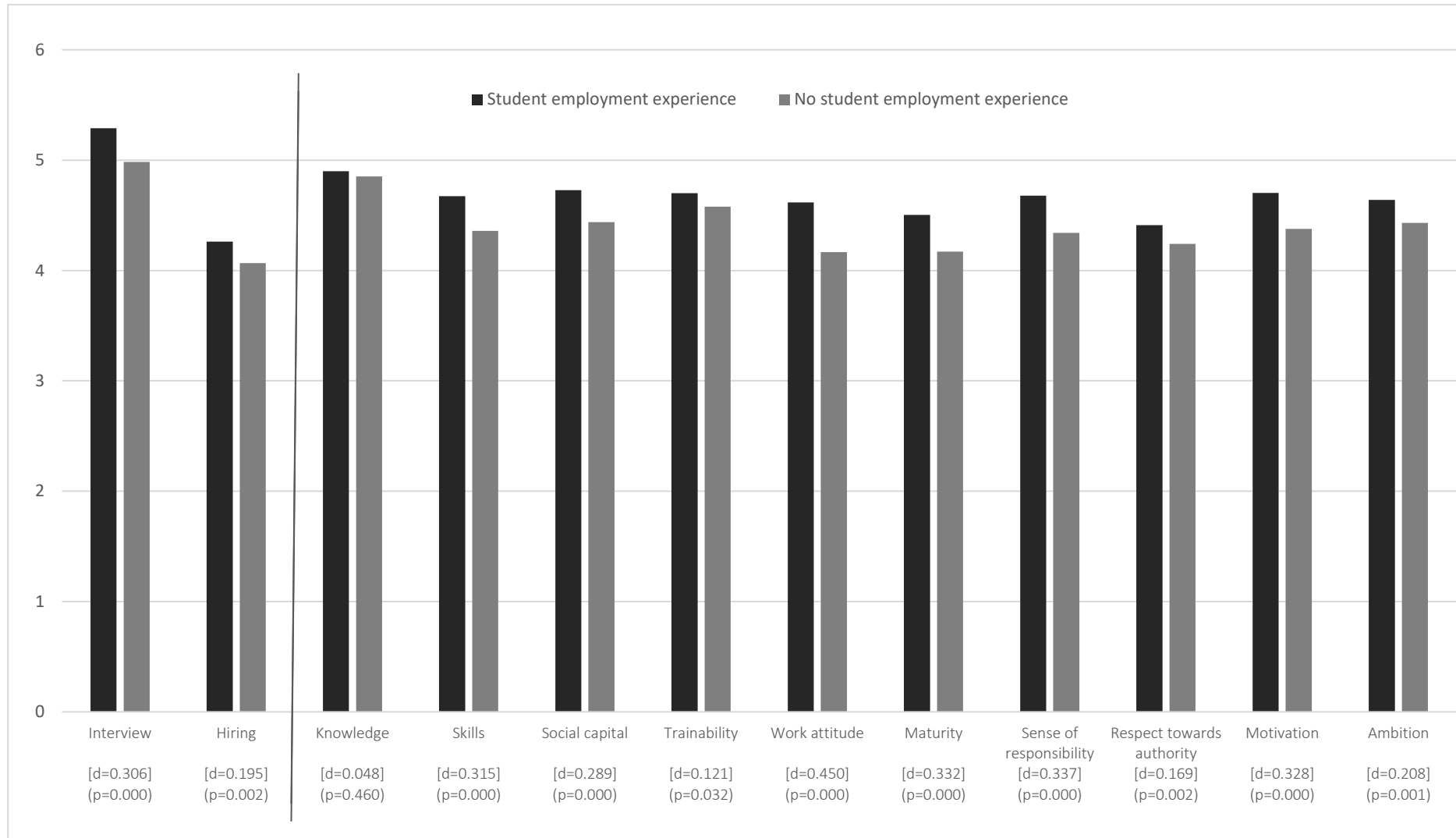
Notes. The following abbreviations were used: ref. (reference category), exp. (experience), SE (Student Employment), TE (Tertiary Education), uni. (university). The presented statistics are coefficient estimates and standard errors in parentheses. Standard errors are corrected for clustering of the observations at the participant level. \* (\*\*) (\*\*\*) indicates significance at the 10% (5%) ((1%)) level.

**Table 5.** Regression results with signal scales as outcome variables.

	Human capital scale		Social capital scale		Trainability scale		Attitude scale	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b>A. Candidate characteristics</b>								
SE (ref. = none)	0.135** (0.056)		0.303*** (0.063)		0.099* (0.055)		0.265*** (0.049)	
SE in summer and academic year		0.099 (0.061)		0.355*** (0.070)		0.099 (0.062)		0.243*** (0.054)
SE with relation to field of study		0.241*** (0.073)		0.266*** (0.077)		0.147** (0.069)		0.333*** (0.060)
SE without relation to field of study		0.064 (0.065)		0.287*** (0.077)		0.048 (0.063)		0.219*** (0.059)
Female	0.051 (0.041)	0.050 (0.041)	0.001 (0.046)	0.003 (0.046)	0.061 (0.043)	0.061 (0.043)	0.107*** (0.038)	0.107*** (0.038)
Delay in study duration	-0.107** (0.042)	-0.109** (0.042)	0.064 (0.050)	0.068 (0.050)	-0.045 (0.042)	-0.044 (0.042)	-0.067* (0.040)	-0.068* (0.040)
Grade obtained (ref. = none)								
Cum laude	0.362*** (0.062)	0.351*** (0.064)	0.202*** (0.074)	0.214*** (0.075)	0.206*** (0.060)	0.204*** (0.061)	0.207*** (0.057)	0.200*** (0.057)
Magna cum laude	0.479*** (0.071)	0.462*** (0.070)	0.173** (0.078)	0.186** (0.079)	0.258*** (0.062)	0.253*** (0.063)	0.306*** (0.058)	0.295*** (0.057)
Summa cum laude	0.579*** (0.067)	0.571*** (0.069)	0.175** (0.080)	0.180** (0.081)	0.261*** (0.070)	0.258*** (0.071)	0.380*** (0.064)	0.375*** (0.064)
Extra-curricular activities (ref. = none)								
Fraternity	0.240*** (0.062)	0.254*** (0.061)	1.228*** (0.091)	1.226*** (0.091)	0.016 (0.064)	0.024 (0.065)	0.300*** (0.058)	0.309*** (0.057)
Sport activities	0.197*** (0.065)	0.210*** (0.066)	0.711*** (0.078)	0.709*** (0.078)	0.127** (0.059)	0.134** (0.060)	0.256*** (0.052)	0.264*** (0.053)
Volunteering	0.229*** (0.067)	0.235*** (0.067)	0.986*** (0.087)	0.985*** (0.087)	0.245*** (0.063)	0.248*** (0.063)	0.445*** (0.057)	0.449*** (0.057)
<b>B. Participant characteristics</b>								
Female	0.140 (0.144)	0.139 (0.144)	-0.023 (0.125)	-0.022 (0.125)	-0.067 (0.129)	-0.067 (0.129)	-0.059 (0.111)	-0.059 (0.111)
Age	0.010 (0.007)	0.010 (0.007)	0.004 (0.006)	0.004 (0.006)	0.003 (0.006)	0.003 (0.006)	0.005 (0.006)	0.005 (0.006)
Highest degree (ref = TE at uni.)								
Secondary education or lower	-0.159 (0.179)	-0.159 (0.180)	0.220 (0.195)	0.221 (0.195)	-0.133 (0.286)	-0.132 (0.286)	0.029 (0.178)	0.029 (0.178)
TE outside university	-0.260* (0.137)	-0.260* (0.137)	-0.099 (0.114)	-0.098 (0.114)	-0.183 (0.114)	-0.183 (0.114)	-0.217** (0.101)	-0.217** (0.102)
Frequency of hiring: weekly	-0.107 (0.171)	-0.106 (0.171)	0.011 (0.129)	0.010 (0.129)	0.090 (0.147)	0.090 (0.147)	-0.025 (0.120)	-0.025 (0.120)
Exp. as HR professional: ≥ 5 years	-0.104 (0.145)	-0.104 (0.146)	0.029 (0.143)	0.030 (0.143)	-0.107 (0.142)	-0.107 (0.142)	-0.055 (0.117)	-0.056 (0.117)
SE	0.022 (0.219)	0.018 (0.220)	0.118 (0.148)	0.121 (0.149)	-0.158 (0.200)	-0.159 (0.200)	0.163 (0.147)	0.161 (0.147)
N	1,210							

Notes. The following abbreviations were used: ref. (reference category), exp. (experience), SE (Student Employment), TE (Tertiary Education), uni. (university). The presented statistics are coefficient estimates and standard errors in parentheses. Standard errors are corrected for clustering of the observations at the participant level. \* (\*\*) (\*\*\*) indicates significance at the 10% (5%) ((1%)) level.

**Figure 1.** Comparison of statements between candidates with and without student employment experience.



Notes. See Table 2 for the complete statements. The y-axis shows the score on a Likert scale of 0 (completely disagree) to 7 (completely agree). We ran t-tests to control whether the differences are statistically different from zero. P-values of these tests are reported between parentheses.

**Table A-1.** Correlations between vignette factors.

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>1</b> Gender	1				
<b>2</b> Delay in study duration	-0.061	1			
<b>3</b> Grade obtained	0.018	0.019	1		
<b>4</b> Work experience as student	0.039	0.020	0.092	1	
<b>5</b> Extra-curricular activities	0.022	-0.062	-0.019	0.026	1

Note. \* (\*\*) (\*\*\*) indicates significance at the 10% (5%) ((1%)) level.



**Table A–2.** Required capabilities mentioned in vacancies.

<b>Vacancy</b>	<b>Requirements</b>
Physiotherapist	Responsibility for patient follow-up Team spirit Ability to work independently Social and communication skills No previous experience required
Human resources consultant	Responsibility for recruitment of new personnel Administrative skills Communication skills Insight into human behaviour No previous experience required
Project engineer	Team leader Communicative skills Analytically strong Organised No previous experience required

**Table A–3.** Regression results with one student work dummy variable and each statement as an outcome variable.

	Knowledge	Skills	Social capital	Trainability	Work attitude	Maturity	Sense of responsibility	Respect towards authority	Motivation	Ambition
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>A. Candidate characteristics</b>										
SE (ref. = none)	-0.018 (0.062)	0.288*** (0.064)	0.303*** (0.063)	0.099* (0.055)	0.401*** (0.068)	0.291*** (0.068)	0.294*** (0.066)	0.138*** (0.052)	0.292*** (0.057)	0.176*** (0.057)
Female	0.010 (0.049)	0.092** (0.046)	0.001 (0.046)	0.061 (0.043)	0.123** (0.050)	0.112** (0.050)	0.095* (0.051)	0.098** (0.047)	0.128*** (0.046)	0.088** (0.043)
Delay in study duration	-0.154*** (0.051)	-0.060 (0.048)	0.064 (0.050)	-0.045 (0.042)	-0.077 (0.058)	-0.081 (0.055)	-0.086 (0.057)	-0.053 (0.043)	-0.063 (0.045)	-0.044 (0.046)
Grade obtained (ref. = none)										
Cum laude	0.400*** (0.069)	0.324*** (0.069)	0.202*** (0.074)	0.206*** (0.060)	0.216*** (0.073)	0.213*** (0.074)	0.238*** (0.077)	0.050 (0.064)	0.237*** (0.065)	0.286*** (0.063)
Magna cum laude	0.558*** (0.080)	0.399*** (0.080)	0.173** (0.078)	0.258*** (0.062)	0.310*** (0.077)	0.346*** (0.073)	0.390*** (0.077)	0.090 (0.065)	0.289*** (0.066)	0.410*** (0.068)
Summa cum laude	0.763*** (0.076)	0.394*** (0.078)	0.175** (0.080)	0.261*** (0.070)	0.407*** (0.076)	0.389*** (0.081)	0.436*** (0.082)	0.177*** (0.067)	0.355*** (0.074)	0.516*** (0.082)
Extra-curricular activities (ref. = none)										
Fraternity	0.116* (0.067)	0.363*** (0.077)	1.228*** (0.091)	0.016 (0.064)	0.141* (0.079)	0.389*** (0.078)	0.473*** (0.082)	0.145** (0.063)	0.221*** (0.066)	0.432*** (0.073)
Sport activities	0.053 (0.072)	0.342*** (0.074)	0.711*** (0.078)	0.127** (0.059)	0.237*** (0.073)	0.296*** (0.061)	0.311*** (0.067)	0.148** (0.062)	0.256*** (0.065)	0.288*** (0.065)
Volunteering	0.107 (0.070)	0.351*** (0.080)	0.986*** (0.087)	0.245*** (0.063)	0.457*** (0.074)	0.584*** (0.075)	0.705*** (0.077)	0.305*** (0.057)	0.371*** (0.072)	0.251*** (0.071)

**Table A–3.** Regression results with one student work dummy variable and each statement as an outcome variable (continued).

	Knowledge	Skills	Social capital	Trainability	Work attitude	Maturity	Sense of responsibility	Respect towards authority	Motivation	Ambition
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>B. Participant characteristics</b>										
Female	0.222 (0.166)	0.058 (0.136)	-0.023 (0.125)	-0.067 (0.129)	-0.060 (0.119)	-0.011 (0.119)	-0.034 (0.126)	0.000 (0.107)	-0.134 (0.120)	-0.114 (0.127)
Age	0.010 (0.008)	0.010 (0.007)	0.004 (0.006)	0.003 (0.006)	0.001 (0.006)	0.008 (0.006)	0.004 (0.006)	0.004 (0.005)	0.006 (0.006)	0.005 (0.006)
Highest degree obtained (ref. = TE at uni.)										
Secondary education or lower	-0.237 (0.204)	-0.081 (0.185)	0.220 (0.195)	-0.133 (0.286)	-0.054 (0.201)	0.032 (0.183)	-0.013 (0.183)	-0.064 (0.191)	0.153 (0.215)	0.120 (0.223)
Tertiary education outside university	-0.245 (0.157)	-0.274** (0.130)	-0.099 (0.114)	-0.183 (0.114)	-0.222** (0.111)	-0.272** (0.111)	-0.214* (0.120)	-0.199** (0.095)	-0.206* (0.111)	-0.190 (0.118)
Frequency of hiring: weekly	-0.173 (0.192)	-0.041 (0.166)	0.011 (0.129)	0.090 (0.147)	-0.070 (0.136)	0.028 (0.130)	-0.055 (0.146)	-0.058 (0.117)	0.002 (0.126)	0.001 (0.135)
Experience as HR professional: ≥ 5 years	-0.110 (0.176)	-0.098 (0.142)	0.029 (0.143)	-0.107 (0.142)	-0.060 (0.124)	-0.032 (0.125)	-0.039 (0.130)	-0.034 (0.112)	-0.077 (0.130)	-0.091 (0.139)
SE	-0.143 (0.259)	0.187 (0.206)	0.118 (0.148)	-0.158 (0.200)	0.120 (0.179)	0.255 (0.190)	0.210 (0.199)	0.078 (0.113)	0.198 (0.154)	0.118 (0.155)
N	1,210									

Notes. The following abbreviations were used: ref. (reference category), exp. (experience), SE (Student Employment), TE (Tertiary Education), uni. (university). The presented statistics are coefficient estimates and standard errors in parentheses. Standard errors are corrected for clustering of the observations at the participant level. \* (\*\*) (\*\*\*) indicates significance at the 10% (5%) ((1%)) level.

**Table A-4.** Regression results with three student work dummy variables and each statement as an outcome variable.

	Knowledge	Skills	Social capital	Trainability	Work attitude	Maturity	Sense of responsibility	Respect towards authority	Motivation	Ambition
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>A. Candidate characteristics</b>										
SE (ref. = none)										
SE in summer and academic year	-0.022 (0.068)	0.219*** (0.070)	0.355*** (0.070)	0.099 (0.062)	0.357*** (0.077)	0.264*** (0.078)	0.334*** (0.073)	0.135** (0.059)	0.248*** (0.067)	0.118* (0.063)
SE with relation to field of study	0.073 (0.078)	0.408*** (0.084)	0.266*** (0.077)	0.147** (0.069)	0.460*** (0.084)	0.381*** (0.075)	0.342*** (0.083)	0.167** (0.066)	0.389*** (0.069)	0.257*** (0.072)
SE without relation to field of study	-0.107 (0.075)	0.234*** (0.074)	0.287*** (0.077)	0.048 (0.063)	0.383*** (0.078)	0.226*** (0.079)	0.202*** (0.077)	0.112* (0.059)	0.237*** (0.067)	0.152** (0.069)
Female	0.009 (0.048)	0.090* (0.046)	0.003 (0.046)	0.061 (0.043)	0.121** (0.051)	0.111** (0.050)	0.096* (0.051)	0.098** (0.047)	0.127*** (0.046)	0.086** (0.043)
Delay in study duration	-0.153*** (0.050)	-0.065 (0.048)	0.068 (0.050)	-0.044 (0.042)	-0.081 (0.058)	-0.082 (0.054)	-0.081 (0.057)	-0.052 (0.042)	-0.065 (0.044)	-0.049 (0.046)
Grade obtained (ref. = none)										
Cum laude	0.396*** (0.071)	0.305*** (0.071)	0.214*** (0.075)	0.204*** (0.061)	0.204*** (0.074)	0.204*** (0.073)	0.245*** (0.077)	0.048 (0.065)	0.225*** (0.066)	0.271*** (0.064)
Magna cum laude	0.549*** (0.080)	0.375*** (0.079)	0.186** (0.079)	0.253*** (0.063)	0.296*** (0.078)	0.333*** (0.072)	0.393*** (0.076)	0.086 (0.065)	0.272*** (0.065)	0.392*** (0.066)
Summa cum laude	0.758*** (0.077)	0.384*** (0.079)	0.180** (0.081)	0.258*** (0.071)	0.402*** (0.077)	0.382*** (0.081)	0.435*** (0.083)	0.175** (0.068)	0.348*** (0.074)	0.508*** (0.082)
Extra-curricular activities (ref. = none)										
Fraternity	0.131** (0.066)	0.378*** (0.076)	1.226*** (0.091)	0.024 (0.065)	0.147* (0.079)	0.402*** (0.077)	0.484*** (0.082)	0.149** (0.063)	0.233*** (0.066)	0.441*** (0.072)
Sport activities	0.065 (0.074)	0.354*** (0.075)	0.709*** (0.078)	0.134** (0.060)	0.243*** (0.074)	0.306*** (0.061)	0.319*** (0.069)	0.152** (0.063)	0.266*** (0.065)	0.296*** (0.065)
Volunteering	0.113 (0.070)	0.357*** (0.080)	0.985*** (0.087)	0.248*** (0.063)	0.460*** (0.074)	0.590*** (0.075)	0.710*** (0.077)	0.307*** (0.057)	0.377*** (0.072)	0.254*** (0.070)

**Table A-4.** Regression results with three student work dummy variables and each statement as an outcome variable (continued).

	Knowledge	Skills	Social capital	Trainability	Work attitude	Maturity	Sense of responsibility	Respect towards authority	Motivation	Ambition
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
<b>B. Participant characteristics</b>										
Female	0.222 (0.166)	0.057 (0.136)	-0.022 (0.125)	-0.067 (0.129)	-0.061 (0.119)	-0.012 (0.120)	-0.034 (0.126)	-0.000 (0.107)	-0.135 (0.120)	-0.115 (0.127)
Age	0.009 (0.008)	0.010 (0.007)	0.004 (0.006)	0.003 (0.006)	0.001 (0.006)	0.008 (0.006)	0.004 (0.006)	0.004 (0.005)	0.006 (0.006)	0.005 (0.006)
Highest degree obtained (ref. = TE at uni.)										
Secondary education or lower	-0.236 (0.205)	-0.082 (0.186)	0.221 (0.195)	-0.132 (0.286)	-0.055 (0.201)	0.032 (0.183)	-0.010 (0.182)	-0.063 (0.191)	0.153 (0.216)	0.119 (0.223)
Tertiary education outside university	-0.245 (0.157)	-0.276** (0.130)	-0.098 (0.114)	-0.183 (0.114)	-0.223** (0.111)	-0.272** (0.111)	-0.212* (0.120)	-0.199** (0.095)	-0.206* (0.111)	-0.191 (0.118)
Frequency of hiring: weekly	-0.172 (0.192)	-0.040 (0.166)	0.010 (0.129)	0.090 (0.147)	-0.070 (0.136)	0.029 (0.130)	-0.054 (0.146)	-0.058 (0.117)	0.003 (0.126)	0.002 (0.135)
Experience as HR professional: ≥ 5 years	-0.110 (0.177)	-0.099 (0.142)	0.030 (0.143)	-0.107 (0.142)	-0.061 (0.125)	-0.033 (0.125)	-0.038 (0.130)	-0.034 (0.112)	-0.077 (0.131)	-0.092 (0.139)
SE	-0.145 (0.260)	0.181 (0.206)	0.121 (0.149)	-0.159 (0.200)	0.117 (0.179)	0.253 (0.190)	0.211 (0.199)	0.078 (0.113)	0.194 (0.155)	0.114 (0.156)
N	1,210									

Notes. The following abbreviations were used: ref. (reference category), exp. (experience), SE (Student Employment), TE (Tertiary Education), uni. (university). The presented statistics are coefficient estimates and standard errors in parentheses. Standard errors are corrected for clustering of the observations at the participant level. \* (\*\*) (\*\*\*) indicates significance at the 10% (5%) ((1%)) level.

**Table A–5.** Duplication of Table 4 and Table 5 while excluding participants who did not feel (very) competent to make a hiring decision.

	Interview scale (1)	Hiring scale (2)	Human capital scale (3)	Social capital scale (4)	Trainability scale (5)	Attitude scale (6)
<b>A. Candidate characteristics</b>						
SE (ref. = none)	0.320*** (0.079)	0.217*** (0.068)	0.226*** (0.061)	0.315*** (0.067)	0.090 (0.062)	0.305*** (0.054)
Female	0.050 (0.064)	0.094* (0.055)	0.060 (0.047)	0.024 (0.052)	0.070 (0.048)	0.116*** (0.042)
Delay in study duration	-0.151** (0.065)	-0.130** (0.057)	-0.089* (0.048)	0.098* (0.056)	0.002 (0.047)	-0.047 (0.043)
Grade obtained (ref. = none)						
Cum laude	0.341*** (0.103)	0.261*** (0.083)	0.331*** (0.069)	0.193** (0.085)	0.191*** (0.067)	0.191*** (0.061)
Magna cum laude	0.576*** (0.101)	0.484*** (0.087)	0.490*** (0.081)	0.217** (0.088)	0.261*** (0.070)	0.316*** (0.065)
Summa cum laude	0.529*** (0.101)	0.431*** (0.091)	0.540*** (0.074)	0.202** (0.088)	0.245*** (0.076)	0.370*** (0.070)
Extra-curricular activities (ref. = none)						
Fraternity	0.243** (0.095)	0.227** (0.089)	0.229*** (0.070)	1.293*** (0.098)	-0.033 (0.072)	0.292*** (0.064)
Sport activities	0.422*** (0.088)	0.323*** (0.073)	0.229*** (0.071)	0.762*** (0.090)	0.127* (0.065)	0.292*** (0.056)
Volunteering	0.509*** (0.098)	0.405*** (0.089)	0.266*** (0.075)	1.007*** (0.094)	0.247*** (0.069)	0.488*** (0.064)

**Table A-5.** Duplication of Table 4 and Table 5 while excluding participants who did not feel (very) competent to make a hiring decision (continued).

	Interview scale (1)	Hiring scale (2)	Human capital scale (3)	Social capital scale (4)	Trainability scale (5)	Attitude scale (6)
<b>B. Participant characteristics</b>						
Female	-0.051 (0.189)	-0.265 (0.164)	0.122 (0.147)	0.034 (0.138)	-0.016 (0.135)	-0.060 (0.114)
Age	-0.003 (0.009)	-0.008 (0.008)	0.009 (0.007)	0.002 (0.006)	0.003 (0.007)	0.005 (0.006)
Highest degree obtained (ref. = TE at uni.)						
Secondary education or lower	0.512** (0.211)	0.125 (0.232)	-0.295 (0.184)	0.098 (0.202)	-0.219 (0.298)	-0.051 (0.186)
Tertiary education outside university	-0.279 (0.198)	-0.192 (0.154)	-0.357** (0.146)	-0.219* (0.132)	-0.317** (0.124)	-0.283*** (0.101)
Frequency of hiring: weekly	-0.199 (0.245)	-0.086 (0.186)	-0.075 (0.180)	0.071 (0.136)	0.163 (0.147)	-0.018 (0.122)
Experience as HR professional: ≥ 5 years	0.245 (0.188)	-0.058 (0.152)	-0.120 (0.135)	-0.040 (0.156)	-0.134 (0.146)	-0.060 (0.117)
SE	-0.355 (0.303)	0.074 (0.249)	0.065 (0.248)	0.093 (0.165)	-0.180 (0.224)	0.203 (0.164)
N	985					

Notes. The following abbreviations were used: ref. (reference category), exp. (experience), SE (Student Employment), TE (Tertiary Education), uni. (university). The presented statistics are coefficient estimates and standard errors in parentheses. Standard errors are corrected for clustering of the observations at the participant level. \* (\*\*) (\*\*\*) indicates significance at the 10% (5%) ((1%)) level.