

The importance of horizontal fit of university student jobs for future job quality

The
importance
of HF

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Abstract

Purpose – The purpose of this paper is to gain a better understanding of the antecedents of the quality of graduates' jobs when they enter the job market after university graduation.

Design/methodology/approach – Survey data collected from 173 Spanish bachelor and master's degree university graduates at two time points (two months before and six months after graduation, approximately) were analyzed by means of path analysis.

Findings – A moderated mediation model was tested, where the relationship between the horizontal fit (HF) between the university degree subject and the student's job and the quality of the graduate's job after graduation is mediated by self-perceived employability and moderated by the time devoted to a student job. Results showed that the relationship between HF and job quality was partially mediated by self-perceived employability. However, contrary to the proposed hypothesis, this relationship did not depend on the time devoted to a student job.

Originality/value – This study contributes to improving the understanding about how and why university students' work experience is related to the quality of their jobs as fresh graduates.

Keywords Job quality,

Horizontal fit while studying (fit between university degree subject and student job),

Self-perceived employability, Time devoted to a student job

Paper type Research paper

In many OECD countries, the majority of university students participate in student employment, i.e., any form of paid work by students during the summer or academic year, while studying. In fact, at least 40 percent of emancipated students (i.e. students whose parents are no longer legally responsible for them) from the majority of countries involved in the



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EUROSTUDENT Project had a paid student job while obtaining their degree (Hauschildt *et al.*, 2015). According to human capital theory (Becker, 1964), this work experience should help students to find high-quality jobs after graduation because it provides them with additional skills and knowledge that can increase their productivity in future jobs. However, some research works suggest that it is not only important to have work experience while studying, but also that the horizontal fit (HF) of this experience really matters (Weiss *et al.*, 2014). HF refers to the extent to which a student's job is related to his/her degree subject. Research on the relationship between the HF of students' jobs and the quality of jobs they obtain after graduation is a new area of inquiry, and we still do not have a clear understanding of the mechanisms linking these two variables, or of other variables that may affect this relationship.

Filling this gap is important for theoretical and practical reasons. Theoretically, research on this issue can help us to better understand how and why the HF of students' jobs is related to the quality of the first jobs of fresh graduates, and to identify relevant boundary conditions. Practically, it can suggest ways for university students to increase the likelihood of obtaining a high-quality job after graduation. This is of utmost importance if we take into account that the quality of one's first jobs can have profound effects on one's future career success (Saks and Ashforth, 2002).

With this contribution, we aim to advance theory and practice by testing a moderated mediation model in which self-perceived employability is the construct linking student jobs' HF with job quality after graduation, and where time devoted to a student job is included as a moderator. We focus on employability because previous research has indicated that graduates who perceive themselves as highly employable aim for fitting qualified jobs (García-Montalvo *et al.*, 2006).

Prior studies mainly explored the predictive value of attributes and skills graduates must have to enhance their employability (Akkermans *et al.*, 2015) and that heighten their chances for successful entrance into the job market (Jackson and Chapman, 2012). Specifically, these studies focused on the role of educational institutions in enhancing graduates' employability and making a smooth school-to-work transition (Donald *et al.*, 2017; Donald *et al.*, 2018; Tomlinson, 2012).

The present study advances the scholarly literature in this domain by adding a Person-Job (P-J) fit perspective, and it aims to better understand the antecedents of the quality of the jobs graduates obtain when they enter the job market after graduation. P-J fit refers to the match between employee characteristics and job characteristics, and previous research indicated that it is positively related to employees' individual and organizational attitudes and behaviors, such as mental and physical health, job satisfaction, organizational commitment and performance (Edwards and Shipp, 2007; Kristof-Brown *et al.*, 2005).

In particular, we will investigate a moderated mediation model. Specifically, HF (between the student's university degree subject and the student's job) will be incorporated as a possible predictor of the quality of the jobs obtained within six months after graduation, with self-perceived employability as an assumed mediator in this relationship. In addition, we will examine whether time devoted to a student job moderates the hypothesized positive effect of HF on self-perceived employability, such that the indirect "effect" of HF on job quality through self-perceived employability is moderated by the time devoted to a student job.

Building on earlier exemplary work by González-Romá *et al.* (2018), our research model will incorporate three indicators of job quality after graduation as outcome variables: HF (i.e. the fit between graduates' specific field of study or university degree subject and their job's field); vertical fit (VF) (i.e. the fit between the educational level obtained by a university graduate and the educational level required by the job); and the job's hierarchical level.

The sample in the present study is made up of Spanish university graduates. Spain is a country with a relatively high unemployment rate among people under 25 years of age (with an average of 34.7 percent from 1986 to 2017; and only the EU member state of Greece has a higher

percentage, at 43.3 percent; see <http://tradingeconomics.com/spain/youth-unemployment-rate>, Peiró *et al.*, 2012). Unemployment is related to negative outcomes such as poorer self-reported health (Bambra and Eikemo, 2009), higher risk of mortality and debilitating illnesses (Roelfs *et al.*, 2011) and a higher prevalence of risk behaviors, such as smoking, excessive alcohol consumption and less healthy lifestyles (Stuckler *et al.*, 2009) particularly in young people (Aguilar-Palacio *et al.*, 2015). In this specific context, gaining more knowledge about ways to increase graduates' (self-perceived) employability is of utmost societal importance.

The intended added value of this contribution is threefold. First, the present study will advance the scholarly literature in this domain by adding a P-J fit perspective, which can help us to uncover some of the antecedents of the quality of graduates' jobs after graduation. Second, Holmes (2013) conceptually distinguished three competing perspectives on university graduates' employability: a possessive (of human capital: skills and attributes); a positioning (based on social capital); and a processual (based on career self-management) perspective (see also Okay-Somerville and Scholarios, 2015). Employability during university-to-work transitions has predominantly been studied from the two former perspectives. Instead, this study focuses on the third perspective, i.e., career self-management, by exploring the role of proactive career behaviors, such as engaging in a student job that is aligned with one's university degree subject, as a possible antecedent of the quality of the jobs obtained after graduation. Third, while self-perceived employability is a relatively new construct within the broader employability literature, there is serious lack of attention to self-perceived employability among graduates (Caricati *et al.*, 2016). This study will add to the employability literature by focusing on self-perceived employability among university graduates in the contemporary career context, where individual responsibility and contextual factors are intertwined (Clarke, 2008).

Hypothesis development

HF, time devoted to a student job, and self-perceived employability

In the context of our study, employability can be defined as the extent to which students possess the skills and other attributes to find employment and stay employed in the type of job they want (Rothwell and Arnold, 2007). Fostering university graduates' employability throughout their working lives in rapidly changing labor markets is also a major goal of the European Higher Education Area (EHEA), and it is one of three goals established by the ministers responsible for higher education in all 47 countries involved in the EHEA, (2012).

Specifically, employability refers to the ability to be employed (Van der Heijde and Van der Heijden, 2006), and it has been studied across disciplines, resulting in a variety of different interpretations and definitions (Forrier and Sels, 2003). In this study, we concentrate on the psychological notion of employability, comprising interpretations of subjectivity and perceptions, which are most obvious in the concept of "perceived" employability (Vanhercke *et al.*, 2014). Particularly, in our case, self-perceived employability refers to the university graduate's perception of his or her possibilities of obtaining and maintaining employment (see also Berntson and Marklund, 2007; Matsouka and Mihail, 2016; Monteiro *et al.*, 2016), and it implies the integration of personal factors, contextual factors and their interactions. For example, a university graduate in business administration without any work experience in that particular field (personal factor) will probably perceive him- or her-self as less employable than a graduate who worked as a student in job recruiting and selecting people for an employment agency. Self-perceived employability also accounts for contextual factors (see for instance Gamboa *et al.*, 2009), such as the specific labor market situation in a certain country (see also Clarke, 2018).

Graduates who build up knowledge and skills that enable them to be better prepared to survive in an increasingly competitive job market are more likely to meet the growing expectations about the necessary repertoire of competencies (GCA, 2012) and address future employers' concerns about the work-readiness of the graduate labor supply (CIPD, 2012).

In today's society, all the members of the labor market, including graduates, are increasingly held responsible for preserving their own employability (or career potential) (Van der Heijde and Van der Heijden, 2006) and their future career successes and failures (Van Vianen *et al.*, 2009). Therefore, we argue that graduates who have invested in building up knowledge and skills through performing student jobs that have a good HF with their university degree will perceive themselves as being more employable than graduates who have worked in jobs with a worse fit.

In student jobs that match the university degree of graduates (i.e. jobs with a high HF), more work-integrated learning takes place. Work-integrated learning provides students with a clear understanding of the responsibilities, standards and expectations of their chosen profession (Simon, 2004), and it facilitates the development of labor market awareness, decision-making, "transition" capabilities (Jackson and Wilton, 2017) and job-seeking networking, which, in turn, enhance one's employability perceptions (Chiesa *et al.*, 2019). By working in jobs with a high HF, students have the opportunity to apply knowledge and skills acquired while studying their degree subject, and to develop new relevant technical and non-technical skills required in their (future) jobs (Jackson, 2016). Thus, work-integrated learning promoted by student jobs with a high HF enhances self-perceived employability (see also Rothwell *et al.*, 2009).

More specifically, previous work experience through a valuable student job in one's degree domain is said "to increase human capital (via hands-on experience), social capital (via professional network development) and career identity and adaptability by providing a realistic preview of working life and its requirements" (Okay-Somerville and Scholarios, 2015, p. 4). These person-centered employability dimensions (Fugate *et al.*, 2004) should be positively related to self-perceived employability. Therefore, we propose the following:

- H1. The HF (match with the university degree subject) of graduates' student jobs is positively related to their self-perceived employability.

In addition, building on the scholarly work by Jackson and Wilton (2016), we claim that the positive relationship between the HF of graduates' student jobs and their self-perceived employability is moderated by the amount of time graduates devote to a student job. In particular, the authors found that the short duration of undergraduate work placements is a barrier to the development of career management competencies, such as networking for future employer prospects, and it might also hinder the development of students' self-perceptions of employability. Thus, the rationale underlying this moderation effect is that the more time they devote to horizontally fitting student jobs, the more opportunities they have to harvest the benefits of work-integrated learning by applying knowledge and skills acquired in their degree subject and developing new relevant skills for future jobs (Allen *et al.*, 2013). Therefore, we formulate the following:

- H2. The positive relationship between the HF of graduates' student jobs and their self-perceived employability is moderated by the time devoted to a student job, so that this relationship is stronger when the amount of time is higher.

Self-perceived employability and job quality

Job quality is a complex construct that has been measured using distinct types of indicators (González-Romá *et al.*, 2018). The European Commission's (2002) Employment in Europe report recommends that job quality measures include objective indicators and subjective evaluations of the employee-job match. Therefore, we conceptualized job quality as the extent to which a job has certain objective characteristics, and to what degree there is a fit (or match) between the job requirements and the job incumbent's characteristics. We incorporated the hierarchical level as an objective job indicator. With regard to subjective

indicators, i.e., the perceived fit (or match), we incorporated the fit between university graduates' specific field of study and their job after graduation (HF), and the fit between the educational level attained by university graduates and the educational level required by their job after graduation (VF).

According to Chiesa *et al.* (2019), self-perceived employability improves one's personal sense of mastery regarding career opportunities, and it is of the utmost importance in surviving in the current labor market (Fugate *et al.*, 2004) and achieving career success (Van der Heijden *et al.*, 2009, 2018). In addition, in the context of sustainable careers (Van der Heijden and De Vos, 2015), Di Fabio (2017) argued that in contemporary career and life construction, an important focus of employability management would be meaningful work and individuals' personal values and well-being.

Therefore, we posit that graduates' self-perceived employability is positively related to the quality of the jobs they obtain after earning their degree. Graduates who rate their own employability higher will take a more positive approach to the labor market and all of its challenges (McArdle *et al.*, 2007). Because they believe that they have a broader arsenal of knowledge and skills that enable them to find suitable employment, they are likely to be more adaptable to novel situations, such as the university-to-work transition, and more motivated and selective in their search for a job that fits their specific field of study and educational level. Thus, they will enact behaviors that are consistent with their self-perceptions, which also influence their personal goals of obtaining a qualified job (Ashforth and Fugate, 2001). Based on this line of reasoning, it has been suggested that graduates who perceive themselves as highly employable aim for high-quality jobs (García-Montalvo *et al.*, 2006) because they would be aligned with the values of the (type of) job they want and deserve (Van der Klink *et al.*, 2016) in contemporary careers (Van der Heijden and De Vos, 2015). Therefore, we propose the following:

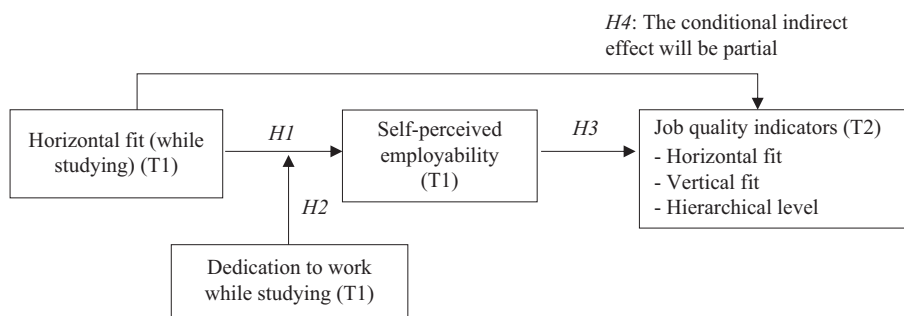
- H3. Self-perceived employability is positively related to the three job quality indicators considered after graduation: HF, VF and job hierarchical level.

The moderating role of time devoted to a student job in the indirect "effect" of HF on job quality through self-perceived employability

Considering H1–H3 together, we argue that time devoted to a student job moderates the indirect "effect" of HF on job quality via self-perceived employability, thus proposing a moderated mediation model (see Figure 1). Because employability plays a key role in the process of obtaining a high-quality job, we posit that students' self-perceptions about whether they possess the knowledge and skills required for the current labor market (i.e. their career potential) transmit the influence of HF (conditioned by the levels of time devoted to a student job) on job quality when they enter the job market after graduation. As we explained above, graduates who devote more time to horizontally fitting student jobs have more opportunities to apply the competencies (i.e. knowledge and skills) acquired during their studies and develop new competencies for future jobs (Allen *et al.*, 2013), which, in turn, will be positively related to job quality (see also Pérez *et al.*, 2018). In other words, relevant work experience is assumed to be crucial for successfully bridging education and employment because it gives graduates a competitive advantage in terms of career planning skills and knowledge of the industry (Jackson and Wilton, 2016), which are strengthened by the accumulation of work-related activities (Tomlinson, 2017).

Together, these relationships will result in a positive indirect "effect" of HF on job quality, and this effect will be stronger when the amount of time devoted to a student job is higher. In our model, we propose partial mediation because there can be other mediators linking the HF of students' jobs to job quality after graduation that we did not measure but can account for the expected direct relationship between the aforementioned variables

Figure 1.
Hypothesized
moderated
mediation model



Notes: The control variables are not shown for the sake of clarity. T1: Time 1 (about two months before graduation); T2: Time 2 (about six months after graduation)

(Hayes, 2013). For example, graduates who acquired relevant knowledge and skills in jobs highly related to their degree field while they were students will be in a better position to meet employers' expectations and, thus, more attractive candidates for high-quality jobs (e.g. Allen and Van der Velden, 2001; Jackson and Wilton, 2016). Therefore, we propose the following:

- H4.* The positive indirect "effect" of the HF of students' jobs on job quality indicators (HF, VF and job hierarchical level) through graduates' self-perceived employability is moderated by the time devoted to a student job, so that the indirect "effect" is stronger when the amount of time devoted to a student job is larger.

Method

Participants and procedure

All of the bachelor and master's degree students at a public University in Spain ($n = 10,307$) were invited to participate in the study via e-mail approximately two months before graduation (Time 1; May 2015). In the same e-mail, they were informed that if they participated, they would receive another questionnaire approximately six months after graduation (Time 2) to ask them about their jobs. This six-month period has been used in previous studies (e.g. McArdle *et al.*, 2007) and should be long enough to allow participants to find a job after graduation. The project was approved by the Research Ethics Committee at the university, and anonymity and confidentiality of responses were guaranteed. All the participants were asked for their informed consent. To encourage participation, a free training course of their choice (on team building, job interviews, leadership or time management) was offered to those who participated in both waves. Additionally, several reminders were sent at both time points.

At Time 1, a total of 1,087 students responded to the survey. At Time 2, 503 of them responded to the second survey. Attrition analyses (based on *t*-tests and chi-square tests) showed that there were no significant differences between graduates who responded at both times and those who responded only at Time 1, in terms of gender, age, social class, level of studies or field of study. We also compared Time 2 respondents and non-respondents on the Time 1 model variables: HF, time devoted to a student job and self-perceived employability. None of the *t*-tests performed were statistically significant. More details about these analyses can be obtained from the corresponding author upon request. Finally, to test our hypotheses, we selected only those graduates who had a job while studying (regardless of the time devoted to a student job) and a job after graduation. The final sample was made up of 173 graduates.

In the final sample, 57.8 percent had completed a Bachelor's degree and 42.2 percent had a Master's degree. In total, 70 percent were female, and the average age was 26.75 years

(SD = 6.42). All the university degree fields were represented. In particular, 57.2 percent of the participants had received their Bachelor/Master's degrees in social sciences, 23.7 percent in health sciences, 12.7 percent in humanities, 4 percent in natural sciences and mathematics, and 2.3 percent in engineering.

Measures

HF while studying (fit between university degree subject and student job) was measured at T1 by means of the question used by González-Romá *et al.* (2018), adapted to students' jobs while studying. Specifically, students were asked to answer the following question: "To what extent is the job you have been performing while studying related to the university degree subject you are completing?" The response scale ranged between 1 (not at all) and 4 (a lot).

Time devoted to a student job. At T1, students were asked about their main activity while completing their bachelor degree/master's degree. Specifically, we used four response options (studying (only); studying + occasional job (summer, weekends, private tutoring, etc.); studying + part-time job; and studying + full-time job)). For the purposes of this study, students who chose response option 1 were excluded.

Self-perceived employability was measured at T1 by means of a three-item scale developed for this study, based on the scale used by Gamboa *et al.* (2009). We asked whether, in the current labor market situation, the students believed it would be possible: to work for an organization of their preference; to find a job that fits their educational level and experience; and to find a job with the workday schedule (part-time or full-time) they prefer. Items were responded to using a six-point Likert scale (1 – totally disagree, 6 – totally agree). We factor-analyzed the items by using unweighted least squares estimation and Oblimin rotation. Results supported a one-factor solution that explained 69.3 percent of the variance. The item factor loadings were all larger than 0.81. Cronbach's α was 0.87.

Quality of graduates' jobs after graduation. We used three indicators of job quality: two measures of P-J fit (horizontal and VF) and job hierarchical level. All of these variables were measured at T2. HF after graduation (fit between university graduates' specific field of study and their job field after graduation) was measured with the question used by González-Romá *et al.* (2018): "To what extent is your current job related to your university degree subject?" The response scale ranged between 1 (not at all) and 4 (a lot). In order to measure VF after graduation (fit between the educational level obtained by a university graduate and the educational level required by his/her current job), we asked the participants to indicate the educational level required by their current job (none, compulsory education, vocational education – first level, vocational education – second level, high school and university degree). Based on González-Romá *et al.* (2018), and given that all the participants were university graduates, the responses obtained were used as indicators of the respondents' VF. In order to measure "Job hierarchical level after graduation," we asked participants about the hierarchical level of their current job, differentiating between six ranks: base-level workers, administrative personnel, mid-level technical staff, high-level technical staff, middle managers and top managers.

Control variables. We controlled for a number of relevant factors. First, earlier research reports that sex and age are related to underemployment indicators, such as educational misfit, and other job quality indicators, such as salary and job hierarchical level (e.g. Béduwé and Giret, 2011; Konrad and Cannings, 1997; Prause and Dooley, 2011; Weststar, 2011; Yap and Konrad, 2009). Therefore, we controlled for graduates' sex (1 – male; 0 – female) and age. Second, taking into account that graduates' social class is expected to be related to their labor market orientations and choices (Tomlinson, 2012), such as investments in postgraduate education and social contacts, which, in turn, influence their careers, we also controlled for graduates' social class. Specifically, we asked students to choose among five

possible ranks: 1 (lower) to 5 (upper). Third, because the educational level attained (Bachelor vs Master's degrees) is a form of human capital that can affect job quality, we also controlled for this variable. Fourth, because different academic fields (e.g. humanities vs engineering) have different underemployment rates, which affect the quality of the jobs graduates finally accept, we also controlled for this variable. Fifth, we controlled for whether the specific degrees taken by the participants had mandatory internships (1) or not (0). Internships have been considered useful tools for helping graduates to acquire occupation-specific skills (e.g. Scholz *et al.*, 2004), to learn cultural codes prevalent in a particular organization or occupation and to facilitate social networking with potential employers and employees. These are forms of human, cultural and social capital which can facilitate obtaining better jobs (see Klein and Weiss, 2011). Additionally, there is evidence that all the control variables considered are also related to self-perceptions of employability (Caricati *et al.*, 2016; Qenani *et al.*, 2014). Finally, considering that some graduates kept the jobs they had while they were studying (specifically, 54.3 percent), we also controlled for whether participants had changed jobs from T1 to T2 (1 – yes; 0 – no).

Analyses

The hypotheses of our moderated mediation model (see Figure 1) were simultaneously tested by means of path analysis using Mplus 8 (Muthén and Muthén, 1998–2015). Specifically, considering that strong departures from normality were found in the distribution of some of the variables, we used robust maximum likelihood estimation methods. In addition, the two predictors (HF and time devoted to a student job) were mean-centered before computing the interaction term, and the three indicators of job quality were allowed to correlate in our research model. Because we expected all the hypothesized effects to be positive, we tested the statistical significance of the path coefficients involved by using one-tailed tests, which are suitable for directional hypotheses (e.g. Wonnacott and Wonnacott, 1984).

Results

Table I shows the means, standard deviations and correlations of the study variables. In order to increase the degrees of freedom, and considering that not all the control variables correlated significantly with every endogenous variable in our model, we only included the paths where the bivariate correlations between the control and endogenous variables were statistically significant (see Table I).

The hypothesized moderated mediation model showed a satisfactory fit to the data ($\chi^2 = 31.77$; $df = 24$, $p > 0.05$; RMSEA = 0.043; CFI = 0.973; TLI = 0.945; SRMR = 0.046). The results of the path analysis are shown in Table II and summarized in Figure 2. As expected, after partialing out the effects of the control variables, the HF (match with university degree subject) of a student's job while studying (T1) was positively related to self-perceptions of employability (also measured at T1) ($\beta = 0.17$; $p < 0.05$). Thus, *H1* was supported by our data.

However, contrary to our expectations, time devoted to a student job did not significantly moderate the relationship between HF while studying and self-perceived employability ($\beta = 0.10$; $p > 0.05$). Thus, *H2* was not supported. Regarding *H3*, our results show that self-perceived employability at T1 predicted job quality after graduation. As expected, the relationship between self-perceived employability before graduation (T1) was positively related to the three indicators of job quality after graduation (T2): HF ($\beta = 0.22$; $p < 0.01$), VF ($\beta = 0.24$; $p < 0.01$) and job hierarchical level ($\beta = 0.24$; $p < 0.01$).

Finally, because time devoted to a student job did not significantly moderate the first path in the hypothesized mediation chain (HF while studying at T1 → self-perceived

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Compulsory internship (1, yes)	0.60	0.49															
2. Age	26.75	6.64	-0.30**														
3. Sex (1, male)	0.30	0.46	-0.08	0.15*													
4. Field D1 (1, natural/math)	0.04	0.20	-0.13*	-0.10	0.06												
5. Field D2 (1, health)	0.24	0.43	-0.21**	0.12	-0.04	-0.11											
6. Field D3 (1, social)	0.57	0.50	0.10	-0.12	-0.02	-0.24**	-0.65**										
7. Field D4 (1, engineering)	0.02	0.15	0.13*	0.03	0.15*	-0.03	-0.09	-0.18*									
8. Level of studies (1, master)	0.42	0.50	-0.56**	0.25**	0.13#	-0.06	-0.12	0.24**	-0.13*								
9. Social class	2.61	0.71	0.06	-0.07	-0.10	-0.05	0.12	0.03	-0.08	0.08							
10. Job change from T1 to T2 (1, yes)	0.54	0.50	0.26**	-0.31**	-0.01	0.01	0.07	-0.02	-0.09	-0.18*	-0.10						
11. Time devoted to a student job T1	1.53	0.72	-0.17*	0.45**	0.06	-0.03	0.10	-0.07	-0.01	0.11	-0.04	-0.41**					
12. Horizontal fit T1	2.23	1.13	-0.10	0.02	0.22**	-0.07	0.03	0.00	-0.07	0.16*	0.13	-0.09	0.05				
13. Self-perceived employability T1	3.23	1.21	0.002	0.13*	0.16*	0.02	0.12	-0.01	0.00	0.05	0.22**	-0.09	0.04	0.23**	(0.87)		
14. Horizontal fit T2	2.53	1.24	0.11	-0.10	0.10	-0.09	0.23**	-0.10	0.06	-0.03	0.16*	0.21**	-0.03	0.35**	0.31**		
15. Vertical fit T2	4.76	1.83	-0.13*	0.07	0.02	-0.05	0.14*	-0.06	0.06	0.21**	0.15*	0.12	0.09	0.29**	0.32**	0.67**	
16. Job hierarchical level T2	2.56	1.52	0.04	0.05	0.01	-0.02	0.29**	-0.17*	0.05	0.07	0.19*	0.15*	0.04	0.30**	0.32**	0.62**	0.60**

Notes: Fields D1–D4 (dummy variables for academic degree field. Reference category: Humanities). Control variables 1–9 were measured at T1. For multi-item scales, Cronbach's α is shown on the diagonal between brackets. * $p < 0.05$, ** $p < 0.01$ (one-tailed tests)

Table I.
Descriptive statistics
and correlation matrix
among the study
variables

Table II.
Summary of
structural equations in
the path analysis

Equation	β	SE	R^2
1. DV: self-perceived employability (T1)			0.13**
Age	0.14*	0.08	
Sex	0.13*	0.07	
Social class	0.21**	0.08	
Horizontal fit (T1)	0.17*	0.08	
Time devoted to a student job (T1)	-0.03	0.09	
Horizontal fit \times Time devoted to a student job (T1)	0.10	0.07	
2. DVs: job quality indicators (T2)			
Horizontal fit (T2)			0.24**
Field D2 (health)	0.18**	0.07	
Changed jobs from T1 to T2	0.14**	0.06	
Self-perceived employability (T1)	0.22**	0.07	
Horizontal fit (T1)	0.31**	0.07	
Vertical fit (T2)			0.27**
Field D2 (health)	0.14*	0.07	
Level of studies	0.14*	0.06	
Self-perceived employability (T1)	0.24**	0.07	
Horizontal fit (T1)	0.19**	0.07	
Job hierarchical level (T2)			0.21**
Field D2 (Health)	0.25**	0.08	
Self-perceived employability (T1)	0.24**	0.07	
Horizontal fit (T1)	0.27**	0.07	

Notes: DV, dependent variable. Regression coefficients are standardized. Only control variables that showed significant effects in the path analysis are included in Table II for the sake of clarity. However, for each equation, control variables that showed bivariate significant correlations with the corresponding outcome variable were included. * $p < 0.05$; ** $p < 0.01$ (one-tailed tests for regression coefficients)

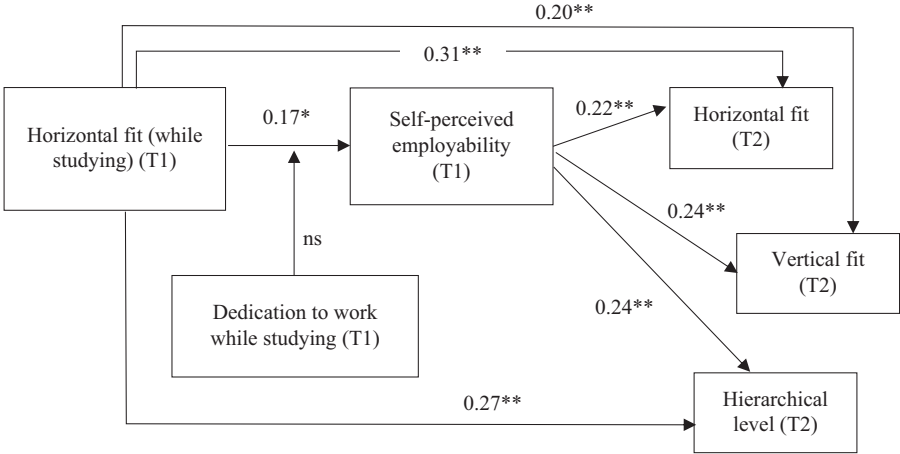


Figure 2.
Summary of
relationships
in the moderated
mediation model

Notes: The control variables are not depicted for the sake of clarity. Standardized regression coefficients are shown. The three indicators of job quality were allowed to correlate. T1: Time 1 (about two months before graduation); T2: Time 2 (about six months after graduation). * $p < 0.05$; ** $p < 0.01$ (one-tailed)

employability at T1), we did not find support for *H4*. Consequently, the strength of the indirect “effect” of HF while studying on job quality indicators after graduation does not depend on time devoted to a student job. This result, along with the support for *H1* and *H3*, suggests that the influence of HF while studying on the three job quality indicators considered (HF, VF and job hierarchical level) is indirect, via self-perceived employability.

Therefore, we tested whether the three indirect effects involved in Figure 1 (the product of the coefficients involved in the two paths of each of the three mediation chains) were statistically significant. Considering that the product of regression coefficients involved in mediation is not normally distributed, we tested the significance of the indirect effects by means of maximum likelihood bootstrapped standard errors (see MacKinnon, 2008). We used the percentile bootstrap method, which keeps a good balance between Type I error rates and power (Hayes and Scharkow, 2013). Specifically, 10,000 bootstrapped samples were used to estimate the indirect effects, and the 90% confidence interval was obtained at the 5th and 95th percentiles, to correspond to one-tailed $\alpha = 0.05$ hypothesis testing for the indirect effects (see Preacher *et al.*, 2010).

The three indirect effects were statistically significant. The standardized indirect effect of HF while studying on job quality indicators after graduation was, respectively, 0.035 (90% CI: 0.011, 0.082) for HF after graduation, 0.039 (90% CI: 0.012, 0.085) for VF after graduation and 0.039 (90% CI: 0.010, 0.091) for job hierarchical level. Considering that, after controlling for self-perceptions of employability, HF while studying positively predicted the three indicators of job quality after graduation ($\beta = 0.31$; $p < 0.01$, for HF, $\beta = 0.19$; $p < 0.01$, for VF and $\beta = 0.27$; $p < 0.01$, for job hierarchical level), it can be concluded that the mediation is partial.

Discussion

The goal of this study was to test a moderated mediation model of the relationship between the HF of university students' jobs while completing their degrees and the quality of the jobs within, approximately, six months after graduation. The results showed that the aforementioned relationship was partially mediated by self-perceived employability. However, contrary to our expectations, this relationship did not depend on the time devoted to a student job. These results have a number of theoretical and practical implications that we discuss next.

Theoretical implications

First, our results help to uncover one of the mediating mechanisms (self-perceived employability) linking HF of university students' jobs to the quality of their jobs after graduation. Our findings suggest that performing a student job with a high HF provides subjects with an opportunity to apply and develop skills learned at the university and acquire new ones that can be relevant for future jobs (Jackson, 2016). This enhances their perceptions of the possibilities of obtaining and maintaining employment of their choice once they enter the labor market (Rothwell *et al.*, 2009), which is very important in terms of the sustainability of their careers (Van der Heijden and De Vos, 2015). In twenty-first century careers, this increased self-perceived employability helps graduates to be more motivated and selective in their search for a job that fits their field of study and educational level, seems to be aligned with their personal values and is associated with more meaningful work and well-being (Di Fabio, 2017).

As a result, graduates with higher self-perceived employability tend to find higher quality jobs (see Gamboa *et al.*, 2009). Thus, our study offers a plausible explanation for why the HF of university students' jobs positively predicts the quality of their jobs just after graduation.

Second, the fact that the amount of time devoted to a student job did not enhance the positive indirect effect of HF of students' jobs on the quality of their first jobs may be interpreted from a signaling theory perspective (Spence, 1973). This theory suggests that because employers have difficulties in inferring job applicants' productivity when making hiring

decisions, they have to rely on proxies or signals. Our results suggest that the amount of time devoted to a student job is not a relevant signal for employers who want to hire university graduates for higher quality jobs. However, having work experience as a student that is highly related to the university degree subject seems to be an important signal. Employers may interpret this experience as an expectation of reduced training costs (Weiss *et al.*, 2014) because it may help them to feel less uncertain about graduates' future productivity.

Third, this is the first study to add a P-J fit perspective to the scholarly work on the employability of university graduates in today's career context. In particular, because the school-to-work transition comprises a so-called "weak" situation characterized by a high amount of uncertainty (Lechner *et al.*, 2016), for which no well-defined script is available, we argue that the different ways individuals engage in career management behaviors may have profound effects on their subsequent employability and resulting P-J fit throughout their careers.

The P-J fit perspective applied in our study has important implications for career theory. The results obtained suggest that university students that have student jobs with a high HF are in a position to develop and acquire relevant knowledge and competencies for their future profession, which will allow them to obtain better career outcomes (i.e. higher quality jobs) in their early professional careers. This idea is also congruent with human capital theory (Becker, 1993), which posits that competencies developed and acquired by subjects allow them to attain valued career outcomes. In addition, the acquired competencies will help them to handle the increasing precariousness and uncertainty of the current labor market (Sullivan and Baruch, 2009; Wang and Wanberg, 2017) and reach valued goals (e.g. obtaining high-quality jobs). This idea is coherent with the conservation of resources (COR) theory (Hobfoll, 1989), as applied to the career domain. COR theory assumes that resources (e.g. competencies) are critical for attaining valued goals (e.g. a high-quality job) and preventing resource loss when external conditions are not optimal (Hobfoll *et al.*, 2018). All of this suggests that the P-J fit adopted in our study can be linked to other perspectives used in the professional career domain (Spurk *et al.*, 2019), offering a richer theoretical perspective on the investigated phenomenon.

Practical implications

The results of this study are not only relevant for university graduates, but also for educational institutions and their (future) employers. On the one hand, all the parties involved have to align their efforts to optimize graduates' P-J fit in order to yield positive outcomes for graduates entering the labor market and the organizations where they work. Because our empirical study indicates that a good HF while studying is important, students should try to carefully select student jobs that are aligned with their interests and university degree fields. Thus, they should take ownership of their careers when they decide what types of student jobs to perform (Van der Heijden and De Vos, 2015).

On the other hand, in order to develop competencies that increase their students' employability, educational institutions should support students in aligning their jobs with their university curriculum (Kuijpers and Scheerens, 2006), and they should provide them with institutional recognition of extra-curricular achievement while at the university (Muldoon, 2009). Universities could do this by informing their career counselors and placement services about the importance of student jobs with a high HF in increasing graduates' employability and the quality of their future jobs. The active involvement of university career counselors and university placement centers could provide a means to influence the decisions of students who want to have a job while studying and foster HF while studying.

Finally, graduates' employability can be further enhanced if employers focus on conscientious selection and socialization processes and invest in carefully aligning the graduates' first jobs with their university degree subject. Additional training and development programs could also be provided to further develop their occupational expertise and employability (Van der Heijden *et al.*, 2016).

Limitations and recommendations for future research

This study has a number of limitations that have to be kept in mind when interpreting the results. First, all the data were obtained by means of self-report measures, which might have inflated the model relationships due to common-method variance (Podsakoff *et al.*, 2003). However, correlations among the model variables differed in size, and some were close to 0, suggesting that common-method variance was not an important concern in this case. Second, some of our measures were based on a single item (e.g. horizontal and VF, hierarchical level). Although this practice is not new in the field (McArdle *et al.*, 2007), it may have reduced the reliability of the involved measures and their correlations with other variables. However, this did not seem to be a serious concern in the present study because most of the variables measured with one-item scales showed the expected significant correlations with the other model variables (see Table I), which provides evidence of convergent validity (see also Wanous and Hudy, 2001 on their insightful reflections on the value of one-item measures). Third, although we implemented a time-lagged design with two measurement points, our predictor and mediator variables were measured at the same time point. This might have inflated the observed relationships between them. Finally, considering our low response rates, the high attrition between time periods, and the restrictions on becoming part of our final sample (participants were required to have a job while studying and six months after graduation), the final study sample size was modest at best. This introduces concerns about the power to detect some of the hypothesized effects that were not significant, and about the generalizability of the results. Thus, the hypothesized model should be tested using larger samples to further validate our findings.

The partially mediated relationship of the HF of students' jobs with graduates' job quality suggests that other mediating mechanisms, apart from self-perceived employability, may also play a mediating role in the aforementioned relationship. Future research should try to uncover possible alternative mediators. A plausible set of candidates would be the person-centered dimensions of employability proposed by Fugate *et al.* (2004), that is, human capital, social capital, career identity and personal adaptability. Previous research has shown that these dimensions are related to job quality (González-Romá *et al.*, 2018), and there are reasons to expect that the HF of students' jobs is positively related to these dimensions as well.

Conclusion

Our study contributes to improving our understanding about how and why university students' work experience is related to the quality of their jobs as fresh graduates. Our results show that the nature of this experience (i.e. HF) is a critical factor, whereas the time devoted to a student job is not. These findings have important implications for how students can start to manage their careers before entering the labor market, and how universities can help them to gain horizontally fitting work experience that will be useful in finding higher quality jobs as graduates.

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