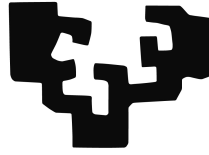


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Job preferences and work values among the youth in Spain

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PhD Thesis

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For my parents.

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1 | Introduction

Young people in Spain are still enduring the effects of the ongoing economic recession, with the most recent unemployment rate at 42% among people below 25 and 17% among people over 25 (3rd trimester of 2016, INE, 2016b). This is a very large proportion of the young population, and it could have detrimental effects on society as a whole. We study this in more detail with three new lines of research. Starting at the very first stage of their labour market experience, we analyze students' job preferences in a more quantitative and rigorous way. This is, what job characteristics young people look for when entering the labour market. Secondly, we study the effect of political ideology on their distributive preferences and if this effect differs with economic status, i.e., if they are students, unemployed or employed. Lastly, we examine the effect of the economic recession on the non-financial work commitment by level of education, exploring which factors are important.

Therefore, in Chapter 2, we study students' job preferences, something that is very important to be aware of. This is clearly important for companies, so that they can try to adapt and therefore attract the best candidates, for policymakers, so they can help match new job-seekers to jobs, but it is also important for the students themselves. Butler, Sanders and Whitecotton (2000) show that students are not good judges of what job characteristics are important to them, and when asked to rank or rate job attributes, they often misjudge the importance of the attribute when looked at independently. When asked to evaluate job opportunities, which include various job characteristics (or attributes) together, the weights on the job characteristics are different from simple ranking or rating methods.

We elicited job preferences using a discrete choice experiment (DCE), a more quantitative and rigorous method than had been previously used. The DCE's that have been used to study job preferences, have mostly been in the health field, but not among students. For

example, finding ways how to attract doctors or nurses to more rural areas. Nevertheless, one study using a DCE to study job preferences was conducted among students, namely, nursing students in South Africa. Given that we are analyzing business and economic students in European countries, we expect to find different results. Typically used in the fields of health, marketing, transportation and environmental economics, a DCE is a stated preferences method which takes into account the multidimensional nature of choosing between various options.

We conducted the DCE among 3rd or 4th business and economics students at five universities in three countries: Spain, the Czech Republic and Germany. We chose these countries so that we could analyze the similarities and differences between students from different cultures. Furthermore, these countries also differ greatly with respect to the unemployment rate; Spain is the highest with an unemployment rate of 20.1% (OECD, 2016), while it is very low for both Germany and the Czech Republic: 4.3% and 4.1% (OECD, 2016), respectively. In Spain, we conducted the survey at a public and a private university in the Basque Country, and at a public university in the region of Asturias. In the Czech Republic, it was done at a public university, and in Germany at a private university.

In Chapter 3, we analyze the effect of political ideology on distributive preferences and how it relates to economic status. In the literature, ideology has been studied by using surveys and experimental data (Barr, Burns, Miller & Shaw, 2015; Barr, Miller & Ubeda, 2016; Margalit, 2013; Owens & Pedulla, 2014). However, in studies using surveys, ideology has been estimated jointly with economic status, and experimental studies have largely ignored the effect of ideology. Therefore, we explicitly tested for political ideology using an experiment. Then, we examined the effect by economic status, which is divided into three categories: students, unemployed and employed participants.

We conducted the experiment among young people in Bilbao, the north of Spain, and in Cordoba, the south of Spain. This was done since many parts of Spain have different cultural values, as well as different unemployment rates. The experiment had two parts. The first part consisted of a real-effort task in which participants had to either fill or empty little pots with yellow and blue gravel. The second part of the experiment was a four-person dictator game, in which participants received a tray with four quadrants, each quadrant

corresponding to a group member.

The experiment had two treatments. In the *earned* treatment, the initial endowment was linked to the participant's performance in the real-effort task. In the *random* treatment, the initial endowments were determined randomly, thus, the two parts of the experiment were not connected in any way.

At the end of the experiment, the participants were asked to fill out a questionnaire which included questions on their socio-demographic, self-reported health and economic status. The political ideology question we used in our analysis appeared in the questionnaire with a left-right axis, going from one (left) to ten (right), and read: *When people talk about politics, the terms left and right are usually used. Below there is a left-right axis. Where would you place yourself on this axis? Indicate it with an X.*

Using a regression model, based on Barr et al. (2015) and Barr et al. (2016), we estimated the acknowledgement of earned entitlement, i.e., acknowledgement that a person can keep his/her earnings gained through effort.

In Chapter 4, we analyze the non-financial work commitment among the youth in Spain. In the literature, this has been measured using the so-called "lottery question", which asks: *If you were to get enough money to live as comfortably as you would like for the rest of your life, would you continue to work?* This has been studied in seven countries, all known for their high work ethics: the United States, the UK, Japan, Israel, Germany, Belgium and the Netherlands. Approximately 70–90% of participants have said they would continue working, implying that there is something more to working other than the salary.

To the best of our knowledge, we are contributing by studying the results in a Southern European country for the first time. Since Spain was greatly affected by the most recent economic recession, we analyze the non-financial work commitment in 2008, at the beginning of the economic recession, and in 2011, three years into the recession. It is not clear what effect a recession has on the non-financial commitment to work, also referred to as the willingness to continue working in our study. Do people feel stressed and demotivated because there are fewer jobs and therefore are *less* willing to continue working? Or perhaps they feel that having a job is necessary in tough economic times and are *more* willing to continue working. This effect has not yet been studied in great detail. Additionally, we

study this effect by level of education, as we are likely to get different results.

The data used in this chapter was taken from the survey study *Observatory of Young People's Transition to the Labour Market* conducted by the Valencian Institute of Economic Research. They targeted young people who were searching for work, or who had found their first job in the last five years. The specific “lottery question” asked in our study was: *If I won the lottery where I wouldn't have to work for the rest of my life, I would not work.* Respondents were provided with five possible answers: Very much disagree, or, in other words, would continue working, Disagree, Indifferent, Agree and Very much agree, or would not continue working. Since there is a natural rank to the answers, we estimated an ordered logit model. Then, we calculated the predicted probabilities, looking at the most important factors affecting the non-financial work commitment.

The rest of the thesis is structured as follows. In Chapter 2, we analyze young people's job preferences when about to enter the labour market. In Chapter 3, we study the effect of ideology on distributive preferences and how it relates to economic status, and in Chapter 4, we examine the effect of the economic recession on young people's willingness to work. Lastly, we conclude with Chapter 5, which summarizes each of the chapters, as well as the thesis as a whole.

2 | Job Preferences of Business and Economics Students: A Discrete Choice Experiment

2.1 Motivation

Students' job preferences are important to analyze, not only for the sake of the companies, or the policymakers, but for the students themselves. Most of the studies in the literature have been conducted in the business and accounting field and are not very quantitative. Main methodologies used to analyze students' job preferences have been ranking or rating job attributes. Ranking refers to arranging various attributes in order of preference, while the rating method asks respondents to evaluate attributes independently, by claiming if the attribute is important for them, or not. In this paper, we argue that using a DCE is a more appropriate methodology to study job preferences; however, before looking at DCE's in more detail, we review the studies that have been done thus far.

Firstly, focusing on ranking methods, Iacovou, Shirland and Thompson (2011) analyzed the job preferences of undergraduate business and MBA students at a public university in the United States. The 241 respondents were asked to evaluate 20 job attributes by comparing three attributes at a time, ranking them in order of importance. They found that growth potential was the most important attribute for the students, followed by a benefits package, job responsibility, job variety or complexity, and work flexibility. Turban, Eyring and Campion (1993) also used the ranking method, analyzing preferences of chemical engineering students. They asked students applying for jobs at a large petrochemical company

to complete a questionnaire. Respondents were asked to rank 11 attributes and those who were offered a job were asked to fill out a second questionnaire ranking the same attributes in terms of what was the most important concerning their decision to accept or reject the job offer. The most important attribute found was the type of work, followed by advancement opportunities. The results from the second questionnaire showed that preferences differed between applicants who accepted or rejected the job.

Rating methods are more common than ranking in the literature. Bundy and Norris (1992) studied the job preferences of upper-level accounting students. Their respondents were asked to rate 35 job attributes using a five-point Likert scale from 1, “not important”, to 5, “extremely important”. The most important attribute was job security, followed by if it is challenging and interesting work, advancement potential, employer-paid health insurance and the personalities of supervisors and co-workers. Similarly, Judge and Bretz (1992) asked students who were job-searching to rate five job attributes on a scale of one to five and found that organizational work values affected job decisions. Phillips, Phillips and Cappel (1994) used a seven-point Likert scale on the importance of 23 job attributes for students and found that the opportunity for advancement, job security and a good retirement plan were the three most important attributes.

Some researchers have used the rating method to analyze students’ job preferences, as well as adding a new component. For example, Boswell, Roehling, LePine and Moynihan (2003) wanted to understand how students chose their jobs when entering the labour market and the role of effective and ineffective recruiting practices. Students rated the importance of 14 job attributes on a Likert scale of one to seven. Company culture, advancement opportunities and the nature of the work (whether it is challenging, etc.) were rated as the top three. In addition, students claimed that how they were treated during the recruitment process was also important for their job choice. Carcello, Copeland, Hermanson and Turner (1991) analyzed the differences in job expectations of accounting students and actual work experiences of accounting staff. Both students and accounting staff rated their agreement to various questions, on a five-point Likert scale, and then the means were compared. The difference between the expectations of students and the expectations of staff differed for many questions, suggesting that work experience affects your expectations,

perhaps giving one a more realistic perspective. Browne (1997) expanded out of the US, comparing gender and country differences of work attitudes among business students. She did this using undergraduate and MBA students from the US and Australia. Students rated the importance of seven job attributes on a seven-point scale. To have interesting and challenging work was found to be the most important, then salary. Although no gender differences were found, there were differences in work attitudes between the two countries, with a greater emphasis placed on achievement through work by Americans.

Studies on job preferences have also been conducted outside of English-speaking countries. Chan and Ho (2000) conducted a study in Hong Kong, where final-year accounting students rated 30 job attributes on a scale from one to five. The office atmosphere, friendliness of staff and the opportunity for advancement were found to be the three most important attributes. In Singapore, Ang Teo and Teng Fatt Poon (1994) analyze undergraduates' perceptions of small and large organizations and their respective preferences. Students first rated what they thought working for a small and medium-sized enterprise (SME) or for a multinational corporation (MNC) would be like. Then, they ranked their preference for working for an SME, MNC, their own business or the government. SME's were rated less favourably, and most students preferred to work for MNC's. Lim and Soon (2006) researched job preferences of final year economics students in Malaysia. Students were asked to rate seven job selection criteria from 1, "not prefer", to 9, "prefer most". Long-term career prospect was found to be the most important job selection criterion. Job security was the second most important, followed by working environment and only then, salary. The applicability of university degree studied was not very important to the students, but job sector preferences did affect the importance of job selection criteria. Additionally, they also found that gender and ethnicity had a large effect on job preferences, but academic attainment did not.

Rating or a ranking methods might not provide us with the most accurate results. First of all, when job applicants look for jobs, they, generally, look at the whole combination of attributes that comes with the job, perhaps unknowingly evaluating each attribute individually. Thus, listing attributes and asking students to rank the importance of each one independently might not result in an accurate reflection of their true preferences in these

situations. Second of all, simply listing the attribute, such as “nature of work” or “job complexity” are very subjective. Telling companies that students think either of these two attributes are important does not really help them in getting a concrete idea of students’ preferences. Using attribute levels, on the other hand, give a better picture; for example, high opportunity for advancement versus low opportunity for advancement. Butler, Sanders and Whitecotton (2000) tested just that, asking whether students and recruiters have good self-insight. They used two methods to estimate the preferences of students’ job attributes; first, respondents were asked to rate attributes individually and second, they were asked to rate *job opportunities*, which grouped all attributes together, assigning a level to each attribute. Their results showed that the difference in importance in the two methods was statistically significant, indicating that students are not good judges of what attributes they find important. Moreover, the results show that recruiters do not have a very good idea of students’ preferences, overemphasizing the importance of firm type (private/public) and underemphasizing the importance of compensation to students.

Similar to Butler et al. (2000), McGinty and Reitsch (1992) combined five attributes, and their levels, for 48 job descriptions, which each student was asked to rate. They found that location was the most important, followed by advancement, social responsibility, interesting job, and salary. However, their sample size was quite small, composed of 10 students. Montgomery and Ramus (2007) also used a different methodology to individual attribute rating or ranking, namely, conjoint analysis using 14 attributes. Students from eight business schools in North America and three business schools in Europe (France, Switzerland and the UK), chose between computer-generated sets of choices of job attributes, either two or three at a time. They found that intellectual challenge is the most important attribute, approximately 25% greater than the financial package. Conjoint analysis, nevertheless, is based on the theory of “Conjoint Measurement”, not a behaviour theory, whereas DCE’s, also a stated preference elicitation method, are based on the random utility theory (RUT) which takes into account choice behaviour (Louviere, Flynn & Carson, 2010).

We use a DCE to elicit students’ job preferences, a methodology that is more rigorous than simple rating or ranking methods, and is based on human behaviour. Usually applied in the fields of health, transportation, marketing and environmental economics, it is easily

extended to the study of job preferences. This methodology takes into account the multidimensional nature of choosing between different job offers. The DCE in our case, allows us to portray hypothetical jobs in terms of specific levels of attributes, similar to a real-world scenario. Each student chooses one out of three hypothetical job alternatives ten times, allowing us to estimate which attributes are more important than others. Thus, a DCE is an appropriate valuation method to study students' job preferences.

To the best of our knowledge, only one DCE has been conducted on students' job preferences. Lagarde and Blaauw (2016) examined the factors that attract nursing students to certain positions in South Africa. Each student had to choose between four hypothetical job opportunities: a nursing job in the public sector in a rural area, a public job in an urban area, a private nursing job and a job overseas. Five attributes were included for each hypothetical job alternative, with a maximum of two levels for each attribute: salary, type of facility (hospital/clinic), training opportunities, working conditions (eg. if there is a lack of basic equipment, if the management is supportive) and the social impact (eg. if you will help provide good quality care to the local population). Students were presented with 12 choice sets and were asked to rank the four jobs. They found that students valued salaries differently across the four job opportunities, but generally, expected higher salaries overseas or in rural areas, and the most important attribute, the highest willingness to pay (WTP), was for better working conditions.

Lagarde and Blaauw's (2016) study is very specific to nursing students, and was conducted in an African country. However, we are interested in business or economic students' job preferences in European countries. Other studies that have focused on job preferences using DCE's, but not among students, have been conducted in the health field, some in developed countries and others in developing countries. In both cases, the objective was to try and find a way to attract doctors or nurses to areas with medical staff shortages. Kolstad (2011) studied how to incentivize Tanzanian clinical officers to move to rural areas. Conducting a DCE, she found that offering continuing education, increased salaries and hardship allowances were the most powerful recruitment instruments. Similarly, Hanson and Jack (2008) looked at how to get doctors and nurses in Ethiopia to accept jobs in rural areas. Doubling wages increased the willingness to work in rural areas the most, while the

most effective non-wage attribute was improving the quality of the equipment and drugs. Since the National Health Service in Scotland was going to change consultants' contracts, Ubach, Scott, French, Awramenko and Needham (2003) looked into different job aspects that hospital consultants preferred. Their DCE results showed that being on-call was the most important attribute which corresponded to a higher income.

Many studies using DCE's have also been used to compare job preferences between two groups. For example, Lanfranchi, Narcy and Larguem (2009) studied the attributes that are important for job-seekers, specifically comparing for-profit workers with nonprofit workers. They found that nonprofit workers have a higher intrinsic motivation for work than for-profit workers, since they are willing to work for longer periods of time for lower wages. For-profit workers, on the other hand, value job offers where higher effort is exchanged for employer's loyalty. Scott (2001) evaluated General Practitioners' preferences, comparing two types of job characteristics: pecuniary and non-pecuniary. He concluded that both types were important, specifically out of hours work commitments among the non-pecuniary job characteristics. However, once again, these studies did not analyze students' job preferences.

We conducted a DCE among students in public and private universities in Spain, the Czech Republic and Germany. These countries were chosen because we wanted to compare different countries in Europe with distinct cultures, to see if the results captured any differences. Moreover, these countries also differ in terms of labour market conditions; Spain has a very high unemployment rate of 20.1% (OECD, 2016), while Germany and the Czech Republic have very low unemployment rates at 4.3% and 4.1% (OECD, 2016), respectively.

The rest of the paper is organized as follows. In Section 2, we detail the methodology, then in Section 3, we present the results. Lastly, in Section 4, we conclude with a discussion.

2.2 Methodology

2.2.1 DCE's: An Introduction

We are interested in studying what job characteristics students look for when they are about to enter the labour market, which is why we use a stated preference method to elicit their initial job preferences. Stated preference methods are a useful way to measure people's preferences and priorities on specific topics. Commonly used in health, marketing, transportation and environmental economics, the DCE includes a variety of goods or attributes, rather than just one (Adamowicz, Louviere, & Swait, 1998). DCE's are based on Lancaster's consumer theory which has three assumptions (Lancaster 1966). Firstly, the *characteristics* of the good give rise to utility, rather than the good itself. Secondly, a good may possess more than one characteristic and additionally, many goods may share the same characteristics. Lastly, multiple goods in combination may have different characteristics from the same goods individually. McFadden (1974) built on this theory by combining a deterministic model of behaviour with a statistical model, resulting in his Random Utility Theory (RUT), commonly employed in DCE's.

There are three main stages to conducting a DCE. The first stage is known as the survey design and consists of: (i) characterizing a decision problem (e.g. what job characteristics do people prefer when applying for a job); (ii) defining attributes and their levels; (iii) setting the experimental design; (iv) developing the questionnaire; and (v) deciding on the correct sampling strategy and data collection mode. The second stage involves the econometric analysis of the choice data to determine the preferences of the individuals. Lastly, the third stage focuses on policy analysis, obtaining welfare measures based on the second stage.

DCE's are very flexible as they take into account the multidimensionality of decision problems, providing trade-offs between the different attributes themselves, as well as the attributes and cost (in our case, salary), which allows us to calculate the WTP in order to obtain a job characteristic (Adamowicz, Boxall, Williams & Louviere, 1998; Bennett & Blamey, 2001; Bateman et al., 2002). The DCE results are useful for providing students, companies, and policy-makers with an idea of what job characteristics young people look

for.








2.2.2 Design of the DCE

We conducted a valuation survey at five universities, in three different countries. Three of the universities were in Spain, specifically, a private and a public university in the Basque Country, and a public university in Oviedo. We also conducted the survey at a public university in Prague, Czech Republic and at a private university in Dortmund, Germany. The questionnaire contained four parts: the objective of the questionnaire, a description of the task they had to perform, the choice cards, and lastly, some socio-demographic questions. Please see section A1 in Appendix A for a version of the final survey.

Our objective was to mimic the decision young people make when entering the labour market, as closely as possible. That is, to choose a hypothetical job based on job attributes a person would normally be aware of ex-ante. Our attribute-based research began by analyzing which job characteristics students found to be important in previous literature, as well as adding some other attributes we thought might be important. A focus group of 15 people was conducted where students, teachers and administrators were invited to participate. Fourth-year students made up the majority of the focus group, with a total of 10 (two from the University of Oviedo, three from Deusto Business School, and the rest from the University of the Basque Country (UPV/EHU)), and were from various majors. Four professors attended, from both undergraduate and postgraduate levels, along with one employee from the University of the Basque Employment Centre. The objective of this focus group was to make sure that we were including job attributes students would find relevant in the DCE. The participants of the focus group were asked to rank the importance of preliminarily chosen attributes from one to five, and if there were any other attributes we should consider adding. Similarly, a focus group was conducted at the International School of Management in Germany, and at the University of Economics, Prague.

After conducting the focus group and determining which attributes were the most important, we had to consider the number of attributes we would include in our DCE. This is important since there is a trade-off between the number of attributes and the complexity of the design. We decided that the seven attributes would be sufficient to describe




















Figure 2.1: Attributes and their Descriptions.

Attributes	Descriptions
Gross Salary	 The total salary offered before tax.
Commuting Time	 The amount of time required to travel one-way from home to work; transportation type is unspecified.
Long-Term Career Prospect At The Company	 The possibility to grow at the company through promotion opportunities.
Education Opportunity At The Company (MBA)	 The tuition of an MBA paid for by the company.
Type of Contract	 Permanent/temporary contract; difficult/easy to get fired (or not re-hired).
Work Environment	 Relationships with co-workers and supervisors, and organizational structure.
Flexible Schedule	 To have the power to change, or at least modify, your schedule.

hypothetical job alternatives without a high degree of complexity. The seven attributes were: (1) *gross salary*, the total salary offered, in local currency, before tax, represented by four amounts; (2) *commuting time*, the amount of time required to travel one-way from the respondent’s home to their work, represented by four different lengths of time given in minutes; (3) *long-term career prospect at the company*, the possibility to advance or grow at the company through promotions, represented by a simple yes/no option; (4) *education opportunity offered by the company (a masters)*, the tuition of an MBA covered by the company, also given as a yes/no option; (5) *type of contract*, portraying the difficulty or ease of getting fired or not re-hired, represented as a temporary or permanent contract; (6) *work environment*, in terms of relationships with co-workers and supervisors, as well as the organizational structure, represented as an old-fashioned company with a vertical structure, a dynamic company with a horizontal structure, or a mix of the two; and (7) *flexible schedule*, indicating if one has the power to change, or at least modify their own schedule, given as a yes/no option. The choice card included pictures for every attribute level to facilitate the choice task understanding. Figure 2.1 presents these pictures together with the definition

of each attribute, and Figure 2.2 presents the levels of each corresponding attribute. All these attributes were presented in three different hypothetical job alternatives.





Figure 2.2: Attributes and their Levels.

Attributes	Levels			
Gross Salary	 28,000 €/year	 31,000 €/year	 34,000 €/year	 37,000 €/year
Commuting Time	 15 min	 30 min	 45 min	 60 min
Long-Term Career Prospect At The Company	 No	 Yes		
Education Opportunity At The Company (MBA)	 No	 Yes		
Type of Contract	 Temporary		 Permanent	
Work Environment	 Old-fashioned company Vertical structure	 Mixed type & structure	 Dynamic company Horizontal structure	
Flexible Schedule	 No	 Yes		

Note: Salary levels given here were for Germany.

Figure 2.3 presents the salary levels for each country, based on typical salary ranges of young people entering the labour market (Destatis, 2014; INE, 2014; Servulo, 2016; Vlková, 2016). For Germany, the gross salary was represented annually, since that is more common, and in the Czech Republic, the salary was given in Czech crowns, the local currency.

























Figure 2.3: Salary Levels by Country.

Country	Gross Salary Levels			
				
Spain	700 €/month	1000 €/month	1300 €/month	1600 €/month
Germany	28,000 €/year	31,000 €/year	34,000 €/year	37,000 €/year
Czech Republic	18,000 CZK/month (≈ 666 €)	22,000 CZK/month (≈ 814€)	26,000 CZK/month (≈ 962€)	30,000 CZK/month (≈ 1,110€)

The seven attributes and their levels result in a large number of combinations ($4^2 \times 2^4 \times 3^1$), impeding a full factorial design. Thus a subset of the full factorial, or a fractional factorial design, was implemented. We used a D-efficient design for random parameter models, afterwards verifying the design did not have any dominant alternatives.

Figure 2.4 shows a sample choice card used in the questionnaire. The generated experimental design was composed of 30 rows and was blocked into three blocks as the number of choice occasions per individual was set to 10. We also randomly changed the order of the choice cards to avoid an order effect, with a total of six versions of each block.

Figure 2.4: Sample Choice Card.

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 31,000 €/year	 34,000 €/ year	 31,000 €/ year
COMMUTING TIME	 45 min	 60 min	 30 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 Yes	 No	 No
EDUCATION OPPORTUNITY AT THE COMPANY	 Yes	 No	 Yes
TYPE OF CONTRACT	 Temporary	 Permanent	 Permanent
WORK ENVIRONMENT	 Old-fashioned company Vertical structure	  Mixed type & structure	 Old-fashioned company Vertical structure
FLEXIBLE SCHEDULE	 No	  Yes	  Yes
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>

Since the DCE in our case describes three hypothetical job alternatives, we left it unlabelled (Alternative A, B, C). Alternative specific constants (ASC) were included for two of the three alternatives, representing unobserved sources of utility. Even though Hensher,

Rose and Greene (2005) claimed that ASC's should be left out of unlabelled experiments, doing so would cause the other model parameters to attempt to capture this effect, which could lead to biased parameter estimates (Morrison, Bennett, Blamey & Louviere, 2002).

The questionnaire was conducted among third or fourth year students at the end of class. The instructions were explained to them and all students' questions were attended to. The pilot survey was conducted at the University of the Basque Country (UPV/EHU) in Bilbao in February 2016 with 33 individuals, and showed that the survey was not too long nor too difficult to understand. After making minor changes to the wording, we conducted the final survey between February and April 2016. Classes were randomly chosen using a simple random sampling, where each class had an equal likelihood of being selected for the sample.

Given the sampling strategy, we defined the minimum sample size we need. An equation for the minimum sample size needed to calculate the true population proportion p with a per cent of the true value p with probability α or greater was provided by Louviere, Hensher and Swait (2000) and Hensher et al. (2005):

$$n \geq \frac{1-p}{r \times p \times a^2} \Phi^{-1} \left(\frac{1+\alpha}{2} \right), \quad (2.1)$$

where n represents the sample size needed, r is the number of responses per individual, and Φ^{-1} is the inverse cumulative distribution function of a standard normal. Table 2.1 presents the minimum sample sizes needed for our case of 10 responses per individual ($r = 10$), for precision levels of 5% ($a = 0.05$), 8% ($a = 0.08$), 10% ($a = 0.10$) and 16% ($a = 0.16$), with 95% probability ($\alpha = 0.95$). The true population proportions are unknown, but the proportions for our sample are 0.36, 0.31, 0.33 for alternatives A, B, and C, respectively. This is to be expected as the alternatives are randomly ordered, with no status quo option.

Therefore, if we focus on the third row of Table 2.1, corresponding to $p=0.3$, the minimum sample to achieve a precision level of 5% would be 183 individuals, whereas for a 10% precision level only 46 respondents would be needed.

Table 2.1: Minimum number of responses and individuals needed.

p	$a=0.05$		$a=0.08$		$a=0.10$		$a=0.16$	
	Responses	Indiv.	Responses	Indiv.	Responses	Indiv.	Response	Indiv.
0.1	7060	706	2760	276	1760	176	690	69
0.2	3140	314	1220	122	780	78	310	31
0.3	1830	183	710	71	460	46	180	18
0.4	1180	118	460	46	290	29	110	11
0.5	780	78	310	31	200	20	80	8

2.2.3 Data Collection

Data was collected at five universities. The University of the Basque Country (UPV/EHU) is a public university with various campuses in the Basque Country of Spain. We conducted our DCE within the Faculty of Economics and Business at the Sarriko campus in Bilbao, a city of population 350,000 (950,000 metropolitan area). The Faculty on the Sarriko campus offers six degrees: Business Administration, Economics, Finance and Insurance, Taxation and Public Administration, Marketing, and a double degree in Business Administration and Law. The annual tuition fee for each degree is approximately €1,000. The Faculty of Economy and Business at the Sarriko campus has approximately a total number of 2,500 students. Classes are offered in Spanish, Basque or English.

Deusto Business School, also in the Basque Country of Spain, is part of a private university called Deusto University. Our DCE was conducted within the Deusto Business School on the Deusto campus in Bilbao. The Business School on this campus offers four double degrees: Business Administration and Industrial Technology Engineering, Business Administration and Law, Business Administration with a Specialization in Finance, and Business Administration and Management in Digital Environments. The annual tuition fee is between €9,000-10,000. The Deusto campus of the Deusto Business School has approximately 1,300 students in total. Classes are offered in Spanish, Basque or English.

The University of Oviedo is a public university in the province of Asturias in Spain. Our surveys were conducted at the Faculty of Economy and Business at the campus in Oviedo, a city of population 220,000. The Faculty on the Oviedo campus, with approximately 2,400 students, offers five degrees: Business Administration, Economics, Finance and Insurance, Human Resources and Labour Relations, and a double degree in Business Administration

and Law. The annual tuition fee for each degree is €1,035, and classes are offered in Spanish or English.

The University of Economics, Prague is a public university in Prague, Czech Republic. The DCE was conducted at the main campus in Prague, a city of population 1,260,000 (2,150,000 metropolitan area); the University also has a smaller campus in another part of Prague, and a smaller campus in another Czech city. The University has 25 bachelor degrees offered by six faculties: the Faculty of Finance and Accounting, the Faculty of International Relations, the Faculty of Business Administration, the Faculty of Informatics and Statistics, the Faculty of Economics, and the Faculty of Management. Classes are offered in Czech and the tuition is free, but students can request degrees to be taught in other languages, such as Russian or English, which cost approximately €3,500 per year, representing approximately 2% of the total students (15,000).

The International School of Management is a private university in Germany, with campuses in Dortmund, Frankfurt, Munich, Hamburg, Cologne and Stuttgart. The DCE was conducted at the campus in Dortmund, a city of population 580,000. The School has seven degrees: International Management, Tourism & Event Management, Marketing & Communications Management, Finance & Management, Psychology & Management, Global Brand & Fashion Management, and Business Law. Classes are offered in German and English and the annual tuition is approximately €9,000 per year. There are approximately 4,000 students on the Dortmund campus.

Table 2.2 presents the sample sizes from our DCE for each university. Assuming that the true proportion is 0.3, we need a sample of 71 to guarantee a precision level of 8% ($\alpha = 0.08$) with a 95% probability, which, as can be seen from Table 2.2, is met by the University of the Basque Country (UPV/EHU) and the University of Economics, Prague. The samples in Oviedo and Germany imply a precision level of 10%, while, unfortunately the small Deusto Business School sample indicates a precision level of 16%.

Table 2.2: Sample Sizes by University.

University	Location	Type of University	Number of Students
University of the Basque Country (UPV/EHU)	Bilbao, Spain	Public	132
Deusto Business School	Bilbao, Spain	Private	18
University of Oviedo	Oviedo, Spain	Public	63
University of Economics	Prague, Czech Republic	Public	95
International School of Management	Dortmund, Germany	Private	52

2.2.4 Econometric Analysis

In order to estimate students' job preferences, we need to transform the individual choice responses to estimated parameters. We do this using two models, the first is the basic Multinomial Logit (MNL) model (McFadden, 1974; Louviere et al., 2000), and the second is a Random Parameter Logit (RPL).

For the MNL model, the utility function for person i (from a total of N individuals) choosing alternative j (from a total of J alternatives) on choice card t (from a total of T choice cards) is given by:

$$U_{it,j} = \beta' x_{it,j} + \varepsilon_{it,j}, \quad (2.2)$$

where β' is a vector of the utility weights, homogenous across the population, $x_{it,j}$ are attribute levels, and $\varepsilon_{it,j}$ is the error term, which is independently and identically distributed as extreme value type I. This means that the unobserved part of the utility for one alternative is unrelated to the unobserved part of the utility for the other alternatives. We assume that person i chooses alternative j on choice occasion t such that $U_{it,j} > U_{it,k}$.

In the MNL model, the probability of person i choosing alternative j in choice situation t is given by:

$$P_{it,j} = \frac{\exp(x'_{it,j}\beta)}{\sum_{j=1}^J \exp(x'_{it,j}\beta)}. \quad (2.3)$$

Since we have ten choice cards, we must calculate the joint probability using the likelihood function. To make it manageable, we take the natural logarithm of both sides and end up with the log-likelihood function:

$$\ln \mathcal{L} = \sum_{i=1}^N \sum_{j=1}^J \sum_{t=1}^T d_{it,j} \ln(P_{it,j}), \quad (2.4)$$

where $d_{it,j} = 1$ if individual i chooses alternative j on choice occasion t and $d_{it,j} = 0$ otherwise. This function is then maximized using maximum likelihood estimation.

While the MNL model can be used to represent systematic taste variations, based on observable characteristics of the respondents, it cannot represent effects linked to random taste variations, or unobservable characteristics. Thus, we also estimate the RPL model which allows for heterogenous preferences which are random taste variations between peo-

ple. Homogenous preferences, on the other hand, imply that two people with the same observed socio-demographic values will have the exact same preferences. Thus, the RPL model allows for more flexibility and is more of an accurate representation of real life.

The utility function of the RPL model is defined as:

$$U_{it,j} = \beta_i' x_{it,j} + \varepsilon_{it,j}, \quad (2.5)$$

where β_i' is a vector of individual specific attribute utility weights. This vector of β_i 's can be broken down into:

$$\beta_i = \beta + \Delta z_i + \Gamma \nu_i, \quad (2.6)$$

where β is a vector of parameters of the average values of the sample, z_i is the vector of the observed heterogenous preferences, generally affected by socio-demographic values, and Δ the associated parameter matrix. The random unobserved heterogenous preferences are represented by ν_i , a vector of uncorrelated random variables characterized by:

$$E(\nu_i) = 0 \quad \text{and} \quad \text{Var}(\nu_i) = \Sigma = \text{diag}[\sigma_1, \sigma_2, \dots, \sigma_K]. \quad (2.7)$$

The unknown lower triangular matrix Γ is to be estimated, assuming the parameters σ_i , where $i = 1, 2, \dots, K$ are known constants. If the random parameters are uncorrelated, we end up with a diagonal matrix $\Gamma = \text{diag}[\gamma_1, \gamma_2, \dots, \gamma_K]$. If we allow the random parameters to be correlated, the full variance-covariance matrix becomes:

$$\text{Var}(\beta_i) = \Gamma \Sigma \Gamma'. \quad (2.8)$$

Assuming that the random parameters are uncorrelated means imposing an additional restriction on the model (Train & Weeks, 2005). Thus, the RPL model with correlated parameters is more flexible, and allows us to interpret the corresponding correlation tables.

Since we have T_i observations for each individual i , the conditional probability of person i choosing the sequences of T choices can be calculated by:

$$P_i | \nu_i = \prod_{t=1}^T P_{it} | \nu_i, \quad (2.9)$$

where P_{it} are probabilities of the chosen alternatives of person i on choice occasion t . P_{it} is defined by (2.3) where β is substituted by (2.6). Given that ν_i is a random variable, we must integrate ν_i out of the conditional probability:

$$P_i = \int_{\nu_i} P_i|\nu_i h(\nu_i) d\nu_i, \quad (2.10)$$

where $h(\nu_i)$ is the probability density function of the standardized random vector ν_i . To calculate the joint probability we use the log-likelihood function:

$$\log L = \sum_{i=1}^N \ln P_i|\nu_i. \quad (2.11)$$

Since we have to integrate over the random variable ν_i , it is much easier to estimate using maximum likelihood running simulations. This can be done by maximizing the simulated log-likelihood function:

$$\ln \mathcal{L} = \sum_{i=1}^N \ln \left[\frac{1}{R} \sum_{r=1}^R \ln \prod_{t=1}^T P_{it}|\nu_{ir} \right], \quad (2.12)$$

where ν_{ir} is a simulated random draw from the assumed distribution, and R is the number of replications.

As the parameters of the RPL model are randomly distributed, we must choose the appropriate distribution function, something which has been of major research interests in DCE's, but there is still no consensus. In practice, the distributions are usually set to normal since it is unknown whether people prefer it or not, thus allowing the effect of the attribute to be either positive or negative on the utility function, but this can cause serious problems in the WTP calculations; some popular distributions used for the cost coefficient imply infinite moments for the distribution of WTP (Daly, Hess & Train, 2012). If not much effort is taken to choose the distributions, the cost coefficient should at least be log-normally distributed, assuring finite moments for WTP values.

Fosgerau and Bierlaire's (2007) propose a semi-nonparametric test for mixing distributions, which tests if a random parameter follows an a priori postulated distribution. A different approach is suggested by Fosgerau and Mabit (2013). This method takes random draws from a standard distribution and then transforms them using a power series,

allowing for a flexible and non-standard distribution without restrictive assumptions. However, information for researchers is still limited regarding the performance of the mentioned tests. Lastly, Hensher and Greene (2003) suggested a simple and robust approach based on plotting the incremental marginal utility, i.e., the contributions of all individuals to the overall sample mean parameter estimate and thus profiling individual preference heterogeneity. Although this method does not include a proper statistical test, it provides us with a visual notion of the underlying distributions of the parameters.

This is why we apply the method proposed by Hensher and Greene (2003). As can be seen from the graphs in section A2 in Appendix A, the distributions of salary and commuting time can be assumed to follow a log-normal distribution, while the rest of the attributes can be said to follow more of a normal distribution.

Lastly, including a monetary attribute allows us to calculate the WTP, defined as the willingness to pay for a unit change in an attribute. This is done by simulating random distributions, using the estimates of the means and standard deviations from the RPL results. In DCE's, it is typically calculated as the change in one attribute with respect to the cost (Hanemann, 1984; Train, 1998), or:

$$WTP = -\frac{\beta_{attribute}}{\beta_{cost}}. \quad (2.13)$$

However, in our case, the *cost* can be interpreted as one's *salary*. Therefore, the interpretation is the willingness to accept a reduction in salary for a unit change in a job characteristic. Since most of the job characteristics are binary coded, it is the willingness to accept a reduction in salary to obtain that job characteristic. For the WTP estimates, we also need to take into account the random nature of the coefficients. For this purpose, the coefficients in (2.13) are generated following the Krinsky and Robb (1986) procedure. For example, the *Contract* attribute is coded as 1 if permanent contract, and 0 if temporary contract; thus, the generated WTP distribution in order to obtain a permanent contract, with its parameter distribution as normal and the *Salary* attribute parameter as lognormal is specified as:

$$\widehat{WTP}_C = \frac{\hat{\beta}_C + \hat{\sigma}_C \cdot \nu_C}{\exp(\hat{\beta}_{Salary} + \hat{\sigma}_{Salary} \cdot \nu_{Salary})}, \quad (2.14)$$

where $\hat{\beta}_C$ and $\hat{\beta}_{Salary}$ are the estimated means of the *Contract* and *Salary* random attribute parameters, respectively, $\hat{\sigma}_C$ and $\hat{\sigma}_{Salary}$ are their corresponding estimated standard deviations, and $\nu_C \sim N(0, 1)$, $\nu_{Salary} \sim N(0, 1)$.

2.3 Results

2.3.1 Basic statistics

Table 2.3 displays descriptive statistics of the sample respondents of each university. Approximately half of the participants are women, with a higher proportion at Deusto Business School (69%). The mean age of the respondents is approximately 21 across all universities, with a family size of four. The average university grades are quite similar among respondents across all universities; a 2.09 in the Czech Republic is approximately a 7 using the Spanish grading system, while the average grade among respondents in Germany is slightly higher at a 2.11 (approximately an 8). The entrance exam grades are similar between the University of the Basque Country (UPV/EHU) and the University of Oviedo, but are slightly higher at Deusto Business School and at the University of Economics, Prague (approximately an 8).

Other similarities exist between the respondents of the two public universities in Spain: the University of Oviedo and the University of the Basque Country (UPV/EHU). To begin with, they have a much lower English level in comparison to the respondents from the other three universities. The education level of both the father and the mother are lower, as are the proportions of both parents working. Lastly, the household income is also lower among the respondents of these two universities in comparison to the others.

Regarding the language spoken at home, there is a mixture of languages spoken among respondents from all universities apart from the University of Oviedo, 97% of whose respondents are Spanish-speaking. Participants from different universities slightly differ in terms of ideology; the most left-wing are respondents from the University of the Basque Country (UPV/EHU), who reported an average of 3 on the left-right ideology scale, and the most right-wing are respondents from the University of Economics, Prague, who reported an average of 7.

Table 2.3: Descriptive Statistics by University.

Variable	University of the Basque Country (UPV/EHU)			Deusto Business School			University of Oviedo			University of Economics, Prague			International School of Management		
	Mean	St. D.	Min; Max	Mean	St. D.	Min; Max	Mean	St. D.	Min; Max	Mean	St. D.	Min; Max	Mean	St. D.	Min; Max
Number of respondents															
Women (1=yes)	0.52	0.50	(0; 1)	0.69	0.46	(0; 1)	0.43	0.50	(0; 1)	0.40	0.49	(0; 1)	0.63	0.48	(0; 1)
Age	21.61	2.94	(19; 40)	21.50	0.71	(21; 23)	21.97	1.85	(20; 28)	21.14	1.31	(19; 25)	20.78	1.88	(18; 26)
University grade*	6.83	0.80	(5; 9.55)	7.30	0.56	(6.5; 8.5)	6.68	0.84	(5; 9)	2.09	0.38	(1.16; 3)	2.11	0.53	(1; 3.3)
Entrance exam grade**	0.70	0.11	(0.44; 0.98)	0.81	0.07	(0.71; 0.96)	0.73	0.12	(0.43; 1)	1.59	0.48	(1; 2.75)	NA	NA	(NA)
High English level*** (1=yes)	0.08	0.27	(0; 1)	0.94	0.24	(0; 1)	0.12	0.32	(0; 1)	0.51	0.50	(0; 1)	0.67	0.47	(0; 1)
Father's Educ: Primary (1=yes)	0.15	0.36	(0; 1)	0.00	0.00	(0; 0)	0.19	0.39	(0; 1)	0.02	0.15	(0; 1)	0.06	0.24	(0; 1)
Father's Educ: University (1=yes)	0.38	0.49	(0; 1)	0.75	0.43	(0; 1)	0.28	0.45	(0; 1)	0.51	0.50	(0; 1)	0.60	0.49	(0; 1)
Mother's Educ: Primary (1=yes)	0.16	0.37	(0; 1)	0.06	0.24	(0; 1)	0.15	0.36	(0; 1)	0.02	0.15	(0; 1)	0.02	0.14	(0; 1)
Mother's Educ: University (1=yes)	0.38	0.48	(0; 1)	0.50	0.50	(0; 1)	0.37	0.48	(0; 1)	0.46	0.50	(0; 1)	0.54	0.50	(0; 1)
Father working (1=yes)	0.80	0.40	(0; 1)	0.94	0.24	(0; 1)	0.72	0.45	(0; 1)	0.91	0.28	(0; 1)	0.96	0.20	(0; 1)
Mother working (1=yes)	0.72	0.45	(0; 1)	0.88	0.33	(0; 1)	0.59	0.49	(0; 1)	0.87	0.34	(0; 1)	0.80	0.40	(0; 1)
Speak [language] at home**** (1=yes)	0.25	0.43	(0; 1)	0.13	0.33	(0; 1)	0.97	0.18	(0; 1)	0.74	0.44	(0; 1)	0.71	0.46	(0; 1)
Family size	3.78	0.84	(1; 7)	3.88	0.78	(3; 5)	3.86	1.08	(2; 7)	3.90	1.32	(1; 11)	3.69	0.86	(1; 5)
Ideology	3.24	1.82	(1; 9)	6.00	1.79	(3; 8)	4.92	2.20	(1; 10)	6.68	1.54	(3; 10)	5.60	1.81	(1; 10)
High income household (1=yes)	0.63	0.48	(0; 1)	0.93	0.25	(0; 1)	0.52	0.50	(0; 1)	0.72	0.45	(0; 1)	0.74	0.44	(0; 1)

Note: (*) In Czech Republic, a different scale is used for both the University grade and the entrance exam grade: 1(best) - 4(worst). In Germany, the scale is: 1(best) - 5(worst.); (**) the entrance exam grades for Spain have been transformed to a grade out of 1 since Spanish entrance exams can either be out of 10 or 14; (***) a student is considered to have a high English level if he/she has either an Advanced or Proficiency qualification; (****) students at the University of the Basque Country (UPV/EHU) and the Deusto Business School were asked if they spoke **Basque** at home, students at the University of Oviedo were asked if they spoke **Spanish** at home, students at the University of Economics, Prague were asked if they spoke **Czech**, and students at ISM were asked if they spoke **German**.

2.3.2 Estimation Results

The data collected from the DCE was estimated using Python Biogeme version 2.4 (Bierlaire, 2008, 2016). Table 2.4 displays the multinomial logit results estimated for each university. Two alternative-specific constants (ASC2, ASC3) for Alternative 2 and 3 respectively, were included in the model, to allow for more flexibility. All variables apart from salary and commuting time were coded as dummy variables. Specifically, long-term career is 1 if the hypothetical job includes this attribute and 0, otherwise; education and flexible schedule were coded the same way. The reference category for contract type is a temporary contract, and the reference category for both work environment variables is an old-fashioned company with a vertical structure.

For all five universities, the estimated coefficient for *salary* is positive, indicating that an increase in salary causes an increase in the respondents' utility. Similarly, having long-term career or education opportunities, a permanent contract, a mixed or horizontal work environment or a flexible schedule also increases respondents' utility. An increase in commuting time, on the other hand, causes a decrease in the respondents' utility, as is indicated by the negative coefficient. All of these results are as expected, consistent with our a priori

Table 2.4: Multinomial Logit Results.

	University of the Basque Country (UPV/EHU)	University of Oviedo	Deusto Business School	University of Economics, Prague	International School of Management
ASC2	0.092 (0.076)	0.108 (0.111)	0.117 (0.221)	-0.015 (0.090)	0.391*** (0.127)
ASC3	0.017 (0.075)	0.057 (0.107)	-0.476** (0.242)	-0.106 (0.089)	0.181 (0.120)
Salary	2.480*** (0.186)	2.160*** (0.267)	2.410*** (0.640)	0.174*** (0.017)	0.176*** (0.029)
Commuting Time	-0.248*** (0.026)	-0.165*** (0.040)	-0.230*** (0.082)	-0.242*** (0.033)	-0.123*** (0.039)
Long-term Career	1.270*** (0.097)	1.490*** (0.146)	1.880*** (0.280)	1.540*** (0.120)	1.060*** (0.159)
Education	0.694*** (0.101)	0.728*** (0.146)	1.080*** (0.342)	0.691*** (0.117)	0.720*** (0.154)
Contract	0.987*** (0.073)	0.587*** (0.108)	0.403 (0.253)	0.070 (0.084)	0.230** (0.104)
Mixed work env.	0.492*** (0.082)	0.517*** (0.120)	0.737*** (0.279)	0.593*** (0.101)	0.818*** (0.234)
Horiz. work env.	0.512*** (0.090)	0.293** (0.127)	0.710*** (0.240)	0.554*** (0.101)	0.708*** (0.131)
Flexible Schedule	0.513*** (0.075)	0.209* (0.113)	0.132 (0.225)	0.391*** (0.091)	0.517*** (0.119)
Number of observations	1317	630	180	948	495
Log-likelihood	-1202.290	-596.430	-152.644	-871.067	-490.074
AIC	2424.196	1212.860	325.288	1762.134	1000.148
BIC	2476.027	1257.317	357.218	1810.678	1042.194

Note: 1) Robust standard errors are listed in parentheses; 2) ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

hypotheses. The MNL estimations are usually conducted to use as a benchmark for the RPL estimations, which we present in the next tables.

Table 2.5 displays the results of the RPL model with correlated and uncorrelated coefficients for the University of the Basque Country (UPV/EHU). The model with correlated coefficients allows for correlations between the random coefficients representing the unobserved preferences. In the two versions of the RPL model, we do not account for observed preference heterogeneity because its inclusion makes the comparison across universities and countries more difficult. Therefore, the matrix Δ in (2.6) is assumed to be zero. In the uncorrelated coefficient version of the RPL model, the matrix Γ in (2.6) is assumed to be a diagonal matrix and in the correlated coefficient version Γ is a lower diagonal matrix. The estimated elements of Γ , listed in the output tables, are needed to calculate the variance-covariance matrix defined in (2.8). The standard errors of the estimated variance-covariance matrix are calculated using the Delta method (Hensher et al., 2005).

Both versions of the RPL model include two random variables with a log-normal distribution (salary, commuting time), and the rest of the random variables are assumed to have a normal distribution. The estimated means and standard deviations of the random variables are very similar when comparing the two versions of the RPL model. Generally, all of the coefficients are statistically significant at the 5% significance level. The boxplot shown on the right-hand side of all output tables and next to each coefficient is a simulation of the coefficient's distribution based on the estimations of the RPL model with correlated parameters. These graphs allow for an easy comparison of the estimated distribution, which is not easy to do with estimated means and standard deviations as log-normal distributions are involved in this composition. The graphs show the distribution from the 25th to the 75th percentile, with the line representing the median. The simulated distributions indicate that salary seems to be the most important attribute for students from the University of the Basque Country (UPV/EHU).

Tables 2.6–2.9 display the RPL model results, with correlated and uncorrelated coefficients, for the University of Oviedo, Deusto Business School, the University of Economics, Prague and the International School of Management. Once again, the estimated means and standard deviations are very similar for all universities. All of the estimated means

Table 2.5: University of the Basque Country (UPV/EHU): RPL Results. Spain-public university.

	Model with Uncorrelated Coefficients				Model with Correlated Coefficients			
	Est. Mean	St. Err.	St. Dev.	St. Err.	Est. Mean	St. Err.	St.Dev.	St. Err.
ASC2	0.217**	(0.101)			0.224**	(0.109)		
ASC3	0.100	(0.103)			0.101	(0.110)		
Random Parameters								
<i>Log-normal distribution</i>								
Salary	1.210***	(0.103)	0.588***	(0.083)	1.270***	(0.104)	0.601***	(0.102)
Commuting Time	-1.200***	(0.150)	0.526***	(0.118)	-0.991***	(0.132)	0.285***	(0.081)
<i>Normal distribution</i>								
Long-term Career	1.960***	(0.173)	1.250***	(0.173)	2.110***	(0.196)	1.364***	(0.465)
Education	1.040***	(0.163)	0.807***	(0.183)	1.090***	(0.169)	0.893***	(0.120)
Contract	1.520***	(0.167)	1.300***	(0.170)	1.670***	(0.200)	1.387***	(0.241)
Mixed work env.	0.626***	(0.141)	0.578***	(0.182)	0.655***	(0.150)	0.689***	(0.092)
Horiz. work env.	0.711***	(0.136)	0.398	(0.271)	0.772***	(0.148)	0.615***	(0.113)
Flexible Schedule	0.725***	(0.126)	0.736***	(0.176)	0.811***	(0.133)	0.873*	(0.474)
Covariances					Elements of Γ	St. Err		
Salary, Commuting time					-0.274***	(0.062)		
Salary, Long-term career					-0.847***	(0.181)		
Salary, Education					-0.545**	(0.253)		
Salary, Contract					-0.117	(0.219)		
Salary, Mixed work env.					-0.142	(0.168)		
Salary, Horiz. work env.					-0.032	(0.402)		
Salary, Flexible schedule					0.076	(0.394)		
Commuting time, Long-term career					-0.135	(0.323)		
Commuting time, Education					-0.183	(0.194)		
Commuting time, Contract					-0.186	(0.368)		
Commuting time, Mixed work env.					0.293	(0.212)		
Commuting time, Horiz. work env.					0.272	(0.186)		
Commuting time, Flexible schedule					0.342	(0.249)		
Long-term career, Education					0.648	(0.418)		
Long-term career, Contract					1.310***	(0.195)		
Long-term career, Mixed work env.					0.350	(0.433)		
Long-term career, Horiz. work env.					-0.221	(0.188)		
Long-term career, Flexible schedule					0.463	(0.424)		
Education, Contract					0.388	(0.300)		
Education, Mixed work env.					-0.118	(0.558)		
Education, Horiz. work env.					-0.425	(0.282)		
Education, Flexible schedule					0.216	(0.243)		
Contract, Mixed work env.					-0.371*	(0.200)		
Contract, Horiz. work env.					0.018	(0.274)		
Contract, Flexible schedule					-0.413***	(0.154)		
Mixed work env., Horiz. work env.					-0.165	(0.205)		
Mixed work env., Flexible schedule					-0.194	(0.185)		
Horiz. work env., Flexible schedule					0.338	(0.219)		
Number of observations	1317				1317			
Log-likelihood	-1083.199				-1076.282			
AIC	2202.398				2244.564			
BIC	2295.694				2482.987			

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

are statistically significant at the 5% significance level.

The simulated distributions of the coefficients for the University of Oviedo, in Table 2.6, and for Deusto Business School in Table 2.7, illustrate that long-term career is almost as important as salary. In Tables 2.8 and 2.9, for the University of Economics, Prague and the International School of Management, long-term career seems to be the most important job characteristic.

As expected, higher values of log-likelihood and lower values of AIC and BIC indicate that RPL clearly outperforms MNL in all cases with the exception of the Deusto Business School sample. This unexpected result is obtained due to the small sample size and suggests that all results for that sample must be interpreted with caution.

Table 2.6: University of Ovedio: RPL Results. Spain-public university.

	Model with Uncorrelated Coefficients				Model with Correlated Coefficients			
	Est. Mean	St. Err.	St. Dev.	St. Err.	Est. Mean	St. Err.	St.Dev.	St. Err.
ASC2	0.239	(0.155)			0.271*	(0.160)		
ASC3	0.138	(0.154)			0.158	(0.163)		
Random Parameters								
<i>Log-normal distribution</i>								
Salary	1.100***	(0.156)	0.641***	(0.125)	1.170***	(0.163)	0.646***	(0.164)
Commuting Time	-1.770***	(0.363)	0.683***	(0.202)	-1.640***	(0.350)	0.578***	(0.080)
<i>Normal distribution</i>								
Long-term Career	2.530***	(0.322)	1.370***	(0.231)	2.740***	(0.386)	1.438***	(0.469)
Education	1.180***	(0.250)	1.200***	(0.181)	1.270***	(0.257)	1.304***	(0.291)
Contract	0.807***	(0.224)	1.120***	(0.209)	0.860***	(0.241)	1.227***	(0.100)
Mixed work env.	0.736***	(0.163)	0.095	(0.135)	0.745***	(0.171)	0.206***	(0.033)
Horiz. work env.	0.412**	(0.177)	0.352	(0.353)	0.428**	(0.180)	0.512***	(0.024)
Flexible schedule	0.340	(0.208)	0.845***	(0.304)	0.372*	(0.225)	0.940***	(0.138)
Covariances					Elements of Γ	St. Err		
Salary, Commuting time					0.222*	(0.121)		
Salary, Long-term career					-0.930***	(0.293)		
Salary, Education					-0.021	(0.136)		
Salary, Contract					-0.297**	(0.117)		
Salary, Mixed work env.					-0.018	(0.061)		
Salary, Horiz. work env.					0.181	(0.113)		
Salary, Flexible schedule					0.194*	(0.104)		
Commuting time, Long-term career					0.753***	(0.211)		
Commuting time, Education					-1.080***	(0.167)		
Commuting time, Contract					-0.846***	(0.183)		
Commuting time, Mixed work env.					0.038	(0.057)		
Commuting time, Horiz. work env.					0.116	(0.126)		
Commuting time, Flexible schedule					0.433***	(0.164)		
Long-term career, Education					-0.361*	(0.208)		
Long-term career, Contract					0.149	(0.177)		
Long-term career, Mixed work env.					-0.039	(0.087)		
Long-term career, Horiz. work env.					-0.316**	(0.153)		
Long-term career, Flexible schedule					-0.301	(0.226)		
Education, Contract					-0.590***	(0.228)		
Education, Mixed work env.					-0.136	(0.141)		
Education, Horiz. work env.					0.026	(0.096)		
Education, Flexible schedule					0.027	(0.168)		
Contract, Mixed work env.					-0.095	(0.121)		
Contract, Horiz. work env.					-0.183	(0.175)		
Contract, Flexible schedule					-0.548**	(0.254)		
Mixed work env., Horiz. work env.					-0.233*	(0.140)		
Mixed work env., Flexible schedule					-0.135	(0.190)		
Horiz. work env., Flexible schedule					-0.494*	(0.257)		
Number of observations	630				630			
Log-likelihood	-516.619				-513.536			
AIC	1069.238				1119.072			
BIC	1149.261				1323.575			

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Table 2.7: Deusto Business School: RPL Results. Spain-private university.

	Model with Uncorrelated Coefficients				Model with Correlated Coefficients			
	Est. Mean	St. Err.	St. Dev.	St. Err.	Est. Mean	St. Err.	St.Dev.	St. Err.
ASC2	0.321	(0.294)			0.377	(0.340)		
ASC3	-0.512**	(0.216)			-0.566**	(0.238)		
Random Parameters								
<i>Log-normal distribution</i>								
Salary	1.140***	(0.342)	0.554**	(0.271)	1.280***	(0.379)	0.586**	(0.291)
Commuting Time	-1.410***	(0.539)	0.689**	(0.335)	-1.090***	(0.403)	0.449	(0.382)
<i>Normal distribution</i>								
Long-term Career	2.860***	(0.618)	1.600***	(0.603)	3.510***	(0.891)	1.775	(2.412)
Education	1.550***	(0.495)	1.060**	(0.537)	2.120***	(0.712)	1.034***	(0.012)
Contract	0.604**	(0.301)	0.928*	(0.533)	0.850**	(0.391)	1.080***	(0.114)
Mixed work env.	1.070***	(0.307)	0.213	(0.248)	1.370***	(0.366)	0.582***	(0.188)
Horiz. work env.	0.890***	(0.337)	0.074	(0.064)	0.917**	(0.430)	0.464**	(0.186)
Flexible Schedule	-0.006	(0.400)	0.669**	(0.264)	-0.126	(0.525)	0.878***	(0.329)
Covariances					Elements of Γ	St. Err		
Salary, Commuting time					0.364***	(0.127)		
Salary, Long-term career					-0.298	(0.217)		
Salary, Education					-0.745	(0.502)		
Salary, Contract					-0.393	(0.342)		
Salary, Mixed work env.					0.030	(0.290)		
Salary, Horiz. work env.					0.303	(0.212)		
Salary, Flexible schedule					0.366	(0.269)		
Commuting time, Long-term career					0.488	(0.502)		
Commuting time, Education					0.344	(0.490)		
Commuting time, Contract					-0.351	(0.254)		
Commuting time, Mixed work env.					0.280	(0.753)		
Commuting time, Horiz. work env.					-0.200	(0.258)		
Commuting time, Flexible schedule					0.490	(0.361)		
Long-term career, Education					-0.514*	(0.269)		
Long-term career, Contract					0.681*	(0.405)		
Long-term career, Mixed work env.					-0.033	(0.266)		
Long-term career, Horiz. work env.					0.118	(0.314)		
Long-term career, Flexible schedule					0.393	(0.778)		
Education, Contract					0.627	(0.469)		
Education, Mixed work env.					-0.089	(0.306)		
Education, Horiz. work env.					-0.149	(0.157)		
Education, Flexible schedule					-0.030	(0.492)		
Contract, Mixed work env.					-0.322	(0.379)		
Contract, Horiz. work env.					0.173	(0.130)		
Contract, Flexible schedule					0.056	(0.687)		
Mixed work env., Horiz. work env.					0.048	(0.114)		
Mixed work env., Flexible schedule					0.456*	(0.256)		
Horiz. work env., Flexible schedule					-0.031	(0.307)		
Number of observations	180				180			
Log-likelihood	-136.210				-133.704			
AIC	308.42				359.408			
BIC	365.893				506.284			

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Table 2.8: University of Economics, Prague: RPL Results. The Czech Republic-public university.

	Model with Uncorrelated Coefficients				Model with Correlated Coefficients			
	Est. Mean	St. Err.	St. Dev.	St. Err.	Est. Mean	St. Err.	St.Dev.	St. Err.
ASC2	0.049	(0.105)			0.052	(0.114)		
ASC3	-0.097	(0.116)			-0.111	(0.137)		
Random Parameters								
<i>Log-normal distribution</i>								
Salary	-1.360***	(0.121)	0.540***	(0.094)	-1.290***	(0.138)	0.536***	(0.108)
Commuting Time	-1.170***	(0.189)	0.689***	(0.156)	-1.080***	(0.210)	0.730**	(0.325)
<i>Normal distribution</i>								
Long-term Career	2.530***	(0.256)	1.170***	(0.172)	2.700***	(0.352)	1.141	(5.049)
Education	1.160***	(0.213)	1.290***	(0.217)	1.220***	(0.264)	1.420	(1.695)
Contract	0.158	(0.164)	1.160***	(0.205)	0.153	(0.324)	1.229	(2.770)
Mixed work env.	0.879***	(0.163)	0.283	(0.353)	0.927***	(0.182)	0.483	(0.667)
Horiz. work env.	0.849***	(0.181)	0.754***	(0.255)	0.909***	(0.203)	0.862	(0.970)
Flexible Schedule	0.679***	(0.164)	0.837***	(0.225)	0.719***	(0.175)	0.971	(1.027)
Covariances					Elements of Γ	St. Err		
Salary, Commuting time					0.121	(0.157)		
Salary, Long-term career					-0.431	(4.620)		
Salary, Education					-0.188	(0.503)		
Salary, Contract					-0.148	(0.834)		
Salary, Mixed work env.					0.307	(0.337)		
Salary, Horiz. work env.					0.259	(0.468)		
Salary, Flexible schedule					0.312	(0.694)		
Commuting time, Long-term career					-0.187	(0.579)		
Commuting time, Education					-0.796	(0.930)		
Commuting time, Contract					-0.118	(1.450)		
Commuting time, Mixed work env.					-0.209	(0.280)		
Commuting time, Horiz. work env.					-0.603*	(0.352)		
Commuting time, Flexible schedule					-0.328	(0.664)		
Long-term career, Education					0.703	(0.500)		
Long-term career, Contract					0.899	(1.510)		
Long-term career, Mixed work env.					-0.261	(1.150)		
Long-term career, Horiz. work env.					-0.306	(1.510)		
Long-term career, Flexible schedule					-0.107	(1.550)		
Education, Contract					-0.453	(1.080)		
Education, Mixed work env.					-0.114	(1.330)		
Education, Horiz. work env.					-0.134	(0.325)		
Education, Flexible schedule					-0.096	(0.752)		
Contract, Mixed work env.					-0.088	(2.290)		
Contract, Horiz. work env.					-0.209	(2.030)		
Contract, Flexible schedule					0.047	(1.070)		
Mixed work env., Horiz. work env.					0.385	(0.378)		
Mixed work env., Flexible schedule					0.461*	(0.273)		
Horiz. work env., Flexible schedule					0.487	(0.588)		
Number of observations	948				948			
Log-likelihood	-770.879				-765.966			
AIC	1577.758				1623.932			
BIC	1665.136				1847.232			

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Table 2.9: International School of Management: RPL Results. Germany-private university.

	Model with Uncorrelated Coefficients				Model with Correlated Coefficients			
	Est. Mean	St. Err.	St. Dev.	St. Err.	Est. Mean	St. Err.	St.Dev.	St. Err.
ASC2	0.526***	(0.163)			0.540***	(0.170)		
ASC3	0.259*	(0.141)			0.262*	(0.147)		
Random Parameters								
<i>Log-normal distribution</i>								
Salary	-1.650***	(0.227)	0.527***	(0.169)	-1.610***	(0.208)	0.521***	(0.157)
Commuting Time	-2.590***	(0.653)	1.320***	(0.340)	-2.560***	(0.619)	1.345	(0.873)
<i>Normal distribution</i>								
Long-term Career	1.370***	(0.243)	0.985***	(0.262)	1.390***	(0.226)	1.040***	(0.102)
Education	0.858***	(0.191)	0.727***	(0.208)	0.854***	(0.189)	0.794***	(0.189)
Contract	0.342**	(0.146)	0.527***	(0.189)	0.370**	(0.149)	0.559***	(0.039)
Mixed work env.	1.020***	(0.200)	0.221	(0.341)	1.090***	(0.205)	0.434***	(0.002)
Horiz. work env.	0.897***	(0.196)	0.070	(0.095)	0.960***	(0.212)	0.328**	(0.132)
Flexible Schedule	0.612***	(0.178)	0.752***	(0.255)	0.608***	(0.181)	0.810***	(0.053)
Covariances					Elements of Γ	St. Err		
Salary, Commuting time					-0.121		(0.102)	
Salary, Long-term career					-0.365*		(0.194)	
Salary, Education					0.283***		(0.087)	
Salary, Contract					0.208		(0.193)	
Salary, Mixed work env.					0.277		(0.172)	
Salary, Horiz. work env.					0.033		(0.060)	
Salary, Flexible schedule					0.107		(0.227)	
Commuting time, Long-term career					0.945***		(0.289)	
Commuting time, Education					0.453*		(0.241)	
Commuting time, Contract					0.219		(0.150)	
Commuting time, Mixed work env.					0.162		(0.122)	
Commuting time, Horiz. work env.					0.035		(0.097)	
Commuting time, Flexible schedule					-0.524***		(0.176)	
Long-term career, Education					-0.371***		(0.104)	
Long-term career, Contract					-0.227		(0.141)	
Long-term career, Mixed work env.					0.191		(0.125)	
Long-term career, Horiz. work env.					-0.026		(0.064)	
Long-term career, Flexible schedule					-0.468**		(0.237)	
Education, Contract					-0.400***		(0.114)	
Education, Mixed work env.					-0.007		(0.081)	
Education, Horiz. work env.					-0.059		(0.083)	
Education, Flexible schedule					0.108		(0.303)	
Contract, Mixed work env.					0.112		(0.085)	
Contract, Horiz. work env.					0.209		(0.253)	
Contract, Flexible schedule					0.105		(0.331)	
Mixed work env., Horiz. work env.					-0.204		(0.203)	
Mixed work env., Flexible schedule					0.339		(0.311)	
Horiz. work env., Flexible schedule					-0.119		(0.161)	
Number of observations		495					495	
Log-likelihood		-460.542					-458.997	
AIC		957.084					1009.994	
BIC		1032.802					1203.404	

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Tables 2.10–2.14 present the correlation matrices computed by the use of estimated parameters from the RPL model with correlated coefficients for each university. In our interpretation of the correlations between the random parameters of our model, we need to be very cautious since the number of estimated coefficients is very high, decreasing the degrees of freedom. As a result, we only focus on the interpretations which appear repeatedly in more than one university.

Generally, the correlations vary between public and private universities, as well as between countries; however, a couple of interesting correlations are worth highlighting. First of all, in all universities except for the University of Economics, Prague, there is a negative correlation between long-term career and salary. This implies that individuals with strong preferences for long-term career opportunities, generally have lower preferences for salary.

Second of all, the correlation between contract type and a horizontal work environment is negative and statistically significant at the 5% significance level for the University of the Basque Country (UPV/EHU) and the University of Oviedo, but not statistically significant for the other three universities. Given the unemployment rate in Bilbao and Oviedo, as well as the lower financial stability found among these respondents in the descriptive statistics, entry into the labour market is the most difficult for students from these two universities. This could explain why respondents from these two universities with strong preferences for a permanent contract, have lower preferences for a better work environment.

Table 2.10: Correlation Results for the University of the Basque Country (EHU/UPV). Spain-public university.

	Salary	Commuting time	Long-term career	Education	Contract	Mixed work env.	Horiz. work env.	Schedule
Salary	1							
Commuting time	-0.962***	1						
Long-term career	-0.621***	0.571**	1					
Education	-0.610**	0.531***	0.963**	1				
Contract	-0.084	0.045	0.800***	0.832***	1			
Mixed work env.	-0.206	0.314	0.481	0.365	0.353	1		
Horiz. work env.	-0.052	0.171	-0.291	-0.488	-0.585**	0.000	1	
Flexible Schedule	0.087	0.023	0.319	0.312	0.476	0.532	-0.012	1

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Table 2.11: Correlation Results for the University of Oviedo. Spain-public university.

	Salary	Commuting time	Long-term career	Education	Contract	Mixed work env.	Horiz. work env.	Schedule
Salary	1							
Commuting time	0.383*	1						
Long-term career	-0.647***	0.235	1					
Education	-0.016	-0.771***	-0.577***	1				
Contract	-0.242**	-0.730***	-0.137	0.308	1			
Mixed work env.	-0.088	0.139	0.050	-0.423	-0.029	1		
Horiz. work env.	0.353*	0.345	-0.452	0.003	-0.509***	0.022	1	
Flexible Schedule	0.206*	0.505***	-0.070	-0.283	-0.694***	0.304	0.479**	1

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Table 2.12: Correlation Results for Deusto Business School. Spain-private university.

	Salary	Commuting time	Long-term career	Education	Contract	Mixed work env.	Horiz. work env.	Schedule
Salary	1							
Commuting time	0.811*	1						
Long-term career	-0.168	0.025	1					
Education	-0.721	-0.389***	-0.258	1				
Contract	-0.364	-0.485	0.569	0.044	1			
Mixed work env.	0.051	0.323	0.071	0.098	-0.390	1		
Horiz. work env.	0.653	0.277	0.013	-0.853	-0.063	-0.278	1	
Flexible Schedule	0.417	0.665	0.507	-0.350	-0.061	0.576	0.225	1

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Table 2.13: Correlation Results for the University of Economics, Prague. The Czech Republic-public university.

	Salary	Commuting time	Long-term career	Education	Contract	Mixed work env.	Horiz. work env.	Schedule
Salary	1							
Commuting time	0.166	1						
Long-term career	-0.378	-0.224	1					
Education	-0.132	-0.575	0.593	1				
Contract	-0.120	-0.115	0.728	0.192	1			
Mixed work env.	0.635	-0.321	-0.661	-0.262	-0.444	1		
Horiz. work env.	0.300	-0.640	-0.322	0.076	-0.305	0.842	1	
Flexible Schedule	0.321	-0.280	-0.166	0.028	-0.024	0.505	0.644	1

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

Table 2.14: Correlation Results for the International School of Management. Germany-private university.

	Salary	Commuting time	Long-term career	Education	Contract	Mixed work env.	Horiz. work env.	Schedule
Salary	1							
Commuting time	-0.090	1						
Long-term career	-0.351*	0.936***	1					
Education	0.357***	0.536**	0.287	1				
Contract	0.372	0.356	0.133	0.136	1			
Mixed work env.	0.639	0.315	0.215	0.226	0.263	1		
Horiz. work env.	0.102	0.098	0.044	0.032	0.354	-0.035	1	
Flexible Schedule	0.132	-0.656**	-0.765***	0.024	-0.042	-0.197	-0.268	1

Note: ***, **, * denote significance at the 1%, 5%, and 10% level, respectively.

2.3.3 Willingness to Pay

In this section, we present the simulated WTP distributions which are derived from the estimated coefficients of the random parameters of the RPL model, with correlated and

uncorrelated coefficients. This allows us to make a relative comparison between models, universities and countries. WTP graphs are very similar for both versions of the RPL model given the very similar estimates presented in Tables 2.5–2.9; therefore, we only present the graphs from the RPL models with correlated coefficients. Figure 2.5 presents the WTP graphs for all universities. Similar to the boxplots included in Tables 2.5–2.9, the graphs show the 25th to the 75th percentile of the WTP distribution together with the corresponding median value.

Looking at the universities overall, Figure 2.5 show that the most important job characteristic is long-term career opportunity. Not only is this consistent across all three countries, but also across both public and private universities. This result is also, surprisingly, consistent with the findings of Lim and Soon (2006), who found that long-term career possibility was the most important job attribute for economics students in Malaysia. Education opportunity is also very important for students, and once again, independent of the type of university or the country.

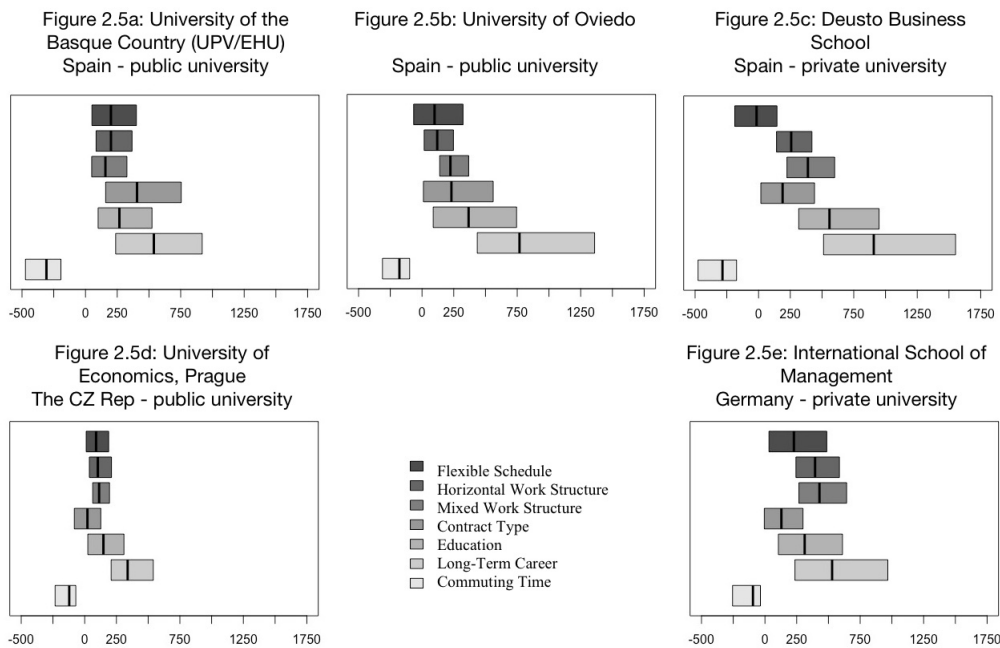
Comparing Spanish and non-Spanish universities, particularly, Figures 2.5a,b,c with 2.5d,e, commuting time is of high importance to Spanish students, while it is one of the least important attributes to respondents in the Czech Republic and Germany, indicating that it is most likely due to a cultural difference. Additionally, contract type is of low importance to respondents from the Czech Republic and Germany, but of high importance to Spanish students, especially to those from public universities. The high unemployment rate in Spain is a likely explanatory factor, creating a sense of insecurity in the labour market.

Furthermore, comparing public and private universities, namely Figures 2.5c,e with 2.5a,b,d, we can see that both the horizontal and mixed work environment is higher among respondents from private universities. One explanation for this result could be based on some comments private university students made in our focus groups, namely, that their goal was to work at “A-level” companies, such as Google, which are known for their good work environments, for example, offering their employees free meals, play areas, massage rooms and free yoga classes.

Lastly, the least important attribute for students is having a flexible schedule; consistent

across all universities regardless of the type of university or country. This is most likely due to the fact that at the beginning of their careers, students know they will have to show their skills, abilities and devotion for the company, which sometimes leads to extra hours. Moreover, at this stage in their lives, young people do not require that much flexibility in their schedules, as they become older and have families, however, the demand for flexibility increases.

Figure 2.5: WTP distributions by University.



Note: The WTP for commuting time is calculated for 30 minutes.

2.4 Discussion and Conclusions

We elicited students' job preferences using a DCE, a more quantitative and rigorous method than had been previously used in the literature. Taking into account students' job preferences, we simulated the WTP based on RPL model estimations for students at five universities, in three countries, at both public and private universities. We found that the possibility of working at the company long-term is the most important attribute, across countries and regardless of whether the university is public or private. Furthermore, people who have high preferences for long-term career possibilities, have lower preferences for

salary. Thus, if companies cannot offer applicants high salaries, they could offer them the possibility of working at the company long-term. Surprisingly, similar results were also found in Malaysia by Lim and Soon (2006), as well as most of the studies conducted among business students, which seems to suggest that students, in general, like to have the prospect of a long-term career at the company. Even though young employees might not choose to stay at the same job indefinitely, they would like that decision to be up to them rather than knowing their position at the company is stagnant.

Another important attribute for all students, regardless of the university, is the opportunity to further their education. Gaining work experience while at the same time further investing in their education is a good strategy in a labour market that is unstable with increasing demands. This is an obvious benefit for the company as well, if the company can afford it.

When comparing Spanish and non-Spanish universities, we found two differences. Firstly, for Spanish students, commuting time is an important attribute, while for students in the Czech Republic and Germany it is not. This is most likely a cultural difference, perhaps Spanish students prefer being closer to their families and are less willing to move, while students in the Czech Republic and Germany would simply move closer to the job, as was mentioned by a student in our focus group in Germany. Secondly, the importance of having a permanent contract was higher among Spanish students, especially at the two public universities, than the rest. This is clearly a result of the ongoing economic recession and the high unemployment rate in Spain. Additionally, students at the two public universities in Spain, who are likely to have a more difficult time finding a job than the rest, prefer forgoing a better work environment in order to obtain a job with a permanent contract. Unfortunately, the effects of the 2008 economic recession still loom large, with a very high unemployment rate, especially among young people, so for people with fewer financial resources, a permanent contract is more important than having a positive work environment. Many companies in Spain are taking advantage of the high unemployment rate, and offering mostly temporary contracts, which allows them the freedom to hire and fire (or not re-hire) anyone they want. Students should be more aware of labour market conditions and, therefore, not expect to obtain a permanent contract easily. Additionally,

policymakers could intervene, for example, offering a tax break to companies that employ young people with a permanent contract.

The only difference found between public and private universities was that for students at private universities, a better work environment was more important. Contrary to students at the two public universities in Spain, who were willing to forgo a better work environment to obtain a permanent contract, students from private universities have enough financial stability to not worry about the type of contract. Comments made by students in our focus groups at private universities suggest that work environment is important for them because their goal is to work at “A-level” companies, known for its modern work environment. Perhaps the biggest difference between students at public and private universities is the type of company they apply to afterwards.

The least important job attribute is having a flexible schedule, indicating that, when they first enter the labour market, young people expect to have to prove their worth which can lead to more hours at work. Additionally, the demand for a flexible schedule tends to increase with age, due to family obligations. Therefore, instead of offering them a flexible schedule, companies should offer new applicants long-term career or education opportunities, if they can.

Analyzing students’ job preferences can be beneficial for students, companies, and policymakers. Butler et al. (2000) showed that students are not aware of the true weights of their job preferences. When asked which attributes they find important, they do not give an accurate reflection of their preferences as when several attributes are combined together, in the form of job opportunities. Thus, learning about their preferences more accurately will inform them if they need to change or adjust them, better matching available job offer conditions. Companies should be aware of young people’s job preferences so that they can try to adapt, thereby attracting more candidates and being able to choose a better employee. Naturally, companies cannot always afford to offer new employees their preferred conditions, but with these kinds of studies, they can decrease the probability of offering them job characteristics they find unimportant. Lastly, policymakers need to be aware of these preferences, in addition to the conditions of the labour market, in order to help match young job-seekers with companies.

Our study is a good start to analyzing students' job preferences across various universities. The DCE is a useful tool to study the multidimensional character of choosing a job, taking into account the heterogenous preferences of the sample. It allows us to identify which attributes are more important than others. With regards to further research, it would be interesting to conduct the DCE in other regions of Spain as well as other European and non-European countries. Additionally, conducting a DCE to estimate *revealed* preferences of young people after entering the labour market would be a great comparison.

3 | Political Ideology and Distributive Preferences: An Experimental Test

3.1 Introduction

There is growing evidence in the social sciences that one's material interest is more important than ideology when it comes to redistributive preferences. This importance of economic conditions has been found both using survey data and experimental data (Barr, Burns, Miller & Shaw, 2015; Barr, Miller & Ubeda, 2016; Margalit, 2013; Owens & Pedulla, 2014). However, whereas non-experimental studies typically estimate jointly the effect of ideology and economic position, experimental studies have largely ignored ideology. In this paper, we explicitly test for political ideology using an experiment.

Margalit (2013) was endeavored to disentangle self-interest from ideology, and compare the effects of the two factors on social policy preferences. Using panel surveys, he examined the effect of an individual's job loss on his/her preferences for redistribution. He found that individuals who were employed in the first wave of surveys and then lost their jobs, became more pro-redistribution. Their preferences on other policy issues, however, were unaffected. He concluded that individuals become more pro-redistribution following a negative economic shock owing to self-interest and not a shift in their ideological value. Owens and Pedulla (2014), who also used a panel survey, found similar results to Margalit (2013).

Another way to separate self-interest from ideology is to observe participants' distributive preferences experimentally. Additionally, using an experiment bypasses the problem of subjects potentially answering questions in a way they think might be "desirable", since

experiments can be designed in such a way that the participants do not know what the experimenter is trying to measure. Scott, Matland, Michelbach and Bornstein (2001) as well as Michelbach, Scott, Matland and Bornstein (2003) used experiments to study distributive justice. They invited participants to read a short description of a hypothetical society, which they were not a part of, and then asked them to evaluate policy alternatives based on income distributions. Other studies use two-stage experimental designs involving a production stage, followed by a dictator game. Konow (2000) and Frohlich, Oppenheimer and Kurki (2004) used such designs to examine the roles of fairness and self-interest during the allocation of economic rewards. In both cases, the “recipient” took part in the production stage and, afterwards, the “dictator” decided how to divide the money between them. Since the total amount of money in the second stage was determined by how well the recipient did in the first stage, the dictator’s decision was between his/her own self-interest and the recipient’s “just deserts”. Cappelen, Hole, Sørensen and Tungodden (2007) conducted a similar two-stage experiment, but in the production stage, participants were asked to make an investment, rather than perform a real-effort task. They estimated the degree of heterogeneity in fairness ideals and found that liberal egalitarianism was the most prevalent. Erkal, Gangadharan and Nikiforakis (2011), on the other hand, conducted a real-effort task followed by a four-person dictator game, adding in a random shock, portraying luck, which decreased the earnings of some of the players in one of the treatments. They found that those who ranked first were significantly less likely to give than those ranked second.

Some researchers have taken such two-stage experiments into the field. “Lab-in-the-field” experiments engage and work with non-student participants in or close to their natural environment (Morton & Williams, 2010, pp.296). Using this method, Jakiela, Miguel and te Velde (2015) found that, in Kenya, an increase in human capital caused an increase in acknowledgment of earned entitlement (AEE). Cappelen, Moene, Sørensen and Tungodden (2013) conducted a two-stage experiment matching participants in two of the richest countries, Norway and Germany, with participants in two of the poorest countries, Uganda and Tanzania. Distributive decisions did not vary with nationality, but were affected by perceptions of both entitlement and neediness. The latter was more important to participants in the two low-income countries, consistent with self-serving bias. Lastly, Barr and

coauthors (Barr et al., 2015; Barr et al., 2016) focused on the effect of economic status on distributive preferences. Using an experiment that they conducted in South Africa, the UK and Spain, they found that participants who were employed or well-off acknowledged earned entitlement, while those who were unemployed or poor did not. In other words, the poor and unemployed were more pro-redistribution.

The contribution of this paper is to test the effect of political ideology on distributive preferences elicited in a “lab-in-the-field” experiment. As far as we know, this is the first study to use an experiment to investigate the relationship between political ideology and preferences for redistribution. There is also surprisingly little evidence on the correlation between standardized measures of political ideology and self-reported perceptions of fairness. Typically, these two measures are included as predictors of other variables, such as preferences for redistribution (Alesina & Giuliano, 2010) or social welfare preferences (Margalit, 2013). An important exception is Evans (1997). In one of the results found in his paper, political ideology (measured using a left-right scale) is correlated with responses to a vignette experiment portraying meritocratic views. The author finds a weak correlation in the expected direction: right-wing responders tend to put more weight on individual responsibility, a typical attribute of the meritocratic view.

The experiment reported here consisted of a real-effort task, followed by a four-person dictator game. The two treatments in the experiment differed in how the initial endowments of the four-person dictator game were determined. In the *earned* treatment, the endowments were ranked according to performance in the real-effort task, and in the *random* treatment, the endowments were assigned randomly. The two treatments allowed us to estimate AEE and how it relates to political ideology. We found that ideology has a weak effect on distributive preferences when considering the entire sample. The extreme-left-wing participants do not acknowledge earned entitlement, exhibiting egalitarian values. Then, as self-reported political ideology move rightwards, AEE increases. When analyzing the results by economic status, we find that ideology has a strong effect on AEE for students, and no effect for unemployed or employed participants.

3.2 Empirical Strategy

3.2.1 Experimental Design

Spain is made up of several regions, many with their own distinct languages and cultures. We conducted our experiment in Bilbao, in the north of Spain, and in Cordoba, in the south of Spain, so that the generalizability of our findings could be investigated.¹ The experiment was conducted in 2014 and consisted of two parts. In the first part of the experiment, participants were asked to engage in a real-effort task, an easy-to-understand, manual task for which no skills were required.² In the second part of the experiment, participants took part in a four-person dictator game. A tray divided into four quadrants, with each quadrant corresponding to a group member, was handed to each participant. Initial endowments of each of the group members were indicated with black counters that were placed in each quadrant (1 counter = €1). The four possible initial endowment values were €6, €10, €12 and €16. Participants were then told they could move the counters around however they wanted, as long as no counter left the tray. Once everyone had finished, the decisions of one group member were randomly chosen to determine the final payoffs. At no time did participants know who the other group members were, and they were told their final allocation decisions would remain anonymous. Apart from the final payoff, participants also received a €4 show-up fee.

There were two treatments. In the *earned* treatment, a participant's initial endowment was directly related to their rank in the real-effort task; the person who performed the best, started with the highest initial endowment in the four-person dictator game. In the *random* treatment, the initial endowments were randomly assigned—the two parts of the experiment were not connected in any way.

At the end of the experiment, participants completed a survey which included questions on their basic demographics, self-reported health, and economic status. There was also a question containing a left-right scale going from one (left) to ten (right) and was worded as follows: *When people talk about politics, the terms left and right are usually used. Below*

¹This is the same experiment as was used by Barr et al. (2016) and is based on the experiment conducted by Barr et al. (2015).

²Please see section B1 in Appendix B for a more detailed description of the experiment.

there is a left-right axis. Where would you place yourself on this axis? Indicate it with an X.³ We refer to this question as *left-right* instead of ideology since the political frame of the question has been removed. Furthermore, we used a 10-point scale so we could compare it to previous studies, such as to Alesina and Giuliano (2011).⁴

3.2.2 Analytical Framework

Since we are interested in analyzing the effect of one's placement on the left-right axis on distributive preferences, several variables should be included in our model. Initial endowment of the other three group members plays an important role because in the earned treatment, it is directly linked with the participant's rank in the real-effort task; this is necessary to measure AEE. Including the treatment the participant was in allows us to measure the difference between the two treatments. Lastly, since the main focus of this paper is on political ideology, or *left-right*, it must also be included in the model.

We began by using the same analytical model as Barr et al. (2015) and Barr et al. (2016), substituting $left-right_i$ for $unemployed_i$. We call this Model 1:

$$\begin{aligned}
 x_{ij \neq i} = \beta_0 &+ \beta_1 E_i + \beta_2 y_j + \beta_3 (E_i \times y_j) + \beta_4 left - right_i + \beta_5 (E_i \times left - right_i) \\
 &+ \beta_6 (y_j \times left - right_i) + \beta_7 (E_i \times y_j \times left - right_i) + \varepsilon_{ij}
 \end{aligned}
 \tag{3.1}$$

where x_{ij} is the final allocation assigned by participant i to participant j (note that we

³We also checked if respondents' answers to: *Which of the following people or organizations do you think has the greatest responsibility to help the poor?* were in line with their self-reported left-right measure. Participants self-reporting to be a four or lower stated that the government (72%) and charities/non-profit organizations (10%) should help. Fewer respondents from the other end of the spectrum (anything higher than a five) reported that the government should help (42%), followed by charities/non-profit organizations (23%) and the Church (18.5%). These results are consistent with their placement on the left-right axis.

⁴Lo, Proksch and Gschwend (2014) address scaling issues when it comes to a participant's ideology, but these only arise with cross-national and other studies that pool data from different surveys; the World Values Survey uses a scale of one to ten for ideology, the General Social Survey uses a scale of one to seven, and the European Election Studies uses a scale of one to eleven. The scale from one to ten is the most common in Spain.

only consider $i \neq j$ for our analysis),⁵ E_i is a dummy variable which equals 1 for the earned treatment, y_j is the initial endowment of participant j , and $left-right_i$ is participant i 's placement on the left-right axis.

We encountered multicollinearity issues due to the lack of variation in the *left-right* variable, so we divided it into four groups and estimated Model 1 for each group. Since the frequency distribution of *left-right* is slightly skewed to the left, with few observations on the far-right of the axis, our groupings were slightly skewed to the left as well, maintaining comparable sample sizes in each group. It would have been ideal to group two *left-right* “points” together, i.e., 1+2, 3+4, 5+6, 7+8, 9+10, but, as can be seen from Table 3.1, we would have encountered sample size problems on the far-right of the scale. Had we grouped together fewer *left-right* values than 6–10, the sample size would have been small and incomparable to the other groups.

Table 3.1: Distribution of *left-right*.

<i>Left-right</i>	1	2	3	4	5	5.5	6	7	8	9	10
Frequency	33	41	103	63	98	4	34	18	5	4	1

We defined the “extreme-left” as those who self-reported being a one or a two on the left-right axis, the “left-wing” as being a three or a four, and the “centre” as being a five.⁶ Lastly, we grouped all participants who self-reported being a six or higher and classified them as being “right-wing”. Since the regression is limited to each grouping of *left-right*, all interactions with the *left-right* variable from Model 1 drop out, and we are left with Model 2:

$$x_{ij \neq i} = \beta_0 + \beta_1 E_i + \beta_2 y_j + \beta_3 (E_i \times y_j) + \varepsilon_{ij}. \quad (3.2)$$

Note that in both models, there are three observations for each participant, so we clustered errors at the individual level.

⁵This excludes allocations to self. We only focus on allocations to others, however, we will use allocations to self to estimate selfishness later.

⁶5.5 was chosen by four respondents which have also been categorized as centre.

3.2.3 Sample

We ran 13 experimental sessions in Bilbao, seven sessions of 16 participants and six sessions of 12, with a total of 184 participants. In Cordoba we ran 16 experimental sessions, nine sessions of 16 participants and the rest of 12, with a total of 228 participants. The large majority of the sample (95%) was aged 20–35.

Table 3.2 displays the main characteristics of our sample, which is evenly distributed among gender and city, with no large differences between the ideology groupings.⁷ The average participant is approximately 27 years old and has a post-secondary education. *Left-right* is slightly skewed to the left, with a mean value of four.

Table 3.2: Participants and treatment assignment.

	All	Extreme-Left	Left	Centre	Right
Sample sizes	404	74	166	102	62
Characteristics					
Female (%)	53%	51%	60%	49%	45%
Age (mean)	26.9	27.3	27.4	26.1	26.3
Years in education	17.9	18.3	18.1	17.2	18.2
Left-right	4 (mean)	1, 2	3, 4	5, 5.5	6 – 10
Location					
Bilbao (%)	44.3%	58.1%	44.0%	37.3%	40.3%
Cordoba (%)	55.7%	41.9%	56.0%	62.8%	59.7%
Treatments					
Random (%)	40.6%	37.8%	41.6%	41.2%	40.3%
Earned (%)	59.4%	62.2%	58.4%	58.8%	59.7%

3.3 Results

3.3.1 Descriptive Statistics

Table 3.3 presents a summary of the final allocations made by the participants. The first row of each treatment section displays the percentage of people who allocated zero to

⁷Out of 412 participants, eight people left the *left-right* question unanswered, but since this is slightly less than 2% of our sample, we are not concerned about our results being biased. If we impute the eight missing values, the results remain the same.

each of the other three members of their plying group, we use the term “selfish” when we talk about these participants. There is a slightly higher percentage of selfish decisions in the earned treatment than in the random treatment. The right-wing participants are more likely to make selfish decisions in comparison to everyone else; in the earned treatment, 27% of right-wing participants kept all of the initial endowments for themselves. This is almost three times the likelihood observed among centre and more than four times that observed among extreme-left. The second and third rows display the percentage of participants that made equal allocations across the other group members, participant i excluded and included respectively. More participants made equal allocations in the random treatment than in the earned, which is what we would expect, since in the former treatment, initial endowments were allocated by luck. In the random treatment, a higher percentage of extreme-left and left-wing participants allocated one-quarter of all endowments to each group member than the rest, 36% and 35% in comparison to 24% and 20%. Similarly, in the earned treatment, a much higher percentage of the extreme-left allocated one-quarter to each person, exhibiting egalitarian traits. The fourth row in each section of the table presents the percentage of participants that left initial endowments unchanged. A slightly higher percentage of participants in the earned treatment left the tray untouched compared to the random treatment. The last two rows of each section present mean final allocations by participants to themselves and to others. The mean allocations to self and others vary

Table 3.3: Experimental data summarized.

	All	Extreme-Left	Left	Centre	Right
Random Treatment					
Allocated zero to all others (%)	7.9%	10.7%	4.4%	14.3%	4.0%
Equal allocations across other three (%)	73.8%	71.4%	78.3%	71.4%	68.0%
One quarter to each of the four (%)	29.9%	35.7%	34.8%	23.8%	20.0%
Left initial endowments unchanged (%)	1.2%	0%	1.5%	2.4%	0%
Allocation to self (mean proportion)	0.44	0.44	0.40	0.47	0.46
Allocation to others (mean proportion)	0.19	0.19	0.20	0.18	0.18
Earned Treatment					
Allocated zero to all others (%)	11.3%	6.5%	8.3%	10.0%	27.0%
Equal allocations across other three (%)	52.1%	63.0%	42.3%	51.7%	64.9%
One quarter to each of the four (%)	16.7%	28.3%	12.4%	16.7%	13.5%
Left initial endowments unchanged (%)	7.1%	6.5%	10.3%	6.7%	0%
Allocation to self (mean proportion)	0.46	0.45	0.45	0.43	0.57
Allocation to others (mean proportion)	0.18	0.18	0.18	0.19	0.14

only marginally across the treatments, except in the case of the right-wing participants, who allocated considerably more to themselves in the earned treatment.

3.3.2 Main Effect of Political Ideology

Table 3.3 shows some evidence of extreme-left-wing participants having egalitarian tendencies, however, it is only a descriptive statistics table. Table 3.4, on the other hand, displays the results of an OLS regression estimated for the full sample excluding the selfish, i.e., participants who allocated zero to everyone but themselves. We exclude them on the basis that they do not provide any information on their distributive preferences, following the methodology of Barr et al. (2015).⁸

Table 3.4: Regression analysis of allocations to others.
Dependent variable = participant i 's final allocation to participant j

	Full Sample Excluding Selfish	Std. Error
Earned treatment (E_i)	-0.042	(0.031)
j 's initial endowment (y_j)	-0.004	(0.078)
$y_j \times E_i$	0.098	(0.113)
$left-right_i$	-0.003	(0.005)
$left-right_i \times E_i$	-0.008	(0.007)
$y_j \times left-right_i$	-0.000	(0.017)
$y_j \times left-right_i \times E_i$	0.045*	(0.026)
Constant	0.218***	(0.022)
Observations		1092
Participants		364

Notes: (i) Unit of analysis is an allocation by i to j ; (ii) excluding allocations to self ($i=j$); (iii) excluding participants who made zero allocations to everyone other than themselves; (iv) clustered standard errors at the individual level; (v) the significance levels are indicated by: * $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.001$.

The first variable in Table 3.4 is a dummy variable for the earned treatment, representing how much money, on average, participant i allocated to participant j in the earned

⁸Only 10% of the sample were completely selfish, and we also test for a link between *left-right* and selfishness using Model 1 in section B2 of Appendix B. In order to make sure we could safely exclude the selfish participants, we tested for sample selection bias. First, we estimated a logit model to obtain an estimate of the inverse Mills ratio, which we then included in the estimation of Model 1. A failure to reject the null hypothesis that the coefficient of the inverse Mills ratio was zero, allowed us to make this exclusion (see section B3 in Appendix B for details).

treatment with respect to the random treatment which is represented by the constant. Final allocations are coded in terms of proportions, where a final allocation of 0.218 means that, on average, participant i allocated 21.8% of total initial endowments (€44) to participant j (€9.59). The earned treatment dummy variable is not statistically significant which indicates that, independent of initial endowments and the participant's ideology, there was no difference in the mean final allocations between the two treatments.

Focusing on the random treatment, none of the variables, i.e., y_j , $left-right_i$, $left-right_i \times y_j$, are statistically significant at the 5% significance level. This indicates that participant j 's initial endowment or participant i 's ideology have no effect on participant i 's final allocation to participant j in the random treatment. This is exactly what one would expect since in the random treatment, a participant's initial endowment is determined randomly, or by luck.

The main effect we are interested in is that of *left-right* on AEE. Note that if the triple interaction term between *initial endowment* of participant j , *left-right* and *earned treatment* is statistically significant, this means that participants at different points on the left-right axis, acknowledge earned entitlement differently. From Table 3.4, we see that the coefficient for this triple interaction term is positive and statistically significant at the 10% significance level. This indicates that, there is only a slight difference in how participants acknowledged earned entitlement, depending on *left-right*. The further right on the left-right axis, the more the participant will acknowledge earned entitlement. However, the triple interaction term is only statistically significant at the 10% significance level, indicating that *left-right* does not play a very important role when acknowledging earned entitlement.

Table 3.5 presents the linear regression results for each of the four groupings of *left-right*. As we can see from the first column of results, in the case of extreme-left participants, none of the variables, apart from the constant, are statistically significant. Most importantly, the interaction term $y_j \times E_i$ is not statistically significant which indicates that the extreme-left do not acknowledge earned entitlement at all. These participants demonstrate egalitarian traits; evidence of which has been seen in Table 3.3, which showed that they allocated one-quarter of total endowments to each group member, the most. Regardless of treatment and

initial endowments, extreme-left participants, on average, divided the total initial endowments among the other three group members almost completely equally, at a proportion of 0.213. This result is in agreement with the literature; Alesina and Giuliano (2011) found that more left-wing individuals were pro-redistribution, and Margalit (2013) observed that 81% of Democrats were supportive of greater welfare spending, in comparison to only 22% of Republicans.

Table 3.5: Regression analysis of allocations to others by *left-right* grouping.
Dependent variable = participant i 's final allocation to participant j

	1st Group (ext-left)	2nd Group (left)	3rd Group (centre)	4th Group (right)	Ext-Left vs. The Rest
E_i	-0.044 (0.029)	-0.081*** (0.018)	-0.076*** (0.026)	-0.084** (0.033)	-0.078*** (0.013)
y_j	-0.015 (0.088)	0.019 (0.033)	-0.047 (0.051)	0.004 (0.062)	-0.002 (0.026)
$y_j \times E_i$	0.128 (0.109)	0.288*** (0.064)	0.325*** (0.089)	0.362*** (0.108)	0.306*** (0.047)
$Ext-L_i$					0.009 (0.025)
$Ext-L_i \times E_i$					0.034 (0.032)
$Ext-L_i \times y_j$					-0.013 (0.091)
$Ext-L_i \times y_j \times E_i$					-0.178 (0.118)
Constant	0.213*** (0.024)	0.203*** (0.012)	0.217*** (0.017)	0.187*** (0.012)	0.204*** (0.008)
Observations	204	465	270	153	1092
Participants	68	155	90	51	364

Notes: (i) Unit of analysis is an allocation by i to j ; (ii) excluding allocations to self ($i = j$); (iii) excluding participants who made zero allocations to everyone other than themselves; (iv) clustered standard errors at the individual level; (v) significance levels are indicated by: * $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.001$.

The second column of results of Table 3.5 displays the results for “left-wing” participants. The constant is similar to the extreme-left participants, which indicates that in the random treatment, on average, left-wing participants’ final allocations were the same as for the extreme-left. In the earned treatment, however, left-wing participants did acknowledge earned entitlement as can be seen from the coefficient for the interacted term $y_j \times E_i$, which is positive and statistically significant at the 1% significance level. The size of AEE can be seen from the magnitude, which is 0.288.

In the third column, we find the results for “centre” participants. Once again, the constant is similar to that of the extreme-left- and left-wing participants, therefore the centre participants allocated similar amounts to the others in the random treatment, on

average. These participants also acknowledged earned entitlement, with a size of 0.325.

The results for the right-wing participants can be seen in the fourth column of Table 3.5. Although the magnitude of the constant appears to be lower, the 95% confidence intervals slightly overlap across the groups. Thus, in the random treatment, mean allocations were similar across the groups, on average. The sign and statistical significance of the interacted term indicates that the right-wing participants acknowledged earned entitlement, with a size of 0.362.

When we compare the results of the two ends of the left-right scale, the size of AEE of the right-wing participants is approximately three times greater than for the extreme-left participants. This signifies that right-wing people are likely to acknowledge earned entitlement approximately three times more than the extreme-left.

In the last column of Table 3.5 are the results of a linear regression using Model 1 to compare the extreme-left participants with the rest. Substituting in a dummy variable, $Ext-L_i$, that equals 1 if the participant is a 1 or a 2 on the left-right scale, and 0 otherwise, we estimated an OLS regression. Using the estimates from Table 3.5, we calculated the p-values of the slopes presented in Table 3.6. We examine slopes since they tell us the rate of change in final allocations with respect to an increase in initial endowments. First, focusing on the random treatment of both groups, we find that the slopes are not statistically significant. This is confirmation of what we have seen in Table 3.4, in the random treatment, final allocations are not impacted by initial endowment levels or *left-right*. From the last row, we can see that the extreme-left participants did not acknowledge earned entitlement, while the non-extreme-left participants did. So far, none of this is new information, it is simply confirming our previous findings. The reason we estimated this last model was to test if this difference in AEE between the two groups is statistically significant. This difference

Table 3.6: Slopes and AEE for the extreme-left and others.

	Extreme-Left		Not Extreme-Left	
	Slope	P-value	Slope	P-value
Random Treatment	$y_j + (Ext-L_i \times y_j)$	0.862	y_j	0.941
Earned Treatment	$y_j + (Ext-L_i \times y_j) + (y_j \times E_i) + (Ext-L_i \times y_j \times E_i)$	0.078	$y_j + (y_j \times E_i)$	0.000
AEE	$(y_j \times E_i) + (Ext-L_i \times y_j \times E_i)$	0.235	$(y_j \times E_i)$	0.000

Notes: (i) Slopes were derived from Model 1; (ii) AEE is the difference between the slopes of the two treatments; (iii) in the case of the linear combinations, p-values were calculated using a *t*-statistic.

is represented by the coefficient of $Ext-L_i \times y_j \times E_i$. From Table 3.5, we can see that the coefficient is not statistically significantly different from zero, meaning that the difference between the two groups is not statistically significant.

We also estimated Model 1 to test if we were capturing the effect of *left-right* on selfishness instead of on distributive preferences. The only changes we made to the model were rather than using the final allocations of participant i to participant j , and initial endowments of participant j , we used the final allocation of participant i to himself/herself and participant i 's initial endowment. In a nutshell, the triple interaction term is not statistically significantly different from zero. This means that a relationship between *left-right* and selfishness cannot be established (please see section B2 in Appendix B for the results).

3.3.3 Political Ideology and Economic Status

Somewhat surprised by the weak effect of *left-right* on AEE, we decided to examine the results by economic status, given the significant results found by Barr et al. (2015), Barr et al. (2016), Margalit (2013) and Owens and Pedulla (2014). Following Barr et al.'s (2015) categorization, we analyze the results for students, employed and unemployed participants independently.

Table 3.7 presents the linear regression results, using Model 1, by economic status. When looking at only students, we find that the triple interaction term becomes statistically significant at the 5% significance level, while no other variables, apart from the constant, are statistically significant. This indicates that *left-right* has a strong impact on AEE for students. The results for the unemployed participants are displayed in the second column. Apart from the constant, none of the variables are statistically significant. Unemployed participants allocated, on average, 17.6% of final allocations, regardless of initial endowments, treatment or *left-right*. Lastly, the triple interaction term is not statistically significantly different from zero for the employed participants, meaning that *left-right* does not have a strong impact on AEE for this group of participants either.

We controlled for economic status by adding in *unemployed*, a dummy variable which is 1 if the participant is unemployed, and is 0 if employed or a student, along with its interactions with E_i and y_j . Table B2 in section B5 of Appendix B shows that the coefficient of the triple

interaction term, $unemployed_i \times E_i \times y_j$, is statistically significant at the 5% significance level, while the triple interaction term with $left-right_i$ remains insignificant. This indicates that economic status does affect AEE differently and is more important than $left-right$. In addition, we also controlled for age in the regression for the student sample. As can be seen from Table B3 in section B5 of Appendix B, the results remain robust. Although the triple interaction term decreases to a 10% significance level, this means that excluding age, the act of not being in the labour market has an impact on the effect of political ideology on AEE.

Table 3.7: Regression analysis of allocations to others by economic status.
Dependent variable = participant i 's final allocation to participant j

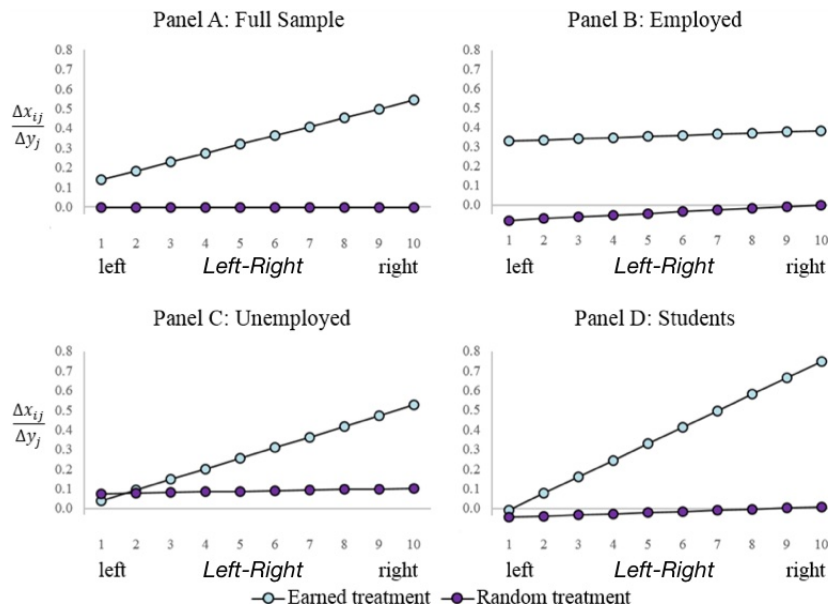
	Students	Unemployed	Employed
Earned treatment (E_i)	-0.039 (0.052)	0.038 (0.047)	-0.131** (0.055)
j 's initial endowment (y_j)	-0.052 (0.080)	0.073 (0.129)	-0.089 (0.155)
$y_j \times E_i$	-0.039 (0.170)	-0.087 (0.173)	0.414* (0.212)
$left-right_i$	-0.003 (0.005)	0.004 (0.009)	-0.012 (0.008)
$left-right_i \times E_i$	-0.011 (0.013)	-0.017 (0.012)	0.007 (0.013)
$y_j \times left-right_i$	0.006 (0.014)	0.003 (0.032)	0.009 (0.032)
$y_j \times left-right_i \times E_i$	0.078** (0.038)	0.051 (0.042)	-0.003 (0.048)
Constant	0.231*** (0.027)	0.176*** (0.035)	0.257*** (0.040)
Observations	297	363	432
Participants	99	121	144

Notes: (i) Unit of analysis is an allocation by i to j ; (ii) excluding allocations to self ($i=j$); (iii) excluding participants who made zero allocations to everyone other than themselves; (iv) clustered standard errors at the individual level; (v) the significance levels are indicated by: * $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.001$.

The results by economic status can also be seen graphically. Figure 3.1 displays the slopes of the relationship between participant i 's allocation to participant j and participant j 's initial endowment. The slopes are graphed for each value of $left-right$, for both the earned and random treatments. Panel A presents the slopes for the full sample, whereas Panels B–D display the slopes by economic status. All four panels show that for the random treatment, the slopes are nearly zero, therefore all participants redistribute money equally, regardless of their $left-right$ placement or participant j 's initial endowment. However, in

the earned treatment for the full sample, slopes are positive and increase the further to the right. This is captured by the triple interaction term $y_j \times \text{left-right}_i \times E_i$ in Table 3.4. Panel B displays the slopes for the employed participants; the slopes do not vary much for either of the treatments, indicating that AEE does not depend on *left-right*, as can be seen from the insignificance of the triple interaction term in Table 3.7. The increasing distance between the slopes for the two treatments for the unemployed, shown in Panel C, suggests that the unemployed acknowledge earned entitlement more, the further right they are. However, the triple interaction term of $y_j \times \text{left-right}_i \times E_i$ in Table 3.7 indicates that AEE is never significantly different from zero. The graph for students, in Panel D, captures a difference between the two treatments; students at the extreme-left of the political spectrum do not acknowledge earned entitlement, while those on the extreme-right do. Moreover, the size of the effect is large, in comparison to the unemployed and the employed, as can be seen from the magnitude of the triple interaction term in Table 3.7.

Figure 3.1: The Effect of Ideology on AEE.



Note: The linear functions graphed are derived from the estimated coefficients of the models in Tables 3.4 and 3.7.

Table 3.8 displays the regression results of the extreme-left in comparison to everyone else by economic status. The interaction term $y_j \times E_i$ represents AEE for participants who

are not extreme-left. In all three cases, the coefficient is positive and statistically significant at the 5% significance level (or better). We have already seen this in the second, third and

Table 3.8: Regression analysis of allocations to others by economic status. Extreme-left vs. the rest.
Dependent variable = participant i 's final allocation to participant j

	Students	Unemployed	Employed
Earned treatment (E_i)	-0.087*** (0.025)	-0.039 (0.024)	-0.094*** (0.020)
j 's initial endowment (y_j)	-0.035 (0.047)	0.066 (0.043)	-0.031 (0.043)
$y_j \times E_i$	0.311*** (0.084)	0.168** (0.073)	0.393*** (0.079)
$Ext-L_i$	0.002 (0.026)	-0.033 (0.033)	0.051 (0.048)
$Ext-L_i \times E_i$	0.065* (0.034)	0.067 (0.045)	-0.038 (0.061)
$Ext-L_i \times y_j$	0.090 (0.059)	0.069 (0.112)	-0.133 (0.177)
$Ext-L_i \times y_j \times E_i$	-0.370*** (0.125)	-0.242 (0.164)	0.040 (0.220)
Constant	0.215*** (0.016)	0.197*** (0.016)	0.200*** (0.012)
Observations	297	363	432
Participants	99	121	144

Notes: (i) Unit of analysis is an allocation by i to j ; (ii) excluding allocations to self ($i=j$); (iii) excluding participants who made zero allocations to everyone other than themselves; (iv) clustered standard errors at the individual level; (v) the significance levels are indicated by: * $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.001$.

fourth columns of Table 3.5. The magnitude of the coefficient is the largest for employed participants, more than twice as large as that of the unemployed participants. This indicates that non-extreme-left-wing participants who were employed were twice as likely to acknowledge earned entitlement as those who were unemployed. The triple interaction term between $Ext-L_i \times y_j \times E_i$ demonstrates whether AEE changes depending on *left-right*. As we can see, the coefficient for this term is negative and statistically significant at the 1% significance level for students. This means that students who self-report as extreme-left acknowledge earned entitlement less than those who do not. However, for both the unemployed and the employed participants, the coefficients for this triple interaction term are not statistically significantly different from zero. This result demonstrates that political ideology is only an important factor on AEE if the person is not in the labour market. Since being employed or unemployed yields similar results, it is being in the labour market itself that removes the importance of one's ideology when acknowledging earned entitlement.

Students can “afford” to behave according to their ideological values, whereas people in the labour market are most likely driven by their economic status, as was found by Barr et al. (2015) and Barr et al. (2016).

3.4 Discussion

The contribution of this paper is twofold. To the best of our knowledge, this is the first time the effect of political left-right ideology has been studied on distributive preferences in an experimental setting. Moreover, the study also captures the importance of economic status when analyzing the effect of political ideology on AEE.

The experiment conducted was composed of two phases, a real-effort task followed by a four-person dictator game. The experiment only differed in the treatment subjects participated in. In the earned treatment, initial endowment values in the four-person dictator game reflected how well the participants did in the real-effort task. In the random treatment, the initial endowment values were assigned randomly, therefore the two parts of the experiment were not connected in any way.

The findings show that political ideology has a weak effect on how people acknowledge earned entitlement when considering the full sample, and it manifests itself in the two ends of the left-right scale. Ideology had no effect on the distributive preferences in the random treatment, since endowments were assigned by chance. It was only in the earned treatment that the effect of ideology was triggered. The participants who were extreme-left, did not acknowledge earned entitlement, exhibiting egalitarian traits. The rest of the participants did acknowledge earned entitlement, adhering to meritocracy, an effect that increases the further right on the left-right axis. When analyzing this effect by economic status, we found that ideology has a strong impact on AEE for students, who can “afford” to act according to their ideological values. Ideology had no effect on AEE for neither the employed nor the unemployed participants, suggesting that their economic status plays a more important role than their ideology.

Despite the growing evidence of material interest outweighing ideology in determining distributive preferences, we provide evidence of an instance where ideology does have a strong impact; namely, when we consider the preferences of students. Since they have not

yet entered the labour market, they have nothing to lose and thus can “afford” to behave in accordance with their ideological values. People already in the labour market, however, are not afforded this privilege and thus behave according to their economic status, rather than their ideological principles.

4 | Education and the Non-Financial Employment Commitment in Times of Economic Recession Among the Youth in Spain

4.1 Introduction

If you were to get enough money to live as comfortably as you would like for the rest of your life, would you continue to work? For over six decades, researchers have been studying the answers to this question and have found surprising results—the majority say they would. It clearly indicates that there is more to a job than just the economic benefits. This non-financial motivation for working may be caused by a sense of purpose, making them feel useful, or because they simply enjoy what they do.

This so-called “lottery question” has been used as a proxy to measure this non-financial employment commitment (which we also call the willingness to continue working in this paper). Studies have only been carried out in seven countries, so this paper contributes to the research by including a Southern European country for the first time—namely, Spain. It is probably not very surprising to learn that in Japan and Germany, the willingness to continue working is high, but we know nothing about countries that are not necessarily known for their high work ethic (MOW, 1987).

Our focus on Spain is twofold. First of all, we are going to examine the effects of the economic recession on the non-financial employment commitment. The most recent

estimate of the unemployment rate in Spain, corresponding to the third term of 2016, is 18.9% (INE, 2016b), so the non-financial commitment to work should be of extreme importance. If people have a low non-financial commitment to work in a country that is in the middle of an economic recession, it can have serious repercussions and prove difficult to recuperate from the recession. It is not self-evident, how a recession affects the non-financial commitment to work. Do people feel demotivated because of the tougher work conditions and fewer job opportunities and are therefore *less* willing to continue working? Alternatively, do they experience the sudden necessity to work which makes them *more* willing to continue working? This effect has not yet been studied in great detail.

Second of all, there are not that many studies that concentrate on the effects of education on the willingness to continue working. In a time with an increasing number of people graduating from university, it is very important to know what effect different levels of education have on the non-financial commitment to work. Policy makers should be aware of these effects when making decisions since they could be indirectly affecting the non-financial employment commitment of an entire generation.

The rest of the paper is organized as follows. In Section 2, we start by reviewing previous literature on the lottery question and list our main hypotheses. Following that, in Section 3, we detail the data and the methodology. Then, in Section 4, we present our results and conclude with a discussion in Section 5.

4.2 Literature Review

The first version of the “lottery question” was posed to an adult working male population by Morse and Weiss (1955) in the US. They asked, *Would you continue to work if you inherited enough money to live comfortably without working?*. Their findings show that 80% of the participants said they would. This was followed up by a similar study done in the US by Vecchio (1980), who asked, *If you were to get enough money to live as comfortably as you would like for the rest of your life, would you continue to work or would you stop working?*. He found that 72% would continue to work; although a slight decrease, the majority still chose to continue to work. Highhouse, Zickar and Yankelevich (2010) wanted to test if this non-financial commitment to work continued to decrease, so they conducted a similar

experiment. They found that 72.8% would continue working 1980-1993 and 68% would continue to work 1994-2006; a very small decrease but still quite high.

Similar studies have been done in other countries. Paulsen (2008) includes an analysis of many of these studies done up to that date—from 1955 to 2005. The 23 studies he has listed were administered in seven different countries: the US, Great Britain, Israel, Germany, Japan, the Netherlands and Belgium. In all cases, the majority chose to continue to work, with the lowest being 59% among employed females in the US in 1971 and the highest 93.4% among the adult population in Japan in 1987 (Paulsen, 2008; Campbell, Converse & Rodgers, 1976; MOW, 1987). The majority of the studies had a non-financial commitment to work of 70% or higher.

The samples used in previous research vary as some only focused on the employed, others on just the unemployed, other samples were limited to only males or only females, and others included the entire working population. Nonetheless, this did not seem to affect the non-financial commitment to work that much, if at all. In all previous studies, the majority always chose to continue working. In fact, in the US, Kaplan and Tausky (1974) looked at the non-financial commitment to work among the hard-core unemployed and still found that 80% would continue working. Likewise in Great Britain, Warr (1982) found that out of the unemployed men who were actively seeking employment, 73% chose to continue working; for women it was slightly lower at 68%. However, out of the unemployed men who were not seeking work, only 33% said they would continue working; similar results were found for women. This is the only time where the majority chose not to continue working.

A relationship between the level of education and the non-financial commitment to work has been found in many studies. Researchers have found that higher-educated workers are more likely to keep working than those with less education (Campbell et al., 1976; Vecchio, 1980; Harpaz, 2002). Rose (2005) asked the lottery question in Britain in 2000, and established that 78% of those with a degree or a higher degree would continue working, 67% of those with a higher qualification below a degree would continue working, 61% with A levels (the last two years of high school), 64% with a secondary education and 53% with no formal education would continue working. Tausky (1969) and the MOW (1987) have separately identified that the less-educated place more importance on the economic and

material conditions of working, whereas the higher-educated value expressive aspects of working. Furthermore, the MOW (1987) found that people of low educational level tended to define work negatively, while people of high educational level defined it positively. Lyman (1955) extends this to the socioeconomic scale. People at the lower end of the scale are more likely to stress the economic aspects of work and people at the upper end typically stress the satisfaction in the work itself. All in all, education appears to have a positive correlation with the willingness to continue working.

Dunn (2011), however, distinguishes between two measures of the non-financial employment commitment. One that focuses on a *moral* principle such as the Protestant Work Ethic (PWE) Scale according to the Mirels and Garrett scale (Mirels & Garrett, 1971) and another that emphasize *preferences* about work, such as the lottery question. He argues that when using the moral principle measure, we find a decrease in the non-financial commitment to work by level of education, such as in Furnham (1982)'s study where he finds the mean PWE score to be 52 for the university-educated, 55 for the college-educated and 57 for secondary-educated participants. Rose (2005) draws similar conclusions which show that using the lottery question provides the opposite results from using the PWE scale. Dunn (2011) explains this inconsistency by claiming that the more educated score highly on measures of work ethics that focus on preferences instead of morality because their education can secure them enjoyable, "career" jobs. He supports his claim by using the measure '*Having almost any job is better than being unemployed*' to analyze the differences by education level. Indeed, he finds that those with the highest level of education score the lowest. Moreover, according to his results, the less educated are more *morally* committed to work, less likely to want to continue working if not financially necessary, and more likely to prefer a 'bad' job to unemployment. Even though the less educated are the most morally committed to work, it is the more educated who always score the highest on the work ethic measures which stress preference. According to Dunn (2011), one factor might be that the lower educated might be more eager to avoid being dependent on state benefits (due to feelings of low self-esteem and boredom), so they are willing to work low status jobs. Education is what reduces the shame and boredom of unemployment and increases opportunities in the job market. Another factor might be that those with a higher education are reporting

a commitment to rewarding jobs that they know they can get with their education, which is not the case for those with lower education. This claim is also supported by Schaufeli (1992) who found that the well-educated can cope well with their unemployment since they have more educational resources which they can make use of. The poorly-educated school-leavers, on the other hand, are negatively affected by unemployment. Furthermore, level of education is positively related to a number of characteristics such as self-esteem, which is key for stress-buffering and a necessary coping characteristic if unemployed.

Highhouse et al. (2010) also noticed a connection between responses to the lottery question and economic conditions. In periods of difficult economic times, more people are willing to continue working. Their results also suggest that when the economy is prosperous, one might feel more comfortable giving up working, but in tougher economic times, the decision is unthinkable.

Given the previous literature, we propose two hypotheses. Participants with the highest level of education will be the most willing to continue working, whereas those with the lowest level of education will be the least willing to continue working. Additionally, since 2011 was a more difficult economic period in Spain than 2008, everyone will be more willing to continue working in 2011 than in 2008. These two hypotheses will be analyzed using two surveys described in the next section.

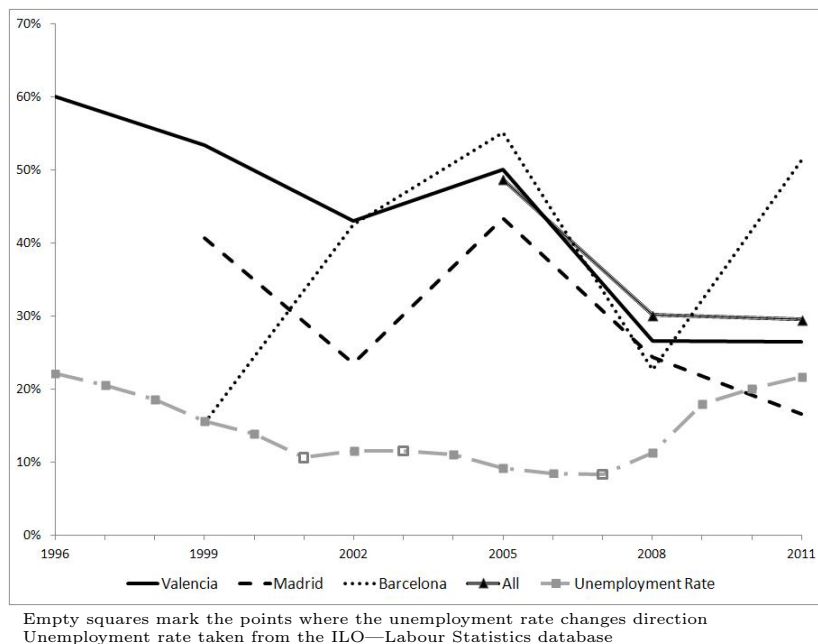
4.3 Method

4.3.1 Sample

The data used in the present study was taken from surveys entitled *Observatory of Young People's Transition to the Labour Market* conducted in 2008 and 2011 by the Valencian Institute of Economic Research.¹ Their target population sample were young people who were searching for or had found their first job in the last 5 years. The Institute first ran this survey in 1996, but only in the region of Valencia. In 1999 and 2002, they added the cities of Madrid and Barcelona to the sample, and then expanded it even further in 2005, 2008

¹We would like to thank The Valencian Institute of Economic Research for supplying us with their survey data.

Figure 4.1: The Willingness to Continue Working and the Unemployment Rate



and 2011, to include 16 (out of 19) regions in Spain. Figure 4.1 presents the willingness to continue working in Barcelona, Madrid and Valencia, together with the overall mean and the unemployment rate.

By including the unemployment rate for all of Spain in the same graph, the pattern is not so clear. The willingness to continue to work seems to be positively correlated with the unemployment rate in the city of Madrid and the region of Valencia for the period of 1996 to 2008. In these two areas, in 1996 and 1999, the unemployment rate, along with the willingness to continue working, are quite high. The unemployment rate starts to decrease from 22.1% in 1996 to 10.6% in 2001; likewise, the willingness to continue working in Valencia begins to decrease from 60% to 43% in 2002. The unemployment rate then slightly increases to 11.5% in 2002 and 2003, as does the willingness to continue working (to 50% in 2005). The unemployment rate starts to decrease, once again, and reaches 8.3% in 2007; similarly, the willingness to continue working decreases to 27% in 2008. The last three years correspond to the deep economic recession with a very high unemployment rate and many diverse responses to the lottery question in different Spanish regions. But, generally, the willingness to continue working has the same pattern as the unemployment rate, which confirms the conclusions of Highhouse et al. (2010) that people

are more willing to continue to work in tougher economic times. The willingness to work in Barcelona behaves very differently from Madrid and Valencia and that is why the data will be studied separately for each region in our analysis.

The analyzed data sets do not have panel data structure. The two samples are similar, but they are not identical. The 2008 survey was conducted in 12 Spanish provinces and used province as a characteristic of the population, whereas the 2011 survey focused on cities and included 34 Spanish cities. In order to homogenize the two samples, we created a common *region* variable and only included in our sample observations from regions common to both samples (8 regions), which was 88.8% of the entire sample.

In our sample, 2,999 people answered the lottery question in 2008 and 1,994 answered it in 2011. Table 4.1 displays the summary statistics of the variables used in our analysis. The first three blocks present summary statistics of socio-demographic variables and the last block is devoted to responses to the lottery question. The comparison of 2008 and 2011 confirm the similarity of the two sub-samples regarding age, gender and education. The interpretation of the mean of the dummy variables is simply the proportion of the sample with those characteristics. We can see that the overall mean age was 23.22 (the survey is only given to participants 16–30 of age) and that 55% of our sample were females. With respect to education, 12% of our sample had a primary education or less, 23% had a university education (or less but more than secondary) and the rest (65%) either had a vocational or a secondary education (or less but more than primary).

Since we are dealing with a sample of young people, we should ask whether our results can be compared to previous studies. Most researchers have found that younger participants are usually more willing to continue working with respect to older participants. Campbell et al. (1976) noted that the choice to give up their job increases with age and Warr (1982) observed that among younger employees (full-time employed men), 76% would continue working, while only 69% of men of all ages said they would continue to work. He obtained the same result for women; among younger female employees, 80%, rather than 65% for females overall, would continue to work; Highhouse et al. (2010) also support this finding. This suggests that, if anything, the willingness to continue working should be even higher in our sample than in previous studies.

Table 4.1: Summary statistics of explanatory variables

Variable	2008		2011		Overall			
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Min.	Max.
Age	22.84	3.61	23.94	3.68	23.22	3.67	16	30
Female (1=yes)	0.57	0.50	0.52	0.50	0.55	0.50	0	1
Primary education (1=yes)	0.12	0.33	0.12	0.32	0.12	0.33	0	1
University education (1=yes)	0.21	0.41	0.25	0.43	0.23	0.42	0	1
Total number of jobs respondent has had	2.16	1.34	2.05	1.26	2.12	1.31	1	6
Total number of months searched for jobs since age 16	7.45	13.98	12.95	17.73	9.37	15.61	0	134
Number of family members working (including the respondent)	2.42	1.10	2.07	0.98	2.30	1.07	0	10
Student (1=yes)	0.38	0.49	0.33	0.47	0.37	0.48	0	1
Employed (1=yes)	0.67	0.47	0.56	0.50	0.63	0.48	0	1
Foreign (1=yes)	0.09	0.29	0.07	0.26	0.08	0.28	0	1
Married/in a relationship (1=yes)	0.16	0.37	0.21	0.41	0.18	0.38	0	1
Father's education level:								
Secondary education (1=yes)	0.40	0.49	0.37	0.48	0.39	0.49	0	1
Vocational education (1=yes)	0.09	0.29	0.12	0.32	0.10	0.30	0	1
University education (1=yes)	0.16	0.37	0.19	0.39	0.17	0.38	0	1
Respondent's region:								
Valencia (1=yes)	0.39	0.49	0.30	0.46	0.36	0.48	0	1
Andalucia (1=yes)	0.14	0.34	0.13	0.33	0.13	0.34	0	1
Basque Country (1=yes)	0.10	0.30	0.07	0.25	0.09	0.28	0	1
Aragon (1=yes)	0.06	0.23	0.04	0.20	0.05	0.22	0	1
Galicia (1=yes)	0.07	0.26	0.08	0.28	0.08	0.27	0	1
Madrid (1=yes)	0.06	0.23	0.13	0.34	0.08	0.27	0	1
Murcia (1=yes)	0.12	0.33	0.05	0.21	0.10	0.30	0	1
Year 2011 (1=yes)	N/A	N/A	N/A	N/A	0.35	0.48	0	1
	2008		2011					
Lottery question	Categ.	% of respon.	Categ.	% of respon.				
Would definitely continue working	1	13.5%	1	14.1%				
Would continue working	2	16.8%	2	15.9%				
Indifferent	3	8.8%	3	13.1%				
Would not continue working	4	22.7%	4	26.5%				
Would definitely not continue working	5	38.2%	5	30.3%				

4.3.2 Methodology

Our dependent variable which measures the willingness to continue to work is the lottery question. Participants were asked to agree or disagree with: *If I won the lottery where I wouldn't have to work for the rest of my life, I would not work.* Participants chose their answer from one to five: Very much disagree, or in other words, the participant chooses to continue working, Somewhat disagree, Indifferent, Somewhat agree, and lastly Very much agree, where the participant chooses to stop working.

Since the outcomes of the lottery question have a natural rank to them and are coded by numbers one to five, one being the “very much disagree” response, we used an ordered logit model to analyze the Spanish dataset (Long, 1997). In this model, the explained variable has five possible ordered responses as explained above and the explanatory variables are those included in Table 4.1. Apart from the variables listed in Table 4.1, we also included the interaction terms between all variables and the year dummy variable equal to one for observations included in the 2011 survey, with a total of 43 variables in our ordered logit model.

The observed answer y_i , by individual i , is defined for N individuals in our ordered logit

model by the measurement equation:

$$y_i = m \text{ if } \tau_{m-1} \leq y_i^* < \tau_m \text{ for } i = 1, 2, \dots, N \text{ and } m = 1, 2, \dots, 5, \quad (4.1)$$

where the τ 's are parameters to be estimated called thresholds, and y_i^* is a latent variable representing the propensity not to work having won the lottery. The structural model for this variable is defined as:

$$y_i^* = x_i' \beta + \varepsilon_i \text{ for } i = 1, 2, \dots, N, \quad (4.2)$$

where x_i is a row vector with the i th observation of the explanatory variables (presented in Table 4.1), β is a column vector of structural coefficients and ε_i is an error term with a logistic distribution. Under simple identification conditions, this model can be estimated by the maximum likelihood method (Long, 1997).

In the results section, we do not report the marginal effects as they depend on the values of explanatory variables and can even change signs with a change in these variables. Thus, we report estimated coefficients of our ordered logit model and then use changes in predicted probabilities caused by changes in explanatory variables to illustrate the relationship between the willingness to work and specific explanatory variables.

The predicted probability that $y_i = m$ ($m = 1, 2, \dots, 5$) given specific values of our explanatory variables x_i^v is:

$$\widehat{Pr}(y_i = 1 | x_i^v) = F(\hat{\tau}_1 - x_i^{v'} \hat{\beta}) \quad (4.3)$$

$$\widehat{Pr}(y_i = m | x_i^v) = F(\hat{\tau}_m - x_i^{v'} \hat{\beta}) - F(\hat{\tau}_{m-1} - x_i^{v'} \hat{\beta}) \text{ for } m = 2, 3, 4 \quad (4.4)$$

$$\widehat{Pr}(y_i = 5 | x_i^v) = 1 - F(\hat{\tau}_4 - x_i^{v'} \hat{\beta}) \quad (4.5)$$

where F is the cumulative distribution function of the logistic distribution and $\hat{\tau}$, $\hat{\beta}$ are estimated parameters. The discrete change in the predicted probability for a change in one of the explanatory variables x_{ki} from the start value x_S to the end value x_E is defined as:

$$\frac{\Delta Pr(y_i = m | x_i^v)}{\Delta x_k} = Pr(y_i = m | x_i^v, x_{ki} = x_E) - Pr(y_i = m | x_i^v, x_{ki} = x_S) \quad (4.6)$$

where $Pr(y_i = m \mid x_i^v, x_{ki})$ is the probability that $y_i = m$ given specific values of our explanatory variables x_i^v except for the k^{th} variable x_{ki} whose effect is analyzed. Its value is set to the start and end values respectively.

4.4 Results and Discussion

As the two samples corresponding to 2008 and 2011 are similar, we pooled them together to be able to test changes in estimated coefficients between the two years. That is why we created a dummy variable for the year 2011 and interacted it with all the explanatory variables from Table 4.1 and included it in the model.

Table 4.2 presents the estimated coefficients β from (4.2) obtained by maximum likelihood estimation. The first column contains the names of the explanatory variables, the second and third columns display the estimated coefficients and standard errors for the 2008 results, and the last two columns present the estimated coefficients and standard errors of interactions with the 2011 dummy variable.

Table 4.2: Ordered Logit Results

Dependent variable = lottery question	2008 Results		Interaction with 2011 dummy variable	
	Coefficient	Std. Err.	Coefficient	Std. Err.
Age	-0.033**	(0.015)	0.015	(0.023)
Female	-0.305***	(0.082)	0.350***	(0.132)
Primary education	0.376***	(0.145)	-0.450**	(0.218)
University education	-0.274***	(0.104)	-0.313*	(0.167)
Total number of jobs respondent has had	-0.108***	(0.032)	0.053	(0.054)
Total number of months searched for jobs since age 16	0.010***	(0.003)	-0.008*	(0.004)
Number of family members working (including the respondent)	0.065	(0.041)	-0.114	(0.070)
Student	-0.071	(0.101)	-0.334**	(0.159)
Employed	-0.122	(0.102)	-0.053	(0.151)
Foreign	0.161	(0.152)	-0.678***	(0.251)
Married/in a relationship	0.133	(0.122)	0.023	(0.175)
Father's education level:				
Secondary education	-0.260***	(0.099)	0.146	(0.158)
Vocational education	-0.431***	(0.155)	0.205	(0.228)
University education	-0.485***	(0.133)	0.295	(0.204)
Respondent's region:				
Valencia	-0.185	(0.148)	1.154***	(0.222)
Andalucia	-0.819***	(0.184)	1.482***	(0.282)
Basque Country	-0.464***	(0.179)	1.222***	(0.324)
Aragon	-0.718***	(0.205)	1.038***	(0.340)
Galicia	-0.738***	(0.189)	1.311***	(0.268)
Madrid	-0.194	(0.200)	1.386***	(0.267)
Murcia	-0.534***	(0.164)	1.127***	(0.258)
Year 2011	-1.463**	(0.593)	N/A	N/A
Observations		3424		
Log pseudolikelihood		-5041.8266		
AIC		10177.65		
BIC		10466.17		

Notes: ***,**,*: significance at the 1%, 5% and 10% level.

A direct interpretation of the estimated coefficients presented in Table 4.2 is not possible since the marginal effects of the explanatory variables on the probability to choose a specific

outcome depends on the values of all explanatory variables, as can be seen in (4.3)–(4.5). However, it can be seen that the explanatory variables are generally significant at the 5% significance level. Therefore, the probability of choosing a specific response depends on the exact age, gender, education level, number of jobs had, number of months searched for work, father’s education level, region and the year. Nevertheless, the effect of gender, education level, number of months searching for work, being a student or a foreigner and the region on the willingness to continue working changes in 2011 because the corresponding interactions with the 2011 dummy variable are significant at 5%. In order to analyze the effects in more detail, we will use the changes in probabilities defined in (4.6).

Detailed below is the interpretation of the effects of different explanatory variables on the predicted probabilities of the extreme responses “very much disagree”, interpreted as would definitely continue working, and “very much agree”, interpreted as would definitely *not* continue working. We compare the results for the regions of Madrid and Catalonia since the participants in these regions responded very differently within our sample. Nevertheless, generally, the rest of the sample fall between the two, but the majority of the other regions had results more similar to the Madrid region. According to (4.3)–(4.5), the predicted probabilities are computed for specific values of explanatory variables. That is why we define a benchmark individual and analyze changes of some variables with respect to their characteristics. The benchmark individual is defined as a woman whose father’s education is at the secondary level, is not a student, not employed, not foreign and not in a long-term relationship, and all continuous control variables are held at the mean. These characteristics were chosen because these values were prevalent in each corresponding variable.

Figure 4.2 displays the effect of age on the predicted probability of definitely working or not working in 2008 and 2011 by education level. In Figure 4.2a, we see that in 2008, the youngest people with a primary education have a high probability (around 60%) of choosing that they would definitely not continue working. Contrary to Highhouse et al. (2010), this probability slightly decreases as age increases (to approximately 45% at 30 years of age). The youngest respondents in Highhouse et al.’s sample, however, were 21, as opposed to 16, so perhaps the two samples are incomparable. Two studies that did include younger respondents were Warr (1982)’s, which found evidence coinciding with Highhouse

et al.'s, and Kaplan and Tausky (1974) whose results are comparable to ours. What is more, Kaplan and Tausky's sample included respondents who were unemployed and quite poor, depicting the economic situation in our sample more accurately than other studies. Comparing the youngest and the oldest age, there is a steady decline in the probability of definitely not working and the probability of working mildly increases from 5% to 10%. Results are similar for both analyzed regions in 2008, but not for 2011, as can be seen in Figure 4.2b. The results for the Madrid region in 2011 are similar to 2008. For Catalonia, however, the difference between the two probabilities is much smaller in 2011 than in 2008. Younger people with a primary education still start off with a higher probability of choosing to definitely not work, but it is less than 30% while the Madrid region starts off almost twice as high.

Figure 4.2c shows that the difference between the two responses is not as large for the secondary- or vocational-educated respondents, as it is for primary-educated respondents. Approximately 50% of 16-year-olds report they would definitely not continue working which decreases with age. This is approximately 10% lower than among the primary-educated. The percentage of 16-year-olds that respond they would definitely continue working is similar, but perhaps slightly higher than the primary-educated respondents. In 2011, the results for the secondary- or vocational-educated are very similar to the primary-educated, as can be seen from Figure 4.2d.

Figures 4.2e and 4.2f present the predicted probabilities of working for the university-educated respondents. In terms of slopes, it is the same as in the primary- or secondary-educated respondents, but the gap between definitely working and definitely not working is much smaller among the university-educated respondents than for the rest. The main difference to note is that in 2011, university-educated respondents from Catalonia responded differently not only from their counterparts from the Madrid region, or from how they responded in 2008, but also from how the primary- or secondary-educated respondents from Catalonia responded in 2011. More young university-educated Catalans prefer to definitely continue working than to definitely not continue working (30% in comparison to 20%), and this percentage increases with age.

Figure 4.2: The Effect of Age on the Willingness to Work in 2008 and 2011 by Level of Education.

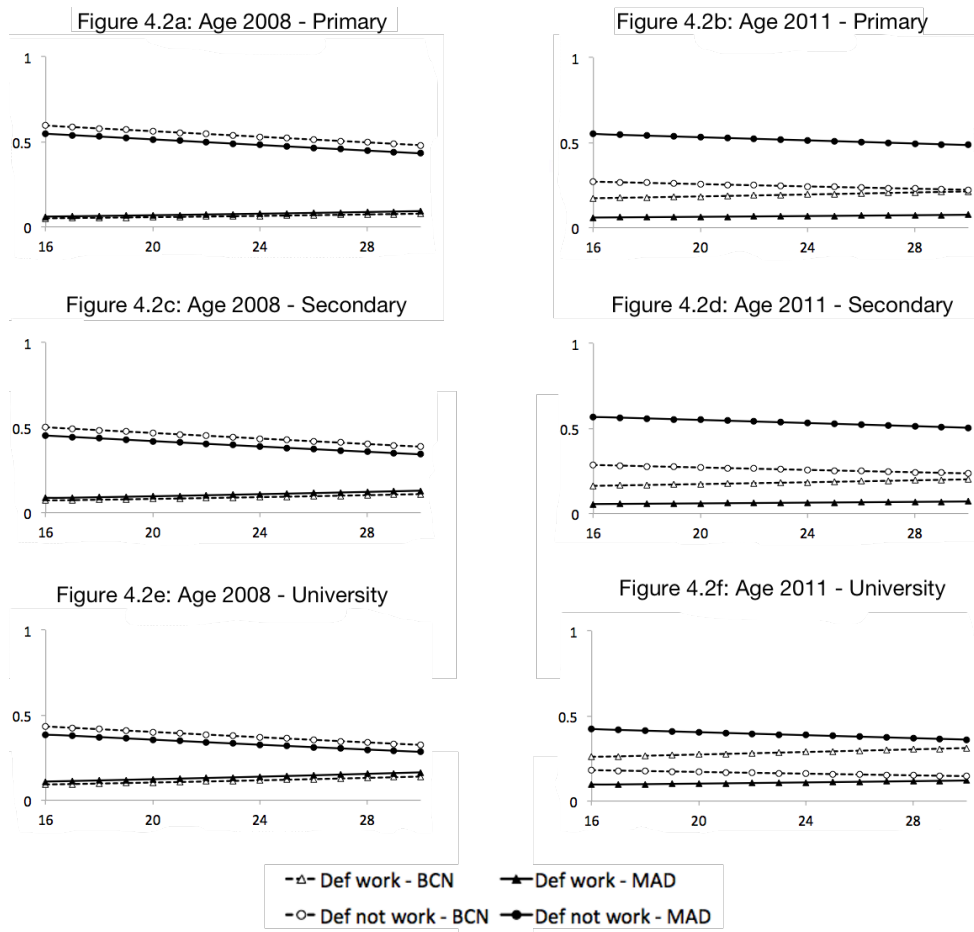
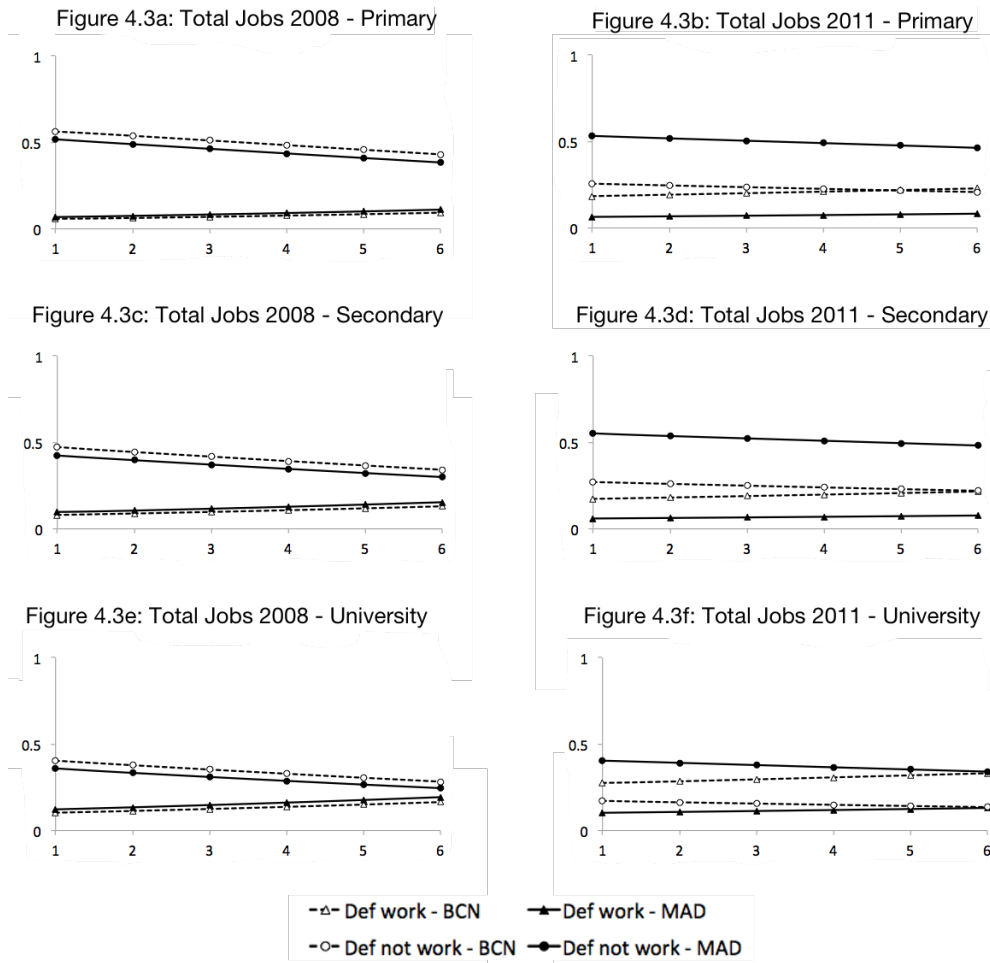


Figure 4.3 presents the effect of a different variable, namely, the total number of jobs, on the probability of continuing to work. Starting with Figure 4.3a, we can see that a primary-educated person that has only held one job in their lifetime has a probability of approximately 50% of choosing to definitely not continue working, but this probability diminishes rapidly with each additional job, reaching 40% after six jobs. The probability of definitely continuing to keep working starts very low at less than 10% and increases very slowly with number of previous jobs. To the best of our knowledge, nothing in the literature has been reported about the effect the number of jobs has on one's willingness to

Figure 4.3: The Effect of the Number of Jobs Had on the Willingness to Work in 2008 and 2011 by Level of Education.



work. Once again, generally, the results for the two regions are similar in 2008, but differ in 2011, while the Madrid region results are consistent over the two years as can be seen from Figure 4.3b. In 2011 in Catalonia, the willingness to continue working increases by more than twice as much and the probability of definitely not working decreases by approximately 50% in comparison to Catalonia in 2008 as well as in comparison to Madrid in 2011. Secondary- and vocational-educated respondents have similar responses as the primary-educated in 2008, with a smaller difference between the two responses as shown in Figures 4.3a and 4.3c.

The gap between the two responses is smaller for university-educated respondents than for less-educated individuals; similar to what we found with the effect of age (Figure 4.2). Only 40% of respondents with one job say they would definitely not continue working

as compared to 50% of secondary-educated individuals and 60% of primary-educated respondents. Once again, we find a difference in responses among the university-educated Catalans in 2011. The probability of the response, I would definitely continue working, for university-educated individuals in Catalonia with one previous job starts around 30% which is almost double the same probability for less-educated people. This can be seen in Figures 4.3e and 4.3f. This probability increases with the number of jobs to approximately 30% for individuals with six jobs.

Figure 4.4 presents the effect of the number of months searching for work in 2008 and 2011 by level of education. Figure 4.4a, displays the effect of the number of months a primary-educated respondent has spent searching for a job, on the willingness to work. Respondents not having spent any time searching for work start off with a 50% probability of definitely not working which then dramatically increases to approximately 80% after 10 years of searching for a job. The probability of definitely continuing to work starts at a 10% probability and decreases to almost 0% after 10 years. As is evident from Figure 4.4a, this effect is similar in both the Madrid region as in the Catalonia region. For the Madrid region in 2011 (Figure 4.4b), the probability of definitely not working starts at the same percentage as in 2008 but it increases at a much slower pace reaching a probability of 60% after 10 years. The probability of definitely not working in Catalonia in 2011, is much lower than in 2008 as well as in comparison to Madrid in 2011; it begins at approximately 25% and increases to about 30%. It is clear that the recession created a sense of need for work in both regions, but definitely more so in Catalonia. As can be seen from Figures 4.4c and 4.4d, the slopes for respondents with a secondary or vocational education follow a similar pattern to the primary-educated respondents, presented in Figures 4.4a and 4.4b.

Figures 4.4e and 4.4f illustrate that in 2008, the difference between the probability of definitely working and definitely not working decreases even more for the university-educated respondents. Someone who has never had to search for work has a 35% probability of saying they would definitely not work, whereas someone with a primary-education starts at a 50% probability. This unwillingness to work increases for the university-educated participants reaching almost a 70% probability after 10 years of searching. In the Madrid region, in tougher economic times (2011), the increase in the willingness to definitely not

work is milder than in 2008. In Catalonia in 2011, the predicted probabilities indicate that more respondents who had spent no months searching for work would definitely continue working than not, but this decreases with the number of months. So the effect of the number of months spent searching for work is still negative on the willingness to continue working for university-educated respondents in 2011, but the individuals in Catalonia start off wanting to work more.

Figure 4.4: The Effect of the Number of Months Searching for Work on the Willingness to Work in 2008 and 2011 by Level of Education.

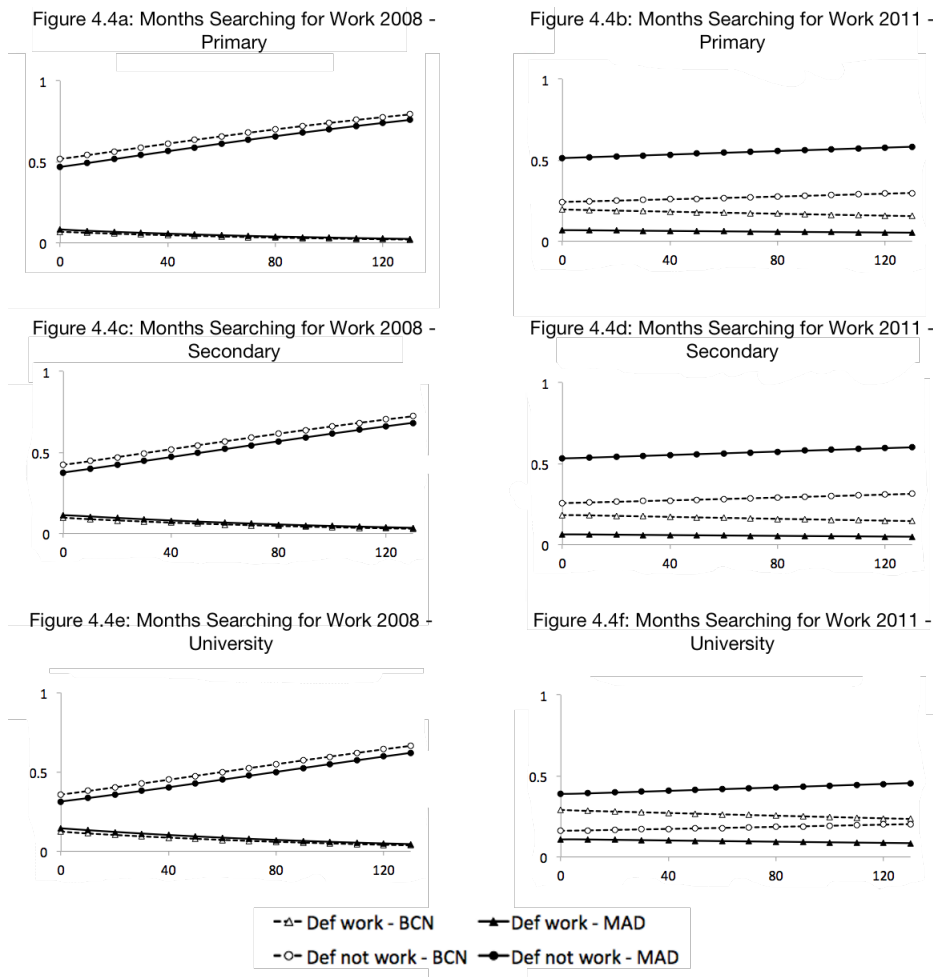
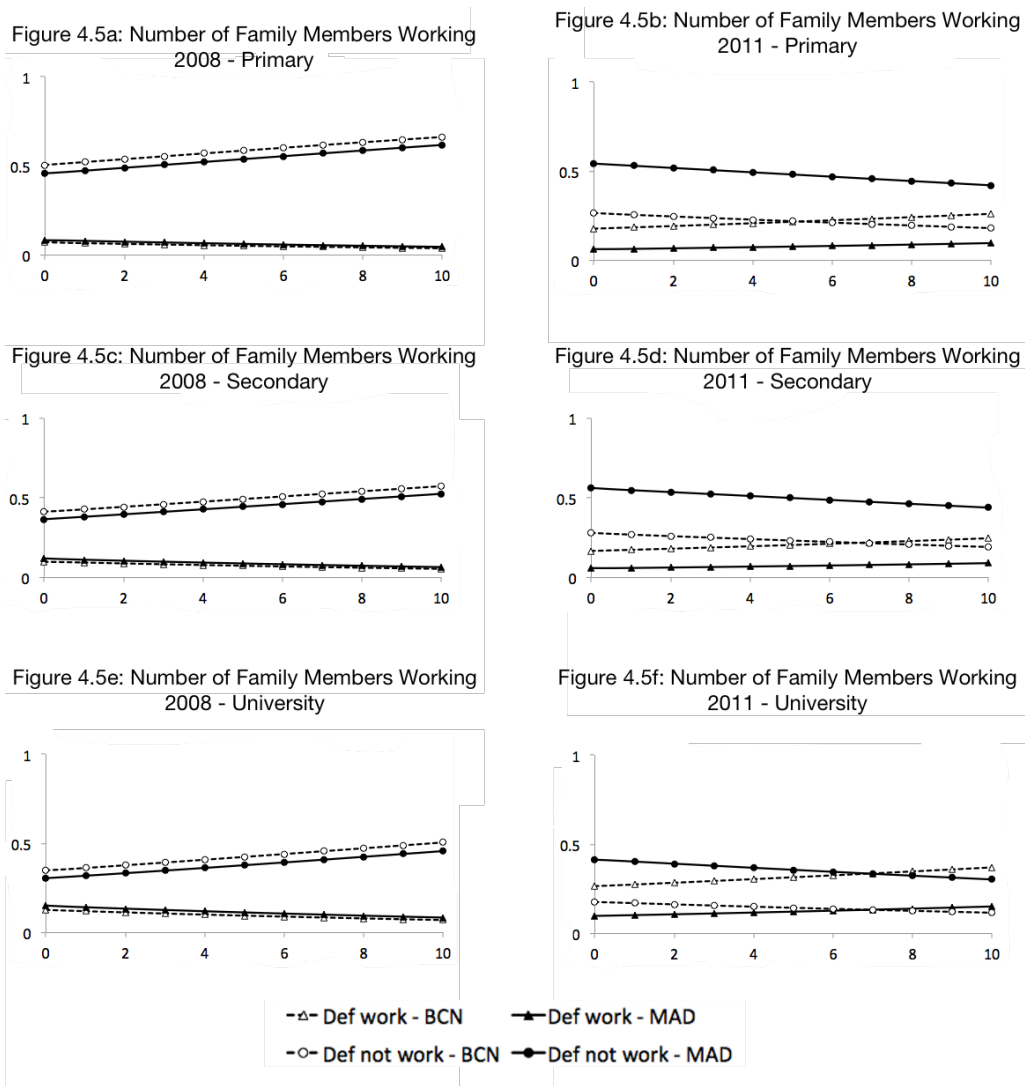


Figure 4.5 presents the effect of the number of family members, including the respondent, working on the willingness to continue working by education level. As can be seen

from Figure 4.5a, the probability of definitely not working for primary-educated participants in 2008 increases with each additional family member working. The probability starts at 50% where no one is working and increases to around 60% where 10 family members are working. The probability of definitely continuing to work starts at 10% and decreases to approximately 0%. The results are very similar for both regions in 2008. In 2011

Figure 4.5: The Effect of the Number of Family Members Working on the Willingness to Work in 2008 and 2011 by Level of Education.



(Figure 4.5b), however, the slopes reverse in both regions. In the Madrid region, primary-educated participants with no family members working still start with a 50% probability of

choosing to definitely not work, but this probability decreases with each additional family member working. We see a similar effect in Catalonia, but the percentage of people who definitely do not want to continue working is much lower at 30% than the Madrid region (Figure 4.5b). This change in slopes between 2008 and 2011 (Figures 4.5a and 4.5b) might be due to the feeling of having to help out your family in an economic recession as well as the added pressure from other family members to work, thus spreading the burden.

The effect of the number of family members working is similar for secondary- or vocational-educated respondents as for those with a primary education. In 2008, once again, we see that the difference between the two responses decreases, but not for 2011. It appears that the recession had a similar effect on primary- and secondary-educated respondents as can be seen comparing Figures 4.5a with 4.5c and 4.5b with 4.5d. Nevertheless, the gap is smaller than for primary-educated people.

In Figures 4.5e and 4.5f, we see the same pattern. The gap between the two extremes is much smaller for university-educated respondents in 2008 and the responses of these university-educated Catalans differ from everyone in 2011. Out of people whose family members, including themselves, are not working, 30% report they would definitely want to continue working; this effect increases with each additional working family member.

If we focus only on 2008, corresponding to the graphs on the left-hand side (that is a, c and e) of Figures 4.2, 4.3, 4.4 and 4.5, we can see that the gap between the two opposite responses, presented as upward and downward curves, decreases if we move from the primary-educated to the university-educated respondents, that is from figures a to e. This confirms our first hypothesis that the willingness to continue working increases by education level. However, we do not observe such a clear result for 2011, corresponding to a severe economic recession. The responses of primary- and secondary-educated people change markedly with respect to 2008, but there is no clear difference between them in 2011. This can be seen by comparing figures b and d of Figures 4.2, 4.3, 4.4 and 4.5. Nevertheless, the first hypothesis is confirmed for 2011, if we compare university- (figures f) and non-university-educated people (figures b and d), as we observe the same decreasing gap described above.

For our benchmark individual in 2008, the effect of age seems to be very small (one year

decreases the probability of definitely not working by 0.8%). The same goes for the number of total jobs - each additional job decreases the probability of definitely not working by approximately 2.5% and each additional family member working increases the probability of definitely not working by approximately 1.5%. The probability of definitely not working for each additional month spent searching for work, however, increases by 2.4%. Therefore, the explanatory variable that seems to have the most effect on the willingness to work is the number of months spent searching for work. To demonstrate just how large this change in one's willingness to continue working is, consider that the effect that one month has on one's willingness to continue working is the equivalent of having worked an additional job, or almost two additional family members working, or as 3 years, in terms of age.

4.5 Conclusion

When looking at the overall percentage of participants who said they would continue to work if they won the lottery, 30.14% say they would continue working in 2008 and 29.5% in 2011. These values are much lower than the original 60% found in the region of Valencia in 1996, which itself is slightly lower than what has been found in other countries. It is difficult to say why the results for Spain are so different in comparison to all other countries in previous research. It could be due to cultural or religious differences or due to the volatility of its economy.

In spite of having the same unemployment rates, the willingness to continue working in 2011 was less than half of what it was in 1996. This, along with the overall pattern, suggests there might be a downward, long-term trend. Our findings show that the willingness to continue working in Spain is very unstable as is the economic situation, which can be seen from the fluctuating unemployment rate. A positive relationship seems to exist between the willingness to continue working and the unemployment rate: the higher the unemployment rate, the higher the willingness to continue working. However, this relationship appears to end in 2008, when a severe economic recession began.

One reason why 2011 is different could be that the participants who are answering the survey in 2011 belong to a different cohort. Those who were 16–30 in 1996 are 31–45 in 2011, and those who answered the surveys in 2008 and 2011 grew up during the first wave

of high unemployment rates. These tougher economic times may have caused them to have a lower non-financial commitment to work. Malmendier and Nagel (2011) found that individuals who experienced low stock market returns in their life had lower willingness to take financial risk, less likely to invest in the stock market, and be pessimistic about their future stock returns. It is not hard to imagine that this could be extended to the non-financial employment commitment as well. However, we find a link between times of need and a high willingness to continue working, so if anything, growing up during tougher economic times should have a positive effect on the willingness to continue working.

A second possible reason for the differences between the 2008 and 2011 results could be due to the reoccurring high unemployment rates. Highhouse et al. (2010) examined the changes in the willingness to continue working with respect to the economic situation, but the unemployment rate in the US never exceeded 11% and the willingness to continue working never dropped below 65%, so it is difficult to draw any conclusions.

If we focus on the two hypotheses we analyze in this paper, the first relating a higher level of education to a higher willingness to work, and the second hypothesis relating tougher economic times to a higher willingness to work, we can say the following. The analysis of the effect of education on predicted probabilities, shows us that the difference between the two opposite responses, definitely continue working and definitely not continue working, decreases as education level increases in 2008, supporting our first hypothesis that people with a higher education level are more willing to continue working. In 2008, the willingness to continue working increased by education level, with the primary-educated respondents being the least willing to continue working and the university-educated respondents being the most willing to continue working. In 2011, however, it appears that the recession had the same effect on both primary- and secondary-educated respondents and no clear difference is observed between them. Nevertheless, the difference between university- and non-university-educated people goes in the same direction as in 2008. It is of course not surprising that the university-educated respondents are willing to continue working the most. Saad (2005) states that high levels of education (and income) coincide with a high percentage of people who love their jobs. It is possible that university-educated people enjoy their jobs more since they have better working conditions and might be working in

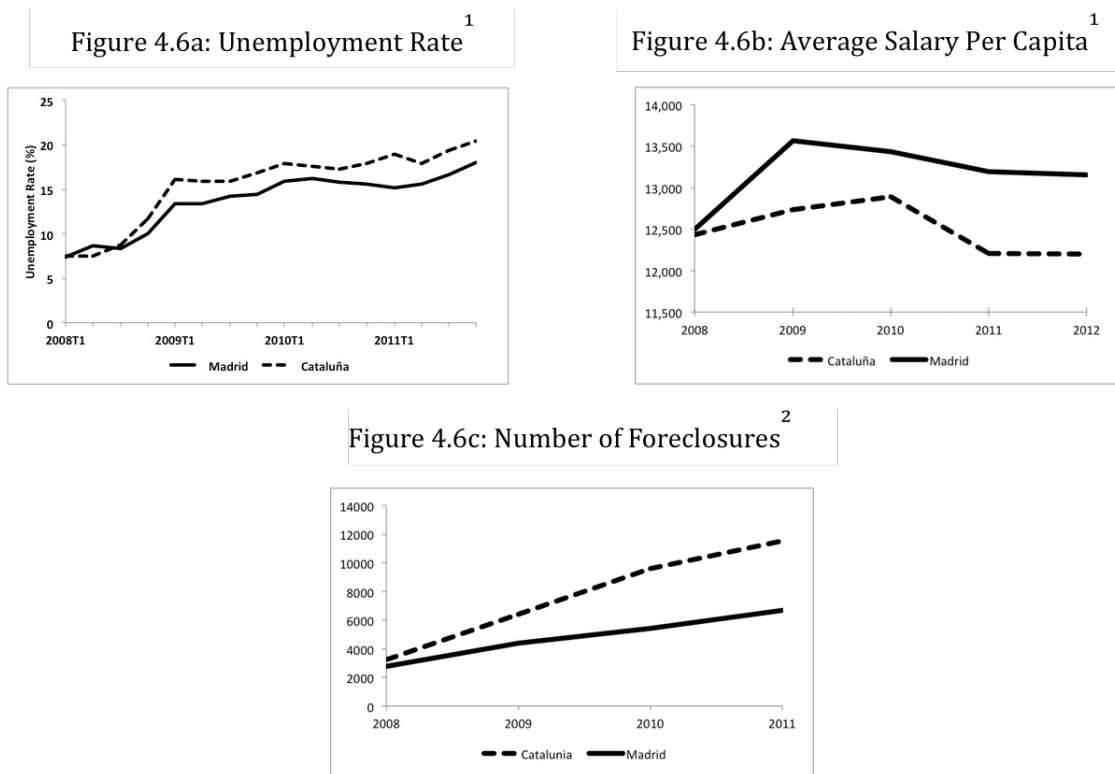
the field that they studied, and presumably enjoy.

Regarding our second hypothesis which focuses on tougher economic times, we can see evidence of this by simply comparing the 2008 graphs with the 2011 graphs for Catalonia in Figures 4.2, 4.3, 4.4, and 4.5. Respondents of all education levels are more willing to continue working in 2011 than in 2008. The effect of the recession on the willingness to continue working for the Madrid region is not as clear. Furthermore, one reason why it appears that the recession had the same effect on both primary- and secondary-educated respondents could be that the primary-educated were hit the hardest in the recession, thus feeling the “need” to work more than the secondary-educated respondents.

The difference in results found between Catalonia and the Madrid region in 2011 could be attributed to two factors. First of all, 2010 saw a rise in Catalan nationalism. When, in 2010, a constitutional court rejected a new statute giving Catalonia more autonomy, more than one million people demonstrated in the streets of Barcelona (“Catalan protesters rally for greater autonomy in Spain”, 2010). That same year, Artur Mas, the leader of a pro-independence party, was elected president of the Catalan government. To the best of our knowledge, how a sudden increase in nationalism affects the non-financial work commitment has not yet been studied. Nevertheless, a strong feeling of building a new state could have a positive effect on the willingness to work.

A second reason for the difference in results between Catalonia and Madrid in 2011, might be that Catalonia endured worse economic conditions than the Madrid region, which can be seen in Figure 4.6. Figure 4.6a presents the unemployment rate for both regions which was similar in 2008, but from 2009 on it increased more in Catalonia than in Madrid. The average salary per capita, as shown in Figure 4.6b, follows the same pattern; in 2008, the average salary is similar between the two regions, but then it increased more in Madrid than in Catalonia. Lastly, as Figure 4.6c illustrates, the number of foreclosures increased much more in Catalonia than in Madrid. This explanation, would be in line with our second hypothesis which addresses tougher economic times.

Figure 4.6: Economic Conditions in Catalonia and Madrid



Sources: 1. Spanish Statistical Office (INE, 2016a, 2016b) 2. Congreso de los Diputados, 2013.

The explanatory variable that had the biggest impact on the willingness to continue working was the number of months spent searching for work. As was mentioned earlier, the effect of one month of searching for work is equivalent to aging 3 years. Therefore, policy makers should focus on decreasing the amount of time people spend searching for work in order to avoid this strong negative impact on the non-financial work commitment.

This paper is a good start to analyzing the non-financial commitment to work in Spain. Further research is necessary to decipher why the year 2011 is different from the rest and why the willingness to continue working increased so much for Catalonia in comparison to other regions in Spain. Conducting a similar study in a country with a comparable economic history would be very insightful and future responses to the lottery question in Spain will be of great interest.

5 | Conclusions

Given the most recent economic recession and its great impact on the Spanish economy, we focused on the most vulnerable subpopulation: the youth of Spain. We addressed three points of concern. First of all, we need to be aware of students' job preferences when they are about to enter the labour market. This is important so that companies, policymakers, and students themselves can take this into consideration, better preparing for a realistic matching of young job-seekers and jobs offered. Second of all, the effect of ideology on distributive preferences and how it relates to economic status is of importance so that political parties can better represent the people. Third of all, the effect of the recession on intrinsic motivation, and analyzing key factors, is very important so that policymakers can see where they need to make the biggest improvements in order to avoid a generation with very low intrinsic motivation.

In Chapter 2, we elicited students' job preferences using a DCE, a more quantitative and rigorous method than had been previously used. We conducted it among business and economics students at five universities in three different countries. The most important job attribute, across all universities and countries, was long-term career prospect at the company. This is consistent with previous literature, even with a study conducted in Malaysia (Lim & Soon, 2006). Moreover, students who have a high preference for a long-term career opportunity have lower preferences for salary.

Education opportunity is another important attribute for all students, regardless of type of university or country. This indicates that students realize that in today's competitive market, it is vital to keep working on one's employability. Perhaps due to the sense of insecurity caused by the most recent economic recession, students feel they need to keep investing in their studies.

A cultural difference was found between Spanish and non-Spanish universities. Specifically, commuting time was found to be very important among Spanish students, but not important at all among non-Spanish students. This could be due to the ease of mobility among Czech or Germany students, i.e., whereas the Spanish youth tend to live with their families and are less likely to move out, young people in Czech and Germany would simply move closer to the job.

Additionally, a difference between Spanish and non-Spanish students was found due to the large difference in unemployment rates. In Spain, the importance of having a permanent contract is very high, whereas in the Czech Republic and Germany it is less important. Furthermore, students at the two public universities in Spain, who are likely to have a harder time finding a job than the rest, are willing to forgo a better work environment in order to obtain a permanent contract.

The only difference found between public and private university students was in the importance of a work environment. Among private university students, work environment was more important, likely due to the fact that they intend to work at “A-level” companies.

The least important job attribute, among all students, was a flexible schedule. This is most probably due to two factors. Firstly, younger people have a lower need for a flexible schedule, that need increases with age due to family obligations. Secondly, when first entering the labour market, young job-seekers are aware that they will not be able to dictate their own schedule, but will have to show their high work commitment to the company.

Studies like these can reveal what job characteristics are important to young job-seekers. Consequently, companies can try to offer characteristics that are important, if they can, or at least lower the probability that they will offer a characteristic that young job-seekers find unimportant. In addition, students should reflect on their preferences and learn about the labour market conditions, perhaps adjusting their preferences to more realistic standards. For example, young people in Spain are not very likely to receive an offer with a permanent contract when first entering the labour market. Lastly, policymakers need to be aware of both students’ job preferences and labour market conditions, so they can help better match job-seekers to jobs. For instance, they could offer a tax break to companies offering

permanent contracts to young people.

The contribution of Chapter 3 is twofold. First of all, to the best of our knowledge, this is the first time that the effect of political ideology on distributive preferences has been studied in an experimental setting. Second of all, the importance of economic status on the effect of political ideology and distributive preferences has also been captured in this study.

The experiment used in Chapter 3 was composed of two parts. First, students had to participate in a real-effort task and then in a four-person dictator game. In the earned treatment, the initial endowments of the four-person dictator game reflected how well they did in the first task, i.e., the person who ranked first started off with the highest initial endowment value. In the random treatment, the initial endowment values were assigned randomly.

The results show that political ideology has a weak effect on AEE, when considering the sample as a whole. The participants who consider themselves as extreme-left do not acknowledge earned entitlement, exhibiting egalitarian traits. The rest of the participants, those who consider themselves a three or higher on the left-right scale, do acknowledge earned entitlement, and this effect increases the further right on the left-right scale.

When analyzing this effect by economic status, we find a very interesting result. Ideology has a strong impact on AEE for students, but no impact for employed or unemployed participants. Since no difference was found between the unemployed and employed participants, it is being in the labour market itself, that plays an important role. As students have not yet entered the labour market, they can “afford” to behave in accordance with their ideological values, strongly believing something without experiencing the “reality” of it, if you will. Employed and unemployed participants, on the other hand, cannot afford this “privilege” and behave according to their economic status rather than their political ideology.

In Chapter 4, we studied the effect of the economic recession on the non-financial employment commitment by level of education. Responses to the “lottery question” in 2008 and 2011 were analyzed. To begin with, the overall percentage of who say they would continue working is approximately 30%, much lower than had been found in previous studies

(70–90%). Without further research, it is difficult to pinpoint the reason why it is so much lower in Spain. It could be due to cultural or religious differences, or due to the instability of the Spanish economy. There appears to be a positive relation between the willingness to continue working and the unemployment rate; however, this relation ended with the most recent economic recession in 2008.

The effect of education on the non-financial employment commitment was examined using predicted probabilities for the region of Madrid, which has similar results as the rest of Spain, and for the region of Catalonia. In 2008, the gap between the two most extreme responses, would definitely continue working and would definitely not continue working, decreased by level of education. Therefore, our hypothesis that the willingness to continue working increases with education is true. Respondents with a primary education were the least likely to continue working, while respondents with a university education were the most likely to continue working. However, in 2011, the difference between primary-educated respondents and secondary-educated respondents is not very clear, but there is still a difference between university- and non-university-educated respondents. Since people with a university degree invested in their education, they most likely enjoy their jobs and have better work conditions.

The effect of the recession increased the willingness to continue working in Catalonia, but the effect for the region of Madrid is not very clear. The reason for this difference in regions could be due to two factors. Since 2008, there has been a rise in Catalan nationalism. Specifically, in 2010, the constitutional court rejected giving more autonomy to the region of Catalonia, resulting in one million protestors in the streets. A few months later, a pro-independence party was elected into the Catalan government. As far as we know, no research has been done on nationalism and how it relates to the non-financial employment commitment, but it is not hard to imagine that it could have a positive effect on the willingness to work. The second reason for this regional difference could be that Catalonia had worse economic conditions than Madrid in 2011. Catalonia saw a larger increase in unemployment than Madrid, in addition to a larger increase in the number of foreclosures, as well as a larger decrease in salaries. This explanation is in accordance with our second hypothesis that the non-financial employment commitment increases in tougher

economic times.

We also compared the effect of various socio-demographic variables on the non-financial employment commitment to examine which one had the largest impact. The willingness to work increases with age; a similar effect is seen with the total number of jobs had. Each additional job increases the non-financial employment commitment, perhaps realizing the *need* to work. The number of months spent searching for work has the opposite effect, with large decreases in the willingness to work for each additional month. However, the severity of the impact decreases in 2011, when there is a larger need to work. Lastly, the number of family members working has a negative effect on the willingness to work in 2008, but a positive one in 2011. In times of economic recession, the burden is shared by all, thus, if most of my family members are working, I am more likely to choose to continue working as well. In terms of the size of the effect of these socio-demographic variables, the number of months searching for work had the largest impact on the non-financial employment commitment. Therefore, this should be of the greatest importance for policymakers.

With regards to further research, it would be interesting to conduct the DCE eliciting students' job preferences in other European countries. Additionally, conducting a DCE among young people who have been working for some years, would provide a good comparison between their *stated* preferences at the beginning of their careers and their *revealed* preferences after having entered the labour market. Regarding the third chapter, the experiment could be conducted in other Spanish cities, thus, increasing the sample size and getting a more symmetric distribution of ideology, which could lead to a more precise estimation and richer interpretation. Lastly, in the fourth chapter, analyzing responses to the lottery question in other Southern European countries would definitely provide a good comparison to our findings in Spain, as rigorous studies on this topic are still missing in Southern European countries.

Appendix A

A1. Job Preference Survey



Survey on Job Preferences of Economics Students.

1 – The Purpose of the Survey

The purpose of this survey is to analyze **job preferences** of economics students of various faculties, that is to say, how students **assess** different job characteristics.





This survey is meant for your first job, hypothetically speaking, after your Bachelor degree.

All responses are **anonymous and confidential**. For this survey to be effective, it's important that you respond freely and sincerely. **There are no right or wrong answers**, we are only interested in knowing your opinion.

2 – Description of Possible Job Characteristics

In this section, we are going to explain the seven job characteristics we analyze. In this section, there is **no need to fill anything out**, but rather only to understand which characteristics we are considering and their possible values.

1) Gross annual starting salary.

GROSS SALARY	 28,000 €/year	 31,000 €/year	 34,000 €/year	 37,000 €/year
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2) Commuting time, in minutes.

COMMUTING TIME	 15 min	 30 min	 45 min	 60 min
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3) Long-term career prospect at the company.

LONG-TERM CAREER PROSPECT AT THE COMPANY	 No	 Yes
---	--	---




4) **Education** opportunity at the company, an MBA paid for by the company.

EDUCATION OPPORTUNITY AT THE COMPANY (MBA)	 No	 Yes
---	---	--

5) Type of **contract**, temporary or permanent contract.

TYPE OF CONTRACT	 Temporary	 Permanent
-------------------------	--	--

6) **Work environment**, in terms of company type and structure.

WORK ENVIRONMENT	 Old-fashioned company Vertical structure	 Mixed type & structure	 Dynamic company Horizontal structure
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7) Flexible **schedule**.

FLEXIBLE SCHEDULE	 No	 Yes
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3 – Hypothetical Choice Cards

In the next section, we are going to show you different choice cards that present different hypothetical job options. In each of the choice cards, please **choose the alternative that best fits your preferences**.






















The different choice cards are not related in any way. In some cases, the choice might appear to be harder than in others, but please remember that there are no correct or incorrect choices and that the hypothetical combinations are generated using statistical design techniques. Please think carefully before selecting the alternative on each choice card.

4 – Choice Cards






















Choice Card N° 1

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 31,000 €/year	 34,000 €/ year	 31,000 €/ year
COMMUTING TIME	 45 min	 60 min	 30 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 Yes	 No	 No
EDUCATION OPPORTUNITY AT THE COMPANY	 Yes	 No	 Yes
TYPE OF CONTRACT	 Temporary	 Permanent	 Permanent
WORK ENVIRONMENT	 Old-fashioned company Vertical structure	 Mixed type & structure	 Old-fashioned company Vertical structure
FLEXIBLE SCHEDULE	 No	 Yes	 Yes
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>






















Choice Card N° 2

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 31,000 €/year	 37,000 €/ year	 34,000 €/ year
COMMUTING TIME	 60 min	 30 min	 45 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 Yes	 No	 Yes
EDUCATION OPPORTUNITY AT THE COMPANY	 Yes	 Yes	 No
TYPE OF CONTRACT	 Permanent	 Temporary	 Temporary
WORK ENVIRONMENT	 Dynamic company Horizontal structure	 Old-fashioned company Vertical structure	 Mixed type & structure
FLEXIBLE SCHEDULE	 Yes	 No	 No
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>






















Choice Card N° 3

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 28,000 €/year	 28,000 €/ year	 34,000 €/ year
COMMUTING TIME	 45 min	 45 min	 30 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 Yes	 No	 No
EDUCATION OPPORTUNITY AT THE COMPANY	 No	 Yes	 No
TYPE OF CONTRACT	 Temporary	 Permanent	 Permanent
WORK ENVIRONMENT	 Mixed type & structure	 Old-fashioned company Vertical structure	 Mixed type & structure
FLEXIBLE SCHEDULE	 No	 Yes	 No
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>






















Choice Card N° 4

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 37,000 €/year	 28,000 €/ year	 34,000 €/ year
COMMUTING TIME	 15 min	 30 min	 60 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 No	 Yes	 Yes
EDUCATION OPPORTUNITY AT THE COMPANY	 Yes	 Yes	 No
TYPE OF CONTRACT	 Permanent	 Temporary	 Permanent
WORK ENVIRONMENT	 Mixed type & structure	 Old-fashioned company Vertical structure	 Mixed type & structure
FLEXIBLE SCHEDULE	 No	 Yes	 Yes
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>








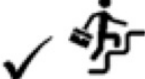













Choice Card N° 5

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 34,000 €/year	 37,000 €/ year	 28,000 €/ year
COMMUTING TIME	 15 min	 15 min	 30 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 Yes	 No	 Yes
EDUCATION OPPORTUNITY AT THE COMPANY	 No	 Yes	 Yes
TYPE OF CONTRACT	 Temporary	 Permanent	 Permanent
WORK ENVIRONMENT	 Dynamic company Horizontal structure	 Dynamic company Horizontal structure	 Old-fashioned company Vertical structure
FLEXIBLE SCHEDULE	 No	 Yes	 Yes
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>






















Choice Card N° 6

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 37,000 €/year	 37,000 €/ year	 34,000 €/ year
COMMUTING TIME	 15 min	 15 min	 60 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 Yes	 No	 Yes
EDUCATION OPPORTUNITY AT THE COMPANY	 No	 Yes	 Yes
TYPE OF CONTRACT	 Permanent	 Temporary	 Permanent
WORK ENVIRONMENT	 Mixed type & structure	 Old-fashioned company Vertical structure	 Old-fashioned company Vertical structure
FLEXIBLE SCHEDULE	 Yes	 No	 Yes
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>






















Choice Card N° 7

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 37,000 €/year	 31,000 €/ year	 28,000 €/ year
COMMUTING TIME	 45 min	 45 min	 30 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 No	 Yes	 No
EDUCATION OPPORTUNITY AT THE COMPANY	 No	 No	 Yes
TYPE OF CONTRACT	 Temporary	 Permanent	 Permanent
WORK ENVIRONMENT	 Mixed type & structure	 Dynamic company Horizontal structure	 Mixed type & structure
FLEXIBLE SCHEDULE	 Yes	 No	 Yes
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>








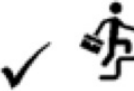













Choice Card N° 8

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 37,000 €/year	 31,000 €/ year	 37,000 €/ year
COMMUTING TIME	 30 min	 15 min	 30 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 No	 No	 Yes
EDUCATION OPPORTUNITY AT THE COMPANY	 No	 Yes	 No
TYPE OF CONTRACT	 Permanent	 Temporary	 Temporary
WORK ENVIRONMENT	 Old-fashioned company Vertical structure	 Mixed type & structure	 Dynamic company Horizontal structure
FLEXIBLE SCHEDULE	 Yes	 No	 No
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>

Choice Card N° 9

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 34,000 €/year	 31,000 €/ year	 37,000 €/ year
COMMUTING TIME	 45 min	 45 min	 15 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 No	 Yes	 No
EDUCATION OPPORTUNITY AT THE COMPANY	 Yes	 Yes	 No
TYPE OF CONTRACT	 Permanent	 Permanent	 Temporary
WORK ENVIRONMENT	 Dynamic company Horizontal structure	 Mixed type & structure	 Old-fashioned company Vertical structure
FLEXIBLE SCHEDULE	 No	 No	 No
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>

Choice Card N° 10

	Alternative A	Alternative B	Alternative C
GROSS SALARY	 28,000 €/year	 31,000 €/ year	 34,000 €/ year
COMMUTING TIME	 60 min	 15 min	 15 min
LONG-TERM CAREER PROSPECT AT THE COMPANY	 Yes	 Yes	 No
EDUCATION OPPORTUNITY AT THE COMPANY	 Yes	 No	 Yes
TYPE OF CONTRACT	 Permanent	 Temporary	 Permanent
WORK ENVIRONMENT	 Dynamic company Horizontal structure	 Old-fashioned company Vertical structure	 Dynamic company Horizontal structure
FLEXIBLE SCHEDULE	 No	 Yes	 Yes
I CHOOSE:	A <input type="checkbox"/>	B <input type="checkbox"/>	C <input type="checkbox"/>

5 – Socio-Economic Variables

- 1) **Gender:** Male Female
- 2) **Age:** _____ years old
- 3) **Residential postal code:** _____
- 4) **University grade point average:** _____
- 5) **What year of university are you in right now? :** 1st 2nd 3rd 4th
- 6) **English level:** No certificate First (B2) Advanced (C1) Proficiency (C2)
- 7) **Father's education level:** Primary Secondary University
- 8) **Mother's education level:** Primary Secondary University
- 9) **Your father's labour situation:** Employed Self-employed Retired
Unemployed Other
- 10) **Your mother's labour situation:** Employed Self-employed Retired
Unemployed Other

11) **Language spoken with family at home:** _____

12) **Family size (the number of people living in your family home):** _____

13) When people talk about politics, the terms left and right are usually used. Below there is a left-right axis. **Where would you place yourself on this axis? Indicate it with an X.**

Left									Right
1	2	3	4	5	6	7	8	9	10

14) This survey is **anonymous** and the data will be confidential. With this in mind, could you tell me, **how you would categorize your household income?** (Please note that this includes the whole family's income.)

	Gross annual household income
Less than 50,000 €	
More than 50,000 €	

Thank you for participating in our study!

(A1)

A2. Graphs of Distributions of Random Parameters. Incremental Marginal Utilities.

Figure A1: Graphs of Distributions of Random Parameters for non-Spanish universities.

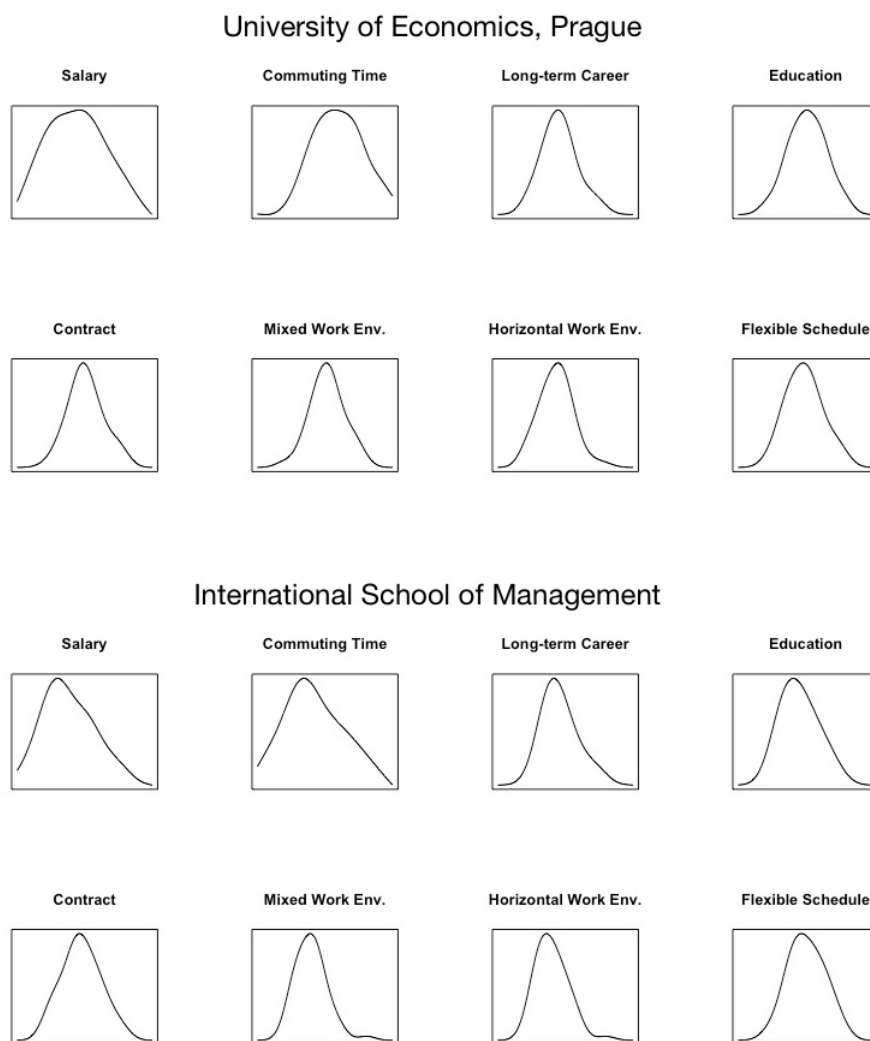
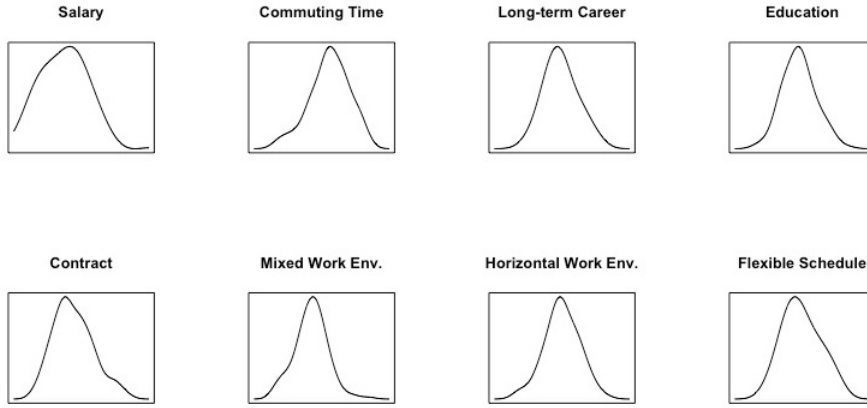
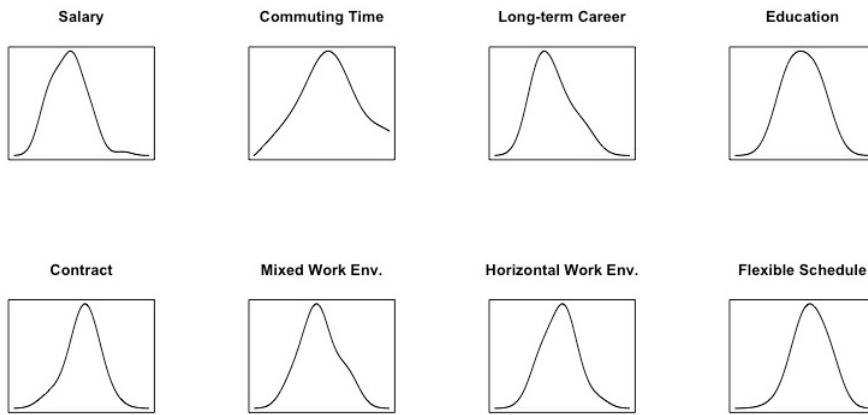


Figure A2: Graphs of Distributions of Random Parameters for Spanish universities.

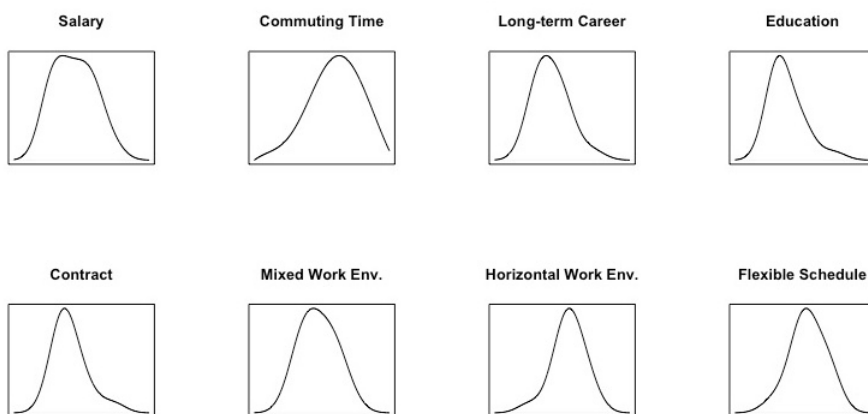
University of the Basque Country (UPV/EHU)



University of Oviedo



Deusto Business School



Appendix B

B1. Experimental Procedures

Real-Effort Task

Participants in the real-effort task had to sort yellow and blue gravel into various containers for seven minutes. There were two types of tasks the participants could have been asked to do. In the “filling task”, participants received a tray with a clear container of mixed yellow and blue gravel and small plastic pots. They were asked to put seven pieces of yellow gravel and seven pieces of blue gravel in each small pot. In the “emptying task”, they were given a tray with two empty clear containers and small plastic pots each containing a mixture of blue and yellow gravel and had to empty the small pots sorting the gravel by colour, putting the blue gravel in one of the clear containers and the yellow gravel in the other. The emptying task can be viewed as preparation for the filling task and vice versa, which enabled us to tell the participants in each session they were helping us prepare for subsequent sessions by sorting out some materials. Therefore, participants were encouraged to view their efforts as genuinely productive.

In the earned treatment, the initial endowments in the four-person dictator game were determined by the participants’ rank in the real-effort task, determined by the number of small pots they either filled or emptied. In determining the initial endowments in the second part of the experiment, we decided to use rank instead of absolute numbers of pots for four reasons. First of all, we assumed that participant types would vary with respect to their ability and their willingness to exert effort in the real-effort task. If we had used absolute numbers of pots instead of rank to determine initial endowments, the initial endowments would have varied across types and we would not have been able to distinguish between type and initial endowment effects. Second of all, participants’ willingness to exert effort in the real-effort task might have varied by treatment, in which case we would have been unable to distinguish between treatment and initial endowment effects. Third of all, if we had used absolute numbers of pots to determine initial endowments, we would not have been able to set up the four-person dictator game until the real-effort task had finished. Setting up the initial endowments according to rank allowed us to save time by preparing for the four-person dictator game beforehand. Finally, we conjectured that pot filling would take longer than pot emptying and did not want initial endowments to depend on the task.

The Four-Person Dictator Game

The four-person dictator game was conducted using specially designed and manufactured trays. Each participant received a tray which was divided into four quadrants, each quadrant relating to a participant. The participant's own quadrant was blue and located at the side of the tray closest to the participant when the tray was placed on their desk in front of him/her. Each quadrant contained black counters which represented the initial endowment of the corresponding participant. One black counter was worth €1. The participants were told they could rearrange the counters any way they liked, as long as none of the counters were removed from the tray. All instructions were given verbally in Spanish.

In addition to their final payoffs from the four-person dictator game, each participant received a show-up fee of €4. In the random treatment, the €4 was presented as a flat fee for the real-effort task. In the earned treatment, the €4 was added to each of the possible earnings levels and then set aside to be collected at the end of the session. Therefore, the €4 represented a minimum total final payoff for each participant.

B2. Selfishness

Measuring how participant i behaves with respect to himself/herself, using Model 1, allows us to see the effect of *left-right* on selfishness. Table B1 displays the regression results, which show that the triple interaction term is not statistically significantly different from

Table B1: Regression analysis of selfishness.
Dependent variable = participant i 's final allocation to himself/herself i

	Full Sample	Std. Error
Earned treatment (E_i)	-0.028	(0.215)
i 's initial endowment (y_i)	-0.104	(0.564)
$y_i \times E_i$	0.088	(0.773)
<i>left-right</i> $_i$	0.018	(0.038)
<i>left-right</i> $_i \times E_i$	-0.031	(0.050)
$y_i \times \textit{left-right}_i$	-0.025	(0.133)
$y_i \times \textit{left-right}_i \times E_i$	0.160	(0.179)
Constant	0.414***	(0.158)
Observations		404
Participants		404

Notes: (i) Unit of analysis is an allocation by i to i ; (ii) clustered standard errors at the individual level; (iii) significance levels are indicated by: * $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.001$.

zero. Thus, a relationship between *left-right* and selfishness cannot be established.

B3. Sample Selection

Since we exclude participants who allocated zero to everyone other than themselves, we need to verify that this does not pose a sample selection problem. Testing for sample selection is done in two steps.

In the first step, we estimate the probability of being “selected”, $s_i=1$, referring to participants who did not allocate zero to everyone other than themselves. This is estimated using a logit model with all of the explanatory variables from Model 1, and also including some sociodemographic variables: female, years of education, age, employment status, and the proportion of right-wing voters in each postal code. Obtaining the estimated coefficients, we compute the inverse Mills ratio for each individual:

$$\hat{\lambda}_i = \lambda(\mathbf{z}_i \hat{\boldsymbol{\gamma}}).$$

where \mathbf{z}_i are the explanatory variables from the logit model and $\hat{\boldsymbol{\gamma}}$ are all of the corresponding estimated coefficients.

In the second step, we estimate our original model, Model 1, adding in the estimated inverse Mills ratio:

$$\begin{aligned} x_{ij \neq i} = \beta_0 &+ \beta_1 E_i + \beta_2 y_j + \beta_3 (E_i \times y_j) + \beta_4 \text{left} - \text{right}_i + \beta_5 (E_i \times \text{left} - \text{right}_i) \\ &+ \beta_6 (y_j \times \text{left} - \text{right}_i) + \beta_7 (E_i \times y_j \times \text{left} - \text{right}_i) + \rho \hat{\lambda}_i + \varepsilon_{ij}. \end{aligned}$$

We test the null hypothesis $H_0 : \rho = 0$ using a t -statistic. The p-value obtained is 0.805 which indicates that we cannot reject the null hypothesis at the 5% significance level. Therefore, there is no sample selection problem.

B4. Linearity Tests

The model presented in Table 3.4, based on (3.1), is estimated assuming that the relationship between participant j 's initial endowment and participant i 's final allocation to j is linear. Furthermore, it also assumes linearity in the relationship between participant i 's placement on the left-right scale and participant i 's final allocation to j . We tested both of these assumptions.

Testing the first assumption, we estimated an unrestricted version of (3.1) and conducted a linear restriction corresponding to the null hypothesis that the relationships are linear in participant j 's initial endowment and the alternative hypothesis that they are not linear. In the unrestricted model, participant j 's initial endowment is included as a set of dummy variables, instead of as a single continuous variable, one corresponding to each of the possible values that participant j 's initial endowment could take. Then, each of these is interacted with E , *left-right* and $E \times \textit{left-right}$. An F-test indicates that the fit of the unrestricted model is no better than the fit of the linear model (p-value=0.267).

Testing the second assumption, we were unable to estimate an unrestricted model similar to the first, owing to small cell frequencies in the *left-right* variable. However, we estimated an unrestricted model which included $\textit{left-right}^2$ as well as its interactions with E , y_j and $E \times y_j$. Once again, the F-test shows that the fit of the unrestricted model is no better than the fit of the linear model (p-value=0.255).

B5. Inclusion of Unemployed and Age as Controls

Table B2: Re-estimation of the effect of ideology on distributive preferences controlling for economic status.
Dependent variable = participant i 's final allocation to himself/herself i

	Full Sample Excluding Selfish	Std. Error
Earned treatment (E_i)	-0.075**	(0.033)
i 's initial endowment (y_i)	-0.073	(0.086)
$y_i \times E_i$	0.218*	(0.121)
$left-right_i$	-0.004	(0.005)
$left-right_i \times E_i$	-0.005	(0.007)
$y_i \times left-right_i$	0.006	(0.017)
$y_i \times left-right_i \times E_i$	0.035	(0.026)
Unemployed $_i$	-0.024	(0.017)
Unemployed $_i \times E_i$	0.069***	(0.025)
$y_i \times$ Unemployed $_i$	0.127**	(0.054)
$y_i \times$ Unemployed $_i \times E_i$	-0.236***	(0.086)
Constant	0.231***	(0.023)
Observations		1092
Participants		364

Notes: (i) Unit of analysis is an allocation by i to i ; (ii) clustered standard errors at the individual level; (iii) significance levels are indicated by: * $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.001$.

Table B3: Re-estimation of the effect of ideology on distributive preferences controlling for age.
Dependent variable = participant i 's final allocation to himself/herself i

	Student Sample	Std. Error
Earned treatment (E_i)	-0.066	(0.052)
i 's initial endowment (y_i)	-0.166	(0.120)
$y_i \times E_i$	0.108	(0.189)
$left-right_i$	-0.002	(0.005)
$left-right_i \times E_i$	-0.010	(0.013)
$y_i \times left-right_i$	0.004	(0.016)
$y_i \times left-right_i \times E_i$	0.073*	(0.039)
Age $_i$	0.011**	(0.005)
Age $_i \times E_i$	-0.004	(0.006)
$y_i \times$ Age $_i$	-0.027	(0.017)
$y_i \times$ Age $_i \times E_i$	0.025	(0.023)
Constant	0.276***	(0.027)
Observations		297
Participants		99

Notes: (i) Unit of analysis is an allocation by i to i ; (ii) clustered standard errors at the individual level; (iii) significance levels are indicated by: * $p \leq 0.10$, ** $p \leq 0.05$, *** $p \leq 0.001$.

B6. Experimental Scripts

Script DJ Experiments

Cordoba and Bilbao, 2013 and 2014

EARNED-FILLING

<*EARNED-EMPTYING*>

{*RANDOM-FILLING*}

|*RANDOM EMPTYING*|

[Before entering the lab subjects need to select a participant letter at random and be asked to sit at the desk bearing their participant letter. Record participant letters on the session form. Once everyone is seated...]

Thank you for coming here today and for agreeing to take part in this workshop.

When you came in today, you each chose a letter.

This is your player identification letter.

Please keep this player identification letter with you. You will need it at the end of the session to claim your money.

Does everyone understand?

We are now ready to begin so please could you all listen carefully to the instructions.

While the workshop is going on, please do not talk to anyone other than me and my assistants.

If you have any questions, please raise your hand and one of us will come to your desk and answer your question. If you talk to the people around you, you will be asked to leave.

There are three parts to the workshop. I am now going to explain what we want you to do in the first part, but please do not start the task until you are told to do so.

You are going to spend 7 minutes helping us sort out some materials that are to be used in another workshop later today, or tomorrow.

We are not asking you to do this for free, of course. You will be paid for helping us in this way.

On your desk, you will find a box of gravel and some small plastic pots. *[Hold up example pot]* <On your desk, you will find some small plastic pots containing blue and yellow gravel, like this one, and two larger containers. *[Hold up example pot]*>

Please put 7 pieces of blue gravel and 7 pieces of yellow gravel in each pot.<Please empty the small pots, one or two at a time, and put the blue gravel in one of the larger containers and the yellow gravel in the other.>

Please be careful when counting the gravel. There should be 14 pieces of gravel in total in each pot, 7 blue and 7 yellow...like this one *[show example]*.<Please be gentle with the small pots so you do not break the hinges on the lids.>

{Only for the filling treatments} Once you have filled a pot, make sure that the pot lid is closed properly.

We will check the pots that you fill<We will check and count the pots that you have emptied>.

{Only for the earned treatments} The more pots you fill <empty>, the more money you will have at the end of this task. You will use this money in the second part of this workshop.

{Only for the earned treatments} However, any pots that do not have 7 pieces of blue gravel and 7 pieces of yellow gravel will not be counted. <However, any pots that have been emptied but the gravel has not been sorted into the larger containers, will not be counted.>

{Only for the earned treatments} The people who fill <empty> the most pots will start the second part of the workshop with more money than the people who fill <empty> the fewest.

If you run out of pots or gravel please raise your hand and we will bring you more. <If you run out of pots please raise your hand and one of us will bring you more.>

Does anyone have any questions?

[Wait... answer as required]

Please start filling <emptying> pots now. I will tell you when the 7 (seven) minutes are up. *[Note start time]*

[After 7 minutes...] Please can everyone stop now. Please raise both hands in the air and keep them there until one of my assistants comes to you. Thank you for your work. We will now collect the trays, pots and gravel.

We will check that each pot has 7 pieces of blue gravel and 7 pieces of yellow gravel, write down the number of pots each one of you has filled and then begin the next part of the workshop. <We are going to count the number of pots that you have emptied, we will check that the gravel has been sorted correctly and then begin the next part of the workshop.> This will take a few minutes. Please be patient and do not talk. I will explain the next part of the workshop once we are ready.

{Only for the earned treatments} *[Rank the subjects according to how many small pots they filled. Disregard pots that do not contain 7+7. Record the number of pots and their rank on the session form. Then, allocate trays to subjects according to Table 1 (which links ranks to tray numbers) at the end of this document. Record their tray numbers on the session form. Also write the participant/desk letters on the tray lids and the corresponding receipts.] < [Rank the subjects according to how many small pots they emptied. Disregard pots from which the gravel has been left unsorted. Record the number of sorted pots and their rank on the session form. Then, allocate trays to subjects according to Table 1 (which links ranks to tray numbers) at the end of this document. Record their tray numbers on the session form. Also write the participant/desk letters on the tray lids and the corresponding receipts.] >*

{Only for the random treatments} *{[Count up and record the number of pots filled, disregarding any pots that do not contain 7+7. Then, allocate each subject a tray by pulling participant letters out of one cup and tray numbers out of another. Record the participant-tray number matches on the session form. Also write the participant/desk letters on the tray lids and the corresponding receipts. While this is going on, the experimenter should read on]}. |[Count up and record the number of pots sorted, disregarding any pots from which the gravel has been left unsorted. Then, allocate each subject a tray by pulling participant letters out of one cup and tray numbers out of another. Record the participant letter/tray number matches on the session form. Also write the participant/desk letters on the tray lids and the corresponding receipts. While this is going on, the experimenter should read on].}*

Alright, we are nearly ready to continue with the workshop. Thank you once again for the effort you put into filling **<emptying>** the pots.

As promised, you will be paid for this. {Only for the random treatment, filling and emptying} **{4 Euros has been set aside for each of you. You will receive this at the end of the workshop.}**

{Only for the earned treatments} There are two parts to your pay:

{Only for the earned treatments} First, 4 Euros has been set aside for each of you. You will receive this at the end of the workshop.

{Only for the earned treatments} Second, each of you has earned additional money for the next part of the workshop depending on how many pots you filled **<emptied>**. You will have earned anywhere between an extra 6 Euros and 16 Euros.

Now I am going to explain the second stage of the workshop.

Please listen carefully as these instructions are very important. Once again, please do not start the task until you are told to do so.

In this part of the workshop you are all going to be placed in groups of 4. However, you will never know who else is in your group.

{Only for the random treatments} {You are each going to start off with a certain amount of money. My assistant has pulled participant letters out of a cup, at random, to find out how much money each of you is going to start off with.}

[Hold up tray photo] In a few minutes we are going to hand each of you a tray. You will find a copy of this photo to your right.

Each tray has 4 triangles: one triangle for each person in your group. The blue triangle is **your** triangle. The 3 cream triangles are for the other people in your group.

[Hold up counter] On each tray there will be several counters, like this one, in each triangle. In the photo, the little black round things to the right of the tray are counters.

{Only for the earned treatments} Each of you has earned a different amount of counters based on the number of pots you filled <emptied> in the first part of the workshop.

Each counter is worth 1 Euro, so 6 counters in a triangle is worth 6 Euros, 3 counters is worth 3 Euros, 10 counters is worth 10 Euros, and so on.

The counters that are in the blue triangle show the amount of money that each of you are starting the second part of the workshop with.

The counters in the three cream triangles show the amount of money that the other people in your group are starting the second part of the workshop with.

{Only for the earned treatments} You will never know who else is in your group, you will just know how much money they earned by looking at the number of counters in their triangles.

{Only for the random treatments} {You will never know who else is in your group, you will just know how much money they are starting out with.}

At the end of the workshop, these counters will be changed for real money.

We are going to hand the trays out now so you can see how much money you and the other people in your group have at the start of this part of the workshop. Each tray is covered by a lid (please only lift the lid when the tray is on your desk so that it cannot be seen by anyone else. It is important that no one sees the contents of your tray).

[Hand out the trays being careful to hand the right tray to the right participant. Meanwhile say...]

There are a total of 44 counters on each tray. Please do not take any counters away with you. It is very important that we get all the counters back. Please have a look at the tray so you know how much money you have and everyone else in your group has at this point in this workshop.

{Only for the earned treatments} Remember as you look at the tray, the person with the most counters in the group has the most money because they filled <emptied> the most pots. The

person with the fewest counters has the least money because they did not fill <empty>as many pots as others.

{Only for the random treatments} {Remember as you look at the tray, the person with the most counters in the group has the most money, and the person with the fewest counters has the least money at this point in the workshop.}

Everyone should now have a tray and should know how much money they and the other people in their group have for the second part of the workshop.

If anyone does not understand their tray, or has any other questions please raise your hand.

OK. In this stage, if you choose, you can change the amounts of money that you and the other members of your group are to take home at the end of the workshop by moving the counters from one triangle to another.

In other words, you can take as many counters away from some people, including yourself, and give those counters to other people, including yourself.

If you want, you can move the counters between the triangles any way you choose until you are happy with the number of counters in each triangle. However, you are not allowed to take any counters completely off the tray. There are 44 counters on the trays and all 44 counters need to be on the trays when they are returned to us.

Let me repeat this as it is important. If you want, you can move the counters between the triangles any way you choose until you are happy with the number of counters in each triangle. However, you are not allowed to take any counters completely off the tray. There are 44 counters on the trays and all 44 counters need to be on the trays when they are returned to us.

Before you start moving the counters on your tray, I have to mention something important. Once everyone has decided how to move the counters we will collect the trays. Then, for each group of four, we will put the four tray numbers into a cup and pick one at random. This will be done for each of the groups. The money you receive at the end of the workshop –on top of the 4 Euros already put aside—will depend on the decision made by the person in your group whose number is picked. Every person’s tray has an equal chance of being picked, so every person’s decision has an equal chance of being carried out. It is important that you think about your decision very carefully.

Finally, the decision you make will be kept secret. No one will ever know whether you were in their group or whether you moved money to them or away from them.

In summary:

- 1. The blue triangle is your triangle.**
- 2. The other triangles relate to 3 other people but you don’t know who they are.**

3. **The counters are equivalent to money.**
4. **The number of counters in a triangle tells you how much that person earned.**
5. **You can move the counters on your tray any way you choose.**
6. **If and how you move them will never be known by anyone else.**
7. **At time of payment, only one person's decision about final payments will be carried out. This decision will be randomly picked out of a cup which has all four tray numbers that correspond to all four people in the group.**

If you do not understand what you are being asked to do or how it might affect yourself and others, or if you have any other questions, please raise your hand and we will help you.

You may now make your decisions about whether and where to move counters. You can have as much time as you want. When you have arranged the counters as you see fit please close the lid of your tray and put up your hand so that one of us can collect your tray from you.

[When all trays collected...] We are going to hand out questionnaires that we would like you to fill out. This questionnaire is the third part of the workshop. When this part of the workshop is finished you will be paid and will be free to leave. Please note that the questionnaire is on both sides of the pages. When you have finished filling out the questionnaire please raise your hand.

[Hand out and later collect questionnaires once they finish. Calculate pay with reference to notes in the next section of this document. Draw up receipts.]

We are now finished. Thank you for being so patient and thank you for participating in this workshop. We have worked out how much money each of you is to be paid. In a minute I will ask you to come, one by one, to the desk in the waiting room so we can give you your money and you can sign a receipt. Once you sign the receipt, you will be free to leave.

B7. Experimental Questionnaire

Letter ID for the session: _____ Personal ID Code: _____

Date: (dd/mm/yy) _____

Time of Session: _____

Research on Individual Decision-Making

Thank you for participating in this research. Please take a few moments to fill out the questionnaire below. All your answers will be kept confidential. There are no right or wrong answers, so please answer honestly.

0. Did you participate in this study last year?

1. Yes

2. No

If you answered YES, proceed to question 01. If you answered NO, proceed to question 02.

01.

A) Could you please tell us why you made the decision you made in the game?

B) Was your decision affected by the experience you had last year in our experiment?

02.

A) Could you please tell us why you made the decision you made in the game?

B) Before participating in this study, had you heard of it?

1. Yes

2. No

C) If yes, could you please tell us if that information influenced your decision in this experiment and in what way?

1. Date of Birth: (DD/MM/YYYY) _____

2. Age: _____

3. Sex 1. Male 2. Female

4. Nationality: _____

5. Postal Code: _____

6. Highest level of education completed

1. = No schooling
2. = EGB/Primary
3. = Secondary/ESO
4. = A Levels/BUP
5. = Middle Grade Vocational Studies
6. = Superior Grade Vocational Studies
7. = Special Regime Education (Visual arts and Design, Curator/Restorer, Music, Dance, Dramatic Arts (Theatre), Languages, Military Service)
8. = Diploma/Certificate at University
9. = Bachelor's degree (under the old system)
10. = Second Cycle Studies
11. = Bachelor's degree (under the new system)
12. = Master
13. = MBA
14. = PhD
15. = Other (specify) _____

7. Please select the option or options that best describes your current situation

1. Employed part-time
2. Employed full-time
3. Unemployed
How long have you been unemployed (number of months: _____)?
4. Retired
5. On maternity leave
6. Housewife/Looking after family
7. Studying part-time
8. Studying full-time
9. On sick leave or disabled
10. Other (specify _____)

8. Have you been unemployed in the last year, i.e., since April 2013?

1. Yes
2. No

9. If yes, how many months in total have you been unemployed in the last year?

Please also indicate the date

From _____	Until _____
From _____	Until _____
From _____	Until _____
From _____	Until _____
From _____	Until _____
From _____	Until _____

10. Do you currently do any work for which you earn money, i.e., do you have a job or a business?

1. Yes
2. No

11. If yes, how much do you earn a month? (net income)

_____ €

12. Is this work full-time or part-time?

1. Full-time
2. Part-time
3. Other (specify) _____
4. Not Applicable (if you are not working)

13. If yes, how many hours do you work per week? _____

14. How did you find your current job?

- 1. Through a family member
- 2. Through a friend
- 3. Through an employment office
- 4. On my own
- 5. Other (specify) _____

15. If you are currently working for money, when was the last time you were either a full-time student or unemployed?

Last time a full time student (mm/yyyy): _____

Last time unemployed (mm/yyyy): _____

16. If you are NOT currently working for money, do you have any other form of income?
(you may tick more than one box)

- 1. Pension
- 2. Child Care Grant
- 3. Disability Grant
- 4. Unemployment Insurance
- 5. Subsidy
- 6. Support from family members (grandfathers, fathers)
- 7. Other _____

17. If you are NOT currently working for money and NOT studying full time, when was the last time you were either a full-time student or in full time paid employment?

Last time a full time student (mm/yyyy): _____

Last time in full time paid employment (mm/yyyy): _____

18. If you are NOT currently working for money and NOT studying full-time, are you receiving or have you recently received (in the last 6 months) any training designed to help you gain employment?

- 1. Yes
- 2. No

19. If yes, could you please tell us which public organization or which organization offered this training?

20. If you are a full-time student, please write the name of the degree you are studying for, e.g., Business or Vocational Studies (What specialty?).

21. If you are a full-time student, when was the last time you were either in full-time paid employment or unemployed and claiming benefits or some type of grant?

Last time in full time paid employment (mm/yyyy): _____

Last time unemployed and claiming benefits or a grant (mm/yyyy): _____

22. How many people, including you, live in your household? (here, you should include all those people who sleep in the same household as you on a regular basis)

23. Would you describe your family as:

1. Rich 2. Upper income 3. Middle income 4. Lower income 5. Poor

24. Which of the following people or organizations do you think has the greatest responsibility to help the poor? (choose one answer only)

1. The Church 2. Charities or non-profit organizations 3. The government
4. Families and relatives of the poor 5. The poor themselves

25. When people talk about politics, the terms left and right are usually used. Below there is a left-right axis. Where would you place yourself on this axis? Indicate it with an X.

Left										Right
1	2	3	4	5	6	7	8	9	10	

26. Finally, look around the room and tell us how many of the other people in the workshop do you know well or think of as friends _____

References

- Adamowicz, W., Boxall, P., Williams, M., & Louviere, J. (1998). Stated preference approaches for measuring passive use values: choice experiments and contingent valuation. *American Journal of Agricultural Economics*, 80(1), 64–75.
- Adamowicz, W., Louviere, J., & Swait, J. (1998). *Introduction to attribute-based stated choice methods* (Purchase Order 43AANC601388). Washington, USA: NOAA-National Oceanic Atmospheric Administration.
- Alesina, A., & Giuliano, P. (2010). The power of the family. *Journal of Economic Growth*, 15(2), 93–125.
- Alesina, A., & Giuliano, P. (2011). Preferences for redistribution. In J. Benhabib, A. Bisin & M. O. Jackson (Eds.), *Handbook of Social Economics*, pp.93–132. Amsterdam, The Netherlands: Elsevier.
- Ang Teo, H., & Teng Fatt Poon, J. (1994). Career choice of undergraduates and SMEs in Singapore. *International Journal of Career Management*, 6(3), 20–26.
- Bancaja Foundation and Ivie (The Valencian Institute of Economic Research). (2008) *Observatorio de Inserción Laboral de los Jóvenes* [Observatory of Young People’s Transition to the Labour Market] [Data file]. Retrieved June 15, 2012, from: <http://www.ivie.es>
- Bancaja Foundation and Ivie (The Valencian Institute of Economic Research). (2011) *Observatorio de Inserción Laboral de los Jóvenes* [Observatory of Young People’s Transition to the Labour Market] [Data file]. Retrieved June 15, 2012, from: <http://www.ivie.es>
- Barr, A., Burns, J., Miller, L., & Shaw, I. (2015). Economic status and acknowledgement of earned entitlement. *Journal of Economic Behavior & Organization*, 118(October), 55–68.

- Barr, A., Miller, L., & Ubeda, P. (2016). Moral consequences of becoming unemployed. *Proceedings of the National Academy of Sciences*, *113*(17), 4676–4681.
- Bateman, I.J., Carson, R.T., Day, B.H., Hanemann, W.M., Hanley, N., Hett, T., . . . Pearce, D. W. (2002). *Economic Valuation with Stated Preferences Techniques: A Manual*. Cheltenham, UK: Edward Elgar.
- Bennett, J., & Blamey, R. (Eds.). (2001). *The choice modelling approach to environmental valuation*. Cheltenham, UK: Edward Elgar Publishing.
- Bierlaire, M. (2008). An Introduction to BIOGEME Version 1.7. Available at: biogeme.epfl.ch.
- Bierlaire, M. (2016) PythonBiogeme: a short introduction. Report TRANSP-OR 160706, Series on Biogeme. Transport and Mobility Laboratory, School of Architecture, Civil and Environmental Engineering, Ecole Polytechnique Fédérale de Lausanne, Switzerland.
- Boswell, W. R., Roehling, M. V., LePine, M. A., & Moynihan, L. M. (2003). Individual job-choice decisions and the impact of job attributes and recruitment practices: A longitudinal field study. *Human Resource Management*, *42*(1), 23–37.
- Browne, B. A. (1997). Gender and preferences for job attributes: A cross cultural comparison. *Sex Roles*, *37*(1), 61–71.
- Bundy, P., & Norris, D. (1992). What accounting students consider important in the job selection process. *Journal of Applied Business Research*, *8*(2), 1–6.
- Butler, S. A., Sanders, D. E., & Whitecotton, S. M. (2000). Student and recruiter insights on the importance of job attributes. *Journal of Managerial Issues*, *12*(3), 337–351.
- Campbell, A., Converse, P., & Rodgers, W. (1976). *The Quality of American Life: Perceptions, Evaluations, and Satisfaction*. New York, NY: Russell Sage Foundation.
- Cappelen, A. W., Hole, A. D., Sørensen, E. Ø., & Tungodden, B. (2007). The pluralism of fairness ideals: An experimental approach. *The American Economic Review*, *97*(3), 818–827.
- Cappelen, A. W., Moene, K. O., Sørensen, E. Ø., & Tungodden, B. (2013). Needs versus

entitlements—an international fairness experiment. *Journal of the European Economic Association*, 11(3), 574–598.

Carcello, J. V., Copeland Jr, J. E., Hermanson, R. H., & Turner, D. H. (1991). A Public Accounting Career: The Gap Between Student Expectations and Accounting Staff. *Accounting Horizons*, 5(3), 1–11.

Catalan protesters rally for greater autonomy in Spain. (2010, July 10). Retrieved May 27, 2015, from <http://www.bbc.com/news/10588494>

Chan, S. Y., & Ho, S. S. (2000). Desired attributes of public accounting firms in the job selection process: an empirical examination of accounting graduates' perceptions. *Accounting Education*, 9(4), 315–327.

Daly, A.J., Hess, S. & Train, K.E. (2012). Assuring finite moments for willingness to pay in random coefficients models. *Transportation*, 39(1), 19–31.

Destatis. [Federal Statistical Office of Germany.] (2014). Table: Income, receipts and expenditure of households. Net household income in 2014. *Destatis*. Retrieved February 23, 2016, from <https://www.destatis.de>

Dunn, A. (2011). Only fools? Reconsidering the relationship between commitment to the work ethic and education attainment. *Journal of Education and Work*, 26(1), 1–20.

Erkal, N., Gangadharan, L., & Nikiforakis, N. (2011). Relative earnings and giving in a real-effort experiment. *The American Economic Review*, 101(7), 3330–3348.

España. Congreso de los Diputados. [The Lower House.] (2013). *Respuesta del Gobierno a la solicitud de informe a la Administración del Estado*. [Government Response to the Administrative Request of the State.] N°: 64883. Congreso de los Diputados: Secretaria General. [The Lower House: General Secretary's Office.]

Evans, G. (1997). Political ideology and popular beliefs about class and opportunity: evidence from a survey experiment. *British Journal of Sociology*, 48(3), 450–470.

Fosgerau, M., & Bierlaire, M. (2007). A practical test for the choice of mixing distribution

- in discrete choice models. *Transportation Research Part B: Methodological*, 41(7), 784–794.
- Fosgerau, M., & Mabit, S. L. (2013). Easy and flexible mixture distributions. *Economics Letters*, 120(2), 206–210.
- Frohlich, N., Oppenheimer, J., & Kurki, A. (2004). Modeling other-regarding preferences and an experimental test. *Public Choice*, 119(1), 91–117.
- Furnham, A. (1982). The Protestant work ethic and attitudes towards unemployment. *Journal of Occupational Psychology*, 55(4), 277–285.
- Hanemann, W.M. (1984). Welfare evaluations in contingent valuation information with discrete responses. *American Journal of Agricultural Economics*, 66(3), 332–341.
- Hanson, K., & Jack, W. (2008). *Health worker preferences for job attributes in Ethiopia: Results from a discrete choice experiment*. Unpublished manuscript, London School of Hygiene and Tropical Medicine/Georgetown University.
- Harpaz, I. (2002). Expressing a wish to continue or stop working as related to the meaning of work. *European Journal of Work and Organizational Psychology*, 11(2), 177–198.
- Hensher, D.A., & Greene, W.H. (2003). The mixed logit model: the state of practice. *Transportation*, 30(2), 133–176.
- Hensher, D.A., Rose, J.M., & Greene, W.H. (2005). *Applied choice analysis: A primer*. Cambridge, UK: Cambridge University Press.
- Highhouse, S., Zickar, M., & Yankelevich, M. (2010). Would you work if you won the lottery? Tracking changes in the American work ethic. *Journal of Applied Psychology*, 95(2), 349–357.
- Iacovou, C. L., Shirland, L., & Thompson, R. L. (2011). Job selection preferences of business students. *Journal of Applied Business Research (JABR)*, 20(1).
- Instituto Nacional de Estadística (INE). [National Statistics Institute.] (2016). *Decil de salarios del empleo principal*. [Deciles of salaries of principal job.] [Press release]. Retrieved March 3, 2016, from <http://www.ine.es/prensa/np939.pdf>
- Instituto Nacional de Estadística (INE). [National Statistics Institute.] (2016a). *Renta*

- por persona y unidad consumo por comunidades autónomas*. [Income per capita and unit consumption by Autonomous Regions]. Retrieved April 5, 2016, from <http://www.ine.es>
- Instituto Nacional de Estadística (INE). [National Statistics Institute.] (2016b). *Tasas de paro por distintos grupos de edad, sexo y comunidad autónoma*. [Unemployment Rates by Age, Sex and Autonomous Regions]. Retrieved April 5, 2016, from <http://www.ine.es>
- International Labour Organization. Labour Statistics database. Retrieved March 23, 2016, from: <http://laborsta.ilo.org/>
- Jakiela, P., Miguel, E., & te Velde, V. L. (2015). You've earned it: estimating the impact of human capital on social preferences. *Experimental Economics*, 18(3), 385–407.
- Judge, T. A., & Bretz, R. D. (1992). Effects of work values on job choice decisions. *Journal of Applied Psychology*, 77(3), 261–271.
- Kaplan, H.R., & Tausky, C. (1974). The meaning of work among the hard-core unemployed. *Pacific Sociological Review*, 16(2), 185–198.
- Kolstad, J. R. (2011). How to make rural jobs more attractive to health workers. Findings from a discrete choice experiment in Tanzania. *Health Economics*, 20(2), 196–211.
- Konow, J. (2000). Fair shares: Accountability and cognitive dissonance in allocation decisions. *The American Economic Review*, 90(4), 1072–1091.
- Krinsky, I., & Robb, A. L. (1986). On approximating the statistical properties of elasticities. *The Review of Economics and Statistics*, 68(4), 715–719.
- Lagarde, M., & Blaauw, D. (2016). *Using stated choice preferences to investigate job preferences and migration patterns of South African nurses*. Unpublished manuscript, London School of Hygiene and Tropical Medicine, London, UK/Centre for Health Policy, University of Witwatersrand, Johannesburg, South Africa.
- Lancaster, K. J. (1966). A new approach to consumer theory. *Journal of Political Economy*, 74(2), 132–157.
- Lanfranchi, J., Narcy, M., & Larguem, M. (2009). *Would you accept this job? An evaluation of the decision utility of workers in the for-profit and nonprofit sectors*. Unpublished

manuscript, Munich Personal RePEc Archive, MPRA Paper No. 16359.

Lim, H. E., & Soon, J. (2006). Job selection criteria and job sector preference of economics student: An ordered logit model analysis. *International Journal of Business and Society*, 7(1), 53.

Lo, J., Proksch, S. O., & Gschwend, T. (2014). A common left-right scale for voters and parties in Europe. *Political Analysis*, 22(2), 205–223.

Long, S. (1997). *Regression Models for Categorical and Limited Dependent Variables*. USA: Sage Publications, Inc.

Louviere, J. J., Flynn, T. N., & Carson, R. T. (2010). Discrete choice experiments are not conjoint analysis. *Journal of Choice Modelling*, 3(3), 57–72.

Louviere J. J., Hensher, D. A., & Swait, J. D. (2000). *Stated Choice Methods: Analysis and applications*. Cambridge, UK: Cambridge University Press.

Lyman, E. (1955). Occupational differences in the value attached to work. *American Journal of Sociology*, 61(2), 138–144.

Malmendier U., & Nagel, S. (2011). Depression Babies: Do Macroeconomic Experiences Affect Risk Taking? *The Quarterly Journal of Economics*, 126(1), 373–416.

Margalit, Y. (2013). Explaining social policy preferences: Evidence from the Great Recession. *American Political Science Review*, 107(01), 80–103.

McFadden, D. (1974). Conditional logit analysis of qualitative choice behaviour. In P. Zarembka (Ed.), *Frontiers in Econometrics* (105–142). New York: Academic Press.

McGinty, R., & Reitsch, A. (1992). Using student perceptions and job characteristics to recruit recent graduates. *Review of Business*, 14(1), 38–42.

Michelbach, P. A., Scott, J. T., Matland, R. E., & Bornstein, B. H. (2003). Doing Rawls justice: An experimental study of income distribution norms. *American Journal of Political Science*, 47(3), 523–539.

Mirels, H. L., & Garrett, J. B. (1971). The Protestant ethic as a personality variable. *Journal of consulting and clinical psychology*, 36(1), 40.

- Montgomery, D. B., & Ramus, C. A. (2007). *Including corporate social responsibility, environmental sustainability, and ethics in calibrating MBA job preferences*. Unpublished manuscript, Stanford University, Graduate School of Business, Stanford, California, USA.
- Morrison, M., Bennett, J., Blamey, R., & Louviere, J. (2002). Choice modeling and tests of benefit transfer. *American Journal of Agricultural Economics*, *84*(1), 161–170.
- Morse, N. C., & Weiss, R. S. (1955). The function and meaning of work and the job. *American Sociological Review*, *20*(2), 191–198.
- Morton, R. B., & Williams, K. C. (2010). *Experimental Political Science and the Study of Causality: From Nature to the Lab*. Cambridge, UK: Cambridge University Press.
- MOW International Research Team (1987). *The Meaning of Working*. London, the UK: Academic Press.
- Owens, L. A., & Pedulla, D. S. (2014). Material welfare and changing political preferences: The case of support for redistributive social policies. *Social Forces*, *92*(3), 1087–1113.
- Paulsen, R. (2008). Economically forced to work: A critical reconsideration of the lottery question. *BASIC INCOME STUDIES An International Journal of Basic Income Research*, *3*(2), 1–20.
- Phillips, C. R., Phillips, A. S., & Cappel, S. D. (1994). Research note: How management students select prospective employers. *International Journal of Manpower*, *15*(1), 55–59.
- Rose, M. (2005). Do rising levels of qualifications alter work ethic, work orientation and organizational commitment for the worse? Evidence from the UK 1985–2001. *Journal of Education and Work*, *18*(2), 131–164.
- Saad, L. (2005, August 25). Most workers are positive, but one-third love their jobs. *Gallup News Service*. Retrieved June 21, 2015, from <http://www.gallup.com/poll/18109/Most-Workers-Positive-OneThird-Love-Their-Jobs.aspx>
- Schaufeli, W.B. (1992). Unemployment and mental health in well- and poorly-educated school-leavers. In Verhaar, C.H.A. & Jansma, L.G. (Eds.), *On the Mysteries of Unemployment: Causes, Consequences and Policies (Studies in Operational Regional Science*,

Vol.10) (pp.253–271). The Netherlands: Springer.

Scott, A. (2001). Eliciting GPs' preferences for pecuniary and non-pecuniary job characteristics. *Journal of Health Economics*, *20*(3), 329–347.

Scott, J. T., Matland, R. E., Michelbach, P. A., & Bornstein, B. H. (2001). Just deserts: An experimental study of distributive justice norms. *American Journal of Political Science*, *45*(4), 749–767.

Servulo, J. (2016, January 4). El salario mínimo sube 6,6 euros al mes en 2016, hasta 655 euros al mes. [Minimum salary increases by 6.6 Euros per month in 2016, up to 655 Euros per month.] *El País*. Retrieved January 17, 2016, from: http://economia.elpais.com/economia/2015/12/29/actualidad/1451390924_950140.html

Tausky, C. (1969). Meanings of work among blue collar men. *The Pacific Sociological Review*, *12*(1), 49–55.

The Organisation for Economic Co-operation and Development (OECD) (2016). *Unemployment rate* [Data file]. Retrieved November 15, 2016, from <https://data.oecd.org/unemp/unemployment-rate.htm>

Train, K. E. (1998). Recreation demand models with taste differences over people. *Land Economics*, *74*(2), 230–239.

Train, K., & Weeks, M. (2005). Discrete choice models in preference space and willingness-to-pay space. In Scarpa, R., & Alberini, A. (Eds.), *Applications of simulation methods in environmental and resource economics* (pp. 1–16). Dordrecht, The Netherlands: Springer.

Turban, D. B., Eyring, A. R., & Campion, J. E. (1993). Job attributes: Preferences compared with reasons given for accepting and rejecting job offers. *Journal of Occupational and Organizational Psychology*, *66*(1), 71–81.

Ubach, C., Scott, A., French, F., Awramenko, M., & Needham, G. (2003). What do hospital consultants value about their jobs? A discrete choice experiment. *BMJ*, *326*(7404), 1432–1435.

Vecchio, R. P. (1980). The function and meaning of work and the job: Morse and Weiss

(1955) revisited. *Academy of Management Journal*, 23(2), 361–367.

Vlková, J. (2016, January 26). Vysokoškolákům stačí i 17 tisíc hrubého. Nejraději by pracovali pro ČEZ. [17,000 gross salary is enough for university students. They would prefer to work for ČEZ.] *iDnes.cz*. Retrieved March 2, 2016, from: http://ekonomika.idnes.cz/studenti-uz-nechteji-delat-u-skoda-vede-cez-a-chteji-30-tisic-nastupni-plat-1ql-/ekonomika.aspx?c=A160125_125534_ekonomika_jvl

Warr, P. (1982). A national study of non-financial employment commitment. *Journal of Occupational Psychology*, 55(4), 297–312.