How happy are young economists in their jobs?

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Abstract – This paper investigates issues of job satisfaction and competencies among economists. For this purpose, we use a data set gathered in 2006 at the University of Seville. Ordered logit analysis is used to analyze the determinants of an economist's overall satisfaction at work. The results demonstrate that competency mismatches matter for reported overall job satisfaction.

1. Introduction

Happiness with work is critical to an individual's overall well-being. As such, job satisfaction has been investigated in several disciplines such as psychology (Argyle, 1989), sociology (Hodson, 1985), economics (Hamermesh 1977, 2001; Freeman, 1978), and management sciences (Hunt and Saul, 1975). Employers prefer that their employees be satisfied, since employees' satisfaction is closely related to their labor market behavior such as productivity, quits and absenteeism. For this reason it is important to study the determinants of job satisfaction. Different aspects of job satisfaction are studied in the literature. These include job satisfaction with gender (Clark, 1997), wage growth (Clark, 1999), age (Clark *et al.*, 1996), or work environment (Idson, 1990). However, the applied research has neglected the impact of competencies on job satisfaction.

Nowadays, we are moving from a market for labor to a market for competencies – which workers must have to perform effectively. But, do individuals have the required competencies employers want? How are educational institutions providing them? This paper provides answers to these questions and it investigates the effect of acquired and required competencies on job satisfaction. We focus on university graduates. Our assumption is that graduates working in jobs requiring high levels of competence (challenging jobs) will have greater job satisfaction. This topic is also crucial at present because we are at the end of the Bologna process aimed at creating an European Higher Education Area (EHEA) based on international cooperation and academic exchange. Providing and enhancing employability on the European labor market is a key feature of the Bologna process. In this context, the systematic and regular assessment of the university to work transition becomes essential. But assessing this transition not only requires evaluation of "strong" indicators as the duration of

the first unemployment[1], but also analysis of the potential (mis)matches between acquired and required competencies.

The paper is organized as follows. Section 2 advances the theoretical model. In Section 3, the data are described. Section 4 describes competency mismatches among young economists. Section 5 presents the statistical model. Section 6 displays and discusses the estimation results. Finally, Section 7 summarizes and concludes.

2. Theoretical framework

The theoretical model in which estimates are based builds on two hypothesis (Gamero (2007): 1) In the context of hedonic approach, we posit that a job is more than its wages or working hours, departing from the reductionist view of the neoclassical approach; other factors are relevant in determining the nature of employment, as the possibility of combining work and family, the possibilities of on-the-job self-realization,… 2) The second hypothesis is that declared job satisfaction is a relative judgement, in the sense that since the individual compares his current job with an ideal or reference job.[2]

We add a third hypothesis to those two former ones: labour satisfaction also depends on the relative mismatch between competencies, acquired in the University and required in the world of work. In this paper we measure the educational mismatch as a mismatch in skills expecting the following results: a) working in a job that requires a high level of competencies has a positive effect on job satisfaction (challenging work) and b) in contrast, the effect of acquired competencies on job satisfaction is more ambiguous, as, on one hand, increases in educational quality augment job satisfaction (by improving employability), while on the other, we may find some frustration associated to perceived overeducation of graduates.

In the light of the three former hypothesis, we present an utility model in which satisfaction depends on labour mismatch[3] and educational mismatch[4]:

$$U(e_i, e_i^R, c_i^a, c_i^r, vc_i) \qquad (1)$$

Where $U(\cdot)$ represents the utility function, e_i is a vector standing for the *j* employment characteristics of the job currently held by individual *i*, e_i^R represents the characteristics of his

[1] As analyzed in Borra *et al.* (2008).
[2] Therefore, the worker will take into account both his past work experience as his expectations about the future.
[3] This matching determines employment quality.
[4] This matching determines higher education quality with respect to the complex needs of the knowledge society.

ideal employment, c_i^a is the level of acquired competencies of individual *i* , c_i^r is the level of required competencies in his current employment and vc_i is a vector of control variables affecting his utility.

In this paper we argue that there is a relationship between actual utility (U_i) and subjective labour wefare (SLW_i), defined as:

$$S_i^* = U(e_i, e_i^R, c_i^a, c_i^r, vc_i) + \varepsilon_i \qquad (2)$$

where the error term captures unobserved individual heterogeneity.

3. Data

This study relies upon graduate questionnaires that provide a range of demographic information along with information about respondents' jobs. These data were obtained by our own research team in 2006 as part of a study into labor market for economists. Four university degrees were involved: Business Studies, Economics Sciences, Management Sciences, and Marketing Studies.[5]

In order to have a career perspective of four years, only those graduates who completed their studies in the academic year 2001/2002 were selected. The questionnaire was sent by postal mail to the whole population of these graduates (982 individuals). The overall response rate was somewhat superior to 20 percent, an acceptable rate considering the extension of the questionnaire. Based on the survey, we have been able to reconstruct the academic and occupational history of these graduates.[6]

The questionnaire elicits workers' satisfaction with different aspects of the position (salary, job security, opportunities for promotion, work climate or leadership) as well as questioning them about their overall satisfaction with the job. As usual with satisfaction data, the responses are on a five-point scale, with five representing perfect satisfaction and one complete dissatisfaction.[7]

Table 1 provides the overall satisfaction level for male and female economists. In general terms, 71.2% of graduates are quite or very satisfied with their current jobs. The distribution of job satisfaction is consistent with that observed in studies for other countries (e.g. the U.K.) which show relatively high levels of revealed job satisfaction (Millward *et al*.,

[5] Graduates from the University of Seville, Spain.
[6] The questionnaire is available from the authors upon request.

1999). These results may reflect a self-selection effect, as workers stay in jobs they like and leave those they do not like. However, and keeping in mind that the higher the response on the five-point scale the better, it is immediately apparent that women are more satisfied with their overall position than men.

Table 1. Reported levels of overall job satisfaction across the sample, by gender

	Gender		Total
	Male	Female	
Very dissatisfied		3.2%	1.8%
Dissatisfied	5.8%	5.3%	5.5%
Satisfied	23.2%	20.2%	21.5%
Quite satisfied	53.6%	45.7%	49.1%
Very satisfied	17.4%	25.5%	22.1%
Total	100.0%	100.0%	100.0%

Source: authors' calculations from the graduate survey data set.

4. Competency mismatches among economists

Our questionnaires provided detailed information about thirty-two competencies acquired at the University and required in the workplace. As in the CHEERS project, economists were asked to indicate on a scale from 1 (not at all) to 5 (largely) the strength of a given competence at time of graduation and the extent to which this given competence was required in their current job. Therefore, graduates' responses constitute a self-assessment of the acquired and required levels of competencies, four years after graduation. Compared to the use of grading by job analysts, with this method the information is obtained from the source closest to the actual job situation, taking into account the specific circumstances of each case (García-Aracil and van der Velden, 2008).

Table 2 provides the questionnaire items grouped in eight categories.[8] For each competence, it shows the average self-assessment of the level acquired at the University (second column) and required in the workplace (third column). The fourth column presents the difference between what has been learnt at university and what is required on the job. The last two columns offer this difference for those competencies for which information is available from the CHEERS survey for Spain and the European Union, extracted from the work of Garcia-Aracil and van der Velden (2008). In these last three, hence, a negative sign

[7] The answer to the discrete question: "Altogether, to what extent are you satisfied with your current work? Rate from 1 (very dissatisfied) to 5 (very satisfied)."

indicates that the skills and knowledge required by the job are greater than those obtained at the university.

Table 2. Competencies acquired at the University and required in the workplace

	Acquired	Required	Difference Survey	Difference Spain	Difference Europe
Stress capacity					
Sacrificing capacity	3.4	**4.1**	-0.7		
Working under pressure	3.2	**4.2**	**-1.0**	-0.85	-0.76
Accuracy, attention to detail	3.0	**4.1**	**-1.1**	-0.42	-0.44
Psychological /physical condition for the job	2.3	3.6	**-1.2**		
Adaptability	3.2	**4.0**	-0.8	-0.30	-0.37
Power of concentration	3.4	**4.0**	-0.5	0.16	-0.10
Taking responsibilities, decisions	3.2	**4.3**	**-1.1**	-0.66	-0.85
Leadership					
Problem solving ability	2.9	**4.3**	**-1.4**	-0.66	-0.68
Negotiating	2.3	3.8	**-1.5**	-0.81	-1.08
Leadership capacity	2.4	3.4	**-1.1**	-0.26	-0.74
Initiative	2.5	**4.0**	**-1.5**	-0.44	-0.60
Oral communication skills	2.7	**4.1**	**-1.5**	-0.65	-0.68
Informative competencies					
Critical thinking	3.2	3.6	-0.4	0.15	-0.14
Reflective thinking, assessing one's work	3.0	3.7	-0.8	-0.36	-0.43
Tolerance, appreciating of different points of view	3.4	3.8	-0.4	-0.10	-0.26
Documenting ideas and information	3.2	3.7	-0.6	-0.38	-0.53
Information management	2.3	**4.0**	-0.7		
Organizational competencies					
Working in a team	3.2	3.9	-0.8	-0.47	-0.54
Planning, coordinating and organizing	3.4	**4.3**	**-1.0**	-0.87	-1.00
Time management	2.9	**4.1**	**-1.2**	-0.49	-0.84
Learning competencies					
Creativity	2.5	3.4	-0.8		
Foreign language proficiency	1.9	2.3	-0.4	0.21	0.16
Analytical competencies	3.4	**4.1**	-0.6	-0.35	-0.27
Learning abilities	3.4	**4.1**	-0.7	0.12	0.15
Independent competencies					
Written communication skills	3.1	3.7	-0.6	-0.02	-0.21
Computer skills	2.5	3.7	**-1.4**	-0.82	-0.83
Working independently	3.1	3.4	-0.2	0.13	-0.38
Specialized competencies					
Field-specific theoretical knowledge	4.1	3.2	0.8	-0.11	0.14
Field-specific practical knowledge	2.6	3.3	-0.7	-0.51	-0.26
Other competencies					
Broad general knowledge	3.0	3.3	-0.3	0.35	0.08
Manual skills	1.8	2.3	-0.5		
Ethical values (loyalty, integrity)	2.6	3.8	**-1.2**	0.12	-0.23

Source: authors' calculations from graduates' survey and García-Aracil and Van der Velden (2008).

[8] The *principal components analysis*, conducted with SPSS v.14, yielded eight factors with an eigenvalue greater than one and accounted for 66.8% of overall variance. With the exception of the so-called other competencies, for all groups, values of Cronbach's alpha greater than 0.7 were found (Nunnally, 1978).

5. The statistical model

As stated above, overall job satisfaction is measured using a categorical variable. Therefore, Ordinary Least Squares is an inappropriate estimation technique, since it assumes the dependent variable is measured on a cardinal scale, and ordered logit analysis is used (Cameron and Trivedi, 2005).[9] We specify the following satisfaction equation:

$$S_i^* = \beta' X_i + \varepsilon_i \qquad (1)$$

where: S^* (subjective labor welfare) is our latent variable; ε is the error component which follows a logistic distribution; X is the vector of explanatory variables (including a constant); and *beta* indicates the parameter values of these variables. However, we do not observe S^*, but rather an indicator variable of the type:

$$S_i = \begin{cases} 0 & if \quad S_i^* \le \mu_0 \\ j & if \quad \mu_{j-1} < \quad S_i^* \le \mu_j \qquad j = 1,2,3,4,\ldots,J-1 \\ J & if \quad S_i^* > \mu_{J-1} \end{cases} \qquad (2)$$

where the μ's (threshold or cutoff points) are unknown parameters that divide the latent variable distribution at intervals associated with the different ratings of declared job satisfaction. The observed variable S (degree of satisfaction) takes the following values in our case: [10]

$S = 0$ if the respondent gives a valuation of 1, 2 or 3 (low satisfaction).

$S = 1$ if the respondent gives an assessment of 4 (average satisfaction).

$S = 2$ if the respondent gives an assessment of 5 (high satisfaction).

We assume that overall job satisfaction depends on personal and job characteristics, and on a vector of competencies. Our hypothesis is that graduates working in occupations requiring high levels of competence (challenging jobs) will have greater job satisfaction. However, rather than attempt to examine the impact of the 32 items on overall satisfaction simultaneously, in order to circumvent the multicollinearity problem, we run a *principal*

[9] The ordered nature of the dependent variable requires specific econometric modeling: ordered probit or logit (Zavoina and McElvey, 1975).

[10] Our dependent variable is the degree of overall job satisfaction subjectively measured on a scale from 1 (very dissatisfied) to 5 (very satisfied). This grouping obeys to the reduced number of cases of classes 1 and 2 in the satisfaction scale.

components analysis on the 32 items to find out whether they could be reduced to a small number of composite factors.[11]

From the standpoint of university policy, it is interesting to identify a set of relevant competencies associated with successful labor market performance. The *principal components analysis* allowed us to classify the competencies into eight categories: stress capacity, leadership, informative competencies, organizational competencies, learning competencies, independent competencies, specialized competencies and other competencies (see these categories in bold in Table 2). Thus, the 32 variables corresponding to required competencies were reduced to eight orthogonal factors.[12]

In order to further evaluate the effect of acquired competencies, we applied the same factor loadings to the 32 acquired competencies, thus obtaining eight additional factors for each observation, measuring acquired skills.[13]

In addition to these 16 factors, we consider in our satisfaction equation other explanatory variables, basically personal and academic characteristics: gender, marital status, age, a set of dichotomous variables that reflect the university degree achieved; and job characteristics: wage rate, a binary variable for permanent job contracts and a set of indicators measuring the discrepancy between what one expects from a job and the reality of it in connection with various aspects.[14]

6. Estimation results

The estimation results for overall job satisfaction are presented in Table 3.[15] We have estimated two models: Model I, which includes only required competencies along with the control variables; and Model II (full model), which includes both acquired and required competencies.

According to Model I, the required levels of organizational, leadership and informative competencies significantly increase economists' job satisfaction. It is worth noting that some of these organizational and leadership skills, such as time management or problem solving, were revealed as quite important from the graduates' perspective. This

[11] The objective of *principal components analysis* is to find the unit length linear combinations of the variables with the greatest variance.
[12] *Varimax rotation* was used, thus producing orthogonal factors. Also, the regression method was used to estimate factor scores.
[13] We tried including, along with required competencies, the differences between required and acquired skills as explanatory variables, but multicollinearity problems advised not to.
[14] Some papers (for instance, Mora *et al.*, 2007) also include average working hours per week, but in our case, multicollinearity problems prevented it.
[15] Results from the estimated ordered logit model for overall job satisfaction specified above.

seems to support the hypothesis of challenging & demanding jobs granting higher levels of satisfaction.

Model II also includes indicators for acquired competencies. Their inclusion does not significantly affect the results of Model I. Moreover, only acquired learning skills significantly reduce economists' job satisfaction. We can infer that graduates acquiring greater learning abilities feel relatively disappointed with their jobs.

Table 3. The determinants of overall job satisfaction: the impact of competency mismatches

	Model I			Model II				
	Coefficient		St. Error	Coefficient		St. Error	Mean	St. Dev.
Constant	3.405	**	1.72	2.950		2.05		
Required competencies								
STRESS	0.108		0.12	0.062		0.15	0.00	1.00
LEADERSHIP	0.435	***	0.13	0.408	***	0.15	0.00	1.00
INFORMATIVE	0.235	**	0.12	0.323	**	0.15	0.00	1.00
ORGANIZATIONAL	0.519	***	0.13	0.510	***	0.16	0.00	1.00
LEARNING	0.013		0.12	0.068		0.16	0.00	1.00
INDEPENDENT	-0.425		0.13	-0.014		0.16	0.00	1.00
SPECIALIZED	-0.146		0.13	-0.170		0.16	0.00	1.00
OTHER	0.165		0.12	0.015		0.15	0.00	1.00
Acquired competencies								
STRESS				0.153		0.18	0.00	0.87
LEADERSHIP				0.195		0.17	-0.04	0.89
INFORMATIVE				0.127		0.21	0.04	0.75
ORGANIZATIONAL				0.097		0.20	0.00	0.76
LEARNING				-0.412	**	0.20	0.00	0.75
INDEPENDENT				0.028		0.22	-0.01	0.75
SPECIALIZED				0.039		0.18	0.00	0.80
OTHER				0.068		0.21	0.01	0.82
Personal and academic characteristics								
AGE (in years)	-0.124	***	0.05	-0.127	**	0.06	28.86	2.74
SEX (= 1 male)	0.030		0.12	0.121		0.29	0.43	0.49
MARKS (1= A,B)	-0.198		0.33	0.266		0.38	1.25	0.43
DEGREE1 (=1 Business)	Ref.			Ref.			0.50	0.50
DEGREE2 (=1 Economics)	-0.657	*	0.35	-0.989	**	0.46	0.25	0.39
DEGREE3 (=1 Management)	0.270		0.37	0.057		0.46	0.16	0.40
DEGREE4 (=1 Marketing)	0.457		0.52	-0.508		0.64	0.01	0.30
Current job characteristics								
WAGE_LN (hourly earnings in logs)	1.109	***	0.32	1.342	***	0.41	7.08	0.38
PERMANENT (=1 permanent contract)	0.470	*	0.26	0.492		0.30	0.64	0.48
DIS_P28B (discrepancy with respect to personal fulfillment)	-0.687	***	0.13	-0.768	***	0.16	1.02	1.06
DIS_P28S (discrepancy with respect to work life balance)	-0.214	**	0.10	-0.256	**	0.11	1.22	1.38
Mu(1)	2.246	***	0.26	2.560	***	0.31		
Log likelihood function	-80.454			-64.763				
Chi squared	87.053	***		90.541	***			
Pseudo-R^2	0.351			0.411				

Dependent variable: degree of overall satisfaction in current job, *S*.
*, **, ***, represent significance at 10%, 5%, and 1%, respectively.

Source: authors' calculations.

As already stated, the results for the remaining control variables are similar in both models. As the literature related to job satisfaction notes, age shows a negative effect (Clark and Oswald, 1996). Neither sex nor academic records significantly affect satisfaction levels. By degrees, higher education levels of Economics graduates are associated with less satisfied

workers, compared to Business graduates (reference category).[16] In line with Sloane and Williams' (2000) hypothesis, we find a strong and highly significant positive correlation between salary and job satisfaction. This is reasonable since we have analyzed a sample of young workers, with relatively low earnings (Groot and Brink, 1999). Finally, we have found evidence that the discrepancy between the characteristics of the professional status and the ideal job of respondents (referred to as the personal valuation of these characteristics) are critical determinants of subjective labor welfare. Jobs allowing for personal realization and work-life balance are associated to greater levels of job satisfaction.

7. Conclusions

Economists' interest on issues such as happiness or job satisfaction is relatively recent. By focusing on job satisfaction and competencies, this paper has presented a series of original findings on this topic. In this work, we have paid attention to job satisfaction determinants corresponding to a particular group of young graduates: economists who finished their degrees in the academic year 2001-02 at the University of Seville (in southern Spain).

Given the lack of official statistics collecting appropriate information, our research was based on a database developed within our own research team, from a pilot questionnaire adequately validated. With the pertinent cautions, our empirical analysis suggests the following conclusions.

Young economists state a significant discrepancy between the competencies acquired at university and those required in the world of work. This discrepancy is especially important in the group of organizational skills (e.g. time management), leadership (oral communication skills) and those related to stress capacity (working under pressure).

Our estimation results support the hypothesis that working in a demanding & challenging job has a positive effect on the economists' satisfaction. Thus, required levels of organizational, leadership and informative competencies significantly increase subjective labor welfare. Moreover, the effect of acquired competencies on job satisfaction is not significant, except for learning skills, which reduce job satisfaction – as graduates feel disappointed with their jobs.

[16] This may reveal that Economics former students have more difficulties finding a job commensurate with their

Acknowledgements

The authors would like to thank financial support from the *Centro de Estudios Andaluces* (research grant ECOD2.05/038) and, especially, the supervision of our research by José-Ignacio García. We would also like to acknowledge the considerable help by the research assistant Margarita Mariscal. Any remaining errors are only ours.

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training, which may end up generating some frustration.

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