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# **Determinants of Subjective Job Insecurity in 5 European Countries**

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**TABLE OF CONTENTS**

<b>1. INTRODUCTION .....</b>	<b>3</b>
<b>2. THE MODEL. ....</b>	<b>5</b>
2.1 Spain .....	8
2.2 Belgium .....	12
2.3 Finland.....	14
2.4 The Netherlands .....	16
2.5 Germany .....	18
<b>3. CONCLUSIONS. ....</b>	<b>21</b>
<b>REFERENCES .....</b>	<b>23</b>
<b>ANNEX SAMPLES .....</b>	<b>25</b>

## 1. INTRODUCTION

Although, from an objective point of view -assuming that a temporary contract is an insecure job position- job insecurity can be measured using the type of contract as a proxy variable, very little is known about perceived job insecurity (SI). That is, about what makes workers feel insecure in their work places, or, in other words, what makes people worrying about the possibility of losing their jobs. The lack of data and the lack of trust of economist on subjective data explain the lack of research on this issue. Notable exceptions are the work of Manski and Straub (2000) on perceptions of job insecurity in the mid 90's in the EU, Green's (2003) study of the determinants of job insecurity in Britain in 2001, Näswall and De Witte (2003) analysis of the characteristics of individuals who experience high levels of job insecurity in Belgium, Italy, Netherlands and Sweden, and three papers covering de EU(15) (Böckerman, 2004), EU(17) (Erlinghagen, 2007) and 23 OECD countries, based on three different surveys: the *Employment Options for the Future* run in 1998, the second wave the *European Social Survey*, run in 2004-5, and the 1989 International Social Survey Program. This papers aims at complementing our knowledge of the determinants of job insecurity perceptions by workers using new data covering five European countries: the Woliweb data base on wage and employment conditions. The Woliweb questionnaire includes a question asking workers to choose among 5 possible answers (fully disagree, disagree, neutral, agree, and fully agree) to the statement: "I worry about my job security"<sup>1</sup>, as well as data on personal, family and job characteristics, making possible to build an indicator of subjective insecurity, SI, to test to what extend perceptions of job insecurity can be explained by differences either in personal characteristics of the worker or by differences in their working environment. As can be seen in table 1, the proportion of workers who worry about their jobs insecurity in the five European countries of our sample (Spain, Belgium, Netherlands, Germany and Finland) is quite broad, going from a minimum of 30 % in Belgium to a maximum of 46% in Spain. As shown in Muñoz de Bustillo and Pedraza (2007), there is enough descriptive evidence to argue that, although there is a lot of heterogeneity regarding SI within groups of gender, sectors of activity, age, type of contract, levels of education and partner's principal activity, etc., these variables should be

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<sup>1</sup> For more details see Muñoz de Bustillo and Tijdens (2005)

able to explain at least partially the high diversity of subjective job insecurity (SI) among these countries

*Table 1.1 Proportion of answer to the question: I worry about my job security*

	Full disagree	Disagree	Neutral	Agree	Fully agree	Subjective insecurity index*
Belgium	33,35	19,45	17,21	11,58	18,40	29,98
Finland	24,35	21,91	14,15	15,23	24,35	39,58
Germany	29,97	19,94	15,59	11,84	22,66	34,50
Netherlands	36,29	19,94	16,17	11,11	16,49	27,60
Spain	26,81	12,63	14,54	9,48	36,53	46,02

\* Agree plus fully agree

Source: authors' analysis from Woliweb data and LFS

This paper aims to study to what extent differences in personal and jobs characteristics are able to explain the differences in subjective insecurity shown in table 1. The paper is organized as follows. In section 2 we review the different personal and sectoral characteristics that could explain the job insecurity perceptions by workers, proceeding to estimate a probit regressions for each country introducing these personal characteristics as explanatory variables. However such a model, reported in the tables below as model 1, is able to explain only as small proportion of subjective job insecurity variability. In the search for more SI explanatory variables, we have augmented model 1 including variables regarding personal and family life, individual position's characteristics, individual's job history and economic context. As it will be shown, augmented models increase the power of the regression to explain subjective insecurity. However, the proportion explained is still very low. Estimations have been done, using woliweb data set, for Belgium, The Neatherlands, Spain, Finland and Germany, the WOLIWEB countries that included the question about SI in their questionnaires. Explanatory variables in each country are similar but are not exactly the same because of minor differences among national questionnaires. Last, section 3 presents a summary of the major conclusions obtained.

## 2. THE MODEL.

In order to test the impact of different personal and environmental characteristics on perceived job insecurity we will built a probit regression. The dependent variable is a binary variable,  $P_i$ , which adopts value 1 when respondents agree or fully agree with the statement: *I worry about my job insecurity*, taking the value 0 otherwise.

We performed the following regression (model 1):

$$P_i = \Phi(X_i \cdot \beta) \quad i = 1, 2, \dots, N$$

where:

$\Phi(\cdot)$  = the normal cumulative density function.

$i$  = subscript that denotes the  $i^{\text{th}}$  individual.

$X$  = vector (1 x Q) of observable characteristics of each individual:

- Gender.
- Age
- Education
- Sector of activity
- Type of contract.

$\beta$  = vector (Q x 1) of coefficients for each characteristic.

We estimate the aforementioned model 1 and four augmented models. Coefficients reported can be interpreted as the marginal effect of each variable in the probability of a worker feeling insecure.

Model 1 is a regression which only includes variables regarding *gender*, a dummy that takes value one for women; *sectors of activity*, taking the service sector as control group we measure the effect of working in agriculture, industry and construction; *age*, this time we take as control group the age interval comprehended between 25 and 34 years old, and measure the effect of being between 16 and 24, 35 and 44, 45 and 54 and more than 55; *type of contract* using a dummy for those that have temporary contracts and *educational level*, taking those with university education (with the exception of Finland), as control group. The introduction of gender is explained by two different considerations. On one side, in many countries (notoriously in Spain), women still hold a subordinated role in the family strategy in relation to labour force participation. From this

perspective it could be argued that men should have a higher index of insecurity as the impact of losing a job in terms of family income would be higher, even if their probability of losing the job is lower. Alternatively, it can be argued that women, precisely for their subordinated position in the labour market (lower participation rate, higher unemployment rate, etc.), could be subject, *caeteris paribus*, to a higher insecurity rate. The results of other papers leaves the causality open to debate, for example, according to Böckerman (2004) and Erlinhagen (2007) gender is not statistically relevant, while according to Green (2003) in the UK the relation is negative but statistically weak. The introduction of the sector of activity is explained by the difference rate of unemployment by sector, their difference rate of growth, distinct cyclical variation of activity and the different risk of delocalization and increase in competition from imports. Unfortunately, the limitation of data doesn't allow a finer distinction of sectors. In relation to age, young people obviously face a higher insecurity, as they are in their first stages in the labour market, but in contrast, insecurity would mean less for them, as often they will not have family responsibilities and they probably, due to their age, will give less importance to stability in itself. Furthermore, as shown in Muñoz de Bustillo and Pedraza (2007), the cost of temporality in terms of lower wages is relatively low for young workers, rising with age. In contrast, older workers, although having lower risk of losing a job, face a higher cost in terms of forgone earnings. This and the higher difficulties of older workers of successfully deal with changes within their firms and/or sector could lead to a higher sense of insecurity. Both Böckerman (2004) and Erlinhagen (2007) back such conclusion; in contrast, age is not significant in the UK (Green, 2003). The type of contract has a direct and unequivocal implication in terms of subjective insecurity (Muñoz de Bustillo and Pedraza, 2007, Näswall and De Witte, 2003), therefore, having a temporary contract should increase the feeling (real) of insecurity. Last, education should contribute negatively to SI, as more educated workers should have more resources to face changes in the labour market<sup>2</sup>.

Model 2 includes two more explanatory variables, both regarding private life. Firstly, a dummy for those that have a *partner working* either with a permanent or temporary contract or self employed. Secondly, a dummy for those that has at least one *child living at home*. Whenever partner's activity was not available in the

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<sup>2</sup> One again the evidence is contradictory, no relation according to Böckerman (2004) and declining perceive insecurity in Erlinhagen's paper (2007).

respective national data set, it was substituted by a dummy for those that were married, which was the case for Germany. We establish the hypothesis that having a *working partner* reduced worker's probabilities of feeling insecure because it is an alternative source of income. With respect to having at least one *child living at home* we hypothesise that it increases workers perceptions of insecurity.

Model 3 augments model 2 including several variables that aim to capture, on the one hand, firm's situation and characteristics and, on the other hand, work position characteristics. Regarding the latter, we introduced a dummy for civil servants. For countries where this variable was not available, it was substituted by a dummy variable for those working in the public sector. Regarding firm's situation we used several variables: a dummy for workers that declared that their firm's labour force was increasing and a dummy for those that declare that their firm labour force was decreasing. We use those two dummies whenever they were available in the data set, however in the case of Germany they were not. To solve this shortcoming, we introduced firm size, whether the firm announced redundancies and whether there is a collective agreement. We established the hypothesis that a decreasing labour force has a positive impact on the perceived job insecurity. On the contrary, that is if labour force is increasing, it will have a negative impact in worker's probabilities of feeling insecure. Regarding civil servants we established the hypothesis that to be a civil servant has a negative impact in SI, due to the still common hiring for life policy of public administration in many countries.

Model 4 is model 3 augmented by the introduction of variables regarding individual employment history: whether they had to look for a job for more than 3 or 6 months (*long search*) and alternatively whether they did not have to search at all (*no search*). Finally we include *annual gross wage* and, when evidences for a quadratic form for these variables were found (a significant coefficient close to zero for *annual gross wage*), we also include squared annual gross wage. We established the hypothesis that a bad search experience, that is a long period looking for the first job has a positive impact in SI. In this respect we follow the findings of Cambell *et al.* (2007) in the sense that workers' fears of unemployment are increased by their previous unemployment experience. With respect to wage we considered that higher salaries make workers feel more secure but, above a certain level, the higher the salary the higher the probabilities of a worker feeling insecure because in case of losing their job they would lose a lot of money (high risk of not finding another alternative job with an equivalent wage). As we will show the quadratic form is very clear in Germany and The Netherlands.

Finally, model 5 has been estimated only for Spain and Germany. Both countries are big countries in which labour market characteristics differ considerably among regions. In Spain, we introduced a dummy variable for those living in *low unemployment regions*. In Germany, we introduce a dummy for those living in *East Germany*. We established the hypothesis that living in an area characterized by bad labour market situation increases the perception of insecurity. Therefore, living in a *low unemployment region* in Spain has a negative impact and *living in East Germany* a positive one.

Although there are conclusions that hold for every country, there are many country specific results. Because of this, before showing conclusions that can be generalised for all countries, we will review our findings country by country. A description of Woliweb samples can be found in the annex.

## 2.1 SPAIN

As mentioned above, we have developed five different models. We will start with a very parsimonious model, including gender, age, sector and education and type of contract, adding in successive rounds other variable hypothetically related with subjective insecurity.

Variable *gender* takes value 1 for women, therefore, this variable refers to the impact of being a women in SI. It is hypothesised that this variable has a positive impact in SI. That is, women have more probabilities of feeling insecure in their work place. Model 1 corroborates that being a woman has a positive impact in the probability of a worker feeling insecure. However, as more explanatory variables are introduced both, the impact and t-value of this variable, decrease. That shows that *gender* positive impact in SI, largely is due to women "discrimination" in Spanish labour market. Once variables capturing such discrimination are taken into account, the positive impact of *gender* disappears.

The effect of sectors is measured with respect to services, introducing dummies for *agriculture*, *industry* and *services*. None of them has a clear impact. Only construction is significant in models 3 and 4, its impact in SI has a negative sign. The boom of construction in the last decade, making for more than half the employment creation in Spain, probably explains the negative impact of construction to SI.

The effect of variable *age* is measured with respect to those that are between 25 and 34 years old. Being between 16 and 24 has a negative impact in SI. Many

variables might be playing a role here: young people do not have family responsibilities, many of them are working and studying at the same time, their salaries are relatively low and they have little to lose if they are fired. On the contrary, being older than 45 has a clear positive impact in SI, probably showing that workers above 45 that lose their jobs have many difficulties in finding a new one.

The effect of having a *temporary contract* is very strong and positive. It increases the probabilities of feeling insecure by a 17%.

The effect of education is measured with respect to those with higher education, introducing a dummy for those with *primary education* and another one for *secondary education*. The result is clear: The higher the level of education the lower the probabilities of a worker feeling insecure. To have only *primary education* increase probabilities between 16 and 18% with respect to those with university education. To have only *secondary education* increase probabilities between 8 and 10% with respect to those with university education.

Model 2 is augmented by the introduction of variables regarding family life, namely two dummy variables. One for those that have a partner employed (*working partner*) and another one for those that has at least one *child living at home*. It is hypothesised that having an employed partner reduces the perceptions of insecurity (as there is a second source of income in the household), therefore we expect this variable to have negative impact on SI. We find that its effect is positive but not significant in most of the models. Having a child living at home may increase the reasons to be worried about losing a job, therefore, it is hypothesised that it has a positive impact in SI. Its effect is positive.

Model 3 aims to include in the regression the effect of being a *civil servant* and worker's firm situation in SI. The effect of being a *civil servant* is strong, negative and significant. Being a *civil servant* reduces the probabilities of a worker feeling insecure by a 20%. Regarding firm situation, a decrease in *labour force* within the firm has a positive impact on SI. However, paradoxically, Spanish workers also feel more insecure when their firms are increasing their labour force. We could speculate that when firms grow workers might feel they can be displaced by new workers. Changes in the labour force of any kind, increasing or decreasing labour force, have a positive impact in SI. As we will show this finding does not hold in the rest of the countries.

Model 4 include a dummy variable for those that were looking for their first job for more that six months and annual gross wage. A long search experience when looking for the first job has a positive impact in SI. The effect of *annual wage* is not significant.

Finally, model 5 introduces a dummy variable for those workers living in regions with an unemployment level below the 80% of Spanish national average (Aragón, Baleares, Cataluña, Madrid, Navarra, País Vasco). We find that *living in a low unemployment region* has a negative impact in SI.

Although most of the variables have the expected sign, the capacity of the model to explain SI is quite limited. R squared increases in augmented models but it is still very low. The model is able to predict almost 61% of the sample cases.

Table 2.1 *Spain.* - Probit model for worker's probability of feeling insecure in his/her work place.

	Model 1 dF/dx (z)	Model 2 dF/dx (z)	Model 3 dF/dx (z)	Model 4 dF/dx (z)	Model 5 dF/dx (z)
Gender	.0526547 (5.48)*	.0538912 (5.58)*	.0474535 (4.89)*	.0409281 (4.06)*	.0344607 (3.15)*
Agriculture	.0586055 (1.25)	.0558287 (1.18)	.0376573 (1.18)	.0272407 (0.56)	.0239243 (0.44)
Industry	.0212804 (1.68)**	.0200584 (1.58)	-.0001097	.0017356 (0.13)	.000013 (0.00)
Construction	-.020403 (-1.15)	-.0185687 (-1.05)	-.0323488 (-1.82)**	-.0327929 (-1.79)**	-.0276505 (-1.38)
Age: 16-24	-.1058209 (-5.81)*	-.1007296 (-5.49)*	-.0974723 (-5.31)*	-.0924031 (4.80)*	-.09334 (-4.49)*
35-44	.0638429 (5.70)*	.0526072 (4.23)*	.0669622 (5.33)*	.0611078 (4.72)*	.0593965 (4.22)*
45-54	.0944047 (6.20)*	.0764004 (4.52)*	.105286 (6.09)*	.1086818 (6.12)*	.1041308 (5.41)*
> 55	.0839938 (2.62)*	.0795201 (2.44)*	.1064923 (3.21)*	.1100965 (3.24)*	.128119 (3.49)*
Temporary contract	0.1784155 (16.04)*	.1805655 (16.14)*	.1777067 (15.84)*	.1743448 (14.99)*	.1698557 (13.44)
Primary education	.185522 (14.56)*	.1820162 (14.11)*	.1638428 (12.54)*	.1703639 (12.48)*	1641637 (11.15)*
Secondary education	.1002215 (9.28)*	.0982281 (9.04)*	.0878531 (8.03)*	.0889642 (7.84)*	.0829336 (6.73)*
Working partner		.0133012 (1.22)	.0143567 (1.31)	.0158414 (1.42)	.0198582 (1.64)**
Child living at home		.0240577 (1.98)*	.0280728 (2.30)*	.0266443 (2.13)*	.0251373 (1.85)**
Civil servant			-.2015945 (-10.06)*	-.2148918 (10.56)*	-.2182064 (-10.00)*
LF decrease			.0980721 (6.22)*	.0922511 (5.71)*	.0796482 (4.55)*
LF increase			.0289367 (2.28)*	.0281338 (2.14)*	.0281632 (1.97)*
Long search experience				.071105 (5.05)*	.0735261 (4.81)*
Gross annual wage				-3.91e-07 (-1.68)**	-2.84e-07 (-1.12)
Living in a low U region					-.0358588 (3.38)*
Pseudo R <sup>2</sup>	0.0340	0.0341	0.0433	0.0460	0.0460
χ <sup>2</sup>	0.000	0.000	0.000	0.000	0.000
Right predict	60.08%	60.04%	60.22%	60.34%	60.95%

dF/dx is for discrete change of the dependent dummy variable from 0 to 1 z is the test of the underlying coefficient being 0.

\*Significant at 95%

\*\*Significant at 90%

## 2.2 BELGIUM

The variable *gender* has a positive impact in SI only in models 1 and 2. In models 3, 4 and 5 it is not significant. This finding reinforces the idea that *gender* positive impact in SI is, in a big extend, due to women discrimination in labour market.

Regarding sectors, those working in the *industry* (the sector more prone to foreign competition) have higher probabilities of feeling insecure in their work place.

Working in *agriculture* and *construction* has no effect with respect to working in the service sector.

The effect of age is similar to that of Spain. The only difference is that those older than 55 do not have more probabilities of feeling insecure than those between 25 and 34 years old. The reason for this difference is to be found in the differences in early retirement incidence in both countries. In fact, according to *employment in Europe 2005*, Belgium has the lowest retirement age of the EU (only 58.8)

The effect of having a *temporary contract* is also strong and positive. It increases the probabilities of feeling insecure by a 25%.

Findings for educational levels are very similar to those for Spain: The higher the level of education the lower the probabilities of a worker feeling insecure. To have only *primary education* increase probabilities between 10 and 12% with respect to those with university education. To have only *secondary education* increase probabilities by a 4% with respect to those with university education.

A very interesting difference with respect to Spain can be found in the effect of having a employed partner. In Belgium such situation reduces the probabilities of feeling insecure while in Spain, it was only significant in model 5. On the contrary, having a *child living at home* has no effect in Belgium SI.

The effect of being a *civil servant* reduces the probabilities of a worker feeling insecure by a 13%. *Labour force decreases* within the firm have a positive impact like in Spain. However, in this case as expected, if *labour force is increasing* the probability of feeling insecure in his/her workplace decreases.

Table 2.1 **Belgium.**- Probit model for worker's probability of feeling insecure in his/her work place.

	Model 1 dF/dx (z)	Model 2 dF/dx (z)	Model 3 dF/dx (z)	Model 4 dF/dx (z)	Model 5 dF/dx (z)
Gender	.0164809 (2.25)*	.0163978 (2.24)*	.0067809 (0.92)	.0034779 (0.46)	-
Agriculture	.0631108 (1.13)	.061252 (1.09)	.0593041 (1.06)	.0728315 (1.28)	-
Industry	.0513257 (6.22)*	.0506578 (6.11)*	.0311167 (3.71)*	.0345816 (4.48)*	-
Construction	-.0216568 (-1.40)	-.0227961 (-1.47)	-.0185784 (-1.19)	-.0141794 (0.90)	-
Age: 16-24	-.0395227 (-2.95)*	-.0435165 (-3.20)*	-.040278 (-2.95)*	-.0358472 (2.58)*	-
35-44	.0218617 (2.52)*	.0243084 (2.64)*	.0241167 (2.60)*	.0249565 (2.65)*	-
45-54	.0236693 (2.41)*	.0246664 (2.4)*	.028545 (2.75)*	.0344667 (3.24)*	-
> 55	-.0037692 (-0.22)	-.0051838 (-0.30)	-.003289 (-0.19)	-.0008925 (0.96)	-
Temporary contract	.2519965 (17.73)*	.2501748 (17.56)*	.2500795 (17.53)*	.2471208 (16.71)*	-
Primary education	.1202806 (10.68)*	.1185274 (10.5)*	.1020102 (8.95)*	.1027087 (8.77)*	-
Secondary education	.0483902 (6.10)*	.0475954 (5.99)*	.0407979 (5.09)*	.0395617 (4.83)*	-
Working partner		-.017617 (-2.25)*	-.0292676 (-3.72)*	-.0268936 (-3.39)*	-
Child living at home		-.0037579 (-0.48)	-.0021281 (0.27)	-.0003845 (-0.05)	-
Civil servant			-.1363302 (-8.87)*	-.1399408 (-8.93)*	-
LF decrease			.293132 (22.29)*	.2945836 (22.05)*	-
LF increase			-.0739483 (-6.48)*	-.0738538 (-6.38)*	-
Long search experience				.0723804 (5.4)*	-
Gross annual wage				-2.42e-07 (-1.38)	-
Living in a low U region <sup>1</sup>				-	-
Pseudo R <sup>2</sup>	0.0238	0.0240	0.0556	0.0574	-
χ <sup>2</sup>	0.000	0.000	0.000	0.000	-
Right predict.	70.3%	70.3%	71.8%	75.6%	-

dF/dx is for discrete change of the dependent dummy variable from 0 to 1 z is the test of the underlying coefficient being 0.

\*Significant at 95%

\*\*Significant at 90%

<sup>1</sup> Not included in small countries: Belgium, Finland, and The Netherlands.

Finally, a *long search experience* when looking for the first job has a positive and significant impact in SI. Annual gross wage have no impact in SI.

Most of the results obtained for Belgium are similar to those obtained for Spain with the exception of the sign of *labour force increase* and the effect of having a *working partner*. R squared is similar and the capacity of the model to predict is a bit higher and increase more as more explanatory variables are added.

### 2.3 FINLAND

The effect of *gender* is not significant in every model. This result could be explained by the high labour force participation rate of Finnish women (only few percentages point below men's participation rate) In contrast, occupational segregation by gender in Finland is among the strongest in the EU 15 (leading to a wage gap around 24%).

With respect to sectors of activity, *agriculture* has not been introduced because the sample was not big enough. The other two sectors have no effect with respect to services.

Results for age intervals are similar to those found for the previous countries. Those below 24 have lower probabilities to worry. The only difference is again with respect to the age interval above 55 that has a negative and significant impact in SI.

The effect of a *temporary contract* is again strong, positive and significant. It increases the probabilities of feeling insecure by a 40%.

The effect of education was measured in a different way because *secondary education* was the larger group and it was taken as control group. Although the effect of *primary education* is positive, its significance level decreased as more explanatory variables were introduced. University education has no effect in Finish SI.

To be a *civil servant* has a strong and negative impact in SI. To work in a firm were *labour force decrease* has a positive impact in SI. To work in a firm were *labour force increase* has no impact in SI. A new variable regarding firm characteristics was introduced for Finland: a dummy for those working in a foreign firm. We found that they have higher probabilities, around a 12%, of feeling insecure.

Table 2.1 **Finland.** - Probit model for worker's probability of feeling insecure in his/her work place.

	Model 1 dF/dx (z)	Model 2 dF/dx (z)	Model 3 dF/dx (z)	Model 4 dF/dx (z)	Model 5 dF/dx (z)
Gender	-.0135821 (0.72)	-.0124265 (-0.65)	-.0113215 (-0.58)	-.0187758 (-0.91)	-
Industry	.0252701 (1.16)	.02765 (1.27)	-.0107968 (0.48)	-.0075472 (-0.33)	-
Construction	.0608963 (1.12)	.0609781 (1.12)	.0491299 (0.89)	.0580869 (1.04)	-
Age: 16-24	-.0671167 (-2.08)*	-.0752491 (-2.31)*	-.0776937 (-2.37)*	-.0788919 (-2.36)*	-
35-44	.0384142 (1.74)**	.0515095 (2.21)*	.0395428 (1.67)**	.0457645 (1.90)**	-
45-54	.043619 (1.68)**	.0545038 (2.04)*	.0573562 (2.10)*	.0682226 (2.45)*	-
> 55	-.077838 (-2.09)*	-.0747026 (1.99)*	-.0770757 (2.02)*	-.0677444 (1.75)**	-
Temporary contract	.3971445 (15.15)*	.3966981 (15.06)*	.4197206 (15.78)*	.4173555 (15.32)*	-
Primary education	.0341412 (1.70)**	.0345096 (1.71)**	.0372227 (1.82)**	.0319222 (1.54)	-
University education	.0158826 (0.60)	.0135923 (0.51)	.0261809 (0.96)	.036141 (1.28)	-
Working partner	-	-.0080182 (-0.43)	-.0093289 (-0.49)	-.0058917 (0.31)	-
Child living at home	-	-.0337662 (1.69)**	-.0337736 (-1.67)**	-.0328674 (-1.61)	-
Civil servant	-	-	-.1661871 (4.36)*	-.1694875 (-4.40)*	-
LF decrease	-	-	.238788 (8.8)*	.2432973 (8.91)*	-
LF increase	-	-	-.0391751 (1.33)	-.0367713 (-1.24)	-
Foreign firm	-	-	.1200367 (5.28)*	.1268991 (5.54)*	-
Long search experience	-	-	-	.0955883 (2.02)*	-
Gross annual wage	-	-	-	-1.16e-06 (0.38)	-
Living in a low U region <sup>1</sup>	-	-	-	2.38e-13 (0.03)	-
Pseudo R <sup>2</sup>	0.0621	0.0630	0.0967	0.099	-
Right predict.	67.15%	67.10%	68.82%	72.86%	-
$\chi^2$	0.000	0.000	0.000	0.000	-

dF/dx is for discrete change of the dependent dummy variable from 0 to 1 z is the test of the underlying coefficient being 0.

\*Significant at 95%

\*\*Significant at 90%

<sup>1</sup> Not included in small countries: Belgium, Finland, and The Netherlands.

Those that had to look for their first job for more than three months have more probabilities of feeling insecure in their work place. Wages have no effect. Last, in Finland, having a *working partner* and *children living at home* has no effect in SI.

Like in Spain and Belgium models, R squared increased with the introduction of more explanatory variables, from 0.0621 to 0.0997. The percentage of successful predictions of the model also increased in augmented models, from a 67.15% to 72.86%.

## 2.4 THE NETHERLANDS

*Gender* variable again gives up being significant with the introduction of more explanatory variables.

Taking the service sector as the control group, working in *agriculture* and *construction* reduces the probability of feeling insecure while working in the *industry* sector increase them.

Being below 24 years old has the usual negative impact on SI, whereas being above 35 has a positive one.

The impact of *temporary contract* is again strong and positive displaying very high significance levels.

Both those with *primary and secondary* education have larger probabilities than those with higher education of feeling insecure.

Like in Belgium having a *working partner* has a negative impact but having at least one *child living at home* has no effect.

The variable for *civil servants* was not available in the Netherlands sample, as a substitute we introduced a dummy for those *working in the public sector*. We found that it has no effect in SI.

Working in a firm where *labour force decrease* increase the probabilities of being worried about job insecurity by a 26% while working in a firm where *labour force increases* decreases the probabilities of being worried about job insecurity by a 5-6%.

**Table 2.1 The Netherlands.- Probit model for worker's probability of feeling insecure in his/her work place.**

	Model 1 dF/dx (z)	Model 2 dF/dx (z)	Model 3 dF/dx (z)	Model 4 dF/dx (z)	Model 5 dF/dx (z)
Gender	.0187149 (5.60)*	.0200962 (5.98)*	.0081668 (2.40)*	.0072778 (2.14)*	-.0020781 (-0.57)
Agriculture	-.0217582 (-1.85)**	-.0240302 (-2.05)*	-.0213833 (-1.81)**	-.0212037 (-1.79)**	-.02045 (-1.64)**
Industry	.0144681 (3.36)*	.0144623 (3.35)*	.0106074 (2.42)*	.0106138 (2.43)*	.0114117 (2.55)*
Construction	-.0330113 (-4.95)*	-.032882 (-4.92)*	-.0308186 (-4.57)*	-.0300429 (-4.45)*	-.0297778 (-4.32)*
Age: 16-24	-.0328822 (-7.95)*	-.0384138 (-8.12)*	-.0324882 (-6.81)	-.0329957 (6.91)*	-.0373477 (7.50)*
35-44	.0527451 (12.99)*	.0542835 (12.04)*	.0503188 (10.11)*	.0483172 (10.66)*	.0545546 (11.67)*
45-54	.1020044 (20.02)*	.1042988 (19.37)*	.0935207 (17.95)*	.0926001 (17.08)*	.1021522 (18.16)*
> 55	.0972703 (10.93)*	.095375 (10.66)*	.0789795 (8.80)*	.0811063 (9.02)*	.0917917 (9.08)*
Temporary contract	.2087929 (49.55)*	.2066213 (48.86)	.2069891 (48.56)*	.2052135 (48.12)*	.2034059 (46.10)*
Primary education	.0990401 (21.40)*	.0986455 (21.19)*	.0876922 (18.58)*	.0914113 (19.28)*	.0796276 (15.76)*
Secondary education	.0542461 (14.74)*	.0543678 (14.63)*	.0483729 (12.98)*	.0512411 (13.69)*	.0441253 (11.16)
Working partner	-	-.0180508 (-5.39)*	-.0174366 (-5.18)*	-.0165194 (-4.91)*	-.0167606 (-4.88)*
Child living at home	-	-.0028312 (-0.73)	-.0026223 (-0.67)*	-.001899 (-0.49)	-.0025527 (0.64)
Working in Public Sector	-	-	.0001687 (0.05)	.0009771 (0.30)	.0015101 (0.45)
LF decrease	-	-	.2653476 (48.21)*	.2653742 (48.20)*	.2658775 (47.20)*
LF increase	-	-	-.0595087 (-12.11)*	-.0587727 (-11.95)*	-.0604897 (-11.95)*
Long search experience	-	-	-	.0471746 (4.44)*	.0449367 (4.13)*
No search	-	-	-	-.0300579 (6.69)*	-.0296288 (6.71)*
Gross annual wage	-	-	-	-	-1.26e-06 (8.03)*
Gross wage square	-	-	-	-	2.91e-12 (-5.85)*
Pseudo R <sup>2</sup>	0.0348	0.0351	0.0633	0.0644	0.0662
Right predict	72.41%	72.44%	73.54%	73.56%	73.61%
$\chi^2$	0.000	0.000	0.000	0.000	0.000

dF/dx is for discrete change of the dependent dummy variable from 0 to 1 z is the test of the underlying coefficient being 0.

\*Significant at 95%

\*\*Significant at 90%

Those with long waiting periods before getting a job have higher insecurity (the probability feeling insecure increases by a 4%). We also introduced a dummy for those that did not have to search for their first job. Their probabilities of feeling insecure in their work place are lower.

Finally, wage - SI relation shows a quadratic pattern: higher gross annual wage decrease SI probability up to a point, but after a certain gross wage level the higher the salary, the higher the probability of feeling insecure.

## 2.5 GERMANY

*Gender* shows again the same tendency: gives up being significant with the introduction of more explanatory variables.

Taking services as the control group, working in *agriculture* reduces the probability of feeling insecure while working in *industry* and *construction* increase them.

Like in the Netherlands to be below 24 years old has a negative impact whereas being above 35 has a positive one.

The impact of *temporary contract* is again strong and positive displaying very high significance levels. Having a temporary contract increases by 17% the probabilities of feeling job insecurity.

Both *primary and secondary educated* have larger probabilities of feeling insecure , 15% and 8% respectively, than those with higher education.

Neither being *married* nor having at least one *child living at home* have any impact in SI. Being a *civil servant* reduces the probability of being worry about job insecurity by a 23%. Due to the lack of variables regarding labour force evolution within the firm, the following dummy variables were introduced to account for firm characteristics: firms with less than 100 workers, firms with more than 500 workers, firms with collective agreement, firms that have announced redundancies. We found that working in a small company (less that 100 workers) increase SI while working in a big company, more that 500 workers decreases SI; *collective agreement* has a negative impact and working in a firm that has *announced redundancies* increases the probabilities of feeling insecure by a 27%.

Table 2.1 **Germany.**- Probit model for worker's probability of feeling insecure in his/her work place.

	Model 1 dF/dx (z)	Model 2 dF/dx (z)	Model 3 dF/dx (z)	Model 4 dF/dx (z)	Model 5 dF/dx (z)
Gender	.0376209 (6.25)*	.0367994 (6.04)*	.0125451 (1.87)**	-.007789 (-1.13)	-.0083304 (-1.15)
Agriculture	-.0306744 (-0.81)	-.0339194 (0.89)	-.0874204 (2.06)*	-.0904199 (-2.12)*	-.0896117 (1.99)*
Industry	.0242379 (4.16)*	.0242459 (4.14)*	.0341153 (5.32)*	.0442406 (6.77)*	.0469996 (6.86)*
Construction	.1855655 (15.33)*	.185334 (15.26)*	.1440385 (10.33)*	.1432321 (10.14)*	.1387488 (9.4)*
Age: 16-24	-.066443 (-5.8)*	-.0688103 (5.96)*	-.0416904 (-3.09)	-.0505577 (-3.66)*	-.0476958 (-3.29)*
35-44	.0910016 (14.08)*	.0926405 (13.56)*	.083352 (11.14)*	.0888355 (11.25)*	.0904819 (10.92)*
45-54	.1348856 (16.35)*	.137311 (15.61)*	.1168076 (12.26)*	.1228846 (12.10)*	.1197786 (11.29)*
> 55	.0418631 (2.97)*	.0467204 (3.22)*	.019598 (1.27)	.0331494 (2.06)*	.0252914 (1.50)
Temporary contract	.1777717 (22.35)*	.1776665 (22.21)*	.1772981 (19.30)*	.1538236 (16.35)*	.1509464 (15.20)*
Primary education	.158883 (23.75)*	.1594193 (23.7)*	.136406 (18.33)*	.0896898 (11.16)*	.0979879 (11.61)*
Secondary education	.081068 (11.85)*	.0814143 (11.85)*	.0669495 (8.93)*	.0356108 (4.56)*	.0426212 (5.18)*
Married		-.0097939 (-1.43)	-.0098746 (-1.33)	-.0001931 (0.03)	.0015575 (0.20)
Child living at home		.0052933 (0.76)	.0080598 (1.07)	.006908 (0.9)	.001054 (0.13)
Civil servant			-.2373245 (-12.51)*	-.2333827 (-12.15)*	-.2410237 (-11.66)*
Firm < 100			.0449185 (5.56)*	.03162 (3.85)*	.0329895 (3.84)*
Firm > 500			-.0542324 (-7.02)*	-.0397425 (5.03)*	-.0389534 (-4.71)
Collective agreement			-.0489914 (-7.01)*	-.0491859 (-6.92)*	-.048527 (-6.49)*
Redundancies announced			.2736395 (44.29)*	.2751748 (43.86)*	.2724209 (41.56)*
Times change employer				.0095234 (7.46)*	.0099341 (7.38)*
Gross annual wage				-3.39e-06 (12.75)*	-2.99e-06 (-10.05)*
Gross annual wage sq				7.73e-12 (6.48)*	5.79e-12 (3.85)*
Living in East Germany					.0764641 (7.92)*
Pseudo R <sup>2</sup>	0.0400	0.0402	0.1017	0.1101	0.1114
χ <sup>2</sup>	0.000	0.000	0.000	0.000	0.000
Right predict	66.28%	66.19%	70.07%	70.48%	70.31%

dF/dx is for discrete change of the dependent dummy variable from 0 to 1 z is the test of the underlying coefficient being 0.

\*Significant at 95%

\*\*Significant at 90%

Search experience was not available in the German data set. To take into account the employment history of each individual we introduced the number of times that he or she had changed employer. We found that it was significant and close to zero, therefore, probably displaying a quadratic form: Those that have change a lot of

times have lower probabilities of feeling insecure but above certain level of job changes probabilities increase.

*Gross annual wage* has a negative effect in SI: the higher the salary the lower the probabilities of feeling insecure. *Gross annual wage squared* has a positive one: above certain wage level a higher wage increase probabilities of feeling insecure.

### 3. CONCLUSIONS.

The results obtained for the five countries of the sample show the existence of the following regularities and differences:

- 1) The positive impact and significance level of *gender* decrease as more explanatory variables are introduced in the model. The impact of this variable is lower and not significant in countries where the situation of women in the labour market is more similar to that of men (Finland). Therefore, it can be argued that women feel more insecure than men, not because intrinsic reasons but because their worst situation in the labour market.
- 2) The type of activity has no effect in Finland and Spain. In Belgium, like in Germany and the Netherlands, only industry is significant and has a positive effect. Construction is significant and has a positive effect in Germany (and Spain), and significant and negative in the Netherlands. Finally agriculture is rarely significant, but when it is, it has a negative impact in SI. Therefore we can conclude that the effect of sector in SI differ very much among sample countries.
- 3) The effect of being young (below 24) is always negative: Young people worry less about their job insecurity in every country. Age intervals between 35 and 44 and between 45 and 54 have a positive impact whenever this variable is significant. The effect of being above 55 differs among countries. This last result is probably explained by the different early retirement regimes of the countries of the sample.
- 4) Although there is a high level of diversity of temporary employment and duration of temporary contracts among sample countries (see Muñoz de Bustillo and Pedraza 2007) Temporary contracts always clearly increase the probabilities of a worker feeling insecure in every country.
- 5) In most countries, with the exception of Finland, the higher the educational level the lower the perception of insecurity of workers (lower probability of SI).
- 6) The effect of family life, having a *working partner* or at least one *child living at home* also differs considerably among countries. Behind this finding there might be differences in perception of what means to have a partner and differences in the degree of emancipation of women with respect to men among countries. For example, traditionally women have been more

dependent on men in Spain than in Finland. Regarding the effect of having at least one *child living at home*, differences in the results obtained may be due to differences in social benefits and family policies among countries (after Denmark and Luxemburg, Finland, with 3%, is the country with the highest share of public social expenditure in relation to GDP in Family/children protection).

- 7) In every country civil servants have lower probabilities of feeling insecure. When *labour force decreases* or *redundancies are announced*, the perception of insecurity increases. In contrast, the increase in labour force within the firm either has no effect or has a negative effect on SI, with the exception of Spain. It seems that Spaniards feel insecure with changes in the labour force regardless whether those changes imply a reduction or an increase of the labour force..

R squared and the successful predictions of the model increased with the introduction of more explanatory variables. However, there is a lot of variability that the model is not able to explain. As a result, future research should focus in the search for more variables that explain SI. Continuous web surveys like WOLIWEB make possible to overcome the difficulties in the collection of data and the lack of data on the topic.

## REFERENCES

- Böckerman P. (2004): "Perception of Job Instability in Europe", *Social Indicators Research*, vol. 67(3), pp. 283-314.
- Cambell., D., Carruth A., Dickerson A. and Green, F. (2007): "Job Insecurity and Wages" *The Economic Journal*, Vol. 117, Issue 518, pp. 544-566, March.
- Erlinghagen M. (2007): *Self-Perceived Job Insecurity and Social Context. Are there Different European Cultures of Anxiety*. DIW Berlin Discussion Paper 688. April. <http://www.diw.de/deutsch/produkte/publikationen/diskussionspapiere/docs/papers/dp688.pdf>
- Green F. (2003): *The Rise and Decline of Job Insecurity*. University of Kent. <http://www.kent.ac.uk/economics/papers/papers-pdf/2003/0305.pdf>
- Manski C. F., and Straub J. D. (2000): "Workers perceptions of Job Insecurity in the Mid-1990 's: Evidence from the survey of Economic Expectations", *Journal of Human Resources*, vol. 35(3), pp. 447-479.
- Muñoz de Bustillo R. And Pedraza P. De (2007): "Subjective and Objective job insecurity in Europe: measurement and implications". WOLIWEB.
- Muñoz de Bustillo R. and Tijdens K. (2005): "Measuring job insecurity in the Wageindicator questionnaire". WOLIWEB. [www.wageindicator.org/documents/publicationslist/jobinsecurity2005](http://www.wageindicator.org/documents/publicationslist/jobinsecurity2005)
- Näswall K. and De Witte H. (2003): "Who feels insecure in Europe? Predicting job insecurity from background variables", *Economic and Industrial Democracy*, vol. 24(2), pp. 189-215.
- OECD(1997) *Employment Outlook 1997*, OECD. Paris. <http://www.oecd.org/dataoecd/19/17/2080463.pdf>



## ANNEX SAMPLES

### SPANISH WOLIWEB SAMPLE

Number of observations: 14 783	
Proportions in the sample:	
<b>Feel insecure</b>	46.07%
<b>Women</b>	39.23%
<b>Sector of activity</b>	
Working in agricultura	1%
Working in industry	16.23%
Working in construction	7.66%
<b>Age</b>	
16-24	7.47%
35-44	27.22%
45-54	12.86%
> 55	2.73%
<b>Temporary contract</b>	25.03%
<b>Education</b>	
Primary education	18.79%
Secondary education	27.81%
<b>Family life</b>	
Working partner	25.02%
Child living at home	33.15%
<b>Firm and work position characteristics</b>	
Civil servants	5.94%
LF decrease	9.75%
LF increase	15.9%
<b>Long search experience (&gt; 6months)</b>	12.8%
<b>Living in a low U region</b>	52.73%

**BELGIUM WOLIWEB SAMPLE**

Number of observations: 20 044	
Proportions in the sample:	
<b>Feel insecure</b>	29.98%
<b>Women</b>	41.09%
<b>Sector of activity</b>	
Working in agriculture	0.5%
Working in industry	24.85%
Working in construction	5.78%
<b>Age</b>	
16-24	8.65%
35-44	29.88%
45-54	21.04%
> 55	5.01%
<b>Temporary contract</b>	8.07%
<b>Education</b>	
Primary education	13.5%
Secondary education	30.99%
<b>Family life</b>	
Working partner	28.52%
Child living at home	51.28%
<b>Firm and work position characteristics</b>	
Civil servants	5.25%
LF decrease	8.52%
LF increase	10.53%
<b>Long search experience (&gt; 6months)</b>	7.5%

**FINISH WOLIWEB SAMPLE**

Number of observations: 3 320	
Proportions in the sample:	
<b>Feel insecure</b>	39.6%
<b>Women</b>	60.13%
<b>Sector of activity</b>	
Working in agriculture	-
Working in industry	22.98%
Working in construction	2.83%
<b>Age</b>	
16-24	9.91%
35-44	27.86%
45-54	17.17%
> 55	6.69%
<b>Temporary contract</b>	15.74%
<b>Education</b>	
Primary education	33.65%
Secondary education	51.51%
University education	14.84%
<b>Family life</b>	
Working partner	60.01%
Child living at home	43.02%
<b>Firm and work position characteristics</b>	
Civil servants	6.14%
LF decrease	12.86%
LF increase	10.39%
<b>Long search experience (&gt; 6months)</b>	3.88%

**DUCTH WOLIWEB SAMPLE**

Number of observations: 85 546	
Proportions in the sample:	
<b>Feel insecure</b>	27.6%
<b>Women</b>	49.66%
<b>Sector of activity</b>	
Working in agriculture	1.92%
Working in industry	17.14%
Working in construction	6.48%
<b>Age</b>	
16-24	18.49%
35-44	26.32%
45-54	15.55%
> 55	3.99%
<b>Temporary contract</b>	21.33%
<b>Education</b>	
Primary education	21.05%
Secondary education	43.14%
<b>Family life</b>	
Working partner	48.47%
Child living at home	37.6%
<b>Firm and work position characteristics</b>	
Public sector	40.93%
LF decrease	10.46%
LF increase	12.32%
<b>Long search experience (&gt; 6months)</b>	2.57%
<b>No search</b>	80.56%

**GERMAN WOLIWEB SAMPLE**

Number of observations: 34 145	
Proportions in the sample:	
<b>Feel insecure</b>	34.5%
<b>Women</b>	29.49%
<b>Sector of activity</b>	
Working in agriculture	0.5%
Working in industry	33.59%
Working in construction	5.9%
<b>Age</b>	
16-24	6.38%
35-44	35.56%
45-54	16.57%
> 55	4.24%
<b>Temporary contract</b>	15.13%
<b>Education</b>	
Primary education	31.99%
Secondary education	28.83%
<b>Family life</b>	
Married	43.96%
Child living at home	34.98%
<b>Firm and work position characteristics</b>	
Firm >100	39.76%
Firm >500	36.89%
Announced redundancies	42.01%
Collective agreement	62.91%
<b>Search experience</b> (Times have changed employer)	
Never	36.21%
1 time	17.18%
2 times	12.50%
3 times	10.90%
4 times	8.2%
5 times	5.91%
<b>Living in East Germany</b>	12.59%