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Time-in-Labour-Market and the Reference Group

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ABSTRACT

This paper examines the relationship between the time spent in the labour market and the choice of the reference group for making relative income comparisons. The choice of reference group has been found in previous work to be an important determinant of various measures of well-being, including life-satisfaction, job-satisfaction, and satisfaction with pay. We estimate multinomial logit models of reference group determination using data from a survey of working conditions. The results suggest that a greater time spent in the labour market is associated with a higher probability of choosing local workers as the reference group for a sample of foreign “cross-border” workers. The results are consistent with studies of immigrant workers who are hypothesized to adjust their reference group over time.

Keywords: reference group; cross-border workers; job satisfaction

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I. Introduction

The well-being of immigrants has been the topic of numerous studies among economists, psychologists and sociologists over the past several decades (for a recent review, see Hendriks 2015). Questions addressed include whether immigrants improve their subjective life-satisfaction and related to that their satisfaction with their jobs or with their incomes (Baltatscu 2005; De Jong et al. 2002). With regard to satisfaction and income in particular, the issue of relative as well as absolute measures is important (Boyce et al. 2010; Clark and Oswald 1996; Clark et al. 2009; Luttmer 2005; Montero and Vasquez 2014).

When measuring relative income, it is necessary to identify a reference group in order to specify the reference income. In the context of immigrants, it has been posited that the relevant reference group is an important contributor to the differences in the relationship between various measures of subjective well-being and relative income observed between natives and immigrants in many countries (e.g., Gokdemir and Dumludag 2012). In most analyses the reference group is imposed by the researcher, and the researcher's choice of reference group can affect the results (Brown et al. 2015). Examples of assumed reference groups include colleagues in the same place of employment, workers outside the firm, and friends and family. In the case of immigrants, the role of location is important. That is, do immigrants compare their situation with their pre-migration status, or with the situation of others in their host country? The answer to this question has been found to vary according to several factors. These include characteristics of the countries in question (e.g., the relative levels of income or inequality in each), the individual migrants (e.g., skill or educational level), and the reason for moving (e.g., economic or political).¹

Another factor that has been found to be important for immigrant well-being is the level of assimilation or acculturation that the migrants have experienced in the host country. Related to this is

¹ See, for example, Delhey and Kohler (2006) and Whelan and Maitre (2013).

the time the migrant has spent in the country. Again, the results of the studies are mixed. That is, in some cases the level of life satisfaction, for example, increases the longer the immigrant has been in the host country (Bartram 2013; Chowhan et al. 2012). This is normally attributed to the benefits of assimilation, reduction in perceived discrimination, higher income, etc. Another explanation is that there is a sample selection problem: those who are happier tend to stay longer in the country. Other studies have found, however, that satisfaction decreases with the length of time in the country (or exhibits a U-shaped relationship) (Safi 2010). One explanation for the inverse relationship is that the migrants change the relevant reference group as they are assimilated in the country. While they initially compare their state with their family or friends at home, over time they begin to compare their status with the residents in the host country. A similar argument can be used to explain differences in happiness among first and second-generation migrants.²

The relationship between the time spent in the labor market in a country and the choice of reference group is the focus of the present study, although the sample is not comprised of immigrants. Rather, we study the determination of the reference group for a unique set of workers in Luxembourg: the “cross-border” workers from France, Belgium and Germany who make up more than 40 percent of the Luxembourg labour force. Using a “reference group” question from a unique survey of workers in Luxembourg, we estimate multinomial logit models of the determinants of reference group. The choices allow for both internal (to Luxembourg) and external (to the foreign country) reference groups, which has rarely been studied in the previous literature.³ This is also the first paper to our knowledge to provide direct evidence of the impact that time spent in the labour market has on the reference group. Our results provide support for the notion commonly put forth in the immigration literature that immigrants adjust their reference group as they are assimilated in the host country.

The paper is organized as follows. In the next section we summarize the literature regarding the determination of reference groups. This is followed by a description of the survey of working conditions

² For discussions of the relationships between length of stay and immigrant acculturation or assimilation see Faragallah and Schumm (1997), Neto (1995), Piore (1979), Stark (1991) and Stark and Taylor (1991).

³ An exception is Gokdemir and Dumludag (2012).

in Luxembourg and the data used in the analysis. In section IV we describe the methodology used, and in section V the empirical results. A summary and concluding remarks are presented in section VI.

II. Factors Related to the Choice of Reference Group

As mentioned above, various reference groups have been assumed in the literature. Clark et al. (2009) assume that the reference group is composed of co-workers, for example, while Luttmer (2005) considers neighbors as the reference group. These decisions are based on alternative applications of social comparison theory (Festinger, 1954), which argues that individuals compare themselves with those who have characteristics similar to their own.⁴ For example, Bygren (2004) defines a reference group as “any entity a person perceives to be sufficiently contiguous to him to be used as a basis for a comparison.”

Some researchers have allowed the reference group to vary. Clark et al. (2013) use Japanese data to study the relationship between relative income and satisfaction and find the Japanese most often report their neighbors as the reference group. Bygren (2004) finds that the satisfaction with pay among Swedish workers was more dependent on the pay of other workers in the labor market in general than the pay of colleagues. He did not explicitly allow “neighbors” as one of the choices.

Clark and Senik (2010) analyze the determinants of the choice of reference group among workers in Europe. Using data from Wave 3 of the European Social Survey, they study the responses to a question asking which, if any, of the following groups does the respondent most often compare his or her income: colleagues, family, friends, or others. They model the choice of the reference group with a multinomial logit regression and a number of socio-demographic characteristics as covariates.

The variable of interest in the present paper is the time spent in the labour market. While this variable has been examined in relation to satisfaction or well-being of immigrants, this is the first paper to directly study its relationship with the choice of reference group. The Luxembourg labour market

⁴ See also Suls et al. (2002) and Wills (1981).

provides an interesting opportunity to examine this relationship given the large proportion of the workforce that is comprised of “cross-border” workers living in the neighboring countries of France, Belgium and Germany. These workers differ from immigrants in that they still reside in their home country and presumably maintain connections with family and friends, some of whom work in the neighboring countries and provide an alternative reference group sometimes ignored in the literature. Based on an *ad hoc* survey of employees in Luxembourg, described below, we are able to study this option directly.

The research question addressed here is whether the choice of reference group among this particular set of workers varies with the length of time they have been working in the Luxembourg labour market. The underlying model is based on social comparison theory (Festinger, 1954) which posits that individuals compare themselves with others with similar characteristics. According to this literature, however, the individual may pursue competing goals: self-enhancement or self-improvement (Falk and Knell, 2000), which leads to some ambiguity in the hypothetical relationship. Our hypothesis is that, among cross-border workers, the probability of choosing employees outside Luxembourg as a reference group will decrease with the length of time of employment in Luxembourg as the workers begin to view the workers in Luxembourg as more like themselves. At the same time, the probability of choosing employees in Luxembourg as a reference group will increase.

III. Data

The data used in this analysis is from a survey on working conditions and quality of working life in Luxembourg, conducted by the Luxembourg Institute of Socio-Economic Research (LISER).⁵ The survey was conducted online between March and June 2013 with a representative sample of people working in Luxembourg in the private sector (temporary workers excluded) and who have at least six months of seniority in their firm. The survey is conducted in the official languages of Luxembourg

⁵ The survey, “Working Conditions and the Quality of Working Life,” was conducted under a contract with the Luxembourg Ministry of Social Security.

(French and German) and English.⁶ In total there were 17,488 responses to the survey (a 24% response rate). Of these, 3,606 were Luxembourgish natives, 4,642 were immigrants (*i.e.* people living in Luxembourg who do not have Luxembourg nationality), and 9,240 were “cross-border” workers.

The primary sample employed here is restricted to cross-border workers who work in a firm with at least 15 employees. Values have been imputed using median values for all observations with missing values. This occurs for a small number of variables and does not affect the results.⁷ The sample of cross-border workers on which the analysis is based consists of 7,737 individuals.

The question regarding the reference group asks, “With whom do you most tend to compare your salary?” The possible answers are:

- colleagues,
- employees practicing the same profession as myself in other firms in Luxembourg,
- employees practicing the same profession as myself in a country other than Luxembourg,
- family members, friends, neighbors, and
- “I do not compare my salary with that of others.”

This question is similar to the reference group question in the European Social Survey used by Clark and Senik (2010) except for two additional responses. First, this survey includes a comparison with people who work outside of Luxembourg, to account for the fact that in Luxembourg the workforce is composed mostly of immigrants and cross-border workers. Second, the survey allows the possibility of employees in the same profession in Luxembourg but at other firms as a reference group, following Bygren (2004).

The key independent variable of interest is the time spent in the Luxembourg labour market (hereafter “Lux Tenure”). The response to the question is measured in years. Descriptive statistics for the reference group and tenure variables are presented in Table 1, below.

⁶ High proportions of the employment in Luxembourg are associated with the financial sector, where English is a commonly used language.

⁷ Means for samples including and excluding the imputed values are shown in Appendix Table A1.

-- Insert Table 1 here --

Referring first to column (1), we see that the most common response is that the worker “does not compare” his or her income with that of others (34.5 percent). Among those who do make a comparison, the most common reference groups are workers at other firms in Luxembourg (28.1 percent) and colleagues in the same firm (24.9 percent). Columns (3) and (4) present the proportions when the sample is limited to those workers who indicate they make a comparison with others. The average tenure in the Luxembourg labour market is between 11 and 12 years for both samples.

The data set also includes information on standard socioeconomic and personal characteristics, as well as information about the jobs and working conditions. The survey does not include the salaries of the respondents, but information used for the initial stratification of the survey allows us to identify the salary of each individual in broad intervals. Definitions and descriptive statistics for each of these variables are given in Appendix Table A1. These make up the control variables used in the logistic regressions.

As seen in Table A1, the sample is predominately male (70%), with about half from France. Most workers are between 30 and 49 years of age (65.1%) and in a couple (81.1%). The most common sectors of employment are in Commerce and Catering (20.1%), Finance (17.4%), Industry (16.8%), and Construction (14.2%). The firms are relatively large (35% have 300 employees or more), and about 40 percent of workers have more than 10 years of seniority with the firm. The sample statistics are consistent whether or not the data includes observations with imputed values.

IV. Methodology

We estimate the relationship between the time spent in the Luxembourg labour market and the choice of reference group using a multinomial logit specification, following Clark and Senik (2010).

The dependent variables take the value 1 or 0 according to the response given to the reference group question described above, yielding 5 responses.

The probability that individual i ($=1$ to N) will choose reference group j ($j=1$ to 5) compared to group h , p_{ij} , can therefore be modeled (when the excluded category $j=5$) as:

$$P(j|x_i) = \frac{\exp(x_i\beta_j)}{1 + \sum_{h=1}^{j-1} \exp(x_i\beta_h)} \text{ for } j=1, \dots, 4, h=5 \text{ and}$$

$$P(5|x_i) = \frac{1}{1 + \sum_{h=1}^{j-1} \exp(x_i\beta_h)} \text{ for } j=5.$$

where x_i is a vector of explanatory variables (including the tenure in Luxembourg labour market variable) and β_j a vector of choice-specific coefficients. The category “employees in the same profession in other firms in Luxembourg” is used as the excluded group. The tenure in labour market variable is continuous. We allow for a non-linear relationship by including tenure squared as an explanatory variable as well. Robust standard errors are clustered at the firm level to correct for the fact that some employees work in the same firm.

We estimate the model for both samples, including and excluding those respondents who indicate they “do not compare” with others.

V. Results

The estimated coefficients for the LuxTenure variable are presented in Table 2, below, along with goodness-of-fit measures. Note that the models are highly significant as a whole. The Pseudo-R² is slightly higher for the restricted sample. The complete results are presented in Appendix table A2.

-- Insert Table 2 here --

The coefficient on the Lux-Tenure variable (-0.11) is highly statistically significant for the choice of employees in other countries, its sign indicating that workers with a longer tenure in Luxembourg are less likely to use workers in other countries as a reference group than are those with a

shorter tenure in Luxembourg. The estimates provide support, therefore, for the hypothesis that cross-border workers modify their reference group over time. This result holds for both the entire and restricted samples. Notice, however, that the link between tenure and choosing workers in other countries as a reference group is U shaped, with a minimal point of 28 years of tenure.

The Lux-Tenure variable is also negative but only marginally significant for the “colleagues” and “family and friends” reference groups (relative to other employees in Luxembourg). These results could indicate that with time the cross-border workers learn more about the Luxembourg labor market in general, causing them to be less likely to choose the narrower groups of colleagues or family and friends as a comparison group.⁸

Note that there are some differences in the choice of reference group according to the country of residence of the cross-border worker. Those coming from Germany are less likely to choose colleagues or family and friends as reference groups, compared with French or Belgian workers.

Through the lens of social comparison theory, the results can be explained by cross-border workers learning more about the characteristics of other workers in Luxembourg over time, and being more likely to compare themselves with them as a result.

Placebo effect – comparison with natives

In order to check the validity of our interpretation of the results, we also estimate the model for a group who should not exhibit any relationship between tenure in the Luxembourg market and the reference group, namely the Luxembourgish natives. The estimated coefficients for the sample of natives who participated in the survey are presented in columns (1) – (4) in Table 3. These results indicate, as expected, that there are no significant relationships between tenure and the probability of choosing any of the alternative reference groups for Luxembourgish natives. An interesting analysis would be to examine Luxembourgish natives working in one of the neighboring countries, but this is not possible since the survey was conducted only for people working in Luxembourg. In addition, the

⁸ Note that some family members, friends or neighbors also work in Luxembourg. It is not clear how the respondents differentiate them from other workers in Luxembourg. In addition, some cross-border workers have spouses who work in the home country.

number of Luxembourg residents who work in another country of the Great-Region (composed of the Lorraine region for France, Wallonie for Belgium and Saar and Rheinland-Pfalz for Germany) is quite small (900 workers in 2015⁹).

--- Insert Table 3 here ---

Comparison with immigrants

Finally, we also estimate the model using a sample of immigrants living and working in Luxembourg who also participated in the survey. The estimated coefficients for the Lux-Tenure variables for this sample are presented in columns (5) – (8) in Table 3. Here we see results similar to those found for cross-border workers, supporting the notion that immigrant workers adjust their comparison group over time. Two differences exist between the cross-border and immigrant workers, however. Firstly, the immigrants are more likely to choose “no comparison” as tenure increases, whereas there is no such relationship found for cross-border workers. This might indicate assimilation into the Luxembourg culture, since natives are the most likely of any group to give the “no comparison” response. Secondly, the immigrants are more likely to choose relatives as tenure increases until 44 years of tenure, after which the relationship becomes negative. For cross-border workers, the link between tenure and choosing relatives as reference group is always negative. This difference may be explained by the greater importance of community in immigrants’ lives.

VI. Summary and Conclusions

Previous studies focused on immigrant populations have suggested that over time workers in a foreign country adjust their “reference group” for making income or other comparisons. We examine this hypothesis for a unique set of workers in Luxembourg, those who live in the neighboring countries of Belgium, France, and Germany. Using a sample of respondents to a survey of working conditions in Luxembourg in 2013, we estimate the effect of tenure in the Luxembourg labour market on the

⁹ Offices Statistiques de la Grande Région (2016, p.17).

probability of choosing various reference groups for making income comparisons. The results indicate a negative relationship between the length of time the respondent has worked in Luxembourg and the probability of comparing his or her income with employees in other countries. We conclude that cross-border and immigrant workers exhibit similar behavior in this regard.

Further research on this topic might seek to address the potential biases arising from self-selection for both the immigrant and cross-border populations, if their status is itself a function of their choice of reference group. Similarly there may be a problem if those who choose employees in Luxembourg as their reference group are more likely to stay in Luxembourg labor market, thereby leading to longer tenure. Unfortunately the cross-sectional nature of the data and limitations on the availability of instrumental variables preclude such an analysis in the present study. Another topic for further research is the extent to which the choice of reference group for income comparisons is correlated with measures of job or life satisfaction.

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Table 1: Descriptive Statistics for Key Variables, Cross-Border Workers in Luxembourg

Variable	Description	Mean (entire sample) (1)	St. Dev. (entire sample) (2)	Mean (limited sample) (3)	St. Dev. (limited sample) (4)
Ref. Group: Colleagues	Respondent compares salary with Colleagues =1; otherwise=0	0.25	0.43	0.38	0.48
Ref. Group: Lux employees	Respondent compares with other employees in Luxembourg=1; otherwise=0	0.28	0.45	0.43	0.49
Ref Group: other	Respondent compares with employees in countries other than Luxembourg=1; otherwise=0	0.04	0.20	0.06	0.25
Ref Group: Family	Respondent compares with family and friends=1; otherwise=0	0.08	0.27	0.13	0.33
Ref Group: None	Respondent does not compare with others=1; otherwise=0	0.34	0.47	---	---
Lux Tenure	Length of time respondent has been working in Luxembourg (years)	11.85	7.66	11.05	7.28
Sample Size (N)		7,737	7,737	5,062	5,062

Note: "Limited sample" excludes respondents who do not compare with others.

Table 2: Multinomial Logistic Regression Coefficients, Choice of Reference Group, Cross Border Workers

Dependent Variable: Reference Group, excluded category=Employees in other firms in Luxembourg

Variable	Entire sample				Limited Sample		
	Colleagues	Employees in Other countries	Friends and Relatives	No Comparison	Colleagues	Employees in Other Countries	Friends and Relatives
Lux Tenure	-0.03* (0.01)	-0.112*** (0.035)	-0.049* (0.029)	-0.004 (0.017)	-0.035* (0.019)	-0.118*** (0.036)	-0.053* (0.030)
Lux Tenure Squared	0.000 (0.000)	0.002** (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.002** (0.001)	0.000 (0.000)
France	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Belgium	-0.054 (0.087)	-0.164 (0.164)	0.020* (0.116)	0.286*** (0.079)	-0.005 (0.088)	-0.162 (0.163)	0.203* (0.116)
Germany	-0.436*** (0.108)	-0.128 (0.182)	-0.654*** (0.167)	-0.174* (0.096)	-0.445*** (0.108)	-0.148 (0.181)	-0.666*** (0.166)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	7,737				5,062		
Wald Chi-squared	798.52***				427.60***		
Pseudo R squared	0.039				0.042		

Note: Level of significance: *=0.10; **=0.05, ***=0.01

Table 3: Multinomial Logit Regression Coefficients, Choice of Reference Group, Natives and Immigrants

Dependent Variable: Reference Group, excluded category=Employees in other firms in Luxembourg

Variable	Natives				Immigrants			
	Colleagues (1)	Employees in Other countries (2)	Friends and Relatives (3)	No Comparison (4)	Colleagues (5)	Employees in Other countries (6)	Friends and Relatives (7)	No Comparison (8)
Lux Tenure	-0.032 (0.031)	-0.007 (0.072)	-0.033 (0.040)	-0.007 (0.026)	-0.017 (0.027)	-0.188*** (0.048)	0.087*** (0.032)	0.043* (0.023)
Lux Tenure Squared	0.000 (0.000)	0.000 (0.001)	0.000 (0.000)	0.001* (0.0005)	0.000 (0.0007)	0.004*** (0.001)	-0.002** (0.000)	-0.000 (0.000)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	2,832				3,581			
Wald Chi-squared	611.55***				656.77***			
Pseudo R squared	0.049				0.058			

Note: Level of statistical significance: *=0.10; **=0.05, ***=0.01

Appendix. Table A1: Descriptive Statistics, variables used in logit analysis, cross-border workers

	With imputed values	Without imputed values
Reference group		
Colleagues	24.9%	24.9%
Other employees in Luxembourg	28.1%	26.6%
Employees in countries other than Luxembourg	4.2%	3.8%
Relatives	8.3%	7.7%
No comparison group	34.5%	34.1%
Women	30%	30%
Country of residence		
France	50.8%	50.8%
Belgium	25.7%	25.7%
Germany	23.5%	23.5%
Age		
Less than 30 years	16.6%	16.6%
30-49 years	65.1%	65.1%
50 years and more	18.3%	18.3%
Level of education		
Secondary inferior or less	16.1%	16.1%
Secondary superior	43.1%	40.3%
Post secondary	40.8%	40.2%
Couple	81.1%	81.1%
Whether there is a child	61.4%	61.4%
Health problem	32.6%	32.6%
Union member	28.0%	27.9%
Seniority in the Luxembourgish labor market (years)	11.8 (Std. Dev=7.7)	11.8 (Std. Dev=7.7)
Seniority in the Luxembourgish labor market Squared	199.3 (Std. Dev=241)	199.3 (Std. Dev=241)
Work full-time	88.9%	88.8%
Log of hourly wage	2.9 (Std. dev = 0.41)	
Permanent contract	96.3%	95.8%
Sector		
Industry	16.8%	16.8%
Construction	14.2%	14.2%
Commerce and catering	20.1%	20.1%
Finance	17.4%	17.4%
Transport	8.9%	8.9%
Informatics and communication	6.0%	6.0%
Specialised activities, scientifics and technical	9.2%	9.2%
Administrative tasks	6.2%	6.2%
Others sectors	1.2%	1.2%
Firm's size		
15-49 employees	24.6%	24.6%
50-299 employees	40.3%	40.3%

300 employees or more	35.1%	35.1%
Seniority in the firm		
Less than 3 years	20.6%	20.5%
3-6 years	28.2%	28.0%
7-9 years	13.0%	12.9%
10-19 years	28.3%	28.1%
more than 20 years	9.9%	9.9%

Table A2. Multinomial Logit Coefficients (Excluded category: Other Employees in Luxembourg)

	Entire sample				Sample without « No comparison »		
	Colleagues	Employees outside Luxembourg	Relatives	No comparison	Colleagues	Employees outside Luxembourg	Relatives
Women	-0.03 (0.08)	-0.30* (0.17)	0.18 (0.12)	0.23*** (0.09)	-0.03 (0.08)	-0.33* (0.17)	0.18 (0.12)
Country							
France	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Belgium	-0.05 (0.09)	-0.16 (0.16)	0.20* (0.12)	0.29*** (0.08)	-0.05 (0.09)	-0.16 (0.16)	0.20* (0.12)
Germany	-0.44*** (0.11)	-0.13 (0.18)	-0.65*** (0.17)	-0.17* (0.10)	-0.45*** (0.11)	-0.15 (0.18)	-0.67*** (0.17)
Age							
Less than 30 years	0.22 (0.15)	-0.16 (0.26)	0.64*** (0.24)	-0.42*** (0.15)	0.22 (0.15)	-0.18 (0.26)	0.64*** (0.24)
30-49 years	0.12 (0.11)	-0.22 (0.19)	0.33* (0.19)	-0.11 (0.09)	0.13 (0.11)	-0.23 (0.20)	0.36* (0.19)
50 years and more	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Level of education							
Secondary inferior or less	0.35** (0.14)	0.24 (0.26)	0.22 (0.20)	0.53*** (0.12)	0.36*** (0.14)	0.27 (0.26)	0.21 (0.20)
Secondary superior	0.32*** (0.10)	0.38** (0.18)	0.21 (0.14)	0.55*** (0.09)	0.34*** (0.10)	0.39** (0.18)	0.24* (0.14)
Post secondary	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Couple	-0.11 (0.10)	-0.18 (0.17)	-0.32** (0.13)	-0.09 (0.09)	-0.12 (0.10)	-0.18 (0.17)	-0.33** (0.13)
Whether there is a child	0.01 (0.09)	0.08 (0.16)	-0.05 (0.12)	0.06 (0.08)	-0.00 (0.09)	0.11 (0.16)	-0.06 (0.13)
Health problem	-0.06 (0.07)	-0.36** (0.16)	-0.37*** (0.12)	-0.29*** (0.07)	-0.03 (0.07)	-0.34** (0.16)	-0.34*** (0.12)
Union member	-0.00 (0.10)	0.18 (0.17)	-0.02 (0.13)	-0.04 (0.08)	-0.00 (0.10)	0.18 (0.17)	-0.03 (0.13)
Seniority on the Luxembourgish labor market	-0.03* (0.02)	-0.11*** (0.04)	-0.05* (0.03)	-0.00 (0.02)	-0.04* (0.02)	-0.12*** (0.04)	-0.05* (0.03)
Seniority on the Luxembourgish labor market Squared	0.00 (0.00)	0.00** (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00** (0.00)	0.00 (0.00)
Work full-time	0.04 (0.12)	-0.10 (0.23)	-0.33** (0.17)	-0.11 (0.12)	0.04 (0.13)	-0.11 (0.23)	-0.33** (0.17)
Log of hourly wage	-0.54*** (0.14)	0.80*** (0.27)	-0.21 (0.19)	0.22* (0.12)	-0.55*** (0.14)	0.79*** (0.27)	-0.23 (0.19)
Permanent contract	-0.06 (0.19)	0.00 (0.34)	-0.23 (0.23)	0.12 (0.18)	-0.05 (0.19)	-0.02 (0.34)	-0.23 (0.24)
Sector							
Industry	-0.00 (0.18)	0.75*** (0.24)	0.14 (0.18)	0.57*** (0.15)	-0.02 (0.18)	0.76*** (0.24)	0.10 (0.19)
Construction	-0.08 (0.15)	0.31 (0.35)	-0.14 (0.24)	0.24* (0.14)	-0.11 (0.16)	0.30 (0.35)	-0.18 (0.24)
Commerce and catering	-0.36*** (0.14)	1.11*** (0.26)	0.10 (0.18)	0.44*** (0.12)	-0.37*** (0.14)	1.11*** (0.25)	0.07 (0.18)
Finance	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Transport	-0.16 (0.18)	1.39*** (0.32)	-0.29 (0.25)	0.32** (0.16)	-0.18 (0.18)	1.37*** (0.31)	-0.34 (0.26)
Informatics and communication	0.02 (0.15)	0.18 (0.31)	-0.52* (0.27)	0.17 (0.15)	0.02 (0.15)	0.19 (0.31)	-0.56** (0.28)
Specialised activities, scientifics and technical	0.06 (0.13)	0.66*** (0.23)	-0.09 (0.17)	0.36** (0.15)	0.06 (0.14)	0.70*** (0.24)	-0.12 (0.18)
Administrative tasks	-0.22 (0.20)	1.13*** (0.33)	0.13 (0.24)	0.86*** (0.17)	-0.18 (0.19)	1.16*** (0.33)	0.13 (0.24)
Others sectors	-0.36 (0.31)	1.32** (0.54)	-1.46* (0.78)	0.28 (0.31)	-0.29 (0.32)	1.35** (0.54)	-1.47* (0.82)

Firm's size							
15-49 employees	-0.59*** (0.12)	-0.69*** (0.20)	-0.51*** (0.16)	-0.31*** (0.10)	-0.61*** (0.12)	-0.68*** (0.19)	-0.52*** (0.16)
50-299 employees	-0.33*** (0.11)	-0.48*** (0.16)	-0.18 (0.13)	-0.21** (0.09)	-0.34*** (0.11)	-0.47*** (0.16)	-0.18 (0.13)
300 employees or more	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
Seniority in the firm							
Less than 3 years	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>	<i>Ref.</i>
3-6 years	0.30*** (0.11)	0.16 (0.19)	-0.18 (0.15)	-0.04 (0.09)	0.31*** (0.11)	0.19 (0.19)	-0.16 (0.15)
7-9 years	0.60*** (0.13)	0.42* (0.25)	0.18 (0.19)	0.13 (0.12)	0.61*** (0.14)	0.44* (0.25)	0.16 (0.19)
10-19 years	0.55*** (0.13)	0.47* (0.25)	0.24 (0.19)	0.15 (0.11)	0.57*** (0.13)	0.53** (0.26)	0.26 (0.19)
more than 20 years	0.77*** (0.18)	0.57 (0.36)	0.61** (0.28)	0.24 (0.16)	0.80*** (0.18)	0.57 (0.38)	0.62** (0.29)
Constant	1.69*** (0.54)	-3.67*** (1.01)	0.42 (0.76)	-0.92* (0.50)	1.73*** (0.56)	-3.60*** (1.01)	0.53 (0.77)
Observations	7,737				5,062		
Pseudi R-squared	0.0389				0.0424		

*** p<0.01, ** p<0.05, * p<0.1

Robust standard errors in parentheses

