

Explaining the gender gap in sickness absence: the EU-LFS ad hoc module 2005

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Introduction

- Women on average more sickness absent than men at the national aggregate level in many countries. Why?
- Gender segregation of the labour market
- Double burden
- Health service usage, biology (pregnancies)

Previous research

- Norwegian LFS: Sickness absence measured as being absent from work the entire reference week due to own ill-health. The employee must have a medical certification if absent more than three days. I.e. the measured absence is certified sickness absence.
- Number of children as proxy for the double burden (negative association, due to selection), age of youngest child. % women in occupation as measure of segregation.
- Little support for the double burden and gender segregation hypotheses (Norwegian LFS).
- The 2005 ad hoc module could be used to extend the previous research, and also replicate the results across countries.

The EU-LFS

- Does not include information about age of youngest child or number of children.
- Known to be one of few surveys that enable comparative studies of sickness absence, because of the variable (NOWKREAS): Reason for not having worked at all during reference week?
- However, due to policy differences across countries on how long a sickness absence spell can last, and sickness absence length at the time of interview is unknown, the validity of this measurement can be questioned. In some countries an employee can be absent for a week without needing a medical certification.

The EU-LFS 2005 ad hoc module

- Includes more specific questions relating to care and ability to adjust working hours.
- In this study the variable TYPECARE was recoded to measure whether or not a child aged 14 or less is living in the respondent's household.
- The variable REGCARE measures whether the respondent cares for someone else, e.g. other family members or other children. However, this variable looked as if it had many item-missing and was therefore not used.

EU-LFS 2005 AHM (2)

- Ability to adjust working hours at the start or end of the day (POSSTEND) or take whole day off from work (POSORGWT) for family reasons, were both coded into a set of dummies.
- TIMEOFF measures time off from work last 12 months due to family emergencies. This variable was coded as yes versus no (1 and 0).
- All three of these variables were asked to those who are working (WSTATOR=1,2)

The questions used

V71 Is it possible for you to vary start or/and end of the working day for family reasons by at least one hour ?

- 1. It is generally possible
- 2. It is rarely possible
- 3. It is not possible
- Blank- No answer

	1
	2
	3

V81 Is it possible for you to organise your working time or your work in order to take whole days off for family reasons (without using holidays and special leave) ?

- 1. It is generally possible
- 2. It is rarely possible
- 3. It is not possible
- Blank- No answer

	1
	2
	3

V91 Over the last 12 months, did you take time off from work without using holidays because of sickness or accident of a child/relative or because of family emergencies (even for few hours) ?

- 1. Yes
- 2. No
- Blank- No answer

	1
	2

The idea

- These three variables tell us something about the constraints under which the person is working in his or her daily job: employer, policies, norms. Instructions to the interviewer reveals formal and informal arrangements and all kinds of family situations should be taken into consideration.
- These constraints or possibilities may over time have had a causal effect on the sickness absence reported at the time of the interview.
- Please notice that the third variable, family emergencies last 12 months (yes or no), does not measure those who did experience such emergencies but were not able to take time off. Family emergencies are therefore under-reported.

Some problems

- At least one publication documenting this ad hoc module had wrong information about filter questions. This can be seen in the analysis, when the documentation suggests different filters are applied for different questions, but N remains the same.
- Sickness absence is a seasonally varying variable. Most countries asked the module questions in quarter 2, while other countries asked the questions throughout the whole year. Some countries asked the module questions only to specific waves of LFS participation. This has consequences both for the measured rate of sickness absence, and the association between sickness absence and other variables.

Problems (2)

- Col. 243 POSSTEND and Col. 244 POSORGWT: “This variable is difficult due to the exclusion of special leaves (very much linked with national legislation).”
- Col. 245 TIMEOFF: “Problem with respect to the interpretation: Does the variable show the incidence of leaves or of sickness?”
- The above quotes are taken from the final report about the 2005 ad hoc module. How valid and reliable are these data?

Problems (3)

- It was voluntary for the respondents to participate in most countries, and compulsory in nine (including Malta).
- Unit non-response for the module was very low.
- However, item non-response could be quite high on specific variables in specific countries. This should be checked country by country.
- Item non-response was the highest in Norway, with almost 37%, on POSSTEND, POSORGWT and TIMEOFF.

Problems (4)

- Another issue is that for most countries the data has a nested structure, with individuals being nested within households. In some countries however, such as Finland and Norway, the respondent is not.
- In countries with a nested structure, the sickness absence of family members, as well as questions relating to family arrangements, could correlate.
- One documentation source (Doc. D1/EMPL/38/2003), mentions a module specific weighting variable, COEFTEXT. Has this weight been implemented in the variable COEFF? If not, a weighting variable specifically for the modul was planned but not implemented or included in the anonymized data.

Analysis

- Logistic regression on single country samples. First age adjusted OR for the difference between men and women in all countries. Thereafter an extended model for five countries.
- Age (dummies), ESeC (without adjustments for supervision, 2-digit isco88), full versus part time hours, fixed versus permanent contract, marital status, children aged 14 or less or not, ethnicity (born outside the country), and the three ad hoc module variables relating to time off at start or end of the day, possible to take whole day off, and whether taken time off due to family emergencies last 12 months.

Results

Table 1. Percent certified sickness absent and age adjusted odds ratio for the gender difference. 2005 EU-LFS AHM. 20-64 years of age.

	% certified sickness absent ^a			Logistic regression		N	% labour force participation ^b			% part time workers ^a		
	Men	Women	Difference	OR (95% CI) ^c			Men	Women	Total(N)	Men	Women	Total (N)
AT	1.8	1.8	0.0	1.01 (.76-1.36)	15710	77.8	64.6	71.2 (25076)	5.6	41.6	22.3 (15710)	
BE	2.5	2.7	0.2	1.14 (.86-1.50)	9783	72.7	58.9	65.8 (17282)	7.3	42.9	24.2 (9783)	
BG	0.3	0.5	0.2	1.72 (.88-3.35)	11189	67.1	57.7	62.4 (21196)	1.3	2.4	1.8 (11189)	
CY	0.8	1.1	0.3	1.67 (.83-3.38)	3448	85.3	64.0	74.4 (5837)	2.1	10.5	6.2 (3448)	
CZ	2.2	3.3	1.1	1.50*** (1.25-1.80)	23086	80.5	61.2	71.0 (39019)	1.6	7.6	4.4 (23086)	
DE	2.2	2.0	-0.2	.92 (.73-1.15)	17529	75.5	64.7	70.1 (28810)	6.8	44.6	24.9 (17529)	
DK	1.1	1.6	0.5	1.36 (.85-2.17)	6287	82.2	74.4	78.3 (8858)	9.2	27.7	18.4 (6287)	
EE	0.4	0.6	0.2	1.32 (.61-2.84)	6953	74.4	68.8	71.5 (10796)	3.4	8.3	6.0 (6953)	
ES	2.4	3.4	1.0	1.53*** (1.34-1.76)	49956	79.7	54.4	67.1 (93953)	4.2	25.5	13.2 (49956)	
FI	2.2	3.4	1.2	1.50** (1.19-1.90)	11922	75.8	71.1	73.4 (18478)	6.4	17.1	11.8 (11922)	
FR	2.8	2.9	0.1	1.00 (.78-1.29)	17773	74.7	63.8	69.2 (29026)	5.3	31.3	18.0 (17773)	
GR	0.1	0.1	0.0	.77 (.24-2.41)	17246	79.8	49.9	65.3 (46301)	1.9	8.8	4.8 (20163)	
HU	0.8	1.4	0.6	1.78** (1.27-2.51)	23986	69.3	55.2	62.1 (47078)	2.4	5.6	4.0 (23986)	
IE	1.2	1.5	0.3	1.24* (1.02-1.51)	31861	82.6	62.7	72.8 (53592)	-	-	-	
IT	1.3	1.2	-0.1	.92 (.74-1.15)	47428	74.9	48.4	61.6 (105649)	3.7	26.0	13.3 (47428)	
LT	0.4	0.5	0.1	1.34 (.49-3.60)	3751	75.6	66.2	70.7 (7174)	2.4	7.3	4.9 (4252)	
LU	1.7	1.8	0.1	1.12 (.77-1.64)	8320	80.1	59.5	69.6 (13667)	2.2	39.9	18.8 (8320)	
LV	0.1	0.6	0.5	^d	2125	74.5	65.5	69.8 (3427)	4.6	10.1	7.3 (2125)	
NL	2.2	2.8	0.6	1.31** (1.08-1.58)	32396	82.2	67.2	74.7 (49500)	17.4	74.4	43.9 (32396)	
NO	2.9	3.8	0.9	1.36*** (1.10-1.68)	12654	81.5	74.1	77.9 (17215)	10.0	41.7	25.2 (12654)	
PL	0.7	1.4	0.7	1.98*** (1.39-2.89)	14802	64.9	51.8	58.4 (33346)	5.4	11.3	8.2 (14802)	
PT	1.1	2.1	1.0	1.97*** (1.44-2.68)	15723	78.7	66.2	72.4 (28363)	2.2	9.6	5.7 (15723)	
RO	0.1	0.1	0.0	.37 (.11-1.17)	17416	71.7	58.3	65.0 (41158)	3.1	7.2	5.1 (21071)	
SE	2.6	3.8	1.2	1.48** (1.17-1.879)	15518	80.6	75.3	78.0 (20124)	9.1	38.1	23.6 (15518)	
SI	2.6	2.9	0.3	1.09 (.79-1.50)	7372	76.0	66.6	71.4 (11744)	4.7	8.9	6.7 (7372)	
SK	0.8	1.0	0.2	1.31 (.83-2.08)	9681	71.6	57.2	64.2 (17779)	1.2	3.8	2.5 (9681)	
UK	1.8	2.5	0.7	1.45*** (1.25-1.68)	40118	81.5	68.1	74.7 (70893)	6.9	40.5	23.5 (46019)	

Notes: ^a Employees aged 20-64; ^b Total population aged 20-64; ^c Weighted with pweight=coeff in Stata 10.1 (sampling weights); ^d For Latvia, the variable measuring reason for not working had very few observations, and for some age categories no employees were certified sickness absent; * $p < .05$, ** $p < .01$, *** $p < .001$

Table 1. Percent certified sickness absent and age adjusted odds ratio for the gender difference. 2005 EU-LFS AHM. 20-64 years of age.

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Table 2. Logistic regression certified sickness absence, 2005 EU-LFS AHM, Age 18-64.

	UK	Norway	Finland	Spain	Poland
Gender (women= 1)	1.61***	1.47**	1.54**	1.84***	2.06***
Age	***	**	**	***	ns
Age 22 (ref)	-	-	-	-	-
Age 27	.94	.94	.58	.91	.94
Age 32	1.24	1.23	.88	1.30	.88
Age 37	1.42	1.31	1.09	1.27	.50
Age 42	1.90**	1.15	1.07	1.23	.76
Age 47	2.41***	.94	1.58	1.37*	.54
Age 52	2.21***	1.38	1.14	2.01***	.44
Age 57	2.87***	2.17	1.87	2.29***	.39
Age 62	3.23***	2.38	2.00	4.01***	.21
Marital status	ns	ns	ns	*	***
Single (ref)	-	-	-	-	-
Partner/married	.88	1.03	1.19	1.18	2.69**
Wid/sep/divorced	1.04	1.28	1.38	1.36*	4.07***
Child	1.19*	.81	1.03	1.00	.56**
Foreign born	.93	1.72*	1.47	.61**	3.04
ESeC class	***	***	*	***	**
Class I (ref)	-	-	-	-	-
Class II	1.37**	1.23	1.12	1.18	1.27
Class IIIa	1.44**	1.00	.90	1.47*	.98
Class IIIb	1.87***	2.02**	1.51	2.22***	1.94
Classes VI+ VII	2.19***	2.21***	1.67*	2.50***	2.46**
Part time	.87	1.00	.68	.62***	.99
Fixed contract	.70	.28**	.51**	.63***	1.50*
End days	ns	ns	**	*	ns
Generally (ref)	-	-	-	-	-
Rarely	.96	.86	1.66**	1.13	.95
Not possible	1.14	1.28	1.46*	1.24**	1.35
Whole days off	ns	ns	ns	ns	ns
Generally (ref)	-	-	-	-	-
Rarely	.90	1.06	1.06	.98	1.23
Not possible	1.06	1.23	1.06	1.15	.97
Family emergency last 12 months (yes= 1)	1.01	1.62***	1.23	.96	1.71*
	-2LL=4146.01	-2LL=1220.05	-2LL=1274.14	-2LL=5581.03	-2LL=-818.85
	HL-test: p=.087	HL-test: p=.512	HL-test: p=.829	HL-test: p=.556	HL-test: p=.561
	N=40118	N=8298	N=10530	N=42214	N=14518

Notes: Unweighted estimates, but the estimated coefficients were very similar to those obtained when the analysis was run with weights (pweight=coeff) in Stata 10.1 (sampling weights); * $p < .05$, ** $p < .01$, *** $p < .001$

Table 2. Logistic regression certified sickness absence, 2005 EU-LFS AHM, Age 18-64.

	UK	Norway	Finland	Spain	Poland
Gender (women= 1)	1.61***	1.47**	1.54**	1.84***	2.06***
Age	***	**	**	***	ns
Age 22 (ref)	-	-	-	-	-
Age 27	.94	.94	.58	.91	.94
Age 32	1.24	1.23	.88	1.30	.88
Age 37	1.42	1.31	1.09	1.27	.50
Age 42	1.90**	1.15	1.07	1.23	.76
Age 47	2.41***	.94	1.58	1.37*	.54
Age 52	2.21***	1.38	1.14	2.01***	.44
Age 57	2.87***	2.17	1.87	2.29***	.39
Age 62	3.23***	2.38	2.00	4.01***	.21
Marital status	ns	ns	ns	*	***
Single (ref)	-	-	-	-	-
Partner/married	.88	1.03	1.19	1.18	2.69**
Wid/sep/divorced	1.04	1.28	1.38	1.36*	4.07***
Child	1.19*	.81	1.03	1.00	.56**
Foreign born	.93	1.72*	1.47	.61**	3.04
ESeC class	***	***	*	***	**
Class I (ref)	-	-	-	-	-
Class II	1.37**	1.23	1.12	1.18	1.27
Class IIIa	1.44**	1.00	.90	1.47*	.98
Class IIIb	1.87***	2.02**	1.51	2.22***	1.94
Classes VI+ VII	2.19***	2.21***	1.67*	2.50***	2.46**
Part time	.87	1.00	.68	.62***	.99
Fixed contract	.70	.28**	.51**	.63***	1.50*
End days	ns	ns	**	*	ns
Generally (ref)	-	-	-	-	-
Rarely	.96	.86	1.66**	1.13	.95
Not possible	1.14	1.28	1.46*	1.24**	1.35
Whole days off	ns	ns	ns	ns	ns
Generally (ref)	-	-	-	-	-
Rarely	.90	1.06	1.06	.98	1.23
Not possible	1.06	1.23	1.06	1.15	.97
Family emergency last 12 months (yes= 1)	1.01	1.62***	1.23	.96	1.71*
	-2LL=4146.01	-2LL=1220.05	-2LL=1274.14	-2LL=5581.03	-2LL=-818.85
	HL-test: p=.087	HL-test: p=.512	HL-test: p=.829	HL-test: p=.556	HL-test: p=.561
	N=40118	N=8298	N=10530	N=42214	N=14518

Notes: Unweighted estimates, but the estimated coefficients were very similar to those obtained when the analysis was run with weights (pweight=coeff) in Stata 10.1 (sampling weights); * p<.05, ** p<.01, *** p<.001

Interactions

- UK: Class by gender ($p=.046$), not born in country by gender ($p=.024$).
- Norway: No statistically significant interactions.
- Finland: No statistically significant interactions.
- Spain: Age by gender ($p=.005$), class by gender ($p=.019$), fixed contract by gender ($p=.009$), marital status by gender ($p<.001$), child under age 14 by gender ($p=.039$).
- Poland: Flexibility to start or end working day by gender ($p=.039$).

Conclusions

- The gender gap is present in three of four Nordic countries, all with high female labour force participation. But the gender gap also exists in countries with much lower female labour force participation, and/or in countries with little use of part time work.
- The gender gap is more likely to be in countries with an overall high level of certified sickness absence?
- The gender gap was not present in as many countries as expected, and in none of Austria, Belgium, France, Germany, Italy, Luxemborg...

Conclusions (2)

- The ad hoc module variables did not reduce the estimated gender difference in terms of odds ratios, but after control for class and working hours, flexibility of when to start and end the working day had an effect in Finland and Spain.
- Flexibility to take the whole day off had no effect in all five countries.
- Children had positive effect on certified sickness absence in the UK, and negative effect on sickness absence in Poland. In Poland respondents with a partner, or separated/divorced/widow(er) had much higher odds of being certified sickness absent.

Conclusions (3)

- Family emergency had a positive effect in Norway and Poland, but this variable is difficult to interpret. Double burden or sick family members likely to make the respondent sick as well?
- Difficult to see any consistent pattern relating to work arrangements or family situation suggesting the double burden is a mechanism which can explain the gender gap in sickness absence. Also the statistically significant interactions did not follow any pattern across countries.

Future

- A panel version added to the ad hoc module would allow us to study sickness absence over time, e.g. during the 12 months during which family emergencies may have happened.
- Future similar modules, or the EU-LFS in general, should include more specific data about children (age, number) and pregnancies.
- Issues relating to weighting should be clarified/solved.

Thank you!