

LFS Practical Training Session 2

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Exercise 1: Labour Market

Exercise 1: Before you start

- Select only working age population (15-74) and respondents living in private households for analysis.

```
FILE HANDLE data_path / NAME='your path'.
GET FILE='data_path/LFS_2012y_td.sav'.
SELECT IF age>=17 AND age<=72.
EXECUTE.
SELECT IF hhpriv=1.
EXECUTE.
```

Exercise 1 a: Temporary Employment

- Examine the prevalence of temporary employment throughout Europe.
- Examine the relationship between temporary employment and age. Compare the three age groups “under 25” “25 to 49” and “over 50”.
- Run a logistic regression model with temp as the dependent variable. Examine the effects of company size, full time versus part time employment and the time a person has been working for his employer. Additionally control for age, sex and education.

Exercise 1 a: Temporary Employment

- Examine the prevalence of temporary employment throughout Europe.

```
FREQ temp.
```

```
CROSS country BY temp / CELLS=COUNT ROW.
```

Exercise 1 a: Temporary Employment

- Examine the relationship between temporary employment and age. Compare the three age groups “under 25” “25 to 49” and “over 50”.

```
RECODE age (17 THRU 22=1) (27 THRU 47=2) (52
THRU 72=3) INTO age3.
```

```
VARIABLE LABELS age3 'Age (3 categories)'.
```

```
VALUE LABELS age3
```

```
  1 'under 25'
```

```
  2 '25-49'
```

```
  3 '50+'.
```

```
FREQ age3.
```

```
CROSS age3 BY temp BY country / CELLS=COUNT
ROW.
```

Exercise 1 a: Temporary Employment

- Run a logistic regression model with temp as the dependent variable. Examine the effects of company size, full time versus part time employment and the time a person has been working for his employer. Additionally control for age, sex and education.

```
Compute yearswithemp=YEAR-YSTARTWK.
FREQ yearswithemp.
```

```
RECODE SIZEFIRM (14=SYSMIS) (15=SYSMIS)
(ELSE=COPY) .
FREQ SIZEFIRM.
```

Exercise 1 a: Temporary Employment

- Run a logistic regression model with temp as the dependent variable. Examine the effects of company size, full time versus part time employment and the time a person has been working for his employer. Additionally control for age, sex and education.

```
LOGISTIC REGRESSION VARIABLES TEMP
  /METHOD=ENTER FTPT yearswithemp SIZEFIRM
HATLEV1D SEX AGE3
  /CATEGORICAL FTPT SIZEFIRM HATLEV1D SEX
AGE3
  / CONTRAST (HATLEV1D)=INDICATOR(3)
  /CRITERIA=PIN(.05) POUT(.10) ITERATE(20)
CUT(.5) .
```


Exercise 1 a: Temporary Employment

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	FTPT(1)	-.442	.049	81.389	1	.000	.643
	yearswithemp	-.260	.007	1325.107	1	.000	.771
	SIZEFIRM			.981	3	.806	
	SIZEFIRM(1)	-.021	.052	.164	1	.685	.979
	SIZEFIRM(2)	-.057	.062	.837	1	.360	.945
	SIZEFIRM(3)	-.036	.057	.400	1	.527	.965
	HATLEV1D			304.267	2	.000	
	HATLEV1D(1)	.739	.058	163.477	1	.000	2.094
	HATLEV1D(2)	-.127	.050	6.433	1	.011	.881
	SEX(1)	.056	.043	1.711	1	.191	1.058
	age3			376.932	2	.000	
	age3(1)	.928	.067	188.988	1	.000	2.529
	age3(2)	-.059	.057	1.071	1	.301	.943
	Constant	-.785	.079	99.681	1	.000	.456

a. Variable(s) entered on step 1: FTPT, yearswithemp, SIZEFIRM, HATLEV1D, SEX, age3.

Exercise 1 b: Transitions into unemployment

- Examine transitions from employment into unemployment. What differences become visible between different educational groups? Test with a logistic regression model controlling for age, sex and country level variation.

Exercise 1 b: Transitions into unemployment

- Examine transitions from employment into unemployment. Which differences become visible between different educational groups?

```
IF wstat1y=1 AND mainstat ne 2
transunempl=0.
```

```
IF wstat1y=1 AND mainstat=2 transunempl=1.
```

```
VARIABLE LABELS transunempl 'Transitions
from employment into unemployment'.
```

```
FREQ transunempl.
```

Exercise 1 b: Transitions into unemployment

- Test with a logistic regression model controlling for age, sex and country level variation.

```
LOGISTIC REGRESSION VAR=transunempl WITH
age3 sex hatlev1d
```

```
/ CATEGORICAL= sex hatlev1d country age3
```

```
/ CONTRAST (sex) =INDICATOR (1)
```

```
/ CONTRAST (hatlev1d) =INDICATOR (3)
```

```
/ METHOD=ENTER
```

```
/ PRINT=CI (95) .
```

Exercise 1 b: Transitions into unemployment

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
								Lower	Upper
Step 1 ^a	AGE	-.032	.002	182.756	1	.000	.969	.964	.973
	SEX(1)	.062	.056	1.224	1	.269	1.063	.954	1.186
	HATLEV1D			226.275	2	.000			
	HATLEV1D(1)	1.176	.082	205.123	1	.000	3.241	2.759	3.807
	HATLEV1D(2)	.497	.076	42.560	1	.000	1.644	1.416	1.910
	Constant	-2.517	.116	467.150	1	.000	.081		

a. Variable(s) entered on step 1: AGE, SEX, HATLEV1D.

Exercise 1 b: Transitions out of unemployment

- Likewise examine transitions out of unemployment. For those transitioning into employment examine the prevalence of temporary employment. Compare to results attained in 1a.
- Additionally consider transitions into employment and transitions into 'inactive'. Estimate a multinomial regression model with unemployed who did not change their status as the base outcome. Estimate the effects of age, sex and education.

Exercise 1 b: Transitions out of unemployment

- Likewise examine transitions out of unemployment.

```
IF wstat1y=2 AND mainstat=1
transoutunempl=1.
```

```
IF wstat1y=2 AND mainstat=2
transoutunempl=2.
```

```
IF wstat1y=2 AND mainstat>=3 AND mainstat NE
6 transoutunempl=3.
```

Exercise 1 b: Transitions out of unemployment

- Likewise examine transitions out of unemployment.

```
VARIABLE LABELS transoutunempl 'Transitions
out of unemployment'.
```

```
VALUE LABELS transoutunempl
```

```
  1 'into employment'
```

```
  2 'no transition'
```

```
  3 'into inactive'.
```

```
FREQ transoutunempl.
```


Exercise 1 b: Transitions out of unemployment

- For those transitioning into employment examine the prevalence of temporary employment. Compare to results attained in 1a.

```
CROSS transoutunempl by temp/ CELLS=COUNT
ROW.
```

```
freq temp.
```

Exercise 1 b: Transitions out of unemployment

- Additionally consider transitions into employment and transitions into 'inactive'. Estimate a multinomial regression model with unemployed who did not change their status as the base outcome. Estimate the effects of age, sex and education.

Exercise 1 b: Transitions out of unemployment

```
NOMREG transoutunempl (BASE=2
ORDER=ASCENDING) BY age3 sex hatlev1d
  /MODEL
  /INTERCEPT=INCLUDE
  /PRINT=LRT KERNEL CPS PARAMETER SUMMARY
MFI
  /SAVE ESTPROB.
```

Exercise 1 b: Transitions out of unemployment

Parameter Estimates

transoutunempl Transitions out of unemployment ^a		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
1,00 into employment	Intercept	-1.162	.121	92.284	1	.000			
	[age3=1,00]	.832	.122	46.719	1	.000	2.297	1.810	2.916
	[age3=2,00]	.716	.095	56.838	1	.000	2.047	1.699	2.466
	[age3=3,00]	0 ^b	.	.	0	.	.	.	.
	[SEX=1]	.154	.072	4.558	1	.033	1.166	1.013	1.343
	[SEX=2]	0 ^b	.	.	0	.	.	.	.
	[HATLEV1D=1]	-1.024	.109	88.532	1	.000	.359	.290	.445
	[HATLEV1D=2]	-.476	.099	22.923	1	.000	.621	.511	.755
	[HATLEV1D=3]	0 ^b	.	.	0	.	.	.	.
3,00 into inactive	Intercept	-1.420	.175	65.530	1	.000			
	[age3=1,00]	-.141	.161	.771	1	.380	.868	.634	1.190
	[age3=2,00]	-.596	.117	25.844	1	.000	.551	.438	.694
	[age3=3,00]	0 ^b	.	.	0	.	.	.	.
	[SEX=1]	-.560	.109	26.520	1	.000	.571	.462	.707
	[SEX=2]	0 ^b	.	.	0	.	.	.	.
	[HATLEV1D=1]	-.045	.175	.067	1	.796	.956	.678	1.347
	[HATLEV1D=2]	-.146	.174	.703	1	.402	.864	.615	1.215
	[HATLEV1D=3]	0 ^b	.	.	0	.	.	.	.

a. The reference category is: 2,00 no transition.

b. This parameter is set to zero because it is redundant.

Exercise 2: Households & Couples

LFS Household Information

- In most countries, the LFS is a household sample
- Only exception in the training dataset: Switzerland

Data Structure

Country	Number of household in each quarter	Sequence number in the household	Relationship to reference person in the household	Sequence number of spouse or cohabiting partner	Sequence number of father	Sequence number of mother
COUNTRY	QHHNUM	HHSEQNUM	HHLINK	HHSPOU	HHFATH	HHMOTH
1	100	1	1	0	0	0
1	105	1	1	2	0	0
1	105	2	2	1	0	0
1	118	1	1	2	0	0
1	118	2	2	1	0	0
1	118	3	3	0	1	2
1	130	1	1	0	0	0
1	130	2	3	0	0	1
1	130	3	3	0	0	1

Before you start

- Open LFS training dataset again
- Exclude Switzerland
- Select population living in private households

```
FILE HANDLE data_path / NAME='your path'.
GET FILE='data_path/LFS_2012y_td.sav'.
```

```
SELECT IF country NE 4.
```

```
SELECT IF hhpriv=1.
```

```
EXECUTE.
```


Ex 2a: Presence, number and age of children in the Phousehold

- Calculate the proportion of households in each country
 - by number of children (0, 1, 2, >2)
 - by age of the youngest child (<5, 5-9, 10-19, no child <20)

- Child definition
 - person is <15 years old
 - person is 15-19 years old, lives with at least one parent in the household and is economically inactive

How to solve it – Exercise 2a

- Identify children
- Count the number of children in the household
- Calculate the proportion of households by number of children (in each country)
- Determine the age of the youngest child in the household
- Calculate the proportion of households by age of the youngest child (in each country)

How to solve it – Exercise 2a

- Identify children

```
COMPUTE child=0.
```

```
IF age<=12 OR (age=17 AND (hhfath>=1 OR  
    hhmoth>=1) AND ilostat=3) child=1.
```

```
EXECUTE.
```

How to solve it – Exercise 2a

- Count the number of children in the household

```
SORT CASES BY country qhhnum.
```

```
AGGREGATE OUTFILE=* MODE=ADDVARIABLES
```

```
  / PRESORTED
```

```
  / BREAK country qhhnum
```

```
  / sum_child=SUM(child) .
```

```
EXECUTE.
```

```
RECODE sum_child (3 THRU HI=3) (ELSE=COPY) .
```

```
EXECUTE.
```

How to solve it – Exercise 2a

- Calculate the proportion of households by number of children (in each country)

```
TEMPORARY.
```

```
SELECT IF hhlink=1.
```

```
CROSSTABS country BY sum_child  
/ CELLS=COUNT ROW.
```

How to solve it – Exercise 2a

COUNTRY Country * sum_child number of children in the household Crosstabulation

% within COUNTRY Country

		sum_child number of children in the household				Total
		,00 no children	1,00 1 child	2,00 2 children	3,00 3 or more children	
COUNTRY Country	1 AT Austria	75,7%	13,0%	9,4%	1,9%	100,0%
	2 BE Belgium	67,1%	14,0%	13,0%	5,9%	100,0%
	6 CZ Czech Republic	72,8%	14,1%	10,7%	2,3%	100,0%
	7 DE Germany	78,4%	11,4%	7,6%	2,7%	100,0%
	9 EE Estonia	63,5%	18,9%	12,8%	4,8%	100,0%
	10 ES Spain	68,9%	15,6%	12,8%	2,6%	100,0%
	12 FR France	71,9%	11,5%	11,3%	5,2%	100,0%
	13 GR Greece	76,4%	10,9%	10,0%	2,7%	100,0%
	15 HU Hungary	74,6%	12,8%	8,8%	3,8%	100,0%
	16 IE Ireland	61,4%	16,1%	14,1%	8,4%	100,0%
	18 IT Italy	75,4%	12,9%	9,7%	2,0%	100,0%
	19 LT Lithuania	66,1%	18,7%	12,4%	2,8%	100,0%
	20 LU Luxembourg	64,8%	14,2%	15,2%	5,8%	100,0%
	23 NL Netherlands	64,9%	14,8%	16,1%	4,2%	100,0%
	25 PL Poland	66,1%	18,6%	11,6%	3,7%	100,0%
	26 PT Portugal	70,6%	17,3%	10,3%	1,8%	100,0%
	27 RO Romania	78,6%	14,3%	6,4%	0,7%	100,0%
	29 SI Slovenia	70,1%	14,8%	12,2%	2,8%	100,0%
	30 SK Slovak Republic	72,9%	14,5%	10,4%	2,3%	100,0%
	31 UK United Kingdom	71,5%	13,3%	11,2%	4,0%	100,0%
Total		70,8%	14,5%	11,2%	3,5%	100,0%

How to solve it – Exercise 2a

- Determine the age of the youngest child in the household

```
IF child=1 childage=age.
```

```
EXECUTE.
```

```
AGGREGATE OUTFILE=* MODE=ADDVARIABLES
```

```
  / PRESORTED
```

```
  / BREAK country qhhnum
```

```
  / min_childage=MIN(childage) .
```

```
EXECUTE.
```

How to solve it – Exercise 2a

- Calculate the proportion of households by age of the youngest child (in each country)

```
RECODE min_childage (12 THRU 17=15)
      (SYSMIS=0) (ELSE=COPY) .
```

```
EXECUTE .
```

```
TEMPORARY .
```

```
SELECT IF hhlink=1 .
```

```
CROSSTABS country BY min_childage
      / CELLS=COUNT ROW .
```


How to solve it – Exercise 2a

COUNTRY Country * min_childage age of youngest child in the household Crosstabulation

% within COUNTRY Country

		min_childage age of youngest child in the household				Total
		,00 no child <20	2,00 0-4 years of age	7,00 5-9 years of age	15,00 10-19 years of age	
COUNTRY Country	1 AT Austria	75,7%	6,7%	6,3%	11,3%	100,0%
	2 BE Belgium	67,1%	12,1%	7,6%	13,2%	100,0%
	6 CZ Czech Republic	72,8%	10,0%	5,9%	11,2%	100,0%
	7 DE Germany	78,4%	7,9%	4,6%	9,1%	100,0%
	9 EE Estonia	63,5%	12,5%	8,0%	16,0%	100,0%
	10 ES Spain	68,9%	10,7%	8,2%	12,2%	100,0%
	12 FR France	71,9%	9,7%	6,9%	11,4%	100,0%
	13 GR Greece	76,4%	6,8%	6,8%	9,9%	100,0%
	15 HU Hungary	74,6%	7,7%	6,9%	10,8%	100,0%
	16 IE Ireland	61,4%	16,5%	8,5%	13,6%	100,0%
	18 IT Italy	75,4%	7,3%	6,9%	10,4%	100,0%
	19 LT Lithuania	66,1%	7,6%	6,1%	20,2%	100,0%
	20 LU Luxembourg	64,8%	12,0%	8,2%	15,0%	100,0%
	23 NL Netherlands	64,9%	11,8%	8,4%	14,9%	100,0%
	25 PL Poland	66,1%	10,1%	8,1%	15,7%	100,0%
	26 PT Portugal	70,6%	7,2%	7,0%	15,3%	100,0%
	27 RO Romania	78,6%	3,7%	5,5%	12,2%	100,0%
	29 SI Slovenia	70,1%	9,9%	6,6%	13,4%	100,0%
	30 SK Slovak Republic	72,9%	7,6%	6,2%	13,3%	100,0%
	31 UK United Kingdom	71,5%	12,1%	6,2%	10,2%	100,0%
Total		70,8%	9,4%	6,9%	12,8%	100,0%

Ex 2b: Employment patterns of couples, depending on the age of the youngest child in the household

- Calculate the prevalence of the different employment patterns of couples, depending on the age of the youngest child in the household (by country)
- Employment patterns
 - traditional breadwinner: man full-time, woman inactive
 - modified breadwinner: man full-time, woman part-time
 - egalitarian: both full-time
 - other

How to solve it – Exercise 2b

- Combine the information of the employment status of both partners in one row of the dataset
- Classify the employment patterns of couples
- Calculate the prevalence of the different employment patterns of couples

How to solve it – Exercise 2b

- Combine the information of the employment status of both partners in one row of the dataset

```

SORT CASES BY country qhhnum hhspou.
TEMPORARY.
SELECT IF sex=2 AND hhspou>0.
SAVE OUTFILE='mydata_path/part_w.sav'
  / KEEP=country qhhnum hhspou age ilostat
  ftpt hatlev1d
  / RENAME (hhspou age ilostat ftpt
  hatlev1d=hhseqnum age_w ilostat_w
  ftpt_w hatlev1d_w) .

```

How to solve it – Exercise 2b

Country	Number of household in each quarter	Sequence number in the household	Relationship to reference person in the household	Sequence number of spouse or cohabiting partner	Sex
COUNTRY	QHHNUM	HHSEQNUM	HHLINK	HHSPOU	SEX
1	100	1	1	0	2
1	105	1	1	2	1
1	105	2	2	1	2
1	118	1	1	2	1
1	118	2	2	1	2
1	118	3	3	0	1
1	130	1	1	0	2
1	130	2	3	0	2
1	130	3	3	0	1

How to solve it – Exercise 2b

- Combine the information of the employment status of both partners in one row of the dataset

```

SORT CASES BY country qhnum hhseqnum.
MATCH FILES / FILE=*
    / TABLES='mydata_path/part_w.sav'
    / BY country qhnum hhseqnum.
  
```

How to solve it – Exercise 2b

Country	Number of household in each quarter	Sequence number in the household	Sequence number of spouse or cohabiting partner	Sex	ILO work status	ILO work status, partnered woman
COUNTRY	QHHNUM	HHSEQNUM	HHSPOU	SEX	ILOSTAT	ILOSTAT_W
1	100	1	0	2	1	.
1	105	1	2	1	1	1
1	105	2	1	2	1	.
1	118	1	2	1	1	3
1	118	2	1	2	3	.
1	118	3	0	1	-2	.
1	130	1	0	2	2	.
1	130	2	0	2	1	.
1	130	3	0	1	3	.

How to solve it – Exercise 2b

- Classify the employment patterns of couples

```
DO IF age_w >= 1.
```

```
  IF ilostat=1 AND ftpt=1 AND ilostat_w=3
    empat=1.
```

```
  IF ilostat=1 AND ftpt=1 AND ilostat_w=1
    AND ftpt_w=2 empat=2.
```

```
  IF ilostat=1 AND ftpt=1 AND ilostat_w=1
    AND ftpt_w=1 empat=3.
```

```
  IF (ilostat=2 OR ilostat=3) OR ftpt=2 OR
    ilostat_w=2 empat=4.
```

```
END IF.
```


How to solve it – Exercise 2b

- Calculate the prevalence of the different employment patterns of couples

TEMP.

```
SELECT IF age_w >= 27 AND age_w <= 52.  
CROSSTABS empat BY min_childage BY  
country / CELLS=COUNT COL.
```

How to solve it – Exercise 2b

empat employment pattern of couples * min_childage age of youngest child in the household * COUNTRY Country Crosstabulation

% within min_childage age of youngest child in the household

			min_childage age of youngest child in the household				Total
			,00 no child <20	2,00 0-4 years of age	7,00 5-9 years of age	15,00 10-19 years of age	
7 DE Germany	empat employment pattern of couples	1,00 traditional breadwinner model	5,7%	32,2%	19,1%	16,9%	15,7%
		2,00 modified breadwinner model	24,9%	36,2%	57,4%	50,6%	37,8%
		3,00 egalitarian model	47,1%	19,5%	12,8%	19,8%	30,2%
		4,00 other	22,2%	12,1%	10,6%	12,8%	16,3%
	Total		100,0%	100,0%	100,0%	100,0%	100,0%
23 NL Netherlands	empat employment pattern of couples	1,00 traditional breadwinner model	11,2%	8,8%	10,0%	9,4%	10,0%
		2,00 modified breadwinner model	45,7%	62,0%	60,0%	60,7%	55,3%
		3,00 egalitarian model	14,7%	6,8%	4,3%	7,7%	9,6%
		4,00 other	28,3%	22,4%	25,7%	22,2%	25,1%
	Total		100,0%	100,0%	100,0%	100,0%	100,0%
29 SI Slovenia	empat employment pattern of couples	1,00 traditional breadwinner model	7,9%	11,7%	6,6%	4,3%	7,5%
		2,00 modified breadwinner model	5,4%	6,1%	4,7%	4,3%	5,1%
		3,00 egalitarian model	55,5%	56,4%	73,6%	73,0%	62,7%
		4,00 other	31,2%	25,8%	15,1%	18,5%	24,6%
	Total		100,0%	100,0%	100,0%	100,0%	100,0%
Total	empat employment pattern of couples	1,00 traditional breadwinner model	8,4%	16,4%	11,5%	9,7%	10,9%
		2,00 modified breadwinner model	25,8%	36,9%	42,1%	38,6%	33,7%
		3,00 egalitarian model	38,4%	26,1%	28,2%	33,4%	33,1%
		4,00 other	27,4%	20,5%	18,2%	18,3%	22,3%
	Total		100,0%	100,0%	100,0%	100,0%	100,0%

Ex 2c: Relationship between employment patterns of couples and socio-demographic characteristics

- Examine the determinants of employment patterns
- Run a multinomial logistic regression model
- Use as dependent variable:
 - employment pattern (as generated in ex 2b)
- Use as independent variables:
 - level of education, of both partners
 - age of the youngest child (as generated in ex 2a)
 - country

How to solve it – Exercise 2c

- Select couples where the woman is aged 25 to 54

```
SELECT IF (age_w>=27 AND age_w<=52) .  
EXECUTE.
```

- Define the reference categories for the independent variables

```
RECODE min_childage (0=99) (ELSE=COPY) .
```

How to solve it – Exercise 2c

- Run the logistic regression model

```
NOMREG empat (BASE=FIRST ORDER=ASCENDING)
  BY hatlev1d hatlev1d_w min_childage
  country
  /MODEL
  /INTERCEPT=INCLUDE
  /PRINT=LRT KERNEL CPS PARAMETER SUMMARY
  MFI
  /SAVE ESTPROB.
```

How to solve it – Exercise 2c

- Plot the predicted probabilities

GRAPH

```
/LINE (MULTIPLE) =MEAN(est1_1) MEAN(est2_1)
  MEAN(est3_1) mean(est4_1) BY min_childage
/PANEL COLVAR=country ROWVAR=hatlev1d.
```

How to solve it – Exercise 2c

predicted probability of employment patterns of couples by age of youngest child and country

