ISSN 2315-0807

eurostat
Statistical working papers

Employment of disabled people

Statistical analysis of the 2011 Labour Force Survey ad hoc module

2015 edition

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Luxembourg: Publications Office of the European Union, 2015

ISBN 978-92-79-40179-4
ISSN 2315-0807
doi:10.2785/56001
Cat. No: KS-TC-14-007-EN-N

Theme 3: Population and social conditions
Collection: Statistical working papers

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List of Abbreviations

AHM	Ad-Hoc Module
AIC	Akaike Information Criterion
CAPI	Computer-Assisted Personal Interviewing
CATI	Computer-Assisted Telephone Interviewing
CAWI	Computer-Assisted Web Interviewing
IC	Interval of Confidence
ICF	International Classification of Functioning, Disability and Health
ISCED	International Standard Classification of Education
ISCO	International Standard Classification of Occupations
LFS	Labour Force Survey
NR	Non-Response
OR	Odds-Ratio
PAPI	Paper-And-Pencil Interviewing
SE	Statistics Explained
SIF	Statistics in Focus

List of countries

BE	Belgium
BG	Bulgaria
CZ	Czech Republic
DK	Denmark
DE	Germany
EE	Estonia
IE	Ireland
EL	Greece
ES	Spain
FR	France
HR	Croatia
IT	Italy
CY	Cyprus
LV	Latvia
LT	Lithuania
LU	Luxembourg
HU	Hungary
MT	Malta
NL	Netherlands
AT	Austria
PL	Poland
PT	Portugal
RO	Romania
SI	Slovenia
SK	Slovakia
FI	Finland
SE	Sweden
UK	United Kingdom
IS	Iceland
NO	Norway
CH	Switzerland
TR	Turkey

Foreword

The main objective of the 2011 Labour Force Survey ad hoc module (LFS AHM) was to implement, as far as possible, the concept of disability as defined by the International Classification of Functioning, Disability and Health (ICF). However, in the process of its development, it appeared that the new concept of disability was difficult to implement and operationalise because of the constraints that govern a LFS AHM (in particular its limitation to 11 variables ([1])). Such constraints do not allow measuring the prevalence of disability in the population according to the full ICF definition or reporting on the situation of disabled people in society. Therefore, it was not possible to have a comprehensive examination of all the different types of barriers that prevent people from participating in society and only barriers in the area of employment were investigated. Moreover, the restrictions in participation in the labour market (limitations in work) were directly linked to health/difficulties in basic activities following in this way the medical model approach of disability.

The 2011 LFS AHM comprised the following topics:

- Health problems and difficulties in basic activities;
- Limitations in work caused by health problems/difficulties in basic activities;
- Special assistance needed or used by people with health problems/difficulties in basic activities;
- Limitations in work because of other reasons.

These topics are of a general nature, covering a large range of working practices, types of health conditions and basic activity limitations, and person/environment interactions. They give information on the barriers to employment associated with health problems and/or difficulties in basic activities, and/or other personal/environmental reasons. A variable on limitations in work caused by other personal or environmental factors was included in order to be closer to the bio-psychosocial philosophy of the disability concept. Thus, alternative definitions of disability can be derived from the 2011 LFS AHM, such as:

1. Disability = difficulties in carrying out basic activities (such as, hearing, seeing, walking, communicating);
2. Disability (in employment) = limitation in work caused by health problems/difficulties in basic activities.

The 2011 LFS AHM consisted of 11 variables ([2]):

- *HEALTHMA*: 1st main type of longstanding health condition or disease;
- *HEALTHSE*: 2nd main type of longstanding health condition or disease;
- *DIFFICMA*: 1st basic activity difficulty (*e.g.* seeing, hearing, walking, remembering, etc.);
- *DIFFICSE*: 2nd basic activity difficulty;
- *LIMHOURS*: the health condition(s) or disease(s) or difficulty(ies) cause(s) the person's limitation in the number of hours that he/she can work in a week;
- *LIMTYPEW*: the health condition(s) or disease(s) or difficulty(ies) cause(s) the person's limitation in the type of work (for instance, having problems in carrying heavy loads, working outdoors, sitting for a long time) that he/she can do;
- *LIMTRANS*: the health condition(s) or disease(s) or difficulty(ies) cause(s) the person's limitation in getting to and from work;
- *NEEDHELP*: because of the health problem or difficulty, the person needs (not employment persons)/uses (employed persons) personal assistance to enable him/her to work;
- *NEEDADAP*: because of the health problem or difficulty, the person needs (not employment persons)/uses (employed persons) special equipment of needs (not employed persons)/has (employed persons) workplace adaptations to enable him/her to work;
- *NEEDORGA*: because of the health problem or difficulty, the person needs (not employment persons)/uses (employed persons) special working arrangements to enable him/her to work (such as sedentary jobs, teleworking, flexible hours or less strenuous work);
- *LIMREAS*: main reason for limitation in work (number of hours, type, getting to and from work) that is not caused by the longstanding health conditions/diseases or basic activity difficulties.

32 countries conducted this module (the 28 EU Member States, Turkey, Iceland, Norway and Switzerland).

([1]) Regulation (EC) No 2257/2003 of the European Parliament and of the Council of 25 November 2003 stipulates that "the volume of an ad hoc module shall be limited to 11 variables."

([2]) For the detailed list of variables, see the Commission Regulation (EU) No 317/2010 of 16 April 2010 adopting the specifications of the 2011 ad hoc module on employment of disabled people for the labour force sample survey provided for by Council Regulation (EC) No 577/98 available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:097:0003:0009:EN:PDF

Acknowledgements

This publication is the outcome of coordinated efforts by Pascal Wolff, Lucian Agafitei and Bart De Norre, all Eurostat, Unit F5.

SOGETI Luxembourg SA supported the work, the team being composed of Laurent Jacquet (project manager), Gwenaëlle Le Coroller and Nicolas Pujol (statisticians and SAS programmers). Furthermore, methodological support was provided by Amanda Wilmot and Emilia Peytcheva (UCD•RTI Applied Research Centre).

Documentation and methodological evaluation of the national implementation of the survey

1. Documentation and methodological evaluation of the national implementation of the survey

The objective of this chapter is to document and tabulate to the extent possible the national implementation of the module. Firstly, an inventory of the material transmitted to Eurostat by the national statistical institutes is presented. Secondly, the characteristics of each national questionnaire are presented allowing identification of differences between countries. Thirdly, response and non-response is analysed by country. Finally, the use of proxy respondents (i.e. participation via another member of the household) is presented.

1.1. Inventory of the material

Table 1 presents all the documents that were available for the analysis of the national implementation.

Table 1: List of documents available

Country	Quality report	Final technical report	Instruction	Questionnaire in English	Questionnaire in national language	Trans codification table	Analysis / Main Results	Other documents
BE	X	X	X	X	X	X	X	
BG	X	X	X	X	X	X	X	
CZ	X	X	X	X	X	X	X	Evaluation
DK	X	X		X	X	X	X	Newsletter
DE	X		X		X			
EE	X	X	X	X	X	X	X	
IE	X	X		X		X	X	
EL	X	X	X	X	X	X	X	
ES	X	X	X	X	X	X	X	
FR	X	X	X		X	X	X	Executive summary
HR	X	X	X	X	X	X	X	
IT	X	X	X	X	X	X	X	
CY	X	X	X	X	X	X	X	
LV	X		X	X		X		
LT	X	X	X	X	X	X	X	
LU	X			X	X		X	
HU	X	X	X	X	X	X	X	
MT	X	X		X	X	X	X	
NL	X	X		X	X	X	X	
AT	X	X		X	X	X	X	
PL	X			X				
PT	X	X	X	X	X	X	X	
RO	X	X	X	X	X	X	X	Data file structure
SI	X	X	X	X	X	X	X	
SK	X	X		X	X	X	X	
FI	X	X		X	X	X	X	
SE	X	X		X	X	X	X	
UK	X			X	X	X		
IS	X	X		X	X	X	X	
NO	X	X		X	X	X	X	
CH	X			X	X			List of variables
TR	X			X				

Note: the symbol "X" means that the document is available.

1.2. Survey implementation analysis

Table 2 presents the main characteristics of the national 2011 LFS-AHM collections (see Annex 1 for details). It should be noted that the average interview durations provided in table 2 are the ones reported by the countries in the national quality reports.

Table 2: Main characteristics of the national 2011 LFS-AHM questionnaires

Country	Placement of the AHM module in the questionnaire	Average interview duration per person (in minutes) for LFS core and LFS AHM	Average interview duration per person (in minutes), for LFS AHM only	Participation in the LFS AHM: Voluntary / Compulsory	Interview mode for the LFS AHM (CATI, CAPI, PAPI, Mixed)	Proxy allowed for the LFS AHM (Y/N)	LFS AHM Proxy share (%)
BE	After the core	16.8	5.0	Compulsory	Mixed (95.4 % CAPI 4.6 % PAPI)	N	0.0
BG	After the core	24.7	10.2	Voluntary	PAPI	Y	-
CZ	After the core	30.0	13.0	Voluntary	CAPI	Y	45.6
DK	After the core, after the module of non-formal education	8.3	1.2	Voluntary	CATI	Y	4.3
DE	After the core	25.0	3.0	Voluntary	CAPI	Y	26.0
EE	At the end of the personal questionnaire	15.0	NA	Voluntary	CAPI	Y	27.9
IE	After the core	11.5	0.4	Voluntary	CAPI	Y	49.5
EL	After the core	NA	NA	Compulsory	PAPI	Y	44.9
ES	After the core	13.0	1.9	Compulsory (but until now no fine is applied in case of NR)	CATI	Y	53.0
FR	After the core	21.0	15.4	Compulsory	Mixed (92.8 % CAPI 7.2 % Telephone)	N (except when the person is unable for health reasons to answer without assistance)	0.4
HR	After the core	17.0	5.0	Voluntary	Face-to-face	Y	NA
IT	Within the core	7.1	1.1	Compulsory	Mixed (45 % CAPI, 55 % CATI)	Y	17.6
CY	After the core	5.0 to 15.0 (Core) + 3.0 to 7.0 (module) depending on wave for core and routing for module	3.0 to 7.0 depending on routing	Compulsory	Mixed (Wave 1: CAPI, and other waves CATI)	Y	35.5
LV	After the core	NA	4.0	Voluntary	Mixed (CAPI and PAPI)	Y	44.0
LT	After the core	25.0	8.0	Voluntary	Mixed (CAPI and PAPI)	Y	31.9
LU	After the core	13.0	3.0	Voluntary	CATI	Y	39.0
HU	After the core	18.5	6.7	Voluntary	PAPI	Y	47.1
MT	Within the core	25.0 to 35.0 minutes	10.0 to 15.0 minutes	Compulsory	Mixed (PAPI and CAPI)	Y	53.0
NL	Towards the end of the questionnaire after the module 'retro' with questions on previous work and before the regular questions on disability and work	9.0	2.0	Voluntary	Mixed (CAPI and PAPI)	Y	50.7
AT	After the core	NA	NA	Voluntary	CAPI	Y	25.8
PL	After the core	15.0	5.0	Voluntary	Mixed (CAPI and PAPI)	Y	38.0

Country	Placement of the AHM module in the questionnaire	Average interview duration per person (in minutes) for LFS core and LFS AHM	Average interview duration per person (in minutes), for LFS AHM only	Participation in the LFS AHM: Voluntary / Compulsory	Interview mode for the LFS AHM (CATI, CAPI, PAPI, Mixed)	Proxy allowed for the LFS AHM (Y/N)	LFS AHM Proxy share (%)
PT	After the core	11.0	4.0	Compulsory	Mixed (CATI and CAPI)	Y	50.0
RO	After the core	21.5	8.8	Voluntary	PAPI	Y	24.8
SI	After the core	3.8	0.7	Voluntary	Mixed (CATI and CAPI)	Y	55.3
SK	After the core	Between 1.0 to 25.0 minutes	5.0	Compulsory	Mixed (paper questionnaires and notebooks, face-to-face and phone interviewing)	Y	43.5
FI	Between the core and the household module questionnaire	NA	NA	Voluntary	CATI	Y	1.6
SE	After the core	13.0	3.0	Voluntary	CATI	Y	1.0
UK	Not after the core	NA	NA	Voluntary	Mixed (CATI and CAPI)	Y	22.5
IS	After the core	6.5	2.6	Voluntary	CATI	Y	3.0
NO	After the core	4.0	NA	Compulsory for the 1st question, then voluntary	CATI	N	-
CH	After the core	24.1	3.5	Compulsory	CATI	Y	4.5
TR	After the core	30.0	10.0	Compulsory	CAPI	Y	40.0

The participating countries fell into two camps, those with a compulsory participation in the module (Belgium, Greece, Spain, France, Italy, Cyprus, Malta, Portugal, Switzerland and Turkey) while the others had a voluntary participation. Note that for Germany, Austria and Croatia, the core questionnaire was compulsory whereas the 2011 LFS AHM was voluntary.

The majority of the countries put the 2011 LFS AHM module at the end of the core questionnaire, with the exception of Malta, Italy and the United Kingdom.

The average interview duration per person for the core plus the 2011 LFS AHM varied from around 4 minutes for Slovenia to 30 minutes for Czech Republic and Turkey. The average interview duration per person for the 2011 LFS AHM varied from 24 seconds for Ireland to around 15 minutes for France (see chapter 2 for the number of questions).

The scheme of interview mode is the same as for the core questionnaire. Indeed, three different interview modes are observed for the collection of the data with some countries using a mixed-mode design:

- Mixed: Belgium, Italy, Cyprus, France, Latvia, Lithuania, Malta, the Netherlands, Portugal, Slovenia, Slovakia and the United Kingdom;
- Computer-assisted telephone interview (CATI): Denmark, Spain, Luxembourg, Finland, Sweden, Island, Norway and Switzerland;
- Computer-assisted personal interview (CAPI): Germany, Estonia, Ireland, Austria and Turkey;
- Paper-assisted personal interview (PAPI) or face-to-face: Bulgaria, Greece, Hungary and Romania.

Proxy responses were allowed in most of the participating countries, except in Belgium, France and Norway. Sweden reported the smallest proxy share, with 1 % of the total response of the LFS AHM. On the opposite, Slovenia reported the highest value with 55 % of the responses.

1.3. Non-response analysis

1.3.1. Non-response rates

The analysis of the response and non-response rates related to the LFS AHM ([3]) is based on a practical definition of a non-respondent in the microdata. In the context of the LFS AHM, a person is considered as a non-respondent when:

HEALTHMA = Blank AND *HEALTHSE* = 99
AND *DIFFICMA* = Blank AND *DIFFICSE* = 99

([3]) The data related to the non-response analysis are available in Annex 2.

AND *LIMHOURS* = 9 AND *LIMTYPEW* = 9 AND *LIMTRANS* = 9
AND *NEEDHELP* = 9 AND *NEEDADAP* = 9 AND *NEEDORGA* = 9
AND *LIMREAS* = Blank

Note: values 9 and 99 mean "Not applicable".

Table 3 below shows the non-response rates reported by countries for the core questionnaire ([4]). The causes for non-response were also reported for both core and LFS AHM questionnaires. Besides, the fourth column of the table shows the non-response rate calculated from the microdata according to the above definition (conditional on completion of the LFS core).

Table 3: Non-response observed in the core and the AHM

Country	2011 LFS core		2011 LFS AHM-disability	
	NR rate reported by countries (%)	NR causes	NR rate conditional on completion of the LFS core (%), calculated on microdata ([1])	NR causes
BE	32.6	Refusals: 10.1 %	4.6	-
BG	20.1	Refusals: 26.2 %	2.7	-
CZ	19.4	Refusals: 80.1 %	0.3	-
DK	48.5	Refusals: 12.3 %	-	Refusals: 12.6 % Non-contact: 20.1 % Research protection: 30.5 % Other: 36.7 %
DE	2.1	-	0.0	-
EE	37.5	Refusals: 42.3 %	-	-
IE	20.3	Refusals: 26.2 %	0.6	-
EL	18.0	Refusals: 25.0 %	9.2	-
ES	14.2	Refusals: 33.0 % Absences: 57.0 % Inaccessible: 10.0 %	6.1	-
FR	16.0	Refusals: 23.6 %	-	Refusals: 29.1 % Impossible to join: 35.9 % Impossible to survey (disabled people): 13.2 % Long leave: 21.8 %
HR	24.4	Refusals: 52.1 %	0.0	-
IT	11.1	Refusals: 30.1 %	7.1	-
CY	3.7	Refusals: 80.3 %	-	Refusals: 79.5 % Non-contacts: 12.8 % Other: 7.7 %
LV	33.3	Refusals: 37.7 %	0.0	-
LT	16.2	Refusals: 47.2 %	-	Refusals: 46.1 % Non-contacts: 49.4 % Other: 4.5 %
LU	67.3	Refusals: 57.0 %	0.3	-
HU	15.2	Refusals: 35.2 %	1.0	-
MT	30.8	Refusals: 6.3 %	-	-
NL	21.8	Refusals: 38.7 %	0.0	-
AT	7.3	Refusals: 5.7 %	-	-
PL	24.4	Refusals: 59.1 %	-	-
PT	17.6	Refusals: 12.8 %	-	-
RO	7.0	Refusals: 22.0 %	2.3	-
SI	21.7	Refusals: 64.5 %	-	Refusals: 62.1 %
SK	6.7	Refusals: 73.0 % Non-contact: 6.0 %	0.5	Refusals: 100.0 %
FI	23.9	Refusals: 65.6 %	3.1	Those who are seriously ill and exempted from interview after the first round: 41.0 % Did not agreed to answer or couldn't give answers or took issue with inquiry: 50.0 % Sake of too many unanswered quest: 9.0 %
SE	25.4	Refusals: 46.1 %	-	-

([4]) Labour force survey in the EU, candidate and EFTA countries - Main characteristics of national surveys, 2011. Available at: http://ec.europa.eu/eurostat/en/web/products-statistical-working-papers/-/KS-RA-12-025

Country	2011 LFS core		2011 LFS AHM-disability	
	NR rate reported by countries (%)	NR causes	NR rate conditional on completion of the LFS core (%), calculated on microdata ([1])	NR causes
UK	38.1	Refusals: 68.0 %	2.3	-
IS	16.5	Refusals: 42.2 %	1.8	-
NO	16.6	Refusals: 13.9 %	86.6	-
CH	15.1	Refusals: 11.7 %	0.4	-
TR	13.0	Refusals: 1.3 %	-	

([1]) Computation based on the same target population aged 15-64 for the core LFS and the 2011 ad-hoc module; except for Iceland where the target population was 16-64 years old.

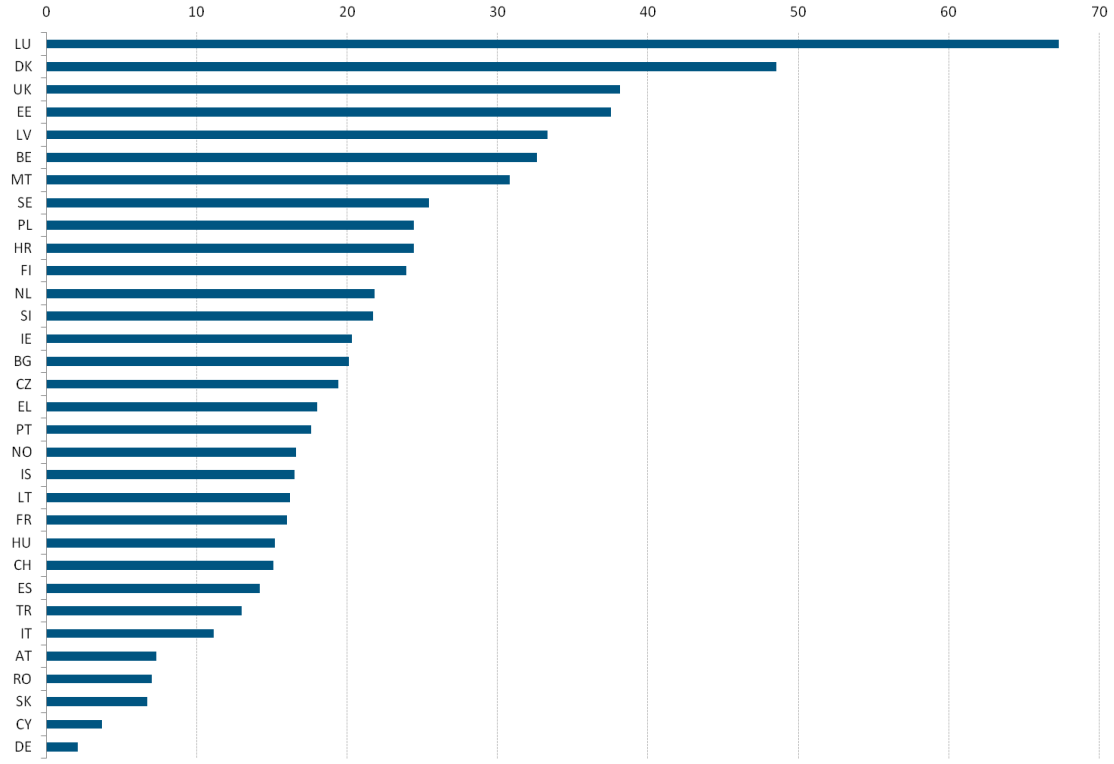
Figure 1 illustrates the non-response rate to the EU-LFS core reported by the countries whereas figure 2 presents the non-response rate to the 2011 EU-LFS AHM calculated on microdata.

According to the Quality Report on the European Union Labour Force Survey (EU-LFS) for the year 2011([5]), the non-response rates reported by the countries are not fully comparable. Indeed, some countries based their calculation on the household unit, whereas others on a per person basis.

The non-response to the 2011 EU-LFS AHM is based on persons having responded to the EU-LFS core aged 15-64. It can be noticed that questions were answered by a PROXY for persons aged 15 in the United Kingdom and Spain. Moreover, in Iceland the target population start at 16 instead of 15 for the other countries.

Figure 1: Non-response rate of the EU-LFS core reported by the countries

(%)



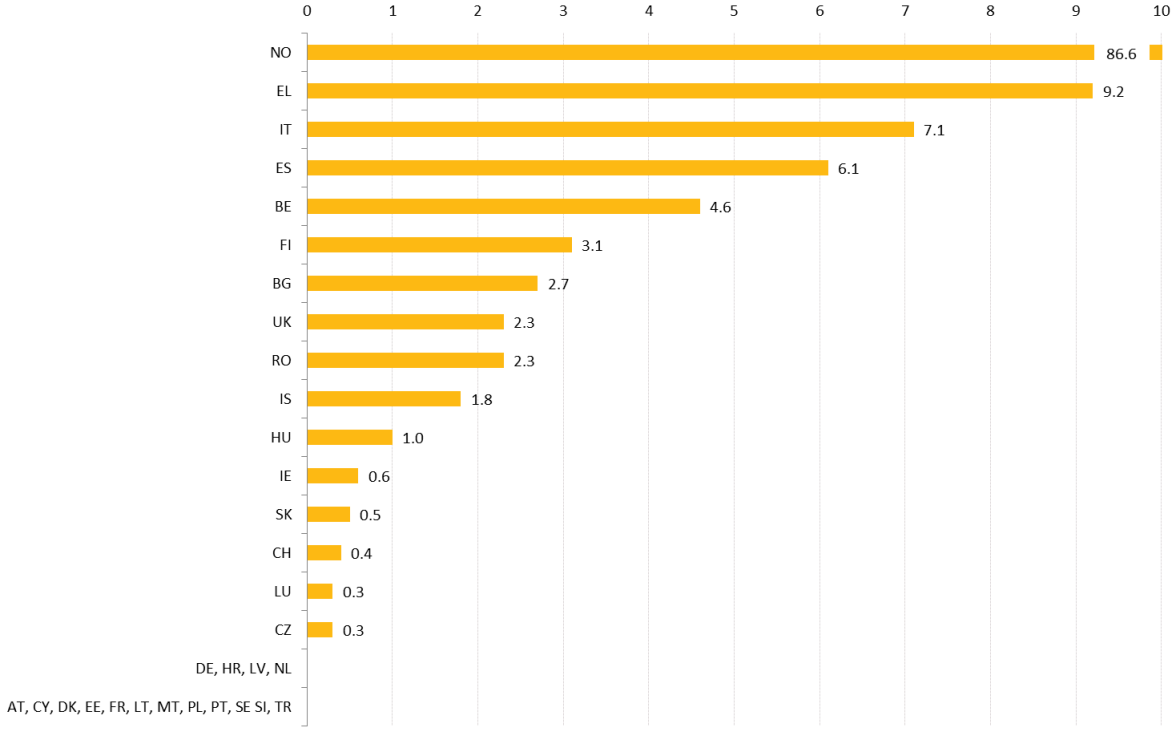
The comparison of both aforementioned non-response rates is thwarted by the differences observed in national calculation methods at the EU-LFS core level and the characteristic of the 2011 EU-LFS AHM in terms of target populations. Indeed, the module addressed persons aged 15-64 while the age range of the target population for the core questionnaire is wider and vary according to the countries.

([5]) Quality report of the European Union - Labour Force Survey 2011. Available at: http://ec.europa.eu/eurostat/en/web/products-statistical-working-papers/-/KS-RA-13-008

The non-response rate of the core LFS differed by country. It started at 2 % in Germany and reached 67 % in Luxembourg. For most countries, the main reason for non-response was refusals.

For the LFS AHM, this rate (conditional on completion of the LFS core) varied from 1 % or less for a total of 22 countries (including 12 countries for which the module was answered by all the respondents to the core questionnaire) to 87 % in Norway. Only a few countries (7) reported the causes of non-response. The reasons varied from a country to another. For example, in France, the main reason was the impossibility to reach the persons whereas in Finland, 50 % of the non-response was due to an impossibility to give answers or disagreement to answer (when the reasons of the non-response are provided).

Figure 2: Non-response rate conditional upon the completion of the EU-LFS core based on target population aged 15-64, calculated on microdata
(%)



1.3.2. Non-response bias

Tables 4 to 6 below show the distribution of each demographic variable by 2011 LFS AHM respondent status (respondent or non-respondent). These tables aim to show that the non-respondents do not necessarily have the same profile as the respondents. Results are only provided for the countries showing a 2011 LFS AHM non-response rate (conditional on completion of the LFS core) higher than 1 %. A Chi-Square test was also applied at different error rates (5 %, 1 % and 0.1 %) in order to determine if the differences pointed out are significant.

The Chi-Square test for independence evaluates the relationship between two variables A and B. It is a non-parametric test of independence that is performed on categorical (nominal or ordinal) variables. A significant relationship means that the level of variable A can help you predict the level of variable B (the variables are related), but the relationship is not necessarily causal, in the sense that one variable “causes” the other.

To illustrate an example from the following tables, in the United Kingdom, most of the non-respondents are single (91 %) whereas the majority of the respondents are in a civil union (50%). Moreover, the independence Chi-Square test is significant at the error rate of 0.1 %, meaning that non-response to the 2011 LFS AHM, conditional on response to the LFS, is related to the marital status of the surveyed person.

Table 4: Distribution of demographic characteristics by respondent status, in % (Part 1)

		Marital status			Degree of urbanisation			Number of persons in the household ([6])	
		Persons whose legal union ended	Single	Persons in legal unions	Density pop. area	Intermediate area	Thinly pop. area	1 person	> 1 person
BE	NR.	8.5***	48.1***	43.4***	46.9***	19.4***	33.7***	11.7	88.3
(4.6 %)	Resp.	12.0***	38.9***	49.1***	50.1***	39.6***	10.2***	12.2	87.8
BG	NR.	9.5***	37.2***	53.3***	36.8***	12.7***	50.5***	6.9	93.1
(2.7 %)	Resp.	10.1***	29.6***	60.2***	40.9***	7.5***	51.6***	8.4	91.6
EL	NR.	6.1**	35.8**	58.1**	27.1***	15.8***	57.1***	8.5	91.5
(9.2 %)	Resp.	6.1**	33.1**	60.1**	36.8***	11.4***	51.8***	8.6	91.4
ES	NR.	5.1***	54.5***	40.4***	43.7***	22.0***	34.3***	4.8**	95.2**
(6.1 %)	Resp.	7.5***	36.8***	55.8***	44.2***	24.1***	31.7***	5.8**	94.2**
IT	NR.	7.8***	40.2***	52.0***	38.2***	40.9***	21.0***	10.4***	89.6***
(7.1 %)	Resp.	7.9***	35.4***	56.7***	35.3***	42.6***	22.1***	9.0***	91.0***
HU	NR.	19.2***	26.4***	54.4***	39.9***	12.3***	47.8***	12.3***	87.7***
(1.0 %)	Resp.	13.7***	38.1***	48.2***	18.1***	22.9***	59.0***	7.0***	93.0***
RO	NR.	8.5***	43.0***	48.5***	20.8***	2.2***	77.0***	4.0***	96.0***
(2.3 %)	Resp.	9.9***	29.6***	60.5***	37.6***	1.1***	61.3***	7.2***	92.8***
FI	NR.	11.3***	55.8***	32.9***	25.4	11.9	62.6	8.8***	91.2***
(3.1 %)	Resp.	12.0***	42.6***	45.4***	25.0	14.3	60.7	21.4***	78.6***
UK	NR.	2.1***	90.9***	7.0***	67.1	16.3	16.6	4.2***	95.8***
(2.3 %)	Resp.	13.2***	36.6***	50.2***	66.4	18.0	15.7	13.6***	86.4***
IS	NR.	20.0	56.0	24.0	-	56.9	43.1	-	100.0
(1.8 %)	Resp.	8.7	49.3	42.0	-	62.2	37.8	-	100.0
NO	NR.	11.9***	44.6***	43.5***	23.4***	21.8***	54.8***	-	100.0
(86.6 %)	Resp.	22.2***	31.4***	46.4***	14.9***	20.9***	64.2***	-	100.0

Notes:

- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively;
- The figures highlighted in colour are those where the majority is different between the non-respondent and the respondent groups (only highlighted if the chi-square test is significant);
- Parentheses in the first column show the 2011 EU-LFS AHM non-response rate (conditional on completion of the EU-LFS core).

([6]) During the analysis of background variables, it appeared that household in CH are only composed of 1 person, while households in SE, IS and NO are always composed of more than 1 person (see Annex 2).

Table 5: Distribution of demographic characteristics by respondent status, in % (Part 2)

		Gender		Age				
		Male	Female	15-24	25-34	35-44	45-54	55-64
BE	NR.	47.4	52.6	24.5**	17.9**	18.9**	21.7**	17.1**
(4.6 %)	Resp.	49.1	50.9	18.6**	18.1**	20.5**	22.6**	20.2**
BG	NR.	52.3	47.7	16.7	13.7	17.7	25.3	26.6
(2.7 %)	Resp.	49.4	50.6	14.8	14.4	19.7	23.7	27.2
EL	NR.	48.6	51.4	17.2***	17.7***	20.4***	20.7***	24.0***
(9.2 %)	Resp.	49.0	51.0	15.1***	18.4***	22.6***	22.8***	21.1***
ES	NR.	50.3	49.7	35.1***	13.7***	17.3***	17.7***	16.1***
(6.1 %)	Resp.	49.0	51.0	14.7***	18.1***	23.6***	24.1***	19.5***
IT	NR.	48.6	51.4	16.3***	15.0***	20.6***	22.3***	25.8***
(7.1 %)	Resp.	48.6	51.4	15.2***	15.9***	23.1***	23.8***	22.0***
HU	NR.	46.0	54.0	12.3***	13.9***	9.3***	14.5***	50.0***
(1.0 %)	Resp.	49.3	50.7	19.4***	17.8***	20.1***	20.0***	22.7***
RO	NR.	59.8***	40.2***	19.7***	28.1***	23.9***	15.8***	12.6***
(2.3 %)	Resp.	49.1***	50.9***	17.1***	16.0***	23.2***	20.3***	23.3***
FI	NR.	54.7*	45.3*	23.7***	12.5***	14.7***	20.4***	28.8***
(3.1 %)	Resp.	49.8*	50.2*	18.1***	18.3***	18.0***	21.5***	24.2***
UK	NR.	51.2*	48.8*	87.6***	2.4***	3.1***	3.3***	3.6***
(2.3 %)	Resp.	47.6*	52.4*	15.7***	19.0***	22.2***	22.3***	20.8***
IS	NR.	49.0	51.0	17.6	25.5	13.7	23.5	19.6
(1.8 %)	Resp.	49.2	50.8	22.6	19.6	19.6	21.0	17.2
NO	NR.	51.6***	48.4***	16.8***	18.8***	23.6***	22.2***	18.5***
(86.6 %)	Resp.	44.8***	55.2***	7.4***	11.3***	18.7***	23.9***	38.7***

Notes:

- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively;
- The figures highlighted in colour are those where the majority is different between the non-respondent and the respondent groups (only highlighted if the chi-square test is significant);
- Parentheses in the first column show the 2011 EU-LFS AHM non-response rate (conditional on completion of the EU-LFS core).

Table 6: Distribution of demographic characteristics by respondent status, in % (Part 3)

		Working status			Highest level of education completed ([7])		
		Employed	Unemployed	Inactive	Low	Medium	High
BE	NR.	56.6*	5.1*	38.4*	33.5**	41.4**	25.1**
(4.6 %)	Resp.	61.9*	4.2*	33.8*	31.9**	37.4**	30.7**
BG	NR.	56.8	5.7	37.5	27.3	53.1	19.6
(2.7 %)	Resp.	61.9	7.1	35.1	25.8	55.2	19.0
EL	NR.	51.4***	9.8***	38.8***	47.0***	34.5***	18.5***
(9.2 %)	Resp.	56.0***	10.7***	33.2***	41.3***	39.1***	19.6***
ES	NR.	43.2***	8.5***	48.3***	49.8**	23.8**	26.4**
(6.1 %)	Resp.	57.5***	14.3***	28.3***	48.2**	22.5**	29.3**
IT	NR.	48.3***	3.7***	48.0***	52.8***	36.0***	11.2***
(7.1 %)	Resp.	55.7***	4.7***	39.6***	47.4***	40.3***	12.3***
HU	NR.	33.7***	5.1***	61.2***	30.2*	52.2*	17.6*
(1.0 %)	Resp.	52.0***	7.0***	40.9***	28.5*	57.5*	14.0*
RO	NR.	11.7***	0.1***	88.2***	30.6**	61.5**	7.9**
(2.3 %)	Resp.	58.4***	4.4***	37.2***	30.4**	58.0**	11.6**
FI	NR.	30.7***	3.2***	66.1***	49.1***	34.8***	16.1***
(3.1 %)	Resp.	70.1***	5.6***	24.3***	22.8***	44.7***	32.5***
UK	NR.	9.9***	0.9***	89.2***	32.1	39.3	28.6
(2.3 %)	Resp.	69.4***	5.7***	24.8***	26.3	41.6	32.1
IS	NR.	47.1***	3.9***	49.0***	33.3	35.9	30.8
(1.8 %)	Resp.	79.9***	7.7***	12.4***	39.2	34.3	26.6
NO	NR.	84.4***	2.2***	13.4***	21.3***	43.1***	35.6***
(86.6 %)	Resp.	50.5***	2.5***	47.1***	31.2***	48.8***	20.0***

Notes:

- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively;
- The figures highlighted in colour are those where the majority is different between the non-respondent and the respondent groups (only highlighted if the chi-square test is significant);

- Parentheses in the first column show the 2011 EU-LFS AHM non-response rate (conditional on completion of the EU-LFS core).

([7]) Highest level of education (Low, Medium and High) is from the derived variable HATLEV1D (see EU Labour Force Survey database User Guide, November 2012).

The following figures aim at providing a visual description of the differences between non-respondents and respondents groups as described above. The focus was put on the most significant variables, *i.e.* working status and marital status.

Figures 3 to 5 show the difference in the proportions of employed/unemployed/inactive people among the respondents and the non-respondents groups. Again, results are provided for countries showing a 2011 LFS AHM non-response rate (conditional on completion of the LFS core) higher than 1 %. Looking at these graphs, it appears that the working status influences the non-response:

- Figure 3: the proportion of employed persons is generally higher among respondents;
- Figure 4: the proportion of unemployed persons is generally higher among respondents;
- Figure 5: contrary to employed and unemployed persons, the proportion of inactive persons is higher among non-respondents.

Figure 3: Comparison of the proportion of employed in the respondent and the non-respondent groups

(%)

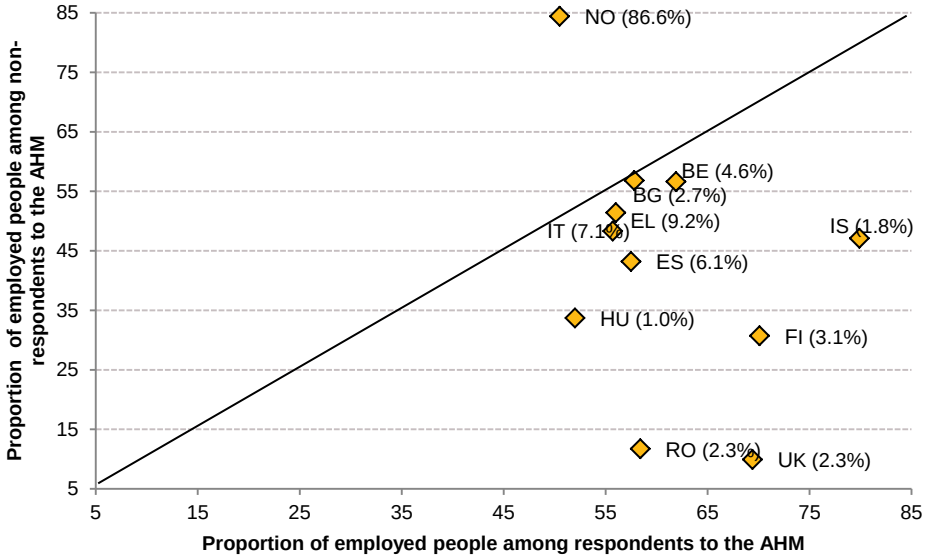


Figure 4: Comparison of the proportion of unemployed in the respondent and the non-respondent groups
(%)

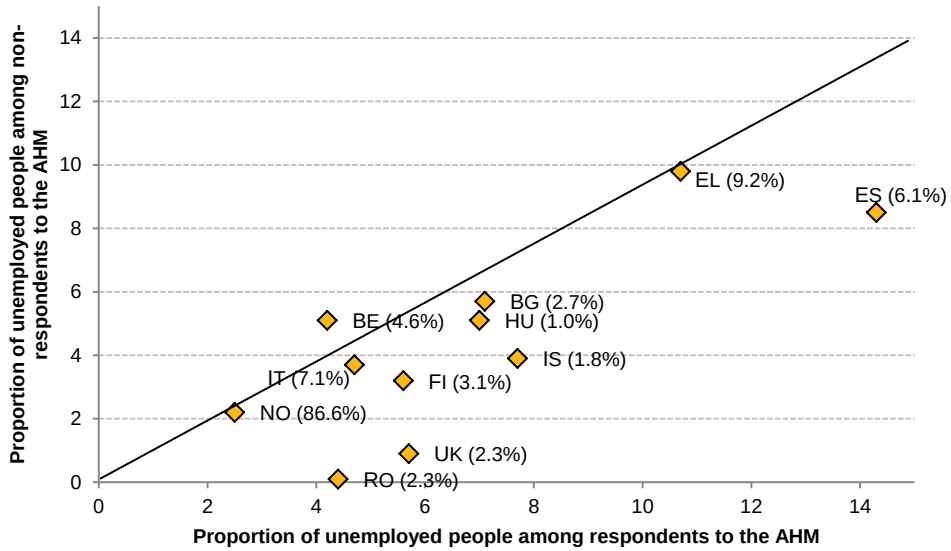
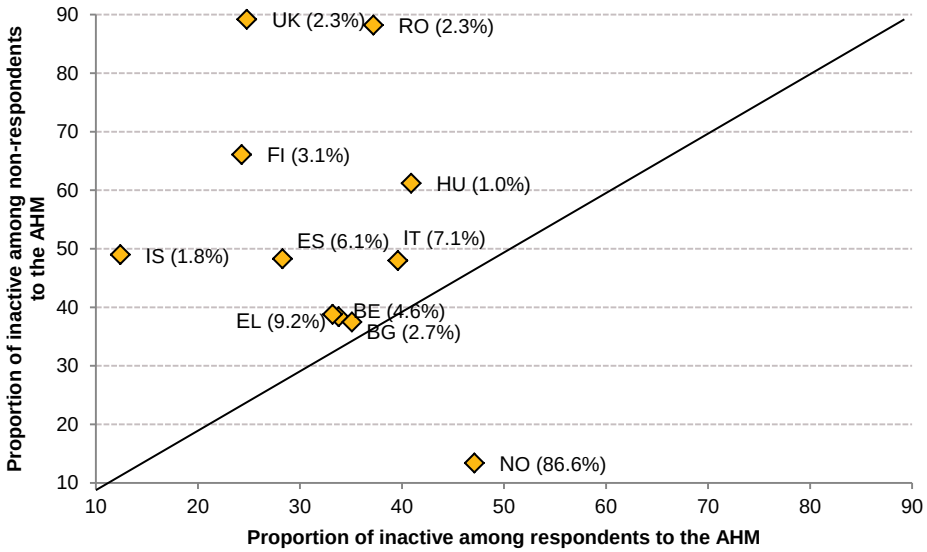


Figure 5: Comparison of the proportion of inactive in the respondent and the non-respondent groups
(%)



Figures 6 to 8 show the difference in the proportions of married/single/widowed, divorced or legally separated people among the respondents and the non-respondents groups. Results are provided for countries showing a 2011 LFS AHM non-response rate (conditional on completion of the LFS core) higher than 1 %. Looking at these graphs, the marital status seems to influence the non-response:

- Figure 6: the proportion of persons in legal union is generally higher among respondents;
- Figure 7: the proportion of single persons is generally higher among non-respondents;
- Figure 8: the proportion of persons whose legal union ended seems to be higher among respondents.

Figure 6: Comparison of the proportion of persons in legal union in the respondent and the non-respondent groups

(%)

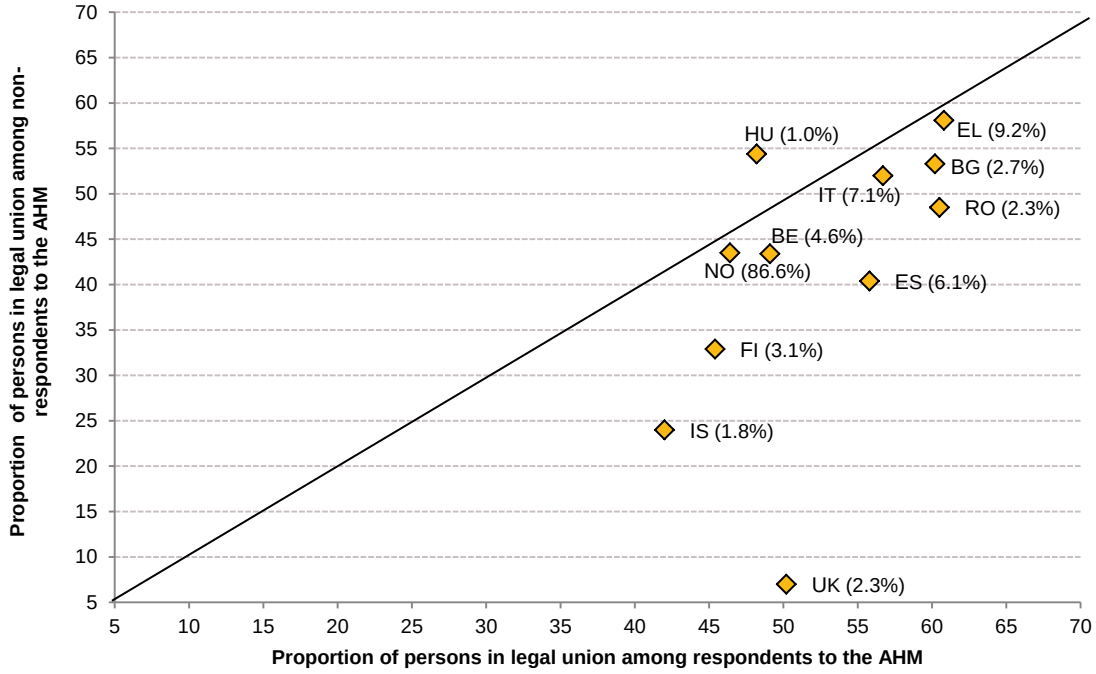


Figure 7: Comparison of the proportion of single in the respondent and the non-respondent groups

(%)

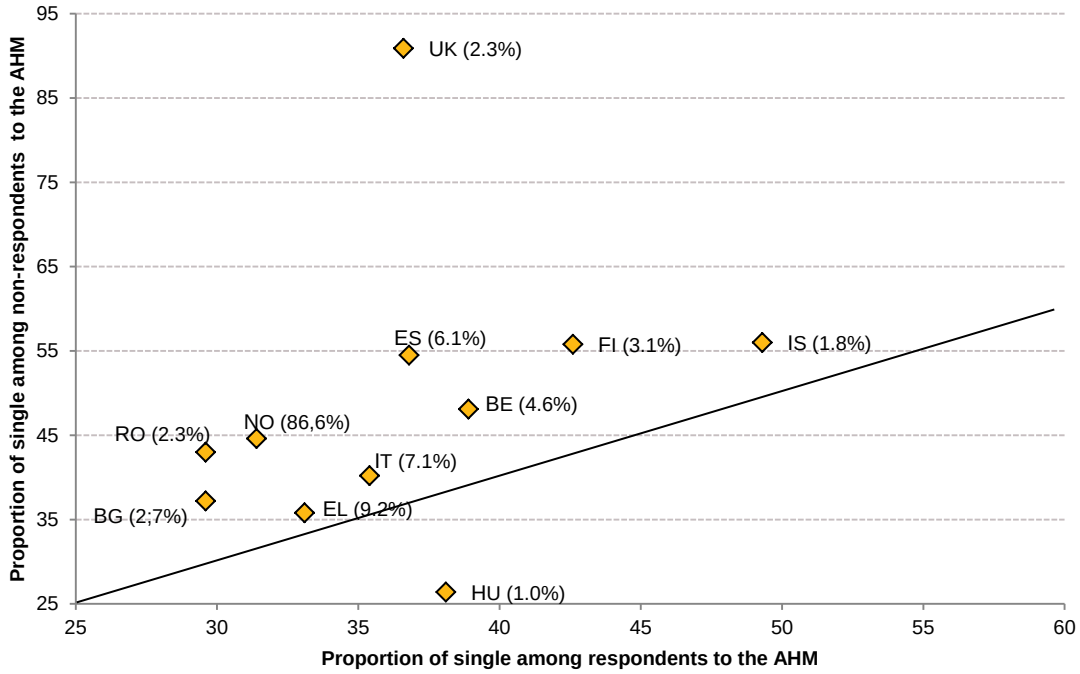
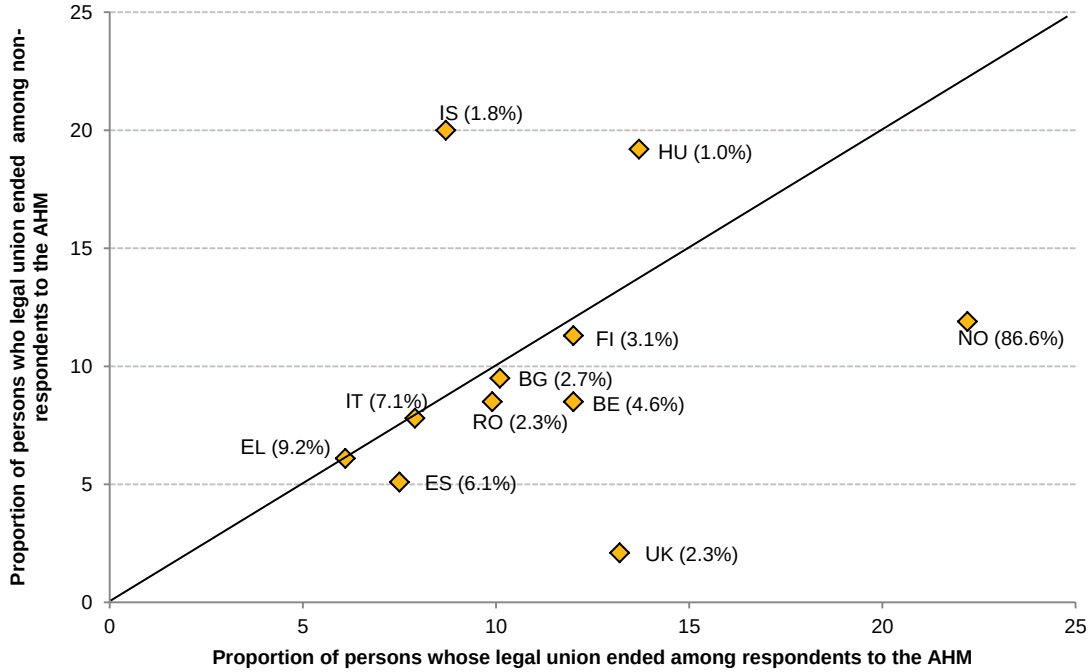


Figure 8: Comparison of the proportion of persons whose legal union ended in the respondent and the non-respondent groups
(%)



Overall there is tremendous variation across countries in the presence, magnitude, and direction of the difference between respondents and non-respondents in the LFS AHM. It should be noted that the demographic variables were collected in the LFS and do not reflect differences due to non-response to the LFS. Furthermore, the magnitude of the difference between respondents and non-respondents may not indicate bias when the non-response rate is very low (recall that bias in an estimate of a mean is the product of the difference in means between respondents and non-respondents, and the non-response rate). For example, the UK showed some of the largest differences between respondents and non-respondents in the LFS AHM, but almost all the non-response occurred in the LFS: the non-response rate in the LFS AHM conditional on LFS participation was merely 2 %. Thus, the above figures present a nature of non-response which is quite different across countries, but not about the significance of bias in these estimates. The following multivariate analysis takes into account the statistical significance of differences, which is influenced by the level of non-response, in addition to controlling for the other covariates.

A **multivariate logistic regression** was carried out with SAS to measure the probabilities to be non-respondent given the following explicative variables: gender, age, marital status, degree of urbanization, highest level of education completed, size of the household and working status. As previously, results are only provided for the countries showing a 2011 LFS AHM non-response rate (conditional on completion of the LFS core) higher than 1 % (in brackets).

A logistic regression measures the relationship between a categorical dependent variable and one or more independent variables. It estimates the probability of an event occuring and allows to calculate odds ratios. An odds ratio indicates how much more likely, with respect to odds, a certain event occurs in one group relative to its occurrence in another group. It shows the strength of the association between the predictor variable and the outcome variable. If the odds ratio is 1, then there is no association between the predictor variable and the outcome. If the odds ratio is greater than 1 then group B is more likely to have the outcome. If the odds ratio is less than 1, then group A is more likely to have the outcome. More details available in the chapter 3 – Multivariate analysis

Then, table 7 presents the results of the logistic regression (using unweighted data), modelling the probability of being a non-respondent, using demographic characteristics as predictor variables. The reader is given the significant odd-ratios at risk 5 %, 1 % and 0.1 %.

The odds ratios presented in the table have to be interpreted in the following way: for instance, regarding marital status in Belgium, a single person is 1.406 times more likely to be a non-respondent than a person in a legal union.

Overall, there are significant correlates of non-response in each country. As for the univariate presentation, countries vary in which correlates are significant, the magnitude of the coefficients, and even their direction. It is important to consider these differences when comparing survey estimates across countries.

It is also important to consider that this non-response bias analysis examines ignorable non-response – the bias that can be adjusted using the examined socio-demographic variables from the LFS. The premise in this analysis is that if there are differences in the nature of non-response across countries on LFS variables, then that differential bias may prevail through other variables. The bias that remains in the LFS AHM variables is unknown.

Lastly, this analysis of non-response is restricted to the conditional non response to the LFS AHM. Since most of the non-response for many countries occurred at the initial LFS stage, it limits the degree to which we learn about the nature of non-response in the LFS AHM estimates.

Table 7: Odd-Ratios (per country) of being a non-respondent, by demographic characteristics (unweighted)

		BE (4.6 %)	BG (2.7 %)	EL (9.2 %)	ES (6.1 %)	IT (7.1 %)	HU (1.0 %)	RO (2.3 %)	FI (3.1 %)	UK (2.3 %)	IS (1.8 %)	NO (86.6 %)
Gender (Male)	Female	1.1	0.9	1.0	1.0	1.0	1.0	0.4***	0.8**	0.9	1.3	0.8***
Age (55-64)	15-24	1.0	0.7*	0.9	0.7***	0.6***	0.3*	1.6***	0.3***	1.3	1.7	7.6***
	25-34	1.0	0.7	0.9	0.9	0.8*	0.5	7.9***	0.7	0.7	1.7	2.3
	35-44	1.0	0.8	0.9	0.9	0.8	0.3**	5.7***	1.2***	0.8	1.1	1.6***
	45-54	1.2	1.1**	0.9	0.9	0.9***	0.5	3.0	1.5***	1.0	1.5	1.4***
Marital status (Persons in legal union)	Persons whose legal union ended	0.8**	1.2	1.0	0.9*	1.0***	0.9	1.6**	1.7	0.9	3.3*	0.7***
	Single	1.4***	1.9***	1.2**	1.3***	1.5***	0.9	1.2	2.7***	0.8	1.1	0.9
Degree of urbanization (Thinly populated area)	Density populated area	0.3***	0.9***	0.7***	0.9	1.2***	2.8***	0.5***	1.1	1.1	-	1.7***
	Intermediate area	0.2***	1.7***	1.3***	0.8***	1.0	0.7***	1.8***	0.9	0.8	1.2	1.2
Highest level of education completed (Medium: Upper secondary)	High: Third level	0.8	1.1	1.1	0.9***	1.0	1.3	1.3***	0.8***	1.0	1.4	1.6***
	Low: Lower secondary	0.9	1.0	1.2**	1.0	1.2***	1.2	0.6***	1.8***	1.2	0.7	0.8***
Number of person(s) in the household (More than 1 person)	1 person	1.0	0.7*	1.0	1.0	1.0	1.3	0.5***	0.2***	2.7***	-	-
Working status (Unemployed)	Employed	0.8	1.3	1.0*	1.3	1.2*	0.8***	8.3	0.8***	0.9	2.2	2.4***
	Inactive	0.9	1.3	1.3***	1.5***	1.6***	1.6***	220.0***	4.7***	1.0	9.1**	0.4***

Notes:
- The reference category is presented in parenthesis;
- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively;
- Parentheses in the first rows show the 2011 LFS AHM non-response rate (conditional on completion of the LFS core).

1.3.3. Partial non-response

This section aims to provide information on partial non-response, in particular in order to see, per LFS AHM variable, if the profile of the respondents differs from the profile of the non-respondents. The background variables chosen for this comparative analysis are the gender, the age, the marital status, the degree of urbanisation, the number of person(s) in the household, the level of education and the employment status. The study was carried out at the scale of the whole countries participating in the LFS AHM.

In the analysis presented below, figures between parentheses provide the differences observed between the distributions of respondents and non-respondents. For example table 8 shows, for the first main type of longstanding health condition or disease (HEALTHMA), that 35.9 % of the respondents and 20.1 % of the non-respondents are from a thinly populated area. It means that the proportion of persons from a thinly populated area is higher among respondents than among non-respondents (+ 15.8 percentage points). Then, it also appeared that the share of persons showing a lower secondary educational level and the share of inactive persons are higher among respondents than among non-respondents (+ 14.5 percentage points and + 17.5 percentage points respectively). On the other hand, the percentages of persons from an intermediate area, of persons showing an upper secondary educational level and of employed persons are lower among respondents than among non-respondents (– 10.7 percentage points, – 11.4 percentage points and – 22.0 percentage points respectively). Similar trends were observed during the analysis of the second main type of longstanding health condition or disease (HEALTHSE).

Regarding the first basic activity difficulty (DIFFICMA), respondents mainly showed more people aged 15-24 years old (+ 8.6 percentage points) and less persons aged 55-64 years (– 8.9 percentage points) than non-respondents. As regards the second basic activity difficulty (DIFFICSE) the proportions of persons aged 55-64, of persons from a thinly populated area, of people showing a lower secondary educational level and of inactive persons are higher among respondents than among non-respondents (+ 10.1 percentage points, + 19.0 percentage points, + 17.6 percentage points and + 17.0 percentage points respectively). In parallel, the percentages of persons from a densely populated area, of people showing a third educational level and of employed persons are lower among respondents than among non-respondents (– 17.6 percentage points, – 10.0 percentage points and – 16.7 percentage points respectively).

The comparative analysis then focused on the three questions about the health condition(s) or disease(s) or difficulty(ies) that cause(s) the person's limitation in the number of hours that he/she can work in a week (LIMHOURS), in the type of work that he/she can do (LIMTYPEW) or in getting to and from work (LIMTRANS). Similar trends were observed for those variables: the shares of persons from a thinly populated area and of employed persons are higher among respondents than among non-respondents (+ 15.7 percentage points and 10.2 percentage points respectively on average). Besides, the proportion of inactive persons is lower among respondents than among non-respondents (– 11.1 percentage points on average).

Regarding questions about the reasons for needing (not employed persons) or using (employed persons) personal assistance (NEEDHELP), special equipment or workplace adaptations (NEEDADAP), or special working arrangements (NEEDORGA) to enable the person to work, the same trends were observed. The percentages of persons from a thinly populated area and of employed persons are higher among respondents than among non-respondents (+ 9.2 percentage points and + 13.9 percentage points respectively on average). Furthermore, the proportions of persons from an intermediate area and of inactive persons are lower among respondents than among non-respondents (– 10.1 percentage points and – 16.7 percentage points respectively on average).

Finally, as regards the question on the limitations in work due to environmental factors (LIMREAS), it mainly appeared that the shares of persons from an intermediate area and of inactive persons are lower among respondents than among non-respondents (– 11.7 percentage points and – 10.5 percentage points respectively).

Table 8: Profiles of the respondents and non-respondents per LFS AHM variable, in %

		HEALTHMA		HEALTHSE		DIFFICMA		DIFFICSE		LIMHOURS		LIMTYPEW		LIMTRANS		NEEDHELP		NEEDADAP		NEEDORGA		LIMREAS	
		NR	R	NR	R	NR	R	NR	R	NR	R	NR	R	NR	R	NR	R	NR	R	NR	R	NR	R
Gender	Male	50.1	48.7	48.5	44.8	50.0	48.7	47.2	43.4	48.2	45.2	48.3	45.2	48.8	45.2	44.8	45.3	44.7	45.3	44.8	45.3	46.2	48.8
	Female	49.9	51.3	51.5	55.2	50.0	51.3	52.8	56.6	51.8	54.8	51.7	54.8	51.2	54.8	55.2	54.7	55.3	54.7	55.2	54.7	53.8	51.2
Age	15-24	11.8	18.0	9.6	6.7	9.5	18.1	8.5	5.1	7.7	7.2	7.6	7.2	6.8	7.3	7.0	7.3	7.0	7.3	7.0	7.3	13.7	18.1
	25-34	16.5	18.0	13.5	9.9	13.7	18.0	11.9	7.7	10.0	10.4	10.3	10.4	10.2	10.4	10.6	10.4	10.3	10.4	10.4	10.4	15.8	18.0
	35-44	21.2	21.3	21.0	17.2	19.7	21.3	17.7	15.1	15.0	17.7	15.3	17.7	15.1	17.7	18.4	17.6	17.9	17.6	18.1	17.6	22.5	21.2
	45-54	28.6	22.2	27.2	27.8	27.8	22.2	28.3	28.6	26.8	27.8	26.7	27.8	27.4	27.7	26.8	27.8	26.5	27.8	26.7	27.8	23.4	22.2
	55-64	22.0	20.6	28.6	38.4	29.4	20.5	33.5	43.6	40.5	36.8	40.0	36.9	40.5	36.8	37.2	36.9	38.2	36.9	37.8	36.9	24.6	20.5
Marital status	Persons whose legal union ended	10.5	9.0	15.6	14.2	13.0	9.0	17.2	16.2	15.4	14.2	15.0	14.2	15.8	14.2	17.3	14.0	17.0	14.1	16.9	14.1	13.1	8.9
	Single	33.9	36.0	30.0	23.3	33.6	36.0	29.6	20.9	30.1	24.0	30.6	24.0	29.6	24.1	27.6	24.0	27.2	24.1	27.5	24.1	34.5	36.0
	Persons in legal unions	55.6	55.0	54.4	62.5	53.4	55.1	53.1	62.9	54.5	61.8	54.4	61.8	54.6	61.8	55.0	61.9	55.7	61.9	55.6	61.9	52.4	55.1
Degree of urbanisation	Densely populated area	44.7	39.6	46.2	37.3	39.0	39.7	53.6	35.9	45.2	38.3	45.7	38.3	45.5	38.3	36.6	38.7	38.2	38.6	38.3	38.6	36.1	39.7
	Intermediate area	35.2	24.5	28.0	24.7	31.0	24.5	26.2	24.8	33.5	24.8	33.0	24.9	33.6	24.8	34.2	24.6	35.0	24.6	34.9	24.6	35.9	24.3
	Thinly populated area	20.1	35.9	25.8	38.0	30.0	35.8	20.2	39.3	21.3	36.9	21.3	36.9	20.9	36.9	29.2	36.7	26.7	36.8	26.8	36.8	28.0	36.0
Number of person(s) in the household	1 person	15.7	9.2	15.8	12.5	12.3	9.2	20.3	13.6	20.3	12.6	20.2	12.6	20.9	12.6	16.5	12.7	17.8	12.6	17.5	12.6	13.9	9.2
	More than 1 person	84.3	90.8	84.2	87.5	87.7	90.8	79.7	86.4	79.7	87.4	79.8	87.4	79.1	87.4	83.5	87.3	82.2	87.4	82.5	87.4	86.1	90.8
Level of education	Low: Lower secondary	20.9	35.5	28.7	44.6	31.3	35.4	30.6	48.2	42.4	42.6	41.5	42.6	40.2	42.7	43.3	42.6	45.1	42.5	45.0	42.5	37.0	35.3
	Medium: Upper secondary	54.9	43.5	47.8	39.9	48.0	43.5	47.6	40.0	41.6	40.7	41.6	40.7	43.2	40.7	37.9	40.9	36.9	40.9	36.9	40.9	37.3	43.7
	High: Third level	24.2	21.0	23.5	15.5	20.7	21.1	21.8	11.8	16.0	16.7	16.8	16.6	16.6	16.7	18.8	16.5	18.0	16.6	18.1	16.6	25.7	21.0
Employment status	Employed	83.5	61.5	64.3	50.0	64.2	61.6	59.4	42.6	40.8	52.5	43.6	52.4	42.4	52.4	41.9	52.7	37.1	52.9	37.7	52.9	53.4	61.9
	Unemployed	2.0	6.5	4.9	5.9	2.1	6.5	5.6	5.3	5.3	5.8	4.8	5.9	4.6	5.9	3.0	6.0	3.2	6.0	3.3	5.9	4.5	6.5
	Inactive	14.5	32.0	30.8	44.1	33.7	31.9	35.0	52.0	53.9	41.7	51.6	41.7	53.0	41.7	55.2	41.3	59.6	41.2	59.0	41.2	42.1	31.6

Note:
-'NR' means "Non-respondents, and 'R' means "Respondents".

1.4. Impact of the proxy utilisation in the 2011 LFS AHM

This section aims to evaluate if the proxy use had an impact on answers. The proxy use means that the participation in the survey was done via another member of the household. The data related to the proxy analysis are available in Annex 3.

1.4.1. Proxy use per country

Table 9 shows whether countries allowed or not the participation in the LFS AHM through another member of the household. The proxy responses were allowed in all countries, except in Belgium, France and Norway. An exception applied to France where the proxy use was granted only if the concerned person was unable (for health reasons) to answer without assistance.

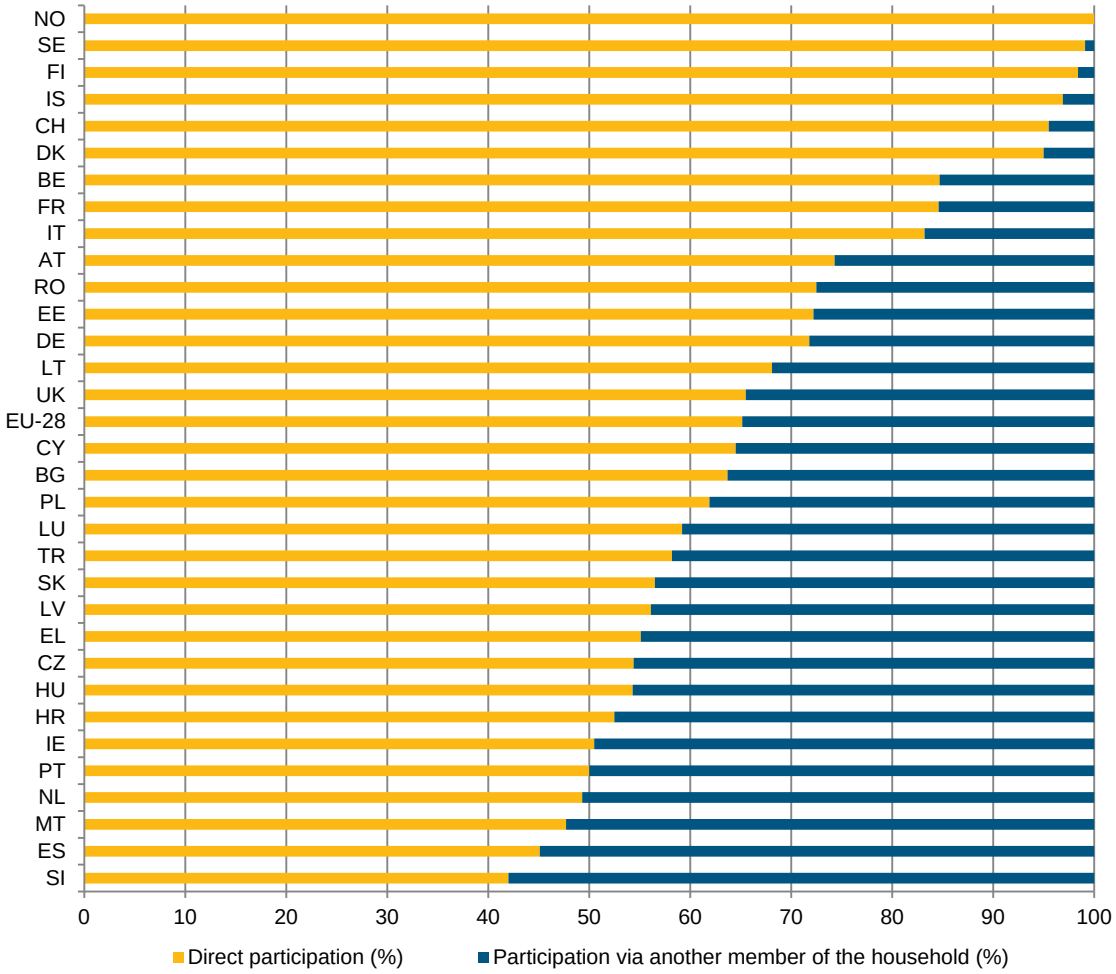
Table 9: List of the countries which allowed proxy use in the 2011 Labour Force Survey ad hoc module on employment of people with disabilities

Proxy allowed for the 2011 LFS AHM	Number of countries	List of countries
Yes	29	BG, CZ, DK, DE, EE, IE, EL, ES, HR, IT, CY, LV, LT, LU, HU, MT, NL, AT, PL, PT, RO, SI, SK, FI, SE, UK, IS, CH, TR
No	2	BE, NO
No, except when the person is unable for health reasons to answer without assistance	1	FR

Thanks to the variable asking for the nature of the participation in the survey (direct participation or proxy answer), figure 9 provides the percentage of persons directly surveyed along with the percentage of persons surveyed via another member of the household for the 2011 LFS AHM on employment of people with disabilities.

The proxy use varied from 0.9 % in Sweden to 58.0 % in Slovenia. At the EU-28 level, this rate reached 34.8 %. In Belgium, although the participation via another member of the household was not allowed, a non-null proxy rate of 15.3 % appeared in the microdata.

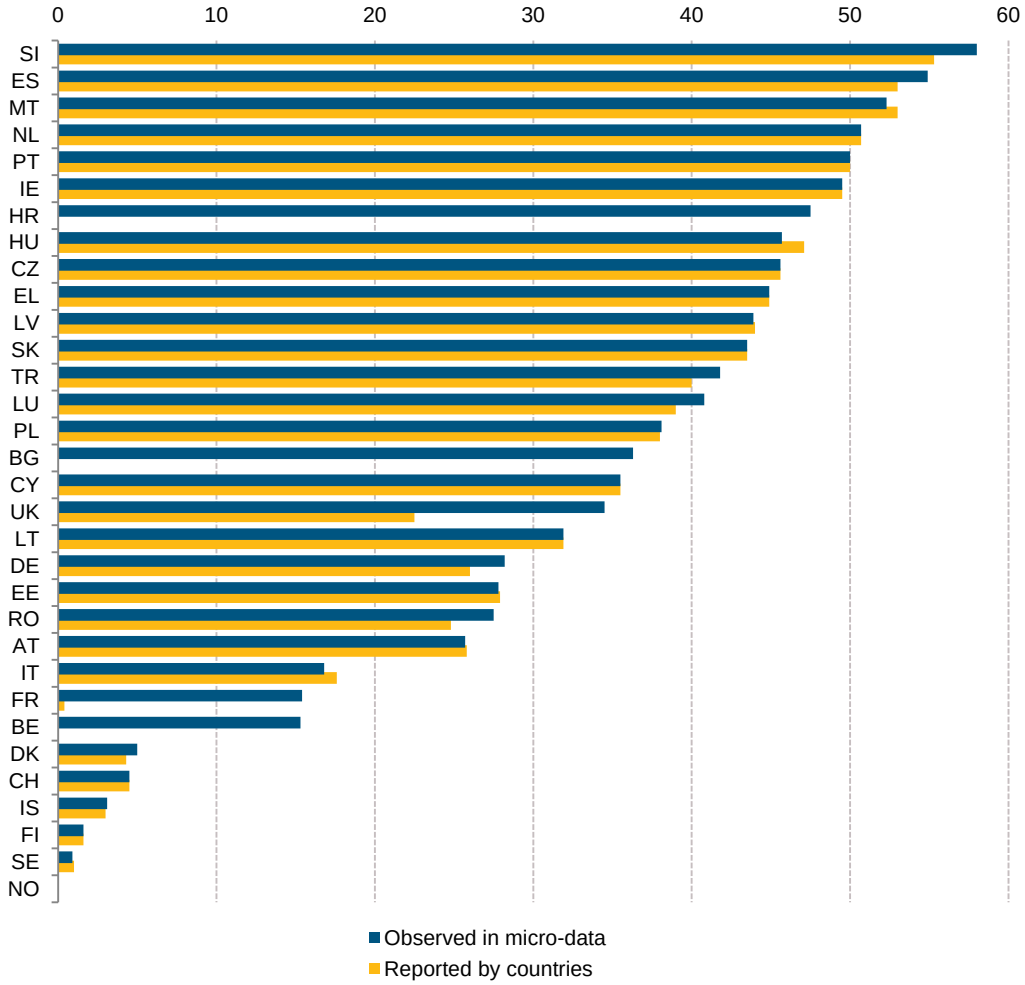
Figure 9 - Percentage of persons directly surveyed and surveyed via another member of the household



As in the section dedicated to the non-response analysis, country declarations in the quality reports and the values in the microdata have been compared thanks to the variable named PROXY. In figure 10, the proxy rate in the respondent population reported by the country is compared to the one calculated from the microdata.

The highest gap observed between the rates declared by the country and calculated from the microdata was at 15.3 percentage points in Belgium. In Bulgaria, Croatia and Norway, no proxy rate was reported by the countries. Consequently, they could not be confronted to the microdata.

Figure 10 - Comparison of the 2011 LFS AHM participation via another member of the household, from the microdata and from the reports supplied by the countries
(%)



1.4.2. Profile of the proxy respondents

This section attempts to determine the profiles of the proxy respondents. Tables 10 to 12 focus on the distribution of a selection of demographic variables by proxy use (direct vs. indirect participation). These tables aim to point out that the persons who participated via another member of the household do not necessarily have the same profile as the people who participated directly. Results are provided for the ten countries showing the highest rates of proxy use, that is the Czech Republic (45.6 %), Ireland (49.5 %), Greece (44.9 %), Spain (54.9 %), Croatia (47.5 %), Hungary (45.7 %), Malta (52.3 %), the Netherlands (50.7 %), Portugal (50.0 %) and Slovenia (58.0 %).

A chi-square test was applied at different error rates (5 %, 1 % and 0.1 %) in order to determine if the observed differences are statistically significant. The symbols *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 %, respectively. The figures highlighted in colour (only when the chi-square test is significant) are those where the majority differs between persons who participated directly to the questionnaire and persons who participated via another member of the household. Parentheses in the first column show the proxy rates of the ten investigated countries for the LFS AHM.

As an illustration, in Ireland, among persons who responded directly to the questionnaire, a majority were female (59.9 %) whereas among persons who responded via another member of the household, men were over-represented (58.1 %). The independence chi-square test is significant at risk 0.1 %, meaning that the proxy use is related to the gender of the surveyed persons in this country.

Regarding the overall results across the ten selected countries, the proxy use seems to be mainly linked to the gender, the marital status and the age of the surveyed persons. Indeed, it appeared that persons who responded directly to the module were most often female, married and over 35 years old, whereas persons who responded via another member of the household were most frequently male, single, and under the age of 25.

Table 10: Distribution of demographic characteristics by proxy use, in % (Part 1)

		Marital status			Degree of urbanisation			Number of persons in the household ([8])	
		Persons whose legal union ended	*Single*	*Persons in legal unions*	*Density pop. area*	*Intermediate area*	*Thinly pop. area*	*1 person*	*> 1 person*
CZ	Direct	20.0***	21.6***	58.4***	28.7***	27.0***	44.3***	16.1***	83.9***
(45.6 %)	Proxy	5.8***	44.8***	49.4***	24.7***	26.0***	49.3***	-	100.0***
IE	Direct	10.1***	35.2***	54.6***	29.3***	-	70.7***	13.1***	86.9***
(49.5 %)	Proxy	2.2***	51.2***	46.7***	31.5***	-	68.5***	0.4***	99.6***
EL	Direct	9.4***	23.3***	67.3***	36.1***	10.9***	53.0***	15.6***	84.4***
(44.9 %)	Proxy	2.0***	45.0***	52.9***	37.6***	11.9***	50.4***	-	100.0***
ES	Direct	12.8***	25.0***	62.2***	45.0***	24.0***	30.9***	12.8***	87.2***
(54.9 %)	Proxy	3.1***	46.4***	50.4***	43.5***	24.2***	32.2***	-	100.0***
HR	Direct	12.2***	17.7***	70.1***	51.4	48.5	0.1	10.4***	89.6***
(47.5 %)	Proxy	2.4***	53.1***	44.4***	52.6	47.3	0.2	0.3***	99.7***
HU	Direct	20.0***	27.5***	52.5***	18.5*	22.5*	58.9*	12.9***	87.1***
(45.7 %)	Proxy	6.1***	50.7***	43.1***	17.6*	23.3*	59.1*	-	100.0***
MT	Direct	10.1***	19.0***	70.9***	83.2	8.0	8.8	9.1***	90.9***
(52.3 %)	Proxy	2.7***	53.5***	43.8***	82.9	8.9	8.2	-	100.0***
NL	Direct	13.3***	29.9***	56.9***	64.3***	33.7***	2.0***	20.6***	79.4***
(50.7 %)	Proxy	2.1***	45.8***	52.1***	59.4***	38.4***	2.1***	-	100.0***
PT	Direct	14.4***	23.0***	62.6***	35.1**	35.1**	29.8**	9.8***	90.2***
(50.0 %)	Proxy	4.3***	47.0***	48.7***	33.8**	37.1**	29.1**	-	100.0***
SI	Direct	8.2***	30.0***	61.8***	20.4	36.7	42.9	9.3***	90.7***
(58.0 %)	Proxy	1.7***	52.6***	45.7***	19.3	36.2	44.4	0.1***	99.9***

Notes:
- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively;
- The figures highlighted in colour are those where the majority is different between the Direct and the Proxy groups (only highlighted if the chi-square test is significant);
- Parentheses in the first column show the proxy rates for the 2011 LFS AHM.

Table 11: Distribution of demographic characteristics by proxy use, in % (Part 2)

		Gender		Age				
		Male	*Female*	*15-24*	*25-34*	*35-44*	*45-54*	*55-64*
CZ	Direct	38.7***	61.3***	7.3***	17.8***	22.5***	21.8***	30.6***
(45.6 %)	Proxy	60.5***	39.5***	29.2***	17.9***	19.5***	16.9***	16.4***
IE	Direct	40.1***	59.9***	8.2***	23.3***	27.3***	22.1***	19.1***
(49.5 %)	Proxy	58.1***	41.9***	30.1***	20.8***	19.3***	17.2***	12.7***
EL	Direct	43.3***	56.7***	7.9***	16.1***	24.8***	26.6***	24.7***
(44.9 %)	Proxy	56.1***	43.9***	24.0***	21.2***	20.0***	18.1***	16.7***
ES	Direct	38.3***	61.7***	3.0***	15.4***	28.2***	29.7***	23.6***
(54.9 %)	Proxy	57.8***	42.2***	24.2***	20.3***	19.8***	19.5***	16.2***
HR	Direct	42.3***	57.7***	5.3***	11.8***	18.0***	31.0***	33.9***
(47.5 %)	Proxy	57.0***	43.0***	32.3***	20.7***	14.5***	18.2***	14.3***
HU	Direct	38.3***	61.7***	10.5***	16.4***	22.1***	22.4***	28.6***
(45.7 %)	Proxy	62.2***	37.8***	29.9***	19.5***	17.8***	17.0***	15.8***
MT	Direct	39.8***	60.2***	6.3***	14.9***	23.2***	27.7***	28.0***
(52.3 %)	Proxy	60.4***	39.6***	33.5***	19.6***	14.5***	17.1***	15.3***
NL	Direct	41.7***	58.3***	5.9***	17.6***	23.2***	29.3***	24.0***
(50.7 %)	Proxy	57.0***	43.0***	33.7***	13.2***	16.7***	20.1***	16.3***
PT	Direct	41.5***	58.5***	7.0***	13.6***	23.3***	28.2***	27.8***
(50.0 %)	Proxy	54.7***	45.3***	27.9***	18.0***	17.3***	19.8***	17.1***
SI	Direct	36.7***	63.3***	5.5***	15.7***	20.8***	29.1***	28.9***
(58.0 %)	Proxy	58.8***	41.2***	26.2***	20.7***	15.7***	20.3***	17.2***

Notes:
- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively;
- The figures highlighted in colour are those where the majority is different between the Direct and the Proxy groups (only highlighted if the chi-square test is significant);
- Parentheses in the first column show the proxy rates for the 2011 LFS AHM.

([8]) During the analysis of background variables, it appeared that household in CH are only composed of 1 person, while households in SE, IS and NO are always composed of more than 1 person (see Annex 3).

Table 12: Distribution of demographic characteristics by proxy use, in % (Part 3)

		Working status			Highest level of education Completed ([9])		
		Employed	*Unemployed*	*Inactive*	*Low*	*Medium*	*High*
CZ	Direct	63.0***	6.4***	30.5***	11.5***	74.2***	14.4***
(45.6 %)	Proxy	64.2***	3.9***	31.9***	19.7***	66.9***	13.4***
IE	Direct	59.4***	10.3***	30.3***	27.2***	36.7***	36.1***
(49.5 %)	Proxy	57.9***	9.9***	32.2***	33.7***	37.7***	28.6***
EL	Direct	57.2***	9.9***	32.9***	40.0***	39.2***	20.8***
(44.9 %)	Proxy	54.6***	11.7***	33.7***	42.9***	38.9***	18.2***
ES	Direct	59.3***	14.2***	26.5***	46.2***	21.8***	32.1***
(54.9 %)	Proxy	56.0***	14.3***	29.7***	49.8***	23.2***	27.0***
HR	Direct	52.4	8.5	39.0	26.6*	57.2*	16.2*
(47.5 %)	Proxy	52.0	8.7	39.3	26.7*	59.7*	13.6*
HU	Direct	51.0***	7.7***	41.3***	26.8***	58.1***	15.1***
(45.7 %)	Proxy	53.3***	6.3***	40.5***	30.4***	56.9***	12.7***
MT	Direct	50.9***	4.0***	45.1***	62.0***	23.4***	14.6***
(52.3 %)	Proxy	61.2***	5.0***	33.8***	52.6***	33.4***	14.0***
NL	Direct	77.2***	4.0***	18.8***	23.2***	43.1***	33.7***
(50.7 %)	Proxy	76.6***	3.5***	19.9***	40.1***	37.8***	22.1***
PT	Direct	64.9***	9.6***	25.5***	69.9***	16.3***	13.9***
(50.0 %)	Proxy	58.0***	8.7***	33.4***	68.8***	19.4***	11.8***
SI	Direct	64.4***	5.6***	30.0***	17.0***	57.4***	25.6***
(58.0 %)	Proxy	61.0***	5.1***	33.9***	22.9***	58.6***	18.5***

Notes:
- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively;
- The figures highlighted in colour are those where the majority is different between the Direct and the Proxy groups (only highlighted if the chi-square test is significant);
- Parentheses in the first column show the proxy rates for the 2011 LFS AHM.

Figure 11 provides a visual description of the differences described earlier. The focus is put on the gender which shows the most significant link with the nature of the participation in the survey (direct or indirect). Results are shown for the ten countries showing the highest rates of indirect participation in the module.

To illustrate an example from the graph, in Hungary, among persons who responded directly to the module's questions, 38.3 % were males and 62.2 % were females, whereas these rates were respectively 61.7 % and 37.8 % among persons who answered through another member of the household.

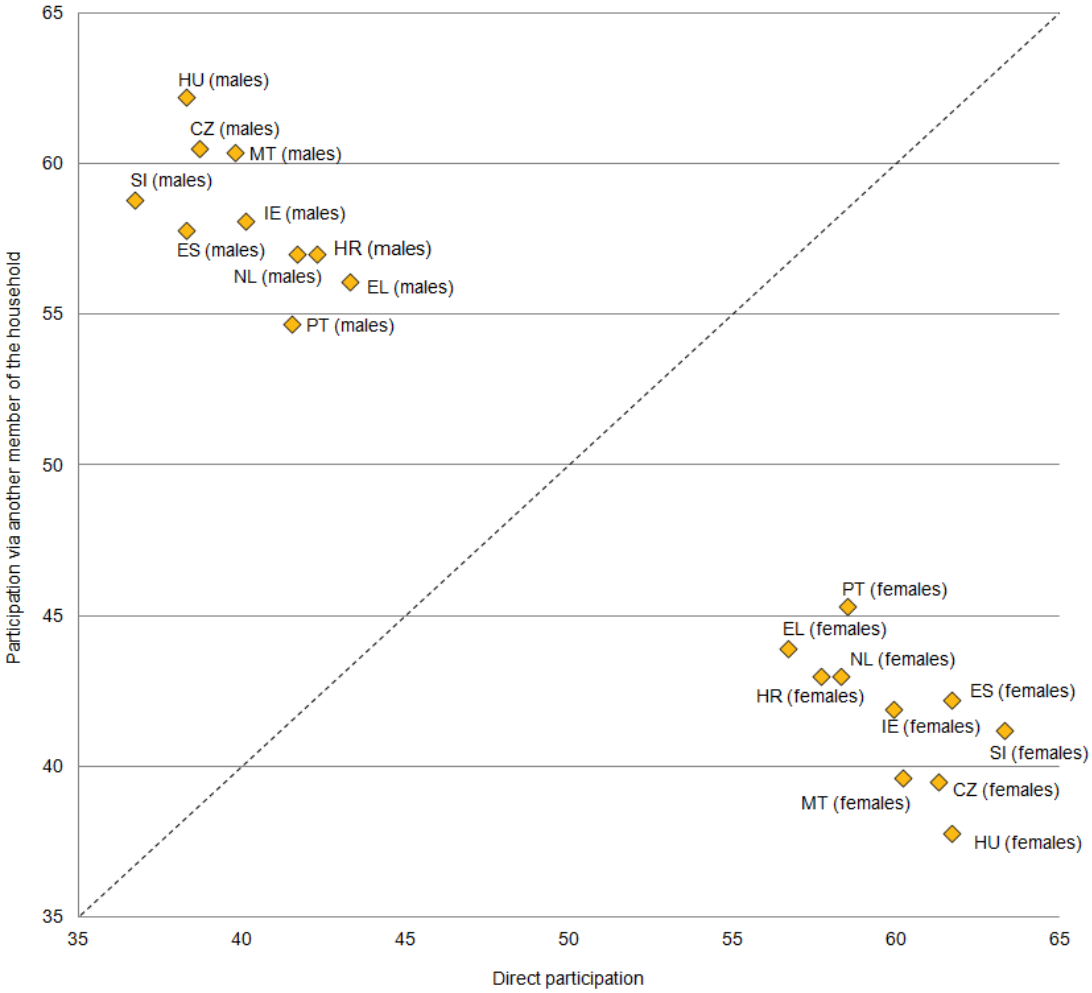
Regarding the overall results, the influence of the gender on the nature of participation in the survey is visually obvious. For all ten selected countries, males are found in the upper left corner of the graph whereas females are on the bottom right corner. Among persons who responded directly to the module, most (around 60 %) were females; among persons who responded via another member of the household, most (around 60 %) were males.

Please note that a variable not linked to the proxy use would have its corresponding points on the centre of the graph (around 50 % on the x-axis and 50 % on the y-axis).

([9]) Highest level of education (Low, Medium and High) is from the derived variable HATLEV1D (see EU Labour Force Survey database User Guide, November 2012).

Figure 11 – Proportion of males and females among persons who participated directly and among persons who responded via another member of the household to the 2011 LFS AHM on employment of people with disabilities

(%)



A multivariate logistic regression was applied to measure the probabilities to respond indirectly to the module given the following explanatory variables: gender, age, marital status, degree of urbanisation, highest level of education completed and working status. As outlined previously, results are provided for the ten countries showing the highest rates of indirect participations.

Table 13 shows the results of the logistic regression, modelling the probability to respond indirectly using the demographic characteristics as predictor variables. Odd-ratios are provided at risk 5 %, 1 % and 0.1 %. The symbols *, ** and *** mean that the chi-square test (evaluating if predictor's regression coefficient is zero) is significant at an error rate of 5 %, 1 % and 0.1 %, respectively. Parentheses in the first line of the table show the proxy rates of the ten investigated countries for the 2011 LFS AHM on employment of people with disabilities.

Regarding the odds ratios presented in the table, it should be noted that the variables influencing the participation in the module most are the gender and the age. On average, calculated on the ten selected countries, a female was 2.1 times more likely to participate directly to the survey than a male, and a person aged 15-24 has 0.2 times the probability of persons aged 55-64 to participate directly to the survey.

Table 13: Odd-Ratios (per country) of being a direct participant, by demographic characteristics (unweighted)

		CZ (45.6 %)	IE (49.5 %)	EL (44.9 %)	ES (54.9 %)	HR (47.5 %)	HU (45.7 %)	MT (52.3 %)	NL (50.7 %)	PT (50.0 %)	SI (58.0 %)
Gender (Male)	Female	2.4***	2.1***	1.5***	2.2***	1.7***	2.5***	2.3***	2.0***	1.6***	2.5***
Age (55-64)	15-24	0.2***	0.2***	0.3***	0.1***	0.1***	0.2***	0.2***	0.1***	0.2***	0.5***
	25-34	0.7***	0.7***	0.7***	0.5	0.4***	0.6	0.6	0.7***	0.5***	0.5**
	35-44	0.7***	1.0***	0.9***	1.0***	0.7***	0.9***	1.0***	0.9***	0.8***	0.8***
	45-54	0.8***	0.9***	1.1***	1.1***	0.8***	0.8***	1.0***	1.0***	0.9***	0.8***
Marital status (Persons whose legal union ended)	Single	0.4***	0.3***	0.2***	0.4***	0.2***	0.4***	0.2***	0.3***	0.3***	0.3***
	Persons in legal union	0.4***	0.3***	0.3***	0.3***	0.4	0.4***	0.4	0.2***	0.4***	0.3***
Degree of urbanization (Thinly populated area)	Density populated area	1.3***	0.9***	0.9	1.0	2.7	1.0	0.9	1.1**	1.0	1.0
	Intermediate area	1.2	-	0.9**	1.0	3.1	1.0	0.8	0.9**	1.0	1.0
Highest level of education completed (Medium: Upper secondary)	High	0.9**	1.1***	1.0***	1.0***	1.1	1.1**	1.1	1.1***	1.0	1.1***
	Low	0.7***	0.8***	0.8***	0.8***	0.9*	0.9***	0.9**	0.6***	0.9***	0.8***
Working status (Unemployed)	Employed	0.4***	0.7***	0.8***	0.6***	0.6***	0.6***	0.6***	0.6***	0.8*	0.8*
	Inactive	*0.6*	*0.9***	*0.9*	*0.8*	*0.8*	*0.9***	*0.9*	*0.7***	*0.8****	*0.8*

Notes:
- The reference category is presented in parenthesis;
- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively;
- Parentheses in the first column show the proxy rates for the 2011 LFS AHM.

1.4.3. Impact on the answer rate

This section analyzes whether the proxy use had an impact on the answer rate, in particular concerning the questions on longstanding health problems and basic activity difficulties

Figure 12 provides the percentage of persons declaring a longstanding health problem for people who participated directly to the 2011 EU-LFS AHM questionnaire, and for people who participated via another member of the household. Those who directly participated to the survey more frequently declared a longstanding health problem, except in Switzerland. The highest divergence between direct and indirect participation was recorded in Finland, showing a difference of 17.8 percentage points.

Figure 13 provides the percentage of persons declaring a basic activity for people who participated directly in the 2011 LFS AHM questionnaire, and for people who participated via another member of the household. As observed for longstanding health problems, it showed that persons who directly participated in the survey declared more often a basic activity difficulty, except for Switzerland and Sweden. The highest divergence between direct and indirect participation was recorded in Luxembourg, showing a difference of 14.3 percentage points.

Therefore, the proxy use may impact the answers of the surveyed persons. Indeed, it seems that the persons who responded on behalf of another member of the household tend to minimize the existence of a longstanding health problem or a basic activity difficulty.

Figure 12 - Persons having a longstanding health problem by nature of participation in the survey

(%)

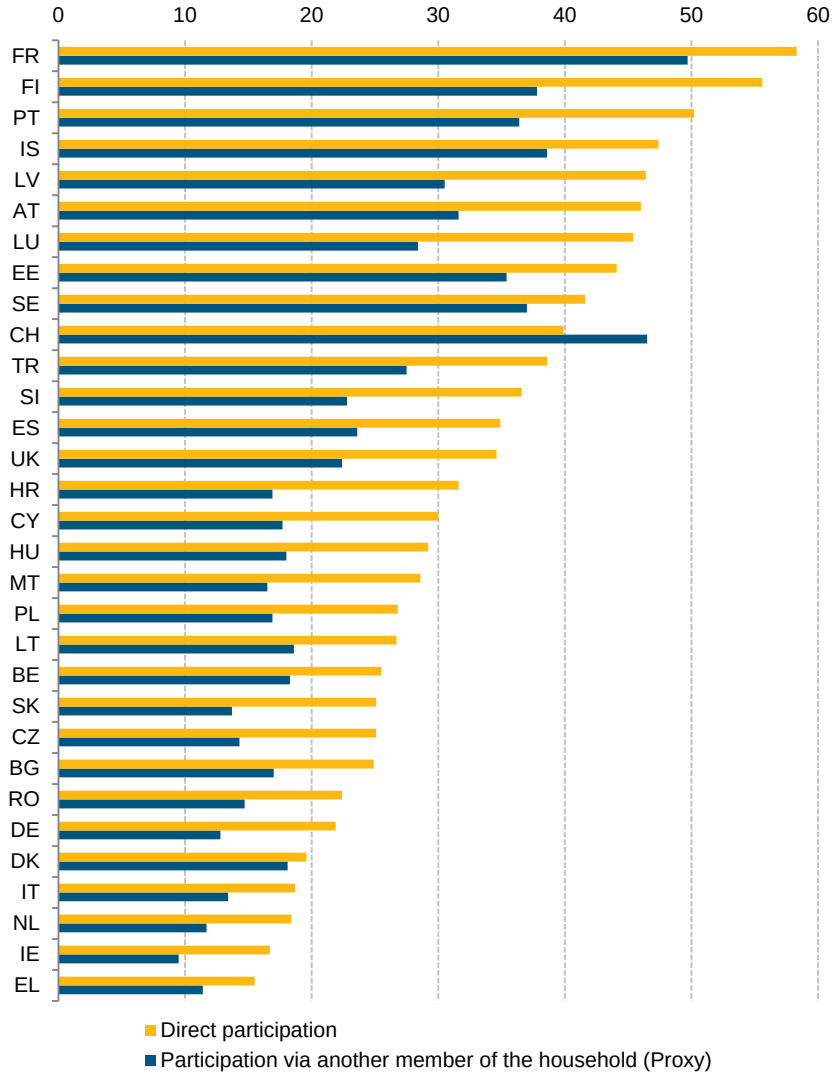
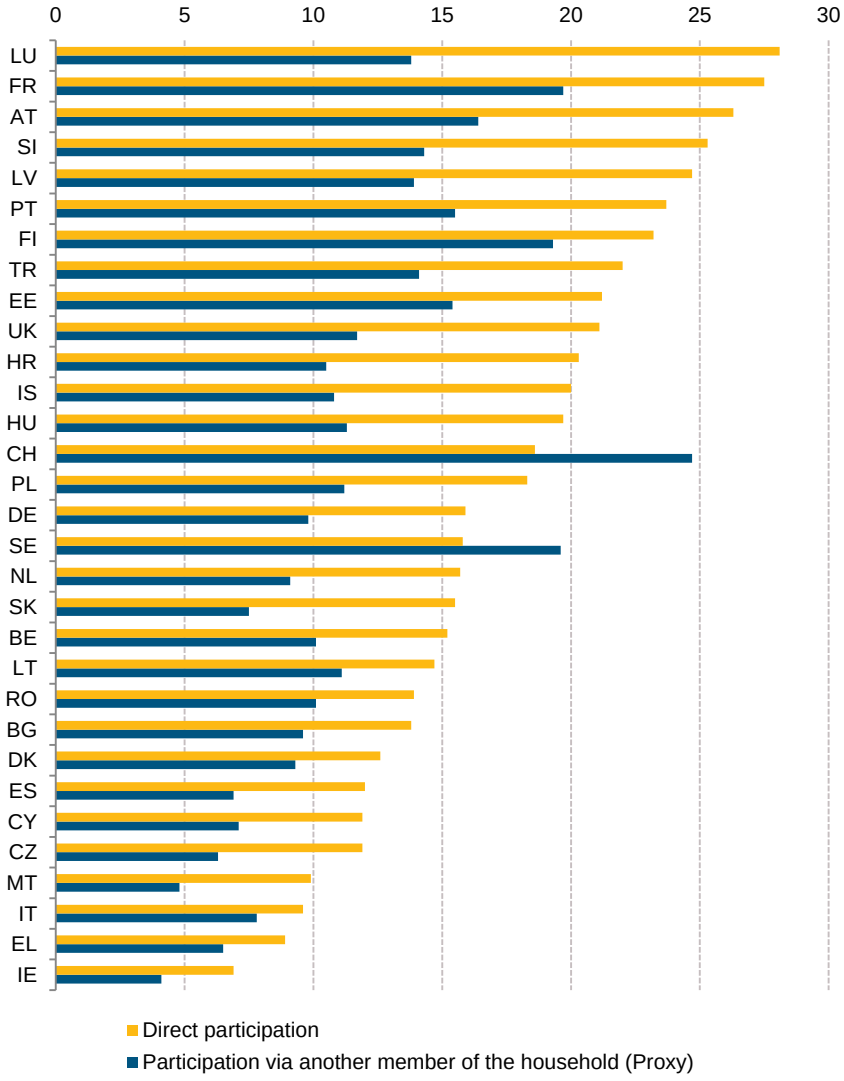


Figure 13 – Persons having a basic activity difficulty, by nature of participation in the survey
(%)



Analysis of the national LFS AHM questionnaires on employment of disabled people and evaluation of the data quality

2

2. Analysis of the national 2011 LFS AHM questionnaires on employment of disabled people

This chapter aims at presenting a qualitative evaluation of the 2011 LFS AHM national questionnaires. The evaluation identifies issues and discusses their potential impact on cross-country comparisons.

This section focuses on the national questionnaires, the related trans-codification and frequency tables (showing the codes used to create the disability variables). Interviewer instructions are referred to for clarification. The list of the material available for each country is provided in Table 1, Chapter 1. Luxembourg which provided only incomplete documents was excluded from the analysis.

2.1. Analysis plan

As for the methodological evaluation of the national implementation (see chapter 1), an Excel file was created to centralize all the information transmitted to Eurostat (Annex 4). Then, six criteria were defined in order to evaluate the quality of the national collections through the 11 variables of the 2011 LFS AHM. They are based on the main characteristics identified during the analysis of the national questionnaires, trans-codification tables, interviewer instructions and frequency tables:

- Questionnaire structure: it takes into account the total number of questions in the national questionnaire, the order of the national questions, as well as the additional questions not required for calculating the EU variables;
- Availability of a given variable: it includes the variable collected as well as the number of national questions used to collect the EU variable.

The 4 next indicators are logically built on available variables only:

- Respect of filters: it compares national and EU recommended filters as well as whether the national instructions were in line with the LFS AHM regulation;
- Availability of modalities: it considers the available modalities, the number of national response categories to collect a given EU modality as well as the order of modalities;
- Programming accuracy ([10]): it looks at errors identified for the construction of EU variables/modalities, the respect of codifications as well the modalities not collected;
- Respect of recommended wording or concepts: it identifies deviations in questions and modalities.

A close analysis of micro data was also carried out in order to see whether the identified deviations affected the microdata (see Chapter 3).

When reading this chapter it is important to note that:

- For the construction of the EU model questionnaire for the 2011 LFS AHM the following restrictions were considered:
  - The total number of questions should be reasonable for a module composed of 11 variables;
  - Multiple answers were not allowed;
  - These restrictions do not apply to the countries when developing their national questionnaire. Moreover, countries could decide to investigate specific issues in more depth. For example, in Hungary, the questionnaire considered workers who did not use personal assistance but who declared that they would need it (these persons are coded NEEDHELP=No). And the questionnaire also considered non-workers who would need personal assistance but who declared that they could work without it (these persons are coded NEEDHELP=Yes). The EU model questionnaire did not consider the two above cases.

([10]) Analysis based on material available only i.e. transcodification tables / this criteria does not take into account problems met regarding the management of missing values – blank

- This evaluation was made on the basis of information provided in English from the participating non-English speaking countries. There may have been administrative or translation errors when the documents were translated into English.
- The mode of administration differed between countries. In some countries the survey module was administered by an interviewer using either paper and pencil or computerised interviewing. In other countries the survey was administered by telephone or the methods were mixed (see table 2 in previous chapter).

  The mode in which the survey was conducted can cause what are known as 'mode-effects'. "A mode effect occurs when respondents answer differently to a survey question, solely because of the mode in which the question is being administered" (Lugtig et al, 2011). Even where the same question is asked, different modes can produce different outputs.

  It is difficult to identify what might be mode effects from other differences in the data collection strategy employed. Furthermore, it is generally understood that factual questions such as those asked in the LFS are less susceptible to mode effect. However, Eurostat is currently funding a project named 'ESSnet Data Collection in Social Surveys using multiple modes'. As part of that project, the National Statistical Office of Germany has been studying mode effects using data from an experiment carried out using the German LFS questionnaire. Differences were found in the estimates produced from key variables such as education attainment and hours worked when comparing CAPI and PAPI data collection and CAPI and CATI (paper presented by Thomas Koerner, Federal Statistical Office Germany (Destatis) at the 2013 European Survey Research Association Conference in Slovenia).

2.2. Target population

The 2011 LFS AHM on employment of disabled people related to all persons aged 15 to 64 years. Since disability and health problems are correlated with age, any differences in the age ranges used could potentially affect cross-country comparability.

In three countries (Spain, the United Kingdom and Iceland), the target population for the ad-hoc module consisted of persons aged between 16 and 64. In the United Kingdom and in Spain, 15 year-old persons are only surveyed via the core questionnaire. In the United Kingdom, their participation in the core is done via another member of the household. In Spain, the information on participation in the survey via another member of the household is missing but it can be assumed that these persons participated also indirectly to the module. The Icelandic technical report specified that the ad-hoc module was aimed at those aged 16-64 while the core questionnaire targeted the population aged between 16 and 74.

2.3. Filter question

Despite the recommendation of Eurostat for not using a filter question at the beginning of the section dedicated to the 2011 LFS AHM, three countries did so. The respondents were asked whether or not they had a disability or health problem, without suggesting the full set of response categories. In case of a negative answer (i.e. no health problem or difficulty) they were not surveyed for the module. The related questions were respectively "Do you have any chronic diseases, conditions or disabilities?" (the Netherlands), "Have you, in your opinion, a disability?" (Norway) and "Do you have any health problems or disabilities that you expect will last for more than a year?" (the United Kingdom). In the latter case, it also appeared that the duration was not in line with the LFS AHM criteria (i.e. 6 months).

The additional filter or alternative question wording and restricted list of examples provided have the potential to elicit a different response than asking respondents to first select a health condition or disease and then to identify basic activity difficulties from a more comprehensive list of examples shown on a card. With a filter question there is a risk that respondents may not include their particular health problem, when answering the question, or may not consider it to be 'chronic'. The shown list of longstanding health conditions and diseases acts as an aide memoire for respondents, helping them to think about the different kinds of physical, mental and emotional health problems that may apply to them.

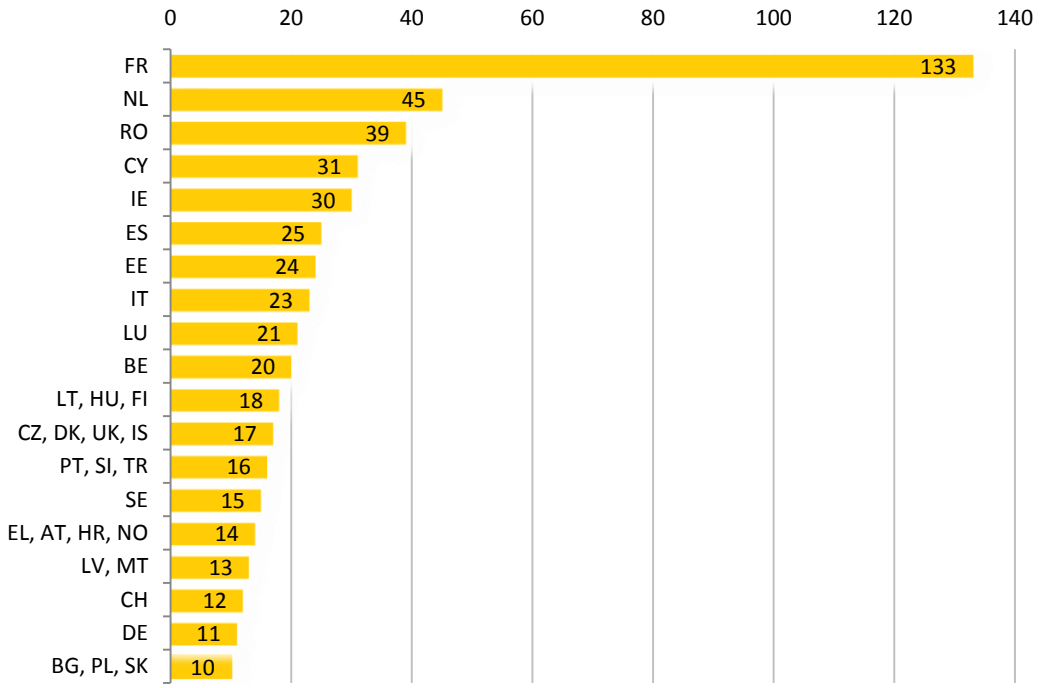
2.4. Structure of the national questionnaires

Number of questions

The model questionnaire produced by Eurostat formed a reference for the national questionnaires, although some countries did make their own adaptations (e.g. multiple answers or additional questions). The number of national questions used to collect the eleven variables of the 2011 LFS AHM varied from 10 questions in Bulgaria, Poland, and Slovakia, to 133 questions in France (figure 14).

Some of the differences in the number of questions listed are due to the different modes of survey administration. In telephone surveys, respondents are likely to be prompted individually for each item listed, whereas in a face-to-face survey they will be shown on a card and asked as a single question. For instance, if the respondent picks from a list on a show card as opposed to being prompted at each of the 17 categories of the variable HEALTHMA, there is likely to be an effect on the data. Where respondents are individually prompted, they often report more items than when they have to pick from a list (Smyth et al., 2006).

Figure 14 – Number of questions in the national questionnaires dedicated to the 2011 LFS AHM on employment of disabled people, per country



Order of the questions

The literature on questionnaire design mentions quite clearly that the order in which questions are asked can affect the results. This is because respondents are influenced by the topic of the previous questioning or the way in which the previous question or the response options were worded. Here, the order of national questions followed the EU model questionnaire in most countries, except in Norway and Germany. Norway collected only six of the eleven variables of the module. Questions on the second health problem, on the difficulties, on the personal assistance and on limitation in work because of environmental factors were not included in the national questionnaire. Also, the order of questions on the limitations in working activities and the special assistance used or needed did not match the EU model questionnaire. In Germany, the variable on the limitation in work because of environmental factors was asked just after the questions on limitations in working activities because of health reasons and before the questions on the special assistance used or needed, instead of being asked at the end of the questionnaire.

Additional questions

Eight countries included additional questions to the 2011 LFS AHM survey, whose influence may depend on their position in the questionnaire.

Only Spain asked additional questions before the questions of the module were expressed. In total, 8 additional questions concerned having a longstanding health condition and the link between work and health condition.

Five countries asked additional questions within the module. France included 62 additional questions on the health problem and daily activity difficulties (duration, origin, considered as a professional disease, cause of aggravation of the disease), the official recognition of the disability, the consequence of the health problem or daily activity difficulty at work, the schooling, and other reasons of limitations at work. Italy asked four additional questions to persons who were in employment about discrimination in the work place and whether they needed more assistance to work in case they have already assistance to work. The Netherlands included 2 additional questions on the difficulties due to the health problem. Austria included 3 additional questions concerning the person that provided the personal

assistance and on the official recognition of the disease by an institution. Finland included 4 additional questions on the evaluation of the state of health and of the incapacity for work and reasons for not working.

Two countries asked additional questions at the end of the module which would, of course, not have affected the responses to the 2011 LFS AHM survey. Estonia included 7 additional questions on accidents at work, the work-related health problems, and the general assessment of health. Poland included one additional question about the use of proxy (participation in the survey via another member of the household).

2.5. National specificities regarding some concepts

Distinction between employed and non-employed persons

According to the LFS AHM explanatory notes, the wording of the questions related to the special assistance used or needed should be adapted according to whether the respondent was employed or not employed,

- Using the conditional tense, in this case the word 'need' for those not employed, and
- Using the present simple tense, in this case 'use' or 'have' for those who were employed.

Following this approach, thirteen countries used the same distinction for variables dealing with limitations in working activities: Estonia, Spain, France, Cyprus, Latvia, Lithuania, Hungary, Austria, Poland, Portugal, Slovenia, Slovakia and Norway. These specificities may be only a matter of language.

Persons unable to work

The objective of the 2011 LFS AHM on employment of disabled people was to identify the extent to which people are limited in their work and the nature or type of this limitation. More precisely, questions related to limitations in working activities and special assistance used or needed are to be considered by the respondent in the context of work. However, three countries (Estonia, Italy, and Portugal) proceeded to a specific treatment for persons unable to work. This may impact the comparison with the other countries as persons unable to work are not identified in the LFS AHM guidelines.

In Estonia and Italy, respondents declaring that they were unable to work were excluded from questions related to the special assistance used or needed; they were automatically classified as persons who did not need or use special assistance and who were not limited in work because of environmental factors. Moreover, in Italy, these persons unable to work were also excluded from questions related to the limitations in working activities and were considered as having no limitations. In Portugal, the questions were changed according to the situation of the respondent (two separate sections depending on the status of the respondent: permanently disabled to work or not).

Removing people who are identified as unable to work will obviously change the population base for the related variables. In other countries persons who were unable to work because of their health condition or disease were still asked whether they would need any special assistance to enable them to work. In Estonia and Italy these persons did not have the opportunity to answer 'yes', but were automatically coded 'no' (they do not need any special assistance to enable them to work). However, this codification choice is in line with the FAQ document concerning the LFS AHM variables related to the special assistance used or needed.

Persons working at home

In France, it was assumed that persons working at home because of their health problem had limitations in getting to and from work. Thus, these respondents were not asked the question directly.

2.6. Wording of the questions

There is plenty of materials in academic literature describing how the actual wording of questions and their response options can alter the way in which a respondent answers a question and therefore can have an effect on the estimates produced from survey data: Schuman and Kalton (1985) and Schuman and Presser (1981). Any changes or deviations in the question wording can impact on measurement error and therefore on the estimates produced. However, it is important to note that the LFS specifies question outputs rather than the actual questions themselves. It is left to the individual countries to formulate their own questions, although a guide questionnaire is provided. It is the measurement concept itself that is important and whether or not the words used to convey that concept to the respondent do so in a consistent manner across countries and not necessarily the fact that the wording may be different in some way. Furthermore, it is difficult to know if some of the apparent changes to the question wording are only errors in the English translation of the studied questionnaires.

For example, asking a respondent about "musculoskeletal disorder related to …" instead of "problems with …" may convey a different conceptual meaning to the respondent and therefore elicit different responses. Prompting respondents with examples incorporated into the question stem can help improve the accuracy of the estimates provided because respondents will have a better understanding of what the question is asking about and include in their answers items they may otherwise have not considered relevant. However, including examples in the questioning can also influence respondents to only focus on the examples given and not the broader scope intended

by the question. Some pretesting in the form of cognitive interviews or split-sample experimentation would be the only way to understand exactly what effect any differences might have on the estimates produced.

Therefore the only judgement that could be made is that respondents may provide different responses when additional examples are included in the question For instance, 'Repetitive Strain Injury' (RSI) was included by the Netherlands as an example but was not included by other countries. RSI may not be a condition that respondents automatically think of without being prompted. The effect on the data of such additions will also depend on whether in a particular country this condition is commonly diagnosed or known in everyday language. The reason why 'severe disfigurement' is included in the examples given in the EU questionnaire is because people with 'severe disfigurement' may not otherwise include it under the heading "skin conditions". Omitting the term may impact on the estimates. However no conclusion could be drafted regarding the direction without reference to in-country pretesting or experimental data.

For a detailed list of the wording deviations pointed out per country and per LFS variable of the module, the reader is invited to refer to the Annex 5. Tables 14 to 16 below provide with a summary of the findings.

Table 14: Summary of the wording for HEALTHMA, HEALTHSE, DIFFICMA and DIFFICSE

	HEALTHMA, HEALTHSE	DIFFICMA, DIFFICSE
Availability	- 1 country (NO) did not collect HEALTHSE.	- 1 country (NO) did not collect DIFFICMA and DIFFICSE.
Coding	- 2 countries (IT, FI): when the respondent did not specify the most severe health condition or disease (resp. basic activity difficulty), the latter was automatically selected as the last one cited (in case of several) according to its position in the response coding frame. Therefore, the one encoded was not necessary the most severe.	
Question	ALL VARIABLES: - 6 countries (CZ, DE, DK, FR, SI, UK): the EU instruction “most severe” (resp. “most difficulty”) was not always clearly asked. For example it was replaced by “the first type” or “the greatest impact on your life”. - 1 country (FI): provided the following additional information: “affects your everyday life”. DIFFICMA and DIFFICSE: - 1 country (FR): "Disturb you the most in the daily life" instead of "the most severe". - 1 country (FR): added the category “Other difficulty”.	
Cat. 01	- 1 country (FI): “musculoskeletal disorder related to” instead of “problems with”. - 1 country (EE): “arms” and “feet” were not specified in the corresponding national options. - 4 countries (ES, FI, IS, NO): the examples “arthritis or rheumatism” were not specified or not fully specified. - 6 countries (FR, CY, HU, NL, RO, FI): provided an additional example as for example “deformity of the arms/legs/ body posture”, “total or partial absence”, “Repetitive Strain Injury”, “problems with shanks” or "shoulder disorder".	- 1 country (FR): added “clearly see the ordinary characters of a newspaper" + "Clearly see someone’s face at a 4 meters distance (on the other side of the room)
Cat. 02		- 1 country (FR): added “hear what was said in a conversation with people".
Cat. 03		- 1 country (RO): the national category was “Locomotion difficulties (of moving/walking)”. - 1 country (FR): added "walk 500 meters on flat ground or a staircase without the help of someone, without a cane, ramp or any other technical help".
Cat. 04	- 1 country (FR): specified that the cancer was diagnosed by a doctor. - 1 country (FR): provided additional examples: “All malignant tumours, including leukaemia, as well as generalised cancer should be coded as yes”.	- 2 countries (HU, RO): the national category was 1) “Sitting down, standing up, stand or sit down for a long time”; 2) “Rise (from a chair) or to sit (on a chair)”.
Cat. 05	- 4 countries (BG, DK, FI, NO): national examples were incomplete (DK, NO) or showed some wording deviations (BG, FI). - 2 countries (FR, RO): provided additional examples as “dermatological” or “psoriasis, eczema, urticaria, professional dermatosis”.	- 1 country (FR): added "remembering important things or be focused more than 10 minutes".
Cat. 06	- 2 countries (FI, NO): national categories mentioned “blood-vascular disease” or “cardiac problems” instead of “blood pressure or circulation problems”. - 1 country (FR): “Blood pressure” was missing. - 1 country (FR): provided additional examples as “hypertension, angina pectoris, myocardial infarction, cardiac dysrhythmia, heart failure, peripheral vascular disease, varicose veins".	- 1 country (FR): the national category was: “Speaking or making oneself understood”. - 1 country (DE): showed a wording deviation (“Chat for other people" instead of "communicating"). - 4 countries (AT, RO, SI, FI): examples “understanding or being understood” were not specified (RO) or showed some wording deviations (AT, SI, FI).

	HEALTHMA, HEALTHSE	DIFFICMA, DIFFICSE
Cat. 07	- 1 country (FI): the national category was only “respiratory disease”. - 2 countries (NL, NO): “chest problems” were not suggested or replaced by “lung problems” (chest problems include lung problems but not only...). - 3 countries (FR, HU, SI): additional examples were provided as “allergy of respiratory organs”, “hay-fever” or “chronic bronchitis, emphysema, pulmonary fibrosis”.	- 3 countries (AT, SE, RO): the national category was “Stretching to reach something” or “Mobility difficulties (e.g. to stretch in the meaning of the body, hands mobility to get to a specific object)”. - 1 country (DE): provided additional information (“stretch to an object). - 1 country (FR): "Reaching the arm (for example to catch an object upright)" instead of "reaching or stretching".
Cat. 08	- 1 country (FI): national category was only “internal organ or intestinal disease”. - 2 countries (EE, NO): “digestive problems” was replaced by “indigestion” or “intestine problems” (digestive problems include intestine problems but not only...). - 1 country (FR): “Stomach” was missing. - 2 countries (DE, FR): provided additional examples “gastric or peptic ulcer, hepatitis, steatosis, cyst, cirrhosis” or “gastrointestinal problems”.	- 1 country (AT): an example was provided “e.g. a heavy shopping bag”. - 1 country (RO): “transportation” instead of “carrying”. - 1 country (FR): “Lifting” was missing. - 1 country (FR): provided additional information “Carry a 5kg provision bag on a 10 meters distance without the help of someone or without any technical help”
Cat. 09	-	- 1 country (SE): the national category was “bowing and rising”. - 1 country (FR): added "pick up an object".
Cat. 10	- 10 countries (BE, DK, EE, HU, NL, SI, FI, SE, IS, NO): the example “fits” was not specified. - 1 country (AT): an additional example was provided: “epileptic”.	- 1 country (RO): the national category was “handling an object”. - 2 countries (CY, SE): additional information “...with the hands”. - 2 countries (DE, AT): “grasping” instead of “gripping”. - 1 country (SI): specified “turning wrists” (instead of only “turning”). - 1 country (FR): added “like a key or screwdriver”.
Cat. 11	- 1 country (NO): did not collect this category. - 1 country (NL): did not specify “migraine”. - 1 country (FI): specified “recurrent migraine”.	-
Cat. 12	- 1 country (NO): “learning difficulties” was not specified. - 1 country (BE): the national category includes “severe mental disability” which should be part of the EU category 15. - 9 countries (DE, NL, SI, AT, FI, RO, SE, UK, NO): examples “reading, spelling or math disability” were not specified, or not fully specified, or show some wording deviations. - 1 country (FR): added “spoken or written language disorders, dyscalculia, attention deficit disorder, coordination disorders”.	-x-
Cat. 13	- 1 country (NO): did not collect this category. - 1 country (SI): the word “chronic” was not specified. - 1 country (AT): provided an additional example “panic attacks” which should be part of to the EU category 15. - 1 country (DE): showed a wording deviation (“anxiety disorders” instead of “chronic anxiety”).	-x-
Cat. 14	- 1 country (NO): did not collect this category.	-x-

	HEALTHMA, HEALTHSE	DIFFICMA, DIFFICSE
Cat. 15	- 1 country (NO): the national category was “psychiatric problem (anxiety, depression, phobia, nervous problems …)”, which included EU categories 13 and 15. - 1 country (DK): “stress” was added. - 2 countries (FI, SE): “nervous or emotional” was not specified. - 1 country (FR): “Psychological" instead of "mental or emotional”. - 1 country (FR): provided additional examples “sleep disorder, bulimia nervosa".	-x-
Cat. 16	- 3 countries (NL, AT, NO): national wording used to collect “progressive illness” suffered from some deviations. - 2 countries (FI, IS): EU examples “multiple sclerosis, HIV, Alzheimer's disease, Parkinson’s disease” were not specified or incomplete.	-x-
Cat. 17	- 1 country (DK): national option added “Brain injury (including spasticity)” and “Dyslexic” which should be mapped into EU category 12. - 2 countries (FR, CY): additional examples were added: “health problems related to the reproductive system” or "otolaryngology or ocular problems (chronic sinusitis, allergic rhinitis, tinnitus, cataract, glaucoma, strabismus)" + "other endocrine or metabolic problems (hyperthyroidism, goitre, hypothyroidism, cholesterol" + "mouth or tooth problems, urinary or genital problems".	-x-

Notes:
- The symbol “-“means that there is no finding for this category;
- The symbol “-x-“ means that the category did not exist for the variable.

Table 15: Summary of the wording for LIMHOURS, LIMTYPEW, LIMTRANS, NEEHELP, NEEDADAP and NEEDORGA

	LIMHOURS, LIMTYPEW, LIMTRANS	NEEDHELP, NEEDADAP, NEEDORGA
Availability	-	- 1 country (NO): did not collect the variable NEEDHELP.
Filter question	- 1 country (IT): at this stage, if the respondent considered that he was "unable to work" then the questionnaire was stopped. Moreover, these persons unable to work were automatically categorised LIM...=No (see section 2.2 on national specificities).	- 2 countries (EE, IT): at this stage, if the respondent considered that he was "unable to work" then the questionnaire was stopped. Moreover, the persons unable to work were automatically categorised NEED…=No (see section 2.2 on national specificities). - 1 country (NO): question was asked only to employed persons.
Question	ALL VARIABLES: - 1 country (EE): option "yes" was split into two sub-categories "yes, considerably" and "yes, slightly". - 1 country (HU): for each of the 4 national cases suggested (1st and 2nd health condition, 1st and 2nd difficulty), the respondent was asked if it limited him. He could respond "yes", "no", or "meaningless". - 2 countries (FR, FI): only "health" was specified in the question instead of "health condition or difficulty". LIMHOURS: - 1 country (EE): "amount of work" instead of "number of hours". - 1 country (RO): "cause limitation in working full-time" instead of "limit the number of hours". LIMTYPEW: - 1 country (BE): "certain tasks" instead of "type of work". - 1 country (NO): "type of tasks" instead of "type of work". - 1 country (DE): added examples as "sedentary activity, computer work" but did not specify examples as "working outdoors or sitting for a long time". LIMTRANS: - 1 country (FR): if a person worked at home because of his/her health condition or difficulty, s/he was coded LIMTRANS=YES.	ALL VARIABLES: - 1 country (EE): considered workers who did not use HELP/ADAP/ORGA but who declared that they would need it (these persons were coded NEED...=No). The country considers also non-workers who would need personal assistance but who declare that they could work without it (these persons were coded NEED...=Yes). - 1 country (MT): conditional tense ("would") was used for both workers and non-workers. - 2 countries (NL, FI): a third category was created in order to identify persons that were unable to work (these persons were categorised NEED...=No). - 1 country (RO): "professional activities" instead of "work". - 4 countries (FR, AT, SI, NO): "health problems" (FR, AT, SI) / "disability" (NO) instead of "health condition or difficulty". NEEDHELP: - 3 countries (ES, SE, FI): suggested a "personal assistant" (SE, FI) or "any type of personalised care" (ES) instead of "personal assistance". - 2 countries (FR, SI): additional examples were provided as "walking, accomplishing tasks and understanding", or "family, friend, colleague, professional". - 1 country (FR): another category "Support of your colleagues or superiors" was suggested in the questionnaire, but not mapped, whereas it might be. NEEDADAP: - 2 countries (AT, FI): "structural modification" or "work premises adaptations" instead of "workplace adaptation". - 2 countries (AT, FR): provided additional examples as "speech processor", or "computer screen or phone adapted". - 1 country (NO): national question was: "Is your work facilitated by physical aid/remedies... and more physical adaption of the workplace". NEEDORGA: - 2 countries (CZ, SI): the respondent was not specified all the EU examples. - 1 country (SE): "other adaptation of the workplace" instead of "special working arrangements". - 1 country (NO): national questions were: "Has your work been adapted by changes in your work tasks" and "Has your work been adapted by changes in your working hours".
Cat. 01	- 1 country (NO): did not collect this category, collected only "YES" without any precision.	-
Cat. 02	- 1 country (NO): did not collect this category, collected	-

	LIMHOURS, LIMTYPEW, LIMTRANS	NEEDHELP, NEEDADAP, NEEDORGA
	only “YES” without any precision. - 1 country (AT): “limitations in carrying out specific activities” instead of “activity difficulties”.	
Cat. 03	- 1 country (NO): did not collect this category, collected only “YES” without any precision.	-x-
Cat. 04	- 1 country (FR): for people who work, two categories were suggested and mapped into “NO”: “no, they were not limited but I should do less" and "No".	-x-

Table 16: Summary of the wording for LIMREAS

	LIMREAS
Availability	- 1 country (NO): did not collect the variable LIMREAS.
Filter question	- 2 countries (EE, IT): persons “unable to work” were excluded and automatically categorised LIMREAS=No (see section 2.2 on national specificities).
Coding	- 1 country (IT): when the respondent did not specify the main reason, the latter was automatically selected as the last one cited (in case of several) according to its position in the questionnaire. Therefore, the one encoded was not necessary the main.
Question	- 1 country (EE): refered only to the health condition, not to the activity difficulty. - 1 country (FR): If two reasons were selected, then a second question was asked "you think that you were limited because of several reasons. Among these reasons, which ones consider you as the most important?" instead of "main reason that you are restricted at work".
Cat. 01	- 1 country (RO): specified “lack of necessary qualifications/experience”. - 1 country (SE): “right competence” instead of “qualifications”. - 1 country (UK): the word “experience” was not specified.
Cat. 03	- 1 country (FI): the word “lack” was not specified. - 1 country (SE): national category was “No or unsuitable opportunities to travel”.
Cat. 05	- 10 countries (BE, DE, ES, CY, HU, AT, PL, SI, FI, SE): use a different wording. - 1 country (UK): the word “Affects” was not specified.
Cat. 06	- 1 country (SI): “caring” was not specified. - 1 country (FI): national category was “Factors connected to your family or care of a close relative”.
Cat. 07	- 1 country (HU): provided an additional option “Age (too young or too old)”. - 1 country (FR): added the following information “(other than family reasons)”.
Cat. 09	- 1 country (RO): national category was “No difficulty in professional activity”.

Because of the number of deviations from the standard questionnaire, the Norwegian data were excluded from the following chapters.

2.7. Ex post harmonisation

Harmonization refers to the effort of achieving comparability across survey measures when different data collections are in place. Since the data collection process and design for the LFS is largely determined at country level, output harmonization is a necessary approach. However, output harmonization cannot address any questionnaire or overall survey design differences across countries.

Overall it is difficult to determine whether differences in the survey design or administration have had an effect on the data, the direction of that effect, and its magnitude. Indeed, there are too many differences across countries (most of which remain unreported) to be able to make a decision whether estimates are comparable, or whether differences in the wording of individual questionnaire items have an effect on response distributions that will further be reflected in derived variables such as HEALTHMA (*first type of longstanding health condition or disease*) or DIFFICMA (*first basic activity difficulty*). To illustrate with a specific example, France asked a large number of additional questions within the ad-hoc module that could have affected the data collected for the 11 LFS AHM questions. However, in the absence of experimental data, it is impossible to estimate the effect of previous questions on response distributions of the 11 LFS AHM questions, nor the effect of questionnaire length on respondent burden, thus, data quality.

The in-depth analysis of the national questionnaires, interviewer instructions and frequency tables do not reveal possible reasons for the large deviations across countries. Furthermore, the aggregated EU-28 estimate, along with the distribution of individual countries, a rein fact in line with the average reported and the distributions reported in other European studies of disability, including the 2002 LFS AHM. Therefore, one can be fairly confident in the data as described in chapter 3 below, without further need for ex-post harmonization.

3

Analysis of the microdata

3. Analysis of the microdata

This chapter introduces a detailed analysis of the 2011 LFS AHM variables. As a first step, the module variables will be analysed through derived disability measures. In a second step, the analysis will compare people with disability with people without disability according to a selection of variables from the LFS core database. Finally the disability status will be used as the key independent variable of interest in analyses of variation in the employment status in a multivariate analysis. Furthermore, "fully specified" regression models containing all variables that in theory would suggest help explaining the dependent variable (employment status) will be estimated.

In the following, all results are weighted in order to extrapolate from the survey sample to the overall population figures. The weights were delivered by the Member States.

The analysis is based on data processed by May 2014. Although minor revisions of the datasets may have happened after this date, the data was considered stable enough for analysis and interpretation.

3.1. Data management

3.1.1. Discrepancy for the variables about limitations

The inconsistencies between the 2011 LFS AHM were investigated. Indeed, in theory, it is not possible to select "Yes, because of the health condition" or "Yes, both health condition and basic activity difficulty" to the questions related to the work limitations (LIMTRANS, LIMHOURS or LIMTYPEW) if the person did not report a health condition (where HEALTHMA = 18, 99, blank). The same case should not be possible with the answers "Yes, because of basic activity difficulty" and "Yes, both health condition and basic activity difficulty" where the person has not reported a basic activity difficulty (where DIFFICMA = 11, 99, blank).

In practice, these rules were not respected. The following table presents by countries these inconsistencies. In the EU-28, only 0.1 % of the data met such problem. The countries which reported the highest proportion of inconsistencies (considering DIFFICMA and HEALTHMA together) are Belgium, Croatia and Iceland (with respectively 1.0 %, 0.8 % and 0.7 %).

Table 17: Inconsistencies within LIMTRANS, LIMHOUR and LIMTYPEW, by country

Country	Inconsistency with DIFFICMA		Inconsistency with HEALTHMA		No inconsistency	
	N	%	N	%	N	%
EU-28	257 850	0.1	89 049	0.0	324 762 931	99.9
BE	59 176	0.9	11 085	0.2	6 880 388	99.0
BG	.	.	.	.	4 863 642	100.0
CZ	.	.	.	.	7 234 329	100.0
DK	.	.	.	.	3 614 172	100.0
DE	11 191	0.0	36 872	0.1	53 752 397	99.9
EE	.	.	.	.	902 952	100.0
IE	295	0.0	247	0.0	3 047 426	100.0
EL	.	.	.	.	6 507 483	100.0
ES	.	.	1 291	0.0	29 103 030	100.0
FR	80 875	0.2	.	.	39 483 354	99.8
HR	20 744	0.8	2 267	0.1	2 708 023	99.2
IT	10 765	0.0	13 001	0.0	36 713 969	99.9
CY	.	.	.	.	569 671	100.0
LV	.	.	.	.	1 381 697	100.0
LT	4 924	0.2	929	0.0	2 034 548	99.7
LU	75	0.0	569	0.2	344 620	99.8
HU	1 761	0.0	2 594	0.0	6 688 152	99.9
MT	572	0.2	212	0.1	288 359	99.7
NL	16 265	0.1	10 363	0.1	10 963 981	99.8
AT	37 478	0.7	2 939	0.1	5 609 877	99.3
PL	.	.	.	.	25 824 068	100.0
PT	6 366	0.1	2 160	0.0	7 088 288	99.9
RO	.	.	.	.	14 622 079	100.0

Country	Inconsistency with DIFFICMA		Inconsistency with HEALTHMA		No inconsistency	
	N	%	N	%	N	%
SI	.	.	.	.	1 422 522	100.0
SK	.	.	.	.	3 864 941	100.0
FI	7 362	0.2	4 522	0.1	3 397 737	99.7
SE	.	.	.	.	6 110 744	100.0
UK	.	.	.	.	39 740 483	100.0
IS	850	0.4	553	0.3	197 985	99.3
CH	.	.	.	.	5 317 800	100.0
TR	.	.	.	.	48 300 871	100.0

3.1.2. Comparison between the 2011 LFS AHM and some core variables

The aim of this part is to see if the people who reported either a basic activity difficulty or a health condition are more likely to quote their disability as the main reason for four situations: part-time work, not searching an employment, leaving last job and the difference between the usual working hours and those worked during the previous week.

As presented in the following table, people who reported a health condition designated more frequently their illness, injury or disability as the reasons for their employment situation. For example, in EU-28, 29.9 % of the people having a health problem declared that their disability is the reason for leaving their last job whereas only 2.5 % of the population without health problem quoted this reason.

Table 18: Distribution of the HEALTHMA variable for persons who reported "own illness, injury or disability" as reason to the core variables, by country

Country		Reason for the part-time work (FTPTREAS)		Reason for not searching an employment (SEEKREAS)		Reason for hours actually worked during the reference week being different from the person's usual hours (HOURREAS)		Reason for leaving last job (LEAVREAS)	
		N	%	N	%	N	%	N	%
EU-28	No health problem	116 625	0.4	543 520	1.0	611 704	1.9	546 103	2.5
	Health problem	1 365 496	13.7	10 461 896	37.4	520 422	4.1	4 353 769	29.9
BE	No health problem	7 580	0.9	8 551	0.6	8 795	1.2	20 714	4.9
	Health problem	45 476	18.3	252 228	38.8	7 333	3.6	142 716	47.4
BG	No health problem	661	1.6	6 226	0.5	177	0.1	2 304	0.6
	Health problem	2 193	15.0	216 130	46.3	280	0.7	52 933	25.7
CZ	No health problem	395	0.3	1 040	0.1	6 446	0.7	2 631	0.4
	Health problem	40 880	60.5	85 300	14.6	2 909	2.0	128 335	37.5
DK	No health problem	3 503	0.6	18 920	5.2	10 971	1.2	17 975	6.4
	Health problem	49 360	35.9	233 056	68.3	8 816	5.5	117 664	62.7
DE	No health problem	20 136	0.3	95 028	1.2	171 004	2.6	111 212	3.9
	Health problem	235 194	16.7	1 284 975	41.5	99 742	6.8	604 858	38.7
EE	No health problem	73	0.2	609	0.5	26	0.0	209	0.4
	Health problem	2 451	10.4	44 646	42.0	318	0.5	17 922	34.7
IE	No health problem	1 853	0.5	2 822	3.4	1 895	0.5	11 666	5.7
	Health problem	3 188	7.9	21 647	66.1	860	2.3	35 669	46.2
EL	No health problem	98	0.0	2 353	0.1	744	0.2	4 399	0.8
	Health problem	1 868	9.7	113 922	25.3	626	1.4	42 643	21.0
ES	No health problem	2 013	0.1	60 026	1.4	19 128	1.2	53 206	1.3
	Health problem	29 133	5.1	1 279 647	47.5	12 501	2.2	558 571	31.2
FR	No health problem	14 186	0.8	1 346	0.1	32 358	0.9	34 625	2.1
	Health problem	221 057	8.8	33 913	1.2	93 262	2.2	393 781	14.1
HR	No health problem	2 561	3.7	12 775	1.9	277	0.3	2 684	1.3
	Health problem	10 040	28.4	47 887	13.8	322	1.4	6 405	4.4
IT	No health problem	8 938	0.3	95 456	0.9	24 062	1.7	45 953	1.6
	Health problem	52 168	9.8	616 390	22.0	16 138	4.4	151 165	17.8

Country		Reason for the part-time work (FTPTREAS)		Reason for not searching an employment (SEEKREAS)		Reason for hours actually worked during the reference week being different from the person's usual hours (HOURREAS)		Reason for leaving last job (LEAVREAS)	
		N	%	N	%	N	%	N	%
CY	No health problem	381	1.5	871	0.9	590	1.0	1 171	3.5
	Health problem	1 976	23.1	19 048	38.9	657	4.0	7 406	35.4
LV	No health problem	.	.	127	0.1	.	.	1 326	1.8
	Health problem	1 824	5.8	49 136	33.2	.	.	28 971	33.6
LT	No health problem	503	0.7	2 092	0.5	.	.	879	0.7
	Health problem	7 524	28.5	105 185	54.8	148	0.4	34 461	35.5
LU	No health problem	150	0.7	1 053	1.5	309	0.9	808	4.3
	Health problem	1 629	9.2	8 890	21.4	801	3.7	6 471	33.7
HU	No health problem	1 907	1.2	3 242	0.2	4 921	0.8	4 022	0.8
	Health problem	36 289	47.8	332 062	40.4	1 102	1.0	121 184	36.6
MT	No health problem	222	1.4	1 512	2.0	1 565	5.2	600	2.7
	Health problem	339	7.7	8 153	24.2	521	8.1	2 916	30.4
NL	No health problem	4 325	0.1	18 115	1.4	67 437	2.7	26 912	4.9
	Health problem	122 853	28.4	611 250	74.8	41 125	13.6	176 810	63.1
AT	No health problem	1 279	0.2	3 195	0.5	11 164	1.9	4 291	1.6
	Health problem	26 231	7.0	106 787	15.7	17 347	4.2	142 747	34.5
PL	No health problem	.	.	1 242	0.0	10 807	0.5	40 087	2.1
	Health problem	94 753	31.8	1 502 678	50.1	6 740	1.5	365 037	36.4
PT	No health problem	1 465	0.6	10 781	1.2	5 744	0.9	5 899	1.4
	Health problem	39 485	17.4	343 762	39.1	13 539	3.9	152 508	32.9
RO	No health problem	7 594	1.2	30 648	0.8	1 461	0.3	7 102	0.9
	Health problem	28 357	16.8	621 362	41.7	7 851	6.7	166 144	30.3
SI	No health problem	1 804	3.3	5 412	2.2	4 484	3.2	1 040	1.1
	Health problem	15 133	58.2	47 513	26.7	3 509	9.5	14 105	17.7
SK	No health problem	386	0.6	5 082	0.6	4 072	1.3	7 184	3.2
	Health problem	8 440	28.4	168 823	50.5	905	2.0	52 832	36.1
FI	No health problem	1 786	1.2	2 793	0.9	16 191	4.0	1 253	0.5
	Health problem	29 244	15.8	104 925	24.1	32 318	6.2	68 425	19.4
SE	No health problem	8 979	1.7	4 657	0.8	47 055	4.3	8 126	2.0
	Health problem	106 927	21.9	136 572	29.4	61 262	7.4	64 520	19.2
UK	No health problem	23 850	0.5	147 547	3.1	160 021	3.0	127 827	5.2
	Health problem	151 483	7.9	2 066 009	50.6	89 487	4.6	696 568	37.8
IS	No health problem	73	0.5	439	6.8	140	0.6	264	2.8
	Health problem	1 336	9.6	8 652	66.0	377	2.2	4 484	38.2
CH	No health problem	6 367	0.8	2 948	0.6	10 714	0.8	3 581	1.4
	Health problem	53 029	9.7	136 281	34.6	21 022	2.7	56 548	27.1
TR	No health problem	958	0.1	45 929	0.3	8 204	0.4	61 128	1.4
	Health problem	68 525	5.9	1 327 167	16.7	18 099	1.5	568 279	23.3

The same trend is observed for the variable DIFFICMA. Indeed, the proportion of people having a basic activity difficulty who reported disability as the reason for part-time work for example, was higher than the people without a basic activity difficulty. 45.1 % of the EU-28 population who reported a basic activity difficulty quoted that their disability was the main reason for not searching an employment while only 3.6 % in the population without a basic activity difficulty mentioned it.

Table 19: Distribution of the DIFFICMA variable for persons who reported "own illness, injury or disability" as reason to the core variables, by country

Country		Reason for the part-time work (FTPTREAS)		Reason for not searching an employment (SEEKREAS)		Reason for hours actually worked during the reference week being different from the person's usual hours (HOURREAS)		Reason for leaving last job (LEAVREAS)	
		N	%	N	%	N	%	N	%
EU-28	No basic activity difficulty	408 514	1.3	2 186 487	3.6	837 949	2.2	1 373 371	4.9
	Basic activity difficulty	1 048 989	20.0	8 262 068	45.1	297 649	5.3	3 292 188	38.1
BE	No basic activity difficulty	21 683	2.3	48 426	3.1	11 312	1.4	45 859	8.8
	Basic activity difficulty	31 374	23.2	212 352	46.3	4 817	5.0	117 571	57.6
BG	No basic activity difficulty	1 611	3.3	41 386	3.2	456	0.2	13 835	3.0
	Basic activity difficulty	1 243	21.8	180 970	57.0	.	.	41 402	33.2
CZ	No basic activity difficulty	16 908	9.4	30 394	1.7	8 539	0.8	46 399	5.8
	Basic activity difficulty	24 583	77.4	55 453	17.2	816	1.7	84 074	46.0
DK	No basic activity difficulty	14 053	2.4	75 873	16.5	13 416	1.4	49 861	15.0
	Basic activity difficulty	39 428	41.4	185 013	72.6	6 372	6.8	89 400	64.7
DE	No basic activity difficulty	57 621	0.9	229 401	2.9	203 895	2.9	163 819	5.4
	Basic activity difficulty	188 985	18.3	1 052 426	40.4	72 709	7.6	489 332	39.5
EE	No basic activity difficulty	1 225	2.8	9 516	5.8	.	.	4 228	6.0
	Basic activity difficulty	1 298	13.3	35 587	54.8	344	1.6	13 752	47.7
IE	No basic activity difficulty	2 976	0.8	13 233	13.0	2 272	0.6	29 068	11.7
	Basic activity difficulty	2 201	15.9	11 222	75.7	483	4.9	18 131	53.1
EL	No basic activity difficulty	943	0.4	26 825	1.5	665	0.2	12 865	2.0
	Basic activity difficulty	1 024	8.9	89 450	33.7	706	2.6	34 176	31.7
ES	No basic activity difficulty	14 206	0.6	391 262	6.8	27 575	1.3	210 539	4.2
	Basic activity difficulty	15 762	9.1	527 516	54.5	4 053	3.0	248 296	39.0
FR	No basic activity difficulty	64 226	2.0	7 445	0.3	90 440	1.5	107 602	3.7
	Basic activity difficulty	156 912	14.3	26 886	1.8	32 811	2.0	306 899	21.1
HR	No basic activity difficulty	3 840	4.8	22 433	2.8	277	0.3	3 248	1.2
	Basic activity difficulty	8 762	35.9	38 229	16.9	322	2.0	5 841	6.3
IT	No basic activity difficulty	21 654	0.7	200 720	1.7	29 164	1.8	83 193	2.6
	Basic activity difficulty	38 569	14.3	489 495	30.9	11 036	6.7	111 291	24.0
CY	No basic activity difficulty	776	2.5	4 842	4.0	808	1.2	2 673	6.3
	Basic activity difficulty	1 581	42.5	15 077	58.1	439	9.0	5 904	49.4
LV	No basic activity difficulty	129	0.2	10 023	3.8	.	.	7 186	6.7
	Basic activity difficulty	1 696	10.7	39 377	42.0	.	.	23 112	43.6
LT	No basic activity difficulty	3 594	4.3	34 233	7.6	148	0.1	10 890	6.5
	Basic activity difficulty	4 432	33.7	73 044	58.9	.	.	24 450	42.9
LU	No basic activity difficulty	266	0.9	1 974	2.3	511	1.2	1 516	5.9
	Basic activity difficulty	1 512	14.7	7 977	32.2	600	5.0	5 761	45.8
HU	No basic activity difficulty	6 728	3.6	29 337	1.6	5 474	0.8	18 530	2.9
	Basic activity difficulty	32 519	60.0	301 910	48.7	549	1.2	106 844	47.7
MT	No basic activity difficulty	267	1.5	4 453	4.6	1 735	5.1	1 955	6.9
	Basic activity difficulty	294	17.6	5 212	40.5	351	17.0	1 561	41.1
NL	No basic activity difficulty	20 923	0.7	62 013	4.4	71 633	2.7	39 455	6.8
	Basic activity difficulty	105 573	31.3	557 735	75.6	36 912	16.3	162 514	64.2
AT	No basic activity difficulty	8 813	1.2	17 607	1.9	17 884	2.2	34 550	8.5
	Basic activity difficulty	18 697	10.1	92 375	19.9	10 627	5.4	112 489	41.1
PL	No basic activity difficulty	19 284	2.1	224 279	3.5	13 201	0.5	102 310	4.6
	Basic activity difficulty	75 468	37.6	1 279 641	56.9	4 347	1.8	302 815	42.9
PT	No basic activity difficulty	10 506	3.1	90 440	7.0	11 113	1.3	51 010	7.7
	Basic activity difficulty	30 443	27.0	261 301	53.7	8 171	7.1	106 140	45.5
RO	No basic activity difficulty	12 854	1.8	164 180	4.0	2 171	0.4	51 440	5.4
	Basic activity difficulty	23 097	19.5	487 830	46.7	7 142	9.4	121 806	33.0

Country		Reason for the part-time work (FTPTREAS)		Reason for not searching an employment (SEEKREAS)		Reason for hours actually worked during the reference week being different from the person's usual hours (HOURREAS)		Reason for leaving last job (LEAVREAS)	
		N	%	N	%	N	%	N	%
SI	No basic activity difficulty	4 548	7.2	11 731	3.9	5 684	3.7	3 451	2.9
	Basic activity difficulty	12 389	69.2	41 194	32.9	2 308	10.5	11 694	21.9
SK	No basic activity difficulty	3 290	4.3	37 014	3.8	4 511	1.4	18 037	6.6
	Basic activity difficulty	5 536	34.4	136 320	57.7	466	2.3	41 961	43.3
FI	No basic activity difficulty	7 234	2.8	20 790	4.2	34 617	4.7	10 370	2.4
	Basic activity difficulty	23 156	29.7	84 082	34.7	13 891	7.3	58 316	33.1
SE	No basic activity difficulty	34 836	4.3	31 006	3.7	80 808	4.9	23 490	4.1
	Basic activity difficulty	80 643	37.5	111 504	45.5	27 713	9.5	48 414	29.1
UK	No basic activity difficulty	53 520	0.9	345 649	6.0	199 639	3.1	225 994	7.3
	Basic activity difficulty	121 813	12.5	1 862 889	61.2	49 666	5.4	598 243	48.1
IS	No basic activity difficulty	493	2.1	1 210	11.8	368	1.1	978	6.8
	Basic activity difficulty	997	15.9	7 159	81.3	219	3.9	3 478	50.7
CH	No basic activity difficulty	13 492	1.3	20 085	3.3	18 787	1.0	11 870	3.5
	Basic activity difficulty	46 434	17.9	119 002	50.2	13 269	4.5	48 258	40.6
TR	No basic activity difficulty	16 043	0.8	314 544	1.8	13 407	0.5	204 692	3.7
	Basic activity difficulty	53 439	7.6	1 058 552	22.7	12 896	1.9	424 715	29.9

3.2. Descriptive analysis

The eleven LFS AHM variables, namely HEALTHMA (*First main type of longstanding health condition or disease*), HEALTHSE (*Second main type of longstanding health condition or disease), DIFFICMA (First basic activity difficulty*), DIFFICSE (*Second basic activity difficulty*), LIMHOURS (*The health condition(s) or disease(s) or difficulty(ies) cause(s) the person's limitation in the number of hours that he/she can work in a week*), LIMTYPEW (*The health condition(s) or disease(s) or difficulty(ies) causes(s) the person's limitation in the type of work that he/she can do*), LIMTRANS (*The health condition(s) or disease(s) or difficulty(ies) cause(s) the person's limitation in getting to and from work*), NEEDHELP (*Because of the health problem or difficulty the person needs (not employed persons)/uses (employed persons) personal assistance to enable him/her to work*), NEEDADAP (*Because of the health problem or difficulty the person needs (not employed persons)/uses (employed persons) special equipment or needs (not employed persons)/has (employed persons) workplace adaptations to enable him/her to work*), NEEDORGA (*Because of the health problem or difficulty the person needs (not employed persons)/has (employed persons) special working arrangements to enable him/her to work*) and LIMREAS (*Main reason for limitation in work that is not caused by the longstanding health conditions/diseases or basic activity difficulties*) were dichotomized into categories "yes", "no" and "blank". They were first analysed for all source variables. Then, the distributions of positive answers (category "yes") were explored when existing.

An analysis of the above-mentioned variables was carried out:

- By country and for the EU-28 aggregate;
- By sex, age group, level of education and occupational group for the EU-28 aggregate.

Besides, we also analysed which health conditions or basic activity difficulty were linked to:

- A work limitation;
- A special assistance needed or used.

The whole datasets used for the descriptive analysis are available in Annex 6.

3.2.1. First main type of longstanding health condition or disease (HEALTHMA)

Figure 15 below provides the distribution of the variable HEALTHMA (*First main type of longstanding health condition or disease*), showing only the dichotomized categories "Yes" (categories 01 to 17), "No" (category 18) and "blank". Across countries, the share of "Yes" varied from 12.7 % in Greece and Ireland to 54.4 % in Finland. At the EU-28 level, this rate reached 26.6 %. Compared to the general level (0.7 % at the EU-28 level), the share of missing values was higher in Germany (3.8 %).

Figure 15 – Distribution of HEALTHMA (No/Yes/Blank)

(%)

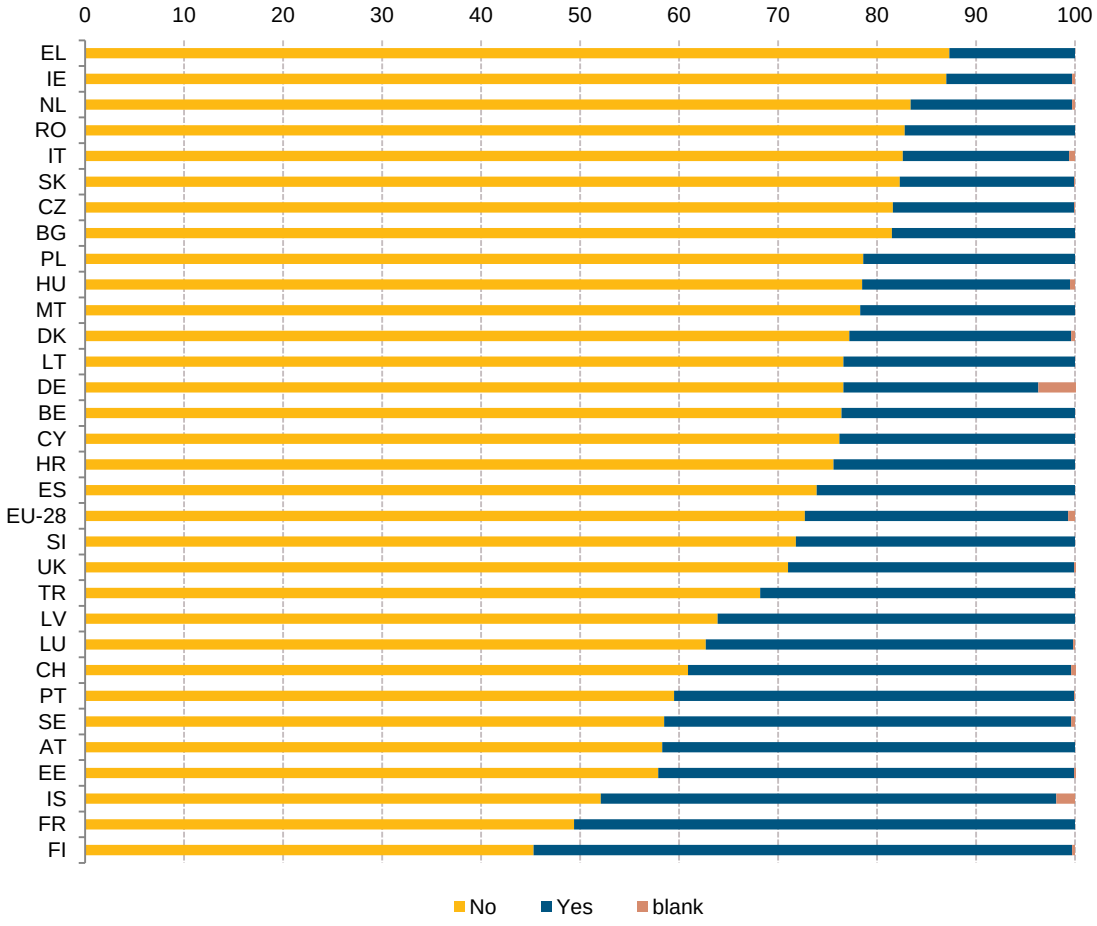
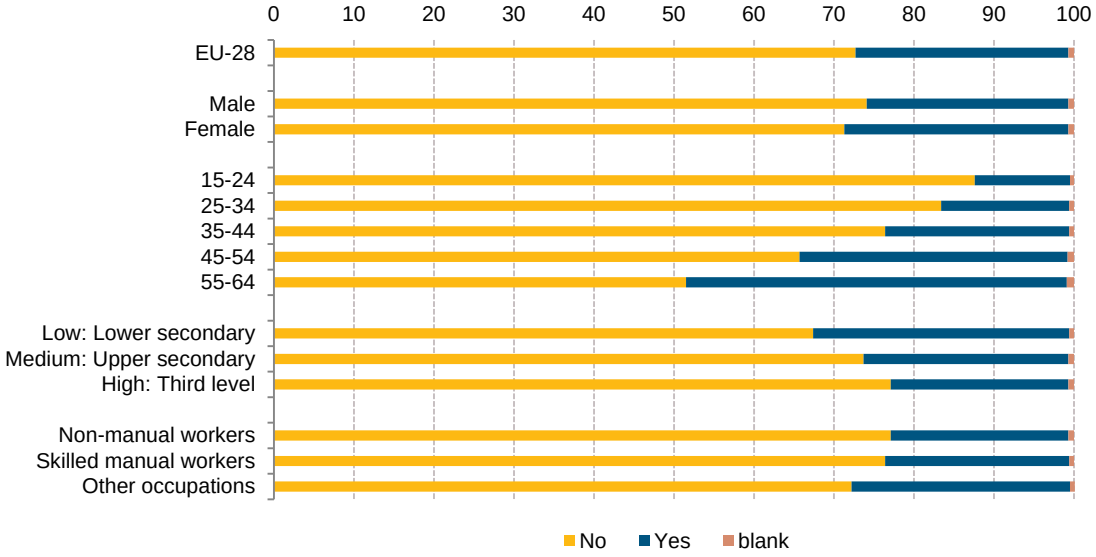


Figure 16 below provides the distributions of the variable HEALTHMA for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. As previously, only percentages of the dichotomized categories "Yes" (categories 01 to 17), "No" (category 18) and "blank" are provided.

- No obvious trend was pointed out regarding the gender. The share of "Yes" responses reached 25.2 % for males and 28.0 % for females.
- As we could expect, this variable seems to be linked to the age of the respondent. Indeed, the rate of "Yes" responses increased with the age, varying from 11.9 % for the group 15-24 to 47.6 % for the group 55-64.
- This variable also seems to be linked to the level of education: the higher the level of education, the lower the number of persons having a health problem. Indeed, the share of "Yes" responses varied from 22.2 % for the "High" level of education to 32.0 % for the "Low" level of education.
- No trend was pointed out regarding the analysis of the occupational group.

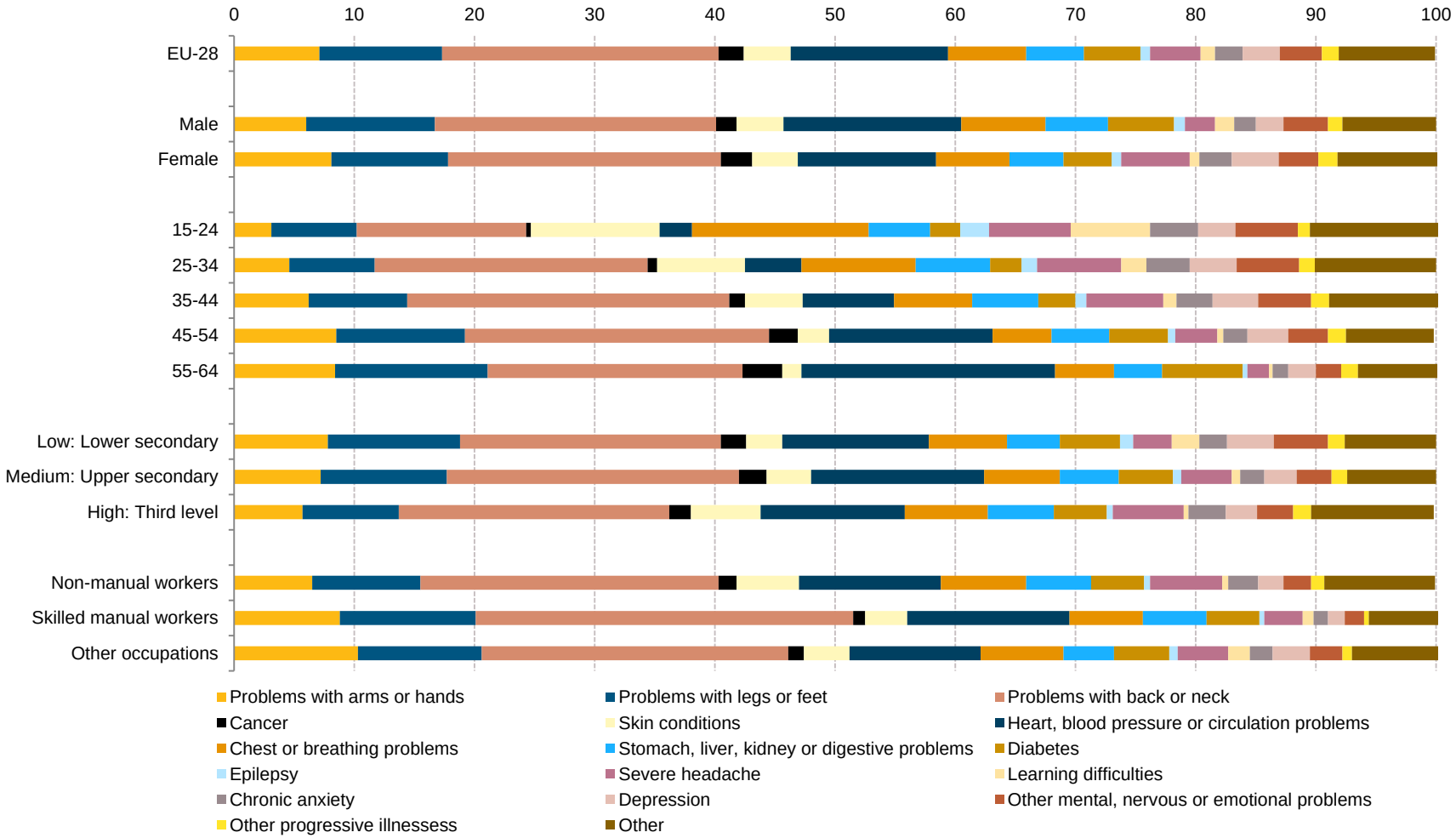
Figure 16 – Distribution of HEALTHMA (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)



Figures 17 below provides the distributions of the variable HEALTHMA for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. Only the percentages of positive answers (categories 01 to 17) are provided.

- At the EU-28 level, the most representative category was "Problems with back or neck" (23.0 %), followed by "Heart, blood pressure or circulation problems" (13.1 %) and "Problems with legs or feet" (10.2 %).
- No obvious trend was pointed out regarding the analysis of the gender. The most representative category for both males and females was "Problems with back or neck" (resp. 23.4 % and 22.7 %), followed by "Heart, blood pressure or circulation problems" (resp. 14.8 % and 11.5 %) and "Problems with legs or feet" (resp. 10.7 % and 9.7 %).
- This variable seems to be linked to the age of the respondent. Indeed, at the EU-28 level:
    - The older you are, the more likelihood there is that you have problems with arms or hands (from 3.1 % for the group 15-24 to 8.4 % for the group 55-64), legs or feet (from 7.1 % to 12.7 %), cancer (from 0.4 % to 3.3 %), heart, blood pressure or circulation problems (from 2.7 % to 21.1 %), and diabetes (from 2.5 % to 6.7 %).
    - The younger you are, the more likelihood there is that you have skin conditions (from 1.6 % for the group 55-64 to 10.7 % for the group 15-24), chest or breathing problems (from 4.9 % to 14.7 %), severe headache (from 1.8 % to 7 %), learning difficulties (from 0.3 % to 6.6 %), chronic anxiety (from 1.3 % to 4.0 %), and other mental, nervous or emotional problems (from 2.1 % to 5.2 %).
- No obvious trend was pointed out regarding the analysis of the level of education. The most representative category for the three categories (Low, Medium, High) was "Problems with back or neck" (resp. 21.7 %, 24.3 % and 22.5 %), followed by "Heart, blood pressure or circulation problems" (resp. 12.2 %, 14.4 % and 12.0 %) and "Problems with legs or feet" (resp. 11.0 %, 10.5 % and 8.0 %).
- Regarding the analysis by occupational group, more problems appeared with back or neck for skilled manual workers (31.4 %) than for non-manual workers (24.8 %).

Figure 17 – Distribution of HEALTHMA (positive answers) by sex, age group, level of education, and occupational group for the EU-28 aggregate (%)



3.2.2. Second main type of longstanding health condition or disease (HEALTHSE)

Figure 18 provides the distribution of the variable HEALTHSE (*Second main type of longstanding health condition or disease*), showing only the dichotomized categories "Yes" (categories 01 to 17), "No" (category 18) and "blank". Across countries, the share of "Yes" varied from 23.5 % in Italy to 67.3 % in the Netherlands. At the EU-28 level, this rate reached 46.3 %. Four countries (Belgium, Germany, Austria, the United Kingdom) did not collect the "No" category. The latter seems to be included in the "blank" category, suspiciously high for these countries. The same phenomenon was observed in Luxembourg but this country showed a non-null rate of "No" (0.7 %).

Figure 18 – Distribution of HEALTHSE (No/Yes/Blank)

(%)

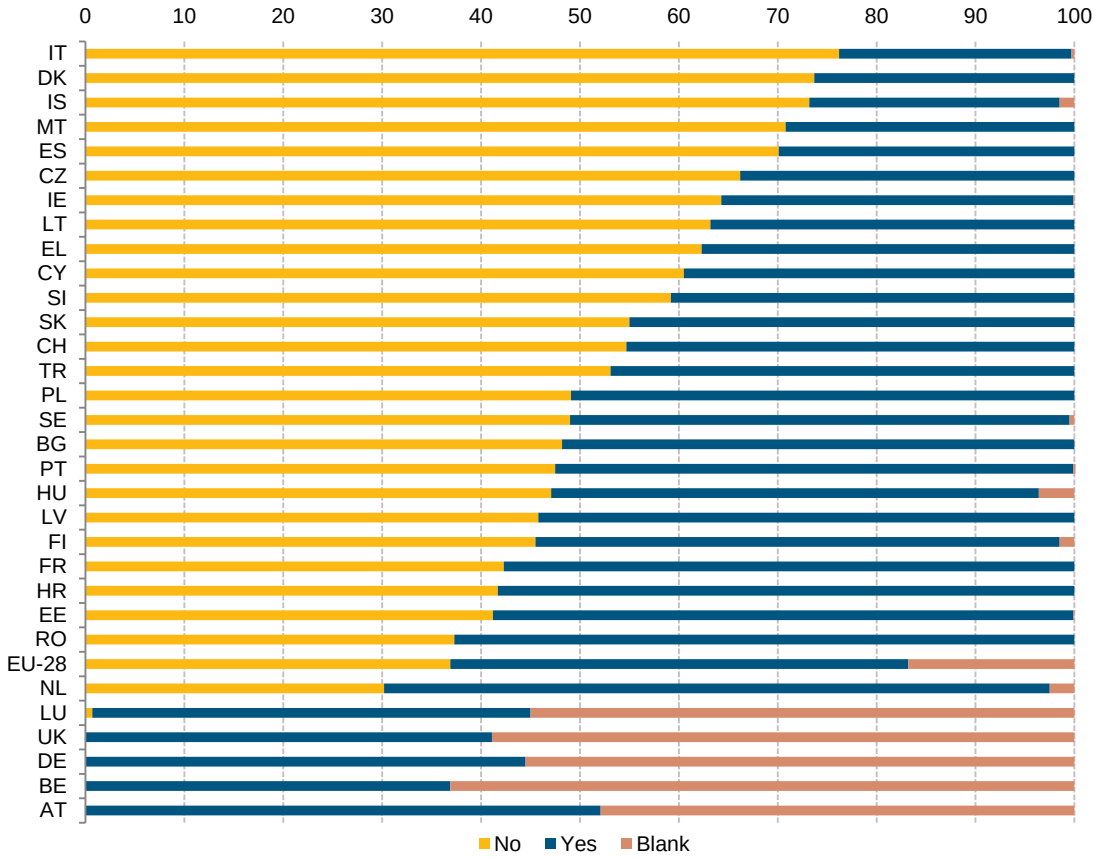


Figure 19 provides the distributions of the variable HEALTHSE for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. As previously, only percentages of the dichotomized categories "Yes" (categories 01 to 17), "No" (category 18) and "blank" are provided.

- No obvious trend was pointed out regarding the gender. The share of "Yes" responses reached 42.8 % for males and 49.5 % for females.
- As expected, this variable seem to be linked to the age of the respondent. Indeed, the rate of "Yes" responses increased with the age, varying from 31.3 % for the group 15-24 to 55.6 % for the group 55-64.
- This variable seems also to be linked to the level of education. Indeed, the higher the level of education, the lower the number of persons having a second health problem: the share of "Yes" responses varied from 40.2 % for the High level of education to 49.8 % for the Low level of education.
- No trend was pointed out regarding the analysis of the occupational group.

Figure 19 – Distribution of HEALTHSE (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)

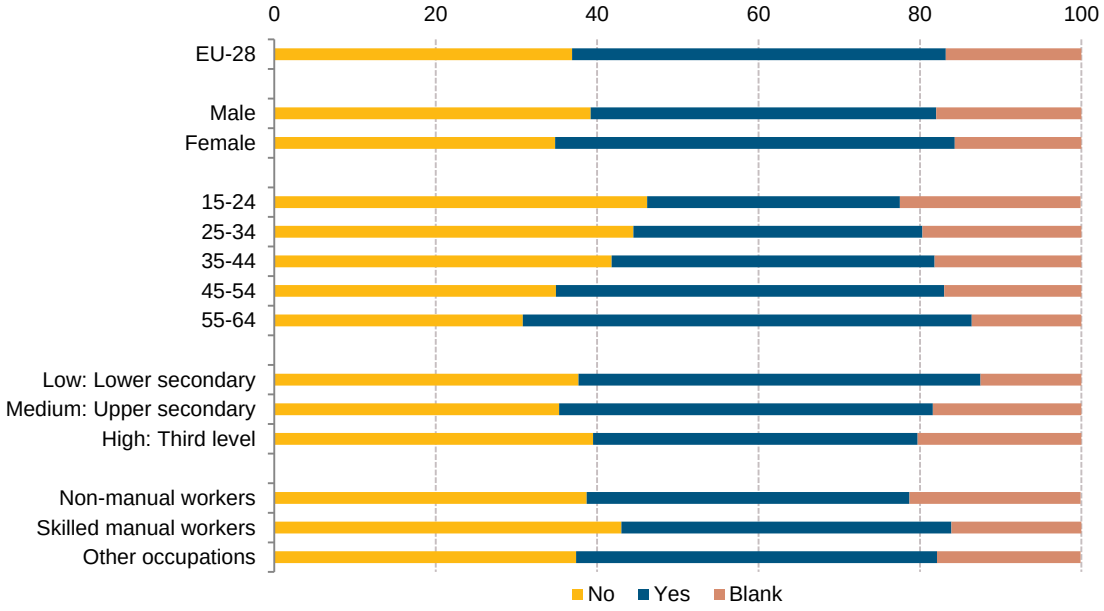
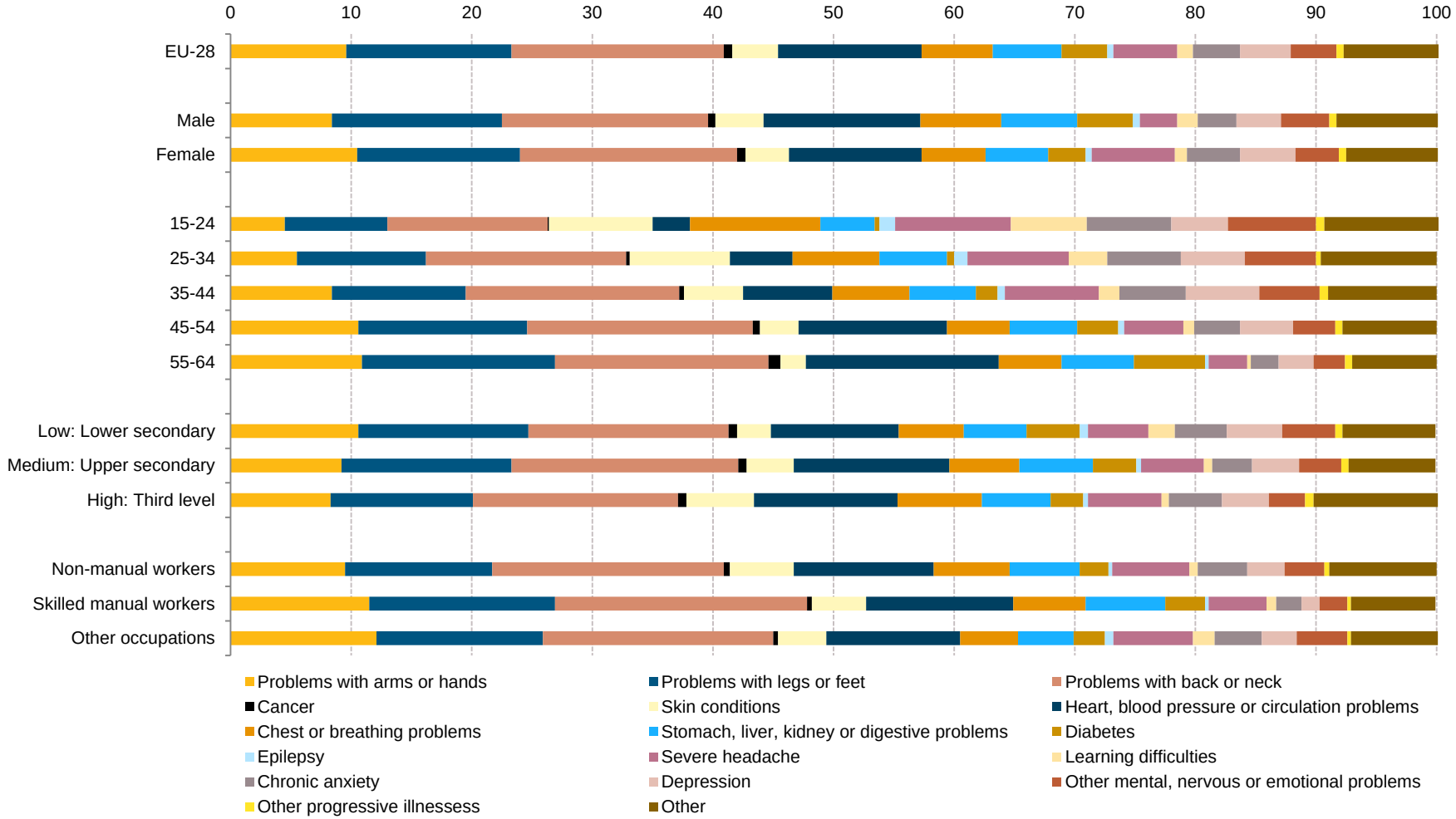


Figure 20 provides the distributions of the variable HEALTHSE for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. Only the percentages of positive answers (categories 01 to 17) are provided.

- At the EU-28 level, the most representative category was "Problems with back or neck" (17.6 %), followed by "Problems with legs or feet" (13.7 %) and "Heart, blood pressure or circulation problems" (11.9 %).
- No obvious trend was pointed out regarding the analysis of gender. The most representative category for both males and females was "Problems with back or neck" (resp. 17.1 % and 18.0 %), followed by "Problems with legs or feet" (resp. 14.1 % and 13.5 %) and "Heart, blood pressure or circulation problems" (resp. 13.0 % and 11.0 %).
- This variable seems to be linked to the age of the respondent. Indeed, at the EU-28 level:
    - The older you are, the more likelihood there is that you have problems with arms or hands (from 4.5 % for the group 15-24 to 10.9 % for the group 55-64), legs or feet (from 8.5 % to 16.0 %), back or neck (from 13.3 % to 18.7 %), cancer (from 0.1 % to 1.0 %), heart, blood pressure or circulation problems (from 3.1 % to 16.0 %), and diabetes (from 0.4 % to 5.9 %).
    - The younger you are, the more likelihood there is that you have skin conditions (from 2.1 % for the group 55-64 to 8.6 % for the group 15-24), chest or breathing problems (from 5.2 % to 10.8 %), severe headache (from 3.2 % to 9.6 %), learning difficulties (from 0.3 % to 6.3 %), chronic anxiety (from 2.3 % to 7.0 %), and other mental, nervous or emotional problems (from 2.6 % to 7.3 %).
- No trend was pointed out regarding the analysis of the level of education. The most representative category for the three categories (Low, Medium, High) was "Problems with back or neck" (resp. 16.6 %, 18.8 % and 17.0 %), followed by "Problems with legs or feet" (resp. 14.1 %, 14.1 % and 11.8 %) and "Heart, blood pressure or circulation problems" (resp. 10.6 %, 12.9 % and 11.9 %).
- Regarding the analysis by occupational group, more problems appeared with legs or feet for skilled manual workers (15.4 %) than for non-manual workers (12.2 %).

Figure 20 – Distribution of HEALTHSE (positive answers) by sex, age group, level of education, and occupational group for the EU-28 aggregate (%)



3.2.3. First basic activity difficulty (DIFFICMA)

Figure 21 provides the distribution of the variable DIFFICMA (*First basic activity difficulty*), showing only the dichotomized categories "Yes" (categories 01 to 10), "No" (category 11) and "blank". Across countries, the share of "Yes" varied from 5.3 % in Ireland to 23.5 % in Austria. At the EU-28 level, this rate reached 14.0 %. Compared to the general level (1.0 % at the EU-28 level), the share of missing values was higher in Germany (3.9 %).

Figure 21 – Distribution of DIFFICMA (No/Yes/Blank)

(%)

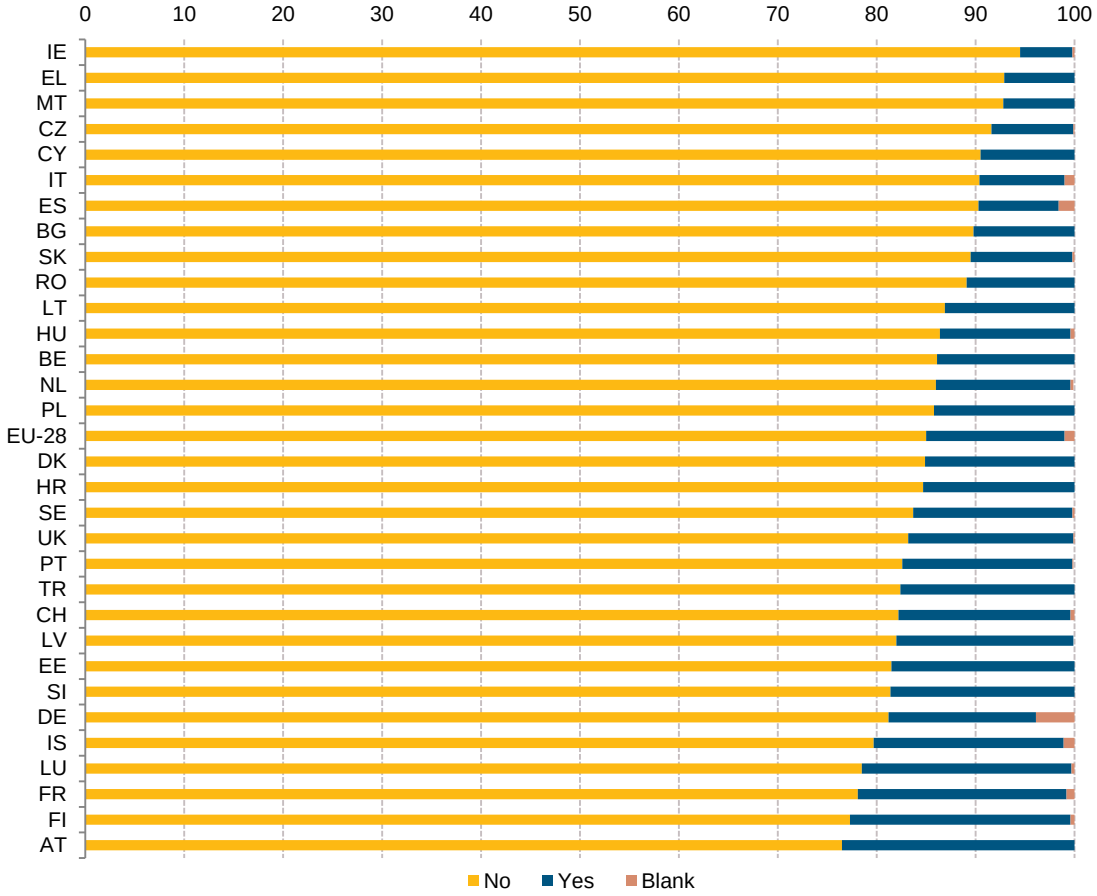


Figure 22 provides the distributions of the variable DIFFICMA for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. As previously, only percentages of the dichotomized categories "Yes" (categories 01 to 10), "No" (category 11) and "blank" are provided.

- No obvious trend was pointed out regarding the gender. The rate of "Yes" responses reached 12.9 % for males and 15.1 % for females.
- As expected, this variable seems to be linked to the age of the respondent. Indeed, the rate of "Yes" responses increased with the age, varying from 4.6 % for the group 15-24 to 29.2 % for the group 55-64.
- This variable also seems to be linked to the level of education: the higher the level of education, the lower the number of persons having a basic activity difficulty. Indeed, the share of "Yes" responses varied from 9.2 % for the High level of education to 18.3 % for the Low level of education.
- No trend was pointed out regarding the analysis of the occupational group. The rate of "Yes" responses reached 11.1 % for the skilled manual workers and 9.5 % for the non-manual workers.

Figure 22 – Distribution of DIFFICMA (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)

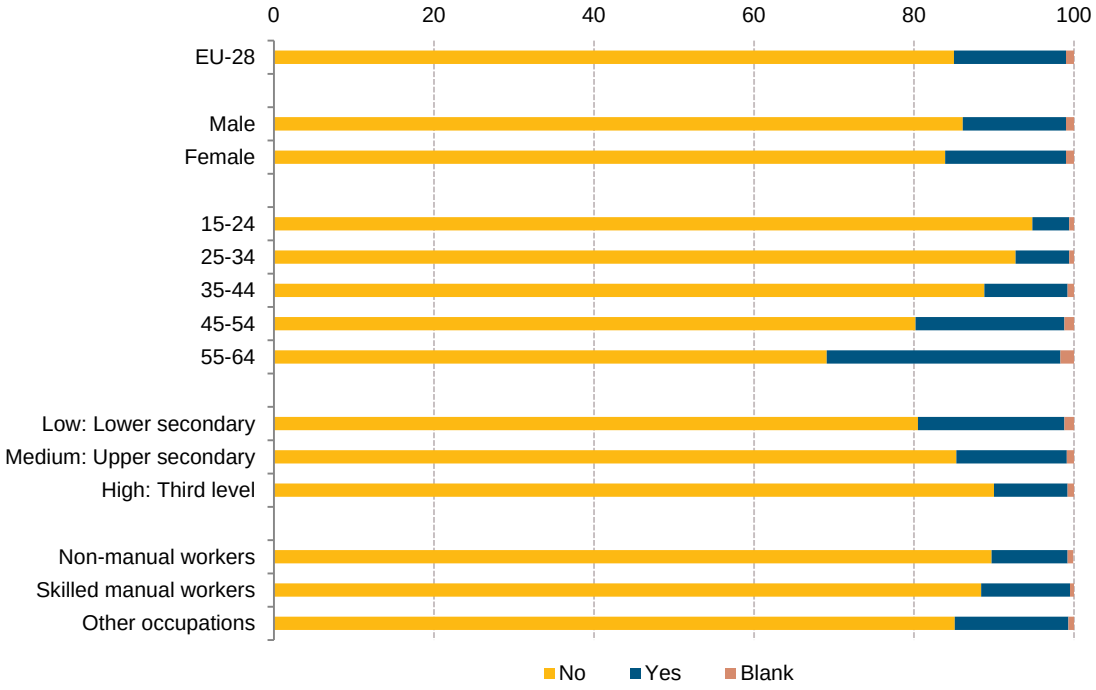
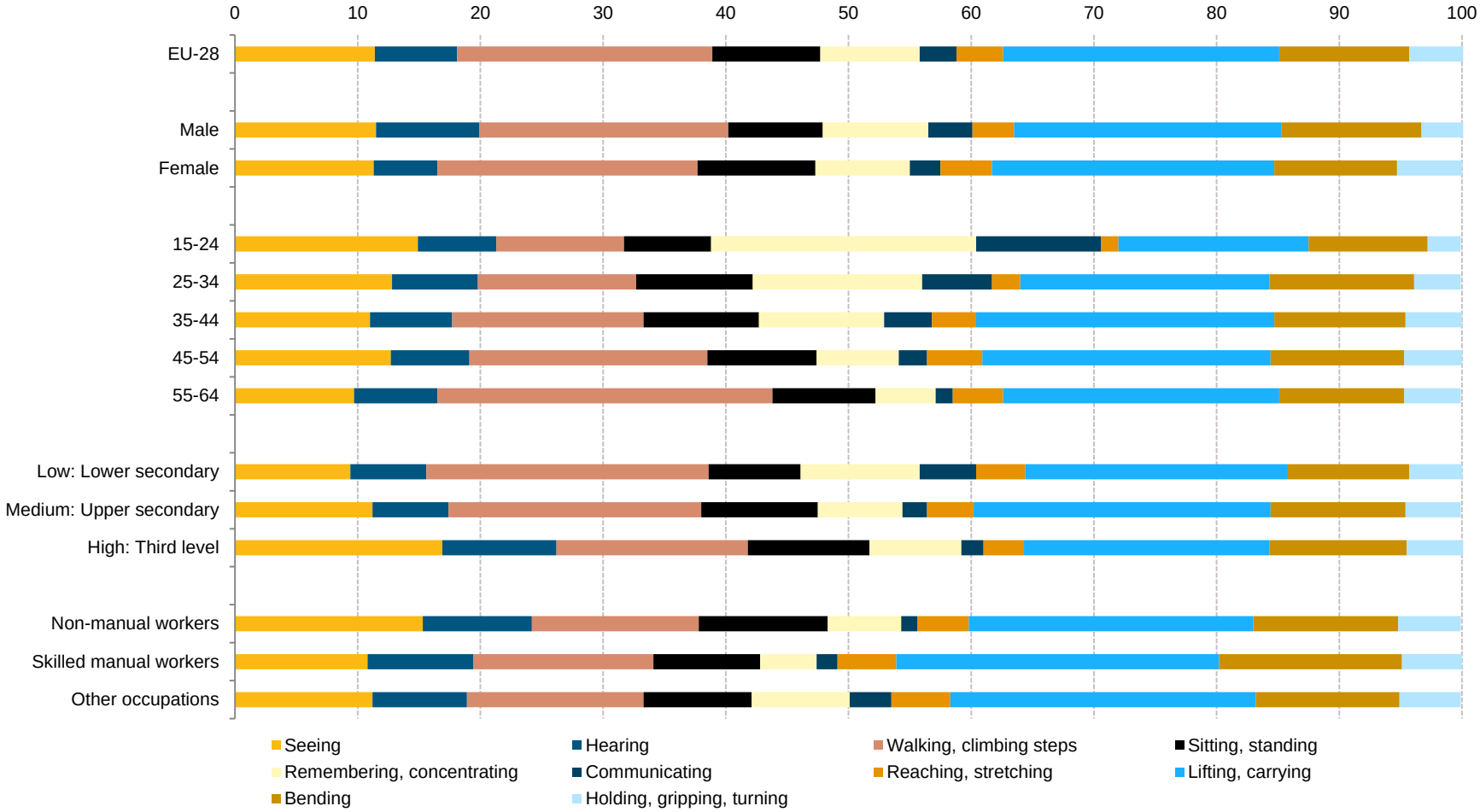


Figure 23 provides the distributions of the variable DIFFICMA for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. Only the percentages of positive answers (categories 01 to 10) are provided.

- At the EU-28 level, the most representative category was "Lifting, carrying" (22.5 %), followed by "Walking, climbing steps" (20.8 %) and "Seeing" (11.4 %).
- No obvious trend was pointed out regarding the analysis of the gender. The most representative category for both males and females was "Lifting, carrying" (resp. 21.8 % and 23 %), followed by "Walking, climbing steps" (resp. 20.3 % and 21.2 %) and "Seeing" (resp. 11.5 % and 11.3 %).
- This variable seems to be linked to the age of the respondent. Indeed, at the EU-28 level:
    - The older you are, the more likelihood there is that you have difficulties with walking, climbing steps (from 10.4 % for the group 15-24 to 27.3 % for the group 55-64) and reaching, stretching (from 1.4 % to 4.5 %).
    - The younger you are the more likelihood there is that you have difficulties with remembering, concentrating (from 4.9 % for the group 55-64 to 21.6 % for the group 15-24) and communicating (from 1.4 % to 10.2 %).
- Regarding the analysis of the level of education, it appeared that the higher the level of education, the higher the share of respondents having difficulties with seeing (from 9.4 % - Low to 16.9 % - High) and hearing (from 6.2 % - Low to 9.3 % - High). The opposite trend was observed for the share of respondent having difficulties with walking, climbing steps (from 15.6 % - High to 23.0 % - Low).
- Regarding the analysis by occupational group, fewer difficulties appeared with seeing for skilled manual workers (10.8 %) than for non-manual workers (15.3 %).

Figure 23 – Distribution of DIFFICMA (positive answers) by sex, age group, level of education, and occupational group for the EU-28 aggregate (%)



3.2.4. Second basic activity difficulty (DIFFICSE)

Figure 24 provides the distribution of the variable DIFFICSE (*Second basic activity difficulty*), showing only the dichotomized categories "Yes" (categories 01 to 10), "No" (category 11) and "blank". Across countries, the share of "Yes" varied from 30.1 % in Malta to 76.6 % in the Netherlands. At the EU-28 level, this rate reached 51.7 %. Four countries (Belgium, Germany, Austria, the United Kingdom) did not collect the "No" category. The latter seems to be included in the "blank" category, suspiciously high for these countries.

Figure 24 – Distribution of DIFFICSE (No/Yes/Blank)

(%)

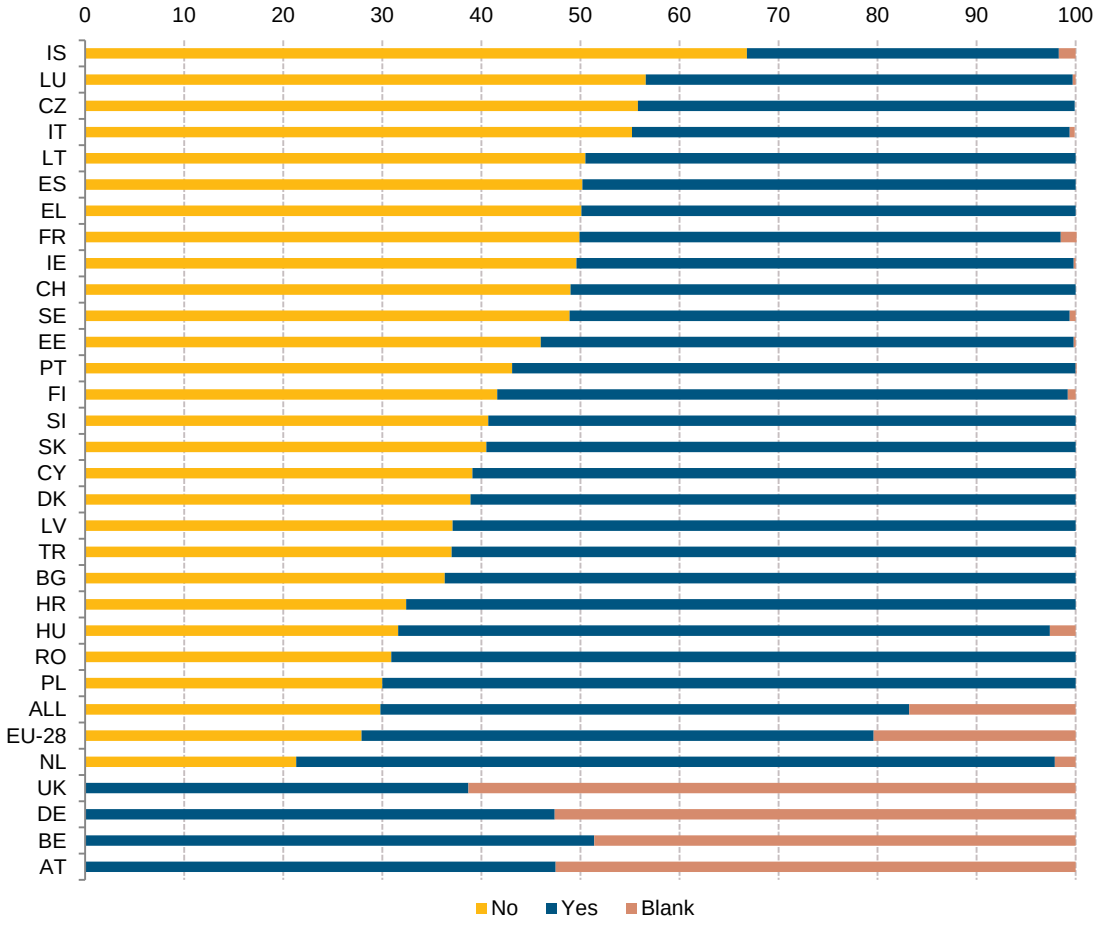


Figure 25 provides the distributions of the variable DIFFICSE for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. As previously, only percentages of the dichotomized categories "Yes" (categories 01 to 10), "No" (category 11) and "blank" are provided.

- No obvious trend was pointed out regarding the gender. The share of "Yes" responses reached 49.3 % for the males and 53.6 % for the females.
- As expected, this variable seems to be linked to the age of the respondent. Indeed, the rate of "Yes" responses increased with the age, varying from 33.0 % for the group 15-24 to 59.5 % for the group 55-64.
- This variable also seems to be linked to the level of education: the higher the level of education, the lower the number of persons having a second basic activity difficulty. Indeed, the rate of "Yes" responses varied from 38.9 % for the High level of education to 56.9 % for the Low level of education.
- No trend was pointed out regarding the analysis of the occupational group. The rate of "Yes" responses reached 45.9 % for the skilled manual workers and 37.6 % for the non-manual workers.

Figure 25 – Distribution of DIFFICSE (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)

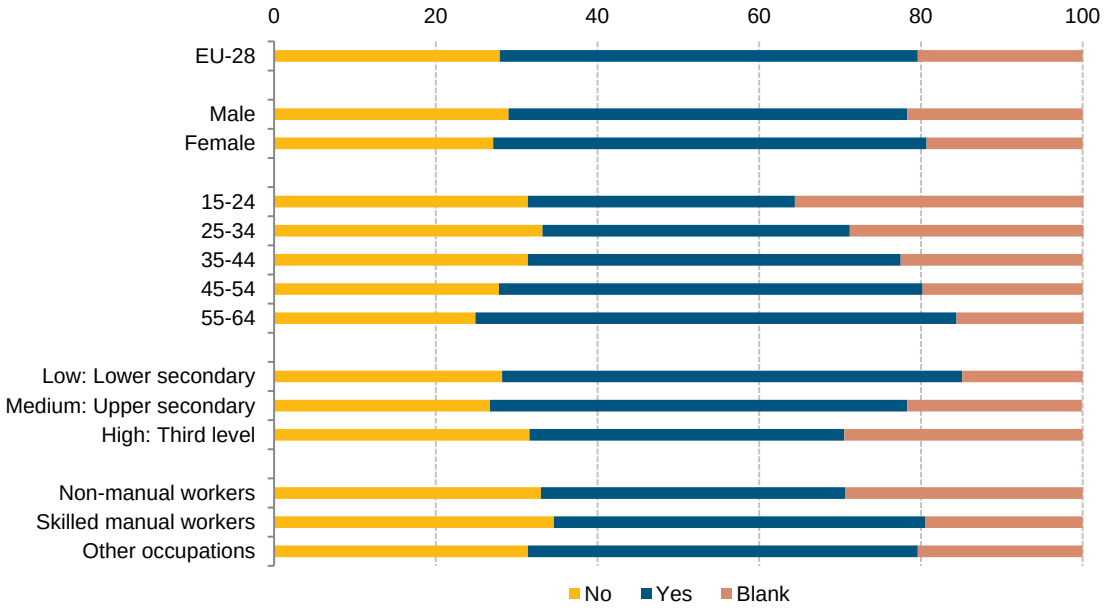
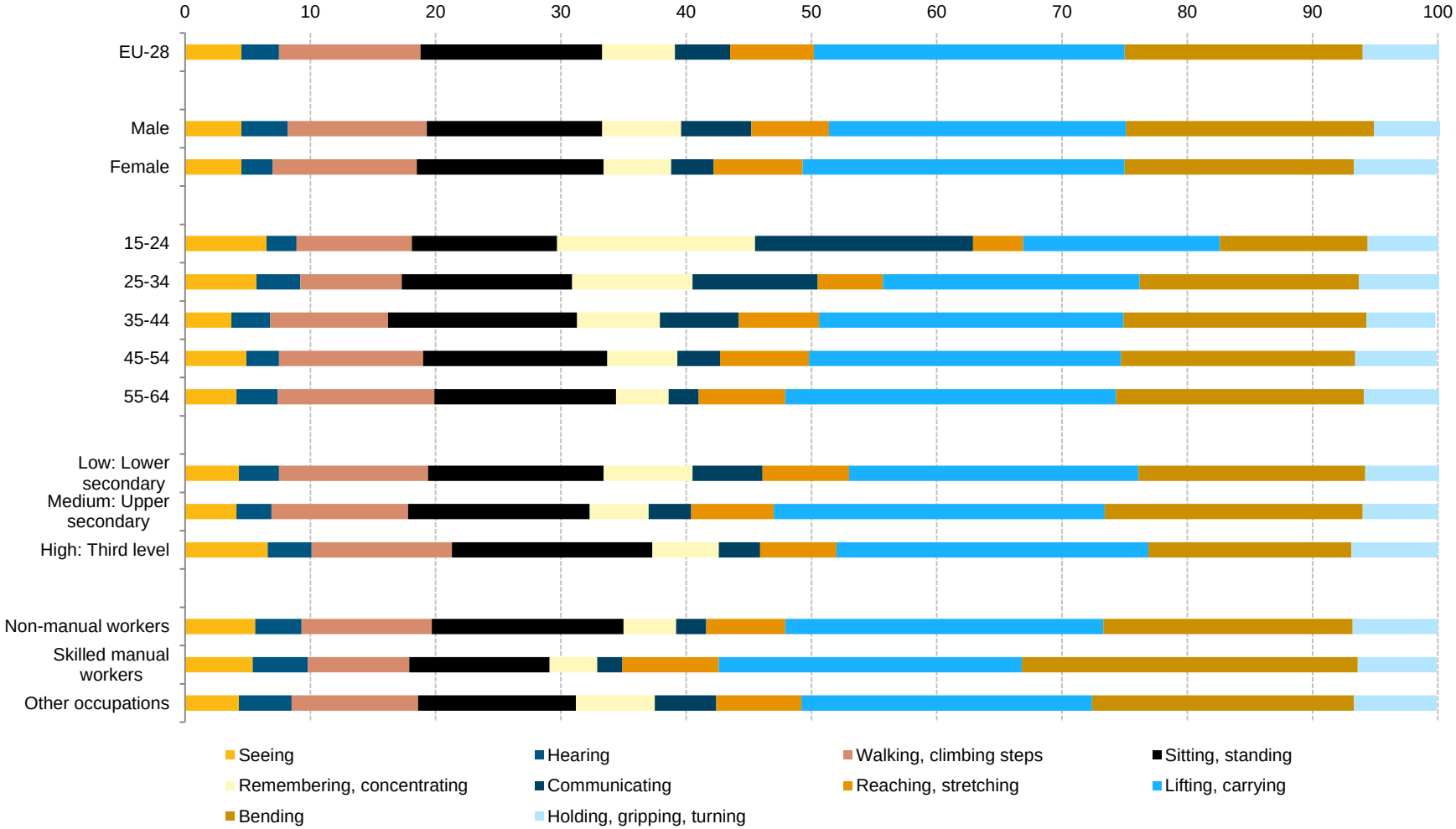


Figure 26 provides the distributions of the variable DIFFICSE for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. Only the percentages of positive answers (categories 01 to 10) are provided.

- At the EU-28 level, the most representative category was "Lifting, carrying" (24.8 %), followed by "Bending" (19.0 %) and "Sitting, standing" (14.5 %)
- No obvious trend was pointed out regarding the analysis of the gender. The most representative category for both males and females was "Lifting, carrying" (resp. 23.7 % and 25.7 %), followed by "Bending" (resp. 19.8 % and 18.3 %) and "Sitting, standing" (resp. 14.0 % and 14.9 %).
- This variable seems to be linked to the age of the respondent. Indeed, at the EU-28 level:
    - The older you are, the more likelihood there is that you have difficulties with reaching, stretching (from 4.0 % for the group 15-24 to 6.9 % for the group 55-64), lifting, carrying (from 15.7 % to 26.4 %) and bending (from 11.8 % to 19.8 %).
    - The younger you are the more likelihood there is that you have difficulties with remembering, concentrating (from 4.2 % for the group 55-64 to 15.8 % for the group 15-24) and communicating (from 2.4 % to 17.4 %).
- No trend was pointed out regarding the analysis of the level of education. The most representative category for the three categories (Low, Medium, High) was "Lifting, carrying" (resp. 23.1 %, 26.4 % and 24.9 %), followed by "Bending" (resp. 18.1 %, 20.6 % and 16.2 %) and "Sitting, standing" (resp. 14.0 %, 14.5 % and 16.0 %).
- Regarding the analysis by occupational group, more difficulties appeared with bending for skilled manual workers (26.8 %) than for non-manual workers (19.9 %).

Figure 26 – Distribution of DIFFICSE (positive answers) by sex, age group, level of education, and occupational group for the EU-28 aggregate (%)



3.2.5. The health condition(s) or disease(s) or difficulty(ies) cause(s) the person's limitation in the number of hours that he/she can work in a week (LIMHOURS)

Figure 27 provides the distribution of the variable LIMHOURS (The health condition(s) or disease(s) or difficulty(ies) cause(s) the person's limitation in the number of hours that he/she can work in a week), showing only the dichotomized categories "Yes" (categories 1 to 3), "No" (category 4) and "blank". Across countries, the rate of "Yes" varied from 5.3 % in France to 59.9 % in the Netherlands. At the EU-28 level, this rate reached 25.3 %. However the share of "Blank" was suspiciously high in Germany (55.5 %) and to a lesser extent in France (10.2 %) and Spain (8.5 %).

Figure 27 – Distribution of LIMHOURS (No/Yes/Blank)

(%)

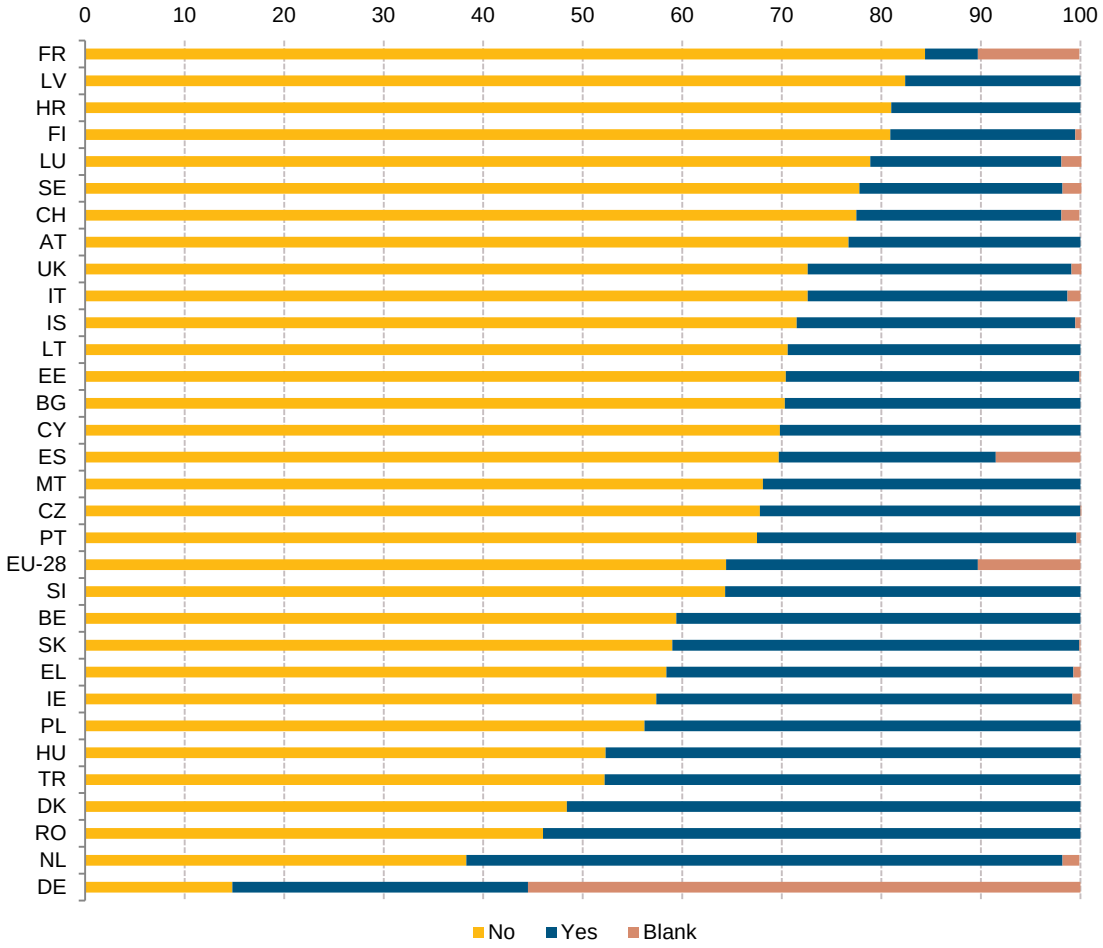


Figure 28 provides the distributions of the variable LIMHOURS for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. As previously, only percentages of the dichotomized categories "Yes" (categories 1 to 3), "No" (category 4) and "blank" are provided.

- No obvious trend was pointed out regarding the gender. The share of "Yes" responses reached 23.3 % for the males and 27.0 % for the females.
- This variable seems to be linked to the age of the respondent. Indeed, the rate of "Yes" responses increased with the age, varying from 13.4 % for the group 15-24 to 34.6 % for the group 55-64.
- This variable also seems to be linked to the level of education: the higher the level of education, the lower the number of persons having a limitation in the number of hours he/she can work. Indeed, the rate of "Yes" responses varied from 13.7 % for the High level of education to 32.6 % for the Low level of education.

- Regarding the analysis of the occupational group, the rate of "Yes" responses was higher for the skilled manual workers (14.7 %) than for the non-manual workers (10.0 %).

Figure 28 – Distribution of LIMHOURS (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)

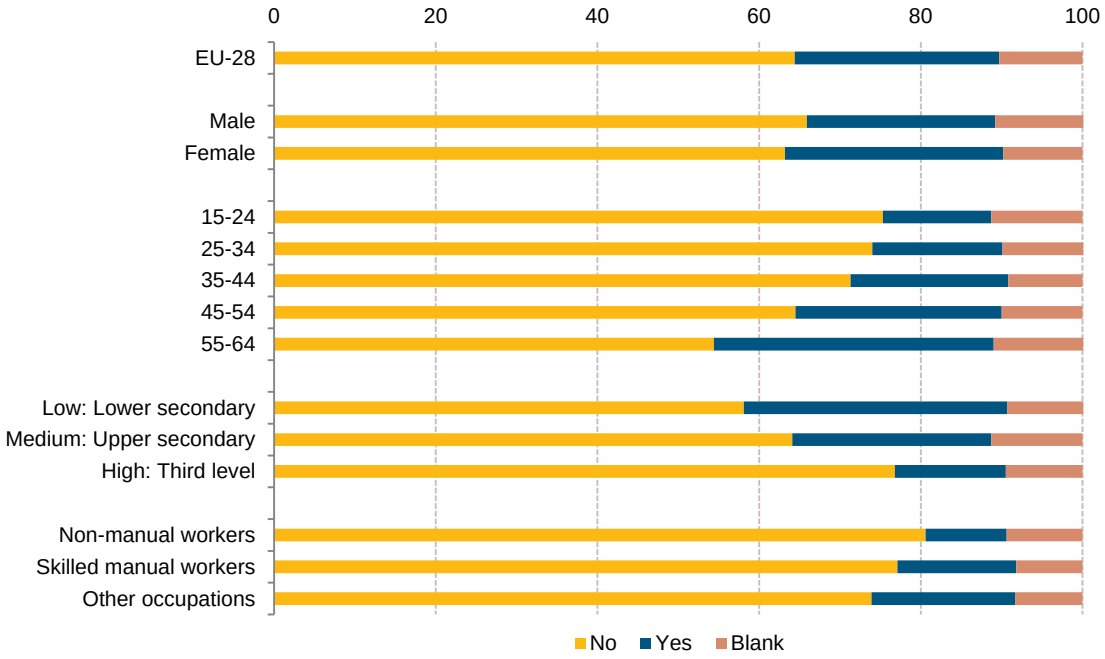


Figure 29 provides the distribution of the variable LIMHOURS, illustrating the positive answers (categories 1 to 3). Across countries: - the share of people limited in the number of hours because of the health condition(s) varied from 22.8 % in Bulgaria to 67.0 % in Poland; - the share of people limited in the number of hours because of the activity difficulty(ies) varied from 2.9 % in Slovakia to 15.6 % in Croatia; - the share of people limited in the number of hours because of both the health condition(s) and the activity difficulty(ies) varied from 21.8 % in Czech Republic to 71.1 % in Slovakia. At the EU-28 level, the share of people limited in the number of hours because of the health condition(s), because of the activity difficulty(ies) and because of both the health condition(s) and the activity difficulty(ies) reached respectively 49.3 %, 7.6 % and 43.1 %.

Figure 29 – Distribution of LIMHOURS (positive answers)
(%)

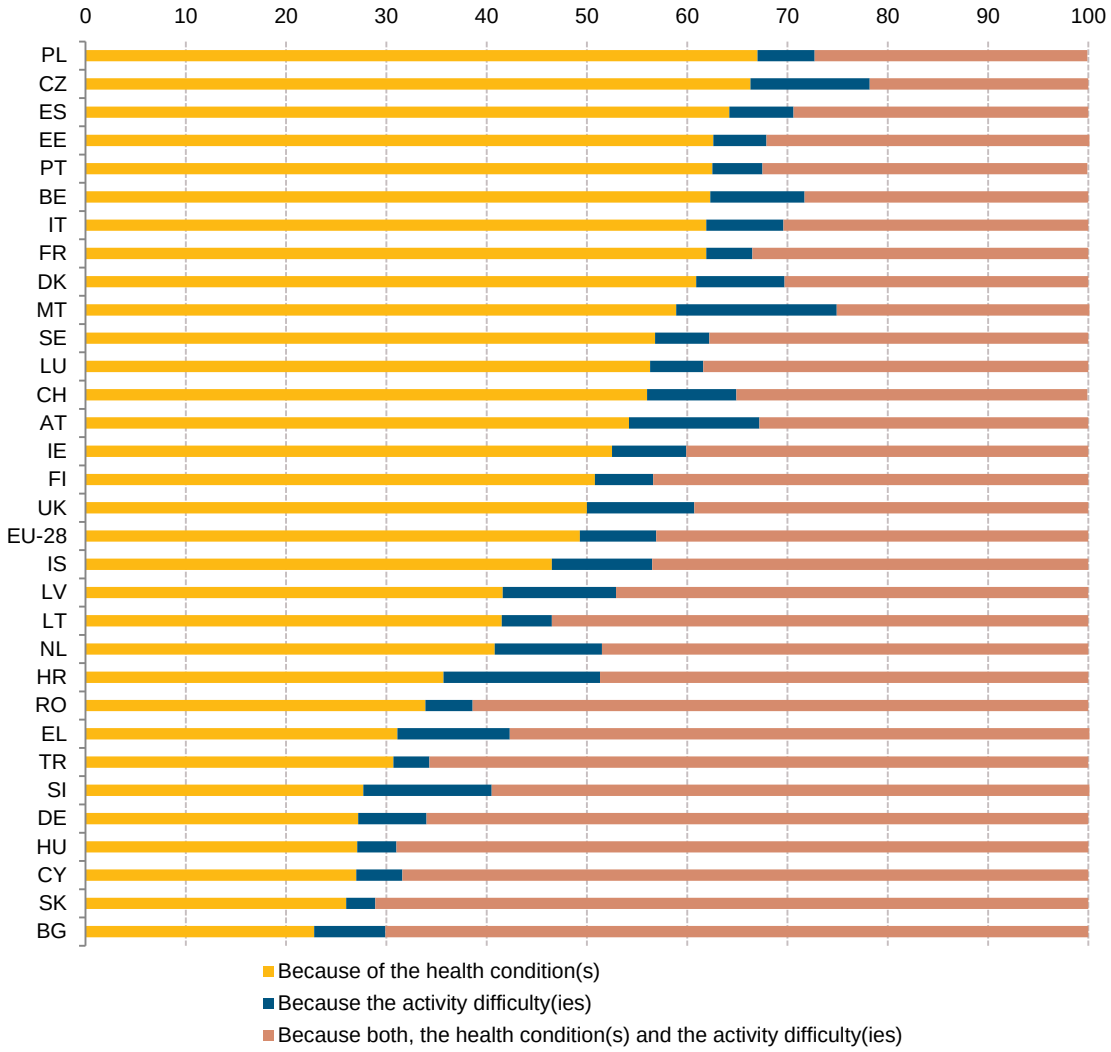
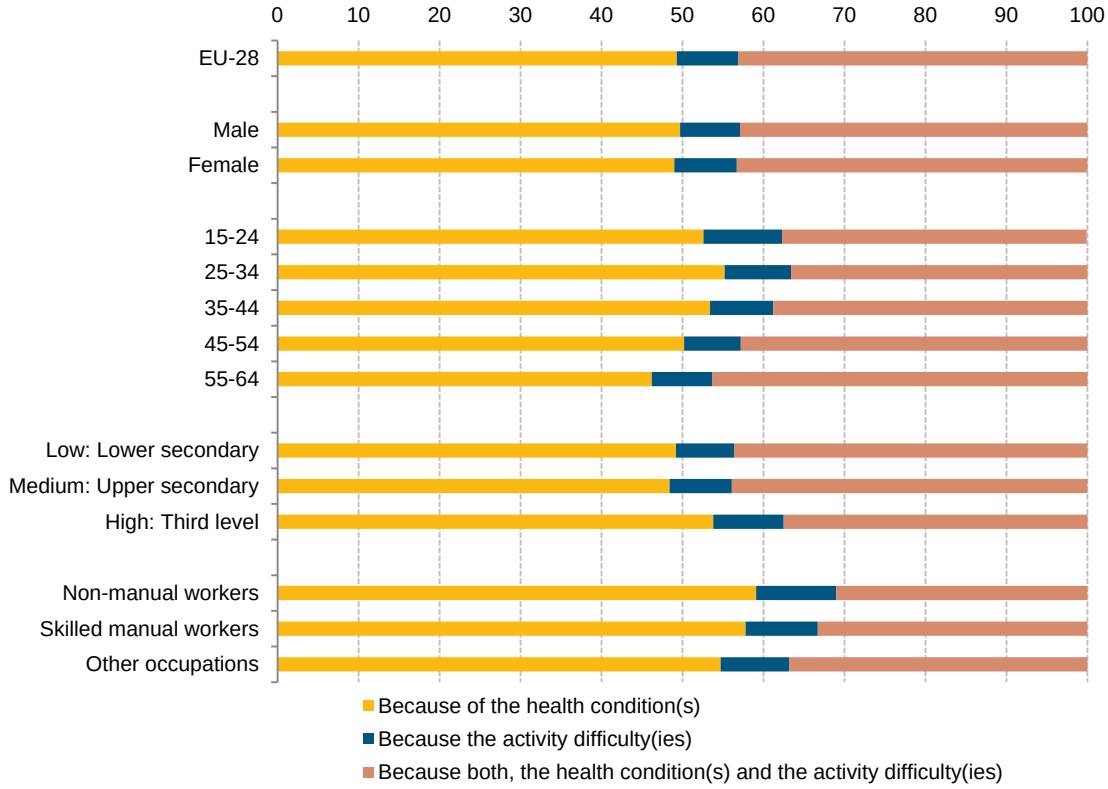


Figure 30 provides the distribution of the variable LIMHOURS for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. Only the percentages of positive answers (categories 01 to 3) are provided.

- No obvious trend was pointed out regarding the analysis of the gender. The most representative category for both males and females was "Because of the health condition(s)" (resp. 49.7 % and 49.0 %), followed by "Because both..." (resp. 42.9 % and 43.3 %) and "Because the activity difficulty(ies)" (resp. 7.4 % and 7.7 %).
- Regarding the variable age, from 25 years old, the share of respondents limited in the number of hours because of the health condition(s) decreased from 55.2 % (people aged 25-34) to 46.2 % (people aged 55-64). The opposite trend was observed on the share of respondents limited in the number of hours because of both the health condition(s) and activity difficulty(ies), increasing with the age from 36.6 % (age group 25-34) to 46.3 % (age group 55-64).
- No trend was pointed out regarding the analysis of the level of education. The most representative category for all levels (Low, Medium, High) was "Because of the health condition(s)" (resp. 49.2 %, 48.4 % and 53.8 %), followed by "Because both..." (resp. 43.6 %, 43.9 % and 37.5 %) and "Because the activity difficulty(ies)" (resp. 7.2 %, 7.7 % and 8.7 %).
- No trend was observed regarding the analysis by occupational group.

Figure 30 – Distribution of LIMHOURS (positive answers) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)



3.2.6. The health condition(s) or disease(s) or difficulty(ies) causes(s) the person's limitation in the type of work that he/she can do (LIMTYPEW)

Figure 31 provides the distribution of the variable LIMTYPEW (*The health condition(s) or disease(s) or difficulty(ies) causes(s) the person's limitation in the type of work that he/she can do*), showing only the dichotomized categories "Yes" (categories 1 to 3), "No" (category 4) and "blank". Across countries, the share of "Yes" varied from 18.8 % in France to 63.1 % in the Netherlands. At the EU-28 level, this rate reached 34.8 %. However the share of "Blank" was suspiciously high in Germany (52.0 %) and to a lesser extent in France (12.4 %) and Spain (7.9 %).

Figure 31 – Distribution of LIMTYPEW (No/Yes/Blank)
(%)

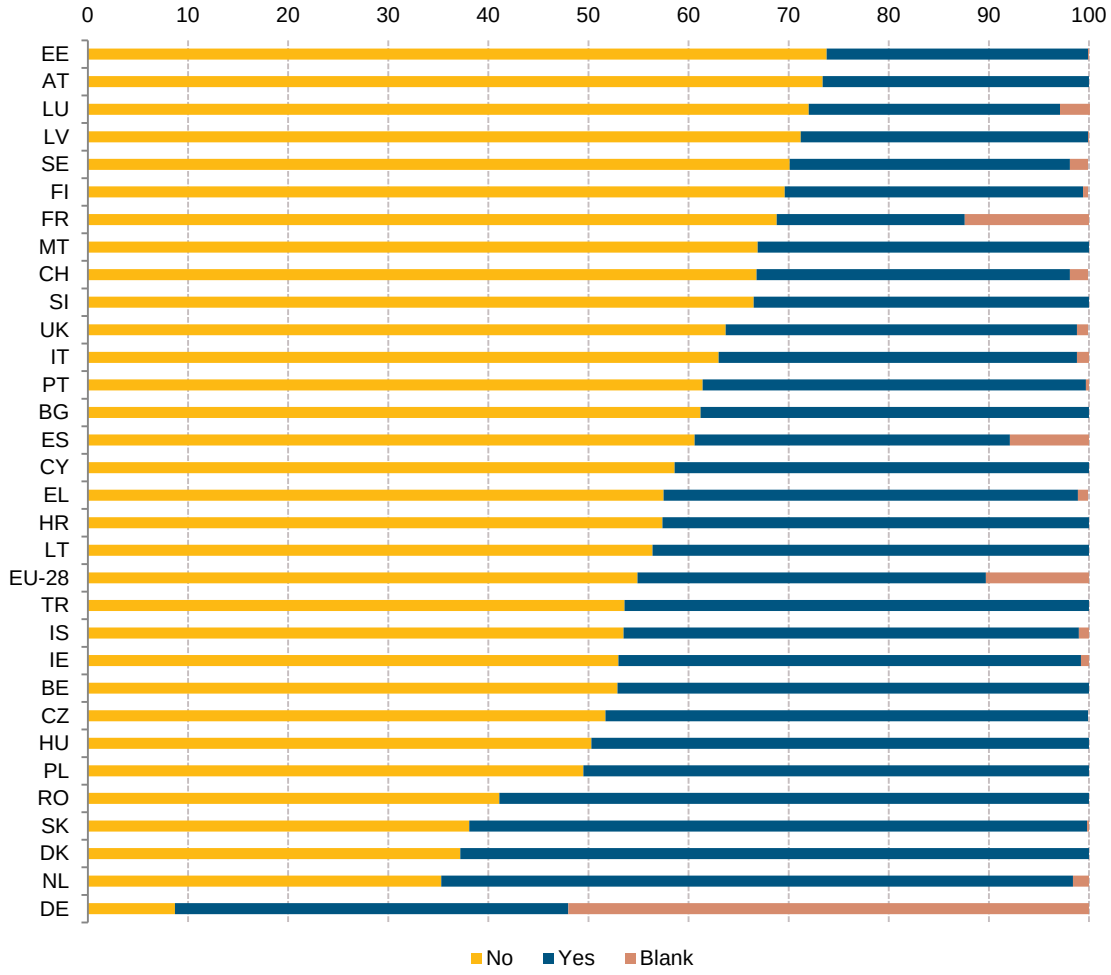


Figure 32 provides the distribution of the variable LIMTYPEW for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. As previously, only percentages of the dichotomized categories "Yes" (categories 1 to 3), "No" (category 4) and "blank" are provided.

- No obvious trend was pointed out regarding the gender. The share of "Yes" responses reached 33.8 % for the males and 35.7 % for the females.
- This variable seems to be linked to the age of the respondent. Indeed, the rate of "Yes" responses increased with the age, varying from 23.7 % for the group 15-24 to 42.3 % for the group 55-64.
- This variable also seems to be linked to the level of education: the higher the level of education, the lower the number of persons having a limitation in the type of work that he/she can do. Indeed, the rate of "Yes" responses varied from 22.4 % for the High level of education to 41.4 % for the Low level of education.
- Regarding the analysis of the occupational group, the rate of "Yes" responses was higher for the skilled manual workers (26.7 %) than for the non-manual workers (20.2 %).

Figure 32 – Distribution of LIMTYPEW (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)

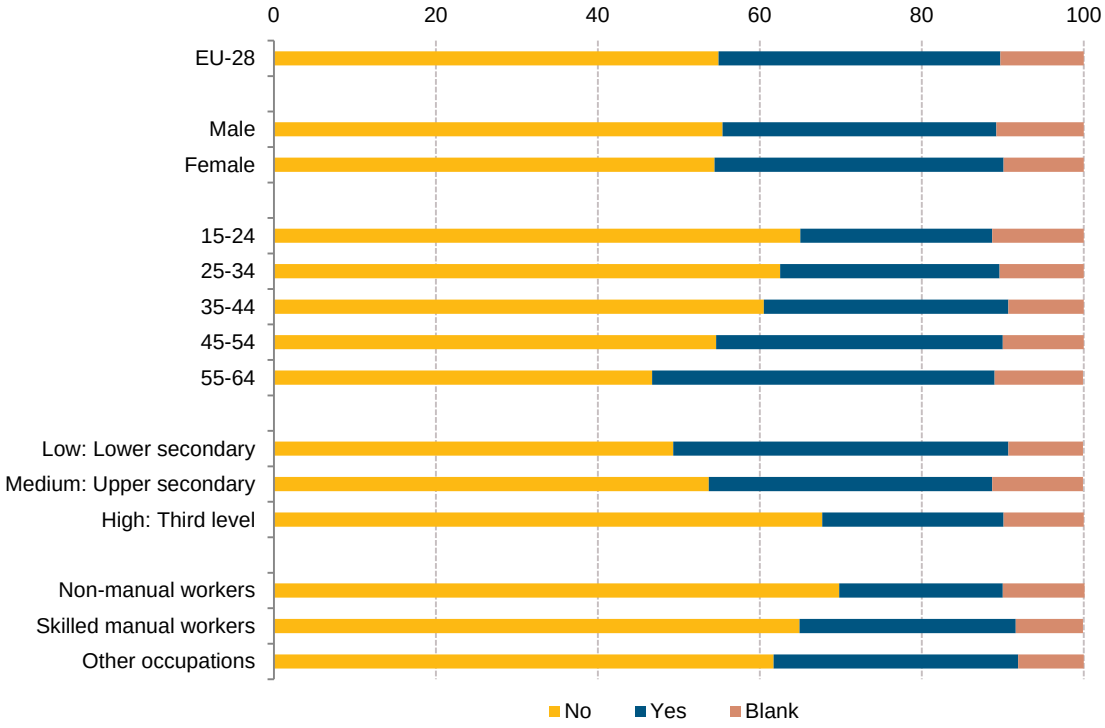


Figure 33 provides the distribution of the variable LIMTYPEW, illustrating the positive answers (categories 1 to 3). Across countries: - the share of people limited in the type of work because of the health condition(s) varied from 19.3 % in Bulgaria to 67.7 % in Poland; - the share of people limited in the type of work because of the activity difficulty(ies) varied from 4.0 % in Hungary to 20.5 % in Slovenia; - the share of people limited in the type of work because of both the health condition(s) and the activity difficulty(ies) varied from 13.9 % in Slovenia to 71.0 % in Bulgaria. At the EU-28 level, the share of people limited in the type of work because of the health condition(s), because of the activity difficulty(ies) and because of both the health condition(s) and the activity difficulty(ies) reached respectively 50.9 %, 9.2 % and 39.8 %.

Figure 33 – Distribution of LIMTYPEW (positive answers)
(%)

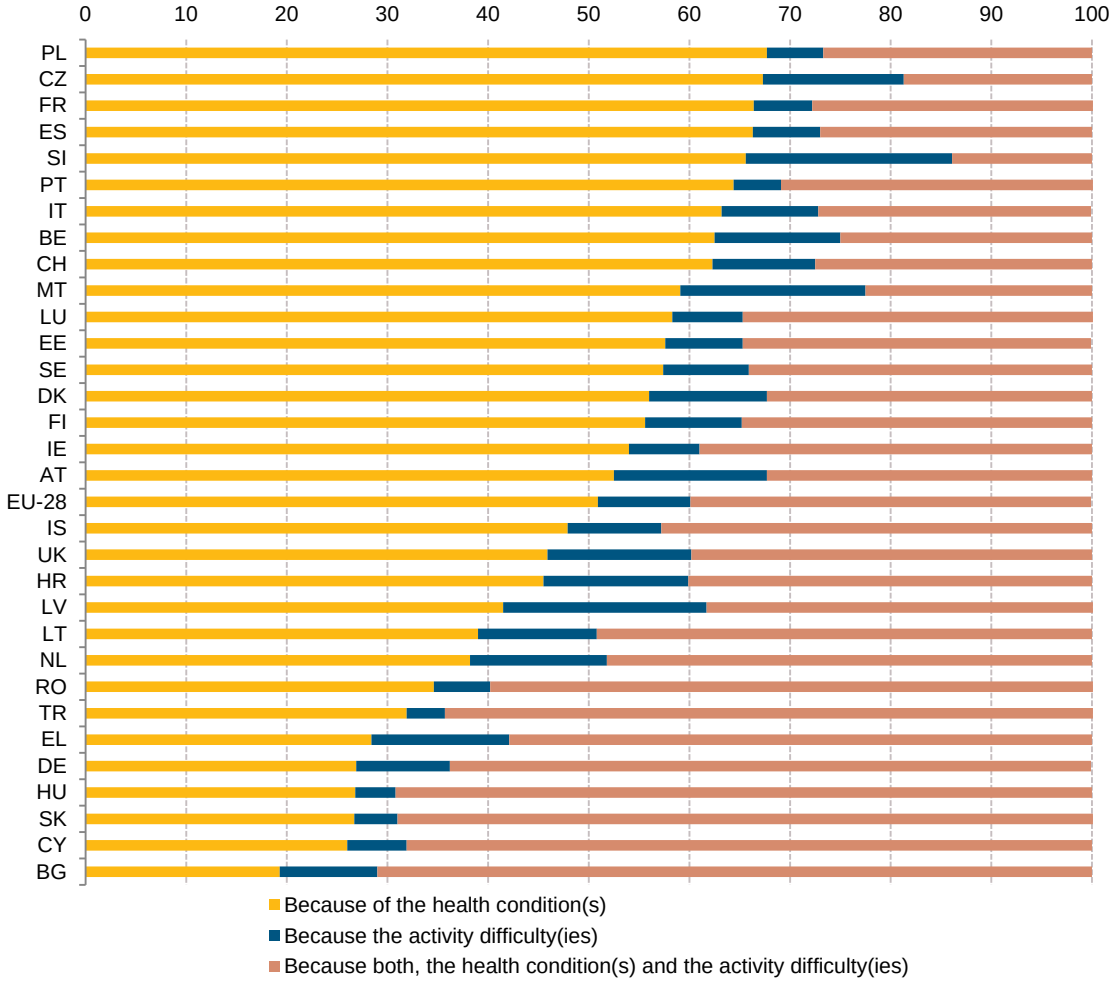
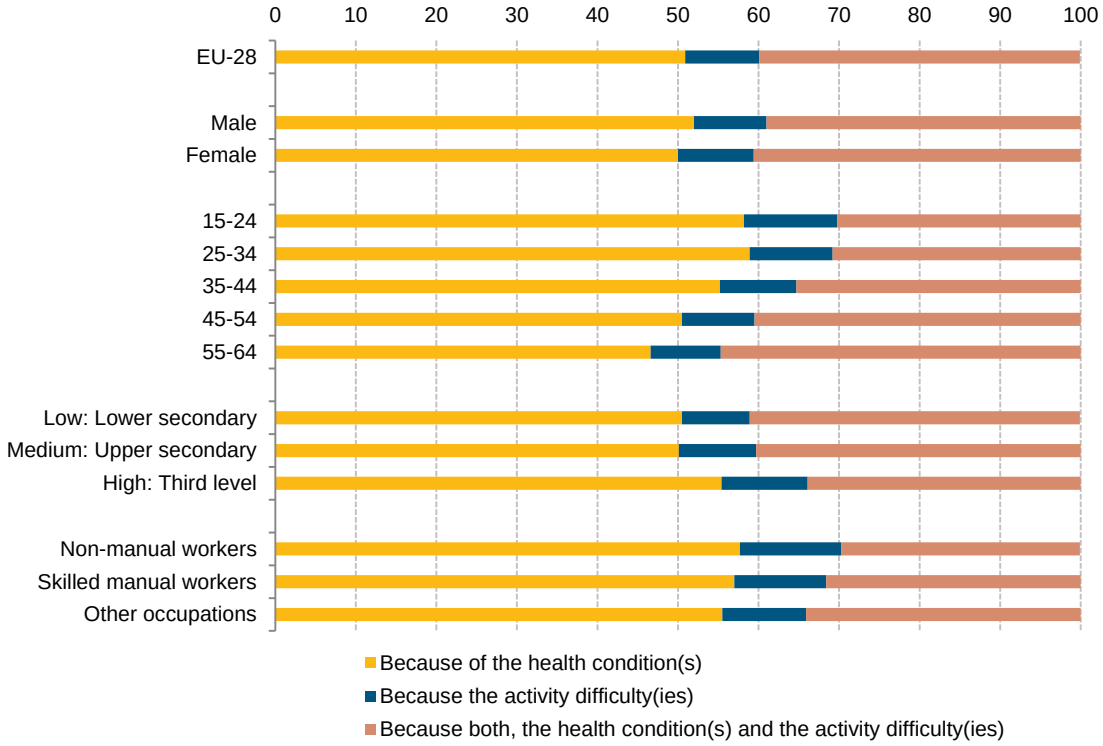


Figure 34 provides the distributions of the variable LIMTYPEW for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. Only the percentages of positive answers (categories 1 to 3) are provided.

- No obvious trend was pointed out regarding the analysis of the gender. The most representative category for both males and females was "Because of the health condition(s)" (resp. 52.0 % and 50.0 %), followed by "Because both..." (resp. 39.0 % and 40.6 %) and "Because the activity difficulty(ies)" (resp. 9.0 % and 9.4 %).
- Regarding the variable age, from 25 years old, the share of respondents limited in the type of work because of the health condition(s) decreased from 58.9 % (people aged 25-34) to 46.6 % (people aged 55-64). The opposite trend was observed on the share of respondents limited in the type of work because of both the health condition(s) and activity difficulty(ies), increasing with the age from 30.2 % (age group 15-24) to 44.7 % (age group 55-64).
- No trend was pointed out regarding the analysis of the level of education. The most representative category for all levels (Low, Medium, High) was "Because of the health condition(s)" (resp. 55.4 %, 50.1 % and 50.5 %), followed by "Because both..." (resp. 33.9 %, 40.3 % and 41.0 %) and "Because the activity difficulty(ies)" (resp. 10.7 %, 9.6 % and 8.4 %).
- No trend was observed regarding the analysis by occupational group.

Figure 34 – Distribution of LIMTYPEW (positive answers) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)



3.2.7. The health condition(s) or disease(s) or difficulty(ies) cause(s) the person's limitation in getting to and from work (LIMTRANS)

Figure 35 provides the distribution of the variable LIMTRANS (*The health condition(s) or disease(s) or difficulty(ies) cause(s) the person's limitation in getting to and from work*), showing only the dichotomized categories "Yes" (categories 1 to 3), "No" (category 4) and "blank". At the EU-28 level, the share of "Yes" reached 14.3 %, from 3.7 % in France to 35.0 % in Romania. However the share of "Blank" was suspiciously high in Germany (59.4 %) and to a lesser extent in France (10.1 %) and Spain (7.5 %).

Figure 35 – Distribution of LIMTRANS (No/Yes/Blank)
(%)

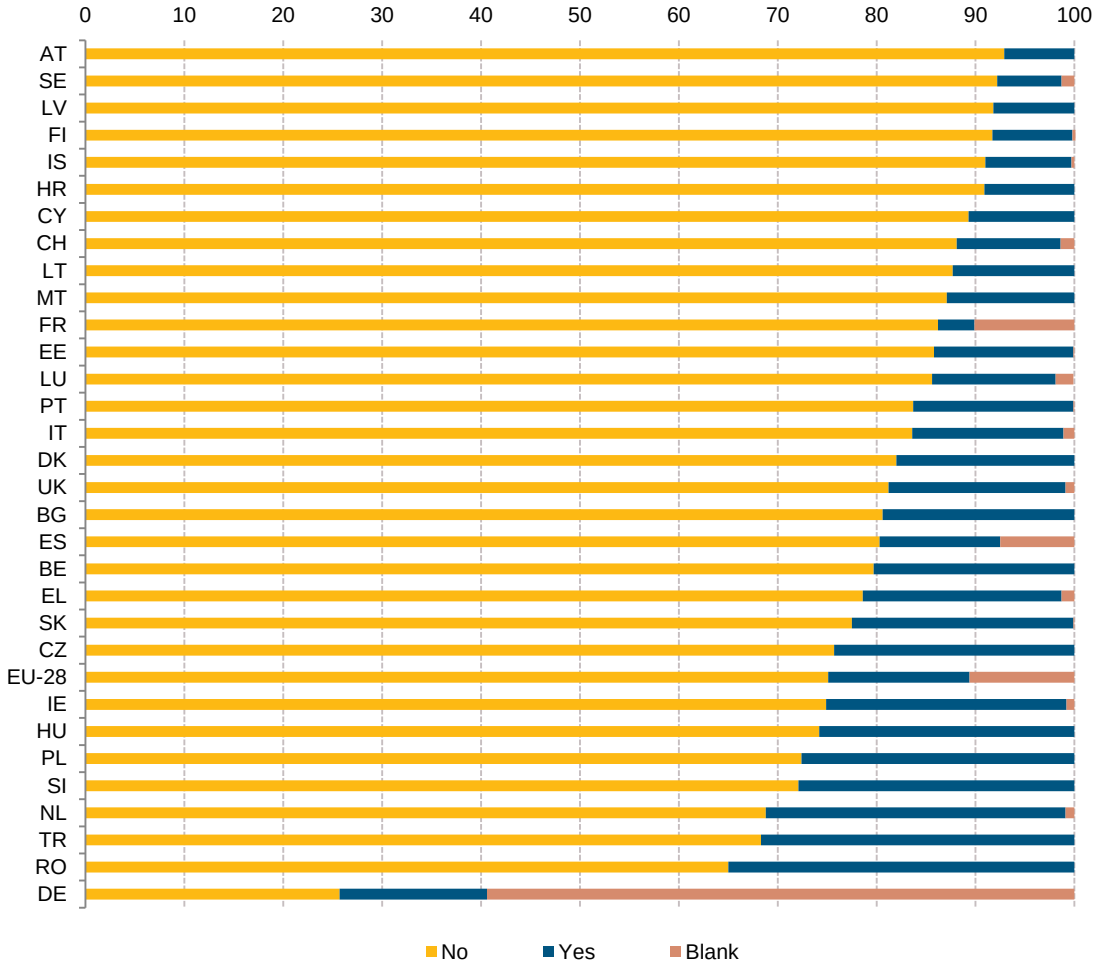


Figure 36 provides the distribution of the variable LIMTRANS for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. As previously, only percentages of the dichotomized categories "Yes" (categories 1 to 3), "No" (category 4) and "blank" are provided.

- No obvious trend was pointed out regarding the gender. The share of "Yes" responses reached 13.6 % for the males and 15.0 % for the females.
- This variable seems to be linked to the age of the respondent. Indeed, the rate of "Yes" responses increased with the age, varying from 8.9 % for the group 15-24 to 19.5 % for the group 55-64.
- This variable also seems to be linked to the level of education: the higher the level of education, the lower the number of persons having a limitation in getting to and from work. Indeed, the rate of "Yes" responses varied from 7.3 % for the High level of education to 19.5 % for the Low level of education.
- No trend was pointed out regarding the analysis of the occupational group. The rate of "Yes" responses reached 5.4 % for the skilled manual workers and 4.2 % for the non-manual workers.

Figure 36 – Distribution of LIMTRANS (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)

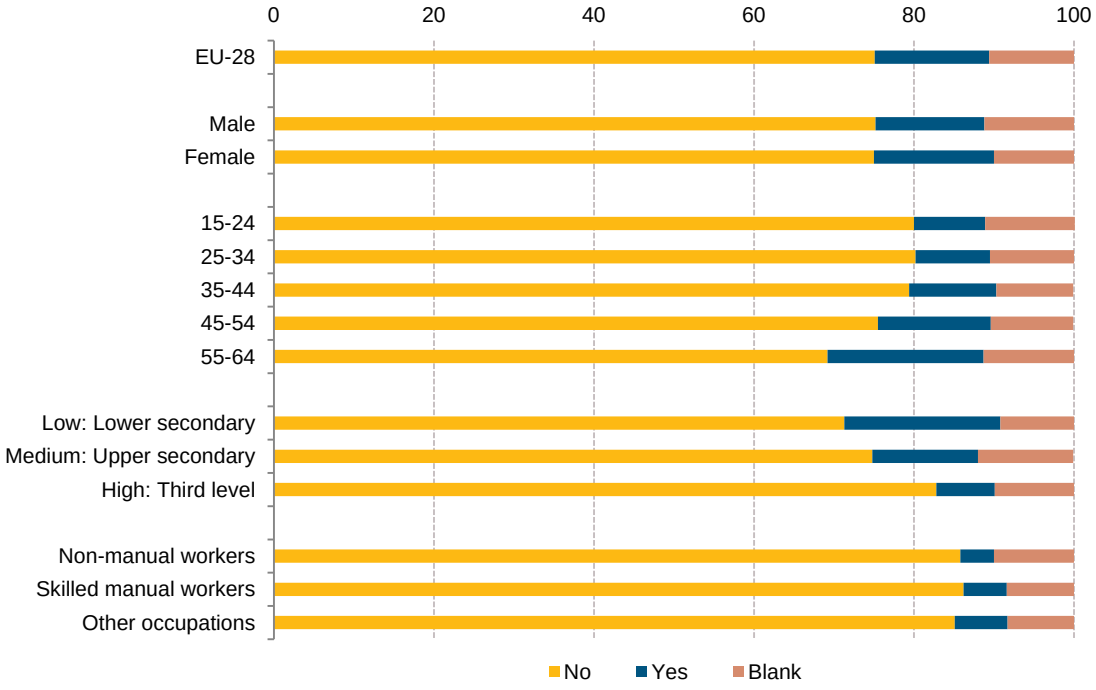


Figure 37 provides the distribution of the variable LIMTRANS, illustrating the positive answers (categories 1 to 3). Across countries: - the share of people limited in going to and from work because of the health condition(s) varied from 15.3 % in Bulgaria to 65.8 % in France; - the share of people limited in going to and from work because of the activity difficulty(ies) varied from 3.4 % in Turkey to 23.1 % in Croatia; - the share of people limited in going to and from work because of both the health condition(s) and the activity difficulty(ies) varied from 23.8 % in the Czech Republic to 76.7 % in Slovakia. At the EU-28 level, the share of people limited in going to and from work because of the health condition(s), because of the activity difficulty(ies) and because of both the health condition(s) and the activity difficulty(ies) reached respectively 45.0 %, 8.1 % and 46.8 %.

Figure 37 – Distribution of LIMTRANS (positive answers)
(%)

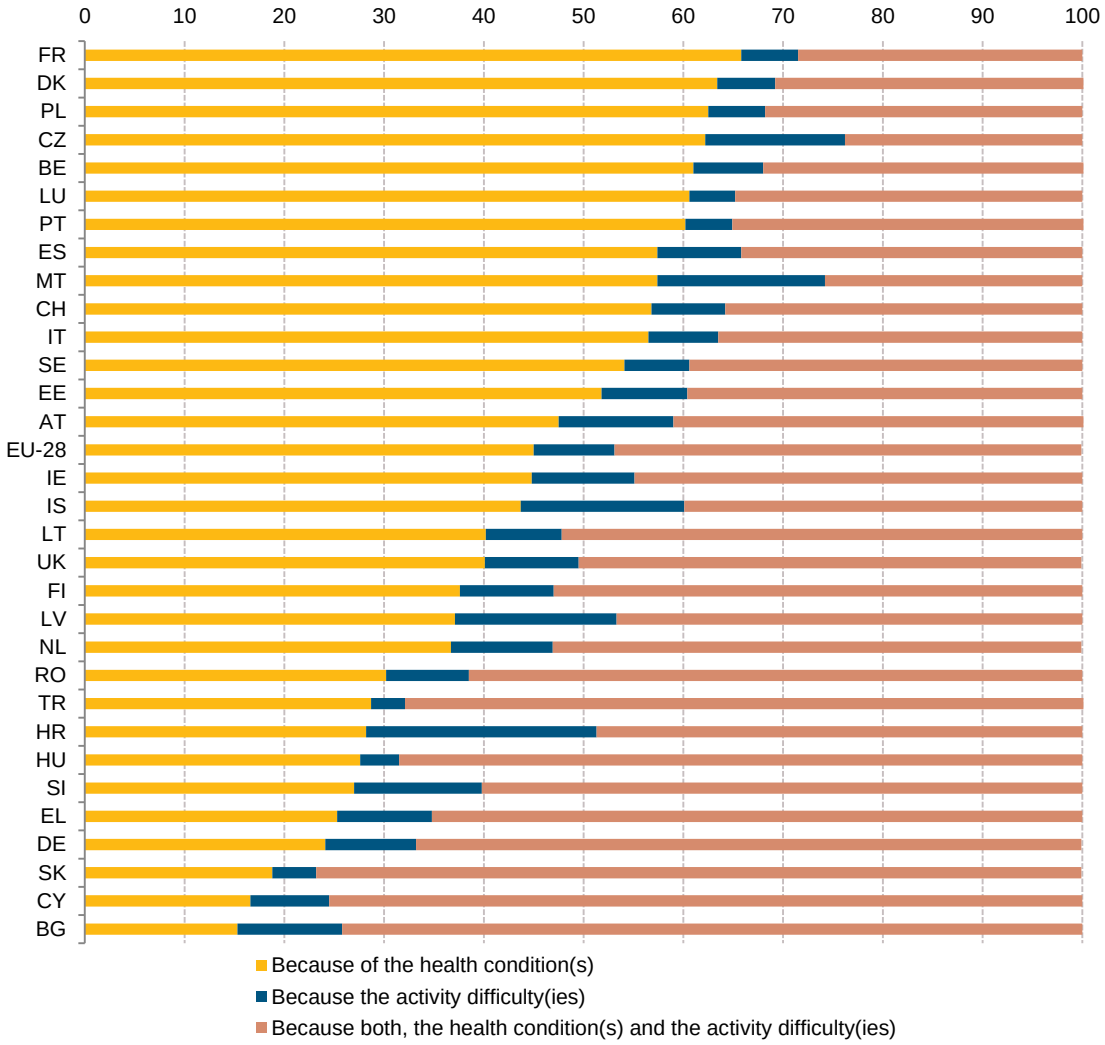
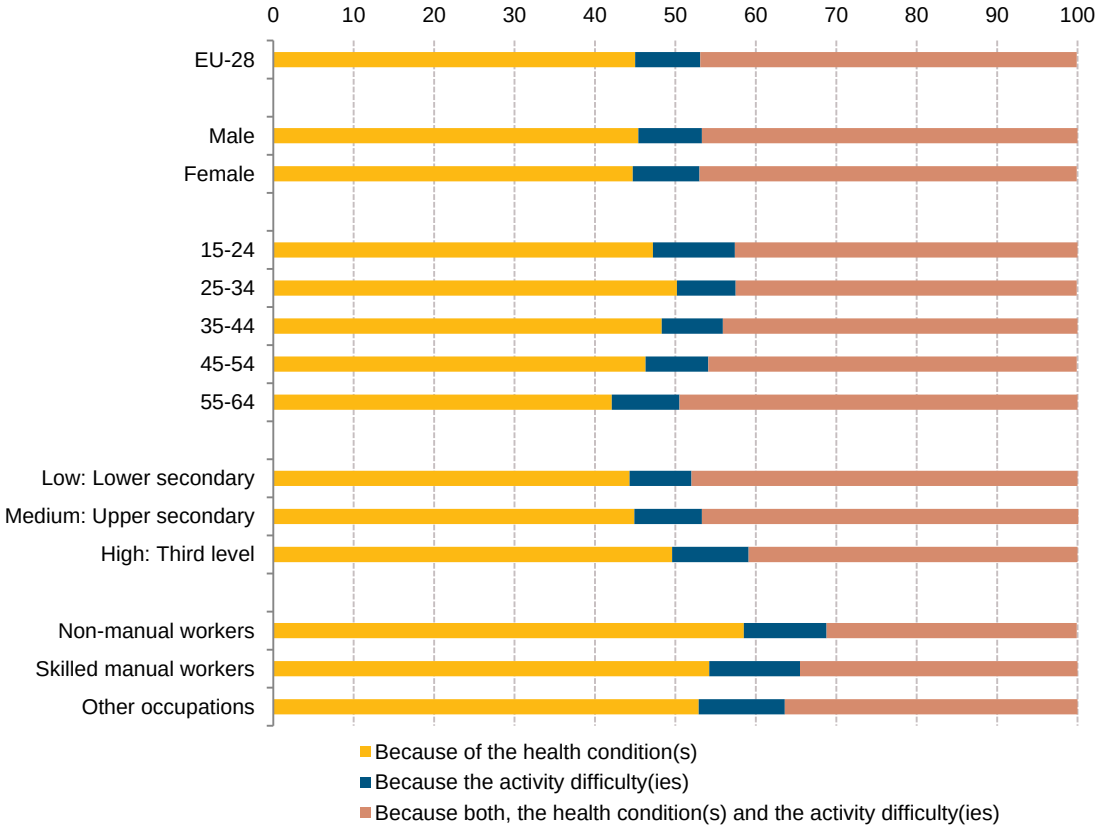


Figure 38 provides the distributions of the variable LIMTRANS for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. Only the percentages of positive answers (categories 1 to 3) are provided.

- No obvious trend was pointed out regarding the analysis of the gender. The most representative category for both males and females was "Because both..." (resp. 46.7 % and 46.9 %), followed by "Because of the health condition(s)" (resp. 45.4 % and 44.7 %) and "Because the activity difficulty(ies)" (resp. 7.9 % and 8.3 %).
- Regarding the variable age, from 25 years old, the share of respondents limited in going to and from work because of the health condition(s) decreased from 50.2 % (people aged 25-34) to 42.1 % (people aged 55-64). The opposite trend was observed on the share of respondents limited in going to and from work because of both the health condition(s) and activity difficulty(ies), increasing with the age from 42.4 % (age group 25-34) to 49.5 % (age group 55-64).
- This variable also seems to be linked to the level of education of the respondent. Indeed, the higher the level of education, the more likelihood that the respondent is limited because of the health condition(s) (from 44.3 % - Low to 49.6 % - High). The opposite trend was observed for people limited because both the health condition(s) and the activity difficulty(ies) (from 40.9 % - High to 48.0 % - Low).
- No trend was observed regarding the analysis by occupational group.

Figure 38 – Distribution of LIMTRANS (positive answers) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)



3.2.8. Because of the health problem or difficulty the person needs (not employed persons)/uses (employed persons) personal assistance to enable him/her to work (variable NEEDHELP)

Figure 39 provides the distribution of the variable NEEDHELP (*Because of the health problem or difficulty the person needs (not employed persons)/uses (employed persons) personal assistance to enable him/her to work*), for the categories "No", "Yes" and "Blank". The rate of persons needing/using personal assistance varied from 0.5 % in Finland to 25.6 % in Romania. At the EU-28 level, this rate reached 7.0 %. The share of "Blank" was suspiciously high in Germany (22.7 %), France (7.9 %) and Spain (8.9 %). Luxembourg collected the variable NEEDHELP in the national questionnaire but 100 % of data is missing.

Figure 39 – Distribution of NEEDHELP (No/Yes/Blank)
(%)

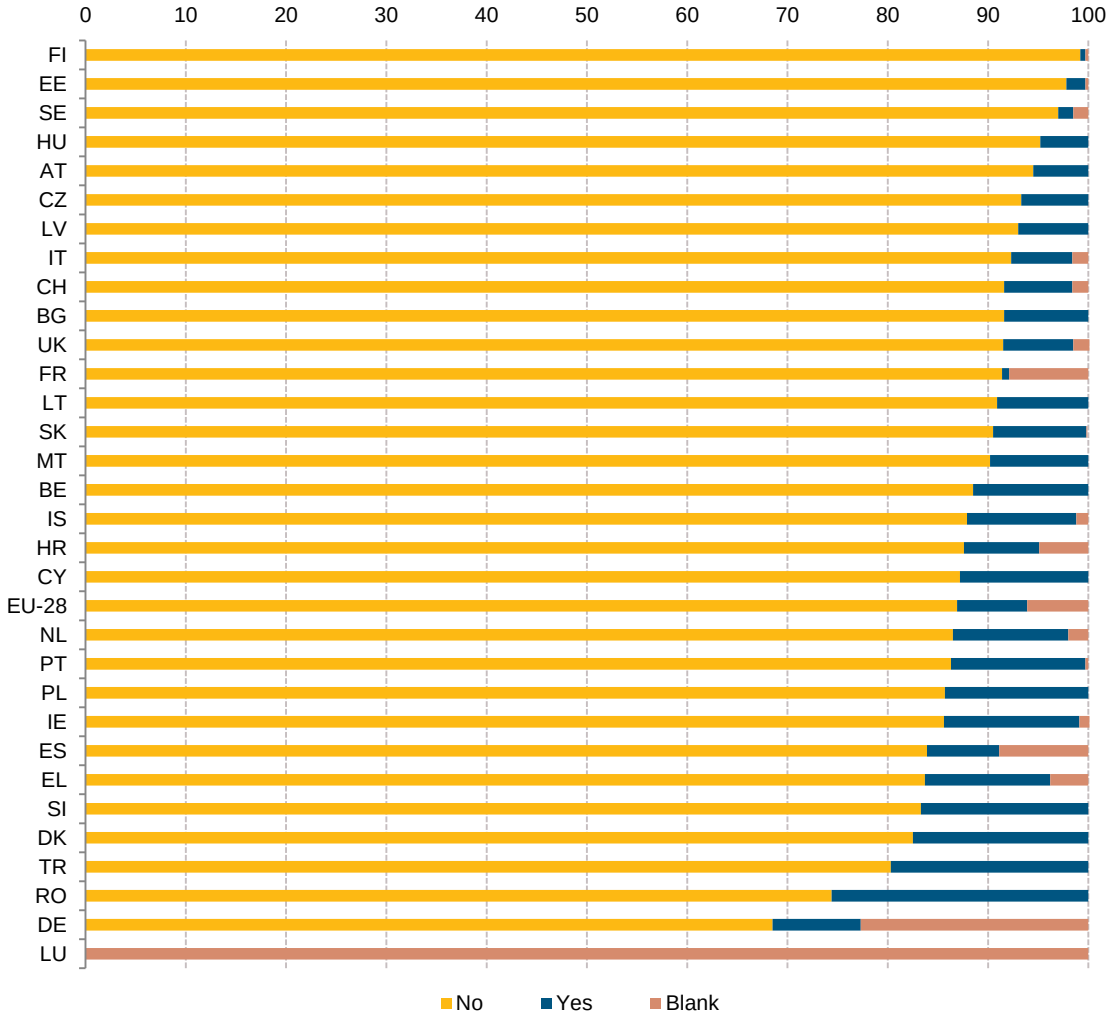
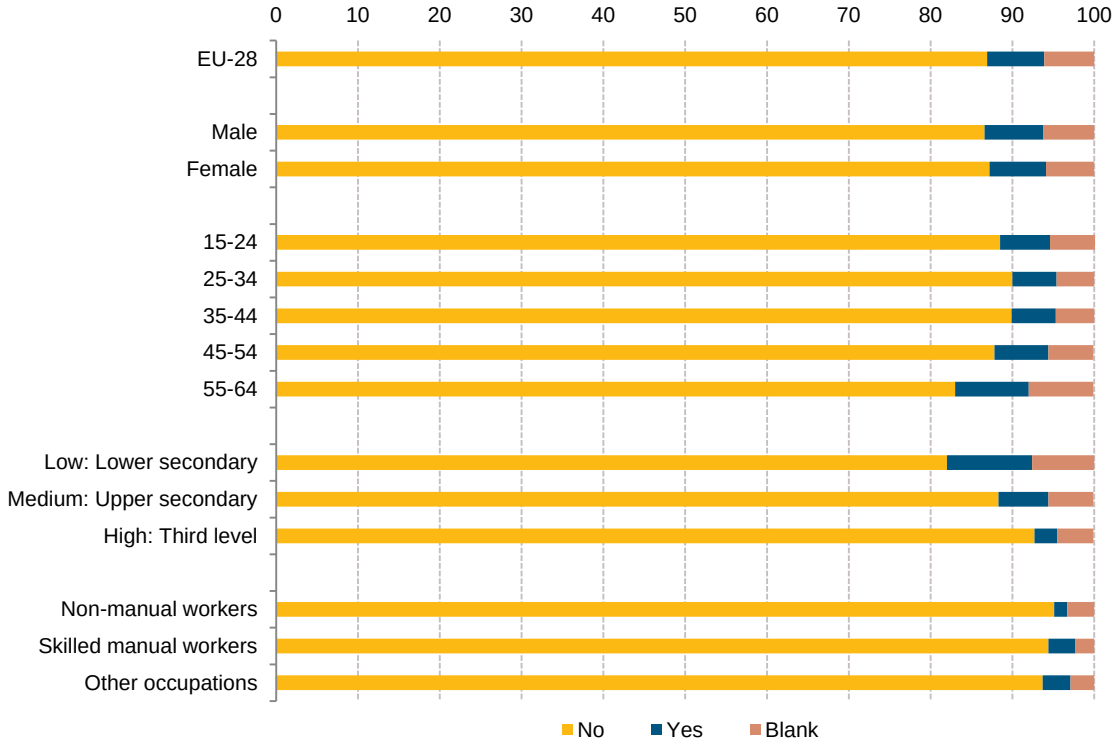


Figure 40 provides the distribution of the variable NEEDHELP for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group.

- No obvious trend was pointed out regarding the gender. The share of persons needing/using personal assistance reached 7.2 % for the males and 6.9 % for the females.
- Regarding the variable age, from 25 years old, the share of persons needing/using personal assistance increased with the age, from 5.4 % (people aged 25-34) to 9.0 % (people aged 55-64).
- This variable also seems to be linked to the level of education. The higher the level of education, the lower the number of persons needing/using personal assistance. Indeed, the rate of "Yes" responses increased from 2.8 % for the High level of education to 10.4 % for the Low level of education.
- No trend was observed regarding the analysis by occupational group.

Figure 40 – Distribution of NEEDHELP (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)



3.2.9. Because of the health problem or difficulty the person needs (not employed persons)/uses (employed persons) special equipment or needs (not employed persons)/has (employed persons) workplace adaptations to enable him/her to work (NEEDADAP)

Figure 41 provides the distribution of the variable NEEDADAP (*Because of the health problem or difficulty the person needs (not employed persons)/uses (employed persons) special equipment or needs (not employed persons)/has (employed persons) workplace adaptations to enable him/her to work*), for the categories "No", "Yes" and "Blank". The rate of persons needing/using special equipment varied from 1.8 % in France to 21.6 % in Denmark. At the EU-28 level, this rate reached 7.2 %. The share of "Blank" was suspiciously high in Germany (22.4 %), France (7.9 %) and Spain (8.8 %). Luxembourg collected the variable NEEDADAP in the national questionnaire but 100 % of data is missing.

Figure 41 – Distribution of NEEDADAP (No/Yes/Blank)
(%)

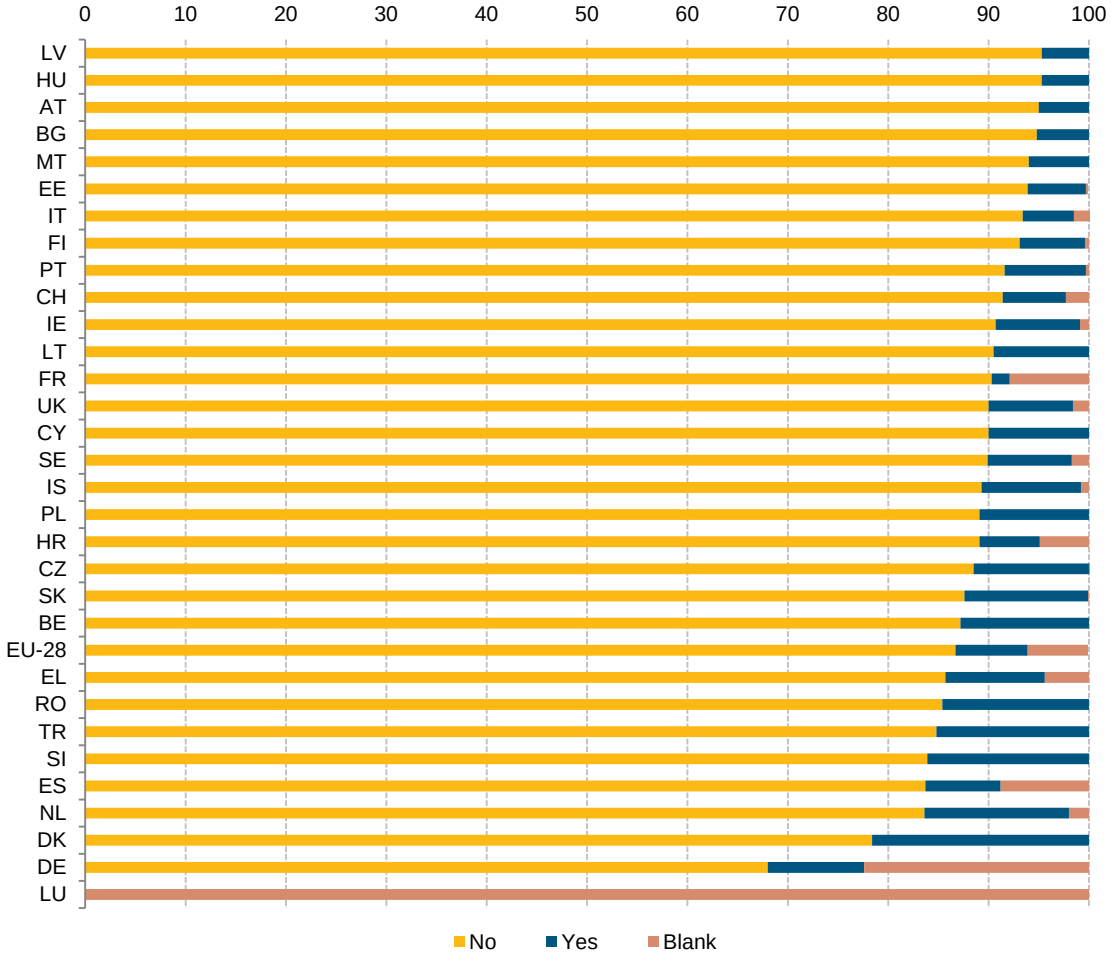
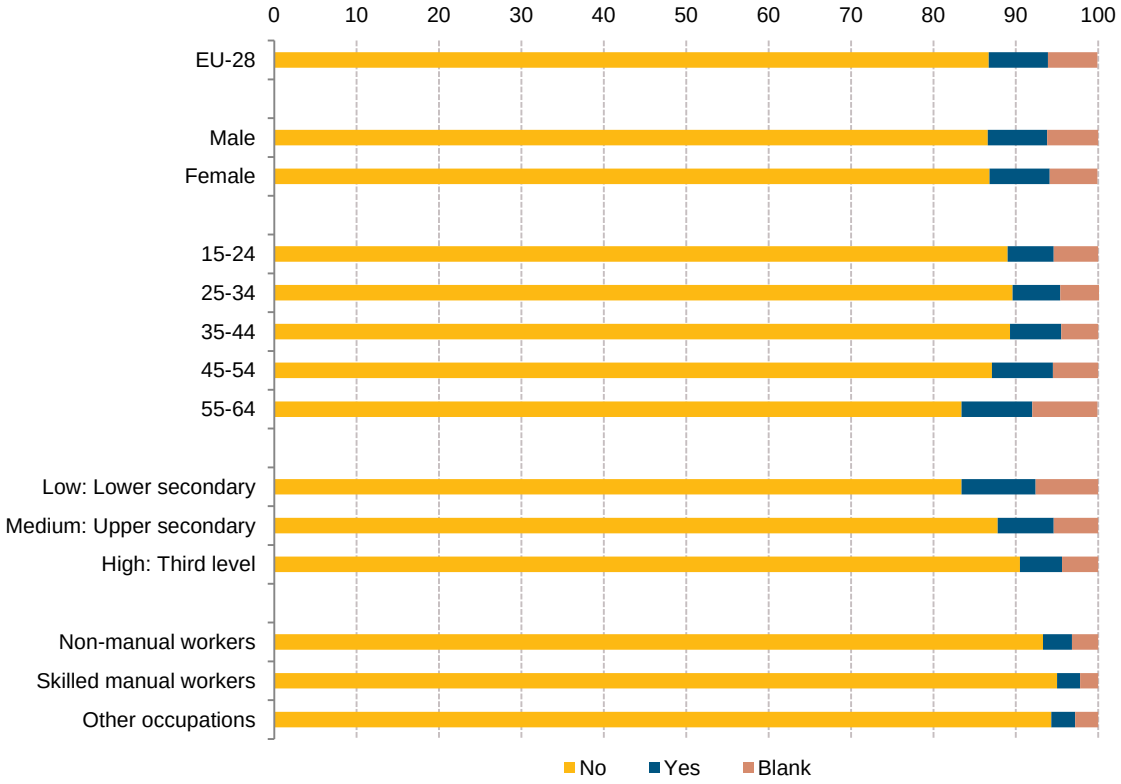


Figure 42 provides the distributions of the variable NEEDADAP for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group.

- No trend was pointed out regarding the gender. The share of persons needing/using special equipment reached 7.2 % for the males and 7.3 % for the females.
- Regarding the variable age, the share of persons needing/using special equipment increased with the age, from 5.6 % (people aged 15-24) to 8.6 % (people aged 55-64).
- This variable also seems to be linked to the level of education. The higher the level of education, the lower the number of persons needing/using special equipment. Indeed, the rate of "Yes" responses increased from 5.1 % for the High level of education to 9.0 % for the Low level of education.
- No trend was observed regarding the analysis by occupational group.

Figure 42 – Distribution of NEEDADAP (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)



3.2.10. Because of the health problem or difficulty the person needs (not employed persons)/has (employed persons) special working arrangements to enable him/her to work (NEEDORGA)

Figure 43 provides the distribution of the variable NEEDORGA (*Because of the health problem or difficulty the person needs (not employed persons)/has (employed persons) special working arrangements to enable him/her to work*), for the categories "No", "Yes" and "Blank". The rate of persons needing/having special working arrangements varied from 4.0 % in France to 33.1 % in Denmark. At the EU-28 level, this rate reached 13.6 %. The share of "Blank" was suspiciously high in Germany (22.6 %), France (7.9 %) and Spain (8.7 %). Luxembourg collected the variable NEEDORGA in the national questionnaire but 100 % of data is missing.

Figure 43 – Distribution of NEEDORGA (No/Yes/Blank)
(%)

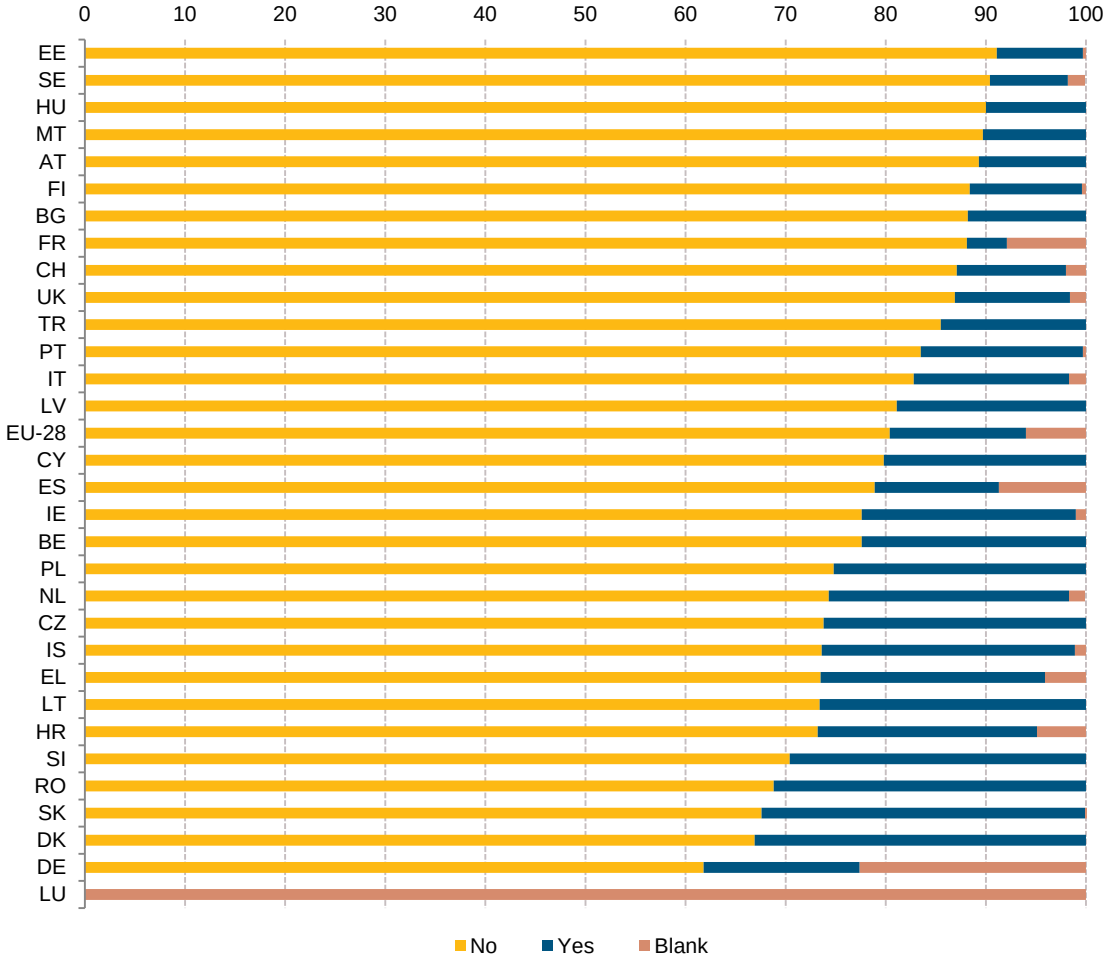
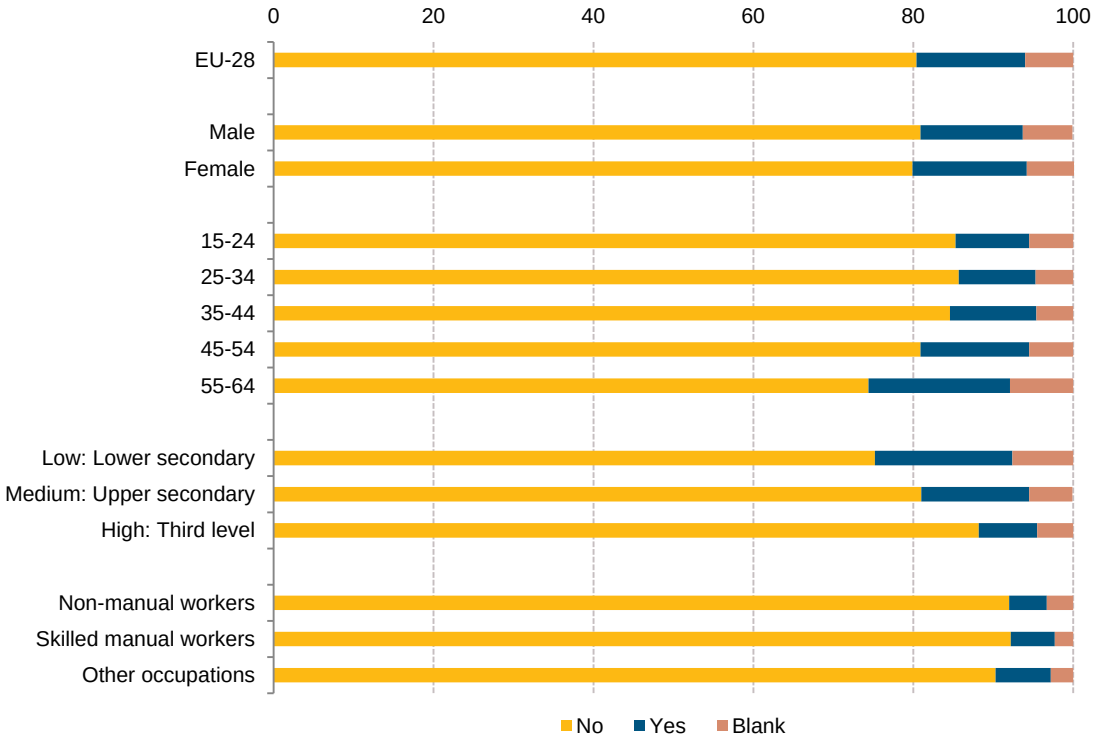


Figure 44 provides the distributions of the variable NEEDORGA for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group.

- No trend was pointed out regarding the gender. The share of persons needing/having special working arrangements reached 12.8 % for the males and 14.3 % for the females.
- Regarding the variable age, the share of persons needing/having special working arrangements increased with the age, from 9.2 % (people aged 15-24) to 17.7 % (people aged 55-64).
- This variable also seems to be linked to the level of education. The higher the level of education, the lower the number of persons needing/having special working arrangements. Indeed, the rate of "Yes" responses varied from 7.3 % for High level of education to 17.2 % for the Low level of education.
- No trend was observed regarding the analysis by occupational group.

Figure 44 – Distribution of NEEDORGA (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)



3.2.11. Main reason for limitation in work that is not caused by the longstanding health conditions/diseases or basic activity difficulties (LIMREAS)

Figure 45 provides the distribution of the variable LIMREAS, showing only the dichotomized categories "Yes" (categories 01 to 08), "No" (category 09) and "blank". Across countries, the rate of persons having a limitation in work that is not caused by the longstanding health conditions/diseases or basic activity difficulties varied from 1.0 % in Switzerland to 46.2 % in Hungary. At the EU-28 level, this rate reached 11.6 %. The share of "Blank" was suspiciously high in Germany (85.2 %) and in France (8.7 %). Luxembourg collected the variable LIMREAS in the national questionnaire but 100 % of data is missing.

Figure 45 – Distribution of LIMREAS (No/Yes/Blank)
(%)

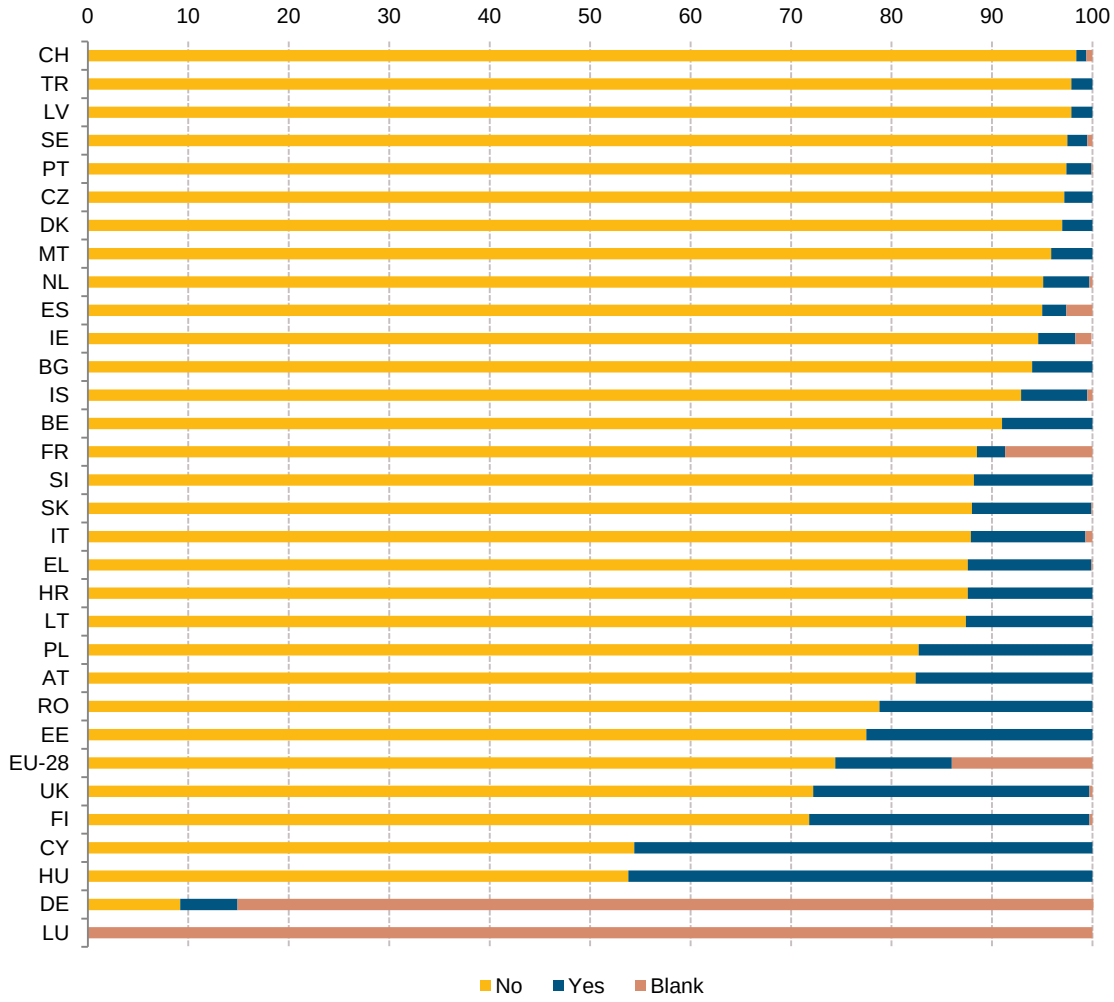


Figure 46 provides the distribution of the variable LIMREAS for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. As previously, only percentages of the dichotomized categories "Yes" (categories 01 to 08), "No" (category 09) and "blank" are provided.

- Regarding the gender, the rate of persons having a limitation in work that is not caused by the health problem/difficulty responses differed slightly between the males (9.9 %) and the females (13.3 %).
- No trend was pointed out regarding the analysis of the age, except the group 55-64 which showed a significantly higher rate of persons having a limitation in work that is not caused by the health problem/difficulty (13.9 %).
- This variable seems to be linked to the level of education. The higher the level of education, the lower the number of persons having a limitation in work that is not caused by the health problem/difficulty. Indeed, the rate of "Yes" responses varied from 8.0 % for the High level of education to 14.5 % for the Low level of education.
- No trend was observed regarding the analysis by occupational group.

Figure 46 – Distribution of LIMREAS (No/Yes/Blank) by sex, age group, level of education, and occupational group for the EU-28 aggregate
(%)

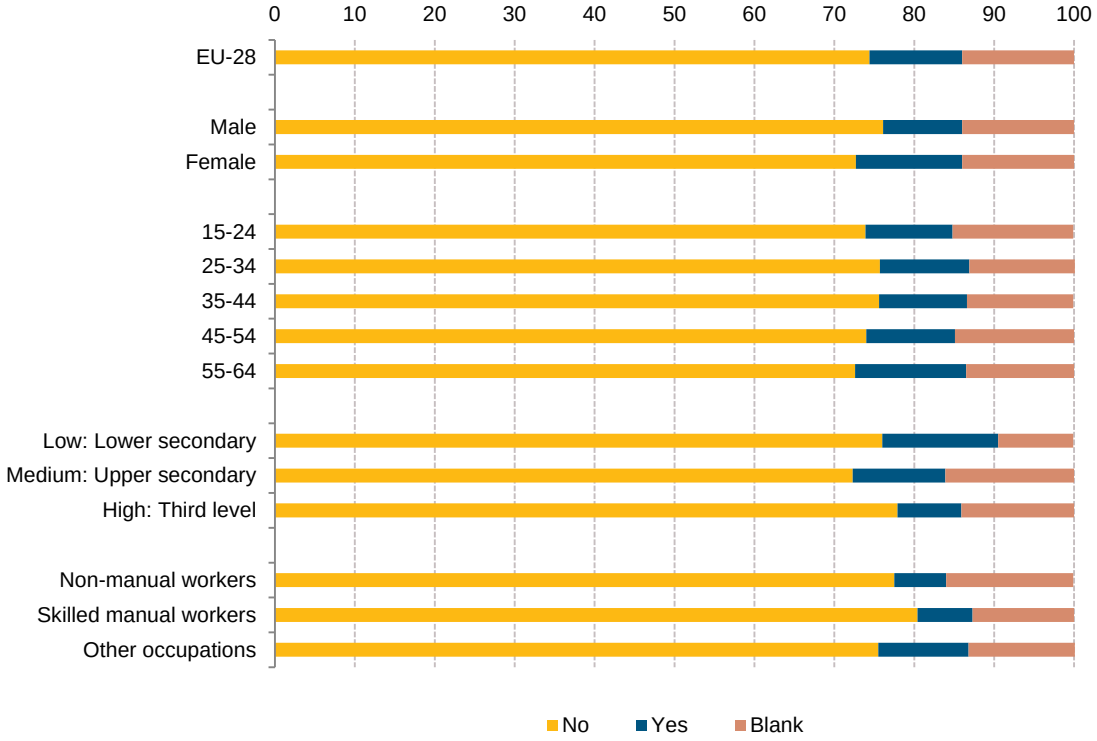
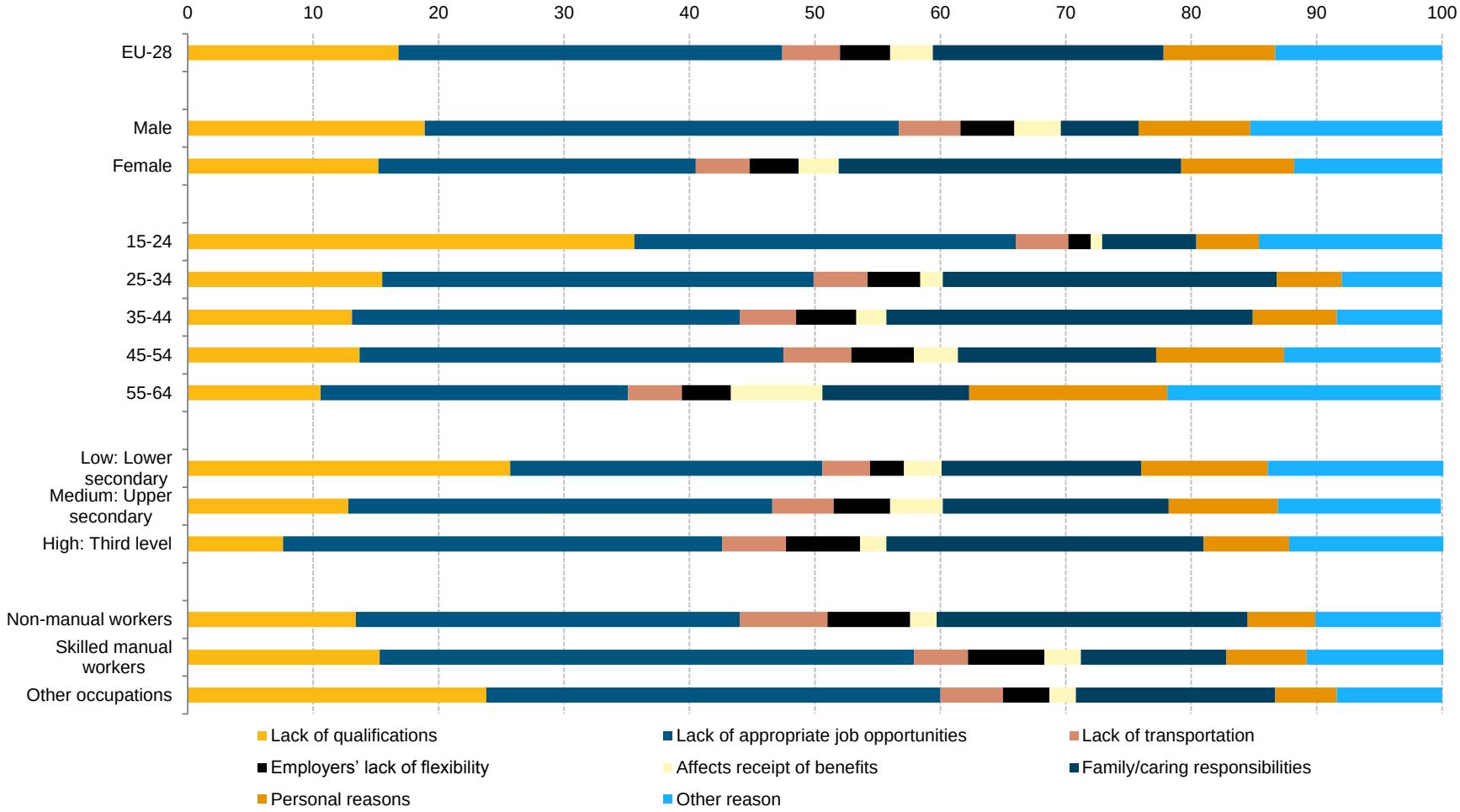


Figure 47 provides the distribution of the variable LIMREAS for the EU-28 aggregate, respectively by sex, age group, level of education and occupational group. As previously, only percentages of the dichotomized categories "Yes" (categories 01 to 08), "No" (category 09) and "blank" are provided.

- At the EU-28 level, the most representative category was "Lack of appropriate job opportunities" (30.6 %), followed by "Family/caring responsibilities" (18.4 %) and "Lack of qualifications" (16.8 %).
- Regarding the gender, a gap appeared between the rate of females limited in work because of family/caring responsibilities (27.3 %) and the males (6.2 %).
- Regarding the age of the respondents, a gap appeared between the share of young people (15-24) limited in work because of a lack of qualifications (35.6 %) and the other age groups (around 13 %).
- Regarding the level of education, the share of persons declaring a lack of qualifications decreased when the level of education increased. The rate varied from 7.6 % (High: Third level) to 25.7 % (Low: Lower secondary).
- No trend was observed regarding the analysis by occupational group.

Figure 47 – Distribution of LIMREAS (positive answers)
(%)



3.2.12. Links between the health problems or difficulties and the limitations or special assistances used or needed

Figure 48 shows, for the EU-28 aggregate, the percentage of persons declaring that they are limited in the number of hours they can work (LIMHOURS = yes) because of a health problem (variable HEALTHMA). The same percentages are provided for the variables LIMTYPEW, LIMTRANS, NEEDHELP, NEEDADAP, and NEEDORGA. For example, the first bar of the chart should be understood as the person limited in the number of hours he/she can work because of the health problem. The most representative category for all limitations and assistance needs is "Problems with back or neck" (21 % on average), followed by "Problems with legs or feet" (13 % on average) and "Heart, blood pressure or circulation problems" (13 % on average).

Figure 48 – Links between HEALTHMA and LIMs/NEEDs for EU-28

(%)

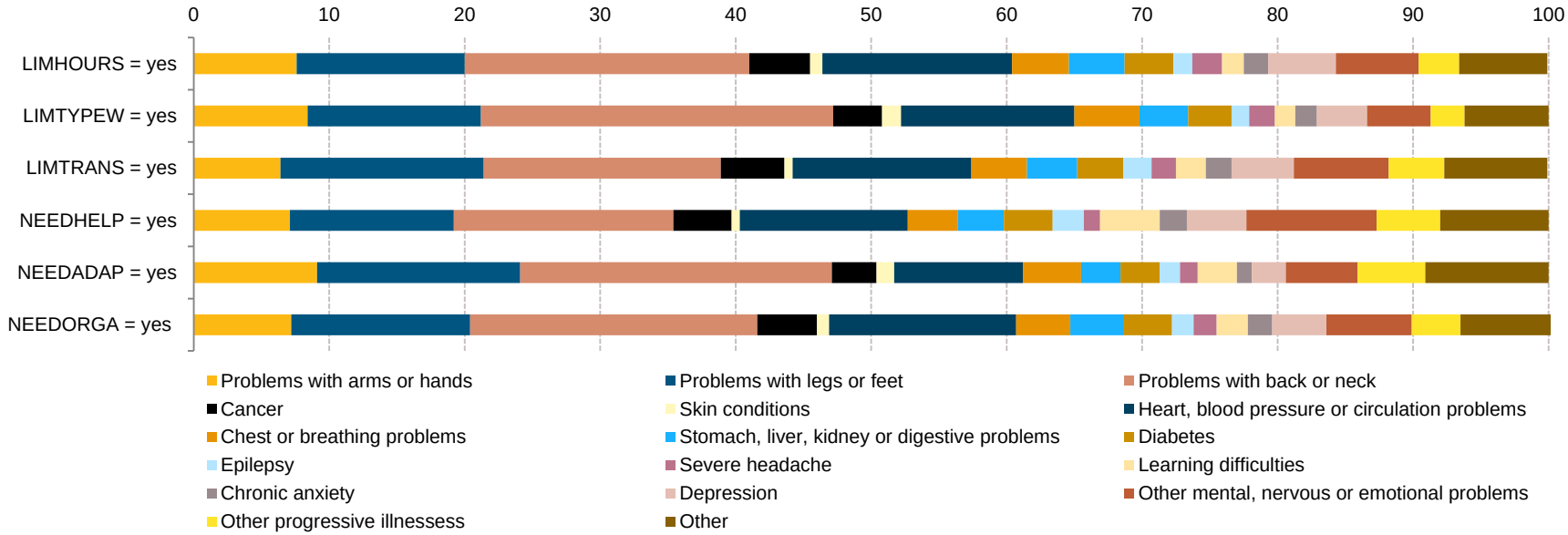
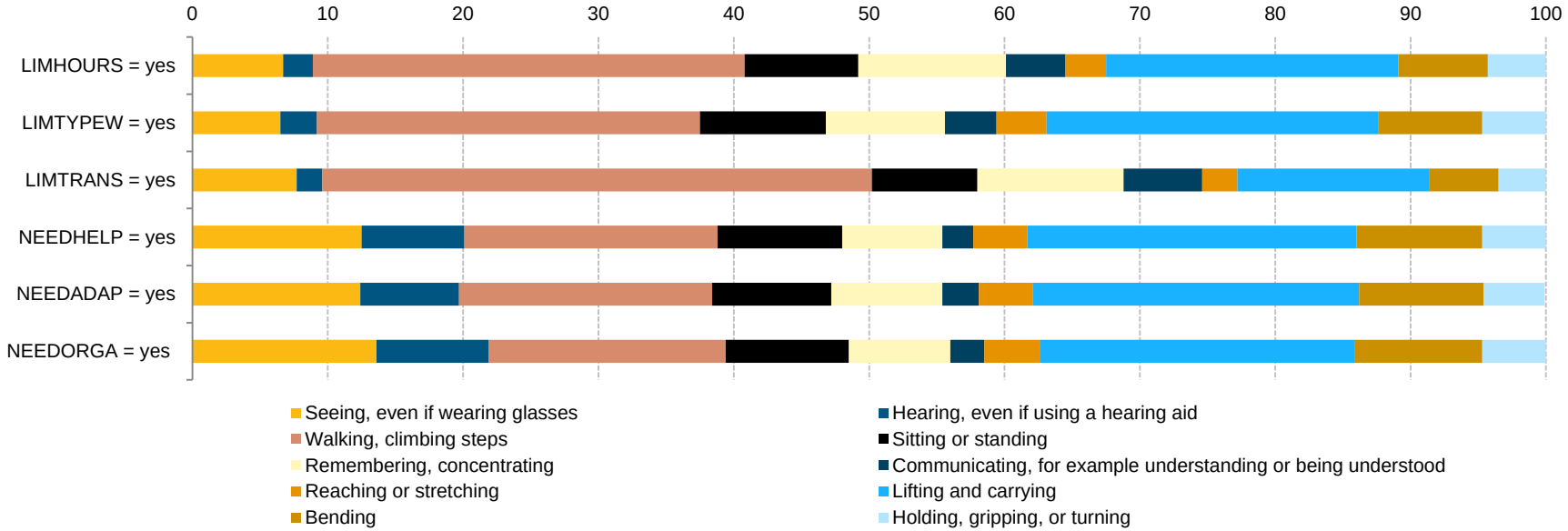


Figure 49 shows, for the EU-28 aggregate, the percentage of persons declaring that they are limited in the number of hours they can work (LIMHOURS = yes) because of a basic activity difficulty (variable DIFFICMA). The same percentages are provided for the variables LIMTYPEW, LIMTRANS, NEEDHELP, NEEDADAP, and NEEDORGA. For example, the first bar of the chart should be understood as the person limited in the number of hours he/she can work because of the basic activity difficulty. The most representative category for all limitations and assistance needs is "Walking, climbing steps" (45 % on average), followed by "Lifting and carrying" (13 % on average).

Figure 49 – Links between DIFFICMA and LIMs/NEEDs for EU-28
(%)



3.3. Disability measures

The following definitions of disability have been used in the present section:

- Definition 1: People having a basic activity difficulty (DIFFICMA);
- Definition 2: People having a health condition (HEALTHMA) but do not declare a basic activity difficulty;
- Definition 3: People having a basic activity difficulty (DIFFICMA) and a health condition (HEALTHMA);
- Definition 4: People limited in work (LIMHOURS, LIMTRANS or LIMTYPEW) because of health condition (HEALTHMA) or basic activity difficulty (DIFFICMA);
- Definition 5: People limited in work (LIMTRANS, LIMTETYPEW, LIMHOURS) because of a health condition only (HEALTHMA);
- Definition 6: People limited in work (LIMTRANS, LIMTETYPEW, LIMHOURS) because of a basic activity difficulty only (DIFFICMA);
- Definition 7: People limited in work (LIMTRANS, LIMTETYPEW, LIMHOURS) because of both a health condition (HEALTMA) and a basic activity difficulty (DIFFICMA).

The definitions 5, 6 and 7 are less restrictive than the definition 4 because they took into account the people who have answered “Yes” to the questions about limitations, which were only answered by people having a health condition or a basic activity difficulty.

The two following tables presented the distributions of the definitions. The definitions 1 and 2 presented the highest proportion of people with disabilities. In the EU-28, nearly 45 million of people are considered as disabled, which represented 14 % of the population between 15 and 64 years old. On the opposite, the definitions 5, 6 and 7 counted less than 10 % of people with disabilities, especially 0.9 % for the definition 6.

At national level, several countries reported a high proportion of people with disabilities. For example, for the first definition (people reported a basic activity difficulty), France, Finland, Luxembourg and Austria reported more than 20 % of the total population while Ireland, Greece and Malta counted less than 8 %.

Table 20: Distribution of people with disabilities, by country and definitions

Country	Definition 1		Definition 2		Definition 3		Definition 4		Definition 5		Definition 6		Definition 7	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
EU-28	44 459 479	14.1	44 421 998	14.2	38 029 915	12.1	34 777 691	11.4	17 609 109	5.8	2 845 239	0.9	14 247 584	4.7
BE	964 542	13.9	760 081	10.9	879 208	12.6	918 570	13.2	527 272	7.7	74 592	1.1	288 745	4.2
BG	496 683	10.2	442 036	9.1	458 215	9.4	389 454	8.0	76 814	1.6	31 496	0.7	281 144	5.8
CZ	603 960	8.4	783 241	10.8	541 045	7.5	698 443	9.7	462 173	6.4	86 023	1.2	150 247	2.1
DK	547 277	15.1	343 117	9.5	465 967	12.9	609 536	16.9	343 001	9.6	67 690	1.9	198 846	5.5
DE	6 877 295	15.5	3 346 728	7.8	4 706 180	10.7	4 718 003	12.1	1 333 609	3.5	387 675	1.0	2 988 710	7.6
EE	167 012	18.5	226 790	25.2	151 958	16.8	128 904	14.3	73 987	8.3	5 730	0.6	49 186	5.5
IE	160 318	5.3	270 835	8.9	116 360	3.8	216 922	7.1	119 166	3.9	15 304	0.5	82 354	2.7
EL	459 109	7.1	454 496	7.0	368 934	5.7	435 860	6.7	137 801	2.1	55 674	0.9	242 385	3.7
ES	2 342 899	8.2	5 136 212	17.9	2 003 470	7.0	2 693 400	9.5	1 768 214	6.2	172 128	0.6	752 718	2.6
FR	8 347 591	21.3	11 994 828	30.6	7 695 582	19.6	4 190 089	11.3	2 764 530	7.6	220 630	0.6	1 193 784	3.2
HR	418 380	15.3	276 580	10.1	391 017	14.3	310 837	11.4	128 712	4.8	31 629	1.2	139 803	5.1
IT	3 163 742	8.7	3 283 864	9.1	2 793 178	7.6	2 545 388	7.0	1 568 502	4.3	212 304	0.6	756 672	2.1
CY	53 960	9.5	85 253	15.0	50 487	8.9	59 772	10.5	16 486	2.9	3 237	0.6	40 049	7.0
LV	247 748	17.9	269 392	19.5	229 428	16.6	160 319	11.6	67 245	4.9	26 811	2.0	66 264	4.8
LT	267 857	13.1	247 006	12.1	230 645	11.3	242 973	11.9	94 697	4.7	22 325	1.1	125 773	6.2
LU	73 118	21.2	68 276	19.9	59 181	17.2	48 369	14.2	27 469	8.2	2 893	0.9	17 837	5.3
HU	882 542	13.2	552 646	8.3	843 311	12.7	756 966	11.4	200 420	3.0	29 734	0.4	524 758	7.9
MT	20 921	7.2	47 603	16.5	15 070	5.2	29 675	10.3	17 417	6.1	4 041	1.4	8 100	2.8
NL	1 497 449	13.7	415 986	3.8	1 348 345	12.3	1 443 302	13.2	530 328	4.9	170 385	1.6	738 616	6.7
AT	1 328 344	23.5	1 321 105	23.4	1 033 377	18.3	877 704	15.5	456 943	8.2	109 827	2.0	310 934	5.5
PL	3 664 910	14.2	1 919 581	7.4	3 596 173	13.9	2 949 996	11.4	1 948 274	7.6	122 931	0.5	878 792	3.4
PT	1 223 843	17.3	1 747 712	24.7	1 108 408	15.6	1 310 439	18.5	833 587	11.9	57 816	0.8	418 647	5.9
RO	1 597 846	10.9	1 105 407	7.6	1 411 129	9.7	1 692 610	11.6	575 141	4.0	75 978	0.5	1 041 491	7.1
SI	265 193	18.6	190 978	13.4	210 434	14.8	316 046	22.2	137 808	9.8	42 054	3.0	136 185	9.6
SK	398 936	10.3	309 376	8.0	368 610	9.6	448 109	11.6	121 406	3.2	19 304	0.5	307 399	8.0
FI	761 271	22.4	1 136 297	33.5	706 964	20.9	619 707	18.2	334 633	9.9	51 803	1.5	231 200	6.8
SE	983 136	16.1	1 604 809	26.4	894 399	14.7	864 623	14.3	497 184	8.3	61 065	1.0	306 373	5.1
UK	6 643 597	16.7	6 081 763	15.3	5 352 837	13.5	5 101 673	12.9	2 446 288	6.2	684 814	1.7	1 970 570	5.0
IS	38 377	19.5	57 137	29.4	33 390	17.0	49 471	25.3	24 800	13.0	3 715	1.9	20 885	10.7
CH	924 428	17.5	1 263 149	23.9	785 665	14.8	838 272	16.0	508 230	9.8	79 664	1.5	250 377	4.8
TR	8 481 367	17.6	7 558 273	15.6	7 817 654	16.2	8 155 479	16.9	2 521 035	5.3	283 111	0.6	5 351 333	11.1

The following tables present the distribution of the demographic variables by definitions only for the EU-28 aggregates. The results by country are available in Annex 7.

Table 21: Distribution of gender for the EU-28 aggregate, by definition

Definition		Female		Male	
		N	%	N	%
Definition 1	Disabled	24 053 689	54.1	20 405 790	45.9
	Not disabled	133 761 651	49.6	136 176 036	50.4
Definition 2	Disabled	22 875 521	51.5	21 546 476	48.5
	Not disabled	133 927 853	50.0	134 009 986	50.0
Definition 3	Disabled	20 771 784	54.6	17 258 131	45.4
	Not disabled	136 960 041	49.6	139 231 907	50.4
Definition 4	Disabled	18 928 633	54.4	15 849 229	45.6
	Not disabled	134 724 364	49.6	136 708 492	50.4
Definition 5	Disabled	9 417 002	53.5	8 192 108	46.5
	Not disabled	142 773 492	49.9	143 192 513	50.1
Definition 6	Disabled	1 549 382	54.4	1 296 510	45.6
	Not disabled	150 571 222	50.1	150 062 382	49.9
Definition 7	Disabled	7 915 025	55.6	6 332 559	44.4
	Not disabled	145 737 972	49.9	146 225 162	50.1

Based on the view of the previous table, the proportion of female in the group of people with disabilities is higher than in the group without disabilities for the EU-28 aggregates for all the definitions. At national level, the females are not systematically the most represented in the group with disabilities. Indeed, in Ireland for example, the opposite is observed for all the definitions. The definition 2 counted the most countries where the opposite trend is observed.

Table 22: Distribution of age group for the EU-28 aggregate, by definition

Definition		15-24		25-34		35-44		45-54		55-64	
		N	%	N	%	N	%	N	%	N	%
Definition 1	Disabled	2 556 149	5.7	4 325 584	9.7	7 203 838	16.2	12 735 532	28.6	17 638 376	39.7
	Not disabled	52 157 921	19.3	59 458 262	22.0	61 619 058	22.8	54 991 840	20.4	41 710 605	15.5
Definition 2	Disabled	4 540 801	10.2	6 787 673	15.3	9 612 959	21.6	11 435 669	25.7	12 044 896	27.1
	Not disabled	49 886 582	18.6	56 632 558	21.1	58 842 558	22.0	55 781 053	20.8	46 795 089	17.5
Definition 3	Disabled	1 828 821	4.8	3 313 509	8.7	6 011 204	15.8	10 954 800	28.8	15 921 580	41.9
	Not disabled	52 893 557	19.2	60 436 290	21.9	62 804 353	22.7	56 704 174	20.5	43 353 574	15.7
Definition 4	Disabled	1 931 514	5.6	3 446 983	9.9	5 749 557	16.5	9 705 967	27.9	13 943 840	40.1
	Not disabled	51 966 106	19.1	59 205 478	21.8	61 666 850	22.7	55 930 223	20.6	42 664 199	15.7
Definition 5	Disabled	1 128 852	6.4	2 042 846	11.6	3 172 430	18	4 871 618	27.7	6 393 364	36.3
	Not disabled	52 653 360	18.4	60 400 004	21.1	63 819 857	22.3	60 004 020	21	49 088 764	17.2
Definition 6	Disabled	210 514	7.4	311 158	10.9	471 424	16.6	793 659	27.9	1 059 137	37.2
	Not disabled	53 513 852	17.8	62 072 353	20.6	66 505 778	22.1	64 127 604	21.3	54 414 017	18.1
Definition 7	Disabled	588 181	4.1	1 085 545	7.6	2 091 264	14.7	4 020 130	28.2	6 462 463	45.4
	Not disabled	53 309 439	18.3	61 566 916	21.1	65 325 143	22.4	61 616 060	21.1	50 145 575	17.2

The percentage of people with disabilities appears to increase with age. The people aged 15-24 years represented less than 10 % of the group with disabilities, except for the definition 2. In the group without disabilities, each age group represented around 20 % apart from the oldest group where the proportion is smaller. The definition 2 shows less difference between the two groups of disability.

At national level, the majority of people with disabilities were at least 45 years old. In Iceland, the opposite is notable for all the definitions, except for the definition 7.

Table 23: Distribution of highest education level attained for the EU-28 aggregate, by definition

Definition		Low		Medium		High	
		N	%	N	%	N	%
Definition 1	Disabled	17 231 545	38.9	20 165 629	45.6	6 870 291	15.5
	Not disabled	75 709 096	28.3	125 059 013	46.7	66 975 265	25.0
Definition 2	Disabled	13 873 359	31.3	19 553 867	44.1	10 866 544	24.5
	Not disabled	78 571 708	29.6	124 661 302	46.9	62 495 187	23.5
Definition 3	Disabled	15 412 788	40.7	17 143 075	45.2	5 335 092	14.1
	Not disabled	77 448 397	28.3	128 011 027	46.7	68 468 515	25.0
Definition 4	Disabled	14 483 353	41.8	15 510 511	44.8	4 654 811	13.4
	Not disabled	76 171 414	28.3	125 601 411	46.6	67 508 675	25.1
Definition 5	Disabled	7 216 947	41.1	7 720 483	44	2 618 127	14.9
	Not disabled	82 322 703	29.0	132 190 917	46.6	69 233 684	24.4
Definition 6	Disabled	1 050 251	37.0	1 323 501	46.7	462 102	16.3
	Not disabled	88 517 811	29.7	138 467 186	46.4	71 384 291	23.9
Definition 7	Disabled	6 183 585	43.6	6 436 274	45.4	1 562 129	11.0
	Not disabled	84 471 183	29.2	134 675 648	46.5	70 601 356	24.4

In EU-28, the proportion of people with disabilities having a low education level is higher than in the group without disabilities for all the definitions. The difference is less noticeable for the definition 2. For example, 43.6 % of the people with disabilities for the definition 7 have attained less than ISCED3 while 29.2 % of the people without disabilities have attained at best ISCED2 level.

At national level, the people who attained the highest level of education are more likely to be in the group without disabilities than in the one with disabilities, for all the definitions and for all the countries.

Table 24: Distribution of working status for the EU-28 aggregate, by definition

Definition		Employed		Unemployed		Inactive	
		N	%	N	%	N	%
Definition 1	Disabled	21 039 933	47.3	2 896 152	6.5	20 523 394	46.2
	Not disabled	180 640 141	66.9	19 268 617	7.1	70 028 929	25.9
Definition 2	Disabled	28 870 916	65.0	3 272 087	7.4	12 278 995	27.6
	Not disabled	171 533 029	64.0	18 798 663	7.0	77 606 148	29.0
Definition 3	Disabled	16 856 256	44.3	2 493 534	6.6	18 680 125	49.1
	Not disabled	184 755 274	66.9	19 682 556	7.1	71 754 118	26.0
Definition 4	Disabled	13 266 026	38.1	2 789 899	8.0	18 721 937	53.8
	Not disabled	183 786 434	67.7	18 960 417	7.0	68 686 005	25.3
Definition 5	Disabled	7 621 920	43.3	1 523 476	8.7	8 463 714	48.1
	Not disabled	188 610 501	66.0	19 984 628	7.0	77 370 876	27.1
Definition 6	Disabled	1 424 008	50.0	269 089	9.5	1 152 795	40.5
	Not disabled	194 754 946	64.8	21 158 138	7.0	84 720 520	28.2
Definition 7	Disabled	4 182 490	29.4	9 073 540	63.7	991 554	7.0
	Not disabled	192 869 969	66.1	78 334 403	26.8	20 758 762	7.1

In EU-28, the proportion of inactive people is smaller in the group of people without disabilities than in the other group, for all the definitions apart from the definition 2.

Regarding the national specificities, the share of employed people in the non-disabled group is higher than in the group of people with disabilities, for all the definitions except from the definition 2 and 6 (for Lithuania and Slovakia).

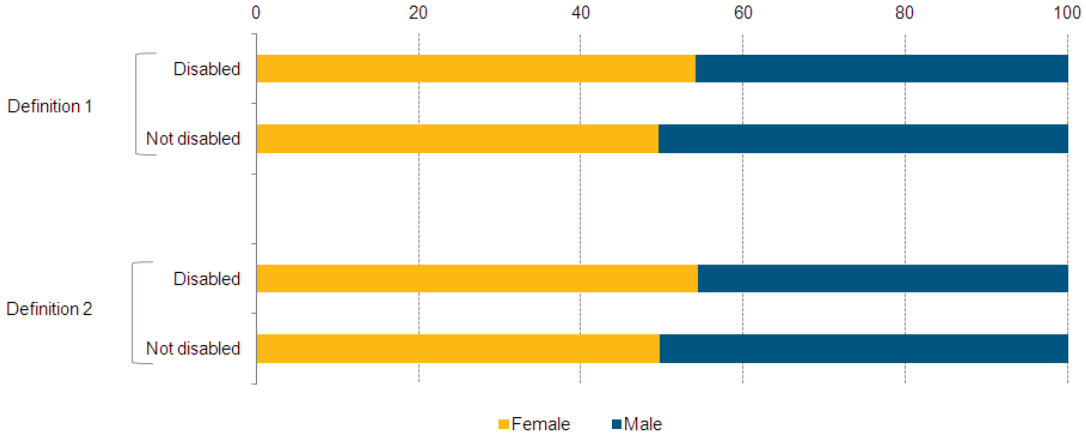
In conclusion, the definition 2 seems not to discriminate the two groups. Indeed, for all the demographic characteristics, the conclusions were more nuanced compared with the other definitions. Also, the size groups for the definitions 6, 7 and 8 are very low, and considered fewer people; For example in Spain, only 0.6% are estimated as disabled for the definition 6. This point could be problematic for the analysis of explicative variables. Based on definitions already used in the literature (in order to be compared), only definitions 1 and 4 (which will be named 2 further) will be investigated in the following analysis.

3.4. Comparative analysis

For the following part, the two definitions 1 and 2 are presented and compared. For each variable analysed, the EU-28 aggregate is displayed in the core of this document whereas the details by country are available in Annex 8, such as the level of significance by variable, definitions, and countries. Moreover, the flags of reliability defined by fixed thresholds are implemented.

3.4.1. Demographic background

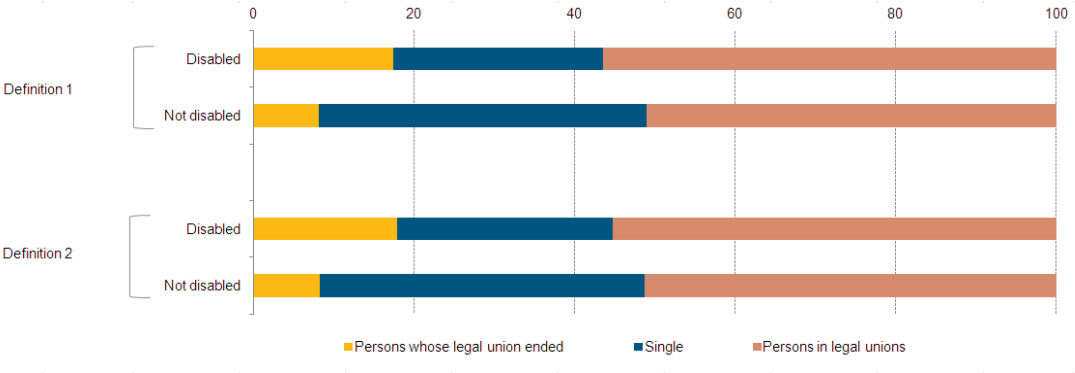
Figure 50 – Distribution of gender for the EU-28 aggregate by definitions
(%)



According to the first definition, the share of women in the population with disabilities in the EU-28 was 54.1 %, compared to 49.6 % in the population without disabilities. The percentages for the second definition are almost identical.

At country level, the opposite trend was observed in Ireland (both definitions), Germany (Definition 1) and Poland (Definition 2). For both definitions, Sweden and Iceland recorded the highest difference in the proportion of men between the populations with and without disabilities. Few countries reported a difference of less than 1 % in the share of men in the two populations.

Figure 51 – Distribution of marital status for the EU-28 aggregate by definitions
(%)

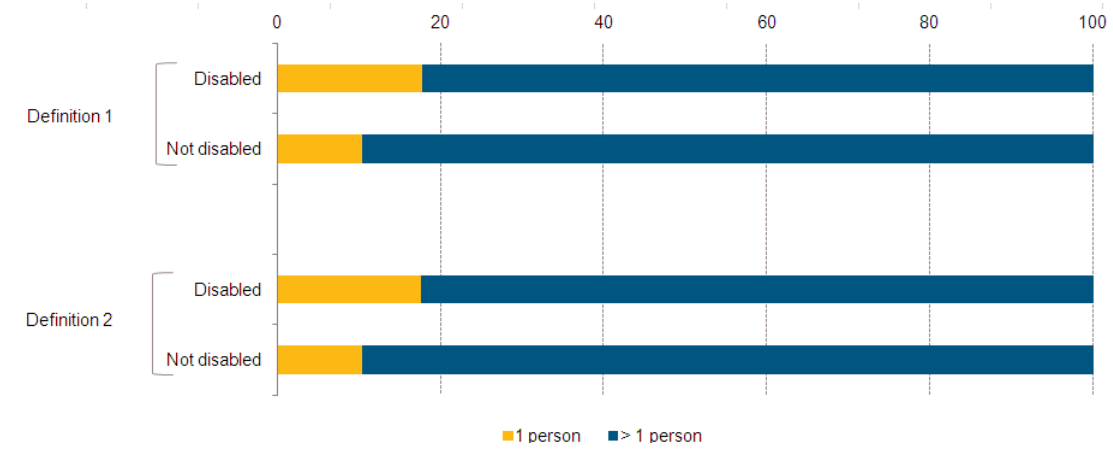


Regarding the marital status, the majority of people with disabilities in most of the EU-28 countries were married, as well as the people without disabilities (56.5 % versus 51.1 % respectively, for the first definition). The same distribution was observed for the second definition.

At country level, more than 50 % of the population with disabilities were married whereas the majority of people without disabilities are single in Estonia, France, Slovenia and Finland. The majority of respondents in Sweden and Iceland were single, in the group with and without disability (45.9 % / 55.9 % and 44.7 % / 49.0 % respectively in each country).

Figure 52 – Distribution of number of persons living in the household for the EU-28 aggregate by definitions

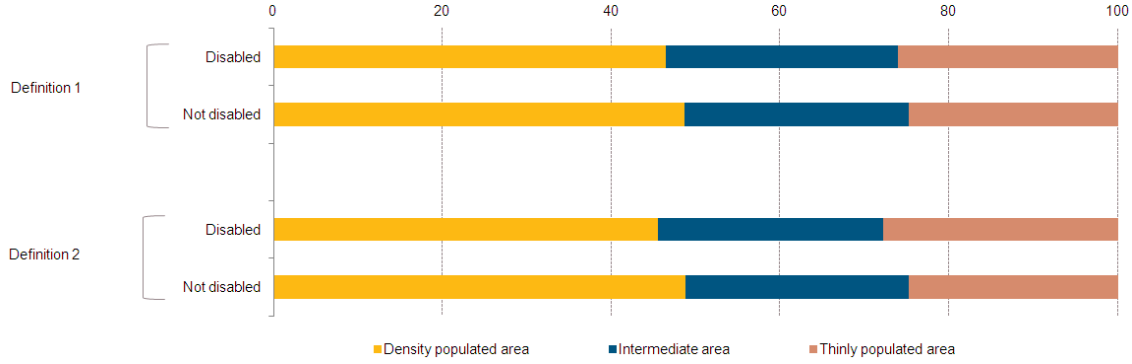
(%)



In the EU-28, the proportion of people reporting a disability and living alone was found to be higher than the one of people without disabilities, whatever the definition considered. All the countries reported the same movement. For the first definition, the highest difference in those living alone was reported in the Netherlands, with 25.9 % of people with disabilities and 13.7 % of people without disabilities, whereas Germany recorded the highest gap between the two populations for the second definition. Conversely, Turkey registered the smallest difference between the two populations and for both definitions. Moreover, Turkey noted the smallest rate of people living in a single household, whatever the population studied.

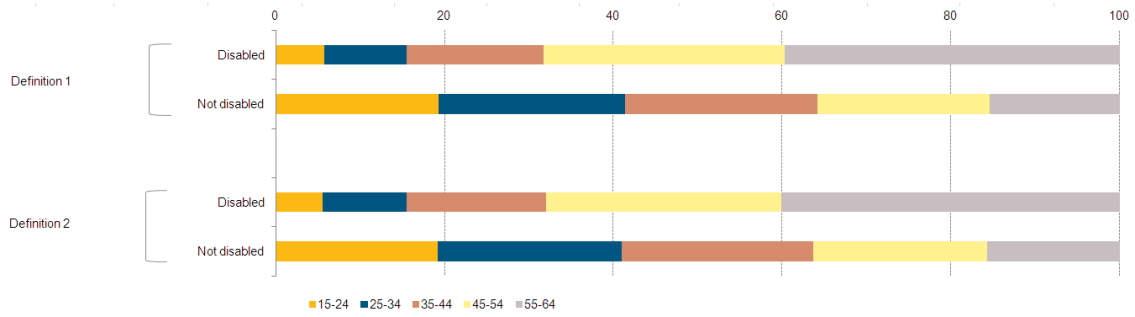
Figure 53 – Distribution of number of persons living in the household for the EU-28 aggregate by definitions

(%)



Concerning the degree of urbanisation, nearly the half of each population lived in a densely populated area. No significant differences appeared between definitions and within each definition at EU-28 level. Regarding the countries specificities, different orientations were observed. Contrary to the EU-28 aggregate trend, ten countries (Estonia, Ireland, Czech Republic, Lithuania, Hungary, Poland, Romania, Slovenia, Slovakia and Finland) had a majority of people living in thinly populated area for both definitions and both groups and four other countries (Croatia, Luxembourg, Sweden and Iceland) recorded a majority of people living in intermediate area. In some countries, a difference appeared between the group reporting a disability and the one without a disability (definition 1 and 2). Indeed, Belgium, Greece and Denmark reported a majority of disabled living in thinly populated area, where the persons without disability lived, for the most part, in a densely populated area. The opposite tendency was observed for Austria.

Figure 54 – Distribution of age groups for the EU-28 aggregate by definitions
(%)

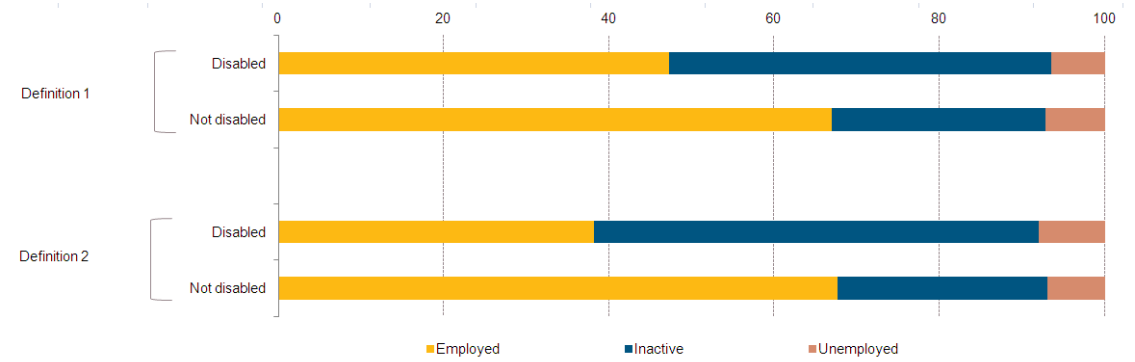


Unsurprisingly, according to the first definition, the percentage of persons with disabilities increased with age. The exception to this rule among the EU Member States was Luxembourg, where the share among the 55-64 year olds (26.4 %) was actually lower than among those aged 45- 54 (32.5 %). A same situation was noted for Turkey, yet far less strong (29.3 % for the 45-54 age class, 28.6 % for the 55-64 age class).

Except for Iceland, at least 50 % of the persons with basic activity difficulties were at least 45 years old. More surprising was the share of people with disabilities taken by the youngest age class: almost one fifth of all the persons with disabilities were aged between 15 and 24 years in Iceland, whereas in Croatia, Slovenia, Greece, Bulgaria and Hungary, less than 3 % were in this age group. In both Iceland and Switzerland, the 15-to-24 year olds were proportionally more represented than the 25-to-34 year olds (and for Iceland even the 35-to-44 year olds).

3.4.2. Labour status

Figure 55 – Distribution of working status for the EU-28 aggregate by definitions
(%)



At EU-28 level, 46.2 % of the people with disabilities were inactive versus only 25.9 % of the population without disabilities according to the first definition. For the second definition, the gap was more emphasized with 53.8 % of the persons reporting a work limitation due to their health condition or basic activity problem and 25.3 % reporting not having a limitation at work.

At country level, the majority of people without disabilities were employed; this proportion varied from 51.0 % in Turkey to 84.0 % in Iceland. The same order of magnitude was noted for the second definition. For the persons with disabilities, the trend was not as distinct. Indeed, the percentage of employed persons was less than 30 % for Ireland and Hungary. Conversely, it exceeded 60 % in Austria, Luxembourg, Finland, Sweden, Iceland and Switzerland. For all the countries, the percentage of persons employed in the group reporting a disability was smaller for the second definition.

3.4.3. Employment characteristics

The following section is limited to the population aged 15 to 64 that earns wages or salaries as employees (i.e. excluding self-employed).

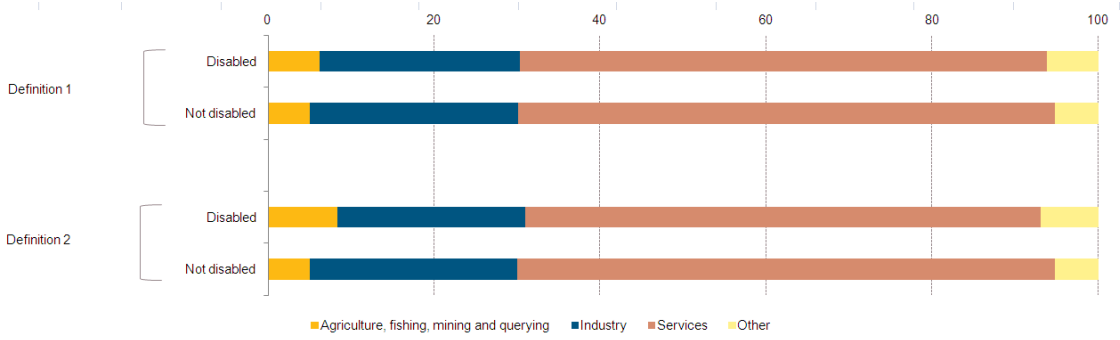
Figure 56 – Distribution of professional status for the EU-28 aggregate by definitions (%)

At EU-28 level, more than 8 persons out of 10 were employed, whatever their status regarding the disability (both definitions). The most notable difference concerned the percentage of self-employed: about 17 % of the persons reporting a work limitation were in this situation compared to nearly 14 % of the persons without a work limitation. No difference was noticed for the first definition.

At country level, the majority of the working population was employees for the two population groups and the two definitions. Indeed, according to the first definition, the rate of employees varied from 45.2 % in Turkey to 94.3 % in Estonia for the group reporting a disability whereas this proportion started at 65.1 % in Greece and exceeded 92.9 % in Luxembourg for the persons without disability. The same order of magnitude was observed for the second definition.

However, some exceptions occurred: In Spain, more than 8 persons without a basic activity difficulty (definition 1) out of 10 were family workers; in Luxembourg and Estonia, the majority of the working population reporting a disability was self-employed (according to the first and the second definition, respectively).

Figure 57 – Distribution of economic activity for the EU-28 aggregate by definitions (%)



At EU-28 level and among employed persons with or without disabilities, the sector of services employed about 7 out of 10 persons; industry and construction sector counted for more than 23 % while agriculture, forestry and fishing counted for less than 8 %.

Unsurprisingly, specific patterns were noted at country level. Indeed, if the sector of agriculture, forestry and fishing was important in Croatia and Greece (about 11 %), in Poland (about 12 %), in Romania (more than 24 %) and in Turkey (about 20 %) for the employment of persons without disabilities, it was even more so for persons having

limitations in work. This was particularly the case for Croatia, displaying a share of 38.9 %, 27.3 % in Greece, 28.2 % in Poland, 54.1 % in Romania and 44.0 % in Turkey.

Figure 58 – Distribution of occupational groups for the EU-28 aggregate by definitions (%)

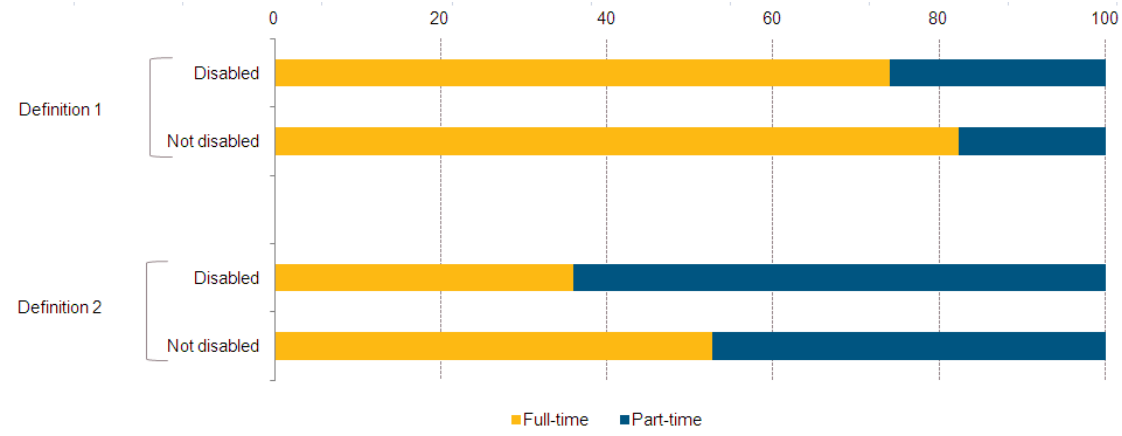
The proportion of skilled manual workers among employed persons aged 15-64 varied significantly between the countries. Among the EU-28 Member States, Iceland and Switzerland, skilled manual workers among employed persons without disabilities counted for less than 25 % in 16 countries, between 25 % and 34 % in 12 countries, around 36 % in Poland and reached 47 % in Romania.

This scheme was respected regarding the proportion of skilled manual workers among employed persons with activity difficulties/limitations, whatever the definition considered. With the first definition, the majority of employed persons having a work limitation were skilled manual workers in Greece (50.7 %), Croatia (60.1 %) and Romania (61.8 %). For the second definition, the situation was similar for the three aforementioned countries, with slightly lower proportions (respectively of 42.9 %, 51.8 % and 54 %).

Even if the skilled manual workers were highly represented in the group of persons with activity difficulties or limitations, a special situation was observed in Iceland which reported a proportion of skilled manual workers accounting for 17.6 % and 20 % of employed persons with disabilities according to definitions 1 and 2 respectively, while the proportion was of 21 % among those without disabilities.

Conversely, skilled manual workers were far more represented among employed persons having a work limitation with at least 10 percentage points difference in Austria (33.5 %), Croatia (60.1 %), Greece (50.7 %), Lithuania (40.1 %), Poland (48.1 %) and Romania (61.8 %). A similar gap (with more than 13 percentage points difference) was observed for Croatia (51.8 %) and Greece (42.9 %) regarding skilled manual workers among employed persons having a basic activity difficulty.

Figure 59 – Distribution of part-time for the EU-28 aggregate by definitions (%)



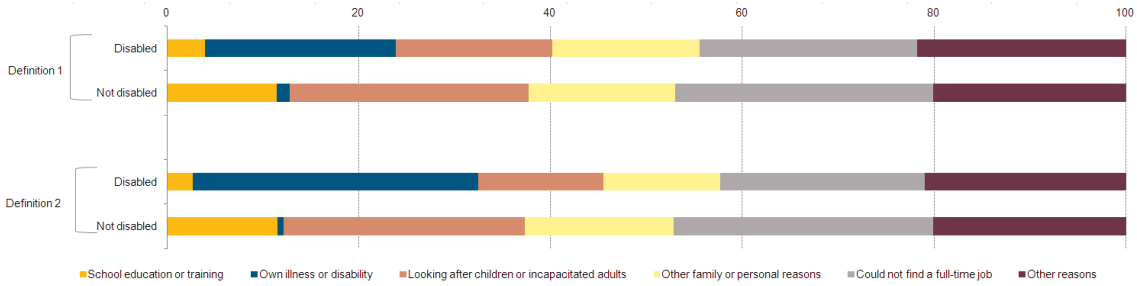
According to the first definition, persons reporting a basic activity difficulty were more likely to have a part-time employment at EU-28 level: 26.0 % was part-time employed against only 17.7 % of persons without difficulties.

At country level, an identical picture was observed, the exception being Austria where the two population groups recorded the same rate (23 % each). The Netherlands, a country where part-time employment is particularly wide

spread, recorded the highest proportion, whatever the group of persons considered (60.7 % for persons with a basic activity difficulty; 47.4 % for the group of persons without difficulties). At the other side of the scale, Greece noticed a proportion below 8 % for both aforementioned groups. Moreover, it can be noticed that for the Czech Republic (13.6 %), Hungary (25.9 %) and Slovakia (12.7 %), the share of part-time employment among persons with a basic activity difficulty was 3 to 5 times higher compared to the group of persons without disabilities.

At EU-28 level, the proportion of part-time employment was higher according to the second definition (33.0 %) while it was similar among persons without disabilities (17.4 %). Among the individual countries, the proportion of part-timers ranged from 8.5 % in Greece to 67.0 % in the Netherlands for persons reporting a work limitation. For the group without a work limitation, only the Netherlands registered a rate over 40 %. The lowest rates were observed for Bulgaria, Slovakia and the Czech Republic, with less than 5 %.

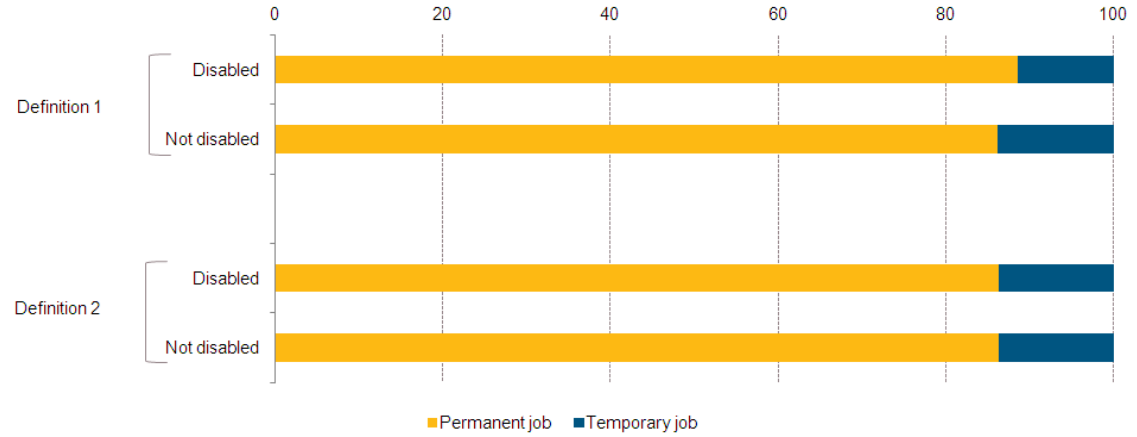
Figure 60 – Distribution of part-time reasons for the EU-28 aggregate by definitions (%)



In the EU-28, the main reason mentioned for people working part-time was “could not find a full-time job”, for both population groups for the first definition. However, regarding the second definition, the persons reporting a limitation at work due to their health condition or basic activity difficulty quoted more often their illness as the consequence of their part-time job (29.7 % versus 0.7 % in the group without limitations).

Depending on the country, the tendencies differed. Unsurprisingly, for some countries (Czech Republic, Hungary, Slovenia, Denmark, Cyprus and Sweden), the group reporting disabilities cited more their illness as the main reason for being a part-time worker. For other countries, no difference between the two population groups was reported: in Ireland, Spain, Italy, Portugal, Slovakia, Switzerland and Turkey the main reason mentioned was “could not find a job”, whereas in the United Kingdom, “looking after children or incapacitated adults”.

Figure 61 – Distribution of permanency of job for the EU-28 aggregate by definitions (%)



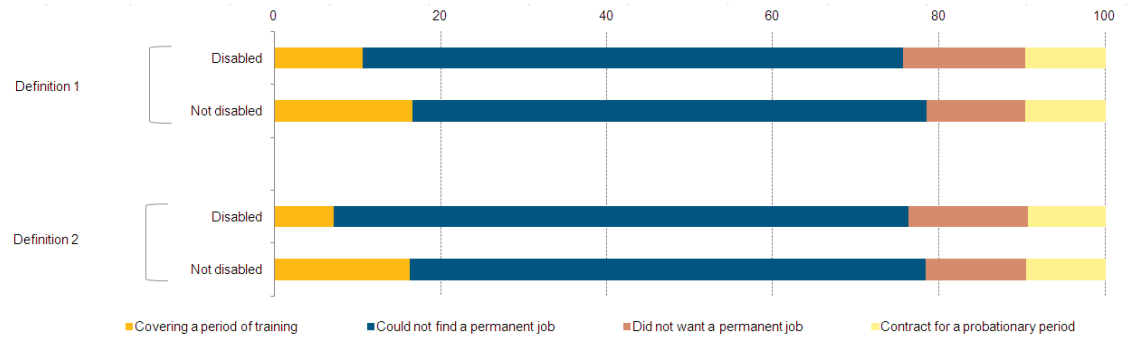
Assuming that permanent employment is preferable over temporary employment, persons having basic activity limitations might have difficulties finding a permanent job adapted to their situation; at the same time, employers might be reluctant to employ such persons on a permanent basis and may offer temporary employment first, in order to “test” their relevant abilities.

Based on the first definition (persons with basic activities difficulties only), the proportion of temporary workers reporting not having a basic activity difficulty among the total number of employees was 13.9 % at EU-28 level in 2011. The proportion of those having such a difficulty was 11.5 %, i.e. lower by 2.4 percentage points. In two-thirds of the countries, a similar situation was observed, i.e. persons with a basic activity difficulty are slightly less likely to

have a temporary job in most the countries. However, especially in Latvia, Slovakia, Hungary and foremost Turkey, the opposite situation was prevalent.

Figure 62 – Distribution of reasons of temporary work for the EU-28 aggregate by definitions

(%)



In the EU-28, the most reported duration of temporary work was less than 6 month, without distinction between the two populations of interest. For nearly 19 % of the people without a disability, the period of the temporary work surpassed two years. This percentage was smaller for the group reporting a disability (for both definitions).

For Czech Republic, Malta, the Netherlands and Poland, the temporary work for the majority of people lasted between 6 months and one year. In Ireland and Switzerland, more than 50 % of the temporary duration was at least 2 years. In some countries, a difference between the two population groups was observed: in Germany, Austria and Cyprus, the duration of temporary work was lower within the population group with disabilities compared to the group without disabilities. The opposite trend was observed in Romania, Luxembourg, Slovakia and the United Kingdom.

Figure 63 – Distribution of duration of the temporary work for the EU-28 aggregate by definitions

(%)

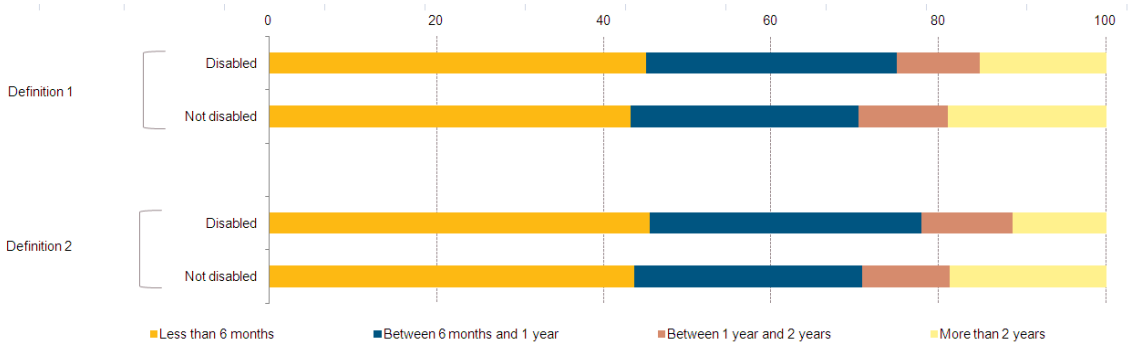
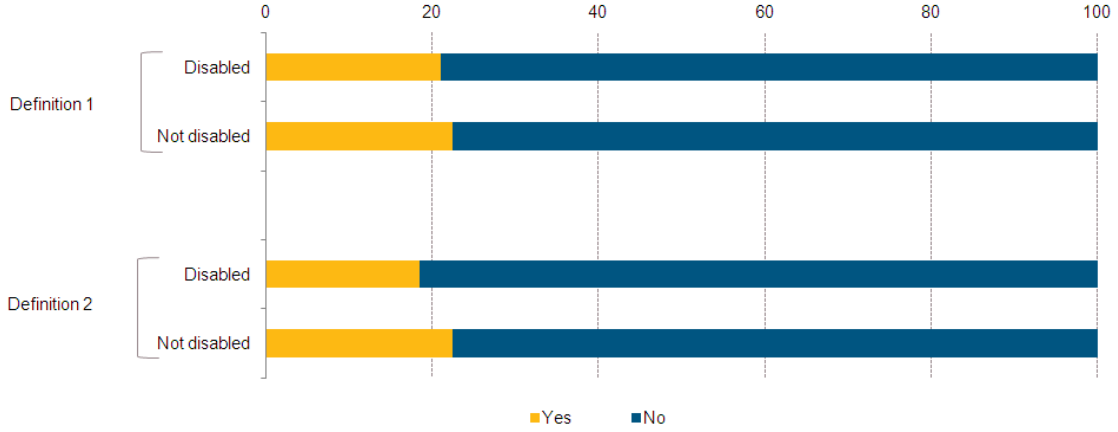


Figure 64 – Distribution of supervisory responsibilities for the EU-28 aggregate by definitions

(%)

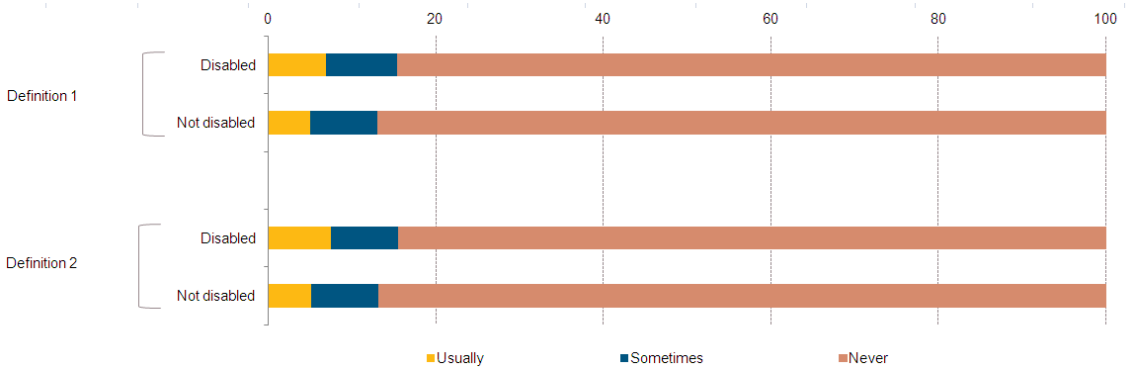


Regarding persons with supervisory responsibilities, the difference observed between persons with and without basic activities difficulties was not significant at EU-28 level (21.1 % against 22.5 %). At country level, differences were expectedly more outspoken, with more noticeable differences (between 5 % and 6 % higher for persons without basic activities difficulties) registered in the Czech Republic, Latvia, the Netherlands and Switzerland. Conversely, more persons with basic activity difficulties had supervisory activities (26.6 %) than persons without these difficulties (25.1 %). Quite noticeable was the proportion of persons with supervisor responsibilities in Iceland: 4 out of 10 persons surveyed (with or without basic activity difficulties) declared having such a job profile, a sharp contrast to the situation in Slovakia (around 10 %).

For the second definition, denoting persons with a longstanding health problem and/or a basic activity difficulty, the difference was more outspoken (4 percentage points at EU level). Longstanding health problems might indeed imply longer absences from work, which may be detrimental to supervising activities. With more than 8 percentage points difference, the biggest variations between both groups regarding persons with supervisory responsibilities were observed for Czech-Republic, Hungary, Malta and Luxembourg. In Estonia, Greece and Iceland, the proportion of persons with supervisor responsibilities was actually higher among the group with limitations in work activities compared with those without limitations.

Figure 65 – Distribution of working at home for the EU-28 aggregate by definitions

(%)



In general, working at home (having disabilities/limitations or not) varied considerably across countries, ranging from 20 % to 30 % in the Nordic countries, Austria, Luxembourg and the United Kingdom to values under 5 % in some Southern and South-eastern European countries.

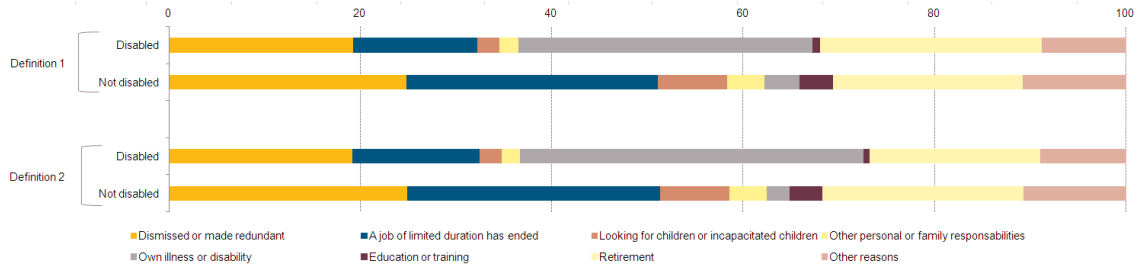
Regardless of the definitions observed, the proportion of people working from home (usually or sometimes) was higher for the persons reporting a disability than for those without disabilities at EU-28 level (15.4 % against 13.0 % respectively).

This situation prevailed in all individual countries except for Denmark, Germany, France, Slovenia and Slovakia where an opposite situation was registered. Moreover, in Iceland, the difference was close to 5 percentage points when considering the second definition. At the other side of the spectrum, considerably less persons with basic

activity difficulties or limitations in working activities were working at home compared to their counterparts without any difficulties in Denmark, and this for both definitions (difference of 6.3 and 6.4 percentage points, respectively).

Figure 66 – Distribution of main reason for leaving last job for the EU-28 aggregate by definitions

(%)

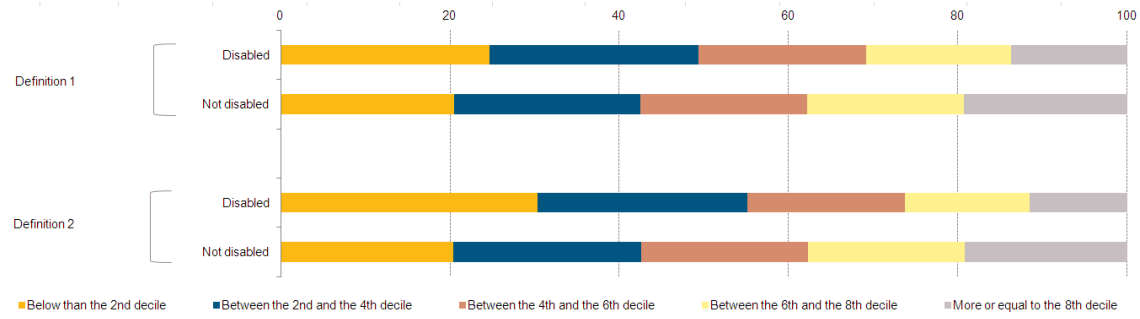


At EU-28 level, the main reason for leaving last job was different for the two population groups. Indeed, one quarter of the group without disability having a job left their job because of this limited duration. Also, the same percentage was observed for the reason for dismissal. For the persons reporting a disability, more than three persons out of 10 left their job because of their illness. This proportion was higher for the second definition.

Regarding the countries specificities, the trend was the same for the group with disabilities in twelve countries (Belgium, Denmark, Cyprus, Latvia, Luxembourg, the Netherlands, Poland, Portugal, Slovakia, the United Kingdom, Iceland and Switzerland). For the other countries, the main reason differed. It varied from retirement in 9 countries, to dismissal in Germany and Estonia, including limited duration in Spain, Sweden and Turkey. In Estonia, France, Slovenia, Spain, Sweden and Turkey, the main reason recorded by the majority of the persons having no disability did not diverge from the main reason of the group reporting a disability.

Figure 67 – Distribution of monthly pay from main job in deciles for the EU-28 aggregate by definitions

(%)

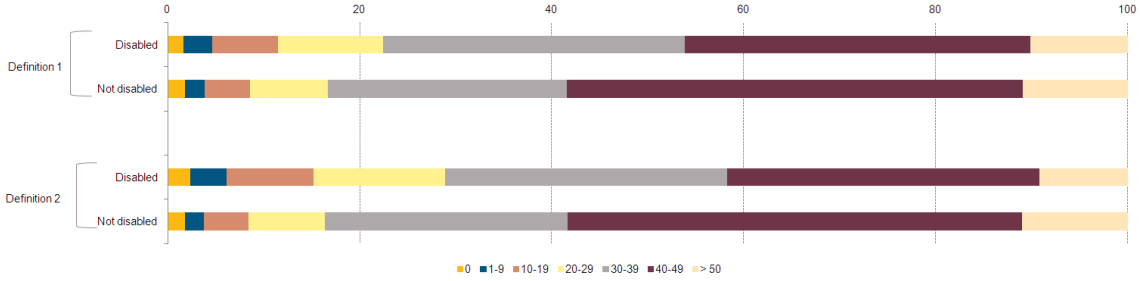


In general, the persons having a disability earned less than the persons without disabilities. At the EU-28 level, more than 50 % of the persons reporting a disability were at maximum in the 4th deciles of monthly pay whereas it represents one fifth of the group without disabilities. This tendency affected more the persons with a limitation at work.

At country level, the same picture was notable for all the countries, the exception being Austria, Cyprus and Romania. For those who earned most (more than the 8th deciles), the difference between the two population groups varied from more 12 percentage points in Latvia, Lithuania and Poland to 1.6 percentage points in the United Kingdom, in favour of the persons without disabilities. Only two countries (Greece and Austria) recorded a difference in the advantage of the persons reporting a disability.

Figure 68 – Distribution of number of hours per week usually worked for the EU-28 aggregate by definitions

(%)

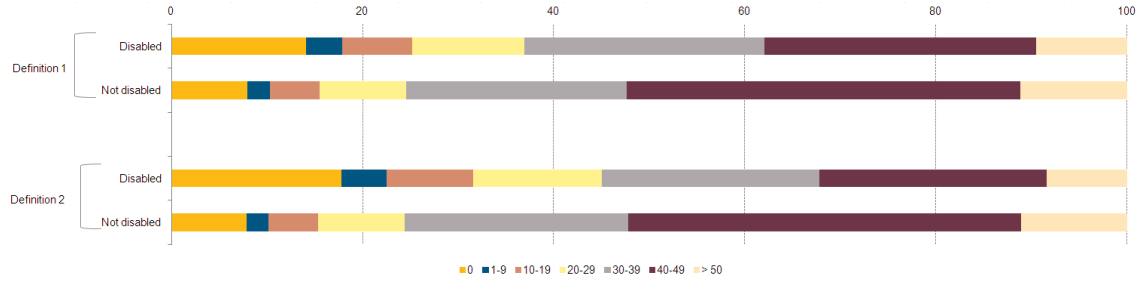


In general, the persons having a disability usually worked less than the persons without disabilities. Indeed, at EU-28 level, nearly 50 % of the persons without disabilities usually worked between 40 and 49 hours per week whereas this duration concerned almost one person out of three in the group reporting a disability. Moreover, 22.4 % of the persons having a disability usually worked less than 30 hours per week, compared to 16.7 % in the group without disabilities according to the first definition (28.9 % versus 16.4 % for the second definition).

At country level, the highest proportion of people (with or without disabilities) usually worked during the same length of time, between 40 and 49 hours for the majority of countries. In Denmark, France, the Netherlands and Finland, people usually worked less than the EU-28 aggregate (between 30 and 39 hours) and Turkey more than the EU-28 aggregate (more than 50 hours), whether the person being considered as disabled or not. However, in Ireland, Cyprus and the United Kingdom, the persons reporting a disability usually worked less than the persons in the group without disabilities. Only Italy recorded a duration of work higher for persons with disabilities: 41.1 % worked more than 50 hours whereas 42.0 % of the group without disabilities worked between 40 and 49 hours.

Figure 69 – Distribution of number of hours per week actually worked for the EU-28 aggregate by definitions

(%)

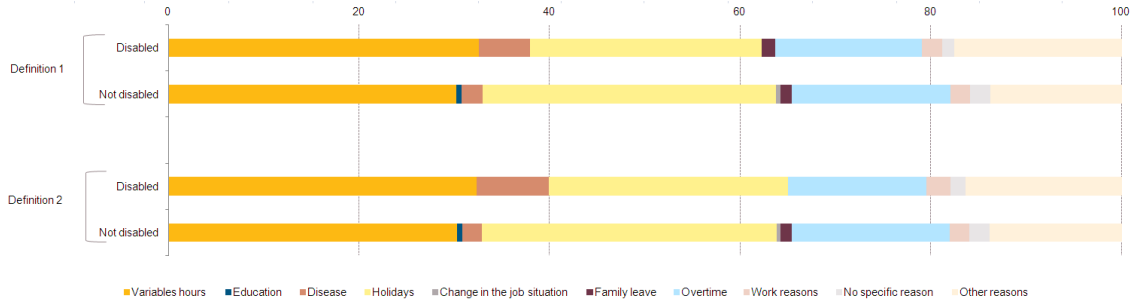


For the EU-28 aggregate, four persons out of 10 without a basic activity difficulty actually worked between 40 and 49 hours where this same proportion was observed for the group of persons reporting a disability for the duration of less than 30 hours per week (regarding the second definition). The difference between the two population groups was less significant compared to the first definition.

Regarding the countries specificities, the percentage of persons which actually did not work was higher for the group of persons reporting a disability. Indeed, it varied from 2.6 % in Turkey to 20.4 % in the Netherlands for the persons having a basic activity difficulty whereas it affected from 1.5 % in Turkey to 26.5 % in Romania. On the opposite, the proportion of persons having a disability and working more than 50 hours per week was smaller: it started at 5.8 % in Hungary and exceeded 38.1 % in Turkey. For the non-disabled persons group, this share ranged from 3.4 % in Lithuania to 45.1 % in Turkey. Otherwise, the same conclusions as the ones for the usually worked hours could be drawn.

Figure 70 – Distribution of main reason for hours actually worked being different from the person's usually hours for the EU-28 aggregate by definitions

(%)



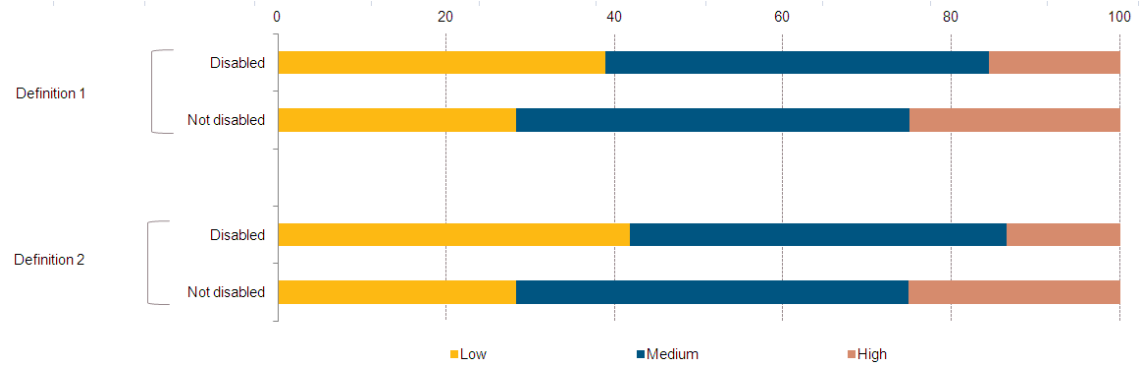
In the EU-28, three persons out of 10 had a difference between hours actually worked and hours usually worked due to flexible working hours, whether the person reported a disability or not. Unsurprisingly, for the first definition 5.4 % (7.6 % for the second definition) of the group with disabilities had a disease as the main reason for this difference, while only 2 % of the persons without disabilities mentioned it (for each definition).

For some countries, the disability had no impact on the main reason for the difference between hours actually worked and hours usually worked. Denmark and Italy recorded more persons who reported overtime as the main reason for this difference, while Germany, the Netherlands, Romania, Sweden, the United Kingdom and Turkey reported flexible working hours and Greece, Austria and Portugal reported holidays. For twelve countries, a difference between the two population groups was noticeable. Moreover, the percentage of persons mentioning the disease as the main reason for this difference was higher for the group with disabilities: it varied from 0.2 % in Spain to 10.3 % in Germany, whereas this rate fluctuated from 0.1 % in Italy to 7.9 % in Finland.

3.4.4. Education

Figure 71 – Distribution of highest level attained of education for the EU-28 aggregate by definitions

(%)



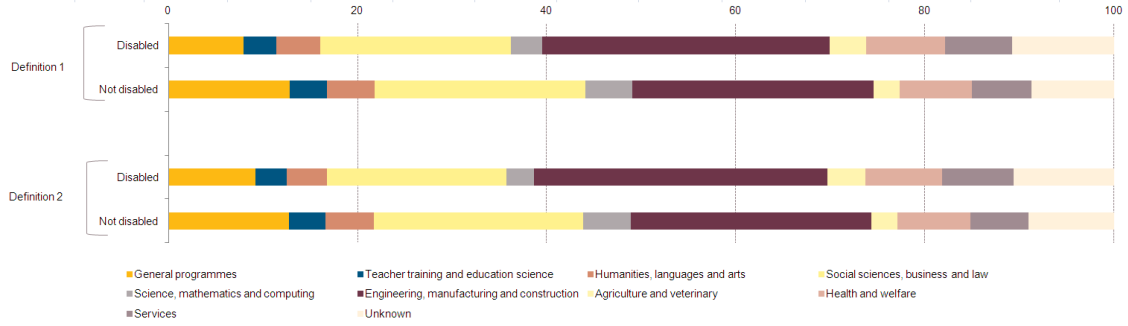
At EU-28 level, the shares of persons attaining "upper secondary and post-secondary non-tertiary educations" levels remained quite similar among persons with or without limitations (between 45 % and 47 %, regardless of the definition applied). However, there was a wider gap between both aforementioned groups regarding the share of persons attaining "pre-primary, primary and lower secondary education" levels and "first and second stage of tertiary education" levels. Indeed, among persons having a basic activity difficulty, a difference of 23 percentage points was observed between the lowest (38.9 %) and the highest (15.5 %) educational attainment levels. The disparity was far more outspoken for persons having limitations in work caused by a health problem or a basic activity difficulty, with a 28 percentage points gap between the aforesaid educational attainment levels (41.8 % against 13.4 %). Conversely, among persons without disabilities, the difference was of 3 percentage points only (around 28 % and 25 % respectively for the lowest and the highest educational levels attainment).

At country level, this general picture was largely confirmed. Still, some particularities could be detected: the share reported for "pre-primary, primary and lower secondary education" attainment level was very high for Malta, Portugal and Turkey regardless of the condition of persons aged 15-64 (i.e. with our without limitations/disabilities). Among people with basic activity difficulties for instance, this rate reached 77.9 % for Malta, 84.0 % for Portugal and 85.9 % in Turkey, with obviously very low shares in the higher attainment levels. Moreover, even if, as a general

trend, the share for disabled persons attaining the "first and second stage of tertiary education level" was lower than the share measured for non-disabled, it can be noticed that the largest differences between the persons with and without disabilities in the highest educational attainment level shown in Table 1 were noted in Belgium, Ireland, Cyprus, Lithuania, Luxembourg, Poland and the United Kingdom, with 15 percentage points difference.

Figure 72 – Distribution of field of highest level attained of education for the EU-28 aggregate by definitions

(%)

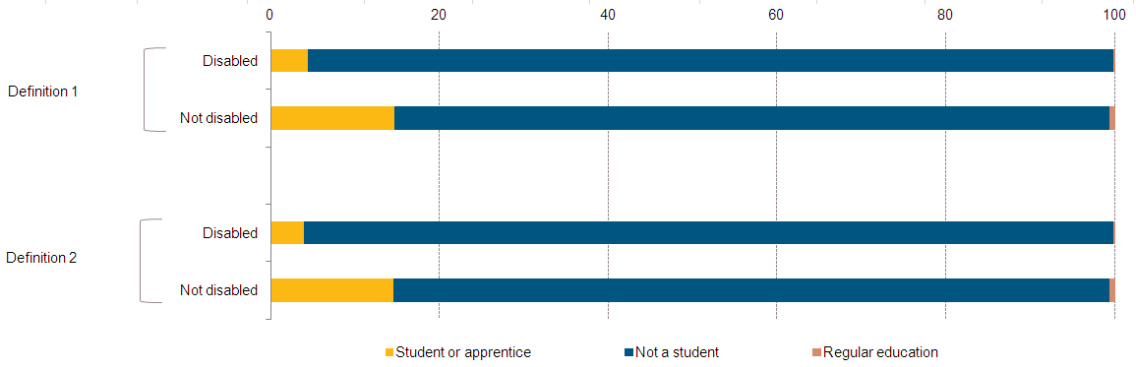


Concerning the field of the highest level of education attained, one third of the persons reporting a disability studied "Engineering, manufacturing and construction" while this field represented one quarter in the group without disabilities. For the other domains, no significant differences were notable. The second definition reported the same conclusions.

At country level, few countries reported a difference between the two population groups: it concerned Denmark, Estonia, Greece, Latvia, Lithuania and Iceland. For the other countries, the majority of persons studied different fields: in Ireland, Spain, Portugal and Turkey, the main domain was "general programs", in France, Cyprus, Luxembourg, the Netherlands and Switzerland, it was "Social sciences, business and law" and for the others it was "Engineering, manufacturing and construction".

Figure 73 – Distribution of regular education during the last 4 weeks for the EU-28 aggregate by definitions

(%)

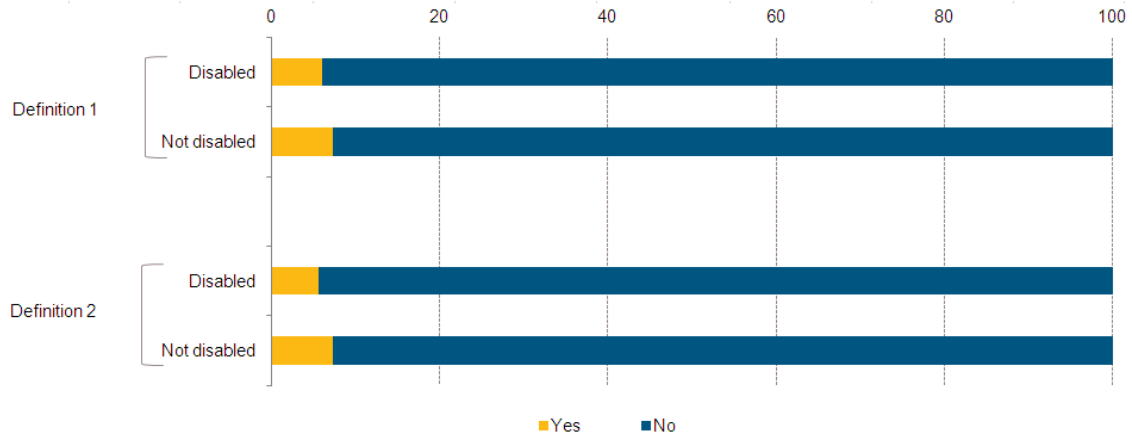


In the EU-28, only 4 % of the persons reporting a disability were in regular education during the last 4 weeks before the interview while this rate equalled to 15 % in the group without disabilities. The same shares were observed for the second definition.

At country level, the rate of persons participating to a regular education was always higher for the persons without disabilities compared to those having a basic activity difficulty. Indeed, the proportion varied from 1.1 % in Romania to 16.6 % in Iceland for the persons having a disability, whereas it started at 9.9 % in Bulgaria and exceeded more than 20 % in Denmark, the Netherlands, Slovenia, Finland and Iceland for the group without disabilities.

Figure 74 – Distribution of attendance to courses outside the regular education system during the last 4 weeks for the EU-28 aggregate by definitions

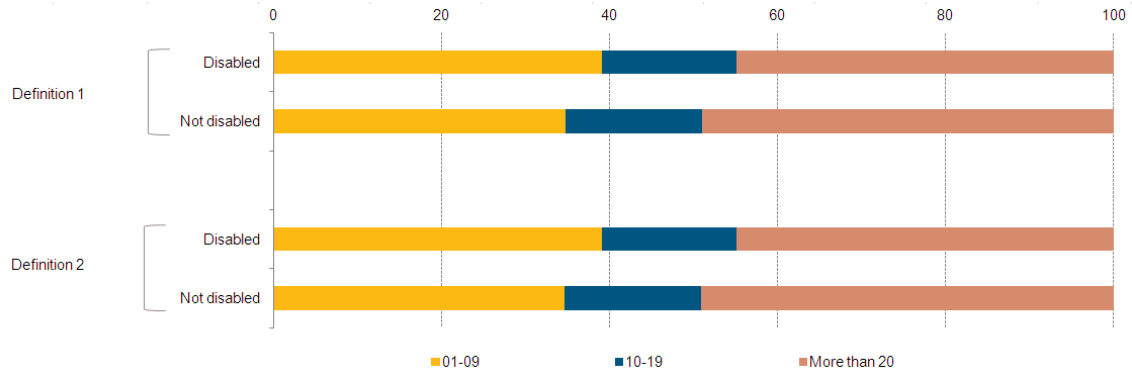
(%)



Disability had no impact on the attendance to courses outside the regular education system. Indeed, in the EU-28, the difference between the two population groups did not exceed one percentage points. At a country level, this difference varied from 0.2 percentage points in Italy to more than 6 percentage points in Denmark, Cyprus and Switzerland. The proportion of attending a course was the smallest in Romania and the highest in Denmark, Switzerland and Sweden, whatever the group considered (with or without disabilities).

Figure 75 – Distribution of number of hours spent on learning activities within the last 4 weeks for the EU-28 aggregate by definitions

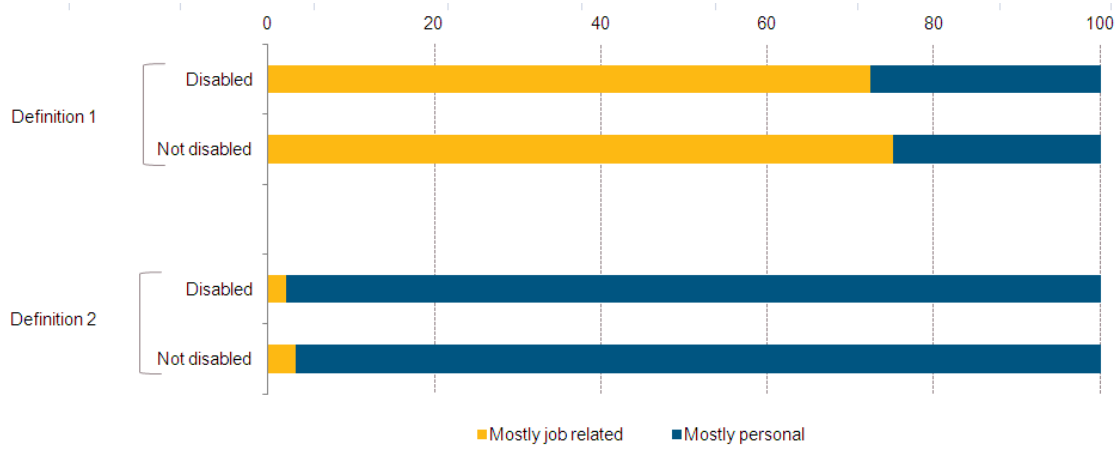
(%)



The number of hours spent on learning activities was smaller for the persons reporting a disability. Indeed, in the EU-28, nearly 50 % of the persons without disabilities spent more than 20 hours whereas 45 % of people with disabilities were in this situation, regardless of the definition considered.

At country level, only Cyprus reported a difference between the two population groups: 57.2 % of the persons having a disability conferred less than 10 hours in learning activities although nearly 4 persons out of 10 in the group without disabilities spent more than 20 hours on it. Otherwise, the other countries were divided in two categories, without distinction regarding the disability status: those where the majority of the persons had less than 10 hours of learning activities, and those who had more than 20 (Spain, France, the United Kingdom and Turkey).

Figure 76 – Distribution of purpose of the most recent learning activity for the EU-28 aggregate by definitions
(%)



The difference observed between the two population groups concerning the purpose of the most recent learning activity was more emphasized for the second definition: the purpose of two thirds of the persons reporting a work limitation was mostly job related while this share represented more than three quarters for the persons without limitation in working activities, for the EU-28.

At country level, the countries were divided in two groups: those where the purpose of the majority of people was mostly job related (Belgium, Germany, Spain, France, Italy, Austria, the Netherlands, Poland, Slovenia and Finland) and those where the purpose was mostly personal for the majority of the persons (Cyprus and the United Kingdom), whether they were considered as disabled or not and regardless of the definition studied. However, in Ireland, Luxembourg and Iceland, the majority of the persons with disabilities according to the first definition had this learning activity as a personal reason while the purpose of the majority of disabled persons according to the second definition was mostly job related.

3.5. Multivariate analysis

3.5.1. Approach implemented

The purpose of this section is to measure the effect of being disabled on employment status, controlling for demographic characteristics and other factors. Employment status can be analysed as a binary variable - employed/not employed (including inactive and unemployed persons), or as a multi-category variable - part-time employed/full-time employed/unemployed/inactive.

As presented previously, the disability was linked to different elements: age, marital status, gender and the highest level of education attained. Consequently, it was reasonable to add these factors into the model as predictors, along with country as a stratum variable. Other variables of the module were added (NEEDHELP, NEEDADAP, NEEDORGA and LIMREAS) in order to see the impact of the need/use of special assistance on the employment status. Two different approaches were used in modelling employment status as a function of disability:

- A binomial logistic regression with categories “employed / not employed”, modelling the probability of being employed.
- A multinomial logistic regression with categories “part-time employed / full-time employed / unemployed / inactive”, using “full-time employed” as the reference category.

The logit models, also called logistic regression is used to model dichotomous outcome variables. In the logit model, the log odds of the outcome is modeled as a linear combination of the predictor variables.

The multinomial logistic regression is a classification method that generalizes logistic regression to multiclass problems, i.e. with more than two possible discrete outcomes. The setup is the same as in logistic regression, the only difference being that the dependent variables are categorical rather than binary.

For each approach (binary or multi-category dependent variable) several models were tested and the best model in terms of convergence, likelihood ratio, Akaike Information Criterion (AIC), and parsimony was selected. Then, this

model was applied for each country. If for some countries, the selected model met some convergence problems, the model was adapted to the country specificities.

The AIC is a measure of the relative quality of a statistical model, for a given set of data. It deals with the trade-off between the goodness of fit of the model and the complexity of the model. Given a set of candidate models for the data, the preferred model is the one with the minimum value.

There were eleven possible models implementing disability definition 1 (person having a basic activity difficulty, DIFFICMA):

Model 1: Disability definition 1 / Global level
Employment Status = disability (definition 1) + age groups + sex + education + marital status + household composition + country fixed effects.

Model 2: Disability definition 1 / Global level / adding 4 additional independent variables to Model 1
Employment Status = disability (definition 1) + age groups + sex + education + marital status + household composition + NEEDHELP + NEEDADAP + NEEDORGA + LIMREAS + country fixed effects.

Model 3: Disability definition 1 / Global level / adding NEEDHELP as independent variable to Model 1
Employment Status = disability (definition 1) + age groups + sex + education + marital status + household composition + NEEDHELP + country fixed effects.

Model 4: Disability definition 1 / Global level / adding NEEDADAP as independent variable to Model 1
Employment Status = disability (definition 1) + age groups + sex + education + marital status + household composition + NEEDADAP + country fixed effects.

Model 5: Disability definition 1 / Global level / adding NEEDORGA as independent variable to Model 1
Employment Status = disability (definition 1) + age groups + sex + education + marital status + household composition + NEEDORGA + country fixed effects.

Model 6: Disability definition 1 / Global level / adding LIMREAS as independent variable to Model 1
Employment Status = disability (definition 1) + age groups + sex + education + marital status + household composition + LIMREAS + country fixed effects.

Model 7: Disability definition 1 / Global level / adding an interaction between disability and gender to Model 2
*Employment Status = disability (definition 1) + age groups + sex + education + marital status + NEEDHELP + NEEDADAP + NEEDORGA + LIMREAS + disability (definition 1)*gender + country fixed effects.*

Model 8: Disability definition 1 / Global level / adding an interaction between disability and age to Model 2
*Employment Status = disability (definition 1) + age groups + sex + education + marital status + NEEDHELP + NEEDADAP + NEEDORGA + LIMREAS + disability (definition 1)*age groups + country fixed effects.*

Model 9: Disability definition 1 / Global level / adding an interaction between disability and age and an interaction between disability and gender as independent variable to Model 2
*Employment Status = disability (definition 1) + age groups + sex + education + marital status + NEEDHELP + NEEDADAP + NEEDORGA + LIMREAS + disability (definition 1)*age groups + disability (definition 1)*gender + country fixed effects.*

Model 10: Disability definition 1 / Global level / adding a three-way interaction among disability, age, and gender to Model 2
*Employment Status = disability (definition 1) + age groups + sex + education + marital status + NEEDHELP + NEEDADAP + NEEDORGA + LIMREAS + disability (definition 1)*age groups*gender + country fixed effects.*

Model 11: Disability definition 1 / Global level / adding an interaction between age and gender to Model 9
*Employment Status = disability (definition 1) + age groups + sex + education + marital status + NEEDHELP + NEEDADAP + NEEDORGA + LIMREAS + disability (definition 1)*age groups + disability (definition 1)*gender + gender*age groups + country fixed effects.*

The final model is presented in the following section. For each predictor, the odds-ratios, the 95 % confidence interval and the level of significance are reported. For each variable of interest, the reference group was defined as the most represented at a global level. The reference group for each variable is indicated in brackets (e.g. male for gender, persons in legal union for marital status…).

The interpretation of the CI is as follows: at 95 % of confidence that upon repeated trials, 95 % of the CI's would include the "true" population odds ratio. It is equivalent to the Chi-Square test statistic: if the CI includes one, it means that the odds ratio equals one, given the other predictors are in the model. The CI brings information on the prevision of the point estimate.

3.5.2. Outcomes for the binomial logistic models

Table 25 presents information on model convergence and fit. The first model used more observations comparing to the others. It also resulted in the highest AIC with intercept and covariates. The best model taking into account all goodness of fit indicators is the model 11, the model including three two-way interactions.

Table 25: General information of the binomial logistic models for all countries

	Number of observations used	Status of the convergence	P-Value of the likelihood ratio	AIC with intercept only	AIC with intercept and covariates
Model 1	863 808	Convergence	***	472 345 446	386 940 357
Model 2	223 326	Convergence	***	132 818 143	105 168 530
Model 3	226 856	Convergence	***	136 620 613	115 256 976
Model 4	226 803	Convergence	***	136 645 735	115 387 826
Model 5	226 831	Convergence	***	136 631 464	111 868 110
Model 6	845 629	Convergence	***	465 188 671	373 279 049
Model 7	223 326	Convergence	***	132 818 143	105 141 685
Model 8	223 326	Convergence	***	132 818 143	105 077 366
Model 9	223 326	Convergence	***	132 818 143	105 043 531
Model 10	223 326	Convergence	***	132 818 143	105 028 603
Model 11	223 326	Convergence	***	132 818 143	104 825 726

Note:
- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively.

The model suggests that controlling for education, household composition, marital status, and different special needs, disability has a significant effect on employment, interacting with age and gender. For example, disability has a negative effect on the likelihood of being employed, but the effect is less pronounced for females. Similarly, the effect is less pronounced for younger (15-24) and older (55-64) persons relative to middle-aged (35-44). There is also an overall effect of age; however, it interacts with gender, such that the odds of being employed for females between 15-24 is two times higher relative to the one for males, 35-44, and the odds of being employed for females between 55-64 years of age is 1.56 higher than the odds for males, 35-44, controlling for other factors. Adults living in a couple with or without children, and adults living in one or two-adult households with children, or two-adult household without children are less likely to be employed, relative to adults living in one-adult household without children controlling for the other predictors in the model. The likelihood of being employed is also dependent on one's education - those with high level education are more likely to be employed relative to those with medium level of education. Similarly, those with no work limitations are more likely to be employed. Interestingly, single people and divorced/separated people are less likely being employed relative to persons in legal unions. Finally, people who need personal assistance, special equipment or special working arrangements are less likely to be employed relative to those who do not, controlling for the other factors in the model.

Table 26: Outcomes of the binomial logistic model at a global level

Independent variables			Odds ratio	CI at 95 %	P-Value
Age groups (35-44)	15-24		0.15	[0.14; 0.17]	***
	25-34		0.80	[0.72; 0.89]	***
	45-54		0.81	[0.75; 0.89]	***
	55-64		0.18	[0.17; 0.20]	***
Age groups (35-44) * Sex (Male)	15-24	Female	1.98	[1.73; 2.26]	***
	25-34	Female	0.97	[0.86; 1.09]	
	45-54	Female	1.24	[1.13; 1.35]	***
	55-64	Female	1.56	[1.43; 1.71]	***
Composition of the household (One adult without children)	Couple with children		0.78	[0.73; 0.83]	***
	Couple without children		0.82	[0.78; 0.87]	***
	One adult with children		0.74	[0.68; 0.81]	***
	Two adults with children		0.77	[0.72; 0.82]	***
	Two adults without children		0.84	[0.79; 0.88]	***
Disability (No)	Disabled		0.76	[0.70; 0.82]	***
Disability (No) * Age groups (35-44)	Disabled	15-24	1.66	[1.45; 1.90]	***
	Disabled	25-34	1.06	[0.95; 1.18]	
	Disabled	45-54	0.94	[0.86; 1.02]	
	Disabled	55-64	1.19	[1.09; 1.29]	***
Disability (No) * Sex (Male)	Disabled	Female	1.20	[1.13; 1.27]	***
Highest level of education attained (Medium)	High: Third level		1.88	[1.80; 1.97]	***
	Low: Lower secondary		0.47	[0.46; 0.49]	***

Main reason of limitation in work (No reason)	Affects receipt of benefits	0.24	[0.21; 0.28]	***
	Employer's lack of flexibility	0.70	[0.61; 0.80]	***
	Family/caring responsibilities	0.40	[0.37; 0.44]	***
	Lack of appropriate job opportunities	0.36	[0.34; 0.38]	***
	Lack of qualifications/experience	0.48	[0.44; 0.53]	***
	Lack or poor transportation to and from workplace	0.57	[0.49; 0.68]	***
	Other reason	0.25	[0.23; 0.27]	***
	Personal reason	0.20	[0.18; 0.22]	***
Marital status (Persons in legal union)	Single	0.78	[0.75; 0.82]	***
	Persons whose legal unions ended	0.88	[0.83; 0.92]	***
Need for personal assistance (No)	Yes	0.56	[0.53; 0.59]	***
Need for special equipment or workplace adaptations (No)	Yes	0.29	[0.27; 0.30]	***
Need for special working arrangements (No)	Yes	0.68	[0.64; 0.73]	***
Sex (Male)	Female	0.36	[0.33; 0.39]	***

Notes:
- The reference category is presented in parenthesis;
- The probability of being employed is modelled (against not being employed);
- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively.

The results by country are presented in Annex 9.

3.5.3. Outcomes for the multinomial models

Similarly to the binomial model, the best multinomial model in terms of fits statistics is model 11.

Table 27: General information of the multinomial logistic models for all the countries

	Number of observations used	Status of the convergence	P-Value of the likelihood ratio	AIC with intercept only	AIC with intercept and covariates
Model 1	863 680	Convergence	***	806 646 568	674 909 823
Model 2	223 282	Convergence	***	223 384 368	182 682 452
Model 3	226 811	Convergence	***	230 869 535	197 868 546
Model 4	226 758	Convergence	***	230 891 587	198 471 368
Model 5	226 786	Convergence	***	230 827 569	194 892 266
Model 6	845 528	Convergence	***	793 783 148	651 536 000
Model 7	223 282	Convergence	***	223 384 368	182 642 644
Model 8	223 282	Convergence	***	223 384 368	182 539 508
Model 9	223 282	Convergence	***	223 384 368	182 487 006
Model 10	223 282	Convergence	***	223 384 368	182 462 190
Model 11	223 282	Convergence	***	223 384 368	181 945 193

Note:
- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively.

Disability is associated with higher likelihood of part-time employment relative to full time, controlling for education, household composition, marital status, and different special needs. However, this effect is less pronounced for females than males. Similarly, disability is associated with higher likelihood of being inactive rather than employed full-time, but this effect is less pronounced for females than males. Also, the effect is less pronounced for younger (15-24) and older (55-64) persons relative to middle-aged (35-44). Finally, disability does not seem to have an effect on the likelihood of being unemployed relative to being employed full-time.

Table 28: Outcomes of the multinomial logistic model at a global level

	Independent variables			Odds ratio	CI at 95 %	P-Value
Part-time employed vs. full-time employed	Age groups (35-44)	15-24		4.31	[3.55; 5.24]	***
		25-34		1.36	[1.15; 1.60]	***
		45-54		1.17	[1.02; 1.34]	**
		55-64		2.69	[2.36; 3.08]	***
	Age groups (35-44) * Sex (Male)	15-24	Female	0.31	[0.25; 0.39]	***
		25-34	Female	0.59	[0.49; 0.71]	***
		45-54	Female	0.79	[0.69; 0.91]	***
		55-64	Female	0.46	[0.40; 0.53]	***
	Composition of the household (One adult without children)	Couple with children		0.86	[0.79; 0.94]	***
		Couple without children		0.74	[0.68; 0.80]	***
		One adult with children		1.1	[0.98; 1.23]	
		Two adults with children		0.71	[0.65; 0.78]	***
		Two adults without children		0.73	[0.67; 0.79]	***
	Disability (No)	Disabled		1.47	[1.31; 1.65]	***
	Disability (No) * Age groups (35-44)	Disabled	15-24	0.84	[0.68; 1.03]	*
		Disabled	25-34	1.14	[0.97; 1.34]	
		Disabled	45-54	1.03	[0.91; 1.16]	
		Disabled	55-64	1.01	[0.89; 1.14]	
	Disability (No) * Sex (Male)	Disabled	Female	0.79	[0.72; 0.87]	***
	Highest level of education attained (Medium)	High: Third level		0.79	[0.74; 0.84]	***
		Low: Lower secondary		1.17	[1.12; 1.23]	***
	Main reason of limitation in work (No reason)	Affects receipt of benefits		3.42	[2.70; 4.35]	***
		Employer's lack of flexibility		0.95	[0.76; 1.18]	
		Family/caring responsibilities		3.1	[2.78; 3.47]	***
		Lack of appropriate job opportunities		1.94	[1.77; 2.13]	***
		Lack of qualifications/ experience		1.92	[1.67; 2.19]	***
		Lack or poor transportation to and from workplace		1.21	[0.96; 1.54]	
		Other reason		1.96	[1.70; 2.27]	***
		Personal reason		2.85	[2.41; 3.37]	***
	Marital status (Persons in legal union)	Single		0.9	[0.84; 0.97]	***
		Persons whose legal unions ended		0.77	[0.71; 0.82]	***
	Need of personal assistance (No)	Yes		1.05	[0.94; 1.16]	
	Need of special equipment or workplace adaptations (No)	Yes		2.1	[1.94; 2.30]	***
	Need of special working arrangements (No)	Yes		0.81	[0.72; 0.91]	***
	Sex (Male)	Female		8.69	[7.72; 9.78]	***

	Independent variables		Odds ratio	CI at 95 %	P-Value
Inactive vs. full-time employed	Age groups (35-44)	15-24	14.41	[12.58; 16.50]	***
		25-34	1.35	[1.19; 1.52]	***
		45-54	1.7	[1.55; 1.88]	***
		55-64	11.99	[10.90; 13.18]	***
	Age groups (35-44) * Sex (Male)	15-24	0.31	[0.27; 0.37]	***
		25-34	0.89	[0.78; 1.02]	*
		45-54	0.65	[0.59; 0.72]	***
		55-64	0.44	[0.40; 0.48]	***
	Composition of the household (One adult without children)	Couple with children	1.37	[1.28; 1.47]	***
		Couple without children	1.14	[1.07; 1.21]	***
		One adult with children	1.47	[1.33; 1.63]	***
		Two adults with children	1.23	[1.15; 1.31]	***
		Two adults without children	1.08	[1.02; 1.15]	***
	Disability (No)	Disabled	1.71	[1.56; 1.86]	***
	Disability (No) * Age groups (35-44)	Disabled	0.48	[0.41; 0.56]	***
		Disabled	0.96	[0.85; 1.09]	
		Disabled	0.99	[0.90; 1.09]	
		Disabled	0.73	[0.66; 0.80]	***
	Disability (No) * Sex (Male)	Disabled	0.78	[0.73; 0.84]	***
	Highest level of education attained (Medium)	High: Third level	0.47	[0.45; 0.50]	***
		Low: Lower secondary	2.31	[2.23; 2.39]	***
	Main reason of limitation in work (No reason)	Affects receipt of benefits	7.33	[6.07; 8.85]	***
		Employer's lack of flexibility	1.28	[1.10; 1.49]	***
		Family/caring responsibilities	4.35	[3.95; 4.79]	***
		Lack of appropriate job opportunities	2.57	[2.41; 2.75]	***
		Lack of qualifications/ experience	2.31	[2.09; 2.56]	***
		Lack or poor transportation to and from workplace	1.48	[1.23; 1.78]	***
		Other reason	5.43	[4.91; 6.01]	***
		Personal reason	8.4	[7.40; 9.53]	***
	Marital status (Persons in legal union)	Single	1.13	[1.07; 1.19]	***
		Persons whose legal unions ended	0.98	[0.93; 1.03]	
	Need of personal assistance (No)	Yes	2.12	[1.98; 2.28]	***
	Need of special equipment or workplace adaptations (No)	Yes	4.61	[4.33; 4.91]	***
	Need of special working arrangements (No)	Yes	1.46	[1.35; 1.57]	***
	Sex (Male)	Female	6.42	[5.88; 7.01]	***

	Independent variables		Odds ratio	CI at 95 %	P-Value
Unemployed vs. full-time employed	Age groups (35-44)	15-24	2.43	[2.03; 2.91]	***
		25-34	1.11	[0.94; 1.30]	
		45-54	0.77	[0.67; 0.89]	***
		55-64	1.09	[0.92; 1.29]	
	Age groups (35-44) * Sex (Male)	15-24	0.73	[0.58; 0.91]	***
		25-34	1.08	[0.89; 1.31]	
		45-54	0.83	[0.71; 0.98]	**
		55-64	0.55	[0.46; 0.66]	***
	Composition of the household (One adult without children)	Couple with children	0.87	[0.77; 0.98]	**
		Couple without children	0.98	[0.86; 1.11]	
		One adult with children	1.21	[1.03; 1.43]	**
		Two adults with children	1.03	[0.92; 1.16]	
		Two adults without children	1.12	[1.02; 1.24]	**
	Disability (No)	Disabled	0.88	[0.76; 1.01]	*
	Disability (No) * Age groups (35-44)	Disabled	0.95	[0.75; 1.20]	
		Disabled	1.05	[0.86; 1.28]	
		Disabled	1.11	[0.94; 1.31]	
		Disabled	1.06	[0.88; 1.27]	
	Disability (No) * Sex (Male)	Disabled	1.06	[0.94; 1.19]	
	Highest level of education attained (Medium)	High: Third level	0.62	[0.56; 0.68]	***
		Low: Lower secondary	1.81	[1.70; 1.93]	***
	Main reason of limitation in work (No reason)	Affects receipt of benefits	2.55	[1.75; 3.74]	***
		Employer's lack of flexibility	1.95	[1.55; 2.46]	***
		Family/caring responsibilities	2.36	[1.97; 2.84]	***
		Lack of appropriate job opportunities	6.33	[5.83; 6.86]	***
		Lack of qualifications/ experience	3.55	[3.03; 4.17]	***
		Lack or poor transportation to and from workplace	3.33	[2.60; 4.27]	***
		Other reason	2.63	[2.16; 3.21]	***
		Personal reason	2.15	[1.70; 2.73]	***
	Marital status (Persons in legal union)	Single	1.57	[1.43; 1.73]	***
		Persons whose legal unions ended	1.56	[1.42; 1.72]	***
	Need of personal assistance (No)	Yes	0.55	[0.47; 0.63]	***
	Need of special equipment or workplace adaptations (No)	Yes	4.14	[3.78; 4.55]	***
	Need of special working arrangements (No)	Yes	0.94	[0.82; 1.08]	
	Sex (Male)	Female	1.71	[1.49; 1.97]	***

Notes:
- The reference category is presented in parenthesis;
- The “Full-time employed” category was the reference one;
- The signs *, ** and *** mean that the chi-square test is significant at an error rate of 5 %, 1 % and 0.1 % respectively.

The results by country are presented in Annex 9.

Conclusion

Conclusion

Background and aims

The primary objective of the 2011 Labour Force Survey ad hoc module was to provide information on the situation of disabled people within the labour market as compared to those without disabilities, using as far as possible the concept of disability as defined by the International Classification of Functioning, Disability and Health (ICF). However, in the process of developing the 2011 LFS AHM, it appeared that the new concept of disability was difficult to implement and operationalize because of the constraints that govern any LFS module (in particular its limitation to 11 variables). Such constraints do neither allow measuring the prevalence of disability in the population according to the ICF definition nor reporting on the situation of disabled people in society according to the wished definition. Therefore, it was not possible to develop a comprehensive examination of all the different types of barriers that prevent people from participating in society and only barriers in the area of employment were investigated. Moreover, the restrictions in participation in the labour market were directly linked to health/difficulties in basic activities following the medical model approach of disability.

The 2011 LFS AHM comprised the following topics:

- Health problems and difficulties in basic activities;
- Limitations in work caused by health problems/difficulties in basic activities;
- Special assistance needed or used by people with health problems/difficulties in basic activities;
- Limitations in work because of other reasons.

These topics are of a general nature, covering a large range of working practices, types of health conditions and basic activity limitations, and person/environment interactions. They give information on the barriers to employment associated with health problems and/or difficulties in basic activities, and/or other personal/environmental reasons. The question on limitations in work caused by other personal or environmental factors was included in order to be closer to the bio-psychosocial philosophy of the disability concept. Thus, two definitions of disability can be derived from the 2011 LFS AHM, such as:

1. Disability = difficulties in carrying out basic activities (such as, hearing, seeing, walking, communicating);
2. Disability (in employment) = limitation in work caused by health problems/difficulties in basic activities.

The results of the statistical analysis are presented in the present publication.

National implementation of the survey

Survey implementation analysis

In general, the ad-hoc module was implemented in the same way for each country: at the end of the core questionnaire and based on a voluntary participation.

Non-response analysis

The overall non-response of the ad-hoc module is satisfactory for all the countries, except for Norway where more than 85 % of the target population are non-respondents.

Proxy use

The proxy responses were allowed in most of the 32 countries that participated in the module, except in Belgium, France and Norway. At EU-28 level, the rate of proxy use reached 34.8 %.

Regarding the overall results, the proxy use seems to be mainly linked to the gender, the marital status and the age of the surveyed persons. Indeed, it appeared that persons who responded directly to the module were most often females, married and over 35 years old, whereas persons who responded via another member of the household were most frequently males, single, and under the age of 25.

The proxy use may also impact the answers of the surveyed persons. Indeed, it seemed that the persons who responded on the behalf of another member of the household tend to minimize the existence of a longstanding health problem or a basic activity difficulty.

Evaluation of the data collection quality

Target population

The 2011 LFS AHM on employment of disabled people related to all persons aged 15 to 64 years. In three countries (Spain, the United Kingdom and Iceland), the target population for the ad-hoc module consisted of persons aged between 16 and 64.

Filter question

Three countries (the Netherlands, Norway, and the United Kingdom) used a filter question at the beginning of the section of the questionnaire dedicated to the 2011 LFS AHM on employment of disabled people. The respondents were asked whether they had or not a disability or health problem, without suggesting the full set of response categories. In the case of a negative answer (*i.e.* no health problem or difficulty) they were not surveyed for the module.

Structure of the national questionnaires

The model questionnaire produced by Eurostat formed the basis for the national questionnaires with adaptations in some countries. The number of national questions used to collect the variables of the 2011 LFS AHM on employment of disabled people varied from 10 questions in Bulgaria, Poland, and Slovakia, to 133 questions in France. The order of national questions followed the EU model questionnaire in most countries, except in two countries. Norway collected only six of the eleven variables of the module.

Eight countries included additional questions to the 2011 LFS AHM survey, whose influence may depend on their position in the questionnaire. Spain was the only country to ask additional questions before the questions of the module were expressed. Five countries asked additional questions within the module (France, Italy, the Netherlands, Austria and Finland). Two countries asked additional questions at the end of the module which would, of course, not have affected the responses to the 2011 LFS AHM survey (Estonia and Poland).

National specificities

According to the EU LFS AHM explanatory notes, the wording of the questions related to the special assistance used or needed should be adapted according to whether the respondent was employed or not employed. Following this approach, thirteen countries used the same distinction for variables dealing with limitations in working activities: Estonia, Spain, France, Cyprus, Latvia, Lithuania, Hungary, Austria, Poland, Portugal, Slovenia, Slovakia and Norway.

Questions related to limitations in working activities and special assistance used or needed are to be considered by the respondent in the context of work. However, three countries (Estonia, Italy, and Portugal) proceeded to a specific treatment for persons unable to work, which may impact the comparison with the other countries as persons unable to work are not identified in the EU LFS AHM guidelines.

In France, it was assumed that persons working at home because of their health problem had limitations in getting to and from work.

Wording

As the LFS specifies question outputs rather than the actual questions themselves, individual countries are left to elaborate their own questions taking into account national practices, although a questionnaire guide is provided. It is the measurement concept itself that is important and whether or not the words used to convey that concept to the respondent do so in a consistent manner across countries and not necessarily the fact that the wording may be different in some way. Furthermore, it is difficult to know if some of the apparent changes to the question wording were only errors in the English translation of the studied questionnaires.

Prompting respondents with examples incorporated into the question stem can help improve the accuracy of the estimates provided because respondent will have a better understanding of what the question is asking about and include in their answers items they may otherwise have not considered relevant. However, including examples in the questioning can also influence the respondent to only focus on the examples given and not the broader scope intended by the question. Some pretesting in the form of cognitive interviews or split-sample experimentation would be the only way to understand exactly what effect any differences might have on the estimates produced. So the only judgment that could be made is that respondents will provide different responses when additional examples are included in the question.

For a detailed list of the wording deviations and the additional examples per country and per EU LFS variable of the module, the reader is invited to go to the Annex 5.

Statistical analysis

Coherence with the core questionnaire

When comparing with the variables of the core questionnaire, no inconsistency appeared in the two variables of the module. Indeed, the persons reporting a longstanding health condition or a basic activity difficulty further declared their illness, injury or disability as the main reason for part-time work, for not searching an employment, for leaving last job and for hours actually worked during the reference week being different from the person's usual hours, compared to the persons without a longstanding health condition and/or a basic activity difficulty.

Descriptive analysis of the variables from the module

At EU-28 level, the share of persons declaring a first (resp. second) main type of longstanding health condition or disease reached 27 % (resp. 46 %) in 2011. The most represented category was "Problems with back or neck" with 23 % (resp. 18 %). Besides, the percentage of people who declared a first (resp. second) basic activity difficulty reached 14 % (resp. 52 %), the most representative category being "Lifting, carrying" with a rate of 23 % (resp. 25 %).

The health condition(s) or disease(s) or difficulty(ies) caused limitation for 25 % of the persons in the number of hours they can work in a week, for 35 % of the persons in the type of work they can do, and for 14 % of the persons in getting to and from work.

Due to a health problem or difficulty, some persons need (not employed persons) or use (employed persons) assistance to enable them to work. In particular, 7 % of them needed or used personal assistance, 7 % some kind of special equipment, and 14 % needed or had special working arrangements.

Finally, the percentage of persons having a limitation in work because of environmental factors (i.e. that is not caused by the longstanding health conditions or diseases or basic activity difficulties) reached 12 %. The most represented category was "Lack of appropriate job opportunities" (31 %).

Analysis of the disability concept

Seven definitions of disability, more or less restrictive, were analysed. Regarding the comparisons according to different factors (age, sex, level of education, working status), two definitions were retained because of small sizes inter alia.

According to the first definition, almost 45 million persons of working age, i.e. between 15 and 64 years old, in the EU-28 countries reported a disability in 2011, which represented 14 % of the working age population. For the second definition, approximately 35 million people in the EU-28 reported a disability, which depicted almost 11 % of the total population aged 15 to 64 years.

According to the first definition, the employment rate (percentage of employed persons in relation to the total population of the same age) of persons with basic activity difficulties aged 15-64 in the EU-28 countries in 2011 reached 47 %, a rate almost 20 percentage points below that of persons without difficulties. As the second definition considers persons limited in their work activities because of a longstanding health problem (which lasts at least up to six months), this rate equalled 38 % at the level of the EU-28; nearly 30 percentage points less compared to persons that did not declare either of these limitations.

At EU-28 level, 46 % of the people with disabilities were inactive versus only 26 % of the population without disabilities according to the first definition. For the second definition, the gap was more emphasized with 54 % of the persons reporting a work limitation due to their health condition or basic activity problem and 25 % reporting not having a limitation at work.

Based on the first definition (persons with basic activities difficulties only), the proportion of temporary workers reporting not having a basic activity difficulty among the total number of employees was 14 % at the level of the EU-28 in 2011. The proportion of those having such a difficulty was 11.5 %.

The likelihood of being employed depends on the disability type (having a basic activity difficulty). A person reporting a basic activity difficulty is less likely to be employed, but the effect is less marked for females, for the youngest (15-24) or for the oldest (55-64), when controlling education, household composition, marital status, and different special needs. Moreover, people who need personal assistance, special equipment or special working arrangements are less likely to be employed compared to those who do not, controlling for the other factors in the model.

Annexes

Annex 1 – Analysis of the survey implementation

Click here to access Annex 1.

Annex 2 – Non-response analysis

Click here to access Annex 2.

Annex 3 – Proxy analysis

Click here to access Annex 3.

Annex 4 – Analysis of the questionnaires

Click here to access Annex 4.

Annex 5 – Information on the wording of the national questionnaires

HEALTHMA

- **Specific coding**

  Italy, **Finland**: when the respondent does not specify the most severe health condition or disease, the latter is automatically selected as the last one cited (in case of more than one) according to its position in the response coding frame. Therefore, the one encoded is not necessary the most severe.

- **Question stem**

  - **Czech Republic**: the respondent is not asked "the most severe" but "the first type".
  - **Germany**: "strongest" instead of "most severe".
  - **France**: "Disturb you the most in the daily life" instead of "the most severe".
  - **Finland**: additional information "affects your everyday life".
  - **United Kingdom**: "greatest impact on your life" instead of "most severe".

  Comment: respondents may not report the same health problem when asked for the one that has the greatest impact or affects everyday life, as opposed to being asked to report the most severe. This could impact on cross-country comparisons and should be borne in mind when interpreting the data.

- **EU category 01** (Problems with arms or hands (which includes arthritis or rheumatism))

  - **Estonia**: "arms" is not specified in the national category.
  - **France**: adds "including osteoarthritis, rheumatoid arthritis, osteoporosis, paralysis, amputation, carpal tunnel".
  - **Spain**, **Finland**, **Iceland**: examples "arthritis or rheumatism" are not specified.
  - **Cyprus**: an additional example "deformity of the arms" is provided.
  - **Hungary**: an additional example "total or partial absence" is provided.
  - **Netherlands**: an additional example "RSI" (Repetitive Strain Injury) is provided.
  - **Finland**: "musculoskeletal disorder related to" instead of "problems with".
  - **Norway**: example "arthritis" is not specified.

- **EU category 02** (Problems with legs or feet (which includes arthritis or rheumatism))

  - **Estonia**: "feet" is not specified in the national category.
  - **France**: adds "including knee or hip osteoarthritis, rheumatoid arthritis, osteoporosis, paralysis, amputation, hallus valgus".
  - **Spain**, **Finland**, **Iceland**: examples "arthritis or rheumatism" are not specified.
  - **Cyprus**: an additional example "deformity of the legs" is provided.
  - **Hungary**: an additional example "total or partial absence" is provided.
  - **Netherlands**: an additional example "RSI" (Repetitive Strain Injury) is provided.
  - **Romania**: adds "problems with shanks".
  - **Finland**: "musculoskeletal disorder related to" instead of "problems with".
  - **Norway**: example "arthritis" is not specified.

- **EU category 03** (Problems with back or neck (which includes arthritis or rheumatism))

  - **France**: adds "including osteoporosis, osteoporosis, scoliosis, sciatic, lumbago, slipped disc, backache, cervical pain".
  - **Spain**, **Finland**, **Iceland**: examples "arthritis or rheumatism" are not specified.
  - **Cyprus**: an additional example "deformity of the body posture" is provided.
  - **Netherlands**: an additional example "RSI" (Repetitive Strain Injury) is provided.
  - **Finland**: uses the word "disorder" instead of "problem", and adds "shoulder disorder".
  - **Norway**: example "arthritis" is not specified.

- **EU category 04** (Cancer)

  - **France**: specifies that the cancer is diagnosed by a doctor and provides additional examples: "All malignant tumours, including leukaemia, as well as generalised cancer should be coded as yes"

- **EU category 05** (Skin conditions, including allergic reactions and severe disfigurement)

  - **Bulgaria**: uses the term "skin changes" instead of "disfigurement".
  - **Denmark**: example "allergic reaction" is not specified.
  - **France**: adds "including psoriasis, eczema, urticaria, professional dermatosis".
  - **Romania**: an additional example "dermatological" is provided.
  - **Finland**: uses the term "other skin problem" instead of "allergic reactions and severe disfigurement".
  - **Norway**: example "severe disfigurement" is not specified.

- **EU category 06** (Heart, blood pressure or circulation problems)

  - **France**: "Blood pressure" is missing and provides additional examples: "including hypertension, angina pectoris, myocardial infarction, cardiac dysrhythmia, heart failure, peripheral vascular disease, varicose veins"
  - **Finland**: uses "blood-vascular disease" instead of "blood pressure or circulation problems".
  - **Norway**: uses the term "cardiac problems" instead of "blood pressure or circulation problems".

- **EU category 07** (Chest or breathing problems, including asthma and bronchitis)

  - **France**: adds "including chronic bronchitis, emphysema, pulmonary fibrosis".
  - **Hungary**: an additional example "allergy of respiratory organs" is provided.
  - **Netherlands**: "chest problems" are not suggested.
  - **Slovenia**: an additional example "hay-fever" is provided.
  - **Finland**: national option is only "respiratory disease".
  - **Norway**: uses the words "lung problems" instead of "chest problems" (chest problems includes lung problems... but not only).

- **EU category 08** (Stomach, liver, kidney or digestive problems)

  - **Estonia**: uses the word "indigestion" instead of "digestive problems".
  - **Germany**: additional example "gastrointestinal problems".
  - **France**: "Stomach" is missing and provides additional examples "gastric or peptic ulcer, hepatitis, steatosis, cyst, cirrhosis".
  - **Finland**: national option is only "internal organ or intestinal disease".
  - **Norway**: uses the words "intestine problems" instead of "digestive problems" (digestive problems includes intestine problems... but not only).

- **EU category 10** (Epilepsy (include fits))

  - **Belgium**, **Denmark**, **Estonia**, **Hungary**, **Netherlands**, **Slovenia**, **Finland**, **Sweden**, **Iceland**, **and Norway**: example "fits" is not specified.
  - **Austria**: an additional example "epileptic" is provided.

- **EU category 11** (Severe headache such as migraine)

  - **Netherlands**: example "migraine" is not specified.
  - **Finland**: it is specified "recurrent" migraine.
  - **Norway**: does not collect this category.

- **EU category 12** (Learning difficulties (reading, spelling or math disability))

  - **Belgium**: national category 13 includes "severe mental disability". The latter should be included in the EU category 15 according to the explanatory notes.
  - **Germany**: "numeracy" instead of "math disability" and "writing" instead of "spelling".
  - **France**: adds "spoken or written language disorders, dyscalculia, attention deficit disorder, coordination disorders".
  - **Netherlands**, **Slovenia**: example "spelling" is not specified.
  - **Austria**: uses the words "writing" and "arithmetic" instead of respectively "spelling" and "math".
  - **Romania**: an additional example "writing" is provided.
  - **Finland**: examples "reading, spelling or math disability" are not specified.
  - **Sweden**: the word "learning" is not used; moreover, the country uses the word "counting" instead of "math".
  - **United Kingdom**: uses the word "numbers" instead of "math disability".
  - **Norway**: national option is "reading and writing difficulties (dyslexia), number blindness, reading difficulties (dyscalculia)".

- **EU category 13** (Chronic anxiety)

  - **Austria**: an additional example “panic attacks” is provided, however it should be related to the EU category 15 according to the explanatory notes.
  - **Germany**: shows a wording deviation (“anxiety disorders” instead of “chronic anxiety”).
  - **Slovenia**: the word “chronic” is not specified.
  - **Norway**: does not collect this category.

- **EU category 14** (Depression)

  - **Norway**: does not collect this category.

- **EU category 15** (Other mental, nervous or emotional problems)

  - **Denmark**: the national option 14 “stress” is added.
  - **France**: “Psychological" instead of "mental or emotional” and provides additional examples “sleep disorder, bulimia nervosa".
  - **Finland**, **Sweden**: “nervous or emotional” is not specified.
  - **Norway**: national option is “psychiatric problem (anxiety, depression, phobia, nervous problems …)”, which includes EU categories 13 and 15.

- **EU category 16** (Other progressive illnesses (which include multiple sclerosis, HIV, Alzheimer's disease, Parkinson’s disease))

  - **Netherlands**: uses the term “another life threatening disease” instead of “other progressive illnesses”.
  - **Austria**: uses the word “ongoing” instead of “progressive”.
  - **Finland**: example “HIV” is missing.
  - **Iceland**: examples “multiple sclerosis, HIV, Alzheimer's disease, Parkinson’s disease” are not specified.
  - **Norway**: uses the word “major” instead of “progressive”.

- **EU category 17** (Other longstanding health problems)

  - **Denmark**: national options 24 “Brain injury (including spasticity)” and 25 “Dyslexic” are added. The latter should be mapped into the EU category 12 according to the explanatory notes.
  - **France**: adds “"otolaryngology or ocular problems (chronic sinusitis, allergic rhinitis, tinnitus, cataract, glaucoma, strabismus)" + "other endocrine or metabolic problems (hyperthyroidism, goitre, hypothyroidism, cholesterol" + "mouth or tooth problems, urinary or genital problems".
  - **Cyprus**: an additional example “health problems related to the reproductive system” is added.

HEALTHSE

- **Filter**

  - **Hungary**: the filter condition on HEALTHMA seems not to be applied in the transcodification table.

- **Specific coding**

  See HEALTHMA.

- **Question stem**

  - **Czech Republic**: the respondent is not asked “the most severe” but “the second type”.
  - **Germany**: “second strongest” instead of “second most severe”.
  - **Denmark**: EU instruction asking to specify “the most severe” is not mentioned.
  - **Slovenia**: uses the term “second one” instead of “second most severe”.
  - **United Kingdom**: “greatest impact on your life” instead of “most severe”.
  - **Finland**: additional information “affects your life”.
  - **Norway**: does not collect this variable.

- **EU categories 01-18**

  See HEALTHMA.

DIFFICMA

- **Specific coding**

  See HEALTHMA.

- **Question stem**

  - **Czech Republic**: the respondent is not asked “the most difficulty” but “the first type”.
  - **Germany**: “most limited” instead of “most difficult”.
  - **France**: "Disturb you the most in the daily life" instead of "the most severe" and adds a category “Other difficulty”.
  - **United Kingdom**: “greatest impact on your life” instead of “most difficulty”.
  - **Norway**: does not collect this variable.

- **EU category 01** (Seeing, even if wearing glasses)

  - **France**: adds “clearly see the ordinary characters of a newspaper" + "Clearly see someone’s face at a 4 meters distance (on the other side of the room)"

- **EU category 02** (Hearing, even if using a hearing aid)

  - **France**: adds “hear what is said in a conversation with people".

- **EU category 03** (Walking, climbing steps)

  - **France**: adds "walk 500 meters on flat ground or climb a staircase without the help of someone, without a cane, ramp or any other technical help".
  - **Romania**: national option is “Locomotion difficulties (of moving/walking)”.

- **EU category 04** (Sitting or standing)

  - **Hungary**: national option is “Sitting down, standing up, stand or sit down for a long time”.
  - **Romania**: national option is “Rise (from a chair) or to sit (on a chair)”.

- **EU category 05** (Remembering, concentrating)

  - **France**: adds "remembering important things or being focused more than 10 minutes".

- **EU category 06** (Communicating, for example understanding or being understood)

  - **Austria**: national option is “conversing with other people” instead of “communicating”.
  - **Germany**: shows a wording deviation (“chat for other people” instead of “communicating”).
  - **Romania**: examples “understanding or being understood” are not specified.
  - **Slovenia**: uses the word “expressing” instead of “being understood”.
  - **Finland**: “understanding speech or text” instead of “understanding or being understood”.
  - **Sweden**: national option is “Speaking or making oneself understood”.

- **EU category 07** (Reaching or stretching)

  - **Germany**: provides additional information (“stretch to an object”).
  - **France**: "Reaching the arm (for example to catch an object upright)" instead of "reaching or stretching".
  - **Austria**, **Sweden**: national option is “Stretching to reach something”.
  - **Romania**: national option is “Mobility difficulties (e.g. to stretch in the meaning of the body, hands mobility to get to a specific object)”.

- **EU category 08** (Lifting and carrying)

  - **France**: “Lifting” is missing and provides additional information “Carry a 5kg provision bag on a 10 meters distance without the help of someone or without any technical help”.
  - **Austria**: an example “e.g. a heavy shopping bag” is provided.
  - **Romania**: uses the word “transportation” instead of “carrying”.

- **EU category 09** (Bending)

  - **France**: adds "pick up an object".
  - **Sweden**: national option is “bowing and rising”.

- **EU category 10** (Holding, gripping, or turning)

  - **France**: adds “"like a key or screwdriver”.
  - **Cyprus**, **Sweden**: additional information “...with the hands”.

- **Austria**, **Germany**: use the word “grasping” instead of “gripping”.
- **Romania**: national option is “handling an object”.
- **Slovenia**: it is specified “turning wrists” instead of only “turning”.

DIFFICSE

- **Filter**

  - **Hungary**: the filter condition on DIFFICMA seems not to be applied in the transcodification table.

- **Specific coding**

  See HEALTHMA.

- **Question stem**

  - **Czech Republic**: the respondent is not asked “the most difficulty” but “the second type”.
  - **Germany**: “second most restricted” instead of “second most difficult”.
  - **Denmark**: EU instruction asking to specify “the most difficulty” is not mentioned.
  - **Slovenia**: uses the term “second one” instead of “second most difficulty”.
  - **United Kingdom**: “greatest impact on your life” instead of “most difficulty”.
  - **Norway**: does not collect this variable.

- **EU categories 01-10**

  See DIFFICMA.

LIMHOURS

- **Filter question**

  - **Italy**: at this stage, if the respondent considers that he is “unable to work” (questions HOC7 and HOC8) then the questionnaire is stopped. Moreover, these persons unable to work are automatically categorised LIMHOURS=No (see section 2.3 on national specificities).

  Comment: people unable to work are not considered in the EU questionnaire.

- **Question stem**

  - **Estonia**: uses the term “amount of work” instead of “number of hours”. Moreover, option “yes” is split into two sub-categories “yes, considerably” and “yes, slightly”.
  - **Hungary**: for each of the 4 cases (1st and 2nd health condition, 1st and 2nd difficulty), the respondent is asked if it limits him. He can respond “yes”, “no”, or “meaningless”.
  - **Romania**: “cause limitation in working full-time” instead of “limit the number of hours”.
  - **France**, **Finland**: only “health" is specified in the question instead of “health condition or difficulty”.

- **EU category 01** (Yes, the health condition(s) or disease(s))

  - **Norway**: does not collect this category, collects only “YES” without any precision.

- **EU category 02** (Yes, the activity difficulty(ies))

  - **Austria**: “limitations in carrying out specific activities” instead of “activity difficulties”.
  - **Norway**: does not collect this category, collects only “YES” without any precision.

- **EU category 03** (Yes, both, the health condition(s)/disease(s) and the activity difficulty(ies))

  - **Norway**: does not collect this category, collects only “YES” without any precision.

- **EU category 04** (No)

  - **France**: for the people who work, two modalities are suggested: “no, they are not limited but I should do less" and "No".

LIMTYPEW

- **Filter question**

  - **Italy**: respondents “unable to work” are excluded (see LIMHOURS).

- **Question stem**

  - **Belgium**: uses the words “certain tasks” instead of “type of work”.
  - **Germany**: adds examples as “sedentary activity, computer work” but does not specify examples as “working outdoors or sitting for a long time”.
  - **Estonia**: option “yes” is split into two sub-categories “yes, considerably” and “yes, slightly”.
  - **Hungary**: for each of the 4 cases (1st and 2nd health condition, 1st and 2nd difficulty), the respondent is asked if it limits him. He can respond “yes”, “no”, or “meaningless”.
  - **France**, **Finland**: only “health" is specified in the question instead of “health condition or difficulty”.
  - **Norway**: uses the words “type of tasks” instead of “type of work”.

- **EU categories 01-04**

  See LIMHOURS.

LIMTRANS

- **Filter question**

  - **Italy**: respondents “unable to work” are excluded (see LIMHOURS).

- **Question stem**

  - **Estonia**: option “yes” is split into two sub-categories “yes, considerably” and “yes, slightly”.
  - **France**: if a person works at home because of his/her health condition or difficulty, it is coded as "Yes".
  - **Hungary**: for each of the 4 cases (1st and 2nd health condition, 1st and 2nd difficulty), the respondent is asked if it limits him. He can respond “yes”, “no”, or “meaningless”.
  - **France**, **Finland**: only “health" is specified in the question instead of “health condition or difficulty”.

- **EU categories 01-04**

  See LIMHOURS.

NEEDHELP

- **Filter question**

  - **Estonia**: at this stage, if the respondent considers that he is “unable to work” (question L14=3), the questionnaire is stopped. Moreover, these persons unable to work are automatically categorised NEEDHELP=No (see section 2.3 on national specificities).
  - **Italy**: respondents “unable to work” are excluded (see LIMHOURS).

- **Question stem**

  - **Spain**: “any type of personalised care” instead of “any personal assistance”.
  - **France**: adds “family, friend, colleague, professional” and another modality "Support of your colleagues or superiors" is in the questionnaire, and it could be integrated in the question.
  - **Hungary**: considers workers who do not use personal assistance but who declare that they would need it (these persons are coded NEEDHELP=No). The country considers also non-workers who would need personal assistance but who declare that they could work without it (these persons are coded NEEDHELP=Yes).
  - **Malta**: conditional tense (“would”) is used for both workers and non-workers.
  - **Netherlands**, **Finland**: a third category is created in order to identify persons that are unable to work (these persons are categorised NEEDHELP=No).
  - **France**, **Austria**, **Slovenia**: “health problems” instead of “health condition or difficulty”.
  - **Romania**: uses the term “professional activities" instead of “work”.
  - **Slovenia**: additional examples “walking, accomplishing tasks and understanding” are added.
  - **Sweden**, **Finland**: suggests a “personal assistant” instead of “personal assistance”.
  - **Norway**: does not collect this variable.

NEEDADAP

- **Filter question**

  - **Estonia**: persons “unable to work” are excluded (see NEEDHELP) and automatically categorised NEEDADAP=No.

- **France**: adds “"computer screen or phone adapted" + "access ramp, elevator …” and only “health" is specified in the question instead of “health condition or difficulty”.
- **Italy**: respondents “unable to work” are excluded (see LIMHOURS).
- **Norway**: question asked only to employed persons.

- **Question stem**

- **Hungary**: considers workers who do not use special equipment / workplace adaptations but who declare that they would need it (these persons are coded NEEDADAP=No). The country considers also non-workers who would need special equipment / workplace adaptations but who declare that they could work without it (these persons are coded NEEDADAP =Yes).
- **Malta**: conditional tense (“would”) is used for both workers and non-workers.
- **Netherlands**, **Finland**: a third category is created in order to identify persons that are unable to work (these persons are categorised NEEDADAP=No).
- **Austria**, **Slovenia**, **Norway**: “health problems” (AT, SI) / “disability” (NO) instead of “health condition or difficulty”.
- **Austria**: uses the words “structural modification” instead of “workplace adaptation”. Moreover, the country provides an additional example “e.g. speech processor”.
- **Romania**: uses the term “professional activities" instead of “work”.
- **Finland**: “work premises adaptations” instead of “workplace adaptations”.
- **Norway**: national question is: “Is your work facilitated by physical aid/remedies... and more physical adaption of the workplace”.

NEEDORGA

- **Filter question**

- **Estonia**: persons “unable to work” are excluded (see NEEDHELP) and automatically categorised NEEDORGA=No.
- **France**: only “health" is specified in the question instead of “health condition or difficulty”.
- **Italy**: respondents “unable to work” are excluded (see LIMHOURS).
- **Norway**: question asked only to employed persons.

- **Question stem**

- **Czech Republic**: the respondent is not specified the two examples “sedentary jobs” and “teleworking” (also not specified in the instructions).
- **Hungary**: considers workers who do not use special working arrangements but who declare that they would need it (these persons are coded NEEDORGA=No). The country considers also non-workers who would need special working arrangements but who declare that they could work without it (these persons are coded NEEDORGA =Yes).
- **Malta**: conditional tense (“would”) is used for both workers and non-workers.
- **Netherlands**, **Finland**: a third category is created in order to identify persons that are unable to work (these persons are categorised NEEDORGA=No).
- **Austria**, **Slovenia**, **Norway**: “health problems” (AT, SI) / “disability” (NO) instead of “health condition or difficulty”.
- **Romania**: uses the term “professional activities" instead of “work”.
- **Slovenia**: example “sedentary jobs” is not specified.
- **Sweden**: “other adaptation of the workplace” instead of “special working arrangements”.
- **Norway**: national questions are: “Has your work been adapted by changes in your work tasks” and “Has your work been adapted by changes in your working hours”.

LIMREAS

- **Filter question**

- **Estonia**: persons “unable to work” are excluded (see NEEDHELP) and automatically categorised LIMREAS=No.
- **Italy**: respondents “unable to work” are excluded (see LIMHOURS).

- **Specific coding**

- **Italy**: when the respondent does not specify the main reason, the latter is automatically selected as the last one cited (in case of several) according to its position in the questionnaire. Therefore, the one encoded is not necessary the main.

- **Question stem**

  - **Estonia**: refers only to the health condition, not to the activity difficulty.
  - **France**: If two reasons are selected, then a second question is asked "you think that you are limited because of several reasons. Among these reasons, which ones consider you as the most important?" instead of "main reason that you are restricted at work".
  - **Norway**: does not collect this variable.

- **EU category 01** (Lack of qualifications/experience)

  - **Romania**: specifies "lack of necessary qualifications/experience".
  - **Sweden**: uses the words "right competence" instead of "qualifications".
  - **United Kingdom**: the word "experience" is not specified.

- **EU category 03** (Lack or poor transportation to and from workplace)

  - **Finland**: the word "lack" is not specified.
  - **Sweden**: national option is "No or unsuitable opportunities to travel".

- **EU category 05** (Affects receipt of benefits)

  - **Belgium**: national option says "Employment influences social allowance".
  - **Germany**: "adverse impact on child support payments/public services" instead of "affects receipt of benefits".
  - **Spain**: national option is: "Changing/Starting job would not be beneficial".
  - **Cyprus**: national option is: "Not receiving any other working benefits (unemployment, disability, sickness, etc.)".
  - **Hungary**: national options consists of 2 categories: "Currently received benefit (child care or other benefit) would be cut off in case doing a job" and "Person could work only with certain conditions besides receiving the benefit".
  - **Austria**: national option is: "Discontinuation or reduction of state benefits".
  - **Poland**: national option is: "Impact on benefits receiving".
  - **Slovenia**: national option is: "If I worked (more), I would lose some of the benefits or reliefs".
  - **Finland**: national option is: "Going to work reduces the benefits paid".
  - **Sweden**: national option is: "This affects benefits I am already claiming".
  - **United Kingdom**: the word "Affects" is not specified.

- **EU category 06** (Family/caring responsibilities)

  - **Slovenia**: "caring" is not specified.
  - **Finland**: national option is "Factors connected to your family or care of a close relative".

- **EU category 07** (Personal reasons)

  - **France**: adds "(other than family reasons)".
  - **Hungary**: an additional national option "Age (too young or too old)" is added and mapped into the EU category "Personal reasons".

- **EU category 09** (No limitation in work)

  - **Romania**: national option is: "No difficulty in professional activity".

Annex 6 – Descriptive analysis of the module variables

Click here to access Annex 6.

Annex 7 – Disability measures

Click here to access Annex 7.

Annex 8 – Comparative analysis

Click here to access Annex 8.

Annex 9 – Multivariate analysis

Click here to access Annex 9.

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KS-TC-14-007-EN-N

Publications Office

doi:10.2785/56001