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Iceland

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1. COMMON LONGITUDINAL EUROPEAN UNION INDICATORS BASED ON THE LONGITUDINAL COMPONENT OF EU-SILC

Not applicable since 4 years are needed to implement longitudinal indicators.

2. Accuracy

2.1. Sample design

2.1.1 Type of sampling

There were four even one-stage simple random samples without stratification used for the 2006 EU-SILC in Iceland.

2.1.2 Sampling units

The sampling units are persons aged 16 years or more living in private households, selected from the Icelandic population register.

2.1.3 Stratification and sub-stratification criteria

The sample is post stratified, see 2.8.

2.1.4 Sample size and allocation criteria

The gross sample size was 4,033 persons, set to meet demands for minimum effective sample size of both the cross-sectional and the longitudinal components.

2.1.5 Sample selection schemes

The sample plan for EU-SILC is a simple random sample in one step, and no upper age limit.

2.1.6 Sample distribution over time

The sample is a rotating panel sample of approximately 4,000¹ individuals selected by simple random sampling from the national register in the end of the year 2003. The sample is divided into four rotation groups of approximately 1,000 individuals, each of which is replaced by another 1,000 participants every successive year. Therefore 1,000 new individuals were added to the sample in the end of the year 2004 and another 1000 in the end of the year 2005 and the 1,000 belonging to rotational group 1 and the 1000 belonging to rotational group 2 were omitted from the sample.

2.1.7 Renewal of sample: Rotational groups

The households of the selected respondents are the household units. Each person (and respective household) drawn remains in the sample for four years and rotates as shown in table 2.1.

Table 2.1 Rotation of waves in the Icelandic SILC survey

Year t		t+1		t+2		t+3	
Wave number	Number in sample						
1	1.000	1	1.000	1	1.000	1	1.000

¹ 4.000 in the year 2004 when the survey starts but in four years the gross sample will be appr. 4,160

2	1.000	2	1.000	2	1.000	2	1.000
3	1.000	3	1.000	3	1.000	3	1.000
4	1.000	4	1.000	4	1.000	4	1.000

Notes:

	Those drawn new in sample year t
	Those drawn new in sample year t-1
	Those drawn new in sample year t-2
	Those drawn new in sample year t-3
	Those drawn new in sample year t+1
	Those drawn new in sample year t+2
	Those drawn new in sample year t+3

Persons 16 years of age are added to the sample every year in order to make up for the aging of the sample. Those who are 16 years old in 2003 will be 20 years old in 2007 and therefore there is need to add 16 year old persons to the sample every year. The gross number in the sample increases with those supplements.

2.1.8. Weighting

2.1.8.1 Design factor

The probability of a household being selected is equal to the number of persons aged 16 and older in the household. The weight for households and for all adult household members is the inverse of the number of adult household members as calculated in **DB080**, the household design weight:

$$DB080 = \frac{1}{n_{16+}}$$

Where

n_{16+} = number of persons age 16+ in the respondents households

2.1.8.2 Nonresponse adjustments

Post stratification weights are used to adjust the data to the population. The information on the population comes from the national register. The weights both adjust for nonresponse and sampling error. The post stratification weights are based on age (14 groups total, 12 groups for 16 and older and 2 groups below 16), sex and residence (2 groups).

2.1.8.3 Adjustments to external data

Results are only calibrated with numbers from the national register as described above.

PB060 is the personal cross-sectional weight for selected respondent:

$$PB060 = \frac{N(kba)}{n(kba)}$$

Where

N = Population 16 years and older 31. December 2005 in private homes

n = number of cases in the data base

k = sex b = residence (capital area and other areas)

a = age groups [16-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-66, 67-79, 80+]

Originally the household cross-sectional weight (**DB090**) was calculated as shown below:

$$DB090 = DB080 * PB060 = \frac{1}{n16+} * \frac{N(kba)}{n(kba)}$$

Where

N = Population 16 years and older 31. December 2005 in private homes

n = number of cases in the data base

k = sex b = residence (capital area and other areas)

a = age groups [16-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-66, 67-79, 80+]

Integrative calibration is applied using the software G-Calib (designed by Statistics Belgium). The original values of **DB090** are replaced by calibrated values. The calibrated values of **DB090** are also assigned to **RB050** in order to assign identical weight to all members of the same household. Integrative calibration takes into account the distribution of the population according to age, sex and residence as described above.

The personal cross-sectional weight **PB040** is equal to **RB050**.

The personal design weight for selected respondent **PB070** is calculated in a similar way as **PB060** except **PB070** applies to the selected sample while **PB060** applies to respondents only.

$$PB070 = \frac{N(kba)}{s(kba)}$$

Where

N = Population 16 years and older 31. December 2005 in private households

s = number of selected respondents

k = sex b = residence (capital area and other areas)

a = age groups [16-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-66, 67-79, 80+]

The children cross-sectional weight **RL070** is calculated with the number of children in each one-year group (0-12 years) in private households in the population divided by the number of children in one-year groups in the households interviewed:

$$RL070 = \frac{BA}{ba}$$

Where

BA = population 0-12 years of age 31. December 2005 in private households

b = number of children 0-12 years old in the respondents' households

a = age groups [0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12]

2.1.8.4 Final longitudinal weights

Longitudinal weights are done using the same methods as cross sectional weights except the base is the wave of entrance into the survey and not the survey year as is the case in the cross sectional component. Since the base of the longitudinal weight is approximately 1/4 of the cross sectional weight the average longitudinal weight produced was approximately 4 times larger than the cross sectional weight for the same individual.

2.1.8.5 Longitudinal nonresponse, wave attrition between 2004 and 2005

No measures were taken to counter attrition between waves in the 2004-2006 longitudinal data. The reason is failed attempts to do so for the 2004-2005 longitudinal surveys. Here is description of those attempts.

There were 2171 households who participated in the 2004 survey and should have continued in 2005. 289 dropped out for various reasons which is a drop out rate of 13%.

A binomial variable was produced describing attrition (dropping - continuing). This variable was run with variables from the 2004 survey in order to try to predict who would remain in the survey and who would drop out. Analysis was done at the household level or using individual information on the selected respondent since he or she is the one determining whether household participates or not.

Two methods were tried, logistic regression and tree analysis. The tree analysis software is not available to us now since we had it on trial period and we did not buy it.

Here is a description of the logistic regression analysis.

A matrix of correlations was run using the attrition variable and several survey variables. The only variables left out were those who had a great number of 0 values or were missing for majority of the households. A variable showing the number of household members was also produced as it was considered that it might be useful in explaining attrition. Categorical variables were coded into binomial variables.

A correlation matrix (Pearson's R) was run, correlating the following variables with attrition.

	attrition
Attrition	1
RB090 sex	,047(*)
RB080 birth_year	-,097(**)
DB100 Urbanization	,067(**)
Working	-0,024
unemployed unemployed	-0,038
retired retired	0,038
work_other work_other	0,010
HH010_detached HH010_detached	0,023
HH010_semi HH010_semi	0,038
HH010_apartment HH010_apartment	-,050(*)
HH010_apartment_house HH010_apartment_house	,051(*)
single_cohabiting	-,095(**)
own_rent own_rent	-,075(**)
HY020 HY020_disposable_inc	0,023
HY100G HY100	0,010
HY120G HY120	0,032
HY140G HY140	0,021
HS010 arrears_rent	0,031
HS020	0,026
HS030	0,035
HS040	0,025
HH020	-,083(**)
HH030	,048(*)
HH031	-,057(**)

HH040	-0,042
HH050	-0,009
HH060	-0,051
HH061	-0,021
HH070	-0,004
HS050	-0,025
HS060	-0,037
HS070	-0,033
HS080	-,057(**)
HS090	-0,005
HS100	-,048(*)
HS110	-0,034
HS120	0,022
HS130	0,022
HS140	-0,003
HS150	-0,010
HS160	0,015
HS170	0,005
HS180	-0,011
HS190	0,029
PB190	0,017
PB200	-,120(**)
PE010	,046(*)
PE020	-0,072
PE030	-,111(**)
PE040	0,034
PH010	0,024
PH020	-,048(*)
PH030	-0,030
PL035	0,025
PL060	0,032
PL150	-0,039
PY010G	0,031
PY200G	0,041
no_hh_members	0,007
HS070_teleph teleph	-0,033
HS080_tv tv	-,059(**)
HS090_computer computer	-0,005
HS100_washing washing	-,048(*)
HS110_car car	-,078(**)
HB100	.(a)

A logistic regression model was run on the same variables, producing the following results.

	Beta				
	value	SE	Exp (B)	sig	change*
RB090(1) – sex	-0,5167	0,2455	0,5965	0,0353	-12,6%
HH010_apr_house(1)	-0,5607	0,2458	0,5708	0,0225	-13,7%
single_cohabiting(1)	0,6353	0,2480	1,8875	0,0104	15,4%
Constant	2,0429	0,2860	7,7126	0,0000	38,5%

* Change in attrition given one unit change in the independent variable

The variables sex, type of housing and single-cohabiting are the most prominent in explaining attrition. However when looking at Cox & Snell R square and Nagelkerke R square it can be

seen that the values are very low therefore it was decided that the model was not a useful adjustment tool for attrition.

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	481,096(a)	,011	,020
2	475,913(a)	,019	,035
3	471,375(a)	,026	,048

a Estimation terminated at iteration number 5 because parameter estimates changed by less than ,001.

As stated before tree analysis was also applied and as for the logistic regression model it only produced weak explanation for attrition. The tree analysis was done with the assistance of Guillaume Osier, a statistical analyst at Eurostat.

2.1.8.6 Adjustments to external data

The national register is used to adjust the cross sectional weights taking into account the age, sex and area of residence. This process is described in sections 2.1.8.2 and 2.1.8.3. Considerable work was put into adjusting wave attrition to different variables in the survey as described in 2.1.8.5. These attempts produced no relation of attrition to survey variables, including variables received from the national register.

2.1.8.7 Final longitudinal weights

See 2.1.8.4 and 2.1.8.5.

2.1.8.8. Final cross sectional weight

See 2.1.8.3.

2.1.9 Substitutions

No substitutions were applied.

2.2 Sampling errors

2.2.1. Standard errors and effective sample size

There were 4.033 persons in the 2006 sample. During the field period, 152 of these proved to be non-eligible (either deceased, living in institutions or emigrated), thus giving a net sample of 3881 persons. Interviews were completed for 2.845 of them.

Table 2.2.1.A The mean, the total number of observations and the standard errors for the following income components (unweighted data)

	Mean	Before imp	After imp	SE mean
Total HH gross inc (HY010)	6894601	2838	2838	94086
Total HH disp. Inc (HY020)	4859381	2838	2838	66269
Total HH disp before (HY022)	4501842	2838	2838	66479
Total HH disp. Including (HY023)	4054913	2838	2838	69713
Gross Income from rental (HY040)	30990	2838	2838	4141
Gross income from investments (HY090)	418262	2838	2838	47125
Gross family allowances (HY050)	113539	2838	2838	6096
Gross social excl. (HY060)	5316	2838	2838	984
Gross housing allowances (HY070)	57299	2838	2838	1755
Gross inter-HH cash received (HY080)	54121	2838	2764	3063
Gross interest repayments (HY100)	394165	2838	2838	10954
Gross Income under 16 (HY110)	13998	2838	2838	1223

Gross taxes on wealth (HY120)	92187	2838	2838	1791
Gross inter-HH cash paid (HY130)	39407	2838	2752	2420
Gross tax on income (HY140)	1903626	2838	2838	34840
Gross employee cash income (PY010)	2318975	6521	6521	31768
Gross self employment (PY050)	106343	6521	6521	7314
Gross unemployment benefits (PY090)	8189	6521	6521	756
Gross old-age benefits (PY100)	163832	6521	6521	6826
Gross survivor benefits (PY110)	30676	6521	6521	4779
Gross sickness benefits (PY120)	233	6521	6521	79
Gross disability benefits (PY130)	60661	6521	6521	4312
Gross education allowances (PY140)	9857	6521	6521	2472

Table 2.2.1.A The mean, the total number of observations and the standard errors for the following income components (unweighted data) by wave for the year 2006

Wave	Variable	Mean	Before		SE mean
			imp	After imp	
1	HY010_amount	8256063	1590	1590	149003,7
1	HY020_amount	5796300	1590	1590	107934,4
1	HY022_amount	5382555	1590	1590	106257,9
1	HY023_amount	4992561	1590	1590	110141,9
1	HY040G_amount	498894	1590	1590	39566,85
1	HY090G_amount	715474,5	1590	1590	102762,9
1	HY050G_amount	307595,4	1590	1590	17895,86
1	HY060G_amount	338401	1590	1590	42230,73
1	HY070G_amount	171118,7	1590	1590	3702,562
1	HY080G_amount	326669,7	1590	1572	13072,2
1	HY100G_amount	595578,6	1590	1590	18925,87
1	HY110G_amount	103235	1590	1590	10066,25
1	HY120G_amount	113199,5	1590	1590	2646,363
1	HY130G_amount	271200,9	1590	1569	13575,48
1	HY140G_amount	2314612	1590	1590	58067,11
1	PY010G_amount	2790209	1590	1590	78203,32
1	PY050G_amount	1090081	1590	1590	167348,8
1	PY090G_amount	238940,1	1590	1590	30424,49
1	PY100G_amount	1547364	1590	1590	87046,55
1	PY110G_amount	464592,7	1590	1590	88774,85
1	PY120G_amount	91430	1590	1590	.
1	PY130G_amount	1208210	1590	1590	91908,6
1	PY140G_amount	628010,1	1590	1590	275488,8
2	HY010_amount	7787238	1610	1610	125829,8
2	HY020_amount	5542224	1610	1610	90359,62
2	HY022_amount	5161025	1610	1610	91826,69
2	HY023_amount	4709271	1610	1610	92011,83
2	HY040G_amount	658329,1	1610	1610	101774,4
2	HY090G_amount	623831	1610	1610	78988,17
2	HY050G_amount	325998,4	1610	1610	18087,38
2	HY060G_amount	201074,7	1610	1610	34714,12
2	HY070G_amount	164265,3	1610	1610	4030,806
2	HY080G_amount	371963,5	1610	1584	16603,18
2	HY100G_amount	515978,1	1610	1610	11610,23
2	HY110G_amount	104810,8	1610	1610	10156,03
2	HY120G_amount	108854,3	1610	1610	1918,162
2	HY130G_amount	258117,9	1610	1588	14756,8
2	HY140G_amount	2108942	1610	1610	41460,72
2	PY010G_amount	2706291	1610	1610	64487,69
2	PY050G_amount	1007733	1610	1610	93050,46

2	PY090G_amount	215140,1	1610	1610	23313,9
2	PY100G_amount	1409152	1610	1610	66639,06
2	PY110G_amount	839043,2	1610	1610	262727,8
2	PY120G_amount	132398,2	1610	1610	36652,48
2	PY130G_amount	1379587	1610	1610	101628,9
2	PY140G_amount	137069,3	1610	1610	9059,976
3	HY010_amount	7659512	1645	1645	116696,3
3	HY020_amount	5378833	1645	1645	75643,5
3	HY022_amount	5033892	1645	1645	76069,21
3	HY023_amount	4656824	1645	1645	83231,45
3	HY040G_amount	555042,4	1645	1645	71072,29
3	HY090G_amount	577172,4	1645	1645	68686,67
3	HY050G_amount	309054,5	1645	1645	24757,43
3	HY060G_amount	108679,5	1645	1645	28455,17
3	HY070G_amount	161460,5	1645	1645	3694,616
3	HY080G_amount	326519	1645	1631	14736,92
3	HY100G_amount	614592,2	1645	1645	23975,25
3	HY110G_amount	91022,3	1645	1645	8939,618
3	HY120G_amount	113620,8	1645	1645	3017,108
3	HY130G_amount	284725,3	1645	1622	17305,03
3	HY140G_amount	2140055	1645	1645	45044,93
3	PY010G_amount	2766914	1645	1645	67735,72
3	PY050G_amount	917627,9	1645	1645	100334,4
3	PY090G_amount	290765,2	1645	1645	29961,55
3	PY100G_amount	1402713	1645	1645	55124,72
3	PY110G_amount	536948,6	1645	1645	124541,5
3	PY120G_amount	81150,67	1645	1645	24093,79
3	PY130G_amount	1230397	1645	1645	84314,45
3	PY140G_amount	153298,6	1645	1645	20978,59
4	HY010_amount	7673338	1676	1676	122495
4	HY020_amount	5410531	1676	1676	86615,65
4	HY022_amount	5032943	1676	1676	87361,6
4	HY023_amount	4615959	1676	1676	91112,7
4	HY040G_amount	666007,4	1676	1676	97160,49
4	HY090G_amount	746687,2	1676	1676	103953,7
4	HY050G_amount	280337,8	1676	1676	17287,61
4	HY060G_amount	154268,2	1676	1676	34668,84
4	HY070G_amount	162816,3	1676	1676	3773,814
4	HY080G_amount	307095,3	1676	1660	15587,11
4	HY100G_amount	572474,4	1676	1676	14502,33
4	HY110G_amount	121888,2	1676	1676	9133,52
4	HY120G_amount	113194,4	1676	1676	2522,836
4	HY130G_amount	239372,3	1676	1656	13049,25
4	HY140G_amount	2128409	1676	1676	46738,65
4	PY010G_amount	2740367	1676	1676	66647,59
4	PY050G_amount	1084390	1676	1676	107795,2
4	PY090G_amount	259036,9	1676	1676	39939,91
4	PY100G_amount	1423919	1676	1676	58914,72
4	PY110G_amount	679247,2	1676	1676	180910,6
4	PY120G_amount	174774	1676	1676	69578,67
4	PY130G_amount	1480031	1676	1676	157146
4	PY140G_amount	294193,8	1676	1676	113068

Table 2.2.1.B The mean, the number of observations and the standard error for the equalised disposable income breakdown by sex, age groups and household size (unweighted data)

Euivalised disposable income	Mean	Before imp	After imp	Standard error
1 household member	2158216	387	383	72251
2 household members	2729826	1662	1658	62060
3 household members	2606583	1722	1719	34409
4+ household members	2514943	4827	4827	18863
<25 years	2406417	3467	3464	21774
25-34 years	2456020	1051	1051	40928
35-44 years	2511913	1205	1202	41536
45-54 years	2941872	1260	1258	61513
55-64 years	3168927	793	791	93790
65+ years	2231609	797	796	41221
Male	2597333	4307	4299	25412
Female	2520303	4291	4288	24803

Table 2.2.1.B The mean, the number of observations and the standard error for the equivalised disposable income breakdown by sex, age groups and household size (unweighted data) in 2006 by wave

Wave	Variable	Mean	Before imp	After imp	SE
1	1 household member	2019957	92	90	117271
1	2 household members	2886799	408	408	164800,1
1	3 household members	2692976	330	329	107156,3
1	4+ household members	2755686	760	760	49297,92
1	<25 years	2672846	348	348	81047,37
1	25-34 years	2584287	272	272	109964
1	35-44 years	2626846	268	266	100103,7
1	45-54 years	3125040	324	324	192943,1
1	55-64 years	3083315	196	195	138907,4
1	65+ years	2166721	182	182	69321,65
1	Male	2790521	797	796	76380,4
1	Female	2678465	793	791	76117,74
2	1 household member	2199475	99	99	109277,2
2	2 household members	2597288	373	370	61897,47
2	3 household members	2599709	324	324	65027,29
2	4+ household members	2673773	814	814	58566,89
2	<25 years	2555590	351	351	77077,56
2	25-34 years	2341039	271	271	80776,35
2	35-44 years	2656486	302	301	105712,5
2	45-54 years	2882433	309	309	81059,31
2	55-64 years	2919331	188	187	77116,08
2	65+ years	2286590	189	188	82825,9
2	Male	2649812	809	807	52348,12
2	Female	2573879	801	800	49824,12
3	1 household member	2109877	84	84	119885,3
3	2 household members	2562868	422	422	92723,4
3	3 household members	2717431	358	358	66840,69
3	4+ household members	2576333	781	781	40287,07
3	<25 years	2489625	354	354	58227,91
3	25-34 years	2354344	234	234	57739,82
3	35-44 years	2528926	339	339	66468,4
3	45-54 years	2881219	302	302	73742,23
3	55-64 years	3046033	200	200	173759,3
3	65+ years	2198298	216	216	78641,88

3 Male	2638383	831	831	49154,1
3 Female	2519927	814	814	48249,19
4 1 household member	2271116	112	110	190263,8
4 2 household members	3010694	398	398	156783,8
4 3 household members	2744819	391	391	68521,84
4 4+ household members	2452823	775	775	36822,55
4 <25 years	2515019	362	362	61206,3
4 25-34 years	2529243	274	274	61846,22
4 35-44 years	2242130	296	296	52147,01
4 45-54 years	2871708	325	323	95738,53
4 55-64 years	3589730	209	209	275742
4 65+ years	2272888	210	210	93857,45
4 Male	2683516	846	844	64846,47
4 Female	2599222	830	830	65517,68

As we do not have resources take the design of the survey and the calibration into account in the calculation of standard error, simple random sample is assumed

2.3 Nonsampling errors

Errors other than sampling errors can be placed in three categories: coverage errors, nonresponse errors and measurement errors.

2.3.1 Sampling frame and coverage errors

The sampling frame is the population register of Iceland in the end of the year 2005. Eligible for the sample were all persons 16 and older who were living in Iceland according to the register. Those registered at institutions were excluded from the sample.

The national register is updated continuously. However, it does not always contain correct information on changing of residence. People may move abroad or to an institution without giving that information to the national register. Therefore the national register over represents young people who tend to go abroad for their studies and older people who sometimes maintain a private address in spite of living in an institution.

This is adjusted for with information received during the data collection process. For instance if it turns out that 5% of 25-29 years old females from the capital area are living abroad in spite of being in the register then the population frame is adjusted to these information and the relevant group is decreased by 5%. These adjustments are made before calculating the post stratification weights.

Under coverage of foreign citizens who live in Iceland is possible but it can be hard to assess. However it is likely that most foreign citizens who live here are working legally and are therefore in the national register. The fact that Iceland is an island makes it hard for foreigners to enter and stay in the country without being registered.

2.3.2 Measurement and processing errors

Errors of this kind can be classified into three categories: Design errors, interviewer errors and processing errors.

2.3.2.1 Design errors

The questionnaire may be the cause of measurement errors. The phrasing of questions can cause misunderstanding as can the ordering of questions affect responses. The work of designing the survey electronically in Blaise also leaves room for errors.

Here are some comments on those variables and other cases where there might be deviations from Eurostat standards.

HB100 and PB120

Timestamps were not included in the Blaise instrument of the survey for 2004, 2005 and 2006 and therefore it could not be seen how long each of the personal- and the household section took. Only information on the total length of the interview was available. This was improved before the 2007 survey.

HS040

The Icelandic question differs because of the uniqueness of Iceland as an island. We asked if the respondent and his family could afford to go on a vacation abroad for one week. We also asked if the household could go on one week vacation in Iceland for one week.

PH030

In 2004, 2005 and 2006 it was assumed that all those with long standing illness or condition were limited in their activities. This was fixed in 2007 when all respondents received questions about limitation in activities.

PL030

In 2004 and 2005 the labour marked definition of economic status was used for PL030 instead of the requested self defined economic status. This was fixed before the 2006 survey.

PL130

For those who were self employed a question was not asked in 2004, 2005 and 2006 on the number working at the local unit. This was fixed before the 2007 survey.

PL140

For those who were retired the question on the type of contract was not asked in 2004, 2005 and 2006 but was included in the 2007 survey.

PL190

A question on the year of beginning first regular job was not in the survey for 2004, 2005 and 2006 but was included before the 2007 survey.

PL200

A question on the number of years in paid work was not in the survey for 2004, 2005 and 2006 but was included before the 2007 survey.

Longitudinal variables

Some variables which are only longitudinal (and not cross sectional) were, by mistake not collected in Iceland in the 2005 and 2006 surveys.

PL210A-PL210L

In 2004, 2005 and 2006, there was only received information on the number of months for each type of economic status but not for which month each status applied. This error was fixed in the 2007 survey.

The following longitudinal variables were not collected in the years 2005 and 2006. They were included in the survey for 2007.

RB120 Moved to, we know who moved and coded all of them = 4 after havinig consulted with Eurostat

RB140 Month moved out or died

RB160 Number of months in household during the income reference period

RB180 Month moved in

The fact that income variables are mostly collected from registers should reduce the risk of measurement errors in the income variables. Wrong estimation from respondents or error in data entering from interviewer should not be a problem.

2.3.2.2. Interviewer and processing errors

The data collection mode in the Iceland EU-SILC is CATI, using the software Blaise. Data entry controls are built into the electronic questionnaire.

Once the data has been collected all processing is done in the SQL data management software, except for imputations which are done in SPSS.

Registers are used quite extensively in the EU SILC in Iceland. The result should be a decrease in measurement error from respondents or interviewers. However there still room for human error in data process as complexities are added to the data processing with linking between survey data and public records or other outside data. The following sources of data are used: the national register, tax register, real estate register, HBS (Household budged survey) data, municipality tax data and list of people living in institutions.

Often a combination of sources or questions is used to fill in the EU-SILC variables. Data processing for 2004 and 2005 in Iceland was done under a great time pressure and some problems arose in the process.

For the 2006 survey there has been some room for improvements. All collected data and outside sources have been compiled into a data base which includes all the years the SILC has been conducted in Iceland. The idea is to be able to process all years simultaneously and adding a year to the data base should be easy. Running comparison of years is quick and easy and filtering out individual years is easy to do as well. Extensive programming work was done in order to achieve this.

2.3.3. Nonresponse errors

In general, males are more difficult to reach than females and young people are harder to reach than older people. People living in the capital region are more often absent from home than people elsewhere in Iceland.

Refusals to participate in the survey are more prevalent among inhabitants of the capital city region and older persons. In contrast, women, people outside the capital city region and young people are less likely to refuse to participate.

To counter bias, the results were weighted by sex, age and residence.

2.3.3.1. Achieved sample size

Achieved sample size		
Households	Persons	HH
(HH)	16+	members

2003	685	1590	2061
2004	705	1610	2152
2005	713	1645	2176
2006	742	1676	2209
	2845	6521	8598

Table 2.4.A shows a table broken down by RB250 and RB100 (selected, not selected), by rotational group.

2.3.3.2. Unit nonresponse

Household nonresponse rates (NRh)

$$NRh = (1 - Ra * Rh) * 100$$

Where

$$Ra = \frac{\text{Number of addresses successfully contacted}}{\text{Number of valid addresses selected}}$$

$$Ra = \frac{\sum (DB120 = 11)}{\sum (DB120 = all) - \sum (DB120 = 23)} = \frac{3881}{4033 - 152} = 1$$

$$Rh = \frac{\text{Number of household interviews completed and accepted for database}}{\text{Number of valid addresses selected}}$$

$$Rh = \frac{\sum (DB130 = 1)}{\sum (DB130 = all)} = \frac{2845}{3881} = 0.7331$$

$$NRh = (1 - 0.7331) * 100 = 26.69$$

Individual nonresponse rates (NRp)

$$NRp = (1 - (Rp)) * 100$$

Where

$$Rp = \frac{\text{Number of personal interviews completed}}{\text{Number of eligible individuals in households where interviews were completed and accepted for database}}$$

$$Rp = \frac{6521}{6521} = 1$$

$$NRp = 1 - (1 - (Rp)) * 100 = 1 - (0) * 100 = 100$$

Overall individual nonresponse rates (*NRp)

$$*NRp = (1 - (Ra * Rh * Rp)) * 100 = (1 - (1 * 0.2669 * 1)) * 100 = 73.31$$

Unit nonresponse by rotational group

Group1 Group 3 Group 4

	2005	2004	2004
Ra	1,00	1,00	1,00
Rh	0,76	0,79	0,77
NRh	0,24	0,21	0,23
Rp	1,00	1,00	1,00
NRp	0,24	0,21	0,23

Ra- Proportion of addresses contacted

Rh – Proportion of complete household interviews accepted for database

NRh – Household nonresponse rate

Rp-Proportion of complete personal interview within the households accepted for data base

NRp – Individual nonresponse rate

For the longitudinal tables it should be noted that there are no split off households (no DB110 = 8) since only selected respondents are followed and whoever are living with them are surveyed. Given the Icelandic design, the only way for a new household to enter the survey in a wave other than the first wave is with a selected respondent who is younger than 16 years in the first wave he or she enters the survey.

Longitudinal tables for calculation of nonresponse

Household response rates: Comparison of result codes between wave 2 and wave 1

Group 3	DB135 =					DB110=3,	Total
	1	DB130 = 21	DB130=22	DB130=23	DB120=23	4, 5, 6, 7	
1: Wave 1, DB135 = 1	683	128	49	6	0	0	866
2: Wave 1, DB135 = 2	0	0	0	0	0	0	0
3: Wave 2, DB110 = 8	0	0	0	0	0	0	0
4: Wave 2, DB110 = 9	683	128	49	6	0	0	866
	683	128	49	6	0	0	866

Group 4	DB135 =					DB110=3,	Total
	1	DB130 = 21	DB130=22	DB130=23	DB120=23	4, 5, 6, 7	
1: Wave 1, DB135 = 1	656	139	38	14	10	0	857
2: Wave 1, DB135 = 2	0	0	0	0	0	0	0
3: Wave 2, DB110 = 8	0	0	0	0	0	0	0
4: Wave 2, DB110 = 9	16	0	1	0	0	0	17
	672	139	39	14	10	0	874

Total	DB135 =					DB110=3,	Total
	1	DB130 = 21	DB130=22	DB130=23	DB120=23	4, 5, 6, 7	
1: Wave 1, DB135 = 1	1339	267	87	20	10	0	1723
2: Wave 1, DB135 = 2	0	0	0	0	0	0	0
3: Wave 2, DB110 = 8	0	0	0	0	0	0	0
4: Wave 2, DB110 = 9	699	128	50	6	0	0	883
	1355	267	88	20	10	0	1740

Group 1	DB135 =				DB110=3,			Total
	1	DB130 = 21	DB130=22	DB130=23	DB120=23	4, 5, 6, 7		
1: Wave 1, DB135 = 1	707	128	93	6	14	0	948	
2: Wave 1, DB135 = 2	0	0	0	0	0	0	0	
3: Wave 2, DB110 = 8	0	0	0	0	0	0	0	
4: Wave 2, DB110 = 9	15	1	0	0	0	0	16	
Total	722	129	93	6	14	0	964	

Wave response rates. Rotational group and total (SILC 2005-2005). Percentages

	Wave resp.rate	Refusal rate	No contact	Total
Group 3	78,87	14,78	6,35	100,00
Group 4	76,89	15,90	7,21	100,00
Total	77,87	15,34	6,78	100,00

	Wave resp.rate	Refusal rate	No contact	Total
Group 1	74,90	13,38	11,72	100,00

Longitudinal follow-up rates. Rotational group and total (SILC 2004-2005). Percentages

	Follow up rate
Group 3	85,22
Group 4	82,61
Total	83,92

	Follow up rate
Group 1	85,02

Follow-up ratio. Rotational group and total (SILC 2004-2005)

	Follow up ratio
Group 4	0,84

The survey started in 2004 and those who are in group 3, wave 2 have DB110 = 9 in 2004. Therefore the follow up ratio for group 3 becomes higher than 1. We therefore only produce follow up ratio for group 1 and group 4.

	Follow up ratio
Group 1	0,87

Achieved sample size ratio. Rotational group and total (SILC 2004-2005)

	Achieved sample size ratio
Group 3	0,79

Group 4 0,78
 Total 0,79

Achieved
 sample
 size ratio
 Group 1 0,76

Household response rates: Comparison of results codes between wave t and wave t-1

Group 3

Wave 2 – 3	DB135 = 1	DB130 = 21	DB130=22	DB130=23	DB110=3, 4, 5, 6, 7	Total
1: DB135 = 1	683	0	0	0	0	683
2: DB134 = 2	0	0	0	0	0	0
4: DB120 = 22	0	0	0	0	0	0
6: DB130 = 22	0	0	49	0	0	49
8: DB130 = 23	0	0	0	6	0	6
10: DB130 = 24	0	0	0	0	0	0
11: DB110 = 8	0	0	0	0	0	0
12: DB110 = 9	14	3	1	0	0	18
	683	0	49	6	0	738

Group 4

Wave 2 – 3	DB135 = 1	DB130 = 21	DB130=22	DB130=23	DB110=3, 4, 5, 6, 7	Total
1: DB135 = 1	656	0	0	0	0	656
2: DB134 = 2	0	0	0	0	0	0
4: DB120 = 22	0	0	0	0	0	0
6: DB130 = 22	0	0	38	0	0	38
8: DB130 = 23	0	0	0	14	0	14
10: DB130 = 24	0	0	0	0	0	0
11: DB110 = 8	0	0	0	0	0	0
12: DB110 = 9	16	0	1	0	0	17
	656	0	38	14	0	708

Total

Wave 2 – 3	DB135 = 1	DB130 = 21	DB130=22	DB130=23	DB110=3, 4, 5, 6, 7	Total
1: DB135 = 1	1339	0	0	0	0	1339
2: DB134 = 2	0	0	0	0	0	0
4: DB120 = 22	0	0	0	0	0	0
6: DB130 = 22	0	0	87	0	0	87
8: DB130 = 23	0	0	0	20	0	20
10: DB130 = 24	0	0	0	0	0	0
11: DB110 = 8	0	0	0	0	0	0
12: DB110 = 9	30	3	2	0	0	35

1339 0 87 20 0 1446

Wave response rates. Rotational group and total (SILC 2005-2005). Percentages

	Wave resp.rate	Refusal rate	No contact	Total
Group 3	92,55	0,00	7,45	100,00
Group 4	92,66	0,00	7,34	100,00
Total	92,60	0,00	7,40	100,00

Longitudinal follow-up rates. Rotational group and total (SILC 2004-2005). Percentages

Longitudinal follow-up rate

Group 3	92,55
Group 4	92,66
Total	92,60

Follow-up ratio. Rotational group and total (SILC 2004-2005)

Follow-up ratio

Group 3	94,44
Group 4	94,92
Total	94,67

Achieved sample size ratio. Rotational group and total (SILC 2004-2005)

Achieved sample size ratio

Group 3	100,00
Group 4	100,00
Total	100,00

Longitudinal response rate for persons

Sample persons, Group 3

Sample persons (RB100=1 and RB245 in ('1', '2', '3) forwarded from last wave

		RB250	RB250	RB250	RB250	RB250	RB250	Total
Group 3		11, 12, 13	21	23	31	32	33	
RB110 = 1-2	Wave 2	683	0	0	0	0	0	683
RB110 = 1-2	Wave 2 to wave 3	637	0	0	0	0	0	637
RB110 = 1-2	Wave 3 to wave 4	607	0	0	0	0	0	607

Nonsample persons, Group 3

Nonsample persons

		RB250	RB250	RB250	RB250	RB250	RB250	Total
Group 3		11, 12, 13	21	23	31	32	33	
RB110 = 1-2	Wave 2	858	0	0	0	0	0	858
RB110 = 1-2	Wave 2 to wave 3	713	0	0	0	0	0	713
RB110 = 1-2	Wave 3 to wave 4	662	0	0	0	0	0	662

Sample and nonsample persons, Group 3

Sample and nonsample persons

		RB250	RB250	RB250	RB250	RB250	RB250	Total
	Group 3	11, 12, 13	21	23	31	32	33	
RB110 = 1-2	Wave 2	1541	0	0	0	0	0	1541
RB110 = 1-2	Wave 2 to wave 3	1350	0	0	0	0	0	1350
RB110 = 1-2	Wave 3 to wave 4	1269	0	0	0	0	0	1269

Sample persons, Group 4

Sample persons (RB100=1 and RB245 in ('1', '2', '3) forwarded from last wave

		RB250	RB250	RB250	RB250	RB250	RB250	Total
	Group 4	11, 12, 13	21	23	31	32	33	
RB110 = 1-2	Wave 1	656	0	0	0	0	0	656
RB110 = 1-2	Wave 1 to wave 2	612	0	0	0	0	0	612
RB110 = 1-2	Wave 2 to wave 3	566	0	0	0	0	0	566

Nonsample persons, Group 4

Nonsample persons

		RB250	RB250	RB250	RB250	RB250	RB250	Total
	Group 4	11, 12, 13	21	23	31	32	33	
RB110 = 1-2	Wave 1	877	0	0	0	0	0	877
RB110 = 1-2	Wave 1 to wave 2	757	0	0	0	0	0	757
RB110 = 1-2	Wave 2 to wave 3	664	0	0	0	0	0	664

Sample and nonsample persons, Group 4

Sample and nonsample persons

		RB250	RB250	RB250	RB250	RB250	RB250	Total
	Group 4	11, 12, 13	21	23	31	32	33	
RB110 = 1-2	Wave 1	1533	0	0	0	0	0	1533
RB110 = 1-2	Wave 1 to wave 2	1369	0	0	0	0	0	1369
RB110 = 1-2	Wave 2 to wave 3	1230	0	0	0	0	0	1230

Total for group 3 and group 4

Sample persons

		RB250	RB250	RB250	RB250	RB250	RB250	Total
	Total	11, 12, 13	21	23	31	32	33	
RB110 = 1-2	2004	1339	0	0	0	0	0	1339

RB110 = 1- 2	2005	1249	0	0	0	0	0	1249
RB110 = 1- 2	2006	1173	0	0	0	0	0	1173

Total for group 3 and 4

Nonsample persons								
		RB250	RB250	RB250	RB250	RB250	RB250	
	Total	11, 12, 13	21	23	31	32	33	Total
RB110 = 1- 2	2004	1735	0	0	0	0	0	1735
RB110 = 1- 2	2005	1470	0	0	0	0	0	1470
RB110 = 1- 2	2006	1326	0	0	0	0	0	1326

Total for group 3 and 4

Sample and nonsample persons								
		RB250	RB250	RB250	RB250	RB250	RB250	
	Total	11, 12, 13	21	23	31	32	33	Total
RB110 = 1- 2	2004	3074	0	0	0	0	0	3074
RB110 = 1- 2	2005	2719	0	0	0	0	0	2719
RB110 = 1- 2	2006	2499	0	0	0	0	0	2499

Group 1, sample persons

Sample persons (RB100=1 and RB245 in ('1', '2', '3) forwarded from last wave								
		RB250	RB250	RB250	RB250	RB250	RB250	
	Group 1	11, 12, 13	21	23	31	32	33	Total
RB110 = 1- 2	Wave 1		707	0	0	0	0	707
RB110 = 1- 2	Wave 1 to wave 2		630	0	0	0	0	630

Group 1, nonsample persons

Nonsample persons								
		RB250	RB250	RB250	RB250	RB250	RB250	
	Group 1	11, 12, 13	21	23	31	32	33	Total
RB110 = 1- 2	Wave 1		909	0	0	0	0	909
RB110 = 1- 2	Wave 1 to wave 2		733	0	0	0	0	733

Group 1, sample and nonsample persons

Nonsample persons and sample persons								
		RB250	RB250	RB250	RB250	RB250	RB250	
	Group 1	11, 12, 13	21	23	31	32	33	Total
RB110 = 1- 2	Wave 1		1616	0	0	0	0	1616

2
 RB110 = 1- Wave 1 to wave
 2 2 1363 0 0 0 0 0 1363

Wave response rate

Group 3

Wave response rate of sample persons =1
 Wave response rate of nonsample persons =1
 Longitudinal follow up rate =1
 RB250 takes only values of 12 and 13 so Rate (RB250=21) =
 0

Group 3

Achieved sample size ratio for
 sample persons
 Wave 2 to wave 3 0,93
 Wave 3 to wave 4 0,95

Group 3

Achieved sample size ratio for
 nonsample persons
 Wave 2 to wave 3 0,83
 Wave 3 to wave 4 0,93

Group 3

Achieved sample size ratio for
 sample and nonsample persons
 Wave 2 to wave 3 0,88
 Wave 3 to wave 4 0,94

Group 4

Wave response rate of sample persons =1
 Wave response rate of nonsample persons =1
 Longitudinal follow up rate =1
 RB250 takes only values of 12 and 13 so Rate (RB250=21) =
 0

Group 4

Achieved sample size ratio
 for sample persons
 Wave 1 to wave 2 0,93
 Wave 2 to wave 3 0,92

Group 4

Achieved sample size ratio
 for nonsample persons
 Wave 1 to wave 2 0,86
 Wave 2 to wave 3 0,88

Group 4

Achieved sample size ratio

for sample and nonsample
persons

Wave 1 to wave 2 0,89

Wave 2 to wave 3 0,90

Total for group 3 and group 4

Wave response rate of sample persons =1

Wave response rate of nonsample persons =1

Longitudinal follow up rate =1

RB250 takes only values of 12 and 13 so Rate (RB250=21) =
0

Total for group 3 and 4

Achieved sample size ratio for
sample persons

Wave 1 to wave 2 0,93

Wave 2 to wave 3 0,94

Total for group 3 and 4

Achieved sample size ratio for
nonsample persons

Wave 1 to wave 2 0,85

Wave 2 to wave 3 0,90

Total for group 3 and 4

Achieved sample size ratio for
sample and nonsample persons

Wave 1 to wave 2 0,88

Wave 2 to wave 3 0,92

Group 1

Wave response rate of sample persons =1

Wave response rate of nonsample persons =1

Longitudinal follow up rate =1

RB250 takes only values of 12 and 13 so Rate (RB250=21) =
0

Group 1

Achieved sample size ratio
for sample persons

Wave 1 to wave 2 0,89

Group 1

Achieved sample size ratio
for nonsample persons

Wave 1 to wave 2 0,84

Group 1

Achieved sample size ratio
for sample and nonsample
persons

Wave 1 to wave 2 0,81

Household status

		DB110 = 1	DB110 = 2	DB110 = 3	DB110 = 4	DB110 = 5	DB110 = 7	DB110 = 9	
Group 1	Wave 1	0	0	0	0	0	0	2418	2418
		0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	100,00%	100,00%
Group 1	Wave 2	1672	389	1	7	4	8	73	2154
		77,62%	18,06%	0,05%	0,32%	0,19%	0,37%	3,39%	100,00%
Group 3	Wave 2	0	0	0	0	0	0	2223	2223
		0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	100,00%	100,00%
Group 3	Wave 3	1682	351	0	2	0	3	62	2100
		80,10%	16,71%	0,00%	0,10%	0,00%	0,14%	2,95%	100,00%
Group 3	Wave 4	1544	326	1	14	7	2	54	1948
		79,26%	16,74%	0,05%	0,72%	0,36%	0,10%	2,77%	100,00%
Group 4	Wave 1	0	0	0	0	0	0	2270	2270
		0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	100,00%	100,00%
Group 4	Wave 2	1674	369	0	1	0	0	66	2110
		79,34%	17,49%	0,00%	0,05%	0,00%	0,00%	3,13%	100,00%
Group 4	Wave 3	1471	370	0	11	3	6	65	1926
		76,38%	19,21%	0,00%	0,57%	0,16%	0,31%	3,37%	100,00%

Record of contact at address

		DB120 = 11
Group 1	Wave 2	389
		100,00%
Group 3	Wave 3	351
		100,00%
	Wave 4	326
		100,00%
Group 4	Wave 2	369
		100,00%
	Wave 3	370
		100,00%

Household questionnaire result

		DB130 = 11	DB130 = 21	DB130 = 22	DB130 = 23	
Group 1	Wave 1	2177	128	93	6	2404
		90,56%	5,32%	3,87%	0,25%	100,00%
Group 1	Wave 2	2061	49	19	5	2134
		96,58%	2,30%	0,89%	0,23%	100,00%
Group 3	Wave 2	2040	128	49	6	2223
		91,77%	5,76%	2,20%	0,27%	100,00%
Group 3	Wave 3	2038	38	13	6	2095
		97,28%	1,81%	0,62%	0,29%	100,00%
Group 3	Wave 4	1882	29	11	2	1924
		97,82%	1,51%	0,57%	0,10%	100,00%
Group 4	Wave 1	2069	139	38	14	2260

	91,55%	6,15%	1,68%	0,62%	100,00%
Wave 2	2052	42	14	1	2109
	97,30%	1,99%	0,66%	0,05%	100,00%
Wave 3	1847	43	15	1	1906
	96,90%	2,26%	0,79%	0,05%	100,00%

Household interview acceptance

DB135 = 1

Group 1	Wave 1	2177	100,00%
	Wave 2	2061	100,00%
Group 3	Wave 2	2040	100,00%
	Wave 3	2038	100,00%
	Wave 4	1882	100,00%
Goup 4	Wave 1	2069	100,00%
	Wave 2	2052	100,00%
	Wave 3	1847	100,00%

2.3.3.3 Distribution of households

Table 2.3.3.3.A Distribution of households by 'record of contact address' (DB120)

	Rot 1	Rot 2	Rot 3	Rot 4	Total
Contacted	969	973	974	965	3881
Does not exist	31	33	40	48	152
Total	1000	1006	1014	1013	4033

Table 2.3.3.3.B Distribution of households by 'household questionnaire result' (DB130)

	Rot. 1	Rot. 2	Rot. 3	Rot. 4	Rot. 1-4
completed (11)	685	705	713	742	2845
refuse (21)	163	146	152	132	593
away (22)	108	104	93	76	381
unable to respond (23)	7	7	9	5	28
other reasons (24)	6	11	7	10	34
Total	969	973	974	965	3881

Table 2.3.3.3.C Distribution of households by 'household interview acceptance' (DB135)

Accepted	685	705	713	742	2845
Rejected	0	0	0	0	0
Total	685	705	713	742	2845

A change was made when processing the 2006 data that caused a minor increase in nonresponse. Households which included individuals for whom we were not able to retrieve social ID numbers were categorized as nonresponse. In 2004 and 2005 they would have been in the data base with zero income. Absence of social ID number means that it is impossible to connect the survey data to the tax register which means that all the income variables will be empty (or 0) for these individuals which can greatly affect the equivalised disposable income of the households. This was further justified by the fact that only about 1% of the households was taken out, all of which had underestimated equivalised disposable income since an “income less” person was living there.

2.3.3.4.A. Distribution of persons for membership status (RB110)

		RB110 = 1	RB110 = 2	RB110 = 3	RB110 = 4	RB110 = 5	RB110 = 6	RB120 = 4	
Group 3	Wave 2	2040	0	0	0	0	0	0	2040
		100,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	100,00%
	Wave 3	1785	88	22	140	3	140	0	2178
		81,96%	4,04%	1,01%	6,43%	0,14%	6,43%	0,00%	100,00%
	Wave 4	1677	72	25	106	2	106	0	1988
		84,36%	3,62%	1,26%	5,33%	0,10%	5,33%	0,00%	100,00%
Group 4	Wave 1	2069	0	0	0	0	0	0	2069
		100,00%	0,00%	0,00%	0,00%	0,00%	0,00%	0,00%	100,00%
	Wave 2	1801	84	25	142	0	142	0	2194
		82,09%	3,83%	1,14%	6,47%	0,00%	6,47%	0,00%	100,00%
	Wave 3	1619	86	20	121	1	121	0	1968
		82,27%	4,37%	1,02%	6,15%	0,05%	6,15%	0,00%	100,00%

Distribution of persons moving out by variable RB120

		RB110 = 5
Group 3	Wave 3	140
		100,00%
	Wave 4	106
		100,00%
Group 4	Wave 2	142
		100,00%
	Wave 3	121
		100,00%

RB120 was not asked in Iceland for the years 2005 and 2006

2.3.3.4.B. Distribution of substituted units

Not applicable as no substitutions are applied.

2.3.3.5. Item nonresponse

For cost or income related variables imputation was used to treat item nonresponse.

Item nonresponse is not assumed to be in the income variables that come from registers. The only income variables where imputation was applied were the ones not received from registers, “regular inter-household cash transfer received” and “regular inter-household cash transfer paid” (HY080G and HY130G). Imputations were used for those variables based on survey data.

For HY080G and HY130G a question was added in 2007 for those not knowing the amount paid for alimony asking for the number of children for whom alimony was paid or received. This was done in order to help with imputation.

HH060: When indicating that the household was paying a non-zero amount for rent but not giving the amount imputation was applied. Variables used were area of residence, number of household members, number of rooms in the dwelling and the type of owner of the dwelling (profit – non-profit). This was done for all years 2004, 2005 and 2006 and files with imputed data were delivered to Eurostat back in time for 2004 and 2005.

A follow up question was added before the 2007 survey in case of “don’t know” to decrease item nonresponse for HH060.

HH061: There has always been high item nonresponse for the question of imputed rent in Iceland. One reason is the small rental market in Iceland. This becomes especially difficult in smaller towns where it might be hard to say whether certain houses could be rented at all no matter how low the rent would be. To treat this problem we added a follow up question for the 2007 survey encouraging respondents to give their best estimate if they said “don’t know”.

HS130: The question on the lowest monthly income to make ends meet has had high levels of item nonresponse and a follow up question was added to the questionnaire before the 2007 survey to try to reduce that.

PE030: In some cases people had difficulties giving an answer about the year of highest level of education on other household members. We added a follow up question asking to give their best guess.

PL060: Number of working hours was imputed for in 2006. If the respondent had reported working hours on earlier waves and was holding the same job the last value given was used. Otherwise when respondent was working but did not give number of hours, regression analysis was used with the variables: personal income, sex, age and whether the respondent claimed to work full time or part time. This was done for all years 2004, 2005 and 2006 and files with imputed data were delivered to Eurostat back in time for 2004 and 2005.

Table 2.3.3.5A Number receiving an amount and item nonresponse for the following income components

	% received		%missing
	% partial		
Total HH gross inc (HY010)	99,88	0,12	0,00
Total HH disp. Inc (HY020)	99,88	0,12	0,00
Total HH disp before (HY022)	99,88	0,12	0,00
Total HH disp. Including (HY023)	99,88	0,12	0,00
Gross Income from rental (HY040)	6,00	0,12	0,00
Gross income from investments (HY090)	68,46	0,12	0,00
Gross family allowances (HY050)	36,45	0,12	0,00
Gross social excl. (HY060)	2,32	0,12	0,00
Gross housing allowances (HY070)	34,52	0,12	0,00
Gross inter-HH cash received (HY080)	16,19	1,13	0,00
Gross interest repayments (HY100)	74,65	0,12	0,00
Gross Income under 16 (HY110)	14,64	0,12	0,00
Gross taxes on wealth (HY120)	89,69	0,12	0,00

Gross inter-HH cash paid (HY130)	14,83	0,87	0,00
Gross tax on income (HY140)	99,83	0,12	0,00
Gross employee cash income (PY010)	84,30	0,00	0,00
Gross non-cash income (PY020)	0,00	0,00	0,00
Gross self employment (PY050)	10,40	0,00	0,00
Gross unemployment benefits (HY090)	3,24	0,00	0,00
Gross old-age benefits (PY100)	11,35	0,00	0,00
Gross survivor benefits (PY110)	4,80	0,00	0,00
Gross sickness benefits (PY120)	0,18	0,00	0,00
Gross disability benefits (PY130)	4,57	0,00	0,00
Gross education allowances (PY140)	3,31	0,00	0,00

Table 2.3.3.5B Total item nonresponse and number of observations

	Valid N	Nonresp
Males	4299	8
Females	4288	3
Employed	4790	6
Unemployed	41	0
Inactive	1509	2
Under 25	3489	3
25-34	1051	0
35-44	1202	3
45-54	1258	2
55-64	791	2
65+	796	1
Owner	7723	6
Tenant	859	5
Male under 25	1753	3
Male 25-34	540	0
Male 35-44	575	2
Male 45-54	626	2
Male 55-64	397	0
Male 65+	408	1
Female under 25	1736	0
Female 25-34	511	0
Female 35-44	627	1
Female 45-54	632	0
Female 55-64	394	2
Female 65+	388	0
Male employed	2532	4
Male unemployed	15	0
Male inactive	650	1
Female employed	2258	2
Female unemployed	26	0
Female inactive	859	1
One person under 64 years	246	4
One person, 65 years or older	137	0
One person male	189	3
One person female	194	1
One person total	383	4
Two adults under 65 no dependent children	854	0
Two adults, no dependent children	626	2
Other, no dependent children	647	0
Single parent, one or more dependent child	384	5
Two adults , 1 dependent child	1110	0
Two adults, 2 dependent children	1768	0

Two adults, 3 or more dependent children	1571	0
Other households with dependent children	1220	0
Households without dependent children	2510	6
Households with dependent children	6053	5

Equivalized disposable income

Item nonresponse for Equivalized disposable income. The information for the income variables were mainly collected through registers. Only information for HY080 and HY130 was received from the tax register. Nonresponse for each income variable is shown in table 2.3.3.5.

If the social ID number was not received for a household member in the interview the household was not included in the data. Therefore we were able to link all household members of all the households to the tax register. Item nonresponse for the equivalized disposable income is therefore only partial where the information were missing for HY080 and HY130 as shown in table 2.3.3.5.

2.4. Mode of data collection

All interviews were done through telephone with the aid of the Blaise software. One week before the start of data collection Statistics Iceland sent a letter to the sampled individuals explaining the purpose of the survey and requesting their cooperation.

For 2006, instead of asking about the amounts paid for electricity and heat (which are a part of variable HH070, Total Housing cost) imputations are used based on the HBS (Household Budget Survey). The reason is that it is our belief that people often do not know the amounts they pay for heating and electricity. These bills are often paid automatically through credit cards or automatically taken out of peoples' bank accounts. Some people hardly ever see the bills. Length of the intervals the amounts apply to have also sometimes been hard to establish (1 month, 3 months ect). The HBS (Household budget survey) on the other hand is a face to face survey where the respondents are asked in advance to prepare by keeping bills or bank transcripts handy.

The distribution of the selected respondents, household members aged 16 or over, and non-selected household members by data status (RB250) and by type of interview (RB260) is shown in the tables below.

Table 2.4 A Distribution of household members age 16 or over by data status (RB250)

Rot. Group	Data status	Sel_resp	Non_sel	All hhmembers 16+
1	Only registers (12)	0	14	14
	Registers and interview (13)	685	891	1576
2	Only registers (12)	0	7	7
	Registers and interview (13)	705	898	1603
3	Only registers (12)	0	4	4
	Registers and interview (13)	713	928	1641
4	Only registers (12)	0	12	12
	Registers and interview	742	922	1664

(13)

Total	2845	3676	6521
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Table 2.4 B Distribution of household members age 16 or over by type of interview (RB260)

Rot. Group	Type of interview	Sel_resp	Non_sel	All hmembers 16+
1	CATI (3)	685	891	1576
2	CATI (3)	705	898	1603
3	CATI (3)	713	928	1641
4	CATI (3)	742	922	1664
Total		2.845	3.639	6.484

2.5.A. Interview duration

The mean interview duration was 25 minutes and 55 seconds.

2.5.B. Imputation procedure

Variables where imputation was applied	2004 imputed	2004 total	2005 imputed	2005 total	2006 imputed	2006 total
Utility bills in Total housing cost (HH070)	2850	2850	2923	2923	2856	2856
Working hours (PL060)	0	4651	0	4738	106	4698
Rent (HH060)	1	401	30	368	33	374
Money from other households (HY080)	77	410	59	387	74	390
Money to other households (HY130)	59	401	67	434	86	472

Imputation was applied when dealing with amounts or working hours and we knew that these amounts were paid or received but did not have the amount or the number. Not imputing would systematically underestimate the amount.

2.6. Imputed rent

Imputed rent was only delivered with the 2007 data. The method used was the same as for the Icelandic HBS (Household budget survey). Market value of dwellings are received from housing registers: This market value is used to produce imputed rent with the formula: $PH * [r(1+r)^N] / [(1+r)^N - 1]$. Where PH is the market value of the dwelling, r = real interest = 4%, N = lasting time of property = 80 years.

2.7 Company cars

Company cars were not included in the 2006 data. In 2007, a question asking for company car was included in the questionnaire. Data on income are received from tax register. The information from the tax register do not distinguish between company car and other income.

3. Comparability

3.1. Basic concepts and definitions

The reference population

The reference population is persons aged 16 years or more at December 31st in the year 2005, living in private households.

The private household definition

A private household is defined as individuals that share food, meaning that they either do not pay for their food or that they share expenses for food. The definition does not require that they eat at the same times or that they are related.

The household membership

Persons are considered as household members if they spend most of their nights at the address of the household.

Individuals that are temporarily away (not having a private address elsewhere) and will return to the household are considered as household members. As example of this are children in boarding schools, fishermen, individuals admitted to hospitals or imprisoned and those that are working for longer periods away from home.

The income reference period

The income reference period is the calendar year 2005.

The period for taxes on income and social insurance contributions

The period for taxes on income and social insurance contributions is the calendar year 2005.

The reference period for taxes on wealth

The reference period for taxes on wealth is the calendar year 2005.

The lag between the income reference period and current variables

The income variables are collected from registers and the interval between the end of the income reference period and the time of interview for current variables is maximum four and a half months.

The total duration of the data collection of the sample

The interviews were carried out between 16th of January and 19th of April 2006.

Basic information on activity status during the income reference period

Table 3.1 Activity status of persons 18 years or older

	N	%
1 Working	4633	75,58
2 Unemployed	40	0,65
3 Retired	739	12,06
4 Other inactive	555	9,05
9 Not responded	163	2,66
Total	6130	100,00

3.2. Components of income

3.2.1 Differences between the national definitions and standard EU-SILC definitions, and an assessment of the consequences of the differences mentioned will be reported for the following target variables.

This section gives an overview of how income data from registers have been organised in order to be comparable to the income concepts outlined in the SILC guidelines. In addition references are made to any departures from these guidelines.

All income data derived from registers are recorded gross at component level. All income data are collected at the individual level (i.e. the person registered as the receiver of the income). This also concerns typically “household” related incomes such as housing benefits and social assistance.

Total household gross income (HY010)

The sum of all income components:

$HY040G+HY050G+HY060G+HY070G+HY080G+HY090G$

Plus the sum for all household members of:

$PY010G+PY020G+PY050G+PY090G+PY100G+PY110G+PY120G+PY130G+PY140G$.

Total disposable household income (HY020)

Defined as total gross income ($HY100G+HY130G+HY140G$) minus ($HY120G+HY130+HY140G$)

Total disposable household income before social transfers except old-age and survivor's benefits (HY022)

Defined as HY020 minus the sum for all household members of:

$(PY090N+PY120N+PY130N+PY140N) + HY050N+HY060N+HY070N$

Total disposable household income before social transfers including old-age and survivor's benefits (HY023)

Defined as HY020 minus the sum for all household members of:

$(PY090N+PY100N+PY110N+PY120N+PY130N+PY140N) + HY050N+HY060N+HY070N$

Income from rental of property or land (HY040)

Income from hiring out property not contacted to business activity. Deviates from SILC definitions in that no information is available in the register on interest repayments, maintenance, insurance and other charges.

Family/children-related allowances (HY050)

Includes the following income components:

- Family allowance
- Maternity allowance (birth grant)
- Single parent's allowance

Social assistance (HY060)

Includes the total amount received in social assistance.

Housing allowances (HY070)

Includes rent benefits granted to tenants.

Regular inter-household cash transfers received - (HY080)

Includes alimonies received. Information on regular private cash support received by children from parents living in a separate household is included from interview. The same goes for other inter household cash transfers received.

Interest, dividends, profit from capital investment in unincorporated business (HY090):

Interest and dividends are taxable income.

Income received by people aged under 16 (HY110)

Includes the following income components:

- Interests and dividends.

Those are registered in one sum on parent's tax return. If more than one child is in the household it is divided equally between the children.

- Children with income.

Interest repayments on mortgage (HY100)

As interest repayments on mortgage are used for calculating fiscal benefits to owner-occupiers are to be found in registers.

Regular taxes on wealth (HY120)

As the taxes are paid in the following year information is sought in registers from the year before.

Regular inter-household cash transfers paid (HY130)

Information on alimonies paid and regular private cash support to children from parents living in a separate household is included from interview. The same goes for other inter household cash transfers received.

Total Tax on income and social contribution (HY140)

It includes assessed income, wealth taxes and social contributions.

Repayment/receipts for tax adjustment (HY145)

It is included in HY140.

Employee cash or near cash income (PY010)

Deviation from the SILC concept:

It is not possible to separate from employee cash income redundancy compensations that should be included under unemployment benefits. The same goes for wages and salaries during sickness, which is a major part of sickness benefits paid in Iceland.

Cash benefits or losses from self-employment (PY050)

Entrepreneurial income is collected *net* in register data. Royalties are registered as "other income" and not possible to separate and not include here.

Unemployment benefits (PY090)

Deviation from the SILC concept:

It is not possible to separate from employee cash income (PY010) redundancy compensations that should be included here or in PY100.

Old-age function (PY100)

Includes the following income components:

- Old age pension from social security scheme (basic pension).

- Old age pension from compulsory private pension funds (employment pension).

Survivors' function (PY110)

Includes the following income components:

- Survivors' pension from social security scheme.
- Survivors' pension from compulsory private pension funds.
- Death grants.

Social benefits in the sickness (PY120)

All sickness benefits that are included in wages and salaries cannot be specified in registers and are included in PY010.

Disability benefits (PY130);

Includes the following income components:

- Disability benefits and pension from social security scheme (basic pension).
- Disability benefits and pension from compulsory private pension funds (employment pension).

Education related allowance (PY140)

It includes scholarship of various kinds and "educational alimony" received by children at the age of 18 to 20 years living with single parent (e.g. students).

3.2.2. The source or procedure used for the collection of income variables

Tax register is use for all income variables except for HY080 and HY130 (Regular inter-household cash transfer received and paid). For those two variables information are collected through the interview. Those are also the only income variables where imputation was used.

3.2.3. The form in which income variables at component level have been obtained

The register data only report gross income at component level. Total assessed taxes and contributions to social security are collected separately from tax registers.

3.2.4. The method used for obtaining income target variables in the required form (i.e. as gross values)

All income data are recorded gross at component level.

3.3 Tracing rules

In Iceland a respondent is selected from the national register. Whoever lives with the selected respondent is also included in the survey. If the composition of the households of the selected respondent changes between waves we do not trace other household members. We only trace the selected respondent and if he or she has new household-partners they will be included in the survey. The information used for tracing are received from the national register, information on phone numbers are received from the largest phone company in Iceland. Information from former household members are also used to help locate selected respondents if the selected respondent has moved. All data are collected through telephone.

4. Coherence

4.1. Comparison of income target variables and number of persons who receive income from each 'income component', with external sources

With the exception of inter-household transfers all the income data in SILC are from register. Hence, in our opinion, there is no point in comparing the results with external sources since the source we would compare with is the source used in SILC.

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