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Title	**Harmonisation of private household data across EU countries, 2005. Part of Deliverable D9.1 (WP9): Collection of harmonisation materials (D9.1e)**
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Contents

1. Introduction

This document provides an example to illustrate the structure for the harmonization database application presented in section 1.4 of D9.2 .It focuses on the measurement of household across the EU countries for the year 2005 (section 2). In section 3 the construction of the household typology is presented as measured in the EU-SILC harmonized survey (Eurostat 2004, and Eurostat 2008a). In section 4 the recommendations for the harmonization of household with the HBS data (European Commission 2003b) are showed. In general, the structure and content of this chapter follows the three basic elements structure of the CHARMCATS DB model, i.e. the Conceptual Step, the Operational Step and the Data Coding Step. Furthermore, in section 3.2.1 the EU-SILC household typology is operationalized with national specific indicators and variables; in this case, the harmonization project has the same conceptual derivation but varying country and time specific indicators and variables. Finally, it has to be mentioned that all the information used here for the presentation of the household typologies in HBS corresponds to the recommendations described by the European Commission (2003b). This means that, any information about definitions, variable names, labels, values etc. are taken from the recommendations presented in the document of the European Commission (2003b) for the harmonization process of HBS among the EU countries.

2. Household definition

The household is a fundamental statistical unit because of its involvement as a sampling or/and analysis unit in many national and international level surveys. Its definition differs among the EU member states, while, in addition, at an EU level the household is defined within each harmonized survey (Hoffmeyer-Zlotnik & Warner 2008). In that sense, the household definition affects the data collection in surveys that use the household as a sampling unit. Generally, the household can be considered as a small group of people which are usually named as "household members". "Household membership" is determined according to some defining criteria. By investigating the different household definition Hoffmeyer-Zlotnik and Warner (2008) concluded that the criteria that are common in the majority of the household definitions used by the EU member states can be categorized as: **i)** common housekeeping in a financial sense**, ii)** common housekeeping in an organizational sense, **iii)** co-residence, **iv)** family relations.

Not all member states adopt a common definition for the household, however, the household membership, in the majority of the definitions, is determined by at least one of the above criteria.

3. Household definition in EU-SILC and aim of the EU-SILC household typology

For the EU-SILC survey, the harmonized household definition at an EU-level can be found in European Commission 2003a and is briefly described as follows:

"The household members are defined as the persons usually resident whether they are related or not to the other household members. Persons who are absent for long periods because of being educated or working away from home are included as household members if they continuously retain close ties with the household. Persons that have ties with the household but are living in institutions are not considered as household members if they are absent for at least six months and they do not have financial ties with the household. Persons that are visitors are considered as household members if they do not have a private address elsewhere and the intended duration of their stay must be more than six months. Finally, persons temporally absent must not have a private address elsewhere and the intended duration of their absence must be less than six months." (European Commission 2003a)

The household typology that is considered here can be viewed as a classification that describes the structure of the household in terms of a combination of some specific characteristics of the household members. Specifically, the household type provided for the EU-SILC data is an economic typology that aims to classify the households according to the number of dependent children and the number of adults that are living in the household. Furthermore, in some categories, the adults are further distinguished as above or below the age of 65, a limit that can be considered as a threshold for the distinction of the not-working and working aged members.

3.1.   EU-SILC Household Type: Conceptual Derivation

Figure 1 describes the conceptual derivation of the household typology in EU-SILC. Note that not all the possible household structures are presented (i.e. household with 5 or more members), however, we believe that the idea about the conceptual derivation of this typology is generally presented. A full presentation of all household structures is not typically possible due to the hypotheses that an upper limit for the household size is not any fixed number, i.e. it is not generally known in advance.

The Household typology that is considered here has the labels:

Table 1: Household typology (EU-SILC)

Code	Label of Classes
5.	One person household, (working age adult)
6.	One person household, (not working age adult)
7.	2 adults, no dependent children, both working aged adults
8.	2 adults, no dependent children, at least one adult not in a working age
9.	Other households without dependent children
11.	Single parent household, one or more dependent children
12.	2 adults, one dependent child
13.	2 adults, two dependent children
14.	2 adults, three or more dependent children
15.	Other households with one or more dependent children
-9.	Unknown household type

The numbered labels presented in figure 1 in the conceptual derivation of the household type are those described above.

Figure 1 Conceptual derivation of the Household type in EU-SILC

Type of household members (THM)	Household type (EU-SILC)

Development stage
- Child
  - Dependent Child
  - Young
    - Child-Parent relationship
      - Child of at least one of the other members
        - Economically active
          - Yes — Working age adult
          - No — Dependent child
    - Child-Parent relationship
      - Child of none of the other members — Working age adult
- Working age adult
- Not working age adult

Household size
- One person — THM[1]
  - Working age adult — **5**
  - Not working age adult — **6**
- Two members — THM[1]
  - Dependent child & working age adult — **11**
  - Dependent child & not working age adult — **11**
  - 2 working age adults — **7**
  - 2 adults. At least one adult not in a working age — **8**
- 3 members — THM[1]
  - 3 adults[2] — **9**
  - 2 adults[2] & dependent child — **12**
  - 1 adult[2] & 2 dependent children — **11**
- 4 members — THM[1]
  - 4 adults — **9**
  - 3 adults[2] & dependent child — **15**
  - 2 adults[2], 2 dependent children — **13**
  - Adult[2] & 3 dependent children — **11**
- 5 or more members ……………………….

1. The Type of household member dimension is applied, 2. Both working and not working age adults

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Figure 1 presents the conceptual derivation of the household type and the type of household member, a dimension that is needed for the computation of the household typology. As it can be seen from figure 1, the conceptual derivation step is composed of the dimensions, i.e. the conceptual criteria that are used for the construction of the target variable "household type", and their levels. Furthermore, the conceptual derivation layer provides an idea of the way how each dimension is used and combined with the other dimensions in order to construct the target variable.

The EU-SILC household type construction uses following dimensions: household size and type of household members. The type of household member dimension is constructed with the use of the dimensions: development stage, child-parent relationships and economic activity. The latter two dimensions are applied only to young members. Definitions for each of the above mentioned dimensions are provided in table 2 in the next section.

3.2   EU-SILC household type: Operational definition at EU and country level

Table 2 provides the indicators, i.e. the measures of the conceptual criteria, both at the EU-level and at the country level. The construction of the household EU-SILC type at a country level is based on the same conceptual criteria as those used for the construction of the household type at an EU level, however, the conceptual criteria are measured differently between these two typologies. Therefore, two different indicators are provided as measures of each conceptual dimension that correspond to the household type EU and Country level typologies.

In table 2 the indicators are placed at the same row of the table as the dimensions they measure. The levels of the type of household member dimension are produced by a combination of a set of indicators.

Table 2: Dimensions with their corresponding indicators at the EU and national level

Conceptual elements		Operational elements			
Dimensions		**Indicators EU level**		**Indicators Country level**	
		Description	Codes	Description	Codes
Type of household member: Classification of a household member according to some of his/her individual characteristics (for example: age, economic activity) or/and according to some other characteristics that attribute a status to a member relative to the characteristics of the other members in the household (for example: relationships between the household members)		This indicator is constructed by a combination of the indicators used for the measurement of the development stage, the parent-child relationships and the economic activity. At the EU level these indicators are described above.	1. Dependent Child 2. Working age adult 3. Not working age adult	This indicator is constructed by a combination of the indicators used for the measurement of the development stage, the parent-child relationships and the economic activity. At the country level these indicators are described above.	1. Dependent Child 2. Working age adult 3. Not working age adult
Type of household member dimension	**Development stage:** The stage of the development of each member with levels that aim to separate the children from the young members and the adults, where the adults are further being separated as working age and not working age adults.	The cut off points applied to the age of each member aim to distinguish the working age from the non working age members (children and elderly members). Also, the youth members are distinguished using the upper age limit of 24 years old. Two different indicators have been proposed for the measurement of the development stage. The first indicator determines the child with the upper age limit of 16 years old (Eurostat, 2004), while the second indicator determines the child with the upper age limit of 18 years old (Eurostat, 2008a)	**1st indicator** 1. Child (<16 years old) 2. Young (16-24 years old) 3. Working age adult (25-64 years old) 4. Not working age adult (65 years old or more) **2nd indicator** 1. Child (<18 years old) 2. Young (18-24 years old) 3. Working age adult (25-64 years old) 4. Not working age adult (65 years old or more)	For the determination of the elderly non working age members both indicators uses the normal retirement age according to the national pension policies systems. The upper age limit for the definition of a child used for the computation of the first indicator is the age at the end of the compulsory education, while, the second indicator uses the age at the end of the secondary education according to the national education systems.	**1st indicator** 1. Child (≤ age at the end of the compulsory education) 2. Young (above the age at the end of the compulsory education-24 years old) 3. Working age adult (25-below the normal pension age) 4. Not working age adult (normal pension age or more) **2st indicator** 1. Child (≤ age at the end of the secondary education) 2. Young (above the age at the end of the secondary education-24 years old) 3. Working age adult (25-below the normal pension age) 4. Not working age adult (normal pension age or more)

Conceptual elements		Operational elements			
Dimensions		*Indicators EU level*		*Indicators Country level*	
		Description	Codes	Description	Codes
Type of house-hold member dimension	*Relationships: Parent-child relation-ship*	Is applied only to the young members. These members are defined differently according to the age groups adopted for the computation of the 1st and the 2nd indicator above (EU level indicators)	**1.**Living with at least one of his/hers parents **2.**Living with non of his/hers parents	Is applied only to the young members. These members are defined differently according to the age groups adopted for the computation of the 1st and the 2nd indicator above (coun-try level indicators)	**1.**Living with at least one of his/hers parents **2.**Living with non of his/hers parents
	Economic activity: The relationship of a member to the eco-nomic activity based on a reference period.	Is applied only to the young members. During a reference period, if a person is working either full or part time, or if he/she is not working but he/she is looking actively for a job and he/she is available for work is considered as eco-nomically active member, otherwise he/she is considered as not economically active member	**1.**Economically active **2.**Not economically active	Is applied only to the young members. During a reference period, if a person is working either full or part time, or if he/she is not working but he/she is looking actively for a job and he/she is available for work is considered as eco-nomically active member, oth-erwise he/she is considered as not economically active mem-ber	**1.**Economically active **2.**Not economically active
Household size: Total number of household members. The household members are re-garded as the group of people that constitute a household according to some defining criteria.		Sum of the household mem-bers. The definition for the household membership is de-scribed in (European Commission, 2003a)	Integer number greater or equal to 1 without a prede-fined maximum number	Sum of the household mem-bers. The household member-ship EU-SILC harmonized definition is described in (European Commission, 2003a). Eurostat allows member states to adopt a national household definition if they are already using it, however, we have not found any documentation for the actual household member-ship definitions that were ap-plied to the EU-SILC surveys at the countries national level	Integer number greater or equal to 1 without a predefined maxi-mum number

3.2.1. Country level operationalisation for the household typology

The operationalisation for the household typology at the countries level is briefly described below.

The indicators for the measurements of the dimensions of the relationships (parent-child relationship), economic activity and household size remain the same as those used at the EU level construction, because:

1. The economically active and inactive definitions applied at the EU level coincide with the ILO definitions and, furthermore, we have not found any specific national approach for the definition of the economically active and inactive persons.
2. The relationships, e.g. the dimension that is applied only to the young members and distinguishes them according to whether they live with at least one parent or not is not considered here as a dimension that has a national coordinate.
3. The household size is the total number of the household members and does not have to be reconsidered or redefined at a member state level. The definition for the members that constitute a household is provided by the EU-SILC harmonized framework. Any national divergence from this definition must be defined at the member state level, though we have not found any documentation that provides the actual national household definitions that have been adopted from the member states EU-SILC sample designs considerations. For EU-SILC 2005, Austria, Germany, Italy and United Kingdom have adopted slightly different private household and household membership definitions that are characterized as largely comparable with the standard EU-SILC definitions (Eurostat 2008b), while, in addition, Portugal, Slovenia and Spain have adopted slightly different household membership definitions that are also characterized as largely comparable with the standard EU-SILC definition (Eurostat 2008b).

One the other hand, the indicators for the measurement of the development stage are provided at each country level. Specifically, for the 1st indicator, the child is defined as a person with an age equal or less than the age at the end of the compulsory education, while for the 2nd indicator, the child is defined as a person with an age equal or less than the age at the end of the secondary education. Another indicator for the definition of a child could be based on the legal age limit that a person may begin to work. Many countries have restrictions on the type of work that a child could be employed for (light and not dangerous job), while in addition, there are countries that distinguish between full and part time job, and finally, there are countries with a gap between the age of compulsory education and the minimum age for employment. Therefore, because of the very differing situations that determine the legal age of employment in the countries under study, we decided not to base the indicator for the definition of the child on the age limits defined by the minimum age of employment. Finally, the definition for the elderly (not working age adults) is based on the age limits defined by the pensionable ages that hold for each country, that is, the normal retirement age, according to the required contributions (minimum or full), above which the pension is payable for each country.

3.3   EU-SILC household type data coding procedure

The data coding procedure for the conversion of the household typology at the EU and country level is provided in figures 2 and 3. The data coding layer is the last of the three layers that describe the harmonization projects under the DB/Application structure. Table 2 provides the "source variables", i.e. the variables that are needed for the conversion of the target variable "household type". These variables refer to the EU-SILC 2005 data sets, and their description is provided in Eurostat, 2008c. In addition, table 2 provides some additional source variables, not provided by the EU-SILC data sets, like **Low_limit_1**, **Upper_limit**, **H_A**, **H_DC**, etc. These variables are computed by the source EU-SILC variables and are needed for the conversion of the household type EU and country level target variables.

Table 3: Sources variables needed for the computation of each indicator at the EU and national level

Indicator	EU level		Country level	
	Variables		Variables	
	Description	*Codes*	*Description*	*Codes*
Development stage	**RX020**: Age at the end of the income reference period The end of the income reference period is: • The date of interview for Ireland • The fixed date 31/12/2005 for United Kingdom • The end of the previous calendar year (reference year: year of the interview) for all the other participating countries	[-1, 79] age in the years included in this time interval (-1 is an age code for members born between the end of the income reference period and the data collection) 80: person aged 80 and over	Same as at the EU level	
			RB020: Country	AT: Austria, BE: Belgium CY: Cyprus, CZ: Czech Republic, DK: Denmark, EE: Estonia, FI: Finland, FR: France, DE: Germany, GR: Greece, HU: Hungary, IS: Iceland, IE: Ireland IT: Italy, LV: Latvia, LT: Lithuania, LU: Luxembourg NL: Netherlands, NO: Norway, PL: Poland, PT: Portugal, SK: Slovakia, SI: Slovenia, ES: Spain SE: Sweden, UK: United Kingdom

Indicator	EU level		Country level	
	Variables		Variables	
	Description	*Codes*	*Description*	*Codes*
Development stage			**Low_limit_1:** age at the end of the compulsory education**,** **Low_limit_2:** age at the end of the secondary education Country level variables (see comments below and the table in appendix)	**Low_limit_1**: AT: 15, BE: 18, CY: 15, CZ: 15, DK: 16, EE: 15, FI: 16, FR: 16, DE: 15, GR: 15, HU: 16, IS: 16, IE: 16, IT: 16, LV: 15, LT: 16, LU: 15, NL: 16, NO: 16, PL: 18, PT: 15, SK: 16, SI: 15, ES: 16, SE: 16, UK: 16, **Low_limit_2**: AT: 17, BE: 18, CY: 18, CZ: 19, DK: 18, EE: 18, FI: 19, FR: 18, DE: 19, GR: 18, HU: 18, IS: 20, IE: 18, IT: 19, LV: 18, LT: 19, LU: 19, NL: 17, NO: 19, PL: 19, PT: 18, SK: 18, SI: 18, ES: 18, SE: 19, UK: 18
			Upper _limit: Normal retirement age Country level variable (see comments below and the table in appendix)	AT: Men: 65-Women: 60, BE: 65, CY: 65, CZ: Men: 63-Women: 61, DK: 65, EE: Men: 63-Women: 60, FI: 65, FR: 60, DE: 65, GR: Men: 65-Women: 60, HU: 62, IS: 67, IE: 66, IT: Men: 65-Women: 60, LV: 62, LT: Men: 62,5-Women: 60, LU: 65, NL: 65, NO: 67, PL: Men: 65-Women: 60, PT: 65, SK: 62, ES: 65, SE: 65, UK: Men: 65-Women: 60
Parent-Child relationships	**RB220_F**: flag variable for father identification number	**1.** filled (the member's father is a household member) **-1.** Missing **-2.** father is not a household member	Same as at the EU level	
	RB230_F: flag variable for mother identification number	**1.** filled (the member's mother is a house-hold member) **-1.** Missing **-2.** mother is not a household member	Same as at the EU level	

Indicator	EU level		Country level	
	Variables		**Variables**	
	Description	*Codes*	*Description*	*Codes*
Economic Activity	**PL030**: Self defined current economic status The variable captures the person's own prescription of his/her main activity and it differs from the ILO concept. The self-declared main activity status is, in principle determined on the basis of the most time spent, but no criteria have been specified explicitly. "Current" overrides any concept of averaging over any specific reference period.	**1.** Working full time **2.** Working part time **3.** Unemployed **4.** Pupil, student, further training, unpaid work experience **5.** In retirement or in early retirement or has given up business **6.** Permanently disabled or/and unfit to work **7.** In compulsory military community or service **8.** Fulfilling domestic tasks and care responsibilities **9.** Other inactive person	Same as at the EU level	
	PL020: Actively looking for a job Applies only to persons not currently working. The reference period is the last 4 weeks ending with the week that the interview is performed	**1.**yes **2.**no	Same as at the EU level	
	PL025: Available for work Applies to persons with PL020=1. The reference period is the next two weeks after the week the interview is performed	**1.**yes **2.**no	Same as at the EU level	

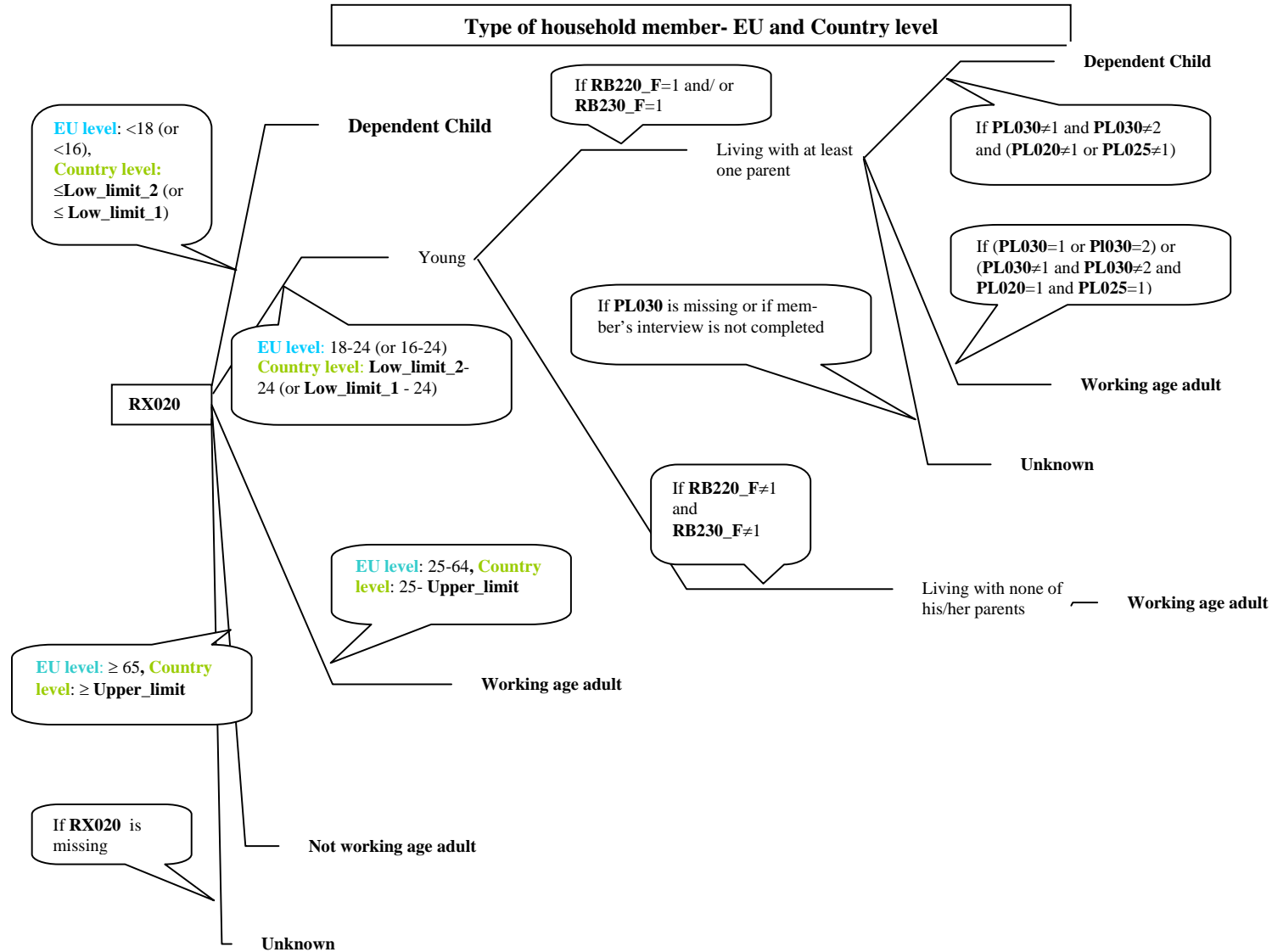| Indicator	EU level		Country level	
	Variables		*Variables*	
	Description	*Codes*	*Description*	*Codes*
Household size	**H_DC**: Sum of the household members that are classified as dependent children	Integer number greater or equal to 0 without a predefined maximum number	Same as at the EU level	
	H_WA: Sum of the household members that are classified as working age adults	Integer number greater or equal to 0 without a predefined maximum number	Same as at the EU level	
	H_NWA: Sum of the household members that are classified as not working age adults	Integer number greater or equal to 0 without a predefined maximum number	Same as at the EU level	
	H_A: Sum of the household members that are classified either as non working or as working age adults	Integer number greater or equal to 1 without a predefined maximum number	Same as at the EU level	
	H_U: Sum of the household members that are classified as unknown (unknown type of household member)	Integer number greater or equal to 0 without a predefined maximum number	Same as at the EU level	

In table 3, the countries for which the Low_limit_1, Low_limit_2 and Upper_limit variables are presented are those countries with available data in the EU-SILC 2005 datasets. These variables are computed with the use of the information that is provided in the table at the appendix. A sort description of the way this information was used in order to provide the above mentioned variables is provided below:

Because of the various upper secondary programs and their different lengths (in years) in many countries, an age threshold, among the various ones, must be adopted for the child limit age threshold. For the present study, this threshold is determined to be the lowest age at which a student normally completes a secondary education program among those programs that are considered to be the most common ones in each country. An alternative age threshold definition could be based on a weighted average age, where the weights may be defined by the percentage of the students that have attended a program during a reference academic year.

In addition, one can see from the table in the appendix that the normal pension ages refer to different years between countries, while, furthermore these ages may be different for different years within a country because of the reform of the pension systems that is taken place to many countries. Due to the lack of information for the pensionable age at the same years in all countries, and because of the reform that is taken place to many of them, we had to adopt a time period, same for all countries, in order to determine the upper age threshold for the working age population during that period. We chose to take into account the different pensionable ages up to the year 2009. For example, if there is a different pensionable age between the years 2008 and 2009 for a country the age threshold that is adopted is the pensionable age defined for 2009. Furthermore, if there is not a pension reform that is taken place during the period 2005-2009, the pensionable age valid for this period is adopted. Finally, it need to be said that, in the case of Czech Republic there is no information in the used data set about the number of children that a woman may have raised, so, we determined the pensionable age for a woman as the mean average between the ages 59 up to 63.

Figure 2 describes the data coding procedure for the conversion of the dimension "type of household member", a dimension needed for the conversion of the target variable "household type". As it can be seen from figures 2 and 3, the data coding layer provides the detailed algorithm, i.e. the way the source variables are used and combined for the conversion of the target variable. In the case of the household type, different conversion algorithms provide the typology at an EU level and at a Country level. These algorithms differ in the conversion of the "type of household member" and they are both presented in figure 2. Furthermore, in figure 2 both age thresholds for the definition of the child are also presented at the two different levels (EU and Country level). As soon as the type of household member is computed, the conversion of the household type is based on the same algorithm irrespective of the typology level of application (EU or Country) and the age threshold definition for a child. This algorithm is provided in figure 3.

Figure 2 Data coding procedure for the type of household member for both EU and Country level classifications.

Type of household member- EU and Country level

Dependent Child

If **RB220_F**=1 and/ or **RB230_F**=1

EU level: <18 (or <16), Country level: ≤**Low_limit_2** (or ≤ **Low_limit_1**)

Dependent Child

Living with at least one parent

If **PL030**≠1 and **PL030**≠2 and (**PL020**≠1 or **PL025**≠1)

Young

If (**PL030**=1 or **Pl030**=2) or (**PL030**≠1 and **PL030**≠2 and **PL020**=1 and **PL025**=1)

If **PL030** is missing or if member's interview is not completed

EU level: 18-24 (or 16-24) Country level: **Low_limit_2**-24 (or **Low_limit_1** - 24)

RX020

Working age adult

Unknown

If **RB220_F**≠1 and **RB230_F**≠1

EU level: 25-64, Country level: 25- **Upper_limit**

Living with none of his/her parents

Working age adult

Working age adult

EU level: ≥ 65, Country level: ≥ **Upper_limit**

If **RX020** is missing

Not working age adult

Unknown

Both age thresholds for child definition are presented: 18 (or 16) at the EU level, Low_limit_2 (or Low_limit_1) at the country level

Figure 3 Data Coding procedure for the household type

```
                        ┌─────────────────────────────┐
                        │       Household Type         │
                        └─────────────────────────────┘

                                                              ──── Household type=5
                                              H_WA=1
                          H_U=0 and
                          H_DC=0          H_NWA=1
                                                         ──── Household type =6

            = 1           H_U= 0 and                 ──── Household type=11
                          H_DC ≥ 1

  ┌─────┐                H_U ≥ 1                      ──── Household type=-9
  │ H_A │
  └─────┘                                                 ──── Household type=7
                                              H_WA= 2
                          H_U= 0 and
                          H_DC= 0          H_NWA ≥ 1
            = 2                                           ──── Household type=8

                                          H_DC= 1  ── Household type=12

                          H_U= 0 and      H_DC= 2
                          H_DC ≥ 1                       Household type=13

                                          H_DC ≥ 3
                                                         Household type=14

                          H_U ≥ 1                    ──── Household type=-9

                          H_U= 0 and               ──── Household type=9
                          H_DC= 0
            ≥ 3           H_U= 0 and               ──── Household type=15
                          H_DC ≥ 1

                          H_U ≥ 1 and──             ──── Household type=15
                          H_DC ≥ 1
```

16
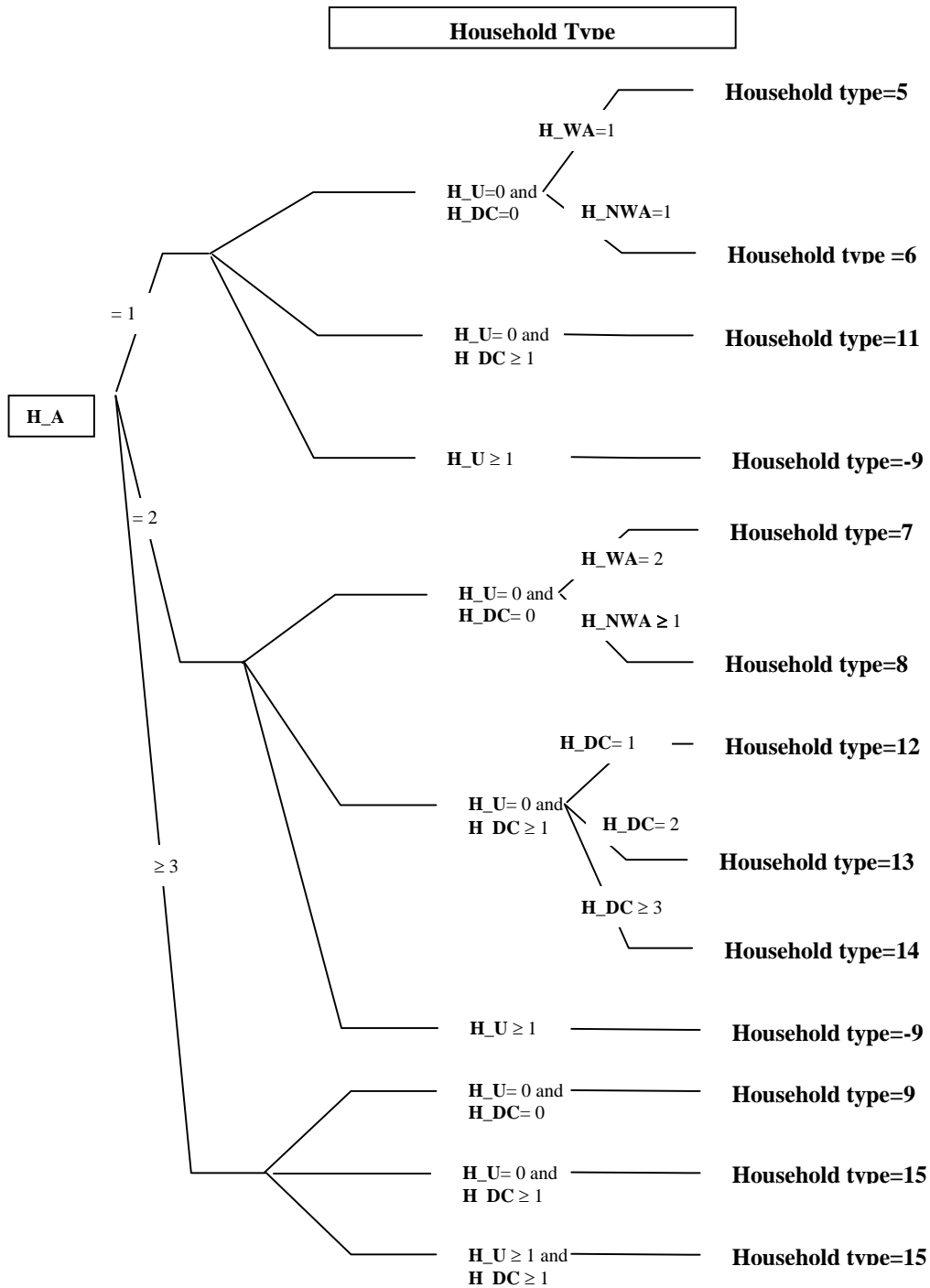
4. Household definition in HBS and aim of the HBS household typology

The HBS household definition, as it is presented in the recommendations for harmonization (European Commission, 2003b), is reported as follows:
"Increasingly restrictive definitions of what constitutes a household can be achieved by adding criteria from (1) to (4) below:
    (1) Co-residence (living together in the same dwelling unit)
    (2) Sharing of expenditures including joint provision of essentials of living
    (3) Pooling of income and resources
    (4) The existence of family or emotional ties
Eurostat recommends that the definition of the household for the purpose of HBS is based on the first two criteria shown above; co-residence and sharing the expenditures. This definition isolates units which, from a HBS perspective, form a whole for studying patterns of consumption expenditures and income." (European Commission 2003b).

The household typologies (type of household (1) and (2)) defined in HBS recommendations for harmonization aim to distinguish household structures such as the nuclear families from other household structures. The members are defined as children according to their age or, irrespective of their age, members are considered as children if they live with at least one of their parents. Furthermore, the members that are not considered as children are further distinguished as working age and not working age adults. In addition, household are distinguished between households where all their members are related and households where at least one of their members is not related to any other member in the household. The construction of the typologies (1) and (2) in HBS (European Commission 2003b) is based on a combination of some specific characteristics of the household members, where the dimension of the household relationships plays a central role on defining the type of household member.

4.1 HBS household type Conceptual derivation

Figure 4 displays the conceptual derivation of the household typologies (1,2) found in HBS recommendations. Likewise figure 1, it was not possible to present all the possible household structures due to the fact that the household size is a number without a predefined maximum value.

The household typologies that are considered here have the labels
One adult household
   01 One person, aged 65 years or more
   02 One person, aged 30 to 64 years
   03 One person, under 30 years
   04 One person with children up to 16 years old (or 18 years old as defined in type of household (2))
Couples without children
   05 Couple without children, older member aged 65 or more

06 Couple without children, older member under 65 years
Couple with children aged up to 16 years (or 18 years old as defined in type of household (2))
    07 with one child
    08 with two children
    09 with three or more children
Other households
    10 single parent or couple with at least one child more than 16 years old (or 18 years old as defined in type of household (2))
    11 Other households with all members related
    12 Other households with one or more members without being related
The numbered labels presented in figure 4 in the conceptual derivation of the HBS household type are those described above.

As it can be seen in figure 4 below, the conceptual derivation of the type of household member, a dimension that is needed for the computation of the household typology is presented. The conceptual dimensions for the construction of the household type in HBS are the "type of household member" and the "household size". The levels of the dimension "type of household member" in correspondence to the "household size" levels are combined in order to produce the target variable household type. The type of household member dimension is constructed with the use of the dimensions development stage and household relationships. The second dimension is applied only to the adult household members.

Furthermore, it need to be said that the term "adult child" found in figure below does not have the same definition as the one found in European Commission (2003b). Specifically, the recommendations for the type of household members found in European Commission (2003b) distinguish the children above the age of 15 (or 17) as "older children" and "adult children" depending on criteria such as whether they are students or not. However, such a distinction is not used for the computation of the household types (1) and (2). Therefore, in the present study the type of household member named as "adult child" refer to those members who are above the age of 15 (or 17 for the type of household (2)) and live with at least one of their parent.

4.2   HBS household type Operational definition

Table 3 provides the indicators, i.e. the measures of the dimensions used for the conversion of the target variable household type. In the dimension column the dimensions and their definitions are provided, while in the indicators column the indicators used for the measure of each conceptual dimension are given. As in table 1, the indicator for the type of household member is constructed with the use of the indicators that measure the dimensions "development stage" and "Household relationships". The levels of the above mentioned indicators are combined in order to produce the "type of household member" indicator. Likewise EU-SILC household typology, two measures for the dimension "development stage" are provided that differ in the age threshold used for the child definition.

Figure 4 Conceptual derivation of the Household type in HBS
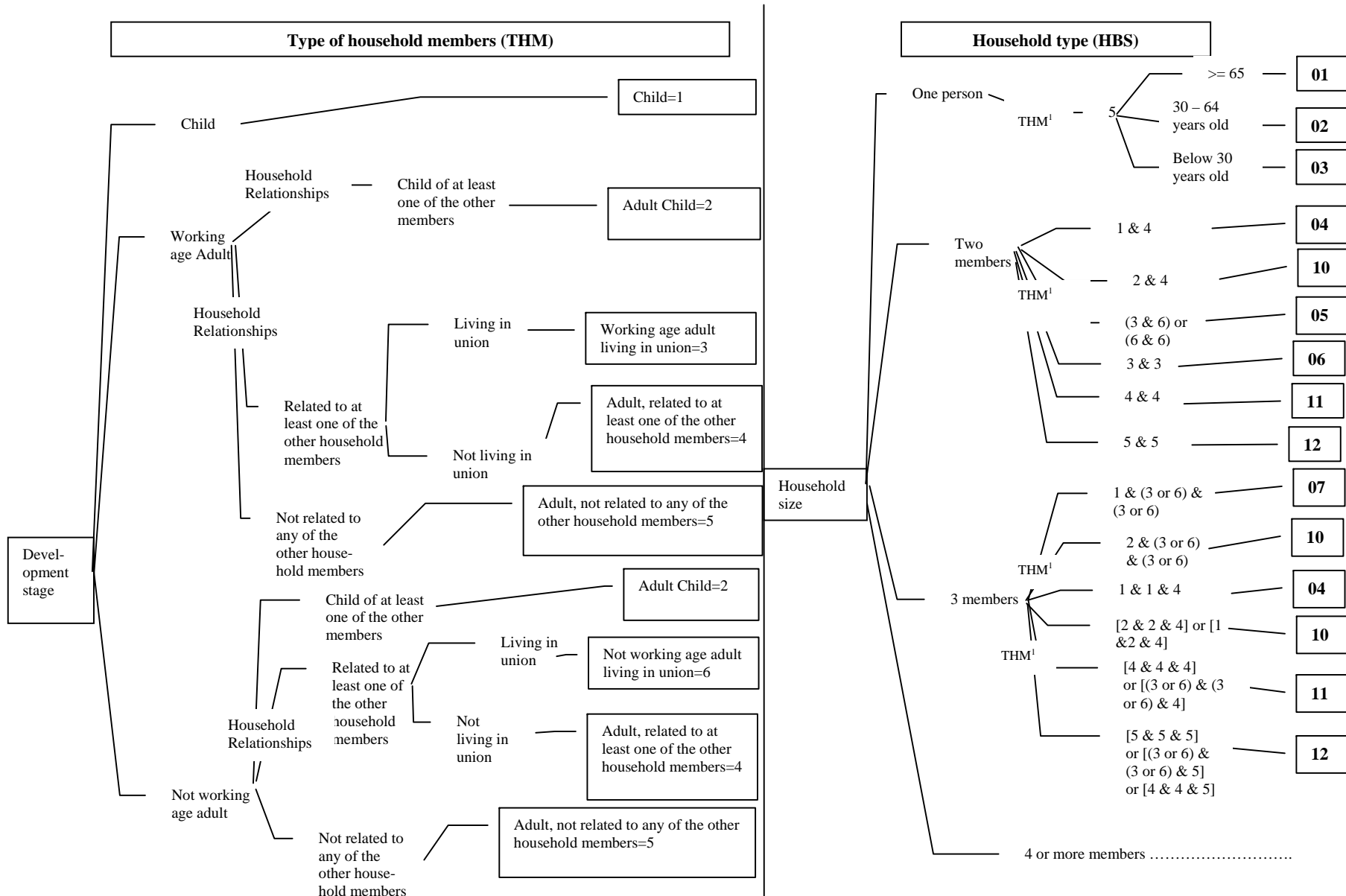
1. The Type of household member dimension is applied

Table 4 Dimensions with their corresponding indicators

Conceptual elements		Operational elements	
Dimensions		*Indicators*	
		Description	Codes
Type of household member: Classification of a household member according to some of his/her individual characteristics (for example: age, economic activity) or/and according to some other characteristics that attribute a status to a member relative to the characteristics of the other members in the household (for example: relationships between the household members)		This indicator is constructed by a combination of the indicators used for the measurement of the development stage and the household relationships	**1.** Child **2.** Adult Child **3.** Working age adult living in union **4.** Adult related to at least one of the other household members **5.** Adult related to none of the other household members **6.** Not working age adult living in union
Type of household member dimension	*Development stage*: The stage of the development of each member with levels that aim to separate the children from the adults. The adults are also being separated as working age and not working age adults.	The cut off points applied to the age of each member aim to distinguish the children from the adults. Two different indicators have been recommended for the measurement of the development stage. The first indicator determines the child with the upper age limit of 16 years old, while the second indicator determines the child with the upper age limit of 18 years old.	**1st indicator** **1.** Child (<16 years old) **2.** Working age adult (25-64 years old) **3.** Not working age adult (65 years old or more) **2nd indicator** **1.** Child (<18 years old) **2.** Working age adult (25-64 years old) **3.** Not working age adult (65 years old or more)
	Household relationships: The dimension refers to the relationships between the household members. A member of the household may (or may not) be related to at least one (none) member of the household. Members may considered to be related if they are related, to a specific degree, through blood, adoption or marriage (legally or live in a consensual union)	Child-parent relationship:	**1.** Living with at least one of his/hers parents **2.** Living with non of his/hers parents
		Couple relationships	**1.** Living in union **2.** Not living in union
		Other relationships	**1.** Adult related to at least one of the other household members **2.** Adult related to none of the other household members
Household size: Total number of household members. The household members are regarded as the group of people that constitute a household according to some defining criteria.		Sum of the household members. The definition for the household membership is described in (European Commission, 2003b)	Integer number greater or equal to 1 without a predefined maximum number

4.3   HBS household type data coding procedure

This subsection provides the data coding procedure for the conversion of the target variable household type as it is defined in HBS (type of household (1) and (2) in European Commission (2003b)). The variables needed for the computation of each indicator are provided in table 4. The variables and their value labels presented in table below are the proposed harmonized variables defined in European Commission (2003b) and may be adopted at a European level.   In other words, the application of the HBS household typology provided here is not based on actual data, specifically is based on those data that may be provided if the harmonized recommendations provided in European Commission (2003b) were followed in an EU level. The potential universe of this household typology is the EU member states because the purpose of the harmonized recommendations in European Commission (2003b) is to bridge the differences between HBS of the EU countries.

The variables H_CB, H_CA, H_UW, H_UNW, H_R, H_NR, H_N and H_U are not provided in European Commission (2003b). These variables are computed by the source HBS variables and are needed for the conversion of the HBS household typology.

Figure 5 and 6 describe the data coding procedure for the computation of the type of household member and the household type respectively. Figure 5 provides the algorithm for the conversion of the type of household member for both the development stage indicators that where described in table 4. The household type conversion algorithm is remained the same irrespective of the indicator used for the measurement of the development stage, and it is presented in figure 6.

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Table 5 Sources variables needed for the computation of each indicator

Indicator		Variables	
		Description	*Codes*
Development stage		**MB03**: Age (in complete years) of household members	A two digit number indicating the age (in complete years) of each member. Possible values for this variable are 00 to 97 years and 98 with indicates members that are 98 years old or more. 99 indicates that the information is not specified
Household Relationships	**Child-parent relationship**	**MB05**: Relationship This variable indicates the relationship of each member of the household with the head of the household. Specifically, this variable aims primary to demonstrate nuclear family relationships, not nuclear family relationships (parent or other relative) and no family relationships. The harmonization criteria that Eurostat recommends for the definition of the head of the household are the age threshold of 16 years old and the contribution to the household income. Specifically, Eurostat recommends that the head of the household should be defined as the person above the age of 15 which contributes most to the total household income. (European Commission, 2003b)	1Head of household 2 Spouse or partner 3 Child of the head or/and of the spouse 4 parent of the head and/or of the spouse 5 other relative 6 no family relationship (e.g. resident employee) 9 not specified
	Couple relationships	**MB04**: Marital status of household members In order to avoid confusion between the legal and the actual situation the following recommendations could be used for the classification of a member in the MB04 categories. If a person is living in a consensual union is coded with 2 irrelative of the fact that he/she may also be divorced, separated or widowed. Furthermore, if a person has never been married and is not living in cohabitation at the time of interview should be coded with 0	0 never married 1 married legally 2 Cohabitation (consensual union) 3 widowed 4 divorced or separated 9 not specified
	Other relationships	**MB05**: Relationship	As defined above
Household size		**H_CB**: Sum of the household members that are classified as children	Integer number greater or equal to 0 without a predefined maximum number
		H_CA: Sum of the household members that are classified as adult children	Integer number greater or equal to 0 without a predefined maximum number
		H_UW: Sum of the household members that are classified as working age adults living in union	Integer number greater or equal to 0 without a predefined maximum number
		H_UNW: Sum of the household members that are classified as not working age adults living in union	Integer number greater or equal to 0 without a predefined maximum number
		H_R: Sum of the household members that are classified as adults related to at least one of the other household members	Integer number greater or equal to 0 without a predefined maximum number
		H_NR: Sum of the household members that are classified as adults not related to any of the other household members	Integer number greater or equal to 0 without a predefined maximum number
		H_N: Sum of the household members	Integer number greater or equal to 1 without a predefined maximum number
		H_U: Sum of the household members that are classified as unspecified in the type of household member indicator	Integer number greater or equal to 0 without a predefined maximum number

Figure 5 Data coding procedure for the type of household member used in HBS household type.
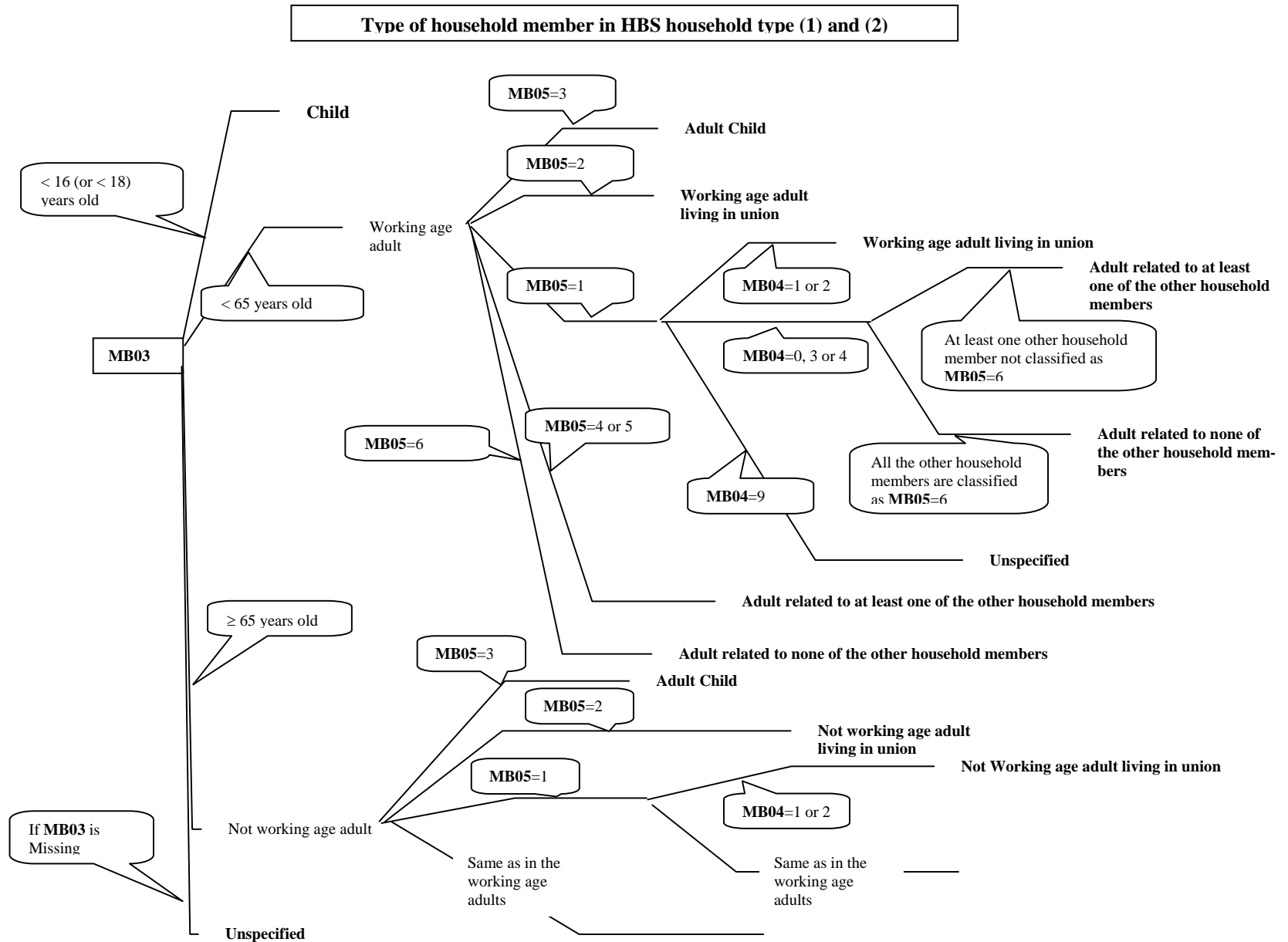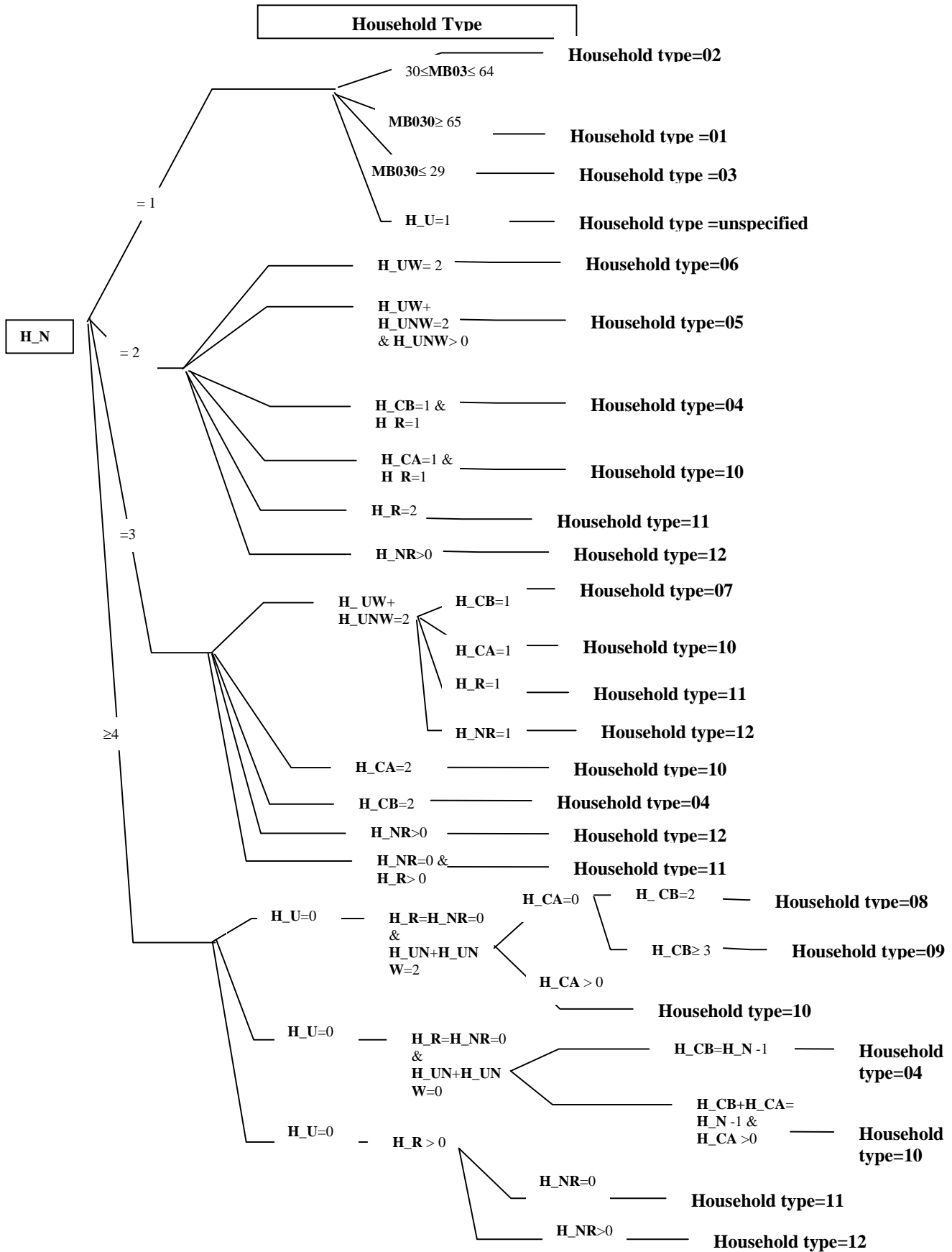
Type of household member in HBS household type (1) and (2)

Child

< 16 (or < 18) years old

Working age adult

MB05=3 — Adult Child

MB05=2 — Working age adult living in union

MB05=1 — Working age adult living in union

MB04=1 or 2

MB04=0, 3 or 4

Adult related to at least one of the other household members

At least one other household member not classified as MB05=6

Adult related to none of the other household members

MB05=4 or 5

MB05=6

All the other household members are classified as MB05=6

MB04=9

Unspecified

Adult related to at least one of the other household members

< 65 years old

MB03

≥ 65 years old

Adult related to none of the other household members

MB05=3 — Adult Child

MB05=2 — Not working age adult living in union

MB05=1 — Not Working age adult living in union

MB04=1 or 2

Not working age adult

Same as in the working age adults

Same as in the working age adults

If MB03 is Missing

Unspecified

Figure 6 Data Coding procedure for the household type

Household Type

30≤MB03≤ 64 — Household type=02

MB030≥ 65 — Household type =01

MB030≤ 29 — Household type =03

H_U=1 — Household type =unspecified

= 1

H_N

= 2

H_UW= 2 — Household type=06

H_UW+ H_UNW=2 & H_UNW> 0 — Household type=05

H_CB=1 & H_R=1 — Household type=04

H_CA=1 & H_R=1 — Household type=10

H_R=2 — Household type=11

H_NR>0 — Household type=12

=3

H_ UW+ H_UNW=2

H_CB=1 — Household type=07

H_CA=1 — Household type=10

H_R=1 — Household type=11

H_NR=1 — Household type=12

H_CA=2 — Household type=10

H_CB=2 — Household type=04

H_NR>0 — Household type=12

H_NR=0 & H_R> 0 — Household type=11

≥4

H_U=0 — H_R=H_NR=0 & H_UN+H_UNW=2

H_CA=0 — H_ CB=2 — Household type=08

H_CB≥ 3 — Household type=09

H_CA > 0 — Household type=10

H_U=0 — H_R=H_NR=0 & H_UN+H_UNW=0

H_CB=H_N -1 — Household type=04

H_CB+H_CA= H_N -1 & H_CA >0 — Household type=10

H_U=0 — H_R > 0

H_NR=0 — Household type=11

H_NR>0 — Household type=12

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5. Appendix

Table 6: Ages at the end of the compulsory education, ages at the end of the secondary education and normal pension ages for each EU member state (except Bulgaria, Malta and Romania), as well as for Iceland and Norway

Country	Age-End of compulsory education or School Leaving age[1]	Age –end of (upper) secondary education	Pension age[2]	
			Men	**Women**
Austria	15	The upper secondary education includes a series of vocational schools, colleges and secondary academic schools. The duration of these programs varies between 1 to 4 years. Upper secondary and academic secondary education last up to the age of 17, while vocational education last up to the age of 18.	65	Currently 60 and will increase to 65 by 2033
Belgium	18. From the 16th to the 18th birthday the persons are obligated to pursue at least part time education	A person completes the upper secondary education at 18 years old	65	Eligibility age in 2004 63. It will increase to 64 in 2006 and 65 in 2009
Cyprus	15	The upper secondary education, including vocational and technical training, is completed at the age of 18 years old	65. For a civil servant the retirement age is 63 by July 2008	65. For a civil servant the retirement age is 63 by July 2008
Czech Republic	15	Three different optional upper secondary schools. The duration of the school attendance depends on the type of the secondary education school. The general secondary, academic secondary and common technical secondary education last unit the age of 19, while the vocational secondary last up to the age of 18 or 19.	63	59-62 depending on the number of children that they raised, 63 for women without children
Denmark	16	The upper secondary education is composed with different educational programs The duration of the most common programs is ranged from 2 to 3 years. Usually a person completes the most common programs at the age of 18 or 19 years old	65	65
Estonia	15	The general upper secondary education or the vocational secondary education are educational programs with 3 years duration. Therefore, the upper secondary education is completed at the age of 18 years old.	63	60, which will increase to 63 by 2016
Finland	16	The upper secondary educational system is composed with the upper secondary schools and the educational schools. The upper secondary education is usually completed at the age of 19 years old	65	65

Country	Age-End of compulsory education or School Leaving age[1]	Age –end of (upper) secondary education	Pension age[2]	
			Men	**Women**
France	16	The upper secondary education system which is composed with schools that provide general, technological and vocational education courses is normally completed at the age of 18 years old.	60	60
Germany	15	The secondary education in Germany includes four types of schools and the duration of the attendance depends on the type of school. The general secondary and higher secondary education last up to the age of 19, while the majority of the vocational secondary programs last up to age of 18.	65	65
Greece	15	The upper secondary education system last three years and is usually completed at the age of 18.	65	60 Equalized at 65 for people entering the labour force from 1993
Hungary	16	The usual age at which the students complete the upper secondary education is 18 or 19 years old	62 from 2000	55. will reach 62 from the end of 2009
Iceland	16	The maximum length of the courses in upper secondary schools (including vocational education) is 4 years. The upper secondary and the technical/vocational education last up to the age of 20.	67	67
Ireland	16	A typical secondary school in Ireland consists of a junior cycle with a 3 years duration, a usually optional transition year and a senior cycle of length 2 years. Most students complete their secondary education between the ages 17-19.	66	66
Italy	16	The upper secondary education (for all types of schools) is usually completed at the age of 19.	65 from 2008	60 from 2008
Latvia	15	The secondary education in Latvia is composed with several educational programs and its length depends on the program. Usually the age at which the upper secondary education is completed is 18 or 19 years old.	62	62 since the 1st of July 2008
Lithuania	16	The usual age at which a student completes a senior secondary program is 19 years while the usual age at which a student completes a vocational program is 20 years	62.5	59.5. Will rise to 60 by 2006
Luxembourg	15	The secondary (or the technical secondary) school is completed at the age of 19 years old	65	65

Country	Age-End of compulsory education or School Leaving age[1]	Age –end of (upper) secondary education	Pension age[2]	
			Men	**Women**
Netherlands	16. After the age of 16 there is a partial attendance obligation which lasts until the age of 17.	The secondary education consists of preparatory secondary vocational education, senior general education and pre-university education. The senior general education is completed at the age of 17 while the pre-university education is completed at the age of 18.	65	65
Norway	16	The upper secondary education (either with general or vocational studies) is completed at the age of 19 years old.	67	67
Poland	18	The upper secondary (general or vocational secondary) is completed at the age of 19, while the technical secondary is completed at the age of 20.	65	60
Portugal	15	The upper secondary education (either general or technical/ vocational) is completed at the age of 18	65	65
Slovakia	16	The general, vocational and specialized secondary education programs are completed at the ages of 18, 19 and 19 respectively	62 from 2006	The increase in pension age 62 will be spread over the period 2004-2014
Slovenia	15	The general and technical secondary programs are completed at the age of 19 while the vocational secondary programs are completed at the age of 17 or 18.	?	?
Spain	16	The upper secondary education is completed at the age of 18	65	65
Sweden	16	The upper secondary system in Sweden provides programs with 3 years length. The upper secondary education is completed at the age of 19 years old	65	65
United Kingdom	16	The upper level of the secondary school system (Sixth Form) in UK is completed at the age of 18.	65	Currently 60. Will reach 65 during the period 2010-2020

1. Melchiorre (2004).
2. OECD (2007)

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7. Conversion Syntaxes

7.1 Conversion Syntax for the calculation of the EU-SILC household type at the EU level

```
{############# Download the R-file data set##########}
GET
  FILE='C:.............\rfile_2005.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.

SORT CASES BY
  RB020 (A) RX030 (A) RB030 (A) . {#####RB020 (Country), RX030 (Household id), RB030
(Member id)##########}

{############## Download the P-file dataset ##############}
GET
  FILE='C:................\pfile_2005.sav'.
DATASET NAME DataSet2 WINDOW=FRONT.

SORT CASES BY
  RB020 (A) RX030 (A) RB030 (A) .


DATASET ACTIVATE DataSet1.
DATASET CLOSE DataSet2.

{################# GET THE PL030, PL020, and PL025 variables needed to compute the type
of household member indicator from the p-file################}
MATCH FILES /FILE=*
 /FILE='DataSet2'
 /BY RB020 RX030 RB030
 {/DROP= all the other variables from the P-file not needed to be merged in the R-file}  .
EXECUTE.

{############### Calculate Working age adult (WA), Not working age adult (NWA), De-
pendent Child (DC) and Unknown (U) ################}

DO IF ((RX020 GE 25) AND (RX020 LE 64)).
COMPUTE WA=1.
ELSE IF (RX020 GE 65).
COMPUTE NWA=1.
```

```
ELSE IF (RX020 LE 15).    {######## or ELSE IF (RX020 LE 17). #########}
COMPUTE DC=1.
ELSE IF ((RX020 LE 24) AND (RX020 GE 16)).    {########  or ELSE IF ((RX020 LE 24)
AND (RX020 GE 18)). #########}
DO IF ((RB220_F NE 1) AND (RB230_F NE 1)).
COMPUTE WA=1.
ELSE IF ((RB220_F EQ 1) OR (RB230_F EQ 1)).
DO IF ((PL030 EQ 1) OR (PL030 EQ 2)).
COMPUTE WA=1.
ELSE IF ((PL030 GE 3) OR (PL030 LE 9)).
DO IF ((PL020 EQ 1) AND (PL025 EQ 1)).
COMPUTE WA=1.
ELSE IF ((PL020 NE 1) OR (PL025 NE 1)).
COMPUTE DC=1.
END IF.
END IF.
DO IF ((PL030_F EQ -1) OR ((RB250 GE 21) AND (RB250 LE 33))).
COMPUTE U=1.
END IF.
END IF.
ELSE IF (MISSING(RX020)).
COMPUTE U=1.
END IF.
EXECUTE.


{############ Compute the variables H_DC, H_WA, H_NWA, H_A and H_U
##############}
AGGREGATE
 /OUTFILE=*
 MODE=ADDVARIABLES
 /BREAK=RB020 RX030
 /H_WA 'Total number of Working age adults in the household' = SUM(WA)
 /H_DC 'Total number of dependent children in the household' = SUM(DC)
 /H_U 'Total number of unknowns in the household' = SUM(U)
 /H_NWA 'Total number of Not working adults in the household'=SUM(NWA).

COMPUTE H_A=H_WA+H_NWA.
EXECUTE.


{############# Calculate the Household Type (HT) ############}

DO IF ((MISSING(H_U)) AND (MISSING(H_DC))).
DO IF (H_A EQ 1).
DO IF (H_WA EQ 1).
```

```
COMPUTE HT=5.
ELSE IF (H_NWA EQ 1).
COMPUTE HT=6.
END IF.
ELSE IF (H_A EQ 2).
DO IF (H_WA EQ 2).
COMPUTE HT=7.
ELSE IF (H_NWA GE 1).
COMPUTE HT=8.
END IF.
ELSE IF (H_A GE 3).
COMPUTE HT=9.
ELSE IF (MISSING(H_A)).
COMPUTE HT=-9.
END IF.
ELSE IF ((MISSING(H_U)) AND (H_DC GE 1)).
DO IF (H_A EQ 1).
COMPUTE HT=11.
ELSE IF ((H_A EQ 2) AND (H_DC EQ 1)).
COMPUTE HT=12.
ELSE IF ((H_A EQ 2) AND (H_DC EQ 2)).
COMPUTE HT=13.
ELSE IF ((H_A EQ 2) AND (H_DC GE 3)).
COMPUTE HT=14.
ELSE IF (H_A GE 3).
COMPUTE HT=15.
END IF.
ELSE IF (H_U GE 1).
DO IF ((H_A GE 3) AND (H_DC GE 1)).
COMPUTE HT=15.
ELSE.
COMPUTE HT=-9.
END IF.
END IF.
EXECUTE.
```

7.2 Conversion Syntax for the calculation of the EU-SILC household type at Country level

```
{############ Download the R-file data set##########}
GET
 FILE='C:.............\rfile_2005.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.


SORT CASES BY
```

RB020 (A) RX030 (A) RB030 (A) . {#####RB020 (Country), RX030 (Household id), RB030 (Member id)##########}

{############## Download the P-file dataset ##############}
GET
  FILE='C:................\pfile_2005.sav'.
DATASET NAME DataSet2 WINDOW=FRONT.

SORT CASES BY
  RB020 (A) RX030 (A) RB030 (A) .

DATASET ACTIVATE DataSet1.
DATASET CLOSE DataSet2.

{################ GET THE PB150, PL030, PL020, and PL025 variables needed from the p-file################}
MATCH FILES /FILE=*
 /FILE='DataSet2'
 /BY RB020 RX030 RB030
 {/DROP= all the other variables from the P-file not needed to be merged in the R-file} .
EXECUTE.

{######################### Calculate age thresholds for each country with the lower limit to be determined by the age at which the compulsory education ends #########################}

DO IF (RB020='AT').
COMPUTE Low_Limit_1=15.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='BE').
COMPUTE Low_Limit_1=18.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='CY').
COMPUTE Low_Limit_1=15.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='CZ').
COMPUTE Low_Limit_1=15.
COMPUTE Upper_Limit=61.
ELSE IF (RB020='DK').

```
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='EE').
COMPUTE Low_Limit_1=15.
DO IF (PB150=1).
COMPUTE Upper_Limit=63.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='FI').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='FR').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=60.
ELSE IF (RB020='DE').
COMPUTE Low_Limit_1=15.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='GR').
COMPUTE Low_Limit_1=15.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='HU').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=62.
ELSE IF (RB020='IS').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=67.
ELSE IF (RB020='IE').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=66.
ELSE IF (RB020='IT').
COMPUTE Low_Limit_1=16.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='LV').
COMPUTE Low_Limit_1=15
COMPUTE Upper_Limit=62.
```

```
ELSE IF (RB020='LT').
COMPUTE Low_Limit_1=16.
DO IF (PB150=1).
COMPUTE Upper_Limit=62.5.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='LU').
COMPUTE Low_Limit_1=15.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='NL').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='NO').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=67.
ELSE IF (RB020='PL').
COMPUTE Low_Limit_1=18.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='PT').
COMPUTE Low_Limit_1=15.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='SK').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=62.
ELSE IF (RB020='ES').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='SE').
COMPUTE Low_Limit_1=16.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='UK').
COMPUTE Low_Limit_1=16.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
END IF.
EXECUTE.
```

{######################### Calculate age thresholds for each country with the lower limit to be determined by the age at which the secondary education ends #########################}

```
DO IF ((RB020='AT')).
COMPUTE Low_Limit_2=17.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='BE').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='CY').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='CZ').
COMPUTE Low_Limit_2=19.
COMPUTE Upper_Limit=61.
ELSE IF (RB020='DK').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='EE').
COMPUTE Low_Limit_2=18.
DO IF (PB150=1).
COMPUTE Upper_Limit=63.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='FI').
COMPUTE Low_Limit_2=19.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='FR').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=60.
ELSE IF (RB020='DE').
COMPUTE Low_Limit_2=19.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='GR').
COMPUTE Low_Limit_2=18.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
```

```
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='HU').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=62.
ELSE IF (RB020='IS').
COMPUTE Low_Limit_2=20.
COMPUTE Upper_Limit=67.
ELSE IF (RB020='IE').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=66.
ELSE IF (RB020='IT').
COMPUTE Low_Limit_2=19.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='LV').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=62.
ELSE IF (RB020='LT').
COMPUTE Low_Limit_2=19.
DO IF (PB150=1).
COMPUTE Upper_Limit=62.5.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
ELSE IF (RB020='LU').
COMPUTE Low_Limit_2=19.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='NL').
COMPUTE Low_Limit_2=17.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='NO').
COMPUTE Low_Limit_2=19.
COMPUTE Upper_Limit=67.
ELSE IF (RB020='PL').
COMPUTE Low_Limit=19.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
```

```
ELSE IF (RB020='PT').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='SK').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=62.
ELSE IF (RB020='ES').
COMPUTE Low_Limit_2=18.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='SE').
COMPUTE Low_Limit_2=19.
COMPUTE Upper_Limit=65.
ELSE IF (RB020='UK').
COMPUTE Low_Limit_2=18.
DO IF (PB150=1).
COMPUTE Upper_Limit=65.
ELSE IF (PB150=2).
COMPUTE Upper_Limit=60.
END IF.
END IF.
EXECUTE.


{############### Calculate the Working age adults (WA), Not-working age adults (NWA),
Dependent Children (DC) and Unknown (U) ################}

DO IF ((RX020 GE 25) AND (RX020 LT Upper_Limit)).
COMPUTE WA=1.
ELSE IF (RX020 GE Upper_Limit).
COMPUTE NWA=1
ELSE IF (RX020 LE Low_Limit_1). {#### or ELSE IF (RX020 LE Low_Limit_2). ####}
COMPUTE DC=1.
ELSE IF ((RX020 LE 24) AND (RX020 GT Low_Limit_1)). {#### or  ELSE IF ((RX020 LE
24) AND (RX020 GT Low_Limit_2)). ####}
DO IF ((RB220_F NE 1) AND (RB230_F NE 1)).
COMPUTE WA=1.
ELSE IF ((RB220_F EQ 1) OR (RB230_F EQ 1)).
DO IF ((PL030 EQ 1) OR (PL030 EQ 2)).
COMPUTE WA=1.
ELSE IF ((PL030 GE 3) OR (PL030 LE 9)).
DO IF ((PL020 EQ 1) AND (PL025 EQ 1)).
COMPUTE WA=1.
ELSE IF ((PL020 NE 1) OR (PL025 NE 1)).
COMPUTE DC=1.
END IF.
```

```
END IF.
DO IF ((PL030_F EQ -1) OR ((RB250 GE 21) AND (RB250 LE 33))).
COMPUTE U=1.
END IF.
END IF.
ELSE IF (MISSING(RX020)).
COMPUTE U=1.
END IF.
EXECUTE.


{########### Compute the variables H_WA, H_NWA, H_DC and H_U and
H_A#############}
AGGREGATE
 /OUTFILE=*
 MODE=ADDVARIABLES
 /BREAK=RB020 RX030
 /H_WA 'Total number of Working Age Adults in the household' = SUM(WA)
 /H_NWA 'Total number of Not-Working Age Adults in the household=SUM(NWA)
 /H_DC 'Total number of dependent children in the household' = SUM(DC)
 /H_U 'Total number of unknowns in the household' = SUM(U).


COMPUTE H_A=H_WA+H_NWA.
EXECUTE.


{############# Calculate the Household Type (HT) ############}

DO IF ((MISSING(H_U)) AND (MISSING(H_DC))).
DO IF (H_A EQ 1).
DO IF (H_WA EQ 1).
COMPUTE HT=5.
ELSE IF (H_NWA EQ 1).
COMPUTE HT=6.
END IF.
ELSE IF (H_A EQ 2).
DO IF (H_WA EQ 2).
COMPUTE HT=7.
ELSE IF (H_NWA GE 1).
COMPUTE HT=8.
END IF.
ELSE IF (H_A GE 3).
COMPUTE HT=9.
ELSE IF (MISSING(H_A)).
```

```
COMPUTE HT=-9.
END IF.
ELSE IF ((MISSING(H_U)) AND (H_DC GE 1)).
DO IF (H_A EQ 1).
COMPUTE HT=11.
ELSE IF ((H_A EQ 2) AND (H_DC EQ 1)).
COMPUTE HT=12.
ELSE IF ((H_A EQ 2) AND (H_DC EQ 2)).
COMPUTE HT=13.
ELSE IF ((H_A EQ 2) AND (H_DC GE 3)).
COMPUTE HT=14.
ELSE IF (H_A GE 3).
COMPUTE HT=15.
END IF.
ELSE IF (H_U GE 1).
DO IF ((H_A GE 3) AND (H_DC GE 1)).
COMPUTE HT=15.
ELSE.
COMPUTE HT=-9.
END IF.
END IF.
EXECUTE.
```

7.3 Conversion Syntax for the calculation of the HBS household types (1) and (2) at the EU level

```
{########## Load the Member file data set##########}
GET
  FILE='C:........sav'.
DATASET NAME DataSet1 WINDOW=FRONT.

SORT CASES BY
  Country (A) MA04 (A) MA05 (A). {###### MA04: Identification number of the households,
MA05: Line number of the member of the household ######}

{##Compute the indicator "Type of household member" , i.e. compute indicators for child (CB),
adult child (CA), Working age adult living in union (UW), Not working age adult living in union
(UNW), Related adult (R) , Unrelated adult (NR) and Unspecified (U)##}

DO IF (MB03 LE 15). {###### or DO IF (MB03 LE 17). ########}
COMPUTE CB=1.
END IF.
EXECUTE.
```

```
DO IF (MB05 EQ 3).
DO IF ((MB03 GE 16) AND (MB03 NE 99)). {###### or ELSE IF ((MB03 GE 18) AND
(MB03 NE 99)). ##########}
COMPUTE CA=1.
END IF.
ELSE IF (MB05 EQ 1).
DO IF ((MB04 EQ 1) OR (MB04 EQ 2)).
DO IF ((MB03 GE 65) AND (MB03 NE 99)).
COMPUTE UNW=1.
ELSE IF (MB03 LE 64).
COMPUTE UW=1.
END IF.
ELSE IF (MB04 EQ 9).
COMPUTE U=1.
END IF.
ELSE IF (MB05 EQ 2).
DO IF ((MB03 GE 65) AND (MB03 NE 99)).
COMPUTE UNW=1.
ELSE IF (MB03 LE 64).
COMPUTE UW=1.
END IF.
ELSE IF ((MB05 EQ 4) OR (MB05 EQ 5)).
DO IF (MB03 GE 16). {##### or DO IF (MB03 GE 18). ########}
COMPUTE R=1.
END IF.
ELSE IF (MB05 EQ 6).
DO IF (MB03 GE 16). {##### or DO IF (MB03 GE 18). ########}
COMPUTE NR=1.
END IF.
ELSE IF (MB05 EQ 9).
DO IF (MB04 EQ 9).
COMPUTE U=1.
END IF.
END IF.
EXECUTE.
```

{########### Compute the Household size (H_N), number of children in the household
(H_CB), number of adult children in the household (H_CA), number of working age adults liv-
ing in union in the household (H_UW), number of not working age adults living in union in the
household (H_UNW), number of related adults in the household (H_R), number of not related
adults in the household (H_NR), maximum age among the household members (MAX) and
number of unspecified in the household (H_U)##############}

```
AGGREGATE
 /OUTFILE=*
 MODE=ADDVARIABLES
 /BREAK=Country MA04
 /H_CB 'Total number of children in the household'=SUM(CB)
 /H_CA 'Total number of adult children in the household'=SUM(CA)
 /H_UW 'Total number of working age adults living in union in the household'=SUM(UW)
 /H_UNW ' Total number of not working age adults living in union in the house-
hold'=SUM(UNW)
 /H_R 'Total number of related adults in the household'=SUM(R)
 /H_NR 'Total number of unrelated adults in the household'=SUM(NR)
 /MAX 'maximum age among the household members'=MAX(MB03)
 /H_U 'Total number of unspecified in the household'=SUM(U)
 /H_N=N.

{#############Load the Household file ##############}
GET
  FILE='C:.................sav'.
DATASET NAME DataSet2 WINDOW=FRONT.

SORT CASES BY
  Country (A) MA04 (A).


DATASET ACTIVATE DataSet2.
DATASET CLOSE DataSet1.

{################ GET THE VARIABLES NEEDED TO COMPUTE THE Household type
(HT), i.e. H_CB, H_CA, H_UW, H_UNW, H_R, H_NR, MAX, H_U, H_N
################}

MATCH FILES /TABLE=*
 /FILE='C:……….sav' {Member file}
 /BY Country MA04
{/DROP= all the other variables from the Member file not needed to be merged in the House-
hold-file}  .
EXECUTE.

DO IF (H_N EQ 1).
DO IF (MAX GE 65).
COMPUTE HT=01.
ELSE IF ((MAX GE 30) OR (MAX LE 64)).
COMPUTE HT=02.
ELSE IF (MAX LE 29).
```

```
COMPUTE HT=03.
END IF.
ELSE
DO IF ((H_N EQ H_CB +1) AND (MISSING(H_U)) AND (SUM(H_UW,H_UNW,H_CA) EQ
0) AND (H_CB GE 1).
COMPUTE HT=04.
ELSE IF ((SUM(H_UW,H_UNW) EQ 2) AND (H_N EG 2)).
DO IF (H_UNW GE 1).
COMPUTE HT=05.
ELSE. IF (H_UW EQ 2).
COMPUTE HT=06.
END IF.
ELSE IF ((SUM(H_UW,H_UNW) EQ 2) AND (H_N EQ 3) AND (H_CB EQ 1)).
COMPUTE HT=07.
ELSE IF ((SUM(H_UW,H_UNW)  EQ 2) AND (H_N EQ 4) AND (H_CB EQ 2)).
COMPUTE HT=08.
ELSE IF ((SUM(H_UW,H_UNW)  EQ 2) AND (H_N EQ H_CB +2) AND (H_CB GE 3)).
COMPUTE HT=09.
ELSE IF (((H_N EQ H_CA + H_CB + 1) AND (H_CA GE 1) AND MISSING(H_U)) OR
((SUM(H_UW,H_UNW)  EQ 2) AND (H_N EQ H_CA + H_CB + 2) AND (H_CA GE 1))).
COMPUTE HT=10.
ELSE IF (H_NR EQ 0).
COMPUTE HT=11.
ELSE IF (H_NR GE 1).
COMPUTE HT=12.
END IF.
END IF.
EXECUTE.
```