Chapter 5
Core Social Variables and Their Implementation in Measurement Instruments

This chapter describes the instruments with which the core socio-demographic variables can be measured in cross-national comparative research. After outlining and discussing current measurement practice in comparative social research for each core variable, we shall present the instruments that we have developed ourselves. With these instruments, optimal research results can be achieved in the case of research questions similar to those pursued by the present authors.

5.1 Education

In many statistical analyses, education – next to sex and age – is considered to be the central background variable when it comes to explaining phenomena such as social inequality. However, in many cross-national comparative projects, education is operationalized and collected in national categories. Therefore, cross-national or cross-cultural harmonisation does not take place until the data analysis stage. If the researchers who perform the analysis are unfamiliar with the education systems of other countries, they tend to count the categories and rank them, all too often intuitively, as 'high', 'medium', or 'low'. This practice is common, but unsatisfactory.

5.1.1 Handling Education in National and International Social Surveys

A number of instruments are used to measure education in national and international surveys. At the national level, researchers usually have no trouble handling such instruments because they are commonly applied in national surveys and do not

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cause any major problems during data collection or analysis. Most respondents are familiar with the categories, and researchers do not need to know a lot about the national education system to be able to analyse the data.

Years of Schooling

Cross-national comparative studies tend to follow the North American example by measuring education on the basis of 'years of schooling' (see the General Social Survey (GSS) questionnaire and the ESS questionnaire). Despite the fact that the variable must also be measured using a uniformly defined concept and a uniformly formulated question, it still causes general confusion – especially in Germany. What does '11' mean, for example? Does it mean that the student left school after spending 11 years in the education system? If so – and if he attended school in Germany – did he obtain a *Hauptschule*[1] leaving certificate after repeating 1 year – or 2 years, depending on the federal state and type of certificate? Or did he obtain a *Realschule*[2] leaving certificate after repeating 1 year – or without repeating a year, if the highest certificate attainable is what counts? And/or, if he belonged to a certain cohort, did he leave the general state education system without a leaving certificate? Or does '11 years of schooling' always mean 'left school after completing 11th grade'? Some surveys also collect the respondent's age when leaving school (see the French census, for example). This adds a further imponderability to those mentioned above, namely the respondent's age when starting school, and the question of whether he interrupted his school career (what school types are included?). Moreover, the extent to which pre-school education should be included in 'years of schooling' has not even been discussed.

Education Sectors

Education sectors are easier to measure. There are three main sectors: primary, secondary, and tertiary. The latter sector prepares students for high-status occupations (see Eurydice, 2011b):

1. Primary education in Germany generally covers grades 1 to 4, but in the states of Berlin and Brandenburg it also includes grades 5 and 6. It does not lead to a school leaving certificate.
2. In Germany, secondary education comprises all types of secondary school – *Hauptschule* (lower secondary), *Gesamtschule* (comprehensive school at lower and upper secondary level), *Realschule*, and *Gymnasium* (lower and

[1] The *Hauptschule* is a type of school at lower secondary level. A *Hauptschule* leaving certificate is normally obtained after 9 years schooling.

[2] The *Realschule* is a type of school at lower secondary level. A *Realschule* leaving certificate is normally obtained after 10 years of schooling.

upper secondary). In addition to education provided at general education schools, secondary education also includes vocational education in the 'dual system' (vocational school plus on-the-job training) and at full-time upper secondary vocational schools that leads to a vocational qualification. The secondary stage can be divided into two levels. Lower secondary lasts until Grade 10 (*Realschule* leaving certificate) and includes the *Hauptschul*e. Upper secondary begins after completion of compulsory full-time schooling. Upper secondary schools in Germany include those schools that lead to the *Abitur* (general higher education entrance qualification) and vocational schools.

3. The German tertiary sector comprises all educational institutions that cater for students with an upper-secondary qualification and provide education that prepares students for high-status occupations. They include higher education institutions (universities and universities of applied sciences), and establishments outside the higher education system, for example *Berufsakademien* and *Fachschulen*.

The various sectors can be measured with relative ease on the basis of completed attendance or certificates. They can also be measured reliably in cross-national comparative surveys because they classify education in three defined categories: 'low', 'medium', or 'high'. However, the successful completion of the primary education stage poses a problem because, in many education systems, it is not the first general education qualification. With just three categories (and two subcategories for the secondary sector) the analytical potential of this measurement instrument is limited.

Certificates

From an analytical point of view, the measurement of education on the basis of national certificates is more flexible. The certificates in question are general education and vocational education leaving certificates, including those of the tertiary system. In many countries, both 'certificates' and 'years of schooling' are collected (see also Section 5.1.3).

Up to 1990, there were two German education systems – the Federal Republic of Germany's (FRG) and the German Democratic Republic's (GDR). The respondents who participate in current surveys in Germany include graduates of both systems. Therefore, researchers here are faced with the task of comparing two systems (see Figs. 5.1 and 5.2 and Table 5.1) because the FRG has a three-tier secondary school system, with leaving certificates after 9, 10, or 12/13 years of schooling, whereas the GDR had a two-tier secondary system with leaving certificates after 10 and 12/13 years of schooling respectively. Therefore, when collecting 'education' in surveys, both official statistical agencies and academic researchers include the leaving certificates of both systems in their response categories (see Table 5.2).

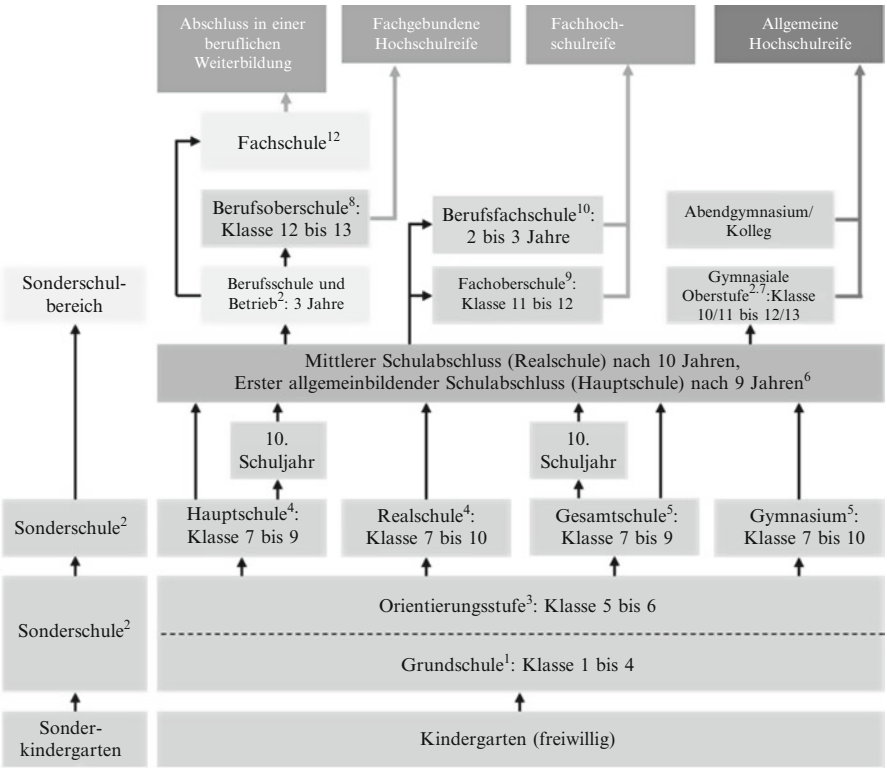

Fig. 5.1 Basic structure of the educational system in the Federal Republic of Germany (Source: KMK (Standing Conference of the Ministers of Education and Cultural Affairs of the *Laender*), 2009, p. 38)

Notes, Fig. 5.1 (see KMK, 2011):

1. *Grundschule* (primary school). In some *Laender* there are special types of transition from kindergarten to primary school (preparatory classes, school kindergartens). In Berlin and Brandenburg, primary school comprises six grades.
2. *Sonderschule* (special needs school): Children with disabilities either attend special types of general-education and vocational schools or integrative schools. The designation of the special needs schools varies depending on the law of the respective *Land* (*Förderschule*/*Schule für Behinderte*/*Sonderschule*/*Förderzentrum*). Special needs schools for children with learning difficulties, and the special needs schools that focus on 'cognitive development', have school-specific leaving certificates.
3. Orientation phase: Grades 5 and 6 represent a phase of intensive support, observation and guidance with regard to students' future educational trajectory and its focus.
4. The *Hauptschule* and *Realschule* programmes can also be pursued at schools that offer several courses of education. The designation of these schools varies from *Land* to *Land*. The following school types accommodate *Hauptschule* and *Realschule* programmes under a common educational and organisational umbrella: *Mittelschule* (Saxony), *Regelschule* (Thüringen), S*ekundarschule* (Bremen, Sachsen-Anhalt),

Erweiterte Realschule (the Saarland), *Verbundene Haupt– und Realschule* (Hessen), *Haupt– und Realschule* (Hamburg), *Regionale Schule* (Mecklenburg-Vorpommern), *Realschule plus* (Rhineland Palatinate), *Regionalschule* (Schleswig-Holstein), *Oberschule* (Brandenburg), *Mittelstufenschul*e (Hessen).

5. The *Gymnasium* programme can also be pursued at G*esamtschulen* (comprehensive schools). *Kooperative Gesamtschulen* (cooperative comprehensive schools) accommodate three educational programmes (*Hauptschule*, *Realschule*, and *Gymnasium*) under a common educational and organisational umbrella. At the *integrierte Gesamtschule* (integrated comprehensive school), these three trajectories form an educational and organisational whole. The provision of comprehensive schools (*Gesamtschulen*) varies depending on the education laws of the respective *Laender*. The following school types also cover three courses of education: the *integrierte Sekundarschule* (Berlin); the *Oberschule* (Bremen, Lower Saxony); the *Stadtteilschule* (Hamburg); to a certain extent, the *Regionale Schule* (Mecklenburg-Vorpommern), and the *Gemeinschaftsschule* (Schleswig-Holstein, Thüringen).
6. The general education qualifications obtainable at the end of Grades 9 and 10 are designated differently in some *Laender*. It is also possible to obtain these qualifications at night school (*Abendschule*) and vocational school, or to sit the exams as an external candidate.
7. *Gymnasiale Oberstufe* (upper secondary *Gymnasium* level): The entrance requirement for this level is the formal entitlement to attend the *Gymnasiale Oberstufe*, which can be obtained at the end of Grade 9 or 10. Now that most of the *Laender* have made the transition from the 9-year to the 8-year *Gymnasium*, the *Allgemeine Hochschulreife* (general higher education entrance qualification) can be obtained at the end of Grade 12 in all but two.
8. *Berufsoberschule*: To date, the *Berufsoberschule* exists only in a few *Laender*. It offers students who have a *Mittlerer Schulabschluss* (general education leaving certificate obtained after successful completion of Grade 10 at *Realschule* or other lower secondary school types) and who have completed vocational training or have 5 years work experience the opportunity to obtain the *Fachgebundene Hochschulreife* (qualification entitling students to study certain subjects at a higher education institution). Students can obtain the *Allgemeine Hochschulreife* (general higher education entrance qualification) if they prove their proficiency in a second foreign language.
9. The *Fachoberschule* is a school at upper secondary level that builds on the *Mittlerer Schulabschluss* and provides 2-year courses (Grades 11 and 12) leading to *Fachhochschulreife* (entrance qualification for a university of applied sciences). Students who have a *Mittlerer Schulabschluss* (*Realschule* leaving certificate) and have completed vocational training can enter in Grade 12. The *Laender* may also establish a 13th grade. Students who attend Grade 13 can obtain the *Fachgebundene Hochschulreife*, and, under certain circumstances, the *Allgemeine Hochschulreife*.
10. *Berufsfachschulen* are full-time vocational schools that differ in terms of entrance requirements, duration, and leaving certificates. Basic vocational training can be obtained in 1- or 2-year courses, and a vocational qualification in 2- or 3 year courses. Under certain circumstances, the *Fachhochschulreife* can be obtained after successful completion of at least a 2-year course.
11. *Berufsqualifizierender Abschluss*: Extension courses offered to enable students to obtain the *Hauptschule* leaving certificate or the *Mittlerer Schulabschluss* (*Realschule* leaving certificate).
12. *Fachschulen* offer continuing vocational training (1–3 year duration). As a rule, entrants must have completed relevant vocational training, and have worked, in a recognised occupation requiring formal training. Under certain circumstances, the *Fachhochschulreife* can be obtained at the *Fachschul*e (our translation).

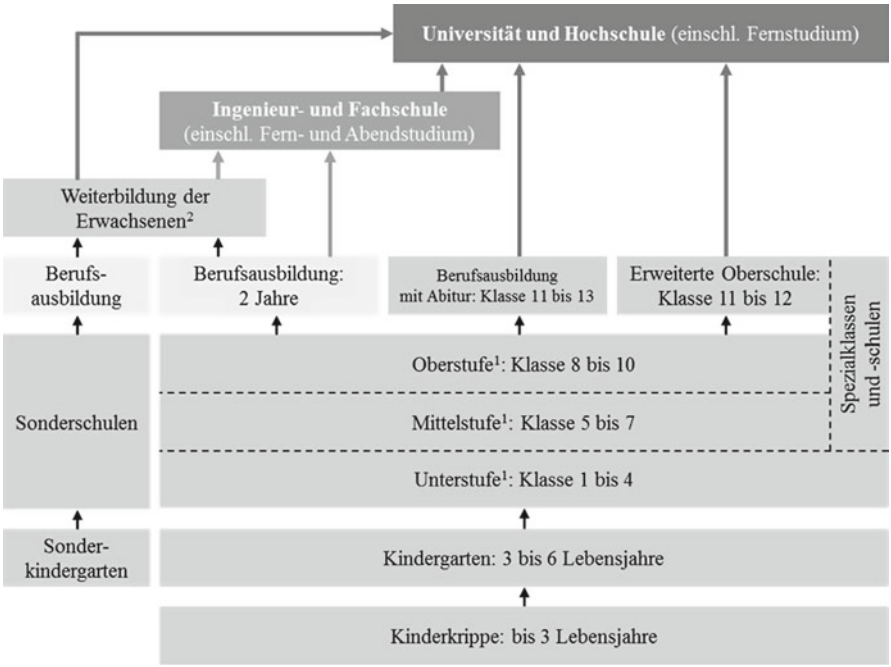

Fig. 5.2 Structure of the education system in the GDR (Source: Deutsche Demokratische Republik, 1979, p. 491)

Notes, Fig. 5.2 (see Handbuch Deutsche Demokratische Republik, 1979, p. 491):

1. *Kinderkrippe*: nursery care for children under three; *Kindergarten*: pre-school for children between the ages of three and six; *Sonderkindergarten*: special needs kindergarten; *Sonderschulen*: special needs schools; *Berufsausbildung, 2 Jahre*: 2-year vocational training; *Berufsausbildung mit Abitur*: 3-year vocational training (Grade 11–13) leading to a higher education entrance qualification; *erweiterte Oberschule*: higher secondary, Grades 11 and 12, leading to a higher education entrance qualification.
2. Elementary school in the GDR was called *Polytechnische Oberschule* (*POS*) and was compulsory for children between the age of 6 and 16. It was divided into three levels: *Unterstufe*: lower level from Grade 1 to Grade 4; *Mittelstufe*, intermediate level from Grade 5 to Grade 7; and *Oberstufe*, higher level from Grade 8 to Grade 10.
3. *Weiterbildung der Erwachsenen*: Continuing adult education provided by state-run or non-state educational institutions and leading to an entrance qualification for an *Ingenieurschule* or a *Fachschule* (lower tertiary vocational institutions), or a higher education institution.

Table 5.1 Upper secondary level leaving certificates of the education systems of the Federal Republic of Germany (FRG) and the German Democratic Republic (GDR)

	Certs.	Certs.	Classification	Classification
Years	FRG	GDR	FRG	GDR
8	–	School-leaving report (failed to graduate) up to 1965 POS		No certificate basic leaving certificate
9	*Hauptschule*	–	First general education qualification	–
10	*Realschule*	POS		First general education qualification
12	*FH-Reife* or *Abitur*	EOS	FH entry HEI entry	HEI entry
13	*Abitur*	EOS + apprent.	HEI entry	HEI entry

POS = *Polytechnische Oberschule*: Elementary school in the GDR was called *Polytechnische Oberschule* (*POS*) and was compulsory for children between the age of 6 and 16. It was divided into three levels:*Unterstufe*: lower level from Grade 1 to Grade 4; *Mittelstufe*, intermediate level from Grade 5 to Grade 7; *Oberstufe*, higher level from Grade 8 to Grade 10
EOS = *Erweiterte Oberschule*, upper secondary (Grade 11–12) leading to a higher education entrance qualification
EOS + apprenticeship: 3-year vocational training (Grade 11–13) leading to a higher education entrance qualification
FH = *Fachhochschule*, university of applied sciences (elevated to university status as a result of the Bologna process)
FH-Reife: Qualification entitling holder to study at a *Fachhochschule* (university of applied sciences)
HEI: higher education institution

When the survey question includes all possible categories of the respective basic models of the two German education systems, it is left up to the researcher to carry out something approximating output harmonisation after data collection by recoding the data. This calls for a sound knowledge of both education systems. Without such knowledge, the researcher will be at a loss and can do no more than group qualifications together on the basis of whether they belong to lower secondary or higher secondary level. All leaving certificates up to Grade 10 belong to lower secondary level; all those above Grade 10, including the first stage of practical and/or school-based vocational training, belong to upper secondary level.

Table 5.2 Survey question about highest general education qualification achieved. What is the highest general education qualification that you have achieved? Please choose one of the options on this list. *Show list*!

A	Student at a full-time general-education school
B	Left school without a *Hauptschule* leaving certificate (or a *Volksschule* leaving certificate)
C	*Hauptschule* leaving certificate (*Volksschule* leaving certificate)
D	*Realschule* leaving certificate (Intermediate leaving certificate)
E	*Polytechnische Oberschule* of the GDR with a leaving certificate from Grade 8 or Grade 9
F	*Polytechnische Oberschule* of the GDR with a leaving certificate from Grade 10
G	*Fachhochschulreife*, leaving certificate of a *Fachoberschule*
H	General or subject-specific HEI entrance qualification/*Abitur* (*Gymnasium* or EOS, also EOS with apprenticeship)
I	*Abitur* obtained later in life via second-chance education
J	Other school leaving certificate, namely,_____

Source: Statistisches Bundesamt (Federal Statistical Office), 2010: *Demographische Standards*, Question 5 (our translation)

Notes:

B/C *Hauptschule* (FRG): School at lower secondary level providing basic general education, usually comprising Grades 5–9. Compulsory schooling in Germany was formerly known as *Volksschule*. It now comprises primary school and *Hauptschule*

D *Realschule* (FRG): School at lower secondary level, usually comprising Grades 5–10 providing more extensive general education and opportunity to go on to courses of education at upper secondary level that lead to higher education entrance qualifications

E *Polytechnische Oberschule*: Elementary school in the GDR was called *Polytechnische Oberschule* (*POS*) and was compulsory for children between the age of 6 and 16. It was divided into three levels: *Unterstufe*: lower level from Grade 1 to Grade 4; *Mittelstufe*, intermediate level from Grade 5 to Grade 7; *Oberstufe*, higher level from Grade 8 to Grade 10

G *Fachhochschulreife* (FRG): Entrance qualification for a university of applied sciences (*Fachhochschul*e)

H *Abitur* (FRG):general higher education entrance qualification

Gymnasium (FRG): School type covering both lower and upper secondary level and providing in-depth general education aimed at a general higher education entrance qualification, and lasting between 8 and 9 years

EOS = *Erweiterte Oberschule* (GDR), upper secondary (Grade 11–12) leading to a higher education entrance qualification

EOS + apprenticeship (GDR): 3-year vocational training (Grade 11–13) leading to a higher education entrance qualification

What renders the measurement of education even more difficult in Germany is the fact that the *Laender* have educational autonomy, which means that there are 16 different education systems. As a rule, however, a basic structure is assumed to exist (Fig. 5.1), and the categories of this structure are used for the survey.

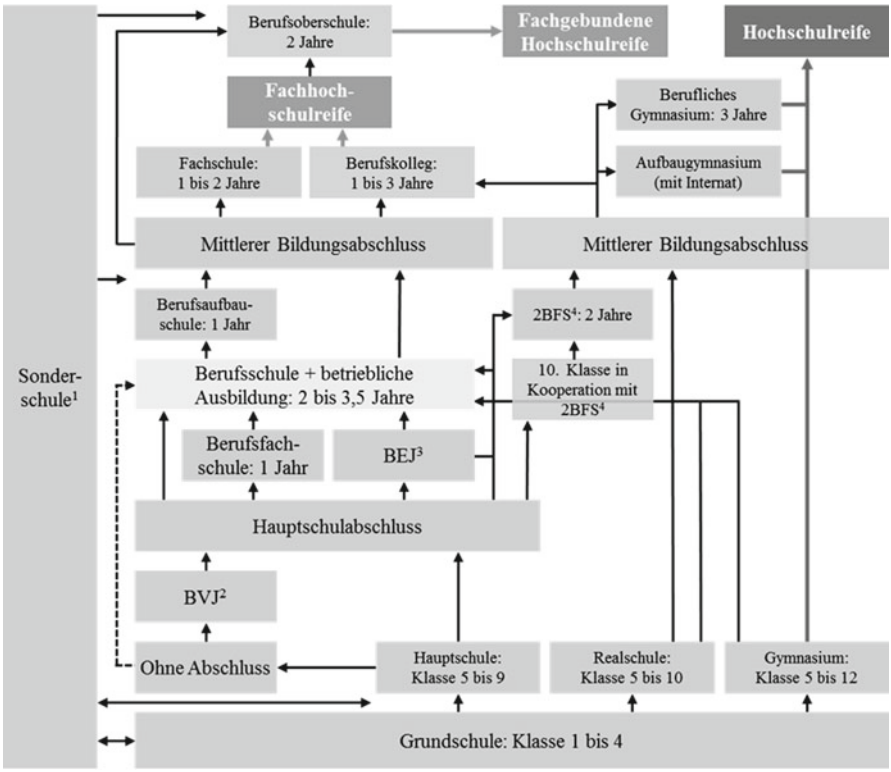

Fig. 5.3 The education system of the state of Baden-Württemberg (Source: Landesbildungsserver Baden-Württemberg, 2011)

Notes, Fig. 5.3

1. *Sonderschule* (special needs school): To a certain extent with primary school, *Hauptschule, Realschule*, *Gymnasium*, and vocational education programmes.
2. *Berufsvorbereitungsjahr*: A year of pre-vocational training for students who did not obtain a *Hauptschule* leaving certificate.
3. *Berufseinstiegsjahr*: A year of pre-vocational training for students who obtained a *Hauptschule* leaving certificate.
4. Two-year *Berufsfachschule*: Full-time vocational school type offering basic vocational training, which can be obtained in 1- or 2-year courses.
5. Some of the transition options are subject to additional qualification requirements. They cannot be presented in the diagram because of space limitations.

A comparison of just two of the 16 German education systems, namely, the systems of Baden-Württemberg (Fig. 5.3) in southwest Germany and Saxony (Fig. 5.4) in east Germany, reveals subtle differences that should actually be – but are not – taken into account when surveying education.

The differences between the education systems of Baden-Württemberg (Fig. 5.3) and Saxony (Fig. 5.4) – and, therefore, the problems faced by the respondents when answering the survey question – are as follows:

1. The problems start with the different terms used: Baden-Württemberg's terminology reflects the basic structure of the education system in the Federal Republic of Germany insofar as it has a *Hauptschule* and a *Realschule*. Saxony, on the other hand, does not have either a *Hauptschule* or a *Realschule*. Instead, it has a *Mittelschule* (intermediate school) with two possible leaving certificates.
2. In Baden-Württemberg the *Hauptschule* can be completed at the end of Grade 9 or Grade 10; *Realschule* ends at the end of Grade 10. In Saxony, a *Hauptschule* leaving certificate can be obtained at the end of Grade 9, and a *Realschule* leaving certificate at the end of Grade 10.
3. In Saxony one can obtain a higher education entrance qualification if one has a *Hauptschule* leaving certificate, a vocational qualification and a qualification from a *Fachoberschule* or a *Fachschule*. In Baden-Württemberg the indirect route to a higher education entrance qualification leads from the *Hauptschule* (leaving certificate in Grade 10) to a vocational *Gymnasium* or from the *Hauptschule* (leaving certificate in Grade 9) to vocational training and then on to a *Fachschule*, a *Berufsoberschule* or a *Berufskolleg*. The logic of both systems may be similar, but the terminology and the related definitions of the individual steps are not.

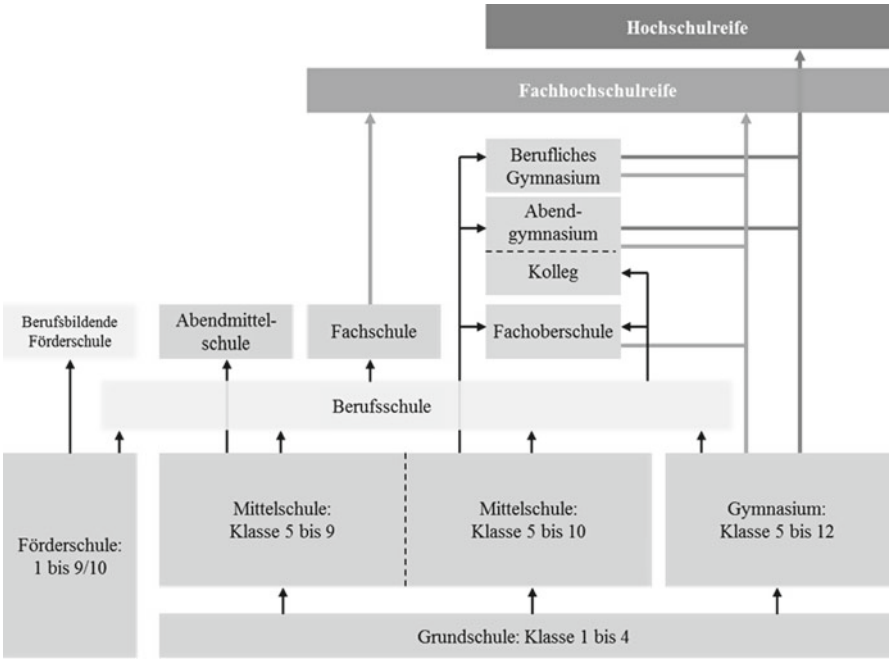

Fig. 5.4 Education system of the state of Saxony (Source: sachsen.de, 2011)

As the comparison of Baden-Württemberg and Saxony reveals, lower secondary level is organised very differently in the individual *Laender*. As of December 2011, the terms and definitions used by eight of the 16 *Laender* deviated from the basic structure of the German education system illustrated in Fig. 5.1. And, in addition to the classical terms – *Hauptschule* and *Realschule* – the current terminology used to describe lower secondary includes such terms as *Realschule plus* in the Rhineland Palatinate (since 2009), *Mittelschule* in Saxony, *Regionalschule* in Mecklenburg-Vorpommern and up to 2009 in the Rhineland Palatinate, *Sekundarschule* in Saxony-Anhalt and Bremen, *integrierte Sekundarschule* in Berlin, and *Regelschule* in Thüringen.

This terminological diversity renders it impossible to cater for respondents' individual needs when collecting the education variable in surveys. It would be impossible to list all the terms for the various school types in a questionnaire because that would be even more confusing than implicitly expecting the respondents to assign themselves to a category in the basic model. Therefore, abstraction is called for. The manner in which the education variable is currently collected in Germany using the basic model is actually input harmonisation on a small scale.

5.1.2 Cross-National Comparison of Input-Harmonised Instruments for the Measurement of Education

If one wishes to carry out a cross-national comparison of education systems, it is necessary, first, to analyse the national education systems and break them down into their individual components. In a second step, the levels of educational attainment must be arranged in a manageable hierarchy. The third step involves the development of a scale with which the levels of educational attainment in the various education systems can be compared.

Educational Qualifications Classified According to Occupational Prestige

On condition that education is a prerequisite for entry into the labour market, a matrix comprising two variables can be created. The first variable is a combination of a qualification from a general education school and a vocational qualification that builds directly on this qualification. The second variable must be a criterion that hierarchically ranks the qualifications combined. As can be seen from Table 5.3, which is based on German educational qualifications, Treiman's Standard International Occupational Prestige Scale (SIOPS) (Ganzeboom, de Graaf, Treimann, & de Leeuw, 1992; Ganzeboom & Treiman, 2003; Treiman, 1977) fulfils this requirement.

Table 5.3 German educational qualifications and their occupational prestige

Code	School qualification	Vocational qualification university degree	Average occupational prestige according to Treiman, SIOPS
1	None	None	14–20
2	*Hauptschule* LC	None or not completed	15–20
3	None	Apprenticeship	20–30
4	*Hauptschule* LC	Apprenticeship	20–35
5	*Hauptschule* LC	Berufsfachschule	20–35
6	*Realschule* LC	None or not completed	20–35
7	*Realschule* LC	Apprenticeship	25–35
8	*Realschule* LC	*Berufsfachschule*	25–45
9	HE entrance qualif.	Apprenticeship	30–40
10	HE entrance qualif.	*Berufsfachschule*	40–55
11	*Realschule* LC	*Fachschule/Akademie*	50–65
12	HE entrance qualif.	*Fachschule/Berufsakademie*	50–70
13	HE entrance qualif.	University: Bachelor	50–70
14	HE entrance qualif.	University: Master or equivalent	65–75
15	HE entrance qualif.	University: Doctoral degree	70–78
16	HE entrance qualif.	University: *Habilitation* (post-doc)	70–78

Source: Hoffmeyer-Zlotnik & Warner, 2005, p. 233
Notes:
LC: leaving certificate
HE: higher education
Hauptschule: School at lower secondary level providing basic general education, usually comprising Grades 5–9
Realschule: School at lower secondary level, usually comprising Grades 5–10 providing more extensive general education and opportunity to go on to courses of education at upper secondary level that lead to higher education entrance qualifications
Berufsfachschule: full-time vocational school; *Fachschule*: post-secondary vocational college catering for continuing education; *Berufsakademie*: tertiary sector institution in some *Laender*, offering courses of academic training combined with practical in-company professional training
SIOPS: Standard International Occupational Prestige Scale (Ganzeboom & Treiman, 2003)

The matrix is based on the principle that each general education qualification can be combined only with a vocational qualification to which it provides direct access. Therefore, every qualification in the secondary sector can be combined with an apprenticeship, but the *Hauptschule* (lower secondary) leaving certificate cannot be combined with a tertiary vocational qualification because several steps are needed to get there. However, in Table 5.3 – in contrast to the *Demographische Standards* survey question (Table 5.2) – it is immaterial whether the general higher education entrance qualification (*Abitur*, etc.) was achieved via a direct or an indirect route.

The scale in Table 5.3 can now be compressed into a five-point autonomy scale, in which the level of job autonomy is an indicator of social status (see Table 5.4). This compressed scale is also based on Treiman's SIOPS.

Table 5.4 Qualifications by job autonomy

Code		Autonomy of action	Prestige SIOPS
1	Low	Unskilled, semi-skilled manual work	6–32
2		Undemanding routine jobs	33–41
3		Demanding jobs following general instructions	42–50
4		Independent tasks inresponsible job, limited supervisory responsibilities	51–63
5	High	Far-reaching management tasks and decision-making powers	64–78

Source: see Hoffmeyer-Zlotnik, 2003, p. 122

Alternatively, insofar as certificates rather than certificate equivalents are collected, the scale in Table 5.4, which ranks qualifications according to expected occupational prestige, can also be used as a basis for data collection. The CASMIN Educational Classification (König et al., 1988; Brauns, Scherer, & Steinmann, 2003; Müller, n.d.) and the International Standard Classification of Education (ISCED) (1997) measure certificates. ISCED measures certificate equivalents separately.

CASMIN Educational Classification

The CASMIN (Comparative Analysis of Social Mobility in Industrial Nations) educational classification was developed by academic mobility researchers in order to represent educational levels in modern industrial societies in such a way that education can be viewed both as a selection criterion in the process of social stratification and as an indicator of social mobility. CASMIN is based on two classification criteria, which Walter Müller (n.d.) describes as follows:

1. The differentiation of a hierarchy of educational levels, both in terms of the length of the educational experience and the required intellectual abilities and corresponding curricular contents, and
2. The differentiation between 'general' and 'vocational-oriented' education.

As can be seen from the application of CASMIN to the German education system (Table 5.5), the general education component of the classification is based on the formal certificates of the education system of the Federal Republic of Germany. In the vocational part, CASMIN also distinguishes between general and vocation-specific education. The classification is divided into three levels: elementary, secondary, and tertiary (Table 5.6).

Table 5.5 Applying the CASMIN classification to the education system of the Federal Republic of Germany

CASMIN	Description
3b	Higher tertiary education (university)
3a	Lower tertiary education (university of applied sciences, *Ingenieurschule)*
2c_voc	Higher or lower tertiary entrance qualification with a vocational qualification (e.g., as trained apprentice or master craftsperson)
2c_gen	Lower tertiary entrance qualification (*Fachhochschulreife*), general higher tertiary entrance qualification (*Abitur*)
2b	*Realschule* Leaving Certificate (Intermediate Leaving Certificate)
2a	*Realschule* Leaving Certificate (Intermediate Leaving Certificate) with a vocational qualification (e.g., as trained apprentice or master craftsman)
1c	First general education qualification (*Hauptschule*, *Volksschule*) with vocational qualification (e.g., trained apprentice, master craftsperson)
1b	First general educational qualfication (*Hauptschule*,*Volksschule*)
1a	no qualifications, practical work experience

Source: Müller, n.d.; Application of CASMIN to France and UK, see Brauns et al. 2003
Notes:
The *Ingenieurschule* was the precursor to the *Fachhochschule* (university of applied sciences). Compulsory schooling in Germany was formerly known as *Volksschule*. It now comprises primary school and *Hauptschule*.

Table 5.6 The CASMIN education classification

Level	Track	Code	Description
Tertiary			
– High		3b	Higher tertiary education: The completion of a traditional, academically-oriented university education
– Low		3a	Lower tertiary education: Lower-level tertiary degrees, generally of shorter duration and with a vocational orientation
Secondary			
– High	Voc	2c_voc	Vocational maturity: Full maturity certificates including vocationally-specific schooling or training
	Gen	2c_gen	General maturity: Full maturity certificates (e.g. *Abitur*)
– Intermediate	Voc	2a	Intermediate vocational qualification, or secondary programmes in which general intermediate schooling is combined with vocational training
– Low	Voc	1c	Basic vocational training above and beyond compulsory schooling
	Gen	1b	General elementary education
Primary			
	Gen	1a	Inadequately completed general education

Source: Brauns et al., 2003, p. 223

International Standard Classification of Education (ISCED-1997)

The International Standard Classification of Education, ISCED (UNESCO, 1997; see also Section 3.1) is an instrument for the comparative measurement of formal education. Developed by UNESCO, the United Nations specialised agency responsible for education, it should measure education and training very accurately. However, social scientists are recommended to be cautious because ISCED is an instrument developed for comparative official statistics purposes and not for social or education research.

As a result, social researchers must first ask themselves what 'education' is supposed to represent in their concrete project. As a comparative instrument, ISCED aims to capture the education systems of all 193 UNESCO member states in such a way as to facilitate cross-national statistical comparisons. Because these education systems are so heterogeneous, ISCED must measure educational attainment at a very high level of abstraction. Therefore, it is imperative that social researchers have in-depth knowledge of the national education systems to which they wish to apply ISCED and that they are familiar with the definitions of the ISCED categories and the intentions that underlie these definitions.

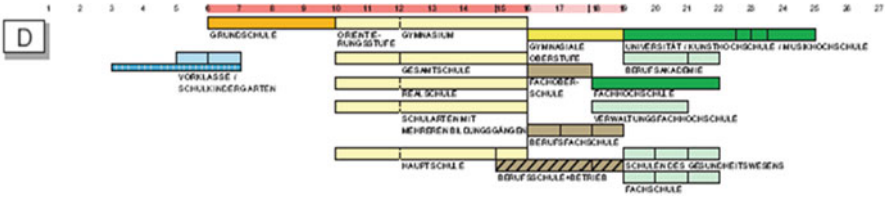

Fig. 5.5 Eurydice 2002: Structure of the German education system (Source: European Commission, 2002; cf. Hoffmeyer-Zlotnik & Warner, 2005, p. 225)

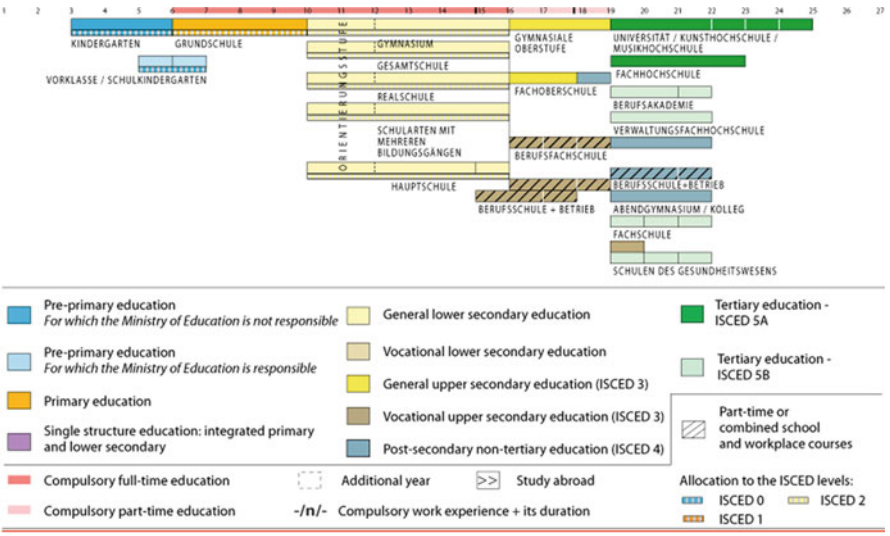

Fig. 5.6 Eurydice 2011: Structure of the German education system (Source: Eurypedia, 2011)

The version of ISCED that is currently in use – ISCED-97 – groups educational programmes from pre-primary to tertiary into seven levels of education and a total of 25 categories and subcategories. The first difficulty is encountered at Level 4 'Post-secondary non-tertiary' education. As can be seen from Figs. 5.5 and 5.6 even Eurydice, the European Commission's network on education systems and policies in Europe, had difficulties when applying this level to the education system in Germany the first time. This is due to the fact that the ISCED categories distinguish general and vocational education programmes according to the subsequent education or destination for which they have been designed, and in some *Laender*, for example Baden-Württemberg (2010), the regulations governing access to higher education allow persons with a master craftsperson certificate to study at a higher education institution. In these *Laender*, therefore, this certificate is a qualification that is post-secondary but non-tertiary because it is considered to be the equivalent of the *Abitur*.

In Fig. 5.5 (for 2002), the master craftsperson training course and the *Abendgymnasium* (an establishment where adults can attend evening classes to obtain a general higher education entrance qualification) are not yet allocated to ISCED Level 4. If even the Eurydice experts have difficulties applying ISCED correctly, one can imagine how difficult it is for social researchers to allocate educational programmes to the correct ISCED categories.

In the European Social Survey (ESS) education has been coded into ISCED since Round 1. Table 5.7 gives an indication of the problems that the ESS national teams have with this.

Each participating country collects education data in such a way that they can be subsequently coded into ISCED. The ISCED coding is carried out by the national teams of researchers. Because these national researchers are, as a rule, graduates of the national education system, they are considered to be experts on that system and are therefore given the task of mapping the national qualifications to ISCED (see the

Table 5.7 Coding educational attainment data collected in Round 1 of the ESS to ISCED: Comparison of coding by a selection of national research teams and recoding by experts following Eurydice definitions; in percent

	Countries							
	Austria		Spain		France		Hungary	
ISCED level	ESS	Exp.	ESS	Exp.	ESS	Exp.	ESS	Exp.
0 Pre-primary	2	0	18	2	9	1	9	0
1 Primary	0	0	18	31	16	18	26	0
2 Lower secondary	29	23	21	25	26	19	29	26
3 Upper secondary	34	51	21	19	5	40	23	54
4 Post sec./non tert.	23	9	8	0	17	0	0	2
5 Tertiary, 1st stage	0	16	14	23	11	21	8	14
6 Tertiary, 2nd stage	12	0	0	0	15	0	6	0

ESS = Data ESS, Round 1, coded by the ESS national research teams
Exp. = Data ESS, Round 1, recoded by experts on the basis of EURYDICE definitions
Source: Hoffmeyer-Zlotnik, 2008, p. 16

first column for each country in Table 5.7). Some years after ESS, Round 1, a group of education experts recoded the identical primary data taking into account the allocation of the national education qualifications to ISCED prescribed by Eurydice (see the second column for each country in Table 5.7). As can be seen from Table 5.7, in some cases the codes in the two columns differ considerably. Where do the greatest discrepancies occur? And why?

The first problem arises with regard to the definition of 'pre-primary'. The survey population comprised persons aged 15 and older. In Spain, France, and Hungary, a large number of respondents were allocated to this level. However, to a large extent, these were not people who had no schooling, but rather those who were still in the education system but had not yet obtained a general educational school leaving certificate. These respondents should have been assigned to a category entitled 'still attending a general education school'. However, because Spain, France, and Hungary did not offer such a category, coders wrongly assigned these persons to Category 0. In Spain, for example, Category 0 was labelled 'no studies/illiterate' and in France it was labelled 'sans diplôme'. The second incorrect allocation relates to the definition of the first general education qualification. This is the qualification that entitles the holder to make the transition to vocational training or a school at upper-secondary level, or to enter the labour market. In all the national education systems in Table 5.7, the first general education certificate is obtained upon successful completion of lower secondary level. However, this does not apply to all cohorts in Spain and France. If – out of ignorance of the education system – the first general education certificate is shifted to primary level, and primary level is deemed completed when the first certificate is obtained, then the second general education certificate ends up at lower-secondary level and the third general education certificate ends up at upper-secondary level. However, if the first general education certificate is deemed to be located at lower secondary level, then it can happen that the second certificate is shifted up to upper secondary. As a result, the higher education entrance qualification, as the third possible general education certificate, ends up being allocated to Level 4 (post-secondary, non tertiary). This is what happened in Austria. The national teams in Spain and France were also at a loss as to what to do with Level 4. Because higher education qualifications are spread over Levels 5 and 6, it is essential that attention be paid to the definitions of these levels. Programmes at Level 6 lead to an 'advanced research qualification', and the main criterion here is that 'It typically requires the submission of the thesis or dissertation of publishable quality which is the product of original research and represents a significant contribution to knowledge' (UNESCO, 2003, p. 215). Austria and France, at any rate, code the second degree (Master) to Level 6, thereby conferring a doctorate on 12 % and 15 % of respondents, respectively.

This incorrect coding did not go unnoticed in the ESS because it is an intensively controlled dataset of international interest. In the case of less controlled – and, in particular, less well documented – studies, incorrect codings tend not to be noticed. However, the problems begin even before coding gets underway, namely at the data collection stage, or, to be more precise, when designing the instrument with which

Table 5.8 'Highest educational qualification obtained' question in Danish questionnaire, ESS, Round 1 F.6: Hvader den længste uddannelse, du hartaget? (KORT 53)

Response category	Code
Ingen skoleuddannelse, ingen erhvervsuddannelse	00
1.–6. Skoleklasse, ingen erhvervsuddannelse	01
7.–10. Skoleklasse, ingen erhvervsuddannelse	02
Gymnasium, HF, HH, HTX, ingen erhvervsuddannelse	03
Erhvervsfagligeuddannelser, håndværkeruddannelser social og sundhedshjælperuddannelser	04
Arbejdslederuddannelser for faglærte	05
Videregående uddannelser på 2–3 år efter gymnasium eller faglig uddannelse	06
Videregående uddannelser på ca. 4 år efter gymnasium eller faglig uddannelse	07
Bachelor eller kandidateksamen fra universitet	08
Overbygning på universitetseksamen, Ph.d., licentiat	09

Source: ESS (2002e), round 1, Questionnaires A Denmark

respondents' level of education is to be measured. Here, too, Wave 1 of the ESS offers a vivid example:

The Danish team collected the education data using an instrument that was based on the ISCED categories (see Table 5.8). And, as the survey documentation revealed, because respondents were eager to answer everything that was read out to them, the interviewers in the field did not notice that the codes 00 to 02 did not fit the Danish education system.

Code 00 stands for 'no qualification' – neither general education nor vocational. This code has nothing to do with ISCED Level 0, nor did the respondents interpret it as such. Code 01 stands for a qualification obtained after completion of Grades 1–6. However, in Denmark the first general education certificate cannot be obtained until the end of Grade 10 (see Fig. 5.7.2). Until then, Danish students attend the *Folkeskole*, a type of comprehensive school (Code 02). Code 01 should not be used in Denmark because the qualification it represents does not exist there. It was chosen by only 1.2 % of Danish respondents (Hoffmeyer-Zlotnik & Warner, 2005, p. 227). Code 03 corresponds to ISCED Level 3, Category A (higher education entrance qualification); Code 04 refers to ISCED Level 3, Category C (vocational qualification designed to lead to the labour market); Code 05 refers to ISCED Level 3, Category B (vocational qualification giving access to 5B programmes). Codes 06 and 07 represent qualifications at tertiary level that correspond to ISCED Category 5B. Codes 08 and 09 represent university education at two levels of qualification: ISCED Category 5A and Level 6.

The Danish questionnaire, constitutes input harmonisation. All in all, it adheres more closely to the ISCED categories than codability into a levels-only seven-category version of ISCED requires. In the Danish questionnaire, for example, ISCED Level 3 is covered by three response categories. But do respondents and coders always understand what these categories mean? Although the Danish researchers followed ISCED closely when formulating the categories, at the lower end of the scale they succumbed to the temptation to use two codes (00 and 01) that do not apply to the Danish system. What is more, only a well-trained coder can correctly allocate qualifications to the categories in the middle of the scale.

5.1.3 Development of the Hoffmeyer-Zlotnik/Warner Matrix of Education

Because they were aware of the problems associated with ISCED coding, and because they found the available alternatives unsatisfactory, Hoffmeyer-Zlotnik and Warner (2007) decided to develop their own instrument for the measurement of education based on two conditions: (a) data collection should take place using national categories, and (b) coding should be so easy that it does not require much training.

Step 1: Definition of the Concept to be Measured

Guided by the rules for the harmonisation of socio-demographic variables, the authors first defined what their education variable was supposed to measure. They regard a formal educational qualification as an entrance ticket to the labour market. The higher the qualification, the more prestigious the labour market positions to which the holder has access. It is relatively unimportant how – i.e. by what route – the highest qualification has been obtained. In Germany, for example, a higher education entrance qualification can be obtained at a *Gymnasium* or via a vocational trajectory.

Step 2: Structural Analysis

An intensive analysis of the education systems of the 27 EU member states conducted by the authors revealed four basic types of education systems. Kuhry, Herweijer, and Heesakker (2004, pp. 79–87) of the Social and Cultural Planning Office of the Netherlands (SCP) arrive at a similar conclusion. They classify the European school systems according to the degree of differentiation within the education sectors (integrated versus stratified systems); the way in which countries provide for children with special needs; and the position of vocational education in the system.

Hoffmeyer-Zlotnik and Warner selected one country as a representative of each of the four types of education system identified: Germany as the representative of Type 1; Denmark for Type 2; Luxembourg for Type 3; and France for Type 4. Two qualifications were chosen as reference values for the comparison: the first general education certificate and the higher education entrance qualification. In every education system, the first general education certificate provides access to the labour market or to further general or vocational education. The higher education entrance qualification is the highest certificate obtainable in the general education school system. However, in some education systems, this qualification can also be obtained by successfully completing vocational education or continuing vocational training programmes. The following descriptions reflect the current state of development of the education systems in the four countries in question.

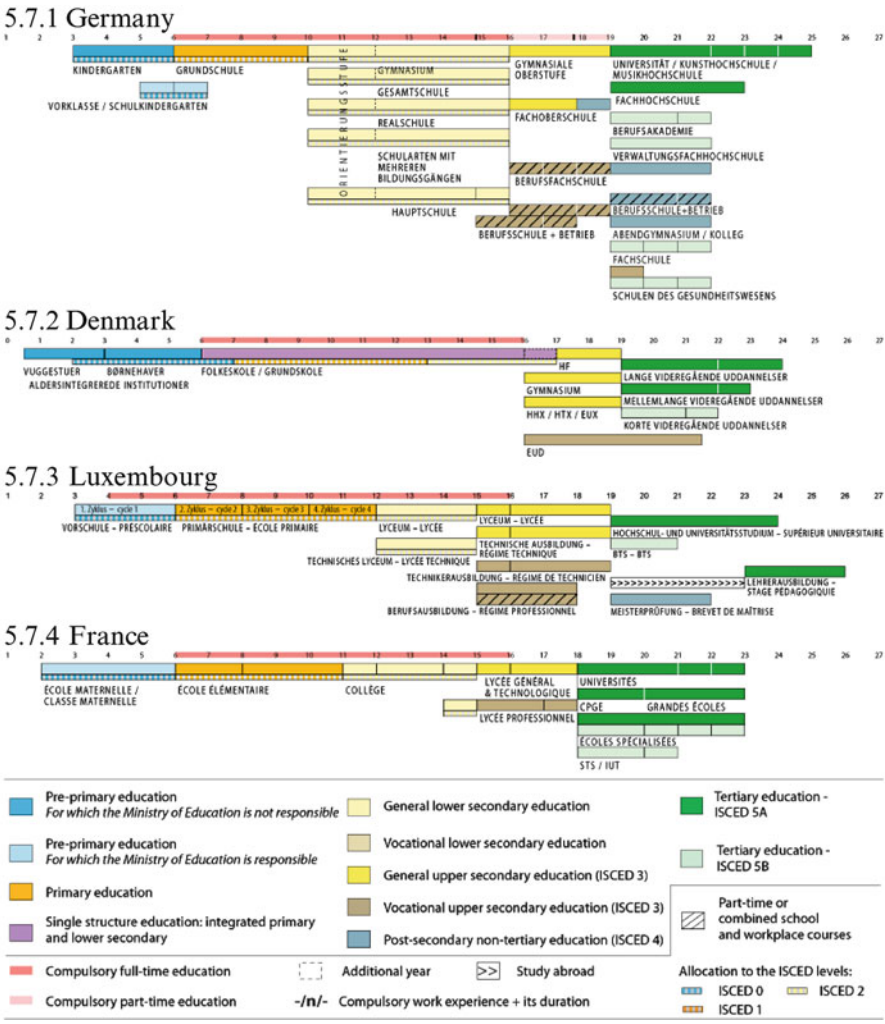

Fig. 5.7 Comparison of the structure of the education systems, Types 1–4 (1) Germany; (2) Denmark; (3) Luxembourg (4) France (Source: Eurydice, 2011d)

Example of Type 1: Germany (see Fig. 5.7.1)

In Germany, compulsory education begins at the age of six and lasts between 9 and 10 years. The primary school phase lasts between 4 and 6 years. Transition from primary school to secondary level is regulated differently from *Land* to *Land*. Differentiation into school types occurs at the beginning of the secondary phase. A first general education qualification can be achieved at lower secondary level. Transition to upper secondary level marks the end of full-time compulsory education. After achieving a first general education qualification, but before completing compulsory education, students must decide whether to continue their education at a general education school leading to a higher education entrance qualification or to opt for full-time vocational education or part-time vocational school and part-time on-the-job

training (the so-called *duales System*). Because a higher education entrance qualification can be obtained via certain vocational tracks or at an *Abendgymnasium* (an establishment where adults can attend evening classes to obtain a general higher education entrance qualification), ISCED Level 4 (post-secondary, non-tertiary) is very much in evidence in this type of education system. The tertiary sector in Germany comprises, in the main, universities and equivalent institutions of higher education that offer a differentiated academic education and have the right to confer doctorates, and more vocationally oriented universities of applied sciences (Eurydice, 2009a).

Other Type 1 countries include Belgium Bulgaria, the Netherlands, Austria, Romania, the Czech Republic, and Hungary.

Example of Type 2: Denmark (see Fig. 5.7.2)

In Denmark, compulsory education begins at the age of six and lasts for 10 years. The primary and lower secondary levels are integrated into a single comprehensive school structure – the *Folkeskol*e – which covers the entire period of compulsory education and ends with the first general education certificate. Upper secondary level offers both general education programmes – which prepare students for higher education – and vocational education programmes – which prepare trainees for a career in trade or industry. The tertiary sector offers short- and medium-cycle vocationally oriented higher education programmes and long-cycle academically oriented programmes (Eurydice, 2009b).

Other Type 2 countries include Estonia, Finland, Latvia, Lithuania, Poland, Portugal, Sweden and Slovenia.

Example of Type 3: Luxembourg (see Fig. 5.7.3)

Compulsory education begins at the age of six in Luxembourg. Primary education lasts 6 years. Lower secondary level is divided into a technical and a general education track (*Lycée technique* and *Lycée général*) and lasts 3 years. Students can continue on at *Lycée* for 3 or 4 more years at upper secondary level. There are also a number of vocational schools at upper secondary level. The tertiary sector comprises one university (the University of Luxembourg) that integrates into one single institution the former University Centre of Luxembourg and a number of institutes (Eurydice, 2011d).

Another example of a Type 3 country is Slovakia.

Example of Type 4: France (see Fig. 5.7.4)

Compulsory education begins in France at the age of six and lasts 10 years. After 5 years at primary school, students automatically enter lower secondary education, which is provided at *collèges* and lasts four years. The first general education certificate (the *brevet*) is awarded on successful completion of lower secondary level. Upper secondary level offers three tracks: a general track, which prepares students for long-cycle higher education, a technological track, which prepares students for higher technological studies, and a professional track, which leads mainly to the labour market but also provides access to higher education. The tertiary sector is even more differentiated and comprises general and technological universities and a non-university sector that includes the elite *Grandes Ecoles* (Eurydice, 2009c).

Other Type 4 countries include Cyprus, Greece, Ireland, Italy, Malta, Spain, and the United Kingdom.

Table 5.9 Hoffmeyer-Zlotnik/Warner Matrix of Education – basic model

		General education school – attainment level				
Vocational education	ISCO major group	No qualif.	First general ed. qualification	Second qualif.	Third qualif.	General HE entrance qualif.
No qualification	9, 8	1	2	3	6	7
Dual system	8, 7	4	4	5	5	5
Full-time vocational school	4, 5	4	4	5	5	5
Vocational college	3, 4	X	5	5	8	8
University of applied sciences or equivalent	2, 3	X	X	9	9	9
University	2	X	X	X	10	10
Doctorate	2	X	X	X	11	11

X = This combination of qualifications cannot occur in practice.

Step 3: Development of the Instrument

Table 5.9 captures national educational attainment levels and their equivalents (vocational qualifications that are recognised as being equivalent to general education qualifications) in one matrix. The matrix crosses the level of general school education (column) with the level of vocational education (row). It ranks general school education from 'no qualification' to the highest possible qualification, namely the general higher education entrance qualification. In view of the fact that we define education as a prerequisite to labour market entry (see Step 1), we then need a ranking of combined general and vocational educational attainment weighted according to occupational prestige. In the basic model presented in Table 5.9, we allocate the weights '1'-'11'. And finally, we rank vocational levels according to the ISCO major groups (see Section 3.2 above). The major groups indicate the superordinate group to which the occupation belongs and the range and complexity of knowledge and skills needed to carry out the job. Academics are in major group 2; technicians in major group 3; clerks in major group 4; and service and sales workers in major group 5. Crafts and related trades workers are in major group 7; plant and machinery operators and assemblers in major group 8, and elementary occupations in major group 9.

General education is not measured on the basis of qualifications alone but also on the basis of the level of education achieved. The highest level of education achieved should be stated, even if it was obtained as an equivalent qualification via vocational education. In contrast to ISCED, the matrix does not differentiate between a higher education entrance qualification obtained at a *Gymnasium* and one obtained via a vocational trajectory or at night school. What counts is that the person holds a higher education entrance qualification, not how it was obtained.

In the context of the matrix, vocational education covers all recognised programmes in the national secondary and tertiary sectors that lead to a certified vocational qualification. Paths to a general HE entrance qualification that are outside the general education school system (ISCED level 4: post-secondary

non-tertiary education) are not included in the matrix because what is of interest is whether the person holds a HE entrance qualification and not how he obtained it. Life-long learning and all continuing vocational training and further training in the workplace are explicitly excluded because they have not yet come into play when the person first joins the labour market. The education variable as we define it is not supposed to reflect the current educational status of the respondent but rather his status when leaving the education system. Otherwise education would have to be surveyed in a way that deviates from the norm.

Let us take a look at the individual fields in the matrix:

1. 'No qualification' means no recognised general education school qualification (column) or vocational qualification (row). Whether one can start vocational training without a general education qualification depends on the national education system.
2. The first general educational qualification is the first leaving certificate from the national education system. It entitles the holder to begin vocational training in a state-run or private institution.
3. The second and third general education qualifications are further possibilities of leaving the national education system with a certificate, or are stages in the general education system that can also be reached via the equivalent qualifications in the vocational education sector.
4. The highest general education (school) qualification is the general higher education entrance qualification.

Six stages are covered under 'vocational education':

1. Part-time vocational school with part-time on-the-job training (dual system);
2. Full-time vocational school;
3. Vocational college at upper secondary level;
4. A short-, medium- or long-cycle programme at a university of applied sciences or equivalent in the tertiary sector; and
5. University degree programmes (first and second degrees).
6. The sixth category is a doctorate because this is universally recognised as constituting the highest level of education or vocational education and is, therefore, cross-nationally comparable.

The codes represent a weighted ranking. Their weights were empirically determined on the basis of the level of knowledge and skill attributed to a particular job. For this reason, a general higher education entrance qualification followed by a vocational education programme (dual system or full-time vocational education) that could also have been accessed with a lower general education qualification has a lower value in the matrix (five points) than a higher education entrance qualification that was not followed by dual-system or full-time vocational education (which has a value of seven points). The rationale here is that the holder of a HE entrance qualification who enters an in-company trainee programme enjoys a higher status than the holder of a HE entrance qualification who begins an apprenticeship in that company. The same rationale applies in the case of the third general education qualification, if the national education system features such a qualification after

completion of compulsory education. Here, too, the holder of such a qualification who has done an apprenticeship in the dual system or a course at full-time vocational school receives five points, whereas the holder of a third general education qualification who has not undergone such training is given six points on the matrix.

The value 'X' indicates that such a combination of general education and vocational education cannot usually occur in practice.

Two survey questions are used to measure education in Germany. The first question is formulated as follows (our translation): 'What is the highest general education school qualification that you have achieved? Please remember that the *Mittlere Reife* and the *Abitur*, which gives you access to university, can also be achieved by successfully completing vocational training'. The second question reads (our translation): 'What vocational qualifications do you hold? By vocational qualifications we also mean university qualifications. Please state all the qualifications that you have achieved'. Other countries collect education with only one question that asks about general *and* vocational education.

Step 4: Harmonisation

The Hoffmeyer-Zlotnik/Warner Matrix of Education is an input-harmonised instrument. Although the educational qualifications, or their equivalents, are measured in national categories, they are entered into a matrix that is designed for international comparison. The harmonisation described in Step 5 is carried out only in the case of output harmonisation, which is not the case here, despite the fact that the data are collected in national categories. The instrument fulfils the two conditions that the authors imposed. It is simple to use, because data are collected in national categories; and it is very easy to code because one has simply to tick the cell in the matrix in which the row and column intersect. There is a separate table for each of the four types of education system (Tables 5.10, 5.11, 5.12 and 5.13); all four tables are based on the basic model (Table 5.9).

Table 5.10 Hoffmeyer-Zlotnik/Warner Matrix of Education – Type 1

		General education school – attainment level				
Vocational education	ISCO major group	No qualif.	First general ed. qualification	Second qualif.	Third qualif.	General HE entrance qualif.
No qualification	9, 8	1	2	3	6	7
Dual system	8, 7	4	4	5	5	5
Full-time vocational school	4, 5	4	4	5	5	5
Vocational college	3, 4	X	5	5	8	8
University of applied sciences or equivalent	2, 3	X	X	9	9	9
University	2	X	X	X	10	10
Doctorate	2	X	X	X	11	11

X = This combination of qualifications cannot occur in practice.

Table 5.11 Hoffmeyer-Zlotnik/Warner Matrix of Education – Type 2

Vocational education	ISCO major group	General education school – attainment level				
		No qualif.	First general ed. qualification	Second qualif.	Third qualif.	General HE entrance qualif.
No qualification	9, 8	1	2		6	7
Dual system	8, 7	X	4		X	X
Full-time vocational school	4, 5	X	X		X	X
Vocational college	3, 4	X	5		8	8
University of applied sciences or equivalent	2, 3	X	X		9	9
University	2	X	X		X	10
Doctorate	2	X	X		X	11

X = This combination of qualifications cannot occur in practice.

Table 5.12 Hoffmeyer-Zlotnik/Warner Matrix of Education – Type 3

Vocational education	ISCO major group	General education school – attainment level				
		No qualif.	First general ed. qualification	Second qualif.	Third qualif.	General HE entrance qualif.
No qualif.	9, 8	1	2	3		7
Dual system	8, 7	X	X	X		X
Full-time vocational school	4, 5	X	4	5		5
Vocational college	3, 4	X	5	5		8
University of applied sciences or equivalent	2, 3	X	X	9		9
University	2	X	X	X		10
Doctorate	2	X	X	X		11

X = This combination of qualifications cannot occur in practice.

Table 5.13 Hoffmeyer-Zlotnik/Warner Matrix of Education – Type 4

Vocational education	ISCO major group	General education school – attainment level				
		No qualif.	First general ed. qualification	Second qualif.	Third qualif.	General HE entrance qualif.
No qualification	9, 8	1	3			7
Dual system	8, 7	X	X			X
Full-time vocational school	4, 5	X	5			5
Vocational college	3, 4	X	5			8
University of applied sciences or equivalent	2, 3	X	X			9
University	2	X	X			10
Doctorate	2	X	X			11

X = This combination of qualifications cannot occur in practice.

Table 5.14 Correlations between the Hoffmeyer-Zlotnik/Warner (HZ/W) Matrix of Education, ISCED-97, 'years of schooling' (YoS), and SIOPS

Country	Instrument	HZ/W	YoS	ISCED
Germany	YoS	0.77		
	ISCED	0.83	0.70	
	SIOPS	0.64	0.54	0.54
Denmark	YoS	0.75		
	ISCED	0.96	0.76	
	SIOPS	0.50	0.49	0.51
Luxembourg	YoS	0.74		
	ISCED	0.94	0.78	
	SIOPS	0.61	0.56	0.58
France	YoS	0.75		
	ISCED	0.95	0.73	
	SIOPS			na

na = ISCO not collected, therefore SIOPS not generalisable
SIOPS = Treiman's Standard International Occupational Prestige Scale. Data: ESS, Round 1

Result: The Measurement Instrument

The above steps yield a measurement instrument that unproblematically measures education in accordance with our research question ('formal education as an entrance ticket to the labour market'). Moreover, the results achieved using this instrument are close to those achieved with other standard instruments such as ISCED-97 and 'years of schooling' (see Table 5.14).

As can be seen from Table 5.14, despite the slight difference in the logic of the Hoffmeyer-Zlotnik/Warner (HZ/W) Matrix and ISCED-97, especially with regard to ISCED Level 4 (post-secondary, non-tertiary education), there is a high degree of convergence between the two instruments. Although the HZ/W Matrix measures occupational prestige in a slightly less precise way than SIOPS, it should not be forgotten that the jobs reported by the respondents are those that they held at the time of the survey, not those taken up when they first entered the labour market.

5.2 Labour Status

Occupation is the most important variable for the measurement of socio-economic status – even more important than education or income. This is because the job a person holds, and his position in the workplace, are dependent on his education and training and are linked to his income. In cross-national comparative research, in particular, occupational data are collected using the International Standard Classification of Occupations (ISCO) (ILO, 1990, 2009). The codes thus obtained are used to create a prestige scale, a social status scale, or a social class scale.

However, the measurement of the respondent's occupation or job must be preceded by the determination of his labour status. The job pursued in the course of marginal employment does not suffice to determine a person's status. When a job is not substantial enough to characterise a person socially, other variables must be used to define his social status. Therefore, from a status point of view, a student continues to be classified as a student even if he is also marginally employed. This means that the labour status variable serves to determine whether, and to what extent, a person is employed. If the job is not substantial enough to define a person's status, the sub-category of the 'population not economically active' to which he should be allocated must be determined. The definition of what constitutes an 'adequate level of employment' for the determination of social status remains a problem. The various research fields differ in the definition they apply because they pursue different goals when measuring the extent of employment. Academic social researchers aim to ascertain socio-economic status (Statistisches Bundesamt, 2010, pp. 12ff., pp. 33f.); national statistical institutes wish to determine the country's level of economic activity (ILO, 1982); and commercial market researchers are interested in respondents' main source of livelihood (Risel et al., 2010, p. 80).

5.2.1 Occupation as an Indicator of Prestige and Socio-Economic Status

The occupation variable is used by social scientists to generate socio-economic status and/or occupational prestige. To this end, the person's labour status and position in the life-cycle must be ascertained. However, before doing so, one must first clarify what is to be understood by socio-economic status and occupational prestige.

The term 'prestige' refers to the level of respect ascribed to a particular position. Therefore, occupational prestige is the respect ascribed to jobs or occupations. It is an important factor when determining a person's location in society.

Occupation as an Indicator of Prestige

Occupation has a subjective component, namely prestige. Prestige refers to a ranking of occupations according to their social standing or the respect enjoyed by a person who pursues such an activity. In the 1960s, a number of studies conducted by American sociologists (see Duncan, 1961) led to occupational prestige being linked to social status. This resulted in Treiman's Prestige Scale (1977), which is still valid today. The version currently in use is the Standard International Occupational Prestige Scale (SIOPS) (see Ganzeboom & Treiman, 2003).

Following Imdorf (2005, pp. 51f., our translation), who uses Bourdieu's terminology, occupational prestige 'in the sense of recognition of, and esteem for, an occupation is symbolic (occupational) capital, in other words, the symbolic

representation of occupations and their respective standing in an historically evolved social order. According to Ganzeboom et al. (1992), this symbolic capital acts as an intervening variable in the sense of a hinge between education (cultural capital) and income (economic capital)'. Therefore, if 'cultural capital can be transformed into economic capital via symbolic occupational capital (prestige)', then socio-economic status refers to 'those parts of cultural capital that can be transformed into economic capital via their socially mediated symbolic effect' (Imdorf, 2005, p. 52; our translation).

Occupation as an Indicator of Socio-Economic Status

'Status' defines the position of a person relative to the position of others. 'Social status' defines his position in the hierarchy of the society to which he belongs. Social status is determined by the person's own education and that of his family of origin, by his own job and the occupational prestige associated with it, or by the occupational prestige of the person's partner and by the household income as an indicator of lifestyle. By including income in the equation, social status becomes socio-economic status (Duncan, 1961). Given that every job calls for a certain level of education and training and commands a certain level of income, occupation is the central status-defining variable – even more so than education. Hence the focus on coding occupations and using these codes as a basis for generating scales of occupational prestige (Treiman, 1977) and/or socio-economic status (Ganzeboom et al., 1992). Following Ganzeboom and Treiman (2003, p. 161), 'socio-economic scores are created by computing a weighted sum of socio-economic characteristics of the incumbents of each occupation, usually education and income, but occasionally other characteristics' (see Duncan-Jones, 1972). The definition of socio-economic status used here reduces mobility to occupational mobility. Increases in occupational status may be linked to the revision of standard classifications to take account of the impact of developments in technology on the occupational structure of the labour market. This is impressively demonstrated in ISCO-08 (ILO, 2009), the revision of ISCO-88 (ILO, 1990). The updated version of the classification takes account of the transition from mechanical to electronic or computerised machines by upgrading operators of machinery that involves automated control of multiple processes or functions from 'machine operator' to 'process control technician'. These technicians are now included in Major Group 3 (Technicians and Associate Professionals) rather than Major Group 8 (Plant and Machine Operators and Assemblers). As a result, the occupation gains in prestige, and the incumbent experiences a corresponding increase in socio-economic status. In this way, hierarchichal status – i.e., prestige status – has become a special type of status that refers to the position that establishes the incumbent's relationship with the incumbents of other positions in the class structure (Hoffmeyer-Zlotnik & Warner, 2011, p. 9).

Occupation as a social background variable is based on the implicit assumption that in a society based on the division of labour a person's position in the social

structure is primarily determined by the type of job he pursues. Education and income are closely linked to occupation and to position in the aforementioned sense. Mayer (1979, p. 81) explains the connection between occupation and position in the social structure with reference to the fact that they are deemed to be important determinants of life-style, attitudes, and individual and group behaviour.

Whether the combination of current job and position in the workplace will, in the long run, remain the central status-defining variable that it is today is not a foregone conclusion. However, at present there is no alternative. The labour market in post-industrial society is in a state of flux. In more and more countries, a growing number of employees hold down more than one job. It is becoming increasingly common for jobs to be pursued on a short- or medium-term basis, after which the person switches jobs. It is therefore all the more important to measure labour status in a detailed manner in order to be able to decide – in the case of an economically active person– which job can be regarded as the one that determines his social status, or whether his status can be determined on the basis of a job at all. If this is not the case, another status or variable must be used.

5.2.2 Handling Labour Status in National and International Surveys

The labour status variable covers all categories of people of working age – be they employed, unemployed or not economically active. 'People of working age' are all persons in the stage in the life-cycle that begins after compulsory education ends and that ends at the official retirement age. The lower age limit is quite clearly defined. In some countries it is 15, in other countries 16 years. The upper limit is less clearly defined, although in most countries retirement age is laid down by law. In the EU member states, the statutory upper limit on retirement age currently lies between 60 and 65 years for men; in many EU member states the upper limit for women is – at most – 5 years below that for men. Some states are planning to increase the retirement age to 68. However, legal retirement age applies only to those in paid employment. There is no upper limit for self-employed persons. For official statistics purposes, an upper limit of 74 years is set.

Categories for the Measurement of Labour Status in Academically Driven Social Surveys

In academically driven social surveys the categories for the differentiation of subgroups are important. Employed persons must be differentiated according to the extent of their employment because the occupational activity of marginally employed persons is not sufficient to determine their social status. Moreover, persons who are not in employment must be classified on the basis of criteria that can be used for

status-assignment purposes. The socio-economic status of persons whose jobs do not exceed the threshold of marginal employment must be ascertained either on the basis of a previous job – provided it was at least substantial part-time employment – or on the basis of the status of another – status-conferring – person in the household.

For academic social research purposes, 'labour status' should be divided into the following superordinate categories (cf. Hoffmeyer-Zlotnik & Warner, 2011, pp. 16ff.):

1. Employed persons: This category comprises three subcategories:

   - Employee (waged/salaried),
   - Employer/self-employed, and
   - Contributing family worker.

   Employees must then be differentiated according to extent of their employment. There are four subcategories here:

   - Full-time employees: 'Full-time' in this sense means the number of daily, weekly or monthly working hours deemed to constitute, or be equivalent to, full-time employment in the sector, occupation, or enterprise in question. It is 'fixed by or in pursuance of law, collective agreements or arbitral awards' (Mata-Greenwood, 1992, pp. 1f.). In the case of self-employed persons, full-time employment is taken to mean the usual average number of hours per working week in the sector in question.
   - Part-time employees: 'Part-time' work, as defined here, means less than full-time but more than marginal employment. As a rule, the lower limit is 50 % of full-time work.
   - Marginally employed persons: 'Marginal employment' can refer to one of two things: (a) employment in which the number of working hours is less than 50 % of 'full-time employment' as defined above; (b) employees who receive very low pay. There are either statutory upper limits reflected in special tax and social security provisions or bilaterally negotiated rates of pay.
   - Seasonal workers: This group of workers is employed only at certain times of the year when there is an increased demand for manpower – for example at harvest time in agriculture or during the Christmas rush.
   - Employees in state labour market programmes. As a rule, these measures are aimed either at re-integrating the long-term unemployed into the labour market or at facilitating the retirement of certain groups from the labour market, for example, the semi-retirement models in Germany and Austria.

2. Persons who work for pay but who are not classified as employed persons. These include:

   - Persons undergoing vocational training,
   - Conscripts on compulsory military or community service, or persons doing a 'voluntary social year'.

3. Persons who, in principle at least, are available for work, but who are not currently employed. These include, for example:
   - Unemployed persons,
   - Persons undergoing retraining,
   - Persons who are on extended leave for the purpose of looking after children, incapacitated relatives or household members,
   - Persons who are on sabbatical or other leave of absence.
4. Persons who are not available for work. This category includes:
   - Students at general education schools, universities, universities of applied sciences and vocational colleges,
   - Homemakers who take care of a private household and/or their family,
   - Pensioners and rentiers who have retired from paid employment, and self-employed persons who have given up work on age grounds and are living on a pension, and
   - Persons who are not available for work on the regular labour market due to mental or physical disability or infirmity.

Statistical Categories for the Measurement of Labour Status in Accordance with the ILO's Labour Force Concept

In surveys conducted by national statistical institutes (NSIs) the categories used to measure labour status differ from those employed in academically driven social surveys. This is due to the fact that NSIs are not interested in determining social or socio-economic status. Rather, all economically active persons are considered to be employed persons, and employment is regarded as an indicator of the economic power of the state. Therefore, NSIs use the ILO's definition of 'at work' – namely some work of at least one hour's duration performed for pay, profit or family gain during the reference period of one week. The ILO distinguishes between the following groups (ILO, 1982, pp. 3f.):

1. The *employed*, comprising persons in paid employment, self-employed persons, and contributing family workers. These categories are divided into two subcategories:
   - 'At work': 'persons who during the reference period performed some work for wage or salary, in cash or in kind';
   - 'With a job/enterprise but not at work': persons who had a formal attachment to their job during the reference period but were temporarily not at work because of illness, vacation, strike, short-time working, maternity leave, etc. This category also includes persons who have received compensation benefits without obligations to accept other jobs.

The *employed* covered by the ILO definition also include (1982, p. 4):

- Persons who produce goods and services for their own consumption. These persons are classified as self-employed.
- Apprentices who receive payment in cash or in kind. They are included in the paid employment category.
- Students and homemakers 'mainly engaged in non-economic activities during the reference period, who at the same time were in paid employment or self-employment'.
- Members of the armed forces, who should be classified as being in paid employment. However, the ILO (1982, p. 5) also suggests that this group should be distinguished from the economically active civilian population.

2. The *unemployed* comprises all persons who are above a specified age (15 or 16 years, depending on the country), who are 'without work', who are not included in the employed group, and who satisfy the following criteria (ILO, 1982, p. 4):

   - They are currently available for work, i.e. they were available for paid employment or self-employment during the reference period.
   - They are actively seeking work.

3. The *population not economically active* comprises all persons irrespective of age, including those below the age of 15/16 years who were not economically active, namely:

   - All persons who during the reference week were neither employed nor unemployed and who were either attending a general education school, were engaged in domestic activities in their private household, were in retirement, or were not economically active for other reasons such as infirmity or disability.

4. The fourth group, the *population not usually active*, comprises persons whose main activity status was neither employed nor unemployed. It includes the following functional categories (ILO, 1982, p. 5):

   - Students,
   - Homemakers, persons taking care of family members,
   - Pensioners, rentiers, etc.,
   - Recipients of public aid or private support,
   - Persons engaged in unpaid community and volunteer services,
   - Persons who worked less than one hour during the reference week.

The Implementation of the ILO Labour Force Concept in National Labour Force Surveys

The aim of the labour status questions in the Labour Force Surveys is to identify the three groups – the *employed*, the *unemployed* and the *population not economically*

active. The fourth group – conscripts on compulsory military or community service – is recorded separately; all those persons who are not members of the target population, namely those who are under the age of 15/16 or over the age of 74, are filtered out.

A user guide produced by the European Commission and Eurostat (2009a) provides a rough schema for identifying the three groups. The first step in the questionnaire clarifies the situation during the reference week, which is usually the week preceding the survey and which runs from Monday to Sunday. Respondents are asked whether they worked for at least one hour for pay, profit or family gain. There are five response categories to choose from:

1. Person worked for at least one hour for pay, profit or family gain during the reference week.
2. Person had a job or business from which he/she was absent (for whatever reason) during the reference week;
3. Person was not working during the reference week because he/she had neither a job nor a business;
4. Person was a conscript on compulsory military or community service.
5. Not applicable because the target person was less than 15/16 years old.

Those respondents who choose categories 1 or 2 are classified as employed. Those who opt for category 4 belong to the special group of conscripts on military or community service. Those in category 5 are not part of the target population. That leaves the respondents who choose category 3. In a second step, these persons are asked whether they have been actively seeking work during the previous 4 weeks. The methods used to seek work are immaterial. All that counts is that the search was an active one. Here, too, there are five response categories to choose from:

1. Person has already found a job which will start within a period of at most three months.
2. Person has already found a job which will start in more than three months.
3. Person is not seeking employment and has not found any job to start later.
4. Person is actively seeking employment.
5. Not applicable because the age of the person is equal to, or greater than, 75.

If the person chooses category 1, he is classified as employed. If he opts for category 2, he is assigned to the population not economically active, as are those who choose category 3. Persons who opt for category 5 do not belong to the target population. Those who choose category 4 are asked in a third step whether they would be available to start working within 2 weeks. The following two categories divide the group of respondents who were asked questions in the third step into unemployed (category 1) and not economically active (category 2):

1. Person could start to work immediately (within 2 weeks).
2. Person could not start to work immediately (within 2 weeks).

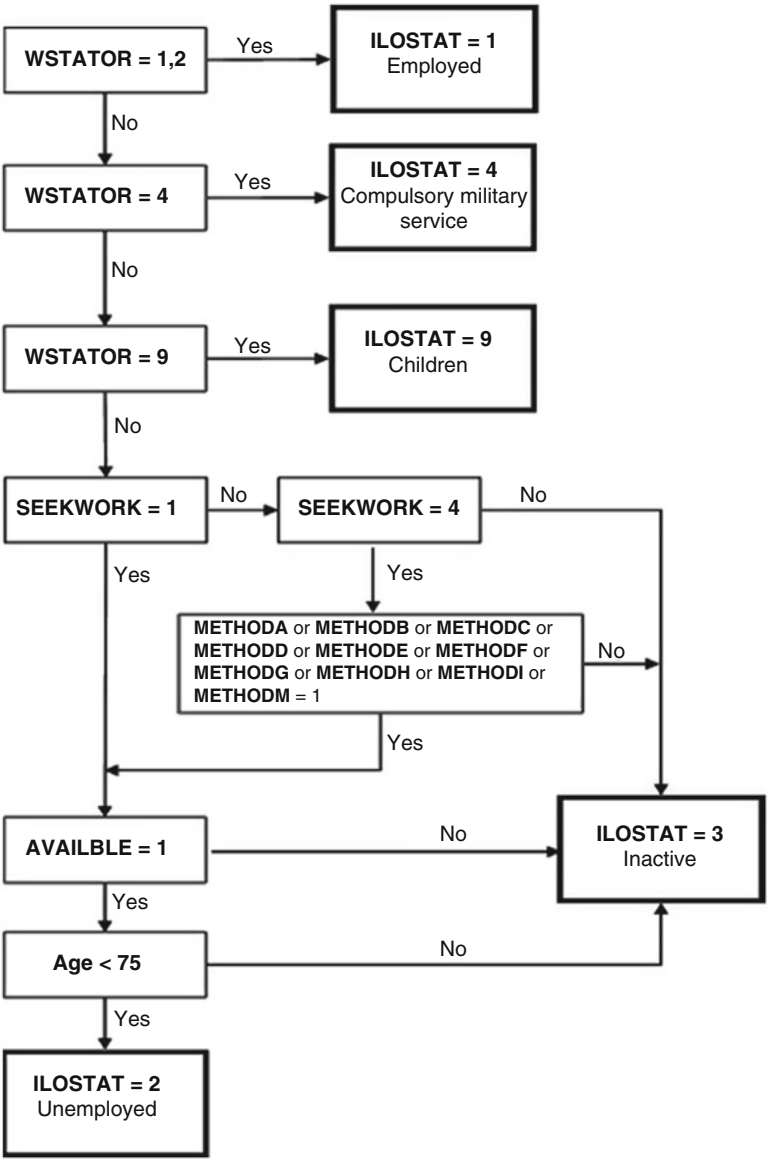

Fig. 5.8 ILOSTAT: ILO/EU Employment Status
Notes: ILOSTAT = ILO labour status, WSTATOR = labour status during reference week, SEEKWORK = seeking work during previous 4 weeks, AVAILBLE = availability to start working within 2 weeks, METHOD A to M = methods used during previous 4 weeks to find work (Source: European Commission, Eurostat, 2009a, p. 52)

Although the determination of the labour status of the target population in three steps may look easy (see Fig. 5.8), it is not. The simple steps in the schema allow only one structure to be given. This structure defines the groups but not the possible categories. When all possible national variations have been formulated, the questionnaire becomes very complex. The national statistical institutes of the EU member states collect the labour status of the respondents in very different ways (see Hoffmeyer-Zlotnik & Warner, 2011, Annex 2). Moreover, in the questionnaires used by the individual EU member states, the questions are formulated in such a way that different emphasis is placed on certain sub-populations, which renders comparison difficult (Hoffmeyer-Zlotnik & Warner, 2011, pp. 23ff.). As ILO experts on the identification of the economically active population, Hussmanns, Mehran, and Verma (1990, pp. 258ff.) provide examples of questionnaire flow charts from well-established national labour force surveys. These flow charts comprise between 31 and 61 questions. The authors also provide extracts from national labour force questionnaires (Hussmanns et al., 1990, pp. 355–395) that show how laborious the measurement of the economically active population actually is, and how many survey questions are needed.

Measuring Labour Status in Cross-National Comparative Social Surveys

In Round 4 of the academically driven European Social Survey (ESS, 2008a), Question F8a reads: '…which of these descriptions applies to what you have been doing for the last 7 days?'At this point in the questionnaire, the ESS did not yet define 'at work' as a minimum of one hour's work for pay during the reference week. Instead, it left the definition up to the respondent. This constituted an attempt to measure labour status in social science categories yet still remain comparable with official statistics. Besides 'paid work', 'unemployed and actively looking for a job', and 'unemployed and not actively looking for a job', the response options included 'in community or military service', 'in education', 'doing housework, looking after children or other persons', 'permanently sick or disabled', and 'retired'. In the follow-up question (F8b), respondents were asked: 'And which of these descriptions best describes your situation (in the last 7 days)?' In this way, those who were temporarily employed could assign themselves to a category reserved for persons who were not at work. The response remains subjective, marginal employment is captured only by coincidence, and extended leave of absence is not captured at all. Question F9 is a follow-up question that was asked if the respondent had indicated that he was not in paid work. It was at this point that the ILO definition of 'an hour or more' was introduced: 'Can I just check, did you do any paid work (of an hour or more) in the last 7 days?' Because the definition was in brackets, the interviewer may have failed to read it out. However, if it was read out, it may have unsettled the respondent because he was now effectively being asked whether his previous choice – the 'no paid work' category – was, in fact, correct. Whether comparability with official statistics was actually established remains questionable.

In its *Background Variables Guidelines* (ISSP DMG, 2009), the International Social Survey Programme (ISSP) Demographic Methods Group (DMG)

recommended that participating countries ask respondents whether they were 'currently, formerly, or never in paid work'. By 'work', the DMG means 'income-producing' work as an employee, self-employed, or working for one's own family's business, for at least one hour per week. If respondents are temporarily absent from work because of illness/parental leave/vacation/strike, etc., they are requested to refer to their 'normal work situation'. Although, the DMG specifically mentions the 'one hour per week' minimum in the definition of paid work provided in the interviewer instruction, it is not explicitly mentioned in the proposed question in the background variable questionnaire (BVQ_05), which reads: 'Are you currently working for pay, did you work for pay in the past, or have you never been in paid work?'

Therefore, the ILO's definition of 'at least one hour per week' is unlikely to reach the respondents. However, when it comes to the 'hours worked weekly' variable, provision is made for full-time, part-time and marginal employment insofar as the response options range from 'from one hour to 96 hours or more'. The 'main labour status' variable then measures the respondent's current situation. The response categories are similar to those used in the ESS (Question F8a). The first category covers those 'in paid work'; the remaining categories classify those who are not in paid work. They comprise 'unemployed and looking for a job'; 'in education …'; 'apprentice or trainee'; 'permanently sick or disabled'; 'retired'; 'doing housework, looking after the home, children or other persons'; and 'in compulsory military service or community service'.

In the 2008 questionnaire, the European Values Study (EVS) asked respondents whether or not they were gainfully employed at the time. There were two superordinate response categories: 'paid employment' and 'no paid employment'. 'Paid employment' was divided into the following subcategories: '30 hours a week or more' (full-time); 'less than 30 hours a week' (less than full-time); and 'self-employed'. The lower limit of full-time working was 30 hours. The 'no paid employment' category comprised the following subcategories: 'military service', 'retired/pensioned', 'housewife not otherwise employed', 'student', 'unemployed', and 'disabled'. Therefore, the EVS measures labour status with just one question (EVS, 2008).

In principle, the system of categories used by the EVS measures what should be of interest to social scientists, even though the lower limit in the definition of full-time work, which is binding on all participating countries, is somewhat imprecise. However, no attempt is made to establish comparability with official statistics and the ILO labour status concept of '(paid) work' used by national statistical institutes.

In contrast to the EVS, both the ESS and the ISSP attempt, albeit half-heartedly, to incorporate the ILO employment concept by using the one hour per week criterion – the ESS does so more explicitly than the ISSP. It is doubtful, nonetheless, whether either survey succeeded in capturing marginal employment. However, this is not a problem insofar as the socio-economic status of marginally employed persons cannot be determined on the basis of their current job anyway. The determination of SES by coding the respondent's occupation into ISCO and assigning it an ISEI or SIOPS score is meaningful only if he works at least part-time (i.e. at least half a full-time job).

5.2.3 *Development of the Hoffmeyer-Zlotnik and Warner Instrument for the Measurement of Labour Status*

In order to yield sociologically meaningful data, a survey instrument for the measurement of labour status must, on the one hand, capture the target person's level of labour market attachment in the most accurate way possible. On the other hand, it must guarantee that the main job recorded is meaningful for the analysis of the respondent's socio-economic status – in other words that it is the activity that characterises that person socially. Furthermore, the data should, ideally, be comparable with official statistics, because official statistics are the reference statistics for academic social research.

Step 1: Definition of the Concept to be Measured

The combination of occupation/job and position in the workplace is the central variable for the determination of a person's socio-economic status because a job calls for education and training and theoretically guarantees a certain level of income. Whether or not occupation can be used to determine socio-economic status depends on the person's labour status. The ISCO-based ISEI and SIOPS scales can be meaningfully used to determine status only in the case of persons who are working full- or part-time. If this is not the case, socio-economic status must be ascertained on the basis of other variables.

Because each job has a specific employment profile, the employment situation of those in paid employment should be measured as exactly as possible so that jobs can be coded correctly and a prestige or status score can be assigned on the basis of that code.

Step 2: Structural Analysis

In post-industrial societies, such as those in Central Europe, occupations are dependent less on national state structures than on modern technical and organisational work processes. In all industrial and post-industrial societies, the collection of occupational data in such a way that they can be coded into ISCO is the prerequisite for determining prestige or status. A second – albeit less weighty – status-related factor is the assumption that a particular occupation commands a certain level of income. Whether this assumption is still meaningful in the light of political debate on wage floors across countries is a question that will not be addressed here.

The definition of full- and part-time employment is important for a structural analysis. There is no international consensus as to what constitutes the lower hours threshold of full-time working (Mata-Greenwood, 1992). The 30 hours per week used by the EVS as the lower threshold is arbitrary. Only that which is deemed to constitute 'full-time' employment in the country in question can be regarded as 'full-time'. It is established either by law or fixed nationally, regionally, locally, or for a particular enterprise by collective agreement or arbitral award. In those sectors or

enterprises that are not governed by collective agreements, an individually negotiated number of hours or the usual number of working hours in that sector or job applies. Therefore, 'full-time' may be defined differently both across countries and within countries. 'Part-time' must be viewed in relation to 'full-time'. It begins below the lower hours threshold of 'full-time' and ends at 50 % of 'full-time'. Anything less than part-time should be designated as 'marginal'.

The next step in the structural analysis of labour status involves persons who are not employed on the regular labour market or who are in categories that have no relation to the labour market:

- Persons not employed on the regular labour market include those who are in national employment programmes designed to integrate people into the regular labour market, and those availing of semi-retirement models. Here one must ask whether, or to what extent, persons in such programmes should be classified as being in paid employment. Many countries have, or have had, (voluntary) retirement schemes to reduce staff numbers in government departments or the military, for example. Germany and Austria currently have semi-retirement models that allow employees to ease themselves into retirement. Only in Germany does one find 'one-euro jobs', a workfare programme in which welfare recipients are employed at a symbolic rate of one euro an hour.
- Moreover, in times of high unemployment, many countries initiate measures on the secondary labour market to support and retrain workers made redundant in sectors such as the coal and steel industry that are suffering from structural decline (CVCE, 2011; Hoffmeyer-Zlotnik, 1998; STATEC, 2005, pp. 166ff.), or to help persons seeking work to reintegrate into the primary labour market in times of economic downturn.
- The time it takes for a person without a job to be removed from the unemployment statistics and to be designated as 'seeking work' rather than 'unemployed' depends on national legislation.
- The work stage of the life-cycle is preceded by the education stage. The length of time spent in the national education system varies from country to country. Moreover, some countries have a dual system of vocational training (part-time vocational school and part-time on-the-job training), while other countries prefer full-time vocational schools and colleges. As a result, the transition from the education stage to the work stage varies depending on the definition and the organisation of vocational education.
- The work stage of the life-cycle is followed by the retirement stage. If retired persons whose main source of income is their pension are also in paid employment, it must be clarified whether they need to work and how their jobs should be classified.

Step 3: Development of the Instrument

The survey instrument (see Chapter 6) collects key information on labour status, employment, occupational activity, and job autonomy in eight steps (see the flowchart of the questions in Fig. 5.9).

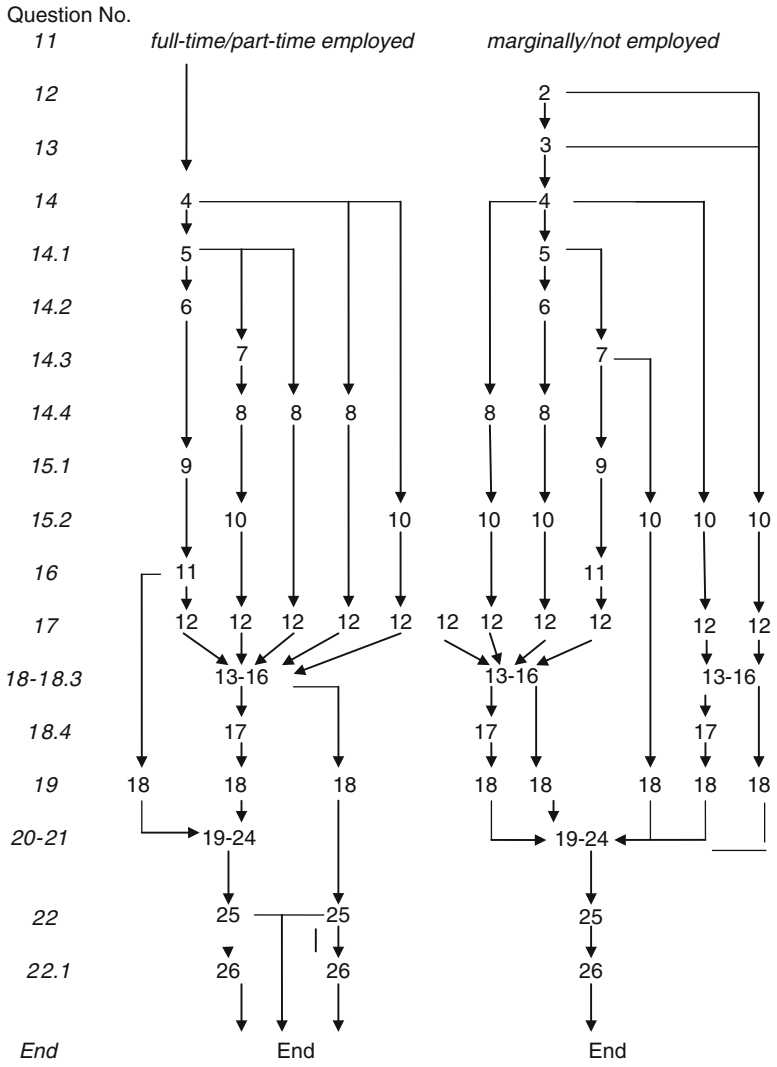

Fig. 5.9 Flowchart for the labour status and occupation questions
Note: See questionnaire in Section 6.1.7

- In the first step, the person is asked whether he is employed and, if so, how many hours he works. Three levels of working time are distinguished: full-time, part-time, and marginal (Question 11[3]).
- In the second step, all those persons who are not employed on the regular labour market, or who are only marginally employed, are asked to indicate their current main status, e.g. undergoing vocational training, homemaker, retired, etc. (Question 12).

[3] The question numbers correspond to those in Chapter 6.

- If the person is unemployed or in a retraining programme, he is asked whether he would be available to start work within 2 weeks (Question 13).
- In the fourth step, all those who are employed, irrespective of the extent of their job(s), are asked (a) whether they are employees, self-employed, or contributing family workers, and (b) how many jobs they hold. If the person has more than one job, he is asked how many hours he works in each job and whether he does the same work or different work in each job. This must be ascertained in order to determine which job characterises the person's social status. And finally, the person is asked how many hours he normally works each week (Questions 14–15).
- All those respondents who are not employed at the time of the survey are asked whether they have ever been employed full- or part-time in the past (Question 16).
- In the sixth step, the main job of all those currently or previously employed on a full- or part-time basis is recorded in such a way that the data can be coded into ISCO (Question 17). Respondents are then asked to indicate the category to which the job belongs. Self-employed persons in industry, commerce etc. are asked how many employees they have; self-employed farmers are asked how many hectares the farm has under cultivation; and employees are asked about their level of job autonomy (Questions 18–18.3). This second set of questions offers an alternative to time-consuming ISCO-based data collection and coding. The data can be organised into a rough five-category occupational prestige scale (see Section 5.3.4). The last information required in this step is whether the person has supervisory responsibilities (Question 18.4).
- The seventh step entails finding out whether the respondent is the main income earner in the household (Question 19). If this is not the case, then it makes good sense to determine the main income earner's main job, job autonomy/prestige, and supervisory responsibilities (Questions 20–21) because the main income earner presumably has a more high-status job, and the person with the highest status determines the status of the household as a whole. It is therefore necessary to collect the 'main status' variable not only for the respondent but also for the person who (presumably) has the highest status in the household. It is also important to identify this person in the case of all those respondents who are not – or who are only marginally – employed.
- To avoid confusing respondents, the question at the core of the ILO labour status concept is not asked until last (Question 22): 'Did you do any work for pay, profit or family gain for at least one hour during the past week (as an employee, a self-employed person, or as a contributing family worker)?' If the person was not 'at work' in the ILO sense during the reference week, then he is asked to state the main reason (Question 22.1).

Step 4: Harmonisation

Labour markets are subject to national regulation. Therefore, not only do weekly working hours differ across countries, but also economic recovery programmes,

regulations regarding the secondary labour market, and types of operational organisation in companies. However, the allocation of occupations to the categories of the International Standard Classification of Occupations (ISCO) is not likely to differ across countries. Even though the training required for – and the prestige enjoyed by – a particular job may differ from country to country, this has been taken into account in ISCO. Therefore, the examples of occupations used in the proposed instrument can be used in all industrial and post-industrial countries in Europe.

- In the employment question (Question 11) the three levels of working time – full-time, part-time, marginal – should be defined in accordance with national norms or with an appropriate definition, without stipulating a standard number of hours for 'full-time'.
- When asking marginally employed respondents about their main status (Question 12), care must be taken to ensure that the response categories cover all relevant national programmes for the regulation of the labour market that are in force in the country in question, for example, early retirement, pre-retirement, 'zero short-time working', etc.
- When asking about the main status, it is also important to use national terms for the various vocational training programmes.
- Question 14.2 features a category that covers the national labour market programmes for those persons who are employed on the secondary labour market. This category must be adapted to national terminology in order to enable respondents to answer the question.
- In Questions 18 and 21, types of organisation and sizes of enterprises are specified. The terminology and the relative orders of magnitude may have to be adapted to national circumstances.
- In the final question (22.1) requesting respondents to explain why they were not 'at work' in the ILO sense during the reference period, the list of reasons may have to be adapted to national circumstances.

Apart from the aforementioned points, the instrument for the measurement of labour status, employment, and occupational activity represents an input-harmonised tool.

Result: The Measurement Instrument

Although the measurement instrument takes up a lot of space in the questionnaire, it can be administered relatively quickly. A respondent who is employed full- or part-time has to answer a minimum of nine questions/sub-questions; persons who are not employed must answer a minimum of eight questions/sub-questions. Marginally employed respondents with more than one job must answer a maximum of 18 questions/sub-questions. The measurement instrument enables the socio-economic status of the respondent or his household to be precisely ascertained on the basis of occupational activity. In addition, it establishes an acceptable level of comparability with surveys conducted by national statistical institutes (NSIs). By an

acceptable level we mean that, even in a 60-question NSI survey, it is difficult to adequately capture marginally employed persons.

The instrument discussed here was developed for a specific research question. If certain items are not needed for a particular project, they may be omitted. However, every omission must be followed by a pre-test. Variables may be added, provided they are compatible with the present instrument. If this is not the case, comparability is no longer a given. Nonetheless, it is permissible to collapse or differentiate categories.

5.3 Occupation and Job

Many countries use national instruments to collect the occupation variable. As a rule, these instruments were developed for use in labour market regulation and for application by national statistical institutes. Because they were developed for very specific purposes, they are not suitable for use in cross-national comparative research. By contrast, the International Standard Classification of Occupations (ISCO), the first version of which was published in 1958, was developed especially for cross-national comparative purposes. The fourth version of ISCO, ISCO-08, was published in 2008. It takes account of the increase in occupational specialisation and differentiation in industrial and post-industrial societies due to the greater division of labour and new technologies, and also reflects the situation in agricultural societies better than its predecessors did. Although ISCO-08 (ILO, 2009) has been applied in the 2010/2011 round of population and housing censuses, academic social researchers will continue to use ISCO-88 (ILO, 1990) in addition to ISCO-08, until such time as tools become available for the conversion of ISCO-08 into measures of occupational status (prestige, socio-economic status, and EGP classes). At the time of writing (mid-2012), such conversion tools had yet to be developed.

ISCO is the only instrument with which it is possible to generate:

a. Data on activity in the economic sense,
b. Data on occupational health risks in the medical sense, and
c. Status variables in the sociological sense, for example, occupational prestige (SIOPS, see Ganzeboom & Treiman, 2003; Treiman, 1977), socio-economic status (ISEI, see Ganzeboom et al., 1992; Ganzeboom & Treiman, 1996) or class category (EGP, see Erikson et al., 1979; Goldthorpe, 1980; Erikson & Goldthorpe, 1992).

5.3.1 Measuring Occupation in Cross-National Social Survey Research

Whether, and in what detail, occupation is measured in academically driven national surveys depends very much on the attitude of the researcher and on the research

budget. Before the advent of computer-assisted interviewing, occupational data collected with instruments such as the *Klassifikation der Berufe* (*KldB*), the German national classification of occupations (Statistisches Bundesamt, 1992), which is used by the statistical institutes in Germany, were extremely laborious to code. The KldB comprises some 30,000 occupational titles to be coded into 2,287 categories. ISCO-88 is not easy to code either, although it features only 390 categories at the most detailed level of the structure. However, the documentation and the coding index take up almost 500 pages. For this reason, national surveys frequently forgo classifying occupations or jobs, and make do with other solutions. In cross-national comparative research this is not expedient as there is no alternative to collecting occupational data in such a way that they can be coded into ISCO.

The International Standard Classification of Occupations (ISCO)

The 1988 version of the International Standard Classification of Occupations (ISCO-88) (ILO, 1990; see also Section 3.2.2) classifies occupations in a four-level hierarchy ranging from major groups at the highest level of aggregation to unit groups at the most detailed level. ISCO-88 saw the introduction of 'skill level', a task-related similarity criterion for the delineation of occupational groups at the major group level. In addition to skill level, a second, occupational, dimension of the skill concept – 'skill specialisation' – was introduced. This criterion reflects the type of knowledge applied in the job and also endeavours to include tools and equipment used, materials worked on, or with, and the type of goods and services produced. However, unlike its predecessors, ISCO-88 is no longer broken down to the level of occupational categories. Instead, the most detailed level of the classification hierarchy is the unit group level, with each unit group being made up of several occupations that have a high degree of similarity (see Section 3.2.2).

As in the case of ISCO-68, the identification of the respondent's job is the key aim of ISCO-88. However, classification takes place at a very abstract – unit group – level. In ISCO-88, this level comprises 390 codes that classify occupations according to educational and training requirements, the type of goods or services produced, characteristics of the production process, and the professional environment.

ISCO-08 adheres to the logic of ISCO-88 (ILO, 2007, p. 1):

> ISCO classifies jobs. A job is defined … as a set of tasks and duties performed, or meant to be performed … for an employer or in self employment.
>
> An occupation is defined as a set of jobs whose main tasks and duties are characterised by a high degree of similarity.
>
> Jobs are classified by occupation with respect to the type of work performed, or to be performed.

Because ISCO classifies jobs, and jobs are only loosely linked to industrial sectors, it is incompatible with those national occupational classifications (NOCs) developed primarily for job-placement purposes, which classify occupational titles.

The changes to ISCO-08 vis-à-vis ISCO-88 (see Table 5.15) involved, first, the adjustment of the classification to reflect the impact of developments in technology

Table 5.15 Number of groups at each level of ISCO-88 and ISCO-08

		Sub-major groups		Minor groups		Unit groups	
	Major groups	ISCO-88	ISCO-08	ISCO-88	ISCO-08	ISCO-88	ISCO-08
1	Managers (senior officials and legislators)	3	4	8	11	33	31
2	Professionals	4	6	18	27	55	92
3	Technicians and associate professionals	4	5	21	20	73	84
4	Clerical support workers	2	4	7	8	23	29
5	Services and sales workers	2	4	9	13	23	40
6	Skilled agricultural, fishery and forestry workers	2	3	6	9	17	18
7	Craft and related trades workers	4	5	16	14	70	66
8	Plant and machine operators and assemblers	3	3	20	14	70	40
9	Elementary occupations	3	6	10	11	25	33
0	Armed forces occupations	1	3	1	3	1	3
ISCO-88 total		28		116		390	
ISCO-08 total			43		130		436

Source: ILO, 2012, p. 22

on the occupation structure. For example, the fact that some former plant and machine operator jobs now require training as a technician led to their classification at a higher level as process control technicians. Second, a more differentiated approach was taken to the occupational fields of managers, professionals, and service and sales workers. Managerial occupations in Major Group 1 were reorganised, and the number of unit groups for professionals and service and sales workers was increased significantly. By contrast, the number of unit groups for plant and machine operators in the traditional sense was drastically reduced (from 70 to 40). Third, the 2008 revision aimed to reflect the occupation structure worldwide by improving the coverage of occupations in pre-industrial countries. Because of the significant differences in the treatment of these occupational groups, the conversion of data between ISCO-88 and ISCO-08 is not as easy as the correspondence tables supplied by ILO suggest.

Collection of Occupational Data for Coding to ISCO

In Germany, the following three questions have proved effective for the collection of occupational data for coding to ISCO: ‘What is your main job at the moment?’ (ESS, 2010b, F34: ‘… what kind of work do/did you do …’); ‘Please give me an

Table 5.16 Codability of responses to ISCO by number of questions used and coding method, in %

	Coding of occupation on basis of response to		
Coding method	First question	First two questions	All three questions
Automatic	37.2	41.9	44.9
Manual, 4-digit	55.1	73.0	75.1
Manual, incomplete	86.8	97.1	99.8

Source: Hoffmeyer-Zlotnik et al., 2004, pp. 40–44

exact description of the job', and 'Does the occupation have a special name?' (Geis & Hoffmeyer-Zlotnik, 2001; Pappi, 1979; Statistisches Bundesamt, 2010, our translation).

Because the aim is to identify the job and not the occupational title, the questions must be phrased in such a way that they elicit a description of the job. The use of three questions to collect occupational data for coding to ISCO has proved its worth for over three decades now, both in national surveys in Germany and in cross-national comparative surveys such as ISSP. The three questions yield all the information needed to code the occupation directly to ISCO-88 or ISCO-08. The survey instrument aims to elicit a description of the job, but in such a way that it can be assigned to an occupational category. This calls for verbs that describe the job. However, information on the type of goods or services produced and the materials used or worked is also needed, and it must be possible to assign the job to an occupational category.

The categories for the coding of occupations are predefined by ISCO. Therefore, they are relevant to the research question, one-dimensional, exhaustive, and delineated, as befits a systematic approach. Moreover, they are also scientifically systematic because, if the right questions are asked, the information provided by the respondent can be coded according to the predefined categories. In a random national sample, some 40 % of the responses to questions on occupation can be coded without any great reflection. They are therefore suitable for computer-assisted or automatic coding. Trained coders are needed to manually code the remaining 60 % of the responses because other information provided by the respondent must be taken into account and the ISCO documentation and definitions may have to be consulted.

The following figures demonstrate how important it is to measure occupation with three questions if the data are to be accurately coded into ISCO-88 (Hoffmeyer-Zlotnik et al., 2004, pp. 40ff.) (see also Table 5.16).

Automatic coding with an electronic index of occupation titles was tested on an occupational dataset from a random sample of the general German population aged 18 and older (N = 3,153). Coding to ISCO on the basis of the response to the first question yielded 34.1 % automatically codable responses before, and 37.2 % after, the correction of the spelling in the responses; coding on the basis of responses to the first two questions yielded 39.7 % automatically codable responses before, and 41.9 % after, the correction of spelling; coding on the basis of responses to all three questions yielded 43.1 % automatically codable responses before, and 44.9 % after, correction of spelling. Correction of the spelling improves the results only slightly

– by between 1 % and 3 %. Manual coding of the remaining entries enabled 75.1 % of all the occupational data to be coded to four digits. Almost all of the remaining 25 % could be manually coded, albeit 'incompletely', i.e. not to four digits. Only 0.2 % could not be coded at all.

As can be seen from Table 5.16, only 45 % of the responses, at most, could be automatically coded into ISCO. The remainder had to be coded manually. The table also shows that a three-question approach is meaningful, even if the third sub-question did not make a great difference to the outcome. However, it did reduce the uncodable cases to 0.2 % as compared to 2.9 % in the case of the two-question approach.

5.3.2 National Occupational Classifications

In addition to the International Standard Classification of Occupations there are national occupational classifications (NOCs). These classifications are often incompatible with ISCO because they were developed not only for official statistics purposes but also for other purposes. By way of example, we shall briefly outline two NOCs – one German and one French.

Germany: *Klassifikation der Berufe* (KldB) 1975–1992

Up until 2010, two different occupational classifications were in use in Germany. The *Klassifikation der Berufe* ('Classification of Occupations'), which was developed in 1970, was supplemented and adjusted in 1975 by the German Federal Statistical Office (StaBA, 1975) and the German Federal Employment Agency (BA) to meet the needs of both institutions. In 1988, the 1975 classification (KldB-75) was revised further by the BA for use in its employment placement and advice services and monthly labour market statistics (KldB-88) (Bundesagentur für Arbeit, 2010a).

In 1992, the Federal Statistical Office produced the KldB-92, its own revised version of KldB-75, adapting it to reflect technical and social developments, the changes in occupational skill and qualification requirements and job profiles, the growing trend towards professionalization, and the revised training regulations (Statistisches Bundesamt, 1992, p. 1). The main difference between KldB-92 and KldB-88 is that the lower levels of aggregation of the KldB-92 are more differentiated (Bundesagentur für Arbeit, 2010a) (see Table 5.17).

Both classifications include occupational titles, the KldB-88 comprises some 24,000 titles, the KldB-92 just over 29,500. As in the case of ISCO, the central differentiating characteristic in the KldB is the 'job exercised', which is defined in terms of title and designation (Statistisches Bundesamt, 1992, p. 16). However, the structural element is the economic sector. The education and training required for the competent performance of the job, the level of job autonomy, and the position in the enterprise are not classification criteria. In other words, occupational titles are classified into groups that are the sub-sectors of the economic sectors.

Table 5.17 Structure of the KldB-88 and KldB-92

Level	Designation of the Level	KldB-88	KldB-92
1	*Berufsbereiche*	6	6
2	*Berufsabschnitte*	33	33
3	*Berufsgruppen*	86	88
4	*Berufsordnungen*	334	369
5	*Berufsklassen*	1,991	2,287
6	*Berufsbenennungen*	ca. 24,000	29,527

Berufsbereiche = occupational sectors; *Berufsabschnitte* = occupational sub-sectors; *Berufsfelde*r = occupational fields; *Berufsordnungen* = occupational categories; *Berufsklassen* = occupational classes; *Berufsbenennungen* = occupational titles (our translation)

Source: Bundesagentur für Arbeit, 1988; Statistisches Bundesamt, 1992, p. 13

When automatically mapping to ISCO-88 a dataset of responses to occupational survey questions (N = 12,793) that had been coded into KldB-92, no matching ISCO code could be found in 4.3 % of cases; in 12.7 % of cases the KldB codes could be unequivocally mapped only to the first level of aggregation; 9.1 % of the codes could be mapped only to the two-digit level of ISCO; 5.8 % could be unequivocally mapped to the three-digit level. In other words, 31.9 % of all the KldB-coded responses to questions about occupation could not be coded to ISCO unit group level (Geis & Hoffmeyer-Zlotnik, 2001, p. 134). As this example shows, the KldB and ISCO-88 coding systems are not compatible.

Germany: *Klassifikation der Berufe* 2010 (KldB-2010)

The *Klassifikation der Berufe* 2010 (KldB-2010), the latest revision of the national classification of occupations, was produced by the Federal Employment Agency (BA) and published in late 2011. It supersedes both the KldB-88 and KldB-92. According to the BA, the completely reworked classification facilitates a more accurate representation of occupational structures in statistics and analyses and has a high degree of compatibility with ISCO-08. Because the instrument was released only recently, comparative data are not yet available. However, as can be clearly seen from the correspondence table between KldB-2010 and ISCO-08 (Table 5.18), some 25 % of the KldB cannot be unequivocally mapped to ISCO. Almost 11 % of codes have one alternative code in ISCO, a further 11 % have two alternative codes, 3 % have three alternative codes, and about 1 % of the KldB codes can be mapped to four different ISCO codes (Bundesagentur für Arbeit, 2010b).

France: *Répertoire Opérationnel des Métiers et des Emplois* (ROME)

The French nomenclature *Répertoire Opérationnel des Métiers et des Emplois* (Operational Classification of Occupations and Jobs: ROME), which was developed by the French National Employment Agency (Agence Nationale pour l'Emploi:

Table 5.18 ISCO-88, ISCO-08, KldB-88, KldB-2010 and ROME classifications

Hierarchy	ISCO-88	ISCO-08	KldB-88	KldB-2010	ROME 1993
1	10	10	6	10	3
2	28	38	33	37	22
3	116	125	86	144	61
4	390	433	334	700	466
5			1,991	1,286	
Occupational titles			24,000	24,000	10,000

Sources: Agence Nationale pour l'Emploi, 1993; Bundesagentur für Arbeit, 2010a; ILO, 2011a; Statistisches Bundesamt, 1992, cf. Dickes & Warner, 1996, p. 53

ANPE), classifies occupations and jobs. As in the case of ISCO, the classification criterion is the similarity of the tasks and duties performed in the course of a job/occupation and of the skills required to fulfil them: 'Le concept d'emploi/métier ROME se fonde sur le rassemblement de contenus d'activité qui sont semblables ou proche. L'emploi/métier est donc un agrégat relativement homogène de situation de travail' (ANPE, 1993, p. 5). 'La définition de l'emploi/métier repose en priorité sur la comparaison des contenus d'activité, contenus qui sont vus dans la perspective de la transférabilité des compétences' (ibid., p. 3).

ROME is also an instrument for the regulation of the labour market. 'Competencies' play an important role in the classification. They are defined as 'the knowledge, skills and experience required to perform a job in an occupational situation' (Dickes & Warner, 1996, p. 52, our translation). In the context of ROME, the 'competencies' criterion is a multidimensional concept that does not include formal qualifications and certificates. Rather, it is limited to the competencies that are essential for the job: 'Les spécifités rendent compte de la diversité des situations de travail que l'emploi/métier peut recouvrir sur le marché du travail' (ibid., p. 8).

Although both ISCO and ROME group jobs on the basis of similarity of tasks and duties, they differ in terms of the logic used to allocate a job to an occupational category. Therefore, here too, the mapping of ROME categories to ISCO is possible only to a certain extent (see Table 5.18).

5.3.3 Field Coding ISCO-88

As outlined in Section 5.3.1 above, only 45 % of the occupational data collected using three survey questions could be automatically coded into ISCO (Hoffmeyer-Zlotnik et al., 2004). This outcome is not satisfactory. However, even though the ISCO code book has been carefully maintained and updated over the years, it is not possible to achieve a higher level of automatic codability with the type of data in question. Hoffmeyer-Zlotnik, Hess, and Geis (2004, 2006) envisioned that it would be possible to code occupational data directly to ISCO in the field during the computer-assisted data collection phase. This vision was based on the fact that almost all the additional socio-demographic data needed during manual coding – for example,

education, training, professional status and, often, industrial sector – are collected as standard in population surveys. (Questions relating to the tools and equipment used, the materials worked on, or with, and the plant or machinery operated are not taken into consideration.)

The Instrument

However, even with relevant additional information, the coding of occupational data to ISCO in the field is not an easy task. Manual coders do not combine all the necessary and available data in their heads according to the 0–1 principle of computer programming. In order to code data to ISCO-88 at the moment of data collection, it is important to be able to process the 390 codes with the help of manageable lists of job descriptions in such a way that jobs can be classified hierarchically over three or four levels of aggregation, moving from a higher to a lower level. In order to test whether, and to what extent, field coding works, Hoffmeyer-Zlotnik et al. (2006) administered in four surveys an occupation measure that was hierarchically organised in ascending order from crude (one- or two-digit ISCO level) to fine (four-digit ISCO level). Where it was not possible to code the occupation in the field on the basis of three occupation-related questions, open-ended questions were used and the data were coded manually afterwards. The tests enabled the authors to develop an entry table for use as a table of categories for the first occupation-related question. Besides the 'don't know' and the 'refusal' categories, this entry table comprises 39 content categories, four of which lead to the one-digit ISCO level, and 17 to the two-digit level. There are three fully formulated jobs in the entry table that do not have to be identified in three or four steps via a tree structure. At all levels, a 'don't know' response causes the respondent to exit the menu navigation and leads him to an open question in which he can provide a response in free-text format. This response can then be manually coded.

The central ordering principle of the entry table is the order in which the categories appear. The respondent must be able to leave the entry table when he encounters the category that applies to him – without being confused in the process. In other words, the 'clerks' category must appear first, and then the various status levels. That means that if it is necessary to differentiate between skilled and semi-skilled workers, the lower status must come before the higher status.

The second ordering principle of the entry table is the visibility of the occupation. An occupation that is not immediately visible under the major group or the sub-major group title must be subsequently identified at minor group or unit group level. For example 'building structure cleaner' is a sub-category of 'extraction and building trades workers' (sub-major group 71).

The third ordering principle of the entry table is the precise and detailed description of the respondent's field of activity, for example, 'owner or corporate manager, chief executive in production or operations, technical manager in a company with more than ten employees, school principal or dean of a university'.

The first occupation-related question reads: 'What is your main job at the moment? I will now read out a list of jobs to you that roughly groups types of job. Are you … ?'

The list with the 39 content categories is then read out. By way of example, 11 of these categories are listed below:

4200:	Customer services clerk, for example bank teller, counter clerk in post office, hotel, etc.
4100:	Office clerk, for example secretary, accounting or bookkeeping clerk, stock clerk, library clerk, mail carrier or sorting clerk, forwarding clerk
3400:	Associate professional in trade, administration, finance and accounting, or customer support
3400:	Associate professional in taxes or customs, associate professional in public administration, police inspector or detective, social work associate professional
3400:	Working in entertainment or sports, in radio or in television, in the arts, in decorating or design, as an estate agent, insurance or commercial sales representative, pharmaceutical representative
3490:	Event manager
5200:	Sales person (also at markets), filling station attendant, demonstrator, model
9110:	Street vendor
9100:	Semi-skilled worker in services, for example domestic helper, kitchen helper, messenger, caretaker, groundkeeper, street sweeper, cleaner, laundry worker
7143:	Skilled building structure cleaner
1200:	Owner or corporate manager, chief executive in production or operations, technical manager in a company with more than 10 employees

Source: Hoffmeyer-Zlotnik et al., 2006 (our translation)

The categories in the entry table proceed from the general to the specific. Therefore, the table typically leads from a two-digit to a three-digit classification, and then to a four-digit classification. If a coding error is made, the respondent can leave the menu navigation and switch to a conventional interview mode.

The following jobs can be coded at the one-digit level via the entry table and are therefore relatively easy to access:

- Skilled agricultural and fishery workers (major group 6),
- Craft and related trades workers (major group 7),
- Plant and machine operators and assemblers (major group 8).

The key differentiations for each superordinate group take place at the second level.

Managers (ISCO major group 1) are differentiated according to whether they manage a government department, a private enterprise, or a scientific institute. Professionals and technicians (ISCO major groups 2 and 3) are differentiated according to job fields; clerks (ISCO major group 4) are differentiated according to office clerks and customer services clerks; service workers (ISCO major group 5) are differentiated according to personal services workers, and models, salespersons and demonstrators; skilled agricultural and fishery workers (ISCO major group 6) are differentiated according to whether they are market oriented or subsistence oriented; craft and related trades workers (ISCO major group 7) are differentiated

according to a rough categorisation of industrial sectors; plant and machine operators and assemblers (ISCO major group 8) are roughly differentiated according to whether they operate stationary plant, operate or assemble machinery, or are drivers or mobile plant operators; elementary occupations (ISCO major group 9) are differentiated according to sales and services, agriculture and fishery, or mining, construction, manufacturing and transport.

Error Analysis

Using the above instrument, between 80 % and 85 % of all occupational data could be coded into ISCO in the field (Hoffmeyer-Zlotnik et al., 2006, p. 104). Error analysis was possible because in the test phase the data were not only coded in the field. The verbal responses were also recorded in writing and manually coded afterwards. Four types of error occurred (see Hoffmeyer-Zlotnik et al., 2006, pp. 108–111):

1. The respondent assigned himself to the wrong category and broke off by opting for 'don't know'. He then gave an open-ended response, which was manually coded afterwards (10 %).
2. The respondent assigned himself to the wrong category but did not break off. The coder coded plausibly (14 %).
3. The respondent assigned himself to a plausible category but the coder assigned him differently, namely:

   (a) to a lower category (9 %) or
   (b) to a higher category (10 %).

An example of a type 1 error (ibid., p. 109): The respondent stated his occupation as 'tool inspector'. He considered himself to be a craft and related trades worker and chose code 72 (metal, machinery and … tool-makers) as his entry point. This led to code 721: 'metal moulder, welder … '. At this point, the respondent realised that he was in a cul-de-sac and broke off by choosing the 'don't know' option. The coder could then get involved: A tool inspector is classified as a 'safety, health and quality inspector' (code 3152).

An example of a type 2 error (ibid., pp. 109f.): The respondent gave his occupation as 'baker' and chose code 51 'service workers' as his entry point. This led to code 512 'housekeeping and restaurant service workers'. The only option open to him then was 'cooks' (code 5122) because the other options were even less suitable. It would have been better if he had opted for 'don't know' at the last level because the code for bakers is 7412, which is under 'craft and related trades workers' (major group 7).

An example of error type 3a (ibid., p. 111): On the second level, the respondent described his job as 'tool construction'. When asked for the name of the occupation he stated it as 'design engineer'. The respondent regarded himself as a 'technician' and chose code 31 'engineering technicians' as his entry point. This led to code 3118 'draughtsperson'. The coder, by contrast, chose 'craft and related trades

workers' (major group 7) as his entry point and classified the respondent as a 'toolmaker' (code 7222). He justified this with reference to the fact that the respondent had an intermediate school-leaving certificate and did not have a very high level of autonomy in his job.

And finally, an example of error type 3b (loc. cit.): The respondent described his job as 'assembly line work'. When asked for the name of his occupation, he gave it as 'forklift driver'. The respondent regarded himself as a 'driver of a vehicle' and chose major group 8 'plant and machine operators and assemblers' as his entry point. This led him to code 83 'drivers and mobile plant operators', and then to code 8312 'railway brakers, signallers and shunters'. The coder, on the other hand, chose 'assembly line' as his entry point and assigned the respondent code 8171 'automated-assembly-line operators'.

As can be seen from the three error types, both the respondent and the coder can get things wrong. In 14 % of cases, respondents self-coded incorrectly; in 19 % of cases coders classified respondents incorrectly. In a further 10 % of cases, respondents self-coded incorrectly but broke off by opting for 'don't know', after which they gave an open-ended response which was manually coded. These cases are not classified as errors because they could be 'ironed out' later. Overall, computer-assisted field coding yielded a very good result. It did not prove more tedious than coding 50 % of the data automatically and 50 % manually after collection. The additional effort needed during data collection took ca. 60–90 seconds per occupation. Although the development of the programme for field coding requires a good knowledge of the ISCO codes and a small number of tests, it can be done with relatively little effort for all countries in the EU.

5.3.4 From Professional Status to Job Autonomy

The collection of occupational data and the coding of this data into ISCO is time-consuming and, therefore, expensive. Costs and effort can be reduced somewhat if one is prepared to forgo certain information. To this end, professional status – also known as 'status in employment' – must be measured in three stages and at three levels. 'Professional status' differentiates:

- At the first level between 'self-employed persons', 'employees', and 'contributing family workers'.
- At the second level, the self-employed are subdivided into farmers, members of the liberal professions, and self-employed persons in commerce, trade, industry, and services. Employees are broken down into blue collar and white collar workers. In those countries in which public service employment is governed by special labour law provisions, a separate 'civil servants' category is also distinguished.
- The third level, differentiates employees and the self-employed according to the degree of responsibility involved in the job. In the case of the self-employed, the relevant characteristic is the size of the enterprise (for farmers this is operationalized

as the number of hectares under cultivation; for the other self-employed groups as the number of employees); in the case of employees the level of job autonomy is decisive (Hoffmeyer-Zlotnik, 2003; Hoffmeyer-Zlotnik & Warner, 2011, pp. 46ff.).

Five degrees of autonomy can be distinguished:

1. Elementary jobs carried out by unskilled or semi-skilled workers,
2. Undemanding, routine jobs,
3. Demanding jobs performed independently following general instructions,
4. Demanding jobs performed autonomously, limited supervisory responsibilities,
5. Far-reaching managerial responsibilities and decision-making powers.

Many national surveys routinely collect the data gathered in the first and second stages of the measurement of professional status. Moreover, information is frequently sought about enterprise size and the supervisory responsibilities of employees. In other words, the incorporation of the complete third stage into the questionnaire is not such a big additional step.

Step 1: Definition of the Concept to be Measured

The analysis of social data is not possible without dividing respondents into status groups. As argued above, occupation in combination with education (the central prerequisite for performing a job) and income (payment for work done) is currently deemed to be the main indicator of socio-economic status. However, to determine occupational prestige and social status it is not always necessary to measure occupation with ISCO and then use these data to construct SIOPS (occupational prestige) or ISEI (socio-economic status) scales. Frequently, the very detailed scales are reduced to a few categories for the purpose of analysis anyway. Hence, a five-category scale should suffice to measure prestige and status.

Each job is linked to the autonomy that it confers on the incumbent. By job autonomy we mean the level of self-determination and discretion inherent in the job, and whether, or to what extent, an employee has managerial powers or supervisory responsibilities. Employees do not present a problem in this regard because their level of autonomy is relatively easy to determine on the basis of the description of the job. However, the level of autonomy of self-employed persons is more difficult to determine. Here, the size of the enterprise is used as a proxy variable.

Step 2: Structural Analysis

An analysis of the various employment relations must reveal which categories of employed persons are to be found on the national labour market. The differentiation of employed persons into self-employed, employees, and contributing family workers is unproblematic as long as civil servants do not occupy a special position as a fourth pillar and cooperatives do not offer an additional alternative to self-employment.

The subdivision of the self-employed into farmers, academic liberal professionals, and self-employed in commerce, trade, industry, and services is problematic when national legislation regulating trade, commerce and industry or national tax laws define these groups differently. This is especially the case with regard to the 'liberal professions'. Germany and Austria furnish an example of divergent definitions. In Germany, the liberal professions include doctors and other health professionals, engineers working as consultants or experts, architects, tax consultants, notaries, economists working as consultants, lecturers, artists, and journalists. In Austria, by contrast, the liberal professions are 'jobs in the public interest'. The list is correspondingly shorter: pharmacists, medical doctors, dentists, and veterinary surgeons, notaries, lawyers and patent lawyers, chartered accountants, and civil engineers. Architects gain access to the group via the civil engineer category. Here, too, the liberal professions are regulated by national law and rules of professional conduct.

In addition to the liberal professions, whose members can be self-employed or employees, there are also freelancers, i.e. persons who carry out jobs for a company but who work on their own account and are not, therefore, employees. A further self-employed category is made up of those persons who are freelancers but who are integrated into an enterprise and must be regarded as being 'bogus self-employed'.

Employees are subdivided into blue-collar and white-collar workers. However, this distinction does not play a role when it comes to assigning a level of job autonomy to the respondent, because the same scale applies to both blue-collar and white-collar workers. Subcontracted or temporary workers pose a problem because, while they may work independently, their contract is with a third-party – the lessor – and their jobs are regarded as having a lower degree of autonomy than they would if they were directly employed by the company in which they are working (temporarily).

In the third stage of the measurement of professional status, all those who are not employees are assigned a job autonomy level on the basis of the size of the enterprise. In this connection, the way in which agriculture and entrepreneurship are organised in the individual countries and the enterprise sizes that represent meaningful economic thresholds must be determined.

With regard to the autonomy of the job, agricultural enterprises can be divided into the following categories:

- Small farmers, or part-time farmers who work in dairy or meat production with a small number of livestock, or who grow vegetables (in Central Europe, farms of up to 10 hectares). Although these farmers require specific training, the work on the farm is done with the help of contributing family workers. In the EU, such farmers receive their 'instructions' about market conditions from the EU.
- Farmers who run medium-sized farms cultivating cereal crops or keeping livestock, or small (in terms of surface area), but highly specialised, enterprises such as wine growers, fruit growers or farmers who rear or fatten livestock. These farmers independently perform demanding jobs with (limited) supervisory responsibilities.
- Big farmers with over 1,000 hectares, who are considered to be the equivalent of large manufacturers.

The thresholds between small, medium and large enterprises must be determined on the basis of national structures.

Small firms with up to four employees in commerce, trade, industry, and services are classified in the same way as small farmers. As a rule, specific training is required and incumbents perform demanding tasks. However their employment relations are determined by the job profile and/or the client. Job autonomy and responsibility for personnel are limited. Freelancers with more than four employees, and self-employed persons in commerce, trade, industry, and services with between 5 and 50 employees, work independently in a demanding job and are responsible for personnel. Members of the liberal professions with more than four employees, and the owners of large companies (50 employees or more), have far-reaching managerial tasks and/or discretionary powers. (Bogus) self-employed persons who are integrated into a company are grouped with the self-employed without employees. Freelancers are assigned to the 'liberal professions without employees' category because in many countries they work in job fields that are classified as 'liberal professions'. However, the employee thresholds for the distinction of the various groups must be determined on a case-by-case basis in each country.

Step 3: Development of the Instrument

The survey instrument first identifies the various groups:

- Members of the liberal professions and academic freelancers
- Self-employed farmers and members of agricultural cooperatives (if applicable)
- Self-employed in commerce, trade, industry, and services, members of cooperatives (if applicable) and the bogus self-employed
- Blue-collar and white-collar workers
- Civil servants (if regarded as a separate group)
- Contributing family workers.

In a second step, the size of the farm (in hectares) is determined in the case of farmers; in the case of the other self-employed persons, the size of the enterprise is determined on the basis of the number of employees. The job autonomy of the employees and, if applicable, the civil servants is measured on a five-point scale. As mentioned above, five degrees of autonomy can be distinguished:

1. Elementary jobs carried out by unskilled or semi-skilled workers,
2. Undemanding, routine jobs,
3. Demanding jobs performed independently following general instructions,
4. Demanding jobs performed autonomously, limited supervisory responsibilities,
5. Far-reaching managerial responsibilities and decision-making powers.

Step 4: Harmonisation

In the case of the present instrument, the input must be harmonised before data collection. When doing so, attention must be paid to ensuring that the operationalisation of small, medium, and large farms (in hectares under cultivation) and small,

Table 5.19 Rating professional status on job autonomy and SIOPS scales

Job autonomy		Professional status	SIOPS (Prestige)
1	Low	Unskilled, semi-skilled, manual work	6–32
2		Undemanding, routine job	33–41
3		Demanding job following general instructions + small farmers + managers of micro-enterprises + contributing family workers	42–50
4		Demanding jobs with discretionary powers + medium-sized farms + highly specialised small agricultural enterprises + managers of small and medium-sized companies + members of liberal professions with a small number of employees	51–63
5	High	Far-reaching managerial responsibilities and discretionary powers + members of liberal professions with 'a large number' of employees + large agricultural or commercial enterprise	64–78

Source: Hoffmeyer-Zlotnik, 2003, pp. 122f.; Hoffmeyer-Zlotnik & Warner, 2011, p. 47

medium, and large businesses (in terms of the number of employees) is equivalent and, therefore, comparable across participating countries. However, it is also possible to undertake divisions for specific groups of countries because, for example, the size of farms depends on the topography, the type of farming, the rules of succession (does the eldest son inherit the farm or is it divided equally among the siblings?), and the nature of land usage.

In the case of employees, the individual categories should be illustrated with meaningful examples. Consideration should be given to the way in which civil servants and members of the armed forces are to be incorporated, and to whether a separate scale should be used for each of these groups.

Result: The Measurement Instrument

The measurement instrument comprises two questions for each respondent. The first question relates to the group (self-employed, employee, contributing family worker) to which he belongs. The second question measures the degree of autonomy inherent in the job. This is done on the basis of enterprise size or of a description of the complexity of the job and the respondent's discretionary powers. On the basis of these data, it should then be possible to rate the respondent on the job autonomy scale.

This scale is based on Treiman's Standard International Occupational Prestige Scale (SIOPS) (Treiman 1975, 1977). Table 5.19 shows the way respondents are rated on the scale on the basis of their professional status.

- With SIOPS scores of between 6 and 32, Group 1 is characterised by manual jobs with a low level of autonomy that do not require specific training.

- Group 2, with SIOPS scores of between 33 and 41, comprises employees in manufacturing or traditional craft and related trades ranging from food processing to wood, fabrics and metal processing and jobs in the services sector with a low level of autonomy. Basic vocational training is required.
- Group 3, with scores of between 42 and 50 on the SIOPS scale, comprises those jobs that require an intermediate vocational training qualification and have a limited degree of autonomy.
- Group 4, with SIOPS scores of between 51 and 63, comprises jobs in an employee- and self-employed capacity that require a university degree but do not offer a high level of prestige.
- Group 5, with SIOPS scores of 64 and over, comprises managers with far-reaching managerial responsibilities and powers of discretion, irrespective of whether they are employees, civil servants, or working in a managerial capacity in a large enterprise.

5.4 Household Income

In academically driven social surveys, income is an indicator of the respondent's socio-economic status. It is used as an explanatory variable in inequality research. In most cases, information about the size class in which the net household income is located is usually enough for a comparative analysis of social structure because the respondent's socio-economic position is determined by his access to the monetary resources of the household in which he lives. Frequently, different questions are formulated for the various sub-populations and information is requested about different income resources. For example, the households of self-employed persons are surveyed using an adapted version of the income question. The reduction of rate of non-response to the sensitive, open-ended income question often succeeds by presenting the respondent with a list of income categories in which each category has a randomly generated code letter. The fact that the code letters are not in any order gives both sides – the respondents and the interviewers – the impression that the interviewer cannot deduce the level of income from the response.

5.4.1 Comparison of Instruments for the Measurement of Income

In the following sections, we shall compare and contrast two instruments for the measurement of income: the first was used in Round 1 of the European Social Survey (ESS) to measure net household income; the second was used to measure the income of all household members in the European Community Household Panel (ECHP).

The European Social Survey measures total net household income with simple survey instruments. We shall compare the result of this academically driven social survey with the complex income measurement of the ECHP, which uses a comprehensive and detailed field instrument to collect net household income with the precision befitting an economic survey. The following section shows the influence of national characteristics of the social order and the income structure on response behaviour and the quality of income measurement.

Measurement Instrument Used for the Cross-National Comparison of Household Income in Round 1 of the ESS

The questionnaire used in Round 1 of the European Social Survey (ESS, 2002a) featured two questions designed to measure household income. The first question (F29) asked the respondent to state the main source of income in his household; the second question (F30) aimed to identify the income category to which the household's total net income belongs. To this end, the respondent was requested to 'add up the income from all sources'. However, in this pan-European survey, the randomly selected respondents were not given any detailed background information or explanations of the questions. Therefore, it was not clear to them which income – and whose income – they should add up. Nor were they given any help in recalling the various possible types of income accruing to the household.

Because the interviewees are randomly selected from among all the members of the household aged 16 or over, and only the target person is interviewed, the respondent's knowledge of the financial situation of the household as a whole varies depending on the cohort to which he belongs and his position in the household or his relationship to the main earner/income recipient.

The ESS question about the main source of income in the household read:

> F29 CARD 55 Please consider the income of all household members and any income which may be received by the household as a whole. What is the main source of income in your household? Please use this card (ESS, 2002a, p. 49).

The showcard listed seven types of income:

> Wages or salaries; Income from self-employment or farming; Pensions; Unemployment/redundancy benefit; Any other social benefits or grants; Income from investment, savings, insurance or property; Income from other sources (ESS, 2002b, CARD 55).

The respondent was then asked about the total net income of the household:

> F30 CARD 56 Using this card, if you add up the income from all sources, which letter describes your household's total net income? If you don't know the exact figure, please give an estimate. Use the part of the card that you know best: weekly, monthly or annual income (ESS, 2002a, p. 47).

To keep the response-refusal rate as low as possible, the ESS employs the strategy of the 'hidden' response: The income categories are represented by randomly sorted letter codes. The respondent gives the letter that corresponds to the

CARD 56				
YOUR HOUSEHOLD INCOME				
	Approximate WEEKLY	Approximate MONTHLY	Approximate ANNUAL	
J	Less than €40	Less than€150	Less than €1800	J
R	€40 to under €70	€150 to under €300	€1800 to under €3600	R
C	€70 to under €120	€300 to under €500	€3600 to under €6000	C
M	€120 to under €230	€500 to under €1000	€6000 to under €12000	M
F	€230 to under €350	€1000 to under €1500	€12000 to under €18000	F
S	€350 to under €460	€1500 to under €2000	€18000 to under €24000	S
K	€460 to under €580	€2000 to under €2500	€24000 to under €30000	K
P	€580 to under €690	€2500 to under €3000	€30000 to under €36000	P
D	€690 to under €1150	€3000 to under €5000	€36000 to under €60000	D
H	€1150 to under €1730	€5000 to under €7500	€60000 to under €90000	H
U	€1730 to under €2310	€7500 to under €10000	€90000 to under €120000	U
N	€2310 or more	€10000 or more	€120000 or more	N

Fig. 5.10 Household income showcard, European Social Survey, 2002b

household's total net income, which saves him having to state the amount (ESS, 2002b, CARD 56) (see Fig. 5.10).

The ESS Project Instructions featured the following interviewer instruction regarding the definition of 'net income'. However, this information was not intended for the respondent.

> At HINCTNT you should obtain the **total net income** of the household from all sources, that is, **after tax**. Income includes not only earnings but state benefits, occupational and other pensions, unearned income such as interest from savings, rent, etc.
>
> We want figures **after** deductions of income tax, national insurance, contributory pension payments and so on. The questions refer to **current level** of income or earnings or, if that is convenient, to the nearest **tax** or other period for which the respondent is able to answer. The respondent is given a showcard that enables them to choose between their weekly, monthly or annual income, whichever they find easiest. They will then give you the letter that corresponds to the appropriate amount. This system is designed to reassure the respondent about the confidentiality of the information they are giving (ESS, 2002c, p. 21).

The ECHP Measurement Instrument for the Cross-National Comparison of Household Income

The European Community Household Panel collects all types of household income that can occur in the country in question; all household members aged 15 or over are interviewed. For as long as they belong to the panel household, all respondents are asked in detail about their income. Hence, in the course of their involvement in the panel, respondents become experts on their personal monetary situation. The field instrument, which is designed as a person questionnaire, lists all possible

sources of money income. In this way, each member of the household is able to recall and state all individually applicable income types during the interview. The 34 types of income listed by the ECHP take up over 16 pages in the questionnaire (European Commission, 1996; ECHP, 2003). The reporting period for income data is monthly for all 12 months of the calendar year preceding the interview. Respondents are asked about seven main sources of income, which are in turn broken down into subcategories: 'income as an employee, self-employment, income and benefits from sources other than work, pensions, private transfer, capital and reimbursement' (European Commission & Eurostat, 2000; cf. Hoffmeyer-Zlotnik & Warner, 2006, p. 296).

In addition to the individual questionnaire for each member of the household aged 15 and older, a household questionnaire is administered to that reference person in the household who is assumed to be able to provide reliable information about income that cannot be assigned to individual members but rather accrues to the household as a whole. The household questionnaire covers 19 types of income, for example, 'social assistance payment, non-cash assistance from the welfare office, income from renting property, inheritance of property or capital, a gift or lottery winnings' (European Commission & Eurostat, 2000, pp. 25–27).

Because this survey of the income situation of the household and its members is so comprehensive and detailed, the ECHP data can be used as reference statistics for the ESS measurement of total net household income.

5.4.2 Quality of Income Measurement

The household concept on which the household-income-related questions are based, the corresponding household size, the target person's knowledge of the financial situation of the household as a whole, the income situation of each individual household member, the household's main source of income: All these factors strongly influence the quality of the survey responses (Hoffmeyer-Zlotnik & Warner, 1998, 2006; Warner & Hoffmeyer-Zlotnik, 2003; Warner, 2009).

Influence of Household Size

Household size depends on the underlying definition of 'household' because this definition determines which persons are to be regarded as household members. Hence, the composition of the household members also determines whose income should be added up to yield the total net income of the household as a whole. Cross-national comparative survey research reveals that each country uses its customary definition of 'household', and that this definition varies from country to country (see Section 5.5).

Because the household concepts on which the ESS and the ECHP are based remain hidden from the respondents, they base their responses on their own

Table 5.20 Income categories by household size (row percentage for the respective countries)

Income category	Germany				Italy				Luxembourg			
	Household size											
	1	2	3.4	5+	1	2	3.4	5+	1	2	3.4	5+
ESS												
1–3	60.9	24.1	8.0	7.0	23.2	37.5	30.4	8.9	27.3	22.7	36.4	13.6
4	55.7	26.4	15.1	2.8	17.9	32.5	36.6	13.0	66.7	16.7	8.3	8.3
5	39.8	36.1	21.2	2.9	9.8	27.6	53.7	8.9	36.4	16.4	32.7	14.6
6	13.0	61.9	31.1	3.9	9.5	24.8	60.0	5.7	35.0	29.9	28.2	6.9
7	8.6	37.6	43.2	10.6	5.7	19.5	64.3	10.3	18.2	24.6	44.9	12.3
8	6.9	36.1	51.6	5.4	6.7	15.6	51.1	26.6	13.0	28.3	46.4	12.3
9	7.2	38.6	46.4	7.8	1.4	10.1	71.0	17.4	8.3	18.5	59.4	13.7
10–12	7.8	35.8	43.0	13.4	6.9	3.4	69.0	20.7	2.1	21.9	55.1	20.9
ECHP8												
1–3	71.7	24.2	4.0	0.0	54.3	17.1	24.8	3.9	75.0	0.0	25.0	0.0
4	72.7	19.8	7.1	0.4	37.4	28.7	28.4	5.5	89.3	3.6	7.1	0.0
5	55.5	31.3	11.6	1.5	17.5	30.0	44.1	8.3	70.3	20.0	9.0	0.6
6	22.9	48.0	25.1	4.0	5.2	29.2	56.1	9.4	53.7	30.7	13.7	1.8
7	8.8	39.1	44.0	8.0	2.4	17.0	69.1	11.5	35.9	36.9	23.6	3.7
8	4.4	36.4	51.5	7.8	1.6	16.9	68.3	13.2	25.4	37.5	29.5	7.6
9	2.7	31.8	54.1	11.4	2.0	9.9	65.7	22.3	9.8	34.3	45.4	10.5
10–12	6.3	24.4	52.0	17.2	6.2	17.3	63.0	13.6	3.9	27.0	53.0	16.1

Source: ESS 2002 Version Feb. 2004, ECHP UDB Version April 2004, own calculations
Income categories: 1: up to €1,800, 2: 1,800–3,600, 3: 3,600–6,000, 4: 6,000–12,000, 5: 12,000–18,000, 6: 18,000–24,000, 7: 24,000–30,000, 8: 30,000–36,000, 9: 36,000–60,000, 10: 60,000–90,000, 11: 90,000–120,000, 12: €120,000 and more

personal understanding of what constitutes a household. In the interests of the comparability of both surveys within a country, it can only be hoped that the customary household concept in that country is reflected in the responses.

Household size, measured in terms of the number of persons who live in the household, can be compared across both surveys (see Table 5.20).

In Germany and Italy larger households achieve high levels of income; smaller households are to be found more often in the lower household income categories. Here, distributions of income by household size differ only slightly between the ESS and the ECHP.

In Luxembourg, however, a discrepancy between the ESS and the ECHP figures is apparent. In the 8th wave of the Luxembourg ECHP, large households are very seldom to be found in the lower income categories (up to the fifth category: €18,000), whereas the ESS reports a significant percentage of large households in these income categories.

Overall, the ECHP reveals a correlation between income and household size: In Germany and Luxembourg, for example, almost no large households (5+) are to be found in the lower income categories (1–5). According to the ESS data, by contrast, some 12.7 % of large households in Germany and 36.5 % of large households in

Table 5.21 ESS respondents' age and position in household (column %)

	Germany		United Kingdom		Italy		Luxembourg	
	Relationship to main income recipient							
Age	Close[a]	Distant[b]	Close	Distant	Close	Distant	Close	Distant
15–24	2.6	34.3	2.1	18.5	1.5	29.3	4.2	48.5
25–34	12.2	12.8	17.5	14.7	11.0	30.5	16.2	14.7
35–49	36.8	17.7	32.8	17.4	35.8	15.0	35.8	10.6
50–64	0.2	12.7	28.8	15.8	32.5	9.1	26.7	11.3
65–69	8.5	5.1	6.6	6.8	6.5	3.4	8.3	4.1
70 +	9.7	17.7	12.1	26.9	12.6	12.6	8.8	10.8

Source: ESS 2002 Version Feb. 2004, ECHP UDB Version April 2004, own calculations
[a]close = the main income recipient/earner and his partner
[b]distant = all other household members

Luxembourg are in the lower income groups. This can be regarded as an indication that the way in which the ESS measures income is not reliable.

Respondent's Level of Knowledge of the Financial Situation of the Household

The randomly selected interview partner in the ESS may have a close or a distant (familial) relationship with the main earner/income recipient in the household. If the respondent is the main income recipient or the partner (married or otherwise) of the main income recipient, a close relationship can be assumed. If the respondent is a child, a parent, or another relation of the main income recipient, then the relationship is deemed to be 'distant' in terms of the person's insight into the financial situation of the household as a whole. In the case of a close relationship, it should be assumed that the respondent has exact information about the household's financial situation. Therefore, it is to be expected that responses to the income question in the ESS will be more reliable when they are furnished by a respondent who has a closer relationship to the main income recipient rather than by a household member who is more distant from the economic centre of the household.

In Germany and Luxembourg, those respondents who are more distant from the economic centre of the household tend to be between the ages of 15 and 20. In Italy, a large percentage of more distant respondents are also to be found in the 25–35 age group. In the UK, the largest group of distant respondents is in the oldest age group (see Table 5.21).

The overall impression conveyed by Table 5.22 is that, in all four countries, the estimates of total net household income given by respondents who are distant from the economic centre of the household are one or two categories lower than the estimates given by the main income recipients/earners or their partners. Presumably, respondents who have a more distant relationship to the main earner/income recipient in their household systematically underestimate the total net household income because their knowledge of the economic situation of the household is so limited.

Table 5.22 Income categories and respondent's relationship to main earner/income recipient (cumulative column %)

	Germany		United Kingdom		Italy		Luxembourg	
	Relationship to main earner/income recipient							
Income category	Close[a]	Distant[b]	Close	Distant	Close	Distant	Close	Distant
1–3	1.6	8.8	3.2	10.4	7.4	12.0	1.7	3.4
4	6.3	28.0	13.5	36.1	24.9	35.4	2.2	6.2
5	19.0	53.2	24.9	50.6	44.3	54.7	5.7	16.1
6	39.8	65.8	36.9	60.7	62.7	66.7	14.8	34.2
7	59.4	76.6	47.1	68.2	77.8	77.1	34.2	53.1
8	73.2	83.9	57.1	76.6	84.7	84.4	48.6	66.8
9	91.2	95.1	81.0	89.9	95.5	95.3	77.4	87.6
10–12	100.0	100.0	100.0	100.0	1000	100.0	100.0	100.0

Source: ESS 2002 Version Feb. 2004, ECHP UDB Version April 2004, own calculations
[a]close = the main earner/income recipient and his partner
[b]distant = all other household members
Income categories: 1: up to €1,800, 2: 1,800–3,600, 3: 3,600–6,000, 4: 6,000–12,000, 5: 12,000–18,000, 6: 18,000–24,000, 7: 24,000–30,000, 8: 30,000–36,000, 9: 36,000–60,000, 10: 60,000–90,000, 11: 90,000–120,000, 12: €120,000 and more

The Main Source of Income in the Household

A further cause of uncertainty in the measurement of income in surveys is the nature of the main component of the household income. Income from employment, such as the wages or salary of the respondent and the other members of the household, is quite easy to measure because it appears regularly and repeatedly in the household budget. This is also the case when regular wage replacement benefits such as old-age pensions or unemployment benefit constitute the main source of income in the household (see Table 5.23). Social benefits, income from investment, savings, insurance or property and income from other sources are supposed to be added to regular and scheduled income. However, in the interview situation, they are frequently forgotten.

What is striking in the case of Germany (see Table 5.23) is the comparatively high percentage of households whose main source of income is unemployment- or redundancy benefit – in the ESS this figure is 4.5 % and in the ECHP it is 3.0 %. In the United Kingdom, 'other social benefits or grants' constitute the main source of income in 8.1 % of cases in the ESS and 9.8 % of cases in the ECHP.

As the number of income sources that a household has increases, so too does the complexity of the response to the income question. Not only the fact that all types of income and the individual amounts for each household member must be added up, but also the fact that all this information must be recalled in the interview situation, constitutes a considerable burden for the respondent.

Both surveys reveal the same patterns with regard to the main sources of income (see Table 5.24). In Germany, the UK, Italy and Luxembourg, the most frequently

Table 5.23 Main source of income in the household (in percent) in the ESS and the ECHP8

Main sources	Germany	United Kingdom	Italy	Luxembourg
ESS				
Wages or salaries	58.1	57.5	57.2	63.7
Income from self-employment or farming	6.6	4.3	16.8	6.8
Pensions	26.4	26.3	23.5	26.0
Unemployment or redundancy benefit	4.5	1.7	0.9	0.9
Any other social benefits or grants	2.0	8.1	0.6	1.3
Income from investments, savings, etc.	0.6	1.0	0.2	0.1
Income from other sources	1.8	1.1	0.8	1.1
ECHP8				
Wages or salaries	61.6	58.6	49.5	65.0
Income from self-employment or farming	5.4	5.7	15.2	3.0
Pensions	23.9	23.2	30.2	24.8
Unemployment or redundancy benefit	3.0	0.3	1.0	0.2
Any other social benefits or grants	4.2	9.8	2.0	5.9
Private income	1.9	2.4	2.0	1.2

Source: ESS 2002 Version Feb. 2004, ECHP UDB Version April 2004, own calculations

cited source of household income is paid employment. This is followed, in second place, by pensions. Together these sources account for 80-90 % of the income of the respondent households. In the case of Italy it is striking that, in the ESS, 23.5 % of respondents give pensions as the main source of household income, whereas the ECHP reports 30.2 %.

The response behaviour of respondents who live in households whose main source of income is wages/salaries or pensions is similar in both the ESS and the ECHP. What is striking in the case of respondents from households whose main source of income is 'other social benefits or grants', is the low number of respondents, in absolute terms, who chose this category; the results of the ECHP would lead one to expect higher absolute values in this category.

Composition of Household Income

In the ECHP, each household member aged 15 and older was requested to answer the questions on personal income. As Table 5.25 shows, most respondents had to recall and state five or six income types and amounts.

Some 63 % of the Italians in the ECHP reported income from between three and six sources. In Germany, a total of 72 % of respondents named between six and 11 sources. In the United Kingdom, between five and nine sources were the norm, while most respondents in Luxembourg had to add up income from between four and six sources.

Table 5.24 Income categories and main source of income (from economic activity, in percent) by country in the ESS and the ECHP8

	Germany			Italy			Luxembourg		
Income category	Wage/salary	Self-employment	Pension	Wage/salary	Self-employment	Pension	Wage/salary	Self-employment	Pension
ESS									
1–3	1.5	3.6	2.8	6.9	4.0	13.0	1.3	2.2	3.3
4	3.9	3.6	13.6	16.4	12.0	29.9	0.2	0.0	0.7
5	11.7	8.6	24.5	18.6	14.0	24.7	4.2	6.5	7.8
6	17.8	12.2	25.2	18.6	17.0	12.3	10.2	8.7	18.3
7	20.8	10.1	14.8	15.0	15.0	11.0	16.4	15.2	25.0
8	15.5	12.2	6.7	8.2	7.0	5.2	12.0	21.7	18.3
9	19.6	29.5	9.4	12.3	20.0	1.9	30.6	26.1	19.0
10–12	9.3	20.1	3.0	4.1	11.0	1.9	25.0	19.6	8.2
ECHP8									
1–3	0.7	0.0	1.7	2.1	5.8	11.3	0.2	0.0	0.0
4	3.6	3.0	17.5	11.2	16.9	36.3	0.8	0.0	1.7
5	9.9	5.3	27.0	24.8	17.8	24.2	4.1	4.2	9.8
6	14.4	8.6	23.1	19.1	19.3	13.4	7.4	5.6	21.8
7	21.7	16.5	14.3	17.9	15.0	6.9	9.2	4.2	20.6
8	18.1	15.8	7.4	10.6	8.3	3.8	10.5	5.6	13.0
9	27.7	33.0	7.6	12.7	13.4	3.8	38.1	23.6	27.0
10–12	3.8	16.8	1.5	1.6	3.5	0.2	29.7	56.9	6.2

Source: ESS 2002 Version Feb. 2004, ECHP UDB Version April 2004, own calculations

Income categories: 1: up to €1,800, 2: 1,800–3,600, 3: 3,600–6,000, 4: 6,000–12,000, 5: 12,000–18,000, 6: 18,000–24,000, 7: 24,000–30,000, 8: 30,000–36,000, 9: 36,000–60,000, 10: 60,000–90,000, 11: 90,000–120,000, 12: €120,000 and more

Table 5.25 Income categories by number of income sources (column percentage) in the ECHP8

Income category	Germany			United Kingdom			Italy			Luxembourg		
	Number of income sources											
	4–6	7–8	9–13	4–6	7–8	9–13	4–6	7–8	9–13	4–6	7–8	9–13
4	7.7	5.9	3.7	10.9	5.8	2.9	16.4	7.8	6.6	1.0	0.3	0.0
5	12.2	12.0	8.7	13.3	9.0	5.8	19.9	15.8	13.2	5.5	2.2	1.2
6	18.9	12.9	12.1	13.9	10.4	8.9	18.0	17.1	16.9	10.1	5.7	3.9
7	19.3	17.3	21.3	11.8	12.1	11.2	16.6	18.6	16.3	10.9	9.2	6.0
8	14.0	16.5	18.9	11.4	12.2	12.4	9.9	15.7	10.7	9.8	10.8	5.7
9	21.5	29.4	29.8	26.0	35.1	38.7	13.6	20.4	28.5	35.4	38.8	39.3
10	3.8	4.5	4.3	8.4	12.0	15.8	1.3	2.5	4.7	20.5	23.6	32.4
11	0.5	0.5	0.4	1.5	1.9	2.6	0.2	0.4	1.6	5.3	6.3	8.7
12	0.2	0.3	0.2	0.8	0.8	1.4	0.0	0.0	0.6	1.4	3.1	2.7

Source: ESS 2002 Version Feb. 2004, ECHP UDB Version April 2004, own calculations
Income categories: 1: up to €1,800, 2: 1,800–3,600, 3: 3,600–6,000, 4: 6,000–12,000, 5: 12,000–18,000, 6: 18,000–24,000, 7: 24,000–30,000, 8: 30,000–36,000, 9: 36,000–60,000, 10: 60,000–90,000, 11: 90,000–120,000, 12: €120,000 and more

Comparison of the Results for Total Net Household Income from the ESS and the ECHP

Figure 5.11 compares the distribution of responses across income categories in the ESS with the distributions of total net household income in the ECHP. The ECHP income values have been recoded into the income categories used in the ESS. The images on the left of Fig. 5.11 are graphic representations of the distribution of responses across income categories in the ESS for the respective countries. The images on the right of Fig. 5.11 show the grouped income distribution in the ECHP.

In the case of the United Kingdom, both data sources yield the same income distribution. A slight deviation is apparent in the case of Germany: 50 % of the ESS respondents opt for the fifth to the eighth income category after they have added up all the household income, while 50 % of the ECHP population availed of the fifth to the ninth income category. Marked differences between the two statistics are apparent in the case of Luxembourg: In the ESS, the average income response was in the eighth income category, whereas the average for households interviewed within the framework of the ECHP was in the ninth income category.

ESS Income Categories Ordered According to the ECHP 5-Percent Percentiles

Five-percent percentiles divide a distribution into segments, each of which contains 5 % of the population. The second step in the comparison of the total net household income data of the two surveys is the division of national income distributions from the 8th wave of the ECHP into 5-percent percentiles (see Table 5.26). These 5-percent percentiles are sorted into the income categories used as response options by the

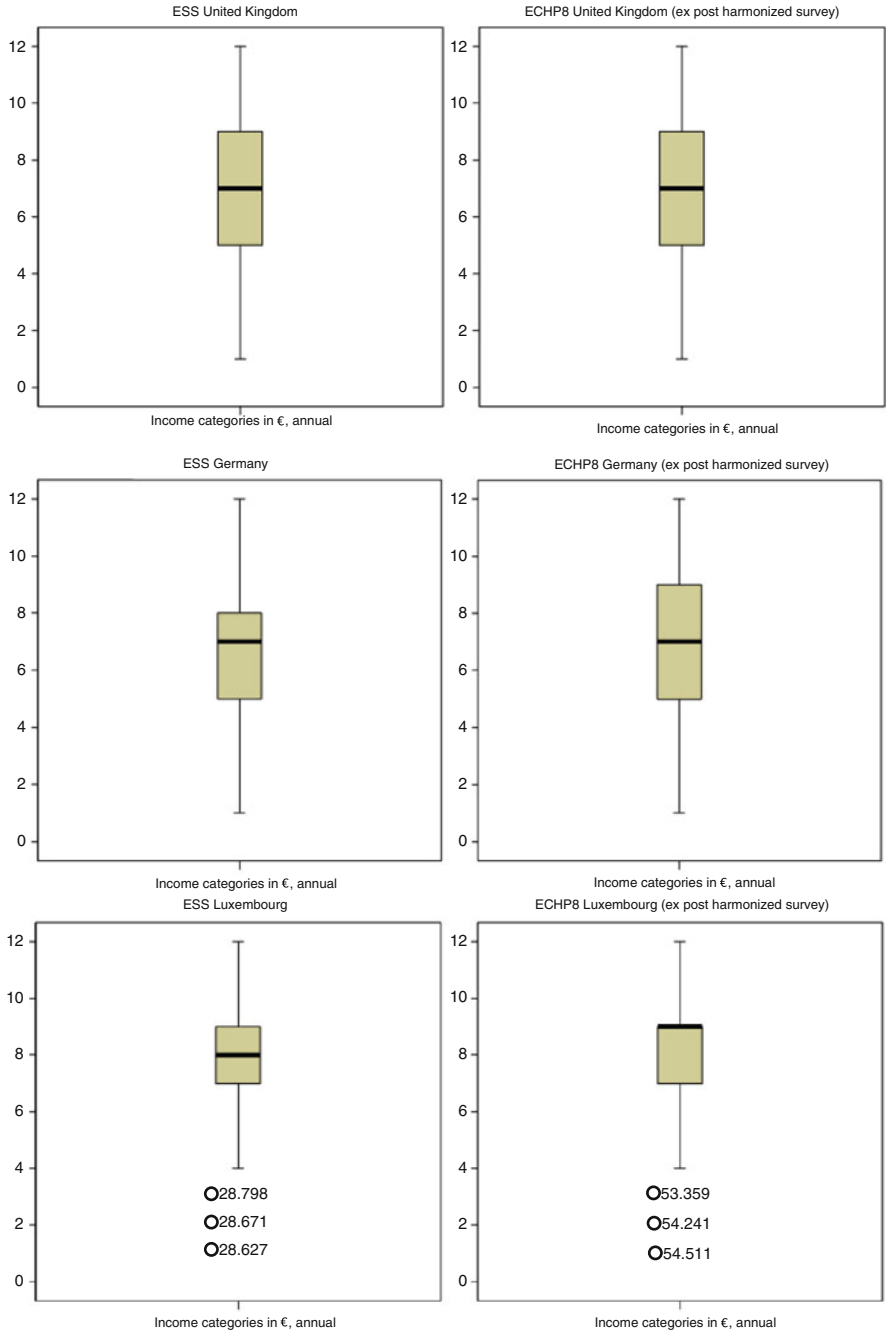

Fig. 5.11 Distribution of total net household income according to ESS categories: Comparison of the ESS and the ECHP for the United Kingdom, Germany, and Luxembourg
(Source: Warner, 2009, p. 84, p. 88, p. 92)

Table 5.26 Distribution of the ECHP 5-percent percentiles across the 12 ESS income categories (selected countries)

	Germany	United Kingdom	Italy	Luxembourg	Portugal	Finland
ESS income categ.	No. of the ECHP8 5-percent percentile					
Up to 1,800	–	–	–	–	–	–
1,800–3,600	–	–	–	–	1–2	–
3,600–6,000	–	–	1	–	3–5	–
6,000–12,000	1–2	1–2	2–5	–	6–11	1–3
12,000–18,000	3–5	3–5	6–10	1	12–15	4–7
18,000–24,000	6–8	6–7	11–13	2–3	16–17	8–10
24,000–30,000	9–12	8–10	14–16	4–6	18	11–12
30,000–36,000	13–14	11–12	17	7–8	19	13–15
36,000–60,000	15–19	13–17	18–19	9–15	–	16–19
60,000–90,000	–	18–19	–	16–18	–	–
90,000–120,000	–	–	–	19	–	–
120,000 and more	–	–	–	–	–	–

Source: ESS 2002 Version Feb. 2004, ECHP UDB Version April 2004, own calculations

ESS. This step highlights the need to adapt the response categories of the income question to the concrete national income situation.

In Germany, the 15th to the 19th 5-percent percentiles of the ECHP are to be found in the 9th ESS income category (36,000–60,000 euros); the 10th ECHP 5-percent percentile, whose upper threshold corresponds to the median of the income distribution, is in the 7th ESS income category (24,000–30,000 euros).

According to the ECHP, only the wealthiest 5 % of Portuguese households have a total net household income of over 36,000 euros. In Luxembourg, the 9th ESS income category (36,000–60,000 euros) covers the ECHP's income distribution from the 9th to the 15th 5-percent percentile. The bottom 5 % of the population in the ECHP income distribution for Luxembourg have a net household income of between 12,000 and 18,000 euros (the 5th ESS category), whereas the median (the 10th 5-percent percentile) is to be found in the 4th income category (6,000–12,000 euros).

Overall, the household income of the respondents in Germany and Luxembourg is distributed across six or seven income categories. However, depending on the average national income, the distribution across income categories varies significantly across the countries.

5.4.3 Proposal for an Instrument to Measure Income in Academically Driven Social Surveys

In socio-economic surveys such as the ECHP, the aim is to measure income as exactly as possible with a view to analysing the role of households and their members in the national economic system. All potential earners/income recipients in the

household must be interviewed, and the communicative task that the respondents and the interviewers are expected to master is an exceedingly complex one.

By contrast, the measurement of income in an academically driven social survey is limited to determining the respondent's relative economic position in the social stratification system (Warner, 2009, p. 27).

Market researchers, on the other hand, are interested in households' purchasing power. To obtain this information it suffices to find out which consumer durables the household possesses. Therefore, in market research surveys, respondents can either be requested to state their income, or the interviewer can estimate it.

Step 1: Definition of the Concept to be Measured

The authors have decided that, in order to place a respondent in the social stratification system, it is sufficient to measure income in the sense of the 'respondent's relative economic situation' (Warner, 2009, p. 27) or that of his household. However, one must first define what is meant by 'income'. To this end, the concept of 'household income' must be defined. This can be done only by explaining to the respondent which income components must be included, which persons in the household should be included, and what must be subtracted to yield 'total net income'.

Guided by the discussions of the Canberra Expert Group on Household Income Statistics (Expert Group, 2001) and the income types measured in the ECHP (see Table 5.27), one soon arrives at a list of income types that must be taken into account in an academically driven social survey. The respondent must be induced to recall all sources of income accruing to his household and to the individual household members. This is the only way to bring the respondent to remember all income sources of all the household members. The showcard that is used includes:

- Wages or salaries, including performance-, Christmas and vacation bonuses, supplementary payments such as overtime payments and profit sharing;
- Income from self-employment, farming, or freelance work;
- Old-age and survivors' pensions;
- Unemployment benefit, unemployment assistance, sickness benefit, grants for education and training;
- Income from the rental of property or land;
- Public transfer payments such as social assistance and support, including children's and family allowances, orphans' pension/benefit, and parental child-raising allowance;
- Private transfers, especially alimony;
- Income from other sources, for example, tax rebates, insurance dividends, investments, savings, and lottery winnings.

The second element of the definition is linked to the household concept and makes it clear to the respondent that the income of all the household members must be added up: 'If you add up the income from all sources and all household members …' (Hoffmeyer-Zlotnik & Warner, 2006, p. 323; Warner, 2009, p. 143).

Table 5.27 Income sources and types: EU definition and Canberra Group's recommendations

EU definition	Canberra recommendations
Employee income-cash or near cash	Employee income-cash or near cash
Cash wages and salaries	Cash wages and salaries
Tips and bonuses	Tips and bonuses
Profit sharing including stock options	Profit sharing including stock options
Severance and termination pay	Severance and termination pay
Allowances payable for working in remote locations etc.	Allowances payable for working in remote locations etc.
Employee income– cash value of 'fringe benefits'	Employers' social insurance contributions
Employers' social insurance contributions, if feasible to collect or to impute from Gross	
Company car	
Other goods and services (to be specified on basis of which relevant/significant part of remuneration: medical insurance, food, telephone, computer)	Goods and services provided to employee as part of employment package
Income from self-employment-cash or near cash	Income from self-employment-cash or near cash
Profit/loss from unincorporated enterprise	Profit/loss from unincorporated enterprise
Royalties	Royalties
In-kind, imputed	In-kind, imputed
Goods produced for home consumption, less costs of inputs	Goods produced for home consumption, less cost of inputs
Effective imputed rent (best national method/source to be specified) includes rent free and subsidised rents	Income less expenses from owner-occupied dwellings
Rentals	Rentals
Income less expenses from rentals, except rent of land	Income less expenses from rentals, except rent of land
Property income	Property income
Interest received is included. Interest paid not specifically identified	Interest received less interest paid
Dividends	Dividends
Profits from capital investment in unincorporated business	
Rent from land	Rent from land
Regular pensions from private schemes (other than employer-based)	Regular payments from market-based pension or life insurance policies (resulting in a regular income)
Current transfers received	Current transfers received
Social benefits (SESSPROS categories)	
Unemployment benefits	Social insurance benefits from employers' schemes
Old-age benefits	
Survivors' benefits	Social insurance benefits in cash from government schemes
Family-related allowances	
Sickness benefits	Universal social assistance benefits in cash from government
Invalidity benefits	

(continued)

Table 5.27 (continued)

EU definition	Canberra recommendations
Education-related allowances	Means-tested social assistance benefits in cash from government
Social assistance	
Housing allowances	
Other benefits	
Regular inter-household cash transfers received	Regular inter-household cash transfers received
Gross income	Gross income
Current transfers paid	Current transfers paid
Employers' social insurance contributions Include if feasible	Employers' social insurance contributions
Employees' social insurance contributions	Employees' social insurance contributions
Taxes on income	Taxes on income
Regular inter-household cash transfers	Regular inter-household cash transfers
Disposable income	Disposable income

Source: Eurostat, 2001

The 'calculation instructions' given to the respondents are the third defining element. They must be aware of what 'net' means in the question. 'Net is after deduction of national taxes and compulsory social security contributions' (Warner, 2009, p. 143). When formulating the national question, the words 'national taxes' and 'compulsory social security contributions' must be replaced by the respective national terms.

Step 2: Structural Analysis

Income structures are dependent on state and private transfer systems, national labour market practices, the national taxation system, the national social security system, and national income distributions. Therefore, the next step entails analysing the income structures and cash transfer systems of the countries participating in the survey with a view to discovering commonalities and structural differences. The comparison of the results of the ESS and the ECHP can be used for this purpose. The ECHP data serve as reference statistics. They show that in view of the different income distributions in Europe, at least three different lists of income categories must be developed as response categories for the income measure.

Step 3: Development of the Instrument

The definition of the object to be measured – total net household income – and the structural analysis of the national distributions of income yield the formulations of the first two survey questions: First the respondent must be induced to recall all the sources of income accruing to each of the household members who contribute to the household income. Then he must add the income from all the possible sources and subtract taxes and social insurance contributions.

Because the average income levels and income distributions differ in the various types of European countries, the response categories must be adapted to the national income situation. As three types of countries can be identified, three systems of categories are required. They can be presented to the respondent on a country-specific showcard that allows him to choose between weekly, monthly and annual income. In countries such as Italy and Portugal, the lower end of the income scale must be subdivided further, starting with an annual income of 2,500 euros and moving up in 2,500-euro steps until it reaches 15,000 euros. Thereafter, the width of the categories increases. Countries such as Luxembourg will not offer any response categories at the lower end of the scale because they rarely occur in the national income distributions. In these countries, the scale begins at 10,000 euros. In countries such as Germany or the United Kingdom, the scale begins at an annual income of 5,000 euros and continues in 5,000-euro steps. Only by using such differentiated scales is it possible to adequately represent the distribution of total net household income (see Warner, 2009, pp. 144ff.).

The third question measures the number of earners/income recipients resident in the household in question. This information enables the researcher to check the plausibility of the responses.

The fourth question focuses on the main source of income. Although it uses all the income types from the first question, the respondent must choose just one, namely the category that appears to him to be main source of the income in the household.

The fifth question measures the respondent's personal relationship to the main earner or income recipient in the household. This gives the researcher the means to assess the quality of the income data provided by the respondent. If the respondent is the main earner/income recipient, or the partner of the main earner/income recipient, the income figures provided are likely to be more valid than if the respondent has a more distant relationship to the main earner/income recipient, for example if he is a parent or child of that person.

Step 4: Harmonisation

The questions developed in Step 4 constitute an input-harmonised instrument. However, each country in which the survey is conducted must adapt the list of income sources to national circumstances on the basis of the Canberra Group recommendations (see Table 5.27) and select the most suitable response category schema. To find this out, one can, for example, consult the national statistical yearbook.

Result: The Measurement Instrument

The measurement instrument comprises five questions. The question stimuli are identical in all survey countries. The response categories are adapted to the national income situation. In this way, they cover national commonalities and differences.

The administration of the instrument does not entail a lot of effort on the part of the interviewer or the respondent. Although the task of calculating the total net income of the household is a complex one, it would not be less complex if it was set in a less precise way, as is the case in many surveys. Because the task is complex, the respondent must be helped to recall the various elements of the calculation to be performed according to exact instructions. On the other hand, however, the researcher should make sure that he is able to assess the quality of the response. This is the function of the three final questions.

5.4.4 Measurement of Income in the Fourth Round of the ESS in 2008

Round 1 of the ESS took place in 2002; Round 4 of this pan-European survey was fielded in 2008. In the first three rounds, the coordinators of the survey prescribed a common and uniform system of income categories for all participating countries for use in the income showcard. In 2006, Jürgen H.P. Hoffmeyer-Zlotnik and Uwe Warner (2006, pp. 318ff.) published an initial critical assessment of the ESS income measure on the basis of the results of Round 1.

To a certain extent, their suggestions for improvement were taken into account in the conception of the fourth round of the survey fielded in 2008. Since then, the response categories have been based on deciles of the actual household income range in the country in question. The quality of this new income measure depends on the quality of the statistics from which the national household income range is derived.

The modifications to the income questions in Round 4 of the ESS wave affected the framing of the questions, response categories, and showcards. Question F31 read:

> F31: Please consider the income of all household members and any income which may be received by the household as a whole. What is the main source of income in your household? Please use this card (ESS, 2008a, Question F31).

The modified showcard featured separate response options for ‘income from self-employment (excluding farming)’ and ‘income from farming’. The income types are:

- Wages or salaries
- Income from self-employment (excluding farming)
- Income from farming
- Pensions
- Unemployment/redundancy benefit
- Any other social benefits or grants
- Income from investment, savings, insurance or property
- Income from other sources (ESS, 2008a, Card 72).

CARD 73				
YOUR HOUSEHOLD INCOME				
	Approximate WEEKLY	Approximate MONTHLY	Approximate ANNUAL	
J	Weekly equivalent	Monthly equivalent	Income corresponding to that held by 10% of households with lowest income (0-10%)	J
R	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (11-20%)	R
C	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (21-30%)	C
M	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (31-40%)	M
F	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (41-50%)	F
S	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (51-60%)	S
K	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (61-70%)	K
P	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (71-80%)	P
D	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (81-90%)	D
H	Weekly equivalent	Monthly equivalent	Income corresponding to that held by next 10% of households (91-100%)	H

Fig. 5.12 Household income showcard, ESS 2008 (Source: European Social Survey, 2008a, CARD 73)

The text of the 'net total household income question' gives the respondent an indication of what is meant by 'net' (ESS, 2008a, Question F32):

> F32: Using this card, please tell me which letter describes your household's total income, after tax and compulsory deductions, from all sources? If you don't know the exact figure, please give an estimate. Use the part of the card that you know best: weekly, monthly or annual income.

From the fourth round of the ESS onwards, each participating country has framed its own showcard (see Fig. 5.12). As mentioned above, the response categories are based on the deciles of the actual household income range in the country in question. In a note on the framing of the decile income showcard, the ESS coordinators gave the following instructions to those responsible for running the survey in each country:

> An income showcard should be devised with approximate weekly, monthly and annual amounts. You should use ten income range categories, each corresponding broadly to DECILES OF THE ACTUAL HOUSEHOLD INCOME RANGE in your country. These figures should be derived from the best available source for your country. The data source used should match the requirement of the question i.e. deciles of household income for all households (not for example average households or just households with children). Using the median income as the reference point, 10 deciles should be calculated with the median itself at the top of the fifth decile (Category F). The figures should not appear to be too

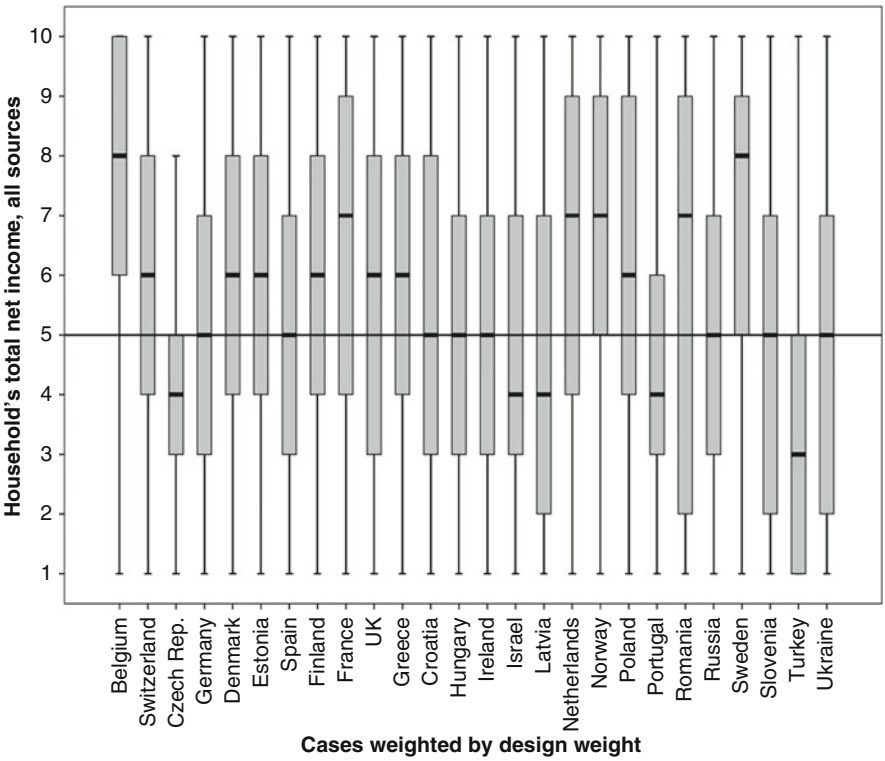

Fig. 5.13 Country-specific distributions of responses across the ten income categories (Source: ESS, 2008, own calculations)

exact. Minor rounding can be employed to achieve this if necessary (ESS, 2008a, CARD 73; see also: ESS, 2008b, p. 17).

Figure 5.13 shows the country-specific distributions of the responses across the ten income categories. Of the 26 countries that participated in Round 4 of the ESS, the mean of the income distribution in 14 countries lay in the fifth or sixth income category. In six countries the mean was in a category higher than the sixth category, while in five countries the mean of the distribution was in a category lower than the fifth category.

Because the survey population (here: households) is divided into ten categories corresponding to deciles of the actual household income range, it is to be expected that in a representative survey with a probabilistic sample each response category will be selected by approximately 10 % of the survey population.

As can be seen from the countries presented by way of example in Fig. 5.14, this expectation was fulfilled in some cases, but not in others. In Denmark, Estonia, Finland, France, the United Kingdom, Croatia, Poland and Slovenia, for example, each income category was chosen by almost 10 % of respondents (ESS, 2008d). However, medium deviations from the expected decile distribution were observed in the case of Switzerland, Germany, Spain, Greece, Hungary, the Netherlands, Norway, the Ukraine and Ireland, where the middle income categories

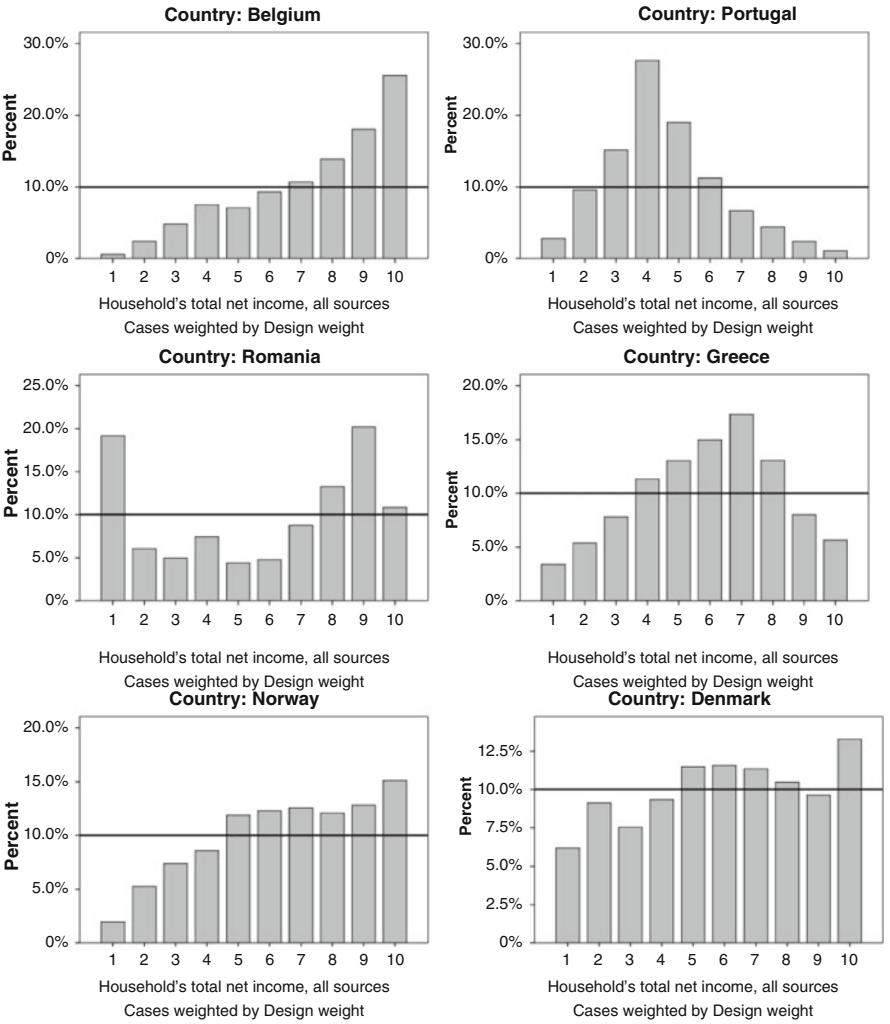

Fig. 5.14 Distribution of net household income by country (Source: ESS, 2008, own calculations)

were more strongly represented than expected. Large deviations from the decile distribution were observed in Belgium, the Czech Republic, Latvia, Portugal, Romania, Russia, Sweden and Turkey (ESS, 2008d). Small deviations from the decile distribution are acceptable and within the realm of probability because of rounding, which the ESS permits. A deviation is deemed to be large if at least one response category deviates by at least 10 percentage points from the expected 10 % mark. A deviation is considered to be medium if at least one response category

Table 5.28 Income distribution in Belgium according to tax register

Deciles	Total taxable net income from register	Average tax paid in %	(Total taxable net income from register) (Average tax paid)	Rounded net income as appeared on showcard 72
1	4,909	0	4,909.000	Less then €5,000
2	9,677	1.5	9,531.845	€5,000 - €10,000
3	12,001	2.3	11,724.977	€10,000 - €12,000
4	14,860	7.9	13,686.060	€12,000 - €14,000
5	18,139	12.5	15,871.625	€14,000 - €16,000
6	21,816	17.9	17,910.936	€16,000 - €18,000
7	26,457	21.2	20,848.116	€18,000 - €21,000
8	34,146	24,3	25,848.522	€21,000 - €26,000
9	47,834	27.5	34,679.650	€26,000 - €35,000
10	>47,834	>27.5	>34,679.650	€35,000 or more

Source: ESS, 2008d, p. 3

deviates by at least 5 percentage points from the 10 % mark. Deviations of 2.5 percentage points from the expected 10 % share are deemed to be small.

The participating countries derive the household income categories from different data sources. As the ESS stresses, the figures for the household income range 'should be derived from the best available source' for the given country (ESS, 2008a, re CARD 73) (see Table 5.29). Four countries use the EU-SILC as the basis for calculating the household income deciles; 14 countries calculate the household income range on the basis of other survey data; and eight countries derive the income deciles from population registers or census data (ESS, 2008d).

The ESS4-2008 Survey Documentation (ESS, 2008d) reports that the income range categories for Belgium and Sweden were calculated on the basis of total taxable net income data from the tax register (see Table 5.28). The responses in these two countries gave rise to major deviations from the expected 10 % mark in all ten response categories. In Belgium, taxable income is made up of wages and salaries, income from self-employment, pensions, unemployment benefit, sickness and disability benefit, income from the rental of property and land, income from investments, income from property and other sources. However, because the ESS measures total net household income, and many components of household income are not subject to tax (for example public and private transfers), it is obvious that the lower response categories in Belgium and Sweden[4] are either not used at all or are hardly used.

The quality of the responses to the survey question about total net household income depends on the quality of the reference statistics from which the household

[4] In Sweden, child allowance, house allowances, student grants and social assistance were not included (ESS, 2008d, p. 62).

Table 5.29 Data source of income distributions in the ESS

Country	EU-SILC	Other surveys	Register	Census	Deviations
Belgium			Tax register		Large
Switzerland		Swiss household panel			Medium
Cyprus		Unknown survey			
Czech Republic	yes				Large
Germany		Income and consumption survey			Medium
Denmark			Income register		Small
Estonia	yes				Small
Spain		Household budget survey			Medium
Finland		Distribution of income matched survey and register			Small
France				Yes	Small
United Kingdom		Family resources survey			Small
Greece	yes				Medium
Croatia		Household budget survey			Small
Hungary		ESS3			Medium
Israel		CBS income survey			Medium
Latvia	yes				Large
Netherlands			CBS register		Medium
Norway			Register		Medium
Poland		Household budget survey			Small
Portugal		Families' expenditure survey			Large
Romania		Family budget survey			Large
Russian Federation		CESSI monitoring of social-political situation in Russia			Large
Sweden			Income and tax register		Large
Slovenia				Yes	Small
Turkey		Survey of income distribution and life conditions			Large
Ukraine		Monitoring survey of the Institute of Sociology, National Academy of Science			Medium
Ireland		Not specified			Medium

Source: ESS, 2008d: Documentation Report, Appendix A5: Income. Table compiled by the authors

income range is derived (see Table 5.29). These data must cover all types of income and optimally represent the national distribution of household income across the survey universe. That means that in the case of total net household income, all possible payments accruing to a household and its members in a given country must be reported in these statistics and that all households in the survey universe must be

represented in the reference statistics. Then the income groups for the response categories can be calculated using the percentiles[5] from the income distribution in the reference data. This is the only way to ensure that – with the exception of minor deviations – the respondent population uses the whole range of response categories as expected.

5.4.5 *Descriptive Characteristics of the European Comparison of Income Distributions*

In this section we present instruments developed by statisticians that facilitate the standardisation of income for comparison purposes or the definition of inequality indicators.

Equivalence Scales and Equivalised Household Income

Equivalence scales were developed in order to adjust the incomes of households to reflect differences in household size and composition, and in the resource needs of the household members. The income of a household adjusted on the basis of such a scale is considered an indicator of the level of wealth. It represents a measure of the wealth of an individual in different survey units (for example household) (cf. Buhmann et al., 1988; Klein, 1986).

The idea behind the equivalence scales is that, due to economies of scale, members of large households who share resources need less financial resources per capita than persons who share resources in small households. The needs weight, or equivalence scale value, assigned to the individual household members ranges between 1 and 0. As a rule, persons are assigned a scale value on the basis of their age, occasionally also on the basis of their employment status. The OECD modified equivalence scale enjoys great popularity in cross-national comparative research. It assigns a value of 1 to the first household member (usually the main earner or income recipient), a value of 0.5 to the second and each subsequent person aged 14 and over, and a value of 0.3 to each child under the age of 14. Since 1990, or thereabouts, an equivalence scale commonly used for the analysis of relative income positions in the national context in Germany is one that is based on the standard rates proportions laid down by the Federal Social Act (*Bundessozialhilfegesetz*).

[5] Income deciles: The ten income categories that comprise 10 % of the survey population respectively are a variant of the percentiles that divide the population into segments of 1 %. Quintiles, which divide the range into five equal parts, are also commonly used, as are quartiles, which divide the distribution into four equal parts. 25 % of a distribution lie below the first quartile, etc. The difference between the lower threshold of the highest quartile and the upper threshold of the lowest quartile comprises 50 % of all observed units in the distribution. This quartile distance can be viewed as a measure of the dispersion of the distribution (cf. Kühnel & Krebs, 2007, p. 85 and p. 105).

This scale assigns the first person in the household a value of 1; all other members are assigned a value of 0.8 or 0.5, depending on their age (Hauser, 1997).

One criticism levelled at the OECD modified equivalence scale is that the employment situation of the adult members of the household is not taken into account. For example, a household in which both parents are working must spend more on food because members have to eat out more often. Compared to the 'classical' family household in which one of the parents (usually the mother) manages the household, prepares the meals, and takes care of the children, single-parent households or households in which both parents work full-time have higher living costs, because of additional expenditure on child care, for example.

By dividing the total net household income by its equivalent size (i.e., the sum of the needs weights), one arrives at the needs-weighted per capita household income, which is known as the 'equivalised net income'. In the Federal Republic of Germany in 2008, the median of the equivalised net income was 18,586 euros per annum (Datenreport, 2011, p. 153).

Table 5.30 shows the equivalised net income for various population groups and the major differences in equivalised net income due to educational and employment status. Because the equivalised net income is an indicator of the level of wealth, the comparison of households comprising two adults and children with single-parent households reveals a considerable drop in wealth.

Purchasing Power Parities

To render income comparable across countries, national currencies can be converted to a common reference currency. This reference currency can be either the currency of one of the countries in the group to be compared, or a benchmark currency. Although the benchmark currency is usually the US dollar, the euro is the better choice if only European countries are participating in the study. A number of exchange rate tables (Eurostat, 2012c) are available to researchers engaged in the cross-national comparison of income. These tables give the euro/national currency exchange rates. Time series are also available. They reflect exchange rate fluctuations and inflation rates in the given country, thereby facilitating the analysis of changes in income over time.

The problem that arises here is familiar to anyone who travels abroad: Because of different national price levels, one's own currency is worth more than at home in some countries and less in others.

The so-called Big Mac Index offers a simple solution to the problem of different price levels. In order to purchase an identical product (a Big Mac burger), the customer has to pay a different price in different countries (see Table 5.31). Hence, the value of his income – and therefore its purchasing power – varies from country to country.

The solution offered by comparative income research to the problem of exchange rates and national price levels is to convert national currencies into purchasing power indices and then determine purchasing power parities (PPPs) (see OECD

Table 5.30 Median of the equivalised net income in Germany

	Median of the equivalised net income (euros per annum)	
	2007	2008
Total	18,309	18,586
Men	18,777	18,927
Women	17,909	18,219
Age groups under 18	17,205	17,438
…18 to 24	17,678	17,784
…25 to 54	19,980	20,407
…55 to 64	19,042	18,775
…65 or over	16,498	16,804
Household types		
One-person households	15,580	15,894
Men	16,589	17,002
Women	14,827	15,277
Persons in households comprising …		
… two adults under 65	22,471	23,073
… two adults, one of whom is aged 65 or over	17,225	17,367
… single parent	12,438	12,792
… two adults with one child	20,420	21,257
… two adults with two children	18,994	19,334
Main employment status[a]		
Employed	20,945	21,536
Unemployed	9,999	9,600
Retired	15,924	16,423
Educational status[b]		
ISCED 0–2 – low	15,412	15,451
ISCED 3–4 – medium	18,014	18,331
ISCED 5–6 – high	22,450	23,223

Source: Datenreport, 2011, p. 153

[a]Persons aged 18 and over. Main employment status self-assigned by respondent. [b]Persons aged 18 and over. Current educational status according to the International Standard Classification of Education (ISCED 1997). ISCED 0–2: pre-primary, primary, and lower secondary; ISCED 3–4: upper secondary and post-secondary, non-tertiary; ISCED 5–6: tertiary

Table 5.31 Big Mac prices (in US$) in selected countries

	1994	2006	2011
USA	2.30	3.10	4.07
Germany	2.69	3.77	4.93
Austria	2.84	3.77	4.93
Switzerland	3.96	5.21	8.06
China		1.31	2.20
India[a]			1.89

Source for 2011: 'The Big Mac Index: Currency comparisons, to go', July 28 2011, 14:35, The Economist online. Source for 1994 and 2006: Diekmann (2007, pp. 230 ff.)

[a]Maharaja Mac

Statistics Directorate, 2011). A purchasing power index is based on the prices of products in a basket of goods and services. In the case of the Big Mac Index, the underlying basket contains only one equivalent product, the Big Mac burger. However, a once-off measurement with just one equivalent product is susceptible to systematic observation errors – in India, for example, the equivalent of the Big Mac (the Maharaja Mac) is made of chicken not beef. Once-off measurements are also susceptible to random errors over time (seasonal effects) or locality (location of the restaurant in the country or city). Therefore, the basket of goods and services used to calculate purchasing power parities includes almost 3,000 consumer goods and services, 30 occupations in government, 200 types of equipment goods and about 15 construction projects. These products are first grouped into 226 basic headings, which are then aggregated into 71 groups and, at the highest level of aggregation, into 31 categories (Eurostat-OECD, 2006, p. 52). Hence, PPPs are a reliable and valid indicator with which the price level and cost of living can be compared across countries. They are defined as:

> 'Spatial deflators and currency converters, which eliminate the effects of the differences in price levels between countries, thus allowing volume comparisons of GDP components and comparisons of price levels'. PPPs are calculated in three stages: first for individual products, then for groups of products or basic headings and, finally, for groups of basic headings or aggregates. … PPPs at all stages are price relatives. They show how many units of currency A need to be spent in country A to obtain the same volume of a product or a basic heading or an aggregate that X units of currency B purchases in country B. In the case of a single product, the 'same volume' means 'identical volume'. But in the case of the complex assortment of goods and services that make up an aggregate such as GDP, the 'same volume' does not mean an 'identical basket of goods and services'. The composition of the basket will vary between countries according to their economic, social and cultural differences, but each basket will provide equivalent satisfaction or utility (Eurostat-OECD, 2006, p. 261).

For presentational purposes, monetary sums that have been converted with the help of PPPs are expressed in OECD dollars. This is an artificial currency unit based on 'US dollars at average OECD price levels'.

Eurostat uses the euro as a reference currency and Germany as the reference country for comparisons across European countries. The name given by Eurostat to artificial currency units in which the PPPs for the EU member states are expressed is 'purchasing power standard' (PPS). The PPS expresses in euros the average price level of the EU member states (Eurostat-OECD, 2006, p. 261).

> For presentational purposes, the PPPs and the real and nominal final expenditures for both individual countries and country groups are subsequently rebased on the euro and the EU 25 and the US dollar and the OECD 30 (Eurostat-OECD, 2006, p. 20, para. 165 and p. 21, para. 170).

However, despite proposals for standardisation (made, for example, by the UN Statistical Office's International Comparison Project), the products used to construct the index and the manner in which the weighting of the individual prices is performed still depends on the individual countries. Nonetheless, the PPPs represent a measure for a sum of money with which the same goods or services can be purchased in different countries in a specific year (Theil, 1982) (see also Table 5.32)

Table 5.32 Median equivalised net income in Purchasing Power Standard (PPS)

	2006		2007		2008		2009		2010
Belgium	16,178		16,311		16,743		17,495		17,171
Bulgaria	3,200	b	3,299		4,765		5,753		6,070
Czech Republic	8,261		8,841		9,725		10,107		10,081
Denmark	16,147		16,868		17,601		17,848		:
Germany	15,167		17,325		18,007		17,959		17,761
Estonia	5,628		6,492		7,563		7,992		7,476
Ireland	15,938		17,722		18,169		17,599		:
Greece	11,162		11,455		12,032		12,629		:
Spain	12,601		13,118		13,949		13,978		13,326
France	14,981		15,149		17,571	b	17,656		:
Italy	13,871		14,406		15,262		15,203		:
Cyprus	16,362		18,252		19,085		19,641		:
Latvia	4,446		5,515		7,257		7,325		6,171
Lithuania	4,620		5,714		6,949		7,306		6,127
Luxembourg	26,418		26,847		26,943		27,043		26,704
Hungary	6,077		6,490		6,597		6,838		6,600
Malta	11,697		12,170		12,667		13,784	b	13,101
Netherlands	16,495		17,537		19,142		19,232		:
Austria	17,420		17,810		18,539		18,863		19,163
Poland	5,095		5,609		6,732		7,376		:
Portugal	8,595		8,915		9,504		9,410		:
Romania	:		2,877	b	3,064		3,443		:
Slovenia	12,153		12,922		13,812		14,410		13,909
Slovakia	4,620		5,608		6,763		7,855		:
Finland	14,843		15,241		16,556		17,282		17,020
Sweden	15,113		15,908		17,799		18,768		18,301
United Kingdom	17,630		18,778		18,543		17,077		:
Iceland	18,560		19,894		21,630		21,576		18,587
Norway	19,738		20,702		23,131		24,137		:
Switzerland	:		:		21,525		22,683		:

Source: European Commission & Eurostat, 2009b [ilc_di03]
Available flags: b = break in series; Special values: – = not applicable or real zero or zero by default, 0 = not applicable or real zero or zero by default; : = not available

because the quality criteria for indicator construction apply also to PPPs. Hence, random and systematic measurement errors can be controlled, and the reliability and validity of income measurements across states can be increased. However, the PPP is not a suitable conversion factor for non-monetary income types (such as payments in kind) or non-quantifiable goods and services (for example, housework or self-grown products (cf. Zaidi, 1991).

Measures of Inequality of Income Distribution, Poverty Indicators

The Gini coefficient of relative concentration, also known as the Gini index, has proved a valuable tool with which to compare distributions of income in different

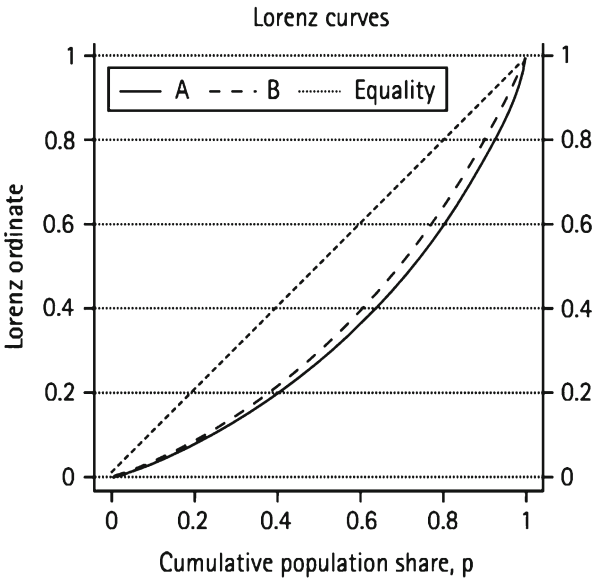

Fig. 5.15 Lorenz curves (Source: Jenkins & van Kerm, 2009, p. 49)

countries (Sauerbier & Voß, 2009, pp. 29f.). The Gini coefficient is based on the Lorenz curve, which maps the cumulative percentage groups of households on the horizontal axis against their share of cumulative net household income on the vertical axis. The percentage groups are arranged in ascending order according to their income shares.

If perfect income equality prevailed in a country (i.e. if X % of households earned X % of the total household income) the Lorenz curve would fall along the diagonal line ('the line of perfect equality'). In reality, the curve rises slowly at first and becomes increasingly steep. Figuratively speaking, the Gini coefficient is the area between the Lorenz curve (see Fig. 5.15) and the line of perfect equality divided by the total area below the line of perfect equality. Hence, the coefficient can take on the value of 0 if the Lorenz curve falls along the line of perfect equality – namely when everyone has the same income. A coefficient of 1 is the opposite extreme: One person owns all the income. The closer the Lorenz curve is to the line of perfect equality, the smaller the Gini coefficient, and the lower the inequality in the surveyed country.

For presentational purposes, and in the interests of interpretability, the Gini coefficient is often multiplied by a hundred. As can be seen from Table 5.33, the inequality of income distribution increased in Germany in 2007: the Gini coefficient increased from 26 in 2006 to 30 in 2007 and remained at that level in the following year. And as the table shows, in 2009, Slovenia was the European country with the lowest inequality of distribution of disposable net household income.

Table 5.33 Gini index

	2006		2007		2008		2009		2010
Belgium	27.8		26.3		27.5		26.4		26.6
Bulgaria	31.2	b	35.3		35.9		33.4		33.2
Czech Republic	25.3		25.3		24.7		25.1		24.9
Denmark	23.7		25.2		25.1		27.0		:
Germany	26.8		30.4		30.2		29.1		29.3
Estonia	33.1		33.4		30.9		31.4		31.3
Ireland	31.9		31.3		29.9		28.8		:
Greece	34.3		34.3		33.4		33.1		:
Spain	31.2		31.3		31.3		32.3		33.9
France	27.3		26.6		29.2	b	29.8		:
Italy	32.1		32.3		31.0		31.5		:
Cyprus	28.8		29.8		28.0		28.4		:
Latvia	39.2		35.4		37.7		37.4		36.1
Lithuania	35.0		33.8		34.0		35.5		36.9
Luxembourg	27.8		27.4		27.7		29.2		27.9
Hungary	33.3		25.6		25.2		24.7		24.1
Malta	27.3		25.7		26.9		27.2	b	28.4
Netherlands	26.4		27.6		27.6		27.2		:
Austria	25.3		26.2		26.2		25.7		26.1
Poland	33.3		32.2		32.0		31.4		:
Portugal	37.7		36.8		35.8		35.4		:
Romania	33.0		37.8	b	36.0		34.9		:
Slovenia	23.7		23.2		23.4		22.7		23.8
Slovakia	28.1		24.5		23.7		24.8		:
Finland	25.9		26.2		26.3		25.9		25.4
Sweden	24.0		23.4		24.0		24.8		24.1
United Kingdom	32.5		32.6		33.9		32.4		:
Iceland	26.3		28.0		27.3		29.6		25.7
Norway	29.2		23.7		25.1		24.1		:
Switzerland	:		:		32.0		30.2		:

Source: European Commission & Eurostat, 2009b [ilc_di12]
Available flags: b = break in series; special value: : = not available

Income Quintile Share Ratio

A further measure of the inequality of the distribution of disposable net household income across households is the quintile share ratio. Eurostat favours the S80/S20 ratio, which measures the ratio of total income received by the 20 % of the population with the highest income (the top quintile) to that received by the 20 % of the population with the lowest income (the bottom quintile). In 2010, the top 20 % of the households in the countries of the European Economic Area (EEA) had at least 4.5 times more net household income than the 20 % at the bottom of the national income distribution (see Table 5.34).

Table 5.34 S80/S20 income quintile share ratio

	2006	2007		2008	2009		2010
Belgium	4.2	3.9		4.1	3.9		3.9
Bulgaria	5.1	7.0		6.5	5.9		5.9
Czech Republic	3.5	3.5		3.4	3.5		3.5
Denmark	3.4	3.7		3.6	4.6		:
Germany	4.1	4.9		4.8	4.5		4.5
Estonia	5.5	5.5		5.0	5.0		5.0
Ireland	4.9	4.8		4.4	4.2		:
Greece	6.1	6.0		5.9	5.8		:
Spain	5.3	5.3		5.4	6.0		6.9
France	4.0	3.9		4.3	4.4		:
Italy	5.5	5.5		5.1	5.2		:
Cyprus	4.3	4.4		4.1	4.2		:
Latvia	7.9	6.3		7.3	7.3		6.9
Lithuania	6.3	5.9		5.9	6.3		7.3
Luxembourg	4.2	4.0		4.1	4.3		4.1
Hungary	5.5	3.7		3.6	3.5		3.4
Malta	4.0	3.8		4.0	4.0	b	4.3
Netherlands	3.8	4.0		4.0	4.0		:
Austria	3.7	3.8		3.7	3.7		3.7
Poland	5.6	5.3		5.1	5.0		:
Portugal	6.7	6.5		6.1	6.0		:
Romania	5.3	7.8	b	7.0	6.7		:
Slovenia	3.4	3.3		3.4	3.2		3.4
Slovakia	4.1	3.5		3.4	3.6		:
Finland	3.7	3.7		3.8	3.7		3.6
Sweden	3.6	3.3		3.5	3.7		3.5
United Kingdom	5.4	5.3		5.6	5.2		:
Iceland	3.7	3.9		3.8	4.2		3.6
Norway	4.6	3.5		3.7	3.5		:
Switzerland	:	:		5.3	4.6		:

Source: European Commission & Eurostat, 2009b [ilc_di11]
Available flags: b = break in series; special value: : = not available

At-Risk-of-Poverty Rate

The economic inequality indicator that is of greatest importance for social and welfare state policy in the European Union is the at-risk-of-poverty rate, i.e. the share of people with an equivalised disposable income below the at-risk-of-poverty threshold. This risk of poverty exists if the equivalised net household income is less than 60 % of the national median equivalised disposable household income after social transfers (Atkinson & Marlier, 2010, p. 104). Table 5.35 gives the at-risk-of-poverty rates of the resident population of the EU member states. In Germany, for

Table 5.35 At-risk-of-poverty rate by '60 % of median equivalised income after social transfers' poverty threshold

	2006		2007		2008		2009		2010
Belgium	14.7		15.2		14.7		14.6		14.6
Bulgaria	18.4	b	22.0		21.4		21.8		20.7
Czech Republic	9.9		9.6		9.0		8.6		9.0
Denmark	11.7		11.7		11.8		13.1		:
Germany	12.5		15.2		15.2		15.5		15.6
Estonia	18.3		19.4		19.5		19.7		15.8
Ireland	18.5		17.2		15.5		15.0		:
Greece	20.5		20.3		20.1		19.7		:
Spain	19.9		19.7		19.6		19.5		20.7
France	13.2		13.1		12.7	b	12.9		:
Italy	19.6		19.9		18.7		18.4		:
Cyprus	15.6		15.5		16.2		16.2		:
Latvia	23.1		21.2		25.6		25.7		21.3
Lithuania	20.0		19.1		20.0		20.6		20.2
Luxembourg	14.1		13.5		13.4		14.9		14.5
Hungary	15.9		12.3		12.4		12.4		12.3
Malta	13.6		14.3		14.6		15.3	b	15.5
Netherlands	9.7		10.2		10.5		11.1		:
Austria	12.6		12.0		12.4		12.0		12.1
Poland	19.1		17.3		16.9		17.1		:
Portugal	18.5		18.1		18.5		17.9		:
Romania	:		24.8	b	23.4		22.4		:
Slovenia	11.6		11.5		12.3		11.3		12.7
Slovakia	11.6		10.5		10.9		11.0		:
Finland	12.6		13.0		13.6		13.8		13.1
Sweden	12.3		10.5		12.2		13.3		12.9
United Kingdom	19.0		18.6		18.7		17.3		:
Iceland	9.6		10.1		10.1		10.2		9.8
Norway	12.0		11.9		11.4		11.7		:
Switzerland	:		:		16.2		15.1		:

Source: European Commission & Eurostat, 2009b [ilc_li02]
Available flags: b = break in series; special value: : = not available

example, the risk of poverty rose between 2006 and 2007: In 2006 12.5 % of the resident population was at risk of poverty whereas the figure for 2007 was 15.2 %.

Goebel (2007) presents further indicators of monetary poverty and assesses them from an economics perspective.

Laeken Indicators

The European Union has developed a portfolio of poverty and social exclusion indicators called the 'Laeken Indicators' (after the Laeken European Council that

endorsed them in December 2001). They comprise primary, secondary, and context indicators. Eurostat (European Commission & Eurostat, 2009b) provides a detailed methodology for the calculation of these indicators. The aim of the indicators is to monitor the implementation of social policy measures and progress towards social inclusion in the European Union and its member states: 'The indicators were intended to be considered as a consistent whole reflecting a balanced representation of EU social concerns. They covered four important dimensions of social inclusion (financial poverty, employment, health and education), which highlight the "multi-dimensionality" of the phenomenon of social exclusion' (European Commission & Eurostat, 2009b, p. 6).

> People are said to be living in poverty if their income and resources are so inadequate as to preclude them from having a standard of living considered acceptable in the society in which they live. Because of their poverty they may experience multiple disadvantage through unemployment, low income, poor housing, inadequate health care and barriers to lifelong learning, culture, sport and recreation. They are often excluded and marginalised from participating in activities (economic, social and cultural) that are the norm for other people and their access to fundamental rights may be restricted (Council of the European Union, 2004, p. 8).

In their entirety, the Laeken Indicators are an instrument for the measurement of 'social exclusion' and poverty. The Council of the European Union (2004, p. 8) defines social exclusion as follows:

> Social exclusion is a process whereby certain individuals are pushed to the edge of society and prevented from participating fully by virtue of their poverty, or lack of basic competencies and lifelong learning opportunities, or as a result of discrimination. This distances from job, income and education opportunities as well as social and community networks and activities. They have little access to power and decision-making bodies and thus often feel powerless and unable to take control over the decisions that affect their day-to-day lives.

The Laeken Indicators for the measurement of poverty and social exclusion comprise eight primary indicators, nine secondary indicators, and a further ten context indicators (cf. Council of the European Union, 2004, pp. 27f.; also: European Commission, 2009b, pp. 160f.).

Primary Indicators

- At-risk-of-poverty rate, by gender and selected age groups (break-downs: by sex and by age: total, 0–17, 18–64, 65+)
- At-risk-of-poverty threshold, illustrative values (illustrative household types: single person household, household consisting of two adults and two dependent children, units: PPS, Euro, national currency)
- Persistent at-risk-of-poverty rate, by gender and selected age groups (break-downs: by sex and by age: total, 0–17, 18–64, 65+)
- Relative median at-risk-of-poverty gap, by age and gender (breakdowns: by sex and by age: total, 0–17, 18–64, 65+)
- Material deprivation rate (by poverty status: below and over poverty threshold, breakdowns: by sex and by age: total, 0–17, 18–64, 65+)
- Housing

- Unmet need for care – Inequalities in access to health care
- Child well-being.

Secondary Indicators

- At-risk-of-poverty rate, by age and gender (breakdowns: by sex and by age: total, 0–17, 18–24, 25–54, 55–64, 65+)
- At-risk-of-poverty rate, by household type (breakdowns: total, households with no dependent children: single person under 65, single person over 65, single women, single men, two adults with at least one being 65 and over, two adults both under 65, other households with no dependent children; households with dependent children, single parent with one or more dependent children, two adults with one dependent child, two adults with two dependent children, two adults with three or more dependent children, three or more adults with dependent children)
- At-risk-of-poverty rate, by work intensity of the household and by gender and selected age groups (work intensity: $WI = 0$, $0 < WI < 1$, $0 < WI < 0.5$, $0.5 \leq WI < 1$, $WI = 1$; breakdowns: by sex and by age: total, 0–17, 18–64, 65+)
- At-risk-of-poverty rate, by most frequent activity status and by gender (activity status: in work, not in work, unemployed, retired, other inactive; breakdown by sex)
- At-risk-of-poverty rate, by accommodation tenure status and by gender and selected age groups (by tenure status: owner-occupied, rent-free and rented accommodation, breakdowns: by sex and by age: total, 0–17, 18–64, 65+)
- Dispersion around the at-risk-of-poverty threshold by gender and selected age group (threshold: at 40 %, 50 % and at 70 %, breakdowns: by sex and by age: total, 0–17, 18–64, 65+)
- Intensity of material deprivation (mean number of deprived items) (by poverty status: below and over poverty threshold, breakdowns: by sex and by age: total, 0–17, 18–64, 65+)
- Housing cost overburden rate (by age, gender, poverty status, income quintiles, tenure status, degree of urbanisation, household type)
- Overcrowding rate (for the total population by: age, gender, poverty status, tenure status, degree of urbanisation, household type; for the population without single-person households by age, gender, poverty status).

Context Indicators

- Inequality of income distribution S80/S20 income quintile share ratio
- Inequality of income distribution: Gini coefficient
- Healthy life expectancy and Life expectancy at birth
- At-risk-of-poverty rate anchored at a fixed moment in time (2005), by gender and selected age groups (breakdowns: by sex and by age: total, 0–17, 18–64, 65+)
- At-risk-of-poverty rate before social transfers, by gender and selected age groups (except pensions, breakdowns: by sex and by age: total, 0–17, 18–64, 65+)
- In-work at-risk-of-poverty rate (breakdown: full-time, part-time)

- Self-perceived limitations in daily activities by income quintiles, by age and gender
- Housing deprivation rate by item (by age, gender, poverty status)
- Housing deprivation rate by number of items (by age, gender)
- Median of housing cost burden distribution (by age, gender, degree of urbanisation).

A more methodologically oriented discussion of these indicators is provided by the AMELI (Advanced Methodology for European Laeken Indicators) project.[6]

5.5 The Private Household

In survey research, 'household' plays a number of different roles:

- First, it is used in many surveys as a sampling unit. Household addresses are drawn from lists of households; interviewers then visit the selected households to establish contact with the target persons of the survey.
- Second, as a social institution, the household has the function of imposing social order on the individual behaviour and personal orientations or attitudes of social actors.
- Third, in survey research, it is established practice to assume that a respondent's characteristics can be influenced by characteristics of the household community of which he is a member. For example, the socio-economic status of the respondent is derived from the social status of the member of the household who enjoys the greatest social prestige. The personal lifestyle and the life chances of the respondent are determined by the social and economic resources of the household as a whole, for example by the total net household income.

5.5.1 The Household Concept in European Official Statistics

In the context of official statistics in Europe, it can be clearly seen that the national concepts underlying the respective definitions of 'household' vary greatly across states and cultures. In most European countries, the household concept has two dimensions:

1. Common housekeeping, and
2. Co-residence.

[6] Programmes for the estimation of indicators on social exclusion and poverty, as well as Pareto tail modeling for empirical income distributions (Alfons, Holzer, & Templ, 2011) are available at http://cran.r-project.org/web/packages/laeken/index.html (23 July 2012). The Stata modules developed by van Kerm et al. are availabe at http://medim.ceps.lu/?id=software (24 July 2012).

Table 5.36 Defining characteristics of 'household' in European Household Budget Surveys (HBS)

	Household defined as a group of persons who share …			
	Dwelling unit	Expenditures	Income resources	Emotional ties
BE	X	X		
DK	X	X	X	
DE	X	X	X	
GR	X	X		
ES	X	X		
FR	X			
IE	X	X		
IT	X	X	X	X
LU	X	X		
NL	X	X		
AT	X	X		
PT	X	X		
FI	X	X	X	
SE	X	X	X	
UK	X	X		

Source: European Commission & Eurostat, 2003a, p. 17

Only Italy (in the European Household Budget Survey: HBS) uses an additional dimension, namely 'family or emotional ties', as a characteristic of a household.

Eurostat (European Commission & Eurostat, 2003a, p. 4) recommends that countries should proceed as follows when measuring the income and consumption of private households in the European context (cf. Table 5.36):

> The basic unit of data collection and analysis in Household Budget Surveys is the household. 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 resources
> 4. The existence of family or emotional ties.
>
> Eurostat recommends that the definition of the household for the purpose of HBS be based on the first two criteria shown above: co-residence and sharing of expenditures. This definition isolates the units, which from a HBS perspective form a whole for studying patterns of consumption expenditures and income.

As a consequence of the varying household concepts, conditions for inclusion or exclusion as household members differ from country to country. In Italy, family or emotional ties between members are what constitutes a household. Hence, persons with whom no emotional ties exist are excluded from household membership. However, in other countries whose notion of household does not include this emotional element, persons who do not belong to the family may well be household members (see Table 5.37).

Table 5.37 Conditions for inclusion as household members in the European Household Budget Surveys (HBS)

	Persons included in the definition of private household							
	Persons usually resident	Servants au-pairs	Lodgers	Long-term absentees	Visitors	Temporary absentees	Students	Hospitalised persons
BE	X						X	X
DK	X					X		
DE	X					X	X	
GR	X			X	X	X	X	X
ES	X				X	X	X	X
FR	X	X	X	X		X	X	X
IE	X	X	X			X	X	X
IT	X							
LU	X					X	X	X
NL	X	X	X	X	X	X	X	X
AT	X			X	X	X	X	X
PT	X	X	X			X	X	X
FI	X					X	X	X
SE	X					X		
UK	X				X		X	

Source: European Commission, 2003a, p. 18

A closer look at the various conditions for inclusion as household members employed in the censuses of the EU member states (see Table 5.37) reveals a richly varied picture. In the censuses, too, four dimensions can be identified in the national household concepts: (1) common housekeeping in the financial sense (2) common housekeeping in the organisational sense (3) co-residence, and (4) family. The categories for the operationalization of the household concept in surveys can be subsumed under these four dimensions.

The census[7] in *Italy* defines 'household' in terms of family or emotional ties (see Table 5.38):

> The term household refers to: A group of people, bound by marriage, kinship, affinity, adoption, guardianship or by emotional ties, who are partners and live in the same Municipality (even if still not registered in the Population Register residing in that Municipality). A household may also be composed of one individual only (National Institute of Statistics, 2001).

In *Denmark*, persons who are registered under the same address in the population register constitute a household (Statistics Denmark, 2001).

In its 1997 Microcensus, *Germany* uses categories 1.1 and 3.1 (see Table 5.38) to define a household: 'A household is a group of persons who live and keep house together, i.e. who share meals and living expenses. A person living alone forms a

[7] Hoffmeyer-Zlotnik and Warner (2009a) provide a detailed overview of the national household concepts used in the census by the EU member states, Norway and Switzerland.

Table 5.38 Operationalization of private household in the censuses: dimensions and categories

	Dimension	Category
1	Common housekeeping – financial	
1.1		Common budget
1.2		Share income
1.3		Share expenses
1.4		Share living costs (in whole or in part)
1.5		Contribute jointly to cost of essentials of living
1.6		Common housekeeping: 'constitute economic unit'
2	Common housekeeping – organisational	
2.1		Share living room or sitting room
2.2		Share food
2.3		Joint meals a) daily, b) at least once a week
2.5		Common living arrangements
3	Co-residence	
3.1		Live together
3.2		Share dwelling
3.3		Have the same address
3.4		The same address in the population register
3.5		The address at which most nights are spent
4	Family	
4.1		Degree of legal relationship by blood, marriage, adoption or guardianship
4.2		Emotional ties

Source: Hoffmeyer-Zlotnik & Warner, 2008, pp. 19f.

household' (Statistisches Bundesamt, 1997; our translation). The 2004 Microcensus (Statistisches Bundesamt, 2005, pp. 11ff.) also emphasises 'living together' and 'economic unit' as dimensions of the definition (our translation):

> A (private) household is any group of persons who live together and constitute an economic unit (multiperson household) or any person who lives in, and manages, the household alone (single-person households, for example single subtenants). Related and unrelated persons (for example domestic staff) may belong to the household. Collective and institutional dwellings are not deemed to be households. However, they may accommodate private households (for example the household of the director of the institution). Households with several dwellings may, under certain circumstances, be counted more than once (see Population in Private Households). Several relationship types (for example a married couple without children and a single mother with two children) may be present in one household.

England defines household with the help of categories 3.3 and 2.3a or 2.1 (see Table 5.38) as:

> (a) a person living alone; or (b) a group of people (who may or may not be related) living, or staying temporarily, at the same address, with common housekeeping. … enumerators

> were instructed to treat a group of people as a household if there was any regular arrangement to share at least one meal (including breakfast) a day or if the occupants share a common living or sitting room (United Kingdom, 1991, Article 3.11 und 3.12).

In its census, *France* defines household in terms of a shared dwelling unit (Category 3.2 of Table 5.38):

> Un ménage (ou encore 'ménage ordinaire'), au sens de l'enquête de recensement, désigne l'ensemble des personnes qui partagent la même résidence principale sans que ces personnes soient nécessairement unies par des liens de parenté (en cas de cohabitation, par exemple) (INSEE, 2011).

Romania and *Slovenia* define household for the purposes of the census in terms of Category 3.1 and Category 1.2 of Table 5.38: 'A private household (household) is a group of people living together and sharing their income for covering the basic costs of living (accommodation, food, other consumer goods, etc.) or a person living alone' (Statistični Urad Republike Slovenije, 2011; see also: IECM & IPUMS, 2006).

The *Czech Republic* uses a definition of household that emphasises the co-residence (Category 3.2) and shared expenses (Category 1.3) aspects. The household questionnaire for the 2001 Census explains that common housekeeping means that 'the main costs of the household (food, living costs, operational costs and others) are paid for jointly' (Czech Statistical Office, 2003).

In *Hungary* Categories 1.4 and 3.1 of Table 5.38 apply:

> A (private) household is a group of persons living together in a common housing unit or in a part of it, bearing together, at least partly, the costs of living (i.e. daily expenses, meals). Persons living in the same dwelling but on the basis of independent tenure status, are not considered as persons living in the same household even if the above conditions are fulfilled (Hungarian Central Statistical Office, 2010, Household).

Few census questionnaires help respondents by specifying the categories of persons that constitute a household. The questionnaire of the 2001 Census of Population in England requested the householder to list all members of the household. It named a number of categories of persons whose household membership was not immediately obvious but who were nonetheless to be included as household members:

> Questionnaire, Table 1: Household Members
> List all members of your household who usually live at this address, including yourself.
>
> – Start with the householder or joint householders.
> – Include anyone who is temporarily away from home on the night of 29 April 2001 who usually lives at this address.
> – Include schoolchildren and students if they live at this address during school, college or university term.
> – Also include schoolchildren and students who are away from home during the school, college or university term and for whom only basic information is required.
> – Include any baby born before 30 April 2001, even if still in hospital.
> – Include people with more than one address if they live at this address for the majority of time.
> – Include anyone who is staying with you who has no other usual address.
> – Remember to include a spouse or partner who works away from home, or is a member of the armed forces, and usually lives at this address (National Statistics, 2001).

5.5.2 Determination of Household Membership

Depending on their life situation, people have different perceptions about their household membership.

Definition of Household: A Vignette Experiment

An experiment conducted by researchers from the Center for Survey Methods Research of the U.S. Bureau of the Census (Gerber, Wellens, & Keeley, 1996) confirmed the necessity of reminding respondents of certain types of household member who might otherwise be forgotten. Gerber et al. used vignettes – i.e., 'brief narratives, generally no more than one or two sentences long, which contain elements of social situations and actions in which researchers are interested' – to ask respondents whether they thought a particular individual should be included in the household. Introducing their experiment, the authors noted that 'Researchers cannot assume that the household definitions they require analytically will be used naturally by respondents'. They pointed out that responses regarding household membership were influenced by household definitions that the respondents encountered in other contexts. For example, the definitions employed in tax or social security regulations or culturally based household membership rules do not correspond to that on which the census is based – irrespective of culture. In a first step, Gerber et al. gave each respondent one of five types of roster, i.e. lists of household residents. The rosters also included information about who should be regarded as a household member. However, they differed in the amount, wording and format of the information given. They were grouped into 'rosters that contained information about a particular Census rule and rosters that did not'. After completion of cognitive interviewing concerning the rosters, the researchers administered 13 vignettes to respondents. These vignettes, ten of which are cited below, 'represented a variety of situations which were connected with specific residence rules which appeared on one of the roster treatments we investigated':

1. Craig and his wife have a house in Pennsylvania. Craig's job is in Washington, D.C. so he stays with his mom in D.C., Monday through Thursday of the week.
   Where should Craig be listed on a census form?
   Correct answer: Washington, D.C
2. Maria is a live-in housekeeper for the Smiths during the week, but spends weekends with her husband and children at their apartment.
   Where should Maria be listed on a census form?
   Correct answer: with the Smiths
3. Carolyn's mom normally lives with her; however, on April 1st, she has placed her mom in a nursing home on a trial basis for the next 3 months.
   Should Carolyn put her mom on her census form?
   Correct answer: no
4. Sergeant Jim is stationed in Alaska while his family has stayed behind in Maryland. Should Jim's wife put him on her census form?
   Correct answer: no.

5. Mary's daughter Alice has been away at college and has 3 more years until graduation.
   Should Mary put her daughter on her census form?
   Correct answer: no.
7. Kathy's roommate moved in on April 10.
   Should Kathy list her roommate on her census form?
   Correct answer: no.
8. Doug's wife, Jane, is in prison for 2 years.
   Should Doug put Jane on his census form?
   Correct answer: no.
10. Dave rents a room at the Johnson's house.
    Should the Johnson's list Dave on their census form?
    Correct answer: yes
12. Mary stayed with her friend Sue for the first 2 weeks in April and then returned to her apartment in Seattle.
    Should Sue list Mary on her census form?
    Correct answer: no
13. Sandy's husband, Peter, left on a business trip on March 15 and won't return until April 30th.
    Should Sandy list Peter on her Census form?
    Correct answer: yes

The results of the experiment (Table 5.39) show that intuitively easy vignettes were answered correctly by almost all respondents even if they had not been given information about the census rule in question. The more contra-intuitive vignettes, by contrast, resulted in a high percentage of incorrect responses. Although rosters that contained information about census rules led to more correct responses to the difficult vignettes, the differences were not dramatic. However, in the case of the five most intuitive vignettes, rosters that contained information about the census rule in question resulted in a decrease in correct responses. The authors suggest that this may be due to the fact that respondents were confused by the presentation of rules that they already 'knew' and that this caused them to reinterpret the questions. If this were the case, the authors argue, the provision of certain rules might be 'unnecessary or even detrimental'.

'Household' as Defined by Respondents and Interviewers

An experimental survey of 118 professional interviewers,[8] 25 academics, and 46 students from the Universities of Gießen and Mannheim conducted by Hoffmeyer-Zlotnik and Warner (2008) confirmed the diverse household definitions held by respondents and interviewers. The following open-ended questions were administered to the participants in the experiment (Hoffmeyer-Zlotnik & Warner, 2008, p. 39):

- What do you understand by the term household?
- Who are the members of your household? If you are a student, please list the members of your parents' household.
- Why are these persons included in the household in question?

[8] The authors wish to thank the infas Institute for Applied Social Sciences in Bonn for their assistance with this part of the project and, especially for the opportunity to interview the interviewers.

Table 5.39 Gerber, Wellens, and Keeley's household experiment (1996)

		Percent correct			
	Vignette number	Without the instruction	With the instruction	Total correct	% difference
Contra intuitive	1	20	30	25	+10
	2	29	40	36	+11
	3	37	64	44	+27
	4	50	59	56	+9
	5	53	63	60	+10
	6	60	72	70	+12
	7	67	73	72	+6
	8	70	86	74	+16
	9	80	77	78	–3
	10	100	82	85	–18
Intuitive easy	11	90	86	87	–4
	12	100	85	87.5	–15
	13	100	97	98	–3

Source: Gerber et al., 1996

- Where do the persons whom you include in your household usually live? Do they all live in the same dwelling? Or in two neighbouring dwellings? Or in a house with a number of different dwellings? Or are they spread across a greater distance?
- If you are a student, what is your situation? Of what household do you consider yourself a member? Of your own household? Or of your parents' household? Please give reasons for your self-assignment.

The wide variety of responses can be subsumed under superordinate categories similar to those identified in the European censuses (Hoffmeyer-Zlotnik & Warner, 2008, pp. 41ff.):

The first defining element is the dwelling unit. Keywords here are 'living under one roof', having an 'entrance door' and/or 'a rental agreement', or a 'self-contained residential situation'. The interviewers group also cited the 'dwelling unit' as the first defining element. However, in addition to 'own entrance', they mentioned other identifying characteristics of a household, namely 'own bell' and 'own letter box'.

The second defining element is the 'shared dwelling with common housekeeping'. The keywords here are 'co-residence with common housekeeping' and 'common housekeeping'. The term 'arrangement of convenience' was often used. The interviewers' responses yielded a greater variety of categories than those of the other two respondent groups. They ranged from 'share dwelling', through 'community of dependence' and 'cohabitation', to 'joint tax return'.

The third defining element is 'the family'. Here, the descriptive characteristics are 'related to each other' and 'living together in the one house'. Frequently, family was taken to mean'first-degree relatives'. 'Family' and 'related to each other' were also cited by many respondents in the interviewers group. Almost a third of them used 'family' as the central defining element; a further 10 % explained their choice of other defining elements with reference to 'family'. Some respondents used a broader definition of family by including 'consensual union'. Belonging to the

family was described in terms of 'managing', 'participating in family life', 'the routine of family life', 'family ties or strong social ties'.

Some respondents emphasised 'emotional ties' as a fourth defining element, also describing it as 'being close'. This fourth element was mainly associated with 'private life', 'togetherness', and 'feeling at home'.

The fifth defining element is 'common activities'. 'Common' is broken down into three dimensions:

1. 'Common housekeeping' with the emphasis on 'grocery shopping', 'kitchen', 'cooker', 'refrigerator', and 'washing machine'. For the students group, in particular, having one's own washing machine is the defining feature of having one's own household;
2. 'Working together', with the emphasis on 'doing housework together';
3. 'Common living arrangements', with the emphasis on 'eating' and 'sleeping'.
4. In this connection, respondents also used the terms 'permanent or common place of residence'.

The members of the interviewers group also emphasised 'common activities' as the fifth defining element. Here, too, this element is subdivided into three categories:

1. 'Common housekeeping',
2. 'Working together', and
3. 'Common living arrangements'.

However, the interviewers group added a further category to this list, namely 'partnership of convenience for the purpose of bringing up children'. What is surprising is the fact that 'common cooker', which is an element of the (German) statistical institutions' definition, was not mentioned once by the interviewers group.

The sixth defining element mentioned by respondents was 'financial dependence'. Keywords here are 'common budget', 'sharing living costs' or 'accommodation costs', and a 'common kitty'. The interviewers group added the following characteristics to the list: 'responsibility for one's own financial affairs', 'share costs', 'joint capital', and 'share rent and/or housing allowance'.

The seventh defining element cited by respondents was 'common planning' or common 'life planning'. Keywords here are 'taking care of each other', 'sharing tasks and duties', 'rooms', and 'basic essentials'. 'Shared meals' were also emphasised. For the respondent interviewers, 'common planning' was strongly associated with 'taking care of each other', 'helping each other out', 'being responsible for each other', and 'joint responsibility for apartment or house'. Therefore, the interviewers' focus diverges slightly from that of the other groups of respondents.

The eighth defining element is 'residence'. Here the keywords are 'principal residence' or 'the same address'. The 'same house/apartment key' was used as a synonym for 'the same address'. The interviewers group described 'residence' in terms of 'entry in the population register', the 'principal residence', the 'address', and the 'rental agreement'. The interviewers group added some further characteristics, namely 'common landline' and 'self-contained living quarters'.

With regard to the time dimension of household membership, respondents considered that a person must 'always', 'mostly' or 'frequently' be present in order to be deemed a member of the household.

When asked whether a household could be spread across several dwellings, respondents argued as follows:

Of course a household could comprise several dwellings if the additional dwellings served to enlarge the original one – as is the case, for example, with a so-called 'granny flat' or two adjacent dwellings with a connecting door. However, the precondition in all such cases was that the dwellings in question should all be in the same house. However, some respondents accepted that several spatially distant households could constitute one household, for example:

1. Where cohabitation in a long-distance relationship is defined in terms of 'emotional ties';
2. In the case of persons such as students who are 'financially dependent' on their parents and are therefore members of two households, the parental household and their own;
3. In the case of persons who 'contribute financially' to, or 'perform work' in, two spatially distant dwelling units.

The respondent interviewers viewed the time dimension of household membership more narrowly than the other respondents. In their view, a person must be 'constantly' or 'permanently' present in the household in order to be a member. However they accepted the rather lengthy temporary absence due to military or civilian service and the regular short absences of weekend commuters.

The interviewers group considered a household spread across several dwellings to be unthinkable.

Casimir and Tobi's Review of Definitions and Use of Household Concept

Casimir and Tobi (2011) undertook a systematic review of the definitions and use of the concept of household in peer-reviewed studies in the social sciences and other disciplines published between 2000 and 2010.

Using a Boolean expression, the authors searched the bibliographic database Web of Science for English-language publications that contained Househo* in the title and Theor* in the topic. Although the search yielded 58 journal articles, 'Only three papers provide a definition of the concept of "household", and although there were many disparities, there were also commonalities among the three papers' (Casimir & Tobi, 2011, p. 502) (see Table 5.40). Casimir and Tobi's review revealed the same plurality of notions of the household concept among researchers as Hoffmeyer-Zlotnik and Warner (2008) observed among interviewers and respondents. Casimir and Tobi group the household concepts into three dimensions:

1. 'People', i.e. household composition and membership
2. 'Sharing', i.e. shared resources, activities and expenditures
3. 'Time', i.e. duration and frequency. However, the authors did not find this third dimension of household in any of the publications included in their review.

Table 5.40 Household concepts following Casimir and Tobi (2011)

Dimension	Facets	Indicator or code	Variable/values or subcodes
People	Household composition	Children present	
		Size	
		Elderly present	
	Household member information	Demographic information on members	Age of members
			Gender of members
			Age of household head
			Gender of household head
		Ethnicity	Hispanic
			White
			Black
			Asian American
			African American
			American Indian
			Caucasian
			Irish
		Civil status	Married/cohabiting
			Single parent
			Single
			Widowed, separated or divorced
		Health status	People living with AIDS
Sharing	Resources	Income	
		Accommodation	Rooms per household
			Owner or tenant
		Non-durable assets	Education level
			Social capital
			Managerial skills
			Knowledge
			Facilities
			Labour for household chores
		Durables	Durables
			Car ownership
		Other assets used for home production	Land
			Livestock
	Activities	Home food production	Fish from fishing
			Berries from foraging
			Cow production
			Ducks from hunting
			Garden products
			Horse products
			Pigs and/or chicken products
		Caregiving	
		Decision making	
		Household chores	
		Meals shared	
		Resource allocation	
		Time allocation	
	Expenditures	Expenditures	On food
			On energy
			On transportation

Source: Casimir & Tobi, 2011, p. 502

5.5.3 *Influence of the Definition of Household on Core Socio-Economic Variables*

In social science studies, characteristics of the household are frequently assigned to its members. For example, the socio-economic status of all household members is determined by the person whose job enjoys the highest social prestige. In addition, the level of wealth of each household member is determined by the equivalised household income. Both characteristics vary according to the underlying household concept because household composition is determined by the criteria that constitute this concept. The status-defining member in one household concept may be excluded from the household if another concept is applied; the sum of the incomes of the household members can change as the number of household members change across definitions.

The following fictional, but enlightening, example of the application of different European population census definitions of household to an extended family comprising ten persons shows how, in social science analyses, socio-economic status and net household income depend on the household concept employed (see Hoffmeyer-Zlotnik & Warner, 2008, pp. 53ff.; also Table 5.41).

The group of ten related persons comprises:

- A married couple (grandfather and grandmother),
- With two adult sons (uncle, father),
- One of whom is married (mother) and has three children (child no. 1, child no. 2, child no. 3),
- The eldest of these children (daughter), is also married (son-in-law) and has a child (grandchild).

Several members of this extended family are working and contribute income to the household:

Table 5.41 Fictional ten-person group and the socio-demographic characteristics of its members

Person	Address	Dwelling	ISCO-88	Personal Income
Grandfather	A	2	8285	1,800
Grandmother	A	2		0
Father	Weekends: A	1	3112	2,500
	Weekdays: B	4		
Mother	A	1	7331	500
Uncle	D	3	7422	1,500
Child no.1	E	6		400
Son-in-law	E	6	2142	2,500
Grandchild	E	6		0
Child no.2 (student)	Holidays: A	1		1,000
	Term time: C	5		
Child no.3 under 14 years of age	A	1		600

- The grandfather works as an assembler of wood products (ISCO-88 code 8285), which has an International Socio-Economic Index (ISEI) value of 30. The grandfather's net monthly income amounts to 1,800 euros.
- The grandmother is not working and does not, therefore, have an income of her own.
- The father works as a civil engineering technician (ISCO-88 code 3112, ISEI = 45) and has a net monthly income of 2,500 euros.
- At the moment, the mother is only marginally employed as a handicraft worker in wood (ISCO-88 code 7311, ISEI = 29). She earns 500 euros a month.
- The uncle earns 1,500 euros a month as a cabinet maker (ISCO-88 code 7422, ISEI = 33).
- Child no. 1 is an adult married daughter who does not have a job.
- The son-in-law is a civil engineer (ISCO-88 code 2142, ISEI = 69). He has a net monthly income of 2,500 euros.
- The grandchild is a baby.
- Child no. 2 is studying. She has a scholarship of 1,000 euros per month.
- Child no. 3 is under 14 and is still at school. This child is assigned 'income' of a total of 600 euros per month comprising child benefit and the pocket money he earns delivering newspapers.

The extended family is spread across four dwellings:

- The grandparents live in a separate apartment in the same house and with the same address as the father and the mother.
- The father and mother live in an apartment with child no. 3.
- The father works in another city and comes home only at the weekends. During the week he lives in a small apartment.
- Child no. 1 lives with her husband (son-in-law) and their child (grandchild) in an apartment near where her parents live.
- Child no. 2 lives in a student residence at her place of study.
- The uncle has his own apartment in the same town as the grandparents but in a different quarter.

The application of the national definitions of household used in the censuses in five member states – Italy, Denmark, France, Luxembourg and England (on behalf of the UK) – to the fictional extended family yields five different household configurations' (see Hoffmeyer-Zlotnik & Warner, 2008, pp. 54ff.):

The *Italian* definition of household in the census assumes that those who are emotionally included in the family belong to the same household, irrespective of whether they live in the same dwelling or have a common address. Hence, the ten persons constitute *one household* spread across four dwellings (the secondary residences of the father and of child no. 2 are not included).

The *Danish* definition includes in the household all persons registered at the same address. Because the extended family is spread across three addresses, it comprises *three households*. In the present example, one household comprises six persons: the grandparents in the 'granny flat'; the mother and the father because family home is registered as the father's principal residence; child no. 3, who lives with his

parents; and child no. 2 (the student) whose principal residence is not the student residence but the family home.

The *French* census definition of household distributes the extended family across *four households*, one of which comprises the father and mother, child no. 2, and child no. 3.

Luxembourg'*s* census, which restricts household membership to those living in the same dwelling, distributes the extended family across *five households*. Mother, father and child no. 3 constitute a household – child no. 2 is excluded.

On the one hand, the criterion 'daily shared meal' in *England*'*s* definition of household restricts household size considerably. On the other hand, however, the use of the criterion 'same address' instead of 'same dwelling unit' makes the definition broader. As a result, several possible configurations are conceivable in the present case. The family actually consists of *six households*, with the core household comprising two persons, the mother and child no. 3. However, if the mother regularly cooks for the grandparents, then the core household could be a four-person household spread across two dwelling units at the same address. The English census offers 'common living or sitting room' as an alternative to the 'shared meal' criterion. If one availed of this alternative, the father could be reintegrated into the core household. However, the grandparents would then constitute a household of their own (see Table 5.42).

The different household membership configurations have consequences for the socio-economic status of the household members. Because child no. 2 is still at university, her socio-economic status is determined by that of her father. The ISEI value in bold face (see Table 5.42) represents the socio-economic score assigned to all the members of the respective household.

As the concepts of household change across countries, so too does the size of the household and the number of adults, children and earners/income recipients in the household. A person's respective position in a household (e.g. main earner) determines the needs weight assigned to him when computing equivalised household income (see Table 5.43).

Hence, the basis for the calculation of the income that describes the level of wealth of individuals in society varies according to the national household concept (see Table 5.44). For illustration purposes, the OECD modified equivalence scale is applied in Table 5.44. This scale assigns a value of 1 to the first household member (usually the main earner or income recipient), a value of 0.5 to the second and each subsequent person aged 14 and over, and a value of 0.3 to each child under the age of 14 (see Section 5.4.5).

5.5.4 The Definition of Private Household in the ESS

The thought experiment conducted in Section 5.5.3 confirmed that the different definitions of household used in national censuses produce different household compositions. It also confirmed that the results of sociological analyses, socio-economic

Table 5.42 Application of selected national household concepts to fictional ten-person group

		Italy		Denmark		France		Luxembourg		England	
Person	ISCO-88	HH	ISEI	HH	ISEI	HH	ISEI	HH	ISEI	HH	ISEI
Uncle	7422	HH1	33	HH1	**33**	HH1	**33**	HH1	**33**	HH1	**33**
Grandfather	8285		30	HH2	30	HH2	**30**	HH2	**30**	HH2	**30**
Grandmother											
Father	3112		45		**45**	HH3	**45**	HH3	**45**	HH3	**45**
Mother	7331		29		29		29		29	HH4	**29**
Child no.3	pupil										
Child no.2	student							HH4	**45***	HH5	**45***
Child no.1				HH3		HH4		HH5		HH6	
Son-in-law	2142		**69**		**69**		**69**		**69**		**69**
Grandchild	baby										

Table 5.43 Selected national household concepts and equivalence scales

		Equivalence scale							
Person	Personal income	Italy		Denmark		France		England	
Uncle	1,500	HH1	0.5	HH1	1.0	HH1	1.0	HH1	1.0
Grandfather	1,800		0.5	HH2	0.5	HH2	1.0	HH2	1.0
Grandmother	0		0.5		0.5		0.5		0.5
Father	2,500		1.0		1.0	HH3	1.0	HH3	1.0
Mother	500		0.5		0.5		0.5	HH4	1.0
Child no.3	600		0.3		0.3		0.3		0.3
Child no.2	1,000		0.5		0.5		0.5	HH5	1.0
Child no.1	400		0.5	HH3	0.5	HH4	0.5	HH6	0.5
Son-in-law	2,500		0.5		1.0		1.0		1.0
Grandchild	0		0.3		0.3		0.3		0.3

Table 5.44 Selected national household concepts and equivalised household income

	Equivalised household income			
	Italy	Denmark	France	England
HH1	2,117	1,500	1,500	1,500
HH2		1,940	1,200	1,200
HH3		1,611	2,000	2,500
HH4			1,611	846
HH5				1,000
HH6				1,611
Average	2,117	1,684	1,577	1,443

calculations of household income, and the calculation of equivalised household income depend on the concept of household on which the measurement is based. Hence it is evident that cross-national comparison is possible only if the same variable is measured with a comparable concept and a uniform, transparent definition of household in each country.

In Section 5.5.2 above, we demonstrated that it cannot be assumed that interviewers and respondents have the same notion of what constitutes a household. In order to achieve comparability across countries, the European Social Survey (ESS) input-harmonises the collection of household data. The ESS Central Coordinating Team requires the national coordinators and survey institutes to use a uniform definition of 'household' during data collection. This uniform definition is formulated in the fieldwork instructions (ESS, 2002c, p. 11):

> One person living alone or a group of people living at the same address (and have that address as their only or main residence), who either share at least one main meal a day or share the living accommodation (or both). Included are: people on holiday, away working or in hospital for less than 6 months; school-age children at boarding school; students sharing private accommodation. Excluded are: people who have been away for 6 months or more, students away at university or college; temporary visitors.

The first household-related question in the source questionnaire (ESS, 2002a) reads:

> And finally, I would like to ask you a few details about yourself and others in your household.
>
> F1 Including yourself, how many people – including children – live here regularly as members of this household?
>
> Write in number: ____.

Question F1 asks about 'the number of people …who live here regularly as members of the household'; it reminds the respondent that children should be included and that he should not forget to include himself. However, it does not include a definition of household, nor is the definition that was provided in the fieldwork instructions read out to respondents.

It is striking that the survey question (F1), which is mandatory in principle, is closely aligned to the definition used in England's census of population in which 'household' was operationalized using the criteria 'same address', 'share at least one meal a day' or 'share a common living or sitting room', and a list of persons to be included and excluded was provided.

In *Germany*, the ESS household composition question is phrased as follows: 'Wie viele Personen leben ständig in diesem Haushalt, Sie selbst eingeschlossen? Denken Sie dabei bitte auch an alle im Haushalt lebenden Kinder'. (Our translation: How many people, including yourself, live here permanently? Please include any children living in the household.)The time reference was changed from 'regularly' to 'permanently' and the reference to household membership was omitted.

The ESS coordinators in *German-speaking Switzerland* use their own translation of the question in the source questionnaire. What is striking here is that 'live here regularly as members of this household' is translated as 'live regularly as members in your household': 'Wenn Sie sich selbst dazuzählen, wie viele

Personen – Kinder eingeschlossen – leben regelmäßig als Mitglieder in Ihrem Haushalt?' (Our translation: Including yourself, how many people – including children – live regularly as members in your household.)

In *French-speaking Switzerland*, by contrast, the question is translated as follows: 'Combien de personnes, vous même et les enfants y compris, vivent régulièrement comme membres de votre ménage?'

In *Italian-speaking Switzerland*, the 'household' is translated as 'economia domestica': 'Quante persone, i bambini e Lei inclusi – vivono qui regolarmente, quali membri della Sua economia domestica?'

The definition of household on which question F1 of the ESS is based in *Italy* is not the same as that used in Italian-speaking Switzerland insofar as Italy translates 'household' as 'famiglia' rather than 'economia domestica': 'Compresi Lei ed eventuali bambini, quante persone vivono regolarmente in questa casa come membri della famiglia?'

Luxembourg also fields the ESS questionnaire in German. Question F1 read: 'Wie viele Personen leben ständig in diesem Haushalt, Sie selbst eingeschlossen? Denken Sie dabei bitte auch an alle im Haushalt lebenden Kinder'. (Our translation: How many persons, including yourself, live in this household permanently. Please include any children living in the household.)

The *French-language* version of Question F1 used by bilingual *Luxembourg* comes very close to the French-language wording used by the trilingual Swiss, although respondents in Luxembourg are reminded to include 'your children' rather than 'the children': 'Y compris vous-même – et vos enfants – combien de personnes vivent ici de façon régulière comme membres de votre ménage?'

However, the *Portuguese-language* question for *Luxembourg's* largest minority poses problems: 'Incluindo-o(a) a si e aos seus filhos – quantas pessoas residem aqui de forma regular como membros do seu agregado?'

Here, a central element of the definition deviates even from the text used in *Portugal*: 'Contando consigo, quantas pessoas – incluindo crianças – vivem habitualmente nesta casa?' (ESS, 2002f, Question F1).

National fieldwork instructions for the ESS in Portugal emphasise the family unit, as in the case of Italy: 'As perguntas F1, F2, F3 e F4 permitem identificar a composição do agregado familiar. Note que aqui as crianças devem ser incluídas ao contrário da folha de contacto onde só se referiam as pessoas com mais de 15 anos. Ou seja, pretende-se aqui identificar a idade, o sexo e a relação de parentesco de todas as pessoas que vivem no agregado familiar. Note ainda que em cada coluna se regista o laço familiar partindo do inquirido. Por exemplo, se a pessoa mais velha no lar é o pai da inquirida, ele deve constar na coluna 2 e deve ser registado como laço familiar na linha pai/mãe.... Não devem ser incluídas nesta grelha as empregadas domésticas' (ESS, 2002g, p. 10).

The country-specific implementation of a master question that is supposed to be implemented uniformly in each country confronts respondents with a considerable number of different question stimuli. It must be assumed that the different stimuli in the respective countries evoke different responses. The time references given in the national field instructions are: 'regularly', 'normally' 'permanently', and 'usually'.

The national questionnaires also use different terms to translate 'household' in their national questionnaires, for example 'household', 'dwelling', 'economic unit', and 'family'.

The different question wordings are reflected in the data of the first round of the ESS (ESS1). A comparison of national ESS1 figures for the number of persons in the household with the figures from the eighth wave of the European Community Household Panel (ECHP8),[9] in which the ECHP8 figures serve as the expected values, yields clear national differences (see Table 5.45). In Italy, for example, the ESS measures 'household' in terms of family members. As the everyday notion of a family involves at least two related persons of different generations, it is not surprising that the number of one-person households was underestimated in Italy. Although the ECHP data lead one to expect approximately 21 % one-person households in Italy, merely 8.7 % of ESS respondents in that country reported living in a one-person household.[10]

Table 5.45 Household structures in selected countries

Denmark					
Persons in household	ESS1 cumulated %	ECHP8 cumulated %	Household composition	ESS1 percent	ECHP percent
1	18.0	25.2	1 adult, no children	18.4	25.2
2	59.5	64.0	1 adult and children	2.9	1.7
3	76.1	79.6	2 adults, no children	40.3	37.8
4	91.3	93.1	2 adults and children	25.6	24.0
5 and more	100.0	100.0	At least 3 adults, no children	6.9	6.3
Average	2.63	2.40	At least 3 adults and children	5.9	5.1
France					
Persons in household	ESS1 cumulated %	ECHP8 cumulated %	Household composition	ESS1 percent	ECHP percent
1	12.6	25.1	1 adult, no children	12.6	25.1
2	43.8	55.7	1 adult and children	2.5	2.6
3	63.0	73.4	2 adults, no children	30.9	29.0
4	84.2	92.1	2 adults and children	32.3	23.3
5 and more	100.0	100.0	At least 3 adults, no children	11.5	13.6
Average	3.05	2.56	At least 3 adults and children	10.1	6.5

(continued)

[9] This wave of the ECHP was grossed up using the average weight so that the distributions correspond to the nationally representative frequencies of household sizes in the year 2001.

[10] 24.9 % of the respondents in the 2001 census in Italy lived in one-person households. The average household size was 2.6 persons.

Table 5.45 (continued)

Luxembourg					
Persons in household	ESS1 cumulated %	ECHP8 cumulated %	Household composition	ESS1 percent	ECHP percent
1	14.0	27.1	1 adult, no children	14.0	27.1
2	32.7	58.5	1 adult and children	2.5	1.5
3	53.3	76.0	2 adults no children	19.9	30.4
4	83.3	91.9	2 adults and children	35.5	22.8
5 and more	100.0	100.0	At least 3 adults, no children	16.0	13.0
Average	3.25	2.50	At least 3 adults and children	12.2	5.2
Germany					
Persons in household	ESS1 cumulated %	ECHP8 cumulated %	Household composition	ESS1 percent	ECHP percent
1	19.9	38.5	1 adult, no child	19.9	38.5
2	55.7	63.2	1 adult and children	3.2	2.2
3	74.3	78.5	2 adults, no child	35.0	23.3
4	91.8	93.2	2 adults and children	22.8	15.9
5 or more	100.0	100.0	At least 3 adults, no children	11.7	13.8
Average	2.63	2.30	At least 3 adults and children	7.5	6.3
England					
Person in household	ESS1 cumulated %	ECHP8 cumulated %	Household composition	ESS1 percent	ECHP percent
1	18.7	31.1	1 adult, no children	18.7	31.1
2	53.7	64.6	1 adult and children	3.6	4.7
3	73.0	79.8	2 adults, no children	34.1	31.6
4	90.5	93.6	2 adults and children	22.4	19.5
5 or more	100.0	100.0	At least 3 adults, no children	14.6	9.0
Average	2.68	2.33	At least 3 adults and children	6.6	4.2
Italy					
Persons in household	ESS1 cumulated %	ECHP8 cumulated %	Household composition	ESS1 percent	ECHP percent
1	8.7	21.4	1 adult, no children	8.8	21.4
2	31.4	43.9	1 adult and children	1.0	1.1
3	56.4	65.8	2 adults, no children	21.9	21.8
4	86.0	88.2	2 adults and children	22.4	20.5
5 or more	100.0	100.0	At least 3 adults, no children	31.8	26.3
Average	3.21	2.86	At least 3 adults and children	14.1	9.0

Source: ESS Round 1 and ECHP Wave 8, own calculations
Any household member under the age of 18 is referred to as a 'child'. 'And children' means at least one child

5.5.5 *Development of an Instrument for the Measurement of Household Size*

In social science surveys, it cannot be assumed that the survey researchers who design and conduct the survey, the interviewers, the respondents, and the researchers who analyse the survey data share a common concept of household.

A cross-national comparison of European countries reveals that, here too, culture-specific differences are in evidence and that they are reflected in the wording of the survey questions. In the countries to be compared, these different household measures produce household sizes and compositions that are based on different concepts. An essential prerequisite for cross-national comparison is that like be compared with like. Hence, because the measurements differ from country to country, the national instruments for measuring private households must be harmonised.

Step 1: Definition of the Concept to be Measured

The concept of household is of central importance in the social sciences because, as a rule, household members share the same socio-economic status and social background; to a greater or lesser extent they make decisions together – including decisions regarding household expenditures, moving house or migration; and they tend to have more or less similar attitudes, norms, and values.

In an ageing society, households play a very important role when it comes to sharing responsibility for older household members, providing medical care, and practising solidarity between the generations so that financial burdens are fairly distributed. These mutual relationships between household members must be reflected in the concept and definition of household. For the social sciences, therefore, a household concept that is based on the principle of common housekeeping in the financial and organisational sense with mutual rights and obligations is expedient:

> 1.448. The concept of household is based on the arrangements made by persons, individually or in groups, for providing themselves with food and other essentials for living. A household may be either (a) a one-person household, that is to say, a person who makes provision for his or her own food and other essentials for living without combining with any other person to form a multi-person household or (b) a multi-person household, that is to say, a group of two or more persons living together who make common provision for food and other essentials for living. The persons in the group may pool their resources and may have a common budget; they may be related or unrelated persons or constitute a combination of persons both related and unrelated.
>
> 1.449. The concept of household provided in paragraph 1.448 is known as the 'housekeeping concept'. It does not assume that the number of households and housing units are or should be equal. A housing unit, as defined in paragraph 2.418., is a separate and independent place of abode that is intended for habitation by one household, but that may be occupied by more than one household or by a part of a

household (for example, two nuclear households that share one housing unit for economic reasons or one household in a polygamous society routinely occupying two or more housing units (UN Department of Economic & Social Affairs Statistics Division, 2008, p. 100).

Step 2: Structural Analysis

The definitions of private household in the population censuses in the selected six countries differ considerably. Hence, they provide an overview of the range of criteria employed. Denmark uses the address, and France the dwelling unit, as the central element for the operationalization of private household. In addition to the spatial characteristic (address or dwelling), Germany, England, and Luxembourg use common housekeeping as a further distinguishing feature, while Italy defines private household in terms of the family.

Denmark: *Registered at the same address* means that, depending on the size and partitioning of the house, there can be several dwelling units at the same address:

- Several dwelling units = 1 household,
- Connecting element is the common address,
- The number of persons can be large,
- Absent school-going children, students and seasonal workers are to be included.

France: *Share dwelling unit* means that household is limited to a dwelling unit. All those residing in the dwelling unit are assigned to the household. Because the defining criterion is the dwelling unit door, the French household cannot reach the size of its Danish counterpart. However, as in Denmark, France does not distinguish between a partitioned dwelling rented out room by room and a shared dwelling with common housekeeping:

- One dwelling unit = 1 household,
- Connecting element is the common dwelling unit,
- The number of persons does not have to be limited to members of the same economic unit.

Luxembourg: *Share a dwelling unit and have common housekeeping* means that household is first of all restricted to the dwelling unit and, within the dwelling unit, it is further restricted to a group who makes common provision for food and other essentials for living. The persons in the group may pool their income. Hence, one dwelling unit may accommodate several households:

- One dwelling unit = 1 to n households,
- Connecting element is the subjective feeling of belonging to a household community within the dwelling unit,
- Although the number of persons is limited by the dwelling unit and common housekeeping criteria, it is not clear-cut.

Germany: *Living together and common housekeeping* means that household is first of all restricted to a dwelling unit and within that unit to an economic unit. Hence, one dwelling unit can accommodate several households.

- One dwelling unit = 1 to n households,
- Connecting element is common housekeeping within the dwelling unit,
- The number of persons is narrowly defined by the dwelling unit and economic unit criteria.

England: *Living at the same address with common housekeeping* means that household is first of all restricted to an address. This address may comprise several dwelling units. Household is then limited to common housekeeping, which is operationalized as a daily shared meal or a common living or sitting room. A daily shared meal presupposes common housekeeping and a regular daily routine. What connects the household members is not the common dwelling unit door but rather a shared regular daily routine. Hence the private household can be spread across several dwelling units as long as the various dwelling unit doors do not hamper regular common housekeeping:

- One to n dwelling units = 1 household,
- Connecting element is regular common housekeeping at a common address,
- The number of persons is narrowly limited by the 'same address' and 'shared daily meal' or 'shared living or sitting room' criteria.

Italy: *The family irrespective of whether it lives in a common dwelling unit* means that family is defined solely via family ties based on blood, adoption, or marriage. The connecting element is the emotional bond or financial dependence, neither or which is measured. As a rule, 'family' implies spatial proximity and is based on the idea of the atrium, in the figurative sense of living together in the immediate vicinity.

- One to n dwelling units = 1 household,
- The connecting element is the emotional bond or financial dependence,
- The number of persons is very open-ended because it is a matter of subjective definition and possible distribution across different dwelling units.

As this overview shows, every operationalization and every definition of household can give rise to a different relationship between address, dwelling unit and group of persons. Where two criteria are used, the bulk of households will not differ greatly across countries. The widespread standardisation of urban residential construction in Europe, alone, sees to that. Nonetheless, it is against the rules of comparability to ignore possible differences in the relationship between address, dwelling unit and the group of persons with common housekeeping.

In order to be suitable for use as a standard measure of household as a socio-demographic variable in cross-national comparative surveys, an instrument must also capture this relationship between address, dwelling unit and the group of persons with common housekeeping. Therefore, the instrument proposed here also takes into account the number of dwelling units and the distribution of the household members across these dwelling units.

Step 3: Development of the Instrument

A social-science survey instrument that aims to collect data on the respondent's household must explain the underlying household concept to him. An instrument that is understandable across cultures must convey the concept of household as a housekeeping concept, i.e., as an aggregate of common housekeeping in the financial and organisational sense with mutual rights and obligations. The household concept is integrated in the question and is therefore known to the interviewer, the respondent, the researcher who collects the data, and the scientist who analyses them.

Because household membership is not self-explanatory, respondents are given a list of categories of people to be included in the household. This list first gives all those who are frequently forgotten, for example children – especially babies – and the respondent himself. Moreover, persons who are temporarily absent because of education/training or work, or persons who are temporarily away from the household because of illness, leisure pursuits or other reasons, are listed and are thereby assigned to the household. The maximum permissible length of absence – 6 months – is based on the period used in many countries' definitions. Then, resident domestic staff, au-pairs, nursing staff, and care-givers are classified as household members. All family members or former household members who live in collective accommodation are excluded, as are all those who have been absent for longer than 6 months and persons who are present temporarily, such as visitors. This list represents a massive intervention in the definition in the sense that temporarily absent persons are reassigned to the household. Nonetheless, only a definition such as this, which can be accepted in as many cultures as possible, allows for comparative analysis.

Finally, we endeavour to assign the persons listed by the respondent to dwelling units because the household definition is not always restricted to one dwelling. So-called self-contained 'granny flats', which are used by parents or children, are frequently encountered. In view of the 'dwelling unit door' criterion, these flats should be regarded as separate dwelling units.

However, weekend commuters and students who have an additional dwelling at their place of work or study, are also included in the central household. This can lead to a problem in the definition of the population universe on the basis of the resident population because in such a case weekend commuters or the students can be encountered at two locations and be counted twice. Many surveys expressly accept this double count. However, this point can be clarified only via an appropriate definition of the survey population.

Step 4: Harmonisation

Because it is based on a concept for the measurement of household that is common to all countries, the measurement instrument proposed here is an input-harmonised survey instrument. Despite the difficulty of adequately translating 'housekeeping' into the respective national languages, professional translators

– in collaboration with survey researchers – can produce a functionally equivalent translation of the source questions, thereby ensuring that a comparable variable is measured in each culture that participates in the survey. However, especially in countries, such as Italy and Portugal, in which 'household' is less housekeeping oriented than elsewhere, this calls for forward-looking pretests guided by the underlying household concept.

Result: The Measurement Instrument

Information on the respondent's household and the relationship between the household and the dwelling units is collected using four survey questions. The list of categories of people to be included in the household ensures that both inclusion and exclusion rules are applied. However, this list can be adapted to the theoretical guidelines of each empirical project and to the research question by modifying the categories of people to counted, without changing the underlying household concept.

5.6 Ethnicity

Ethnicity is a concept that is difficult to measure in cross-national comparative research because it means different things in different countries. From a sociological perspective, ethnicity means 'a shared racial, linguistic, or national identity of a social group' (Jary & Jary, 1995, p. 206). In general population surveys in European countries, respondents are rarely asked about their self-assigned membership in, or subjective identification with, an ethnic, linguistic, or national group. What is usually measured in these countries is objective group membership. Such a measure is usually based on citizenship because this concept covers a broad spectrum, ranging from membership in a 'community with common descent' in a state that is largely ethnically homogeneous to membership in a 'melting pot' state with a strong immigration tradition. These two extremes can be defined as follows:

a. An ethnic nation state aspires to ethnic homogeneity. It sees itself as a community that shares common descent, culture, and history. Citizenship is established by (cultural) descent. In order to belong, members of ethnic minorities must assimilate. In principle, however, outsiders cannot be accepted into such a society – to really belong one must be born into it (Heckmann, 1992, p. 212). As the example of the ethnic German repatriates (*Aussiedler*) shows, membership in a community linked by common descent does not depend on where in the world one was born and where one settled. Cultural roots are binding, even after many centuries. The example of one *Aussiedler* group, the Transylvanian Saxons (Rothe, 1994), serves to illustrate the fact that, in an ethnic national state such as the Federal Republic of Germany, which sees itself as a community linked by common descent, even a

group of people who (re)migrated to Germany 800 years after their ancestors emigrated are still regarded as members of the community. The Transylvanian Saxons remigrated to Germany in the second half of the twentieth century. As persons of 'German ethnic origin' within the meaning of the German Basic Law, they were automatically recognised as German citizens.

b. A state in which a large percentage of citizens arrived as immigrants must define itself differently: 'What distinguishes a nation is not "ancestry" but rather common values, institutions and political convictions' (Heckmann, 1992, p. 214, our translation). Such a state, which is based on the notion of common standards and assimilation, is well disposed to immigration and naturalisation. There are two variants here: the 'demotic-unitarian concept of the nation' and the 'ethnic-pluralist nation state' (Heckmann, 1992, pp. 214ff.).

   ba. The demotic-unitarian concept of the nation, which emerged from the French Revolution and is based on cultural homogenisation and ethnic assimilation, is a political rather than an ethnic paradigm: Citizens aspire to unification as a nation state through the 'general will', i.e. the will of the people as a whole (Heckmann, 1992, p. 215). In this type of state, cultural or ethnic roots are unimportant.

   bb. The ethnically plural nation state builds on common political traditions and institutions. Like the demotic-unitarian nation state, the ethnically plural state does not see itself as an ethnic community. Rather, it can define independent ethnic groups as belonging to, and being constitutive of, the state.

5.6.1 Handling Ethnicity in National and Cross-National Comparative Social Science Surveys

National surveys are shaped by the citizenship regulations of the state in question. The residential (household) population – as a rule irrespective of the citizenship and ethnicity of the individuals – is the universe for general population surveys. Hence, when developing national ethnicity measures, many questions regarding the relationship between the various ethnic groups must be addressed:

How is citizenship defined? Is the state dominated by one ethnic group? How are long-established minorities who have lived in the territory of the state for centuries treated? Are there groups of second-class citizens comprising members of discriminated minorities? How are migrants or repatriates from former colonies or territories that were lost as a result of war or plebiscites treated?

The answers to these questions have implications for the survey. Should citizenship alone be collected, or also country of birth? Or should only country of birth be collected because – in the country in question – citizenship is derived from it? Should only the target person's data be collected or should his parents' details be collected too? Should ethnic group membership be collected? If yes, should it be self-assigned or assessed on the basis of current citizenship? Should discriminated

groups be specifically focused upon? In what depth should migrants' current residency status be measured?

These questions show that the ethnicity measure varies greatly in the different countries. The International Social Survey Programme (ISSP) is a good example. Up to 2004, each participating country measured ethnicity in accordance with its national practice (see Hoffmeyer-Zlotnik & Warner, 2010, pp. 128f.), with the result that comparability was non-existent.

5.6.2 Elements of an Ethnicity Measure

'Ethnicity' can be meaningfully subdivided into five sub-themes:

- *Legal status*: If the respondent is a citizen of the country in which the survey is conducted, then he enjoys full citizenship rights. If the respondent is not a citizen of this state, then his rights are limited.
- *Opportunity to participate as a non-citizen in the economic life of the country*: In their country of residence, non-citizens' rights are limited to a greater or lesser extent. In order to be able to participate in the economic life of the country, foreigners require a work permit.
- *Ethnic assignment as self-assignment to a cultural background*: Groups with a distinctive background, language, or historical socialisation develop group identity.
- *Immigrant background*: In many European countries, immigrants account for a double-digit percentage of the population. In some neighbourhoods, migrants are the dominant group. In order to determine whether a respondent has an immigrant background it is not enough to collect his own details. One also requires the data of the previous generation(s), i.e. his parents (and grandparents).
- *Integration of immigrants into the host society*: Different groups can interact only if they are able to communicate with each other in a common language.

Distinguishing Groups According to Legal Rights: Citizenship and Residency Status

Citizenship is the first characteristic with which groups can be distinguished according to the legal rights they enjoy. 'Citizenship' denotes the state of which a person is a member – the state in which he can, and must, assume the role of citizen with all the rights and obligations that this entails. In contrast to citizenship as membership in a state, 'nationality' is a legal and protective relationship between a natural person and a state from which certain (nationality) rights, such as the right to vote, and certain obligations, such as military service and the liability to tax, follow. Citizenship can be acquired by descent (in Latin: *jus sanguinis*, the law of blood), or on the basis of the principle of the birthplace (in Latin: *jus soli*, the law of the soil). The principle

of descent means that the child acquires the citizenship of his parents, of one parent, or, if born out of wedlock, of his mother (this is the case, for example, in Austria, Italy, Sweden, and Switzerland; before 1 January 2000 it was also the case in Germany). According to the principle of the birthplace (which applies, for example, in Canada and the USA), the child acquires the citizenship of his country of birth. In some countries, modified versions of pure *jus sanguinis* or *jus soli* apply, or the two are combined to a greater or lesser extent. This is the case, for example, in the United Kingdom, in Germany, where an optional *jus soli* was introduced in 2000, and in France with its double – i.e. second-generation – *jus soli* (Der Standard, 2010). Moreover, citizenship can be acquired by naturalisation, legitimation, marriage to a citizen, or adoption (Schubert & Klein, 2006).

However, there are also ways of acquiring citizenship that are peculiar to particular countries:

Ethnic German repatriates (*Aussiedler*) are a specifically German phenomenon. *Aussiedler* are the descendants of persons who migrated to Southeastern Europe (for example, the Transylvanian Saxons and the Danube Suebians), to Eastern Europe (for example, the Volga Germans and the Black Sea Germans), and even to Asia (for example, to Kazakhstan) centuries ago, and who have been resettling in the Federal Republic of Germany since 1950. After (re)migrating to the Federal Republic of Germany, these *Aussiedler* were granted, and, under certain conditions, are still granted, German citizenship on the basis of their cultural roots because Germany's Basic Law, or constitution, refers to them as being 'of German ethnic origin' (Schneider, 2005).

In France, special provisions apply in the case of Algeria. One must distinguish here between the *pieds-noirs*, European colonists who were repatriated to France after Algerian independence in 1962 (Delpard, 2002), and Maghrebis, who immigrated to France from Algeria. In 1947, non-French European settlers and the Arab and Berber population of French Algeria were granted French citizenship. For this reason, all Algerians born before independence in 1962 were allowed to immigrate to France. Up to 1998, these former French citizens and their children were automatically granted French citizenship on application (Ruf, 2002a, p. 594, 2002b).

The second characteristic with which categories of people can be distinguished according to legal rights is residency status. Residency status can take very different forms. As a rule, it is based on the legally regulated acquisition of a residence permit. The residence permit specifies the length of time the non-citizen may stay in the country and the restrictions or requirements to which he is subject. Because residency status regulations are subject to national law, they vary considerably from country to country. Within the European Economic Area (EEA), which comprises the 27 EU member states and three EFTA states (Iceland, Norway, and Liechtenstein), workers who are nationals of EEA member states enjoy freedom of movement (TFEU Article 45) and freedom of establishment (TFEU Article 49) (see TFEU, 2009; also: EEA Joint Committee, 2007).

With regard to non-citizens' participation in the economic life of their country of residence, two questions are of central importance: Does the person hold a permanent, i.e. indefinite, residence permit, or is it subject to certain restrictions? Is the

person entitled to take up employment? Participation in the economic life of the country of residence is possible only if the person's residency status gives him security for the duration of his intended stay and allows him to take up employment.

Ethnic Group Membership

An ethnic group is understood to mean 'a group of people sharing an identity which arises from a collective sense of a distinctive history' (Jary & Jary, 1995, p. 205).

As a rule, the European nation states comprise an ethnic majority and several ethnic minorities. The co-equal existence of large ethnic groups, as is the case in Switzerland, for example, is a rare exception. Normally, the dominant group determines the value system, and the minorities are expected to conform even though each group has its own norms (Jary & Jary, 1995, p. 205).

At least three different kinds of ethnic groups are to be found in Europe (see Hoffmeyer-Zlotnik & Warner, 2010, p. 12):[11]

1. Large ethnic groups who are politically unified as a nation, but who are culturally separate even in terms of language, for example, the four ethnic groups in Switzerland, the three ethnic groups in Belgium, the four big ethnic groups in Spain, and the four formerly independent states that now make up the United Kingdom.
2. Small ethnic groups that do not belong to the majority but are now part of the nation. They include:
   - Groups who immigrated in the distant past, for example the Greeks who immigrated to the South of Italy between 1,500 and 2,000 years ago; the Albanians who immigrated to the South of Italy some 500 years ago; or the Romani in Hungary, Bulgaria and Romania.
   - Ethnic groups who were incorporated into a nation state because they were living in the territory at the time the state was founded. Such groups include the Bretons in France, the Sards in Italy, the Sorbs in Germany, and the Saami in Norway, Sweden, Finland and Russia.
   - Groups who became part of another nation as the result of a post-war border shift, for example the Southern Tyroleans who are now citizens of Italy, and the Hungarians in Croatia.
   - Groups with their own customs that arose as a result of political or religious socialisation, for example the Kurmainzer in the Eichsfeld district in Thuringia, Germany and the Gottscheers in Slovenia.

[11] Not included is the type of regional group identity that can be observed, for example, among people living on one side of a river who look down on the people who live on the other side. Such is the relationship between the inhabitants of the German cities of Mainz and Wiesbaden or Mannheim and Ludwigshafen.

These small ethnic groups can be divided into recognised minorities with guaranteed cultural independence, and non-recognised – and therefore discriminated – minorities, for example the Romani.

3. Immigrants, who can be divided into four groups:

   - Migrant workers who have been moving from poor or declining agricultural regions to industrialised regions since industrialisation began.
   - Native Africans, Asians or South and Central Americans who migrated from (former) colonies or overseas territories and provinces to the United Kingdom, the Netherlands, France, Portugal, etc.
   - Repatriates from the former colonies who resettled in their 'home country' after independence.
   - Outside Europe, the descendants of those who arrived as immigrants or slaves.

   According to Jary and Jary's definition (1995, p. 205), 'Ethnic groups possess their own culture, customs, norms, beliefs and traditions. There is usually a common language, and boundary maintenance is observed between members and non-members'. Members of ethnic groups tend to live segregatedly with members of their own community, either in small segregated enclaves within the larger community, or in large, ethnically dominated areas. To a greater or lesser extent, they develop a sense of group identity. The self-definition offered by members of ethnic minorities is based 'on a mixture of attributes, including national origin, tribal membership, religion, language, minority status, wealth, and physical characteristics' (see for example, Harris, 1968). However, ethnic self-assignment is based not only on social or cultural characteristics of the group but also on descent (Office of Management & Budget (OMB), 1997, p. 58782). Moreover, intermarriage between groups gives rise to mixed descent.

Persons with an Immigrant Background

Persons with an immigrant background are either immigrants or the descendants of immigrants. An immigrant is defined as a person who moved to the host country for a prolonged period of time (over a year) or permanently, irrespective of which citizenship he currently holds. The descendants of these immigrants are the children or grandchildren born in the host country, irrespective of their current citizenship.

In surveys, immigrants can usually be identified on the basis of their citizenship and/or country of birth. However, from the second generation – i.e. the children of immigrants who were born in the host country – onwards, persons with an immigrant background cannot be identified in statistics and registers if they do not differ in terms of citizenship and country of birth from persons without an immigrant background.

Immigrant background plays a role when population groups who have been socialised in different cultural contexts encounter each other. These groups may be immigrants from different cultural backgrounds who came as migrant workers and stayed (Akgündüz, 2008); they may be natives of former colonies, such as the

Algerians who immigrated to France before 1998 and who held French citizenship until independence in 1962 (Ruf, 2002a, p. 594); or they may be groups who remigrated after a long period of absence and whose sub-culture no longer has much – or anything – in common with that of the home country of their forefathers. The ethnic German repatriates (*Aussiedler*) fall into this category, as do the colonists returning to the United Kingdom and France after the colonies gained independence.

Expellees, i.e. persons who, for ethnic, religious, social or political reasons, were forced by state measures to leave their region of origin or their home country, have a special refugee status (Marrus, 1985; Wren, 1995).

Integration of Migrants into the Host Society

When migrants speak the language of the host country, this is considered to be a key indicator of their integration into the host society (Hoffmeyer-Zlotnik & Warner, 2010, p. 15). The language of the host country becomes the second language after the mother tongue. The mother tongue is defined as 'the first language that the child learns. Its grammatical structure and the individual sound shapes are so deeply engraved in the brain that the speaker has almost an automatic command of it' (eloquent-online.de, 2011, our translation). Normally, people have only one mother tongue. Even if they are bilingual, they do not usually have an equal command of both languages. The mother tongue is important for one's psychological identity and for the identification with one's own culture and roots.

Following Alba (2005), immigrants – the first generation – learn just enough of the language of the host country to get by. They speak their mother tongue within their own community. Their children – the second generation – grow up speaking their mother tongue in the family. However, at school, on the street, and with their peers they use the language of the host country. In this way, that language becomes the one in which they answer their parents. By the third generation – at the earliest – the language of the host country is learned as the mother tongue. However, the language of the host country is the key to participation in education and is a central prerequisite to taking advantage of opportunities in the national labour market.

5.6.3 Development of an Instrument for the Measurement of Citizenship, Residency Status and Immigrant Background

Because the ethnicity measure must cover five sub-themes (see Section 5.6.2), it is developed in two thematically separate stages. The first stage deals with citizenship, residency status, immigrant status and integration, all of which have to do with migration. The second stage (Section 5.6.4) is devoted to ethnic group membership.

Step 1: Definition of the Concept to be Measured

'Citizenship' is understood here as 'membership' in a state. As a 'member', the citizen has certain rights and obligations. Without membership a person has only limited rights. This is the case in every country. Normally, citizenship is acquired at birth – either by descent (*jus sanguinis*), in which case one acquires the citizenship of the parent(s), or by birthplace (*jus soli*), whereby one acquires the citizenship of the state in whose territory one was born.

Citizenship is an important survey variable because it enables conclusions to be drawn about the respondent's rights and obligations in the country in which the survey is conducted. If the respondent is a non-citizen, the rights he currently holds must be determined, as different rights are conferred in different situations, and a person's room for manoeuvre depends on the rights he holds. This applies to all states, although the rights granted to non-citizens by individual states are subject to different levels of restriction. The rights held by a non-citizen depend on his residency status. Different types of residency status confer different possibilities for action and, thus, for participation in the economic life of the country of residence.

However, for a sociological analysis it is not only important to know whether the respondent is a citizen or a non-citizen and, if he is a non-citizen, what rights he holds. In order to be able to interpret attitudes and behaviour, the sociologist must also know whether those respondents who are citizens of the country in which the survey is being conducted have an immigrant background and, if so, to what extent they are integrated into the society of the host country. Following Alba (2005), linguistic integration – in the sense of speaking the language of the host country as the home language – is to be expected by the third migrant generation at the earliest.

Step 2: Structural Analysis

As a rule, people have only one citizenship, namely that acquired at birth. The legal basis for acquiring citizenship differs from country to country. In countries where it is possible to combine the principle of descent (*jus sanguinis*) and the principle of the birthplace (*jus soli*), a person may, in an extreme case, accumulate up to three citizenships: that of each parent (*jus sanguinis*), and that of the country of birth (*jus soli*). National law usually regulates the number of citizenships that a person may hold on reaching the age of majority, and the way in which citizenship can be changed. Some countries allow all new citizens to retain their original citizenship, while other countries permit dual citizenship only under certain conditions. Besides by descent or place of birth, citizenship can be acquired by legitimation, by adoption, by marriage to a citizen, or by naturalisation. All modes are regulated by the national laws governing the acquisition of citizenship; the facility with which citizenship is granted varies from country to country.

In some states, specific groups enjoy – or enjoyed – special rights. This was the case with the Algerians who lived as French citizens in French Algeria (*Département d'Algérie*) before independence in 1962. After independence they became Algerian citizens, but up to 1998 they could apply for what was called 'reintegration into

French nationality'. Most of the inhabitants of the British colonies were British citizens (British Nationality Act, 1948). It was not until the early 1980s (British Nationality Act, 1981) that British Dependent Territories citizens were denied full British citizenship. In Germany, ethnic German repatriates (*Aussiedler*) are a special case. Their forefathers emigrated to Southeastern and Eastern Europe centuries ago. From 1950 onwards, these *Aussiedler* began (re)migrating to the Federal Republic of Germany, where they were automatically granted German citizenship because they were of 'German ethnic origin' (Schneider, 2005). Special repatriation provisions apply, or applied, to all these groups.

Non-citizens who reside on a medium- or long-term basis in a foreign state acquire a residency status. This status can be based on the permitted period, or on the purpose, of stay. Some countries have only three types of residence titles: visas for short stays or for specific purposes (for example, student visa, work visa); temporary residence permits; and indefinite residence permits. The latter may take the form of a (permanent) settlement permit. Other countries have a wider range of residence titles. However, the transition from a temporary to an indefinite residence permit is common to all countries. In addition to residence permits, there are work permits. In some countries, the work permit that gives a foreigner the right to take up employment on the same terms as a national is issued in the form of a combined work and residence permit. In other countries, each permit is issued separately.

The language that people with an immigrant background speak as their mother tongue – or 'home language' – is considered to be a powerful indicator of their level of integration into the host society. However, even in the case of people without an immigrant background, the mother tongue may not be the language spoken by the majority. This can be due, first, to the fact that the country has several co-equal official languages and cultures. Switzerland is one example (German, French, Italian, Rhaeto-Romance); Belgium is another (French, Dutch, and German). Second, the person may speak a regional official language. Several countries have regional official languages in addition to the national language. Spain is one example (Aranese, Basque, Galician, and Catalan), Italy is another (German, French, Ladin, and Slovene). A third possible explanation for the fact that a native's mother tongue is not the language of the majority is that he is a member of a group that speaks a protected minority language. Such protected minority languages are to be found in almost all European countries, for example, in Italy (Albanian, German in the variants Southern Tyrol German and Walser German, Franco-Provençal, French in the Aosta Valley, Furlan, Griko, Catalan in Alghero, Croatian, Ladin in linguistic enclaves in Southern Tyrol and Belluno, Ligurian, Occitan, Rhaeto-Romance in Livigno, Sardinian, Slovene, Venetian and Zimbrian). Such a variety of protected minority languages can be viewed as an indicator of cultural diversity.

Step 3: Development of the Instrument

Because they were socialised under different cultural and institutional conditions, nationals and foreigners differ in the way they think and act. As a result, relations between the two groups may sometimes be strained. Therefore, when designing

surveys it makes sense to distinguish between nationals and foreigners. The easiest way to do so is via citizenship. However, many countries allow dual citizenship. And because up to three citizenships can be accumulated if *jus sanguinis* and *jus soli* can be combined, the citizenship measure must provide three response options. If the survey is computer-assisted, respondents should be shown a list of all possible citizenships because otherwise they may confuse citizenship with ethnic group membership.

If the respondent is a citizen of the country in which the survey is being conducted, one must determine how he acquired this status. If he has not been a citizen since birth, then it can be assumed that he was socialised in another culture. However, a dichotomous question does not suffice, because the manner in which membership in a state was acquired can give some indication of the person's attitude to that state's norms and institutions. There are seven ways in which citizenship can be acquired. The acquisition of citizenship by birth is the one most commonly encountered in surveys. However, there are different modes of acquisition of citizenship by birth. Because *jus soli* is based on the place of birth, it is not enough to ask about citizenship, one must also ask about the country of birth. However, caution should be exercised when the place of birth became part of another state as a result of a border shift that occurred after the respondent was born. In many surveys, the respondent is asked to give the current name of his country of birth. This may be expedient for official statistics purposes but not for academically driven social research. For example, a person who was born in the German city of Koenigsberg (now the Russian city of Kaliningrad) before 1945, and who never lived in Russian territory, would be then be classified as having an immigrant background. However, it makes sense to use the current name of the state when the state in question was newly established. For example, a person who was born in Ljubljana in the 1970s, and who still lives there, is Slovenian, even if he was Yugoslavian at birth.

Citizenship can also be acquired by adoption. In this case, the child acquires the citizenship of his adoptive parents/mother. If parents change their citizenship, so too do their children if they have not yet reached the age of majority. In the case of dual citizenship, a young person is entitled – or obliged – to opt for one or other citizenship on reaching the age of majority. Two further possibilities of changing citizenship by one's own volition are by marriage or civil partnership, where one acquires the citizenship of one's spouse or civil partner, or by naturalisation. In both cases the person makes a conscious and voluntary decision in favour of his new home country and makes a commitment to live in accordance with its laws and institutions.

The last mode of citizenship acquisition, citizenship by descent (*jus sanguinis*), also serves to capture all repatriates who were granted citizenship because their antecedents had been citizens of the country in which the survey is being conducted. In Germany, the ethnic German repatriates (*Aussiedler*) fall into this category; in France, it covers Algerians born before 1962 and their descendants; and in a number of other countries, the category comprises returnees from the former colonies.

Because living between two cultures means that both cultures influence the mentality and behaviour of the respondent, it is not only judicious but also necessary to determine when the change of citizenship occurred. This information helps one to

assess how long the respondent has been a citizen of the host country and, thus, how long he has been consciously engaging with its laws and institutions.

If the respondent is not a citizen of his country of residence, but rather a foreigner, then his residency status is of interest. This is measured in the four categories that are to be found in all countries: indefinite residence; temporary residence with work permit; temporary residence without work permit; refugee or asylum-seeker. The following information is of interest:

- Does the respondent hold an indefinite residence permit? (If so, he is entitled to work.)
- Does the respondent hold a temporary residence permit?
- If so, is he also entitled to work?
- Is the respondent a refugee or an asylum-seeker?

The different degrees of legal rights granted to foreigners vary from country to country. From the point of view of participation in the economic life of the country, the four aforementioned categories are sufficient to determine how secure the respondent's residency status is, and whether he has the possibility of taking up employment. Only with a work permit can a person participate in the economic life of the country and build a secure existence. However, if the research question calls for more differentiated residence titles, recodability into the aforementioned four categories should be ensured. Roughly speaking, the supplementary category for refugees and asylum-seekers can be equated to a 'temporary residence permit'. However, its inclusion as a separate category underlines the special status of these groups.

The next sub-theme addressed in the ethnicity question block is 'immigrant background', which is measured via the country of birth of the respondent's father and mother. This question is asked irrespective of the citizenship of the respondent.

And finally, the language spoken most frequently at home is measured, i.e. the language spoken by the respondent in the household to which he belongs. In order to do justice to bilingual respondents, the final question asks whether the respondent also speaks a second language at home. This question is asked despite the acknowledgment that respondents will have only one mother tongue. The mother tongue – or home language – is regarded as an indicator of the extent to which a person is integrated into the host society. If the language of the host country is spoken as a second language, this could be a first big step in the direction of integration.

Step 4: Harmonisation

The ethnicity question block is input-harmonised. The questions contain no national idiosyncrasies and can therefore be translated from one language to another without changing the stimulus in the process.

There is just one small problem with the term 'citizenship'. Some countries use the term 'nationality' rather than 'citizenship' in their surveys. As the European Union Democracy Observatory on Citizenship (2012) notes:

> There is much terminological confusion in the study of citizenship statuses and laws. While public international law uses the term nationality to refer to the legal bond between an individual and a sovereign state, several domestic laws use the term citizenship or its equivalent. In some states, a distinction is made between nationality as a status independent of residence and citizenship as a bundle of rights granted only to nationals residing in the territory.
>
> In most European languages, the term nationality can also refer to individual membership in a nation as a cultural, ethnic and historic community rather than a legal entity. Sometimes, nationality is also contrasted with nation when distinguishing dominant national groups from national minorities.

What is of interest for the measurement of ethnicity is the state in which the respondent is a member.

Result: The Measurement Instrument

The measurement instrument captures citizenship, residency status, immigrant background, and integration. It comprises five questions with sub-questions. This may appear excessive to some. However, if the respondent is a citizen of the country in which the survey is being conducted, the first part of the question block is completed after four sub-questions. This is followed in the second part of the question block by questions about the country of birth of his father and mother and the language(s) he speaks at home. This second part yields useful – or important – background information for the interpretation of the mentality and behaviour of people with an immigrant background. However, if the instrument has to be shortened, then the second part can be done without more than the first. The only problem is, however, that in many countries the immigrant background of the second generation may then go undetected. Moreover, according to the literature (see Alba, 2005), full linguistic integration is not to be expected until the third generation.

5.6.4 Development of an Instrument for the Measurement of Ethnic Background

In addition to questions about citizenship, residency status, immigrant background, and integration, the ethnicity question block also features a question about the respondent's ethnic background.

Step 1: Definition of the Concept to be Measured

Ethnic group classification means the assignment of respondents to cultural background. To a certain extent at least, ethnic minorities – be they indigenous peoples or

groups who immigrated in recent times or in the distant past – tend to live in their own (sub-)culture. At the very least, they develop a sense of group identity that distinguishes them from the majority. In some states, ethnic minorities who have their own language and culture have recognised minority group status and enjoy partial cultural autonomy, be it linguistic, religious or in relation to customs/traditions. The minority status of migrant groups can also lead to the substratification of the nationally established stratification system. Sub-stratification is also associated with prejudice and discrimination, which can increase a minority's tendency to seek refuge in a group identity.

Step 2: Structural Analysis

Some states – for example Switzerland, Belgium, the United Kingdom, and Spain – have large politically co-equal autonomous ethnic groups. Many states have regions or enclaves inhabited by indigenous ethnic groups (e.g. the Saami in Norway, Sweden, Finland, and Russia; the Sorbs and the Frisians in Germany; the Ladins in Italy, etc.) or by ethnic groups who immigrated many centuries ago (the Greeks, Albanians, etc. in Italy; the Germans in Romania, etc.). As ethnic minorities, these groups have the right to speak their own language and to preserve and develop their own culture. As a result of the redrawing of the state borders in the Balkans, many ethnic groups from neighbouring states are now 'stranded' in the newly established states. All industrial and post-industrial countries have immigrant groups who arrived in the recent past. These groups tend to live among themselves in ethnically dominated city quarters. They are accepted – to a greater or lesser degree – by the majority. The rights of members of recent migrant groups depend on their country of origin. Within the European Economic Area (EEA), for example, EEA nationals enjoy the privilege of freedom of movement (TFEU, Article 45) and freedom of establishment (TFEU, Article 49). Migrants from other states must individually acquire these rights. Migrant groups also differ greatly in terms of their visibility; some are perceived as being more 'foreign' or 'alien' than others.

In addition to these 'pure' groups, there are also individuals or families who have intermarried with other minority groups or who have 'assimilated' by marrying into the majority group.

A final group comprises regional 'territorial or homeland associations' within a state. These associations devote themselves to preserving and fostering their customs. They can be found in all large states that have regions that differ historically or economically from others, for example in Germany, France, Italy, and Austria, to mention but a few. These territorial or homeland associations should not be taken into account when assigning respondents to ethnic groups.

Step 3: Development of the Instrument

Ethnic group membership can be meaningfully measured only on the basis of self-identification. The ethnic group measure serves, first, to distinguish large ethnic

groups, and second, to identify those groups who substratify or superstratify the majority. When it comes to identifying substratification and superstratification, the respondent's ethnic self-identification is required. Martin and Gerber (2005, p. 3) of the US Bureau of the Census point out that 'Cognitive interviews with persons who have a multiracial heritage demonstrate that race is a social construct, and illustrate the complex factors that influence racial identifications'.

However, to avoid overburdening respondents with an excessively detailed and time-consuming instrument, ethnic background should be measured using a small number of broad categories. In countries in which ethnic self-identification is the norm in the surveys conducted by the national statistical institute, ethnicity is classified into broad superordinate categories. England, for example distinguishes White, Black, Asian, Chinese, Mixed, and Other. The USA uses five main categories, but instead of a 'Mixed' category, respondents are allowed to choose two or more categories. As a separate 'Mixed' category can combine only the superordinate categories, it would appear expedient to restrict respondents to a maximum of two categories. Gerber, de la Puente, and Levin (1998) point out that persons of multiracial heritage differentiate explicitly between what others may think they are and how they think of themselves. Moreover, they insist that a person's sense of race cannot be deduced from outward appearances. As Martin and Gerber (2005, p. 3) note, 'There are also many respondents who are aware of having ancestors of more than one race, but who prefer to report in only one category'. Although the US Census permits respondents to assign themselves to up to four categories, this should be avoided. However, one should not forget to include a category for the national majority. Otherwise the 'Mixed' category, at least, would lose its meaning.

When drawing up a national list of categories, it is necessary, first, to differentiate according to the large autonomous ethnic groups (such as those found in Switzerland, Belgium, the UK, and Spain). In countries such as France, where the autonomy of large ethnic groups was sacrificed to the principle of the central state, the large groups must also be separately listed. However in those states with small recognised ethnic minorities (for example the small Danish, Frisian, and Sorb minorities in Germany), it does not make sense to analyse these groups individually because only a very small number of group members find their way into the survey sample. Although these minorities can be listed individually in the national part of the questionnaire, they should be categorised under a main category entitled 'groups with cultural autonomy'.

In addition to the majority, it is necessary to list all those minorities that can be grouped into large categories, for example 'immigrants from other EU/EEA member states', 'immigrants from former colonies', 'immigrants from other parts of the world', etc. However, it is also important to list separately all those groups who are visible in society, identifiable in surveys, and who are considered problematic from an integration point of view. Such groups include, for example, the 'Germans from Russia' (*Russlanddeutsche*) in Germany, the Portuguese in Luxembourg, the Algerians in France, and the Roma in Bulgaria.

Step 4: Harmonisation

Because there is a different ethnic constellation in each participating country, the ethnic categories will differ from country to country. Therefore, the data must be harmonised after collection (output harmonisation). Two things should be taken into consideration in this regard:

- When drawing up the national list of categories, each state must include all the relevant groups, starting with the national majority. If a comprehensive list features too many small groups, they can be accommodated in an open residual category.
- Respondents may choose a maximum of two categories.

It is up to the national research team to decide how the groups should be designated or characterised and whether the distinguishing feature is a common language, religion, country of origin, or tradition. However, in each participating country, the end result should be a list with comparable categories. We suggest that the list should include the following categories:

1. The majority;
2. The large autonomous ethnic groups (alternatively: ethno-religious groups or linguistic groups) (perhaps subdivided);
3. Small groups who enjoy cultural autonomy;
4. Immigrants from EEA states or immigrant groups from the same continent as the country in which the survey is being conducted who enjoy freedom of establishment;
5. Immigrants from other European countries/immigrants from the same continent as the country in which the survey is being conducted who do not enjoy freedom of establishment;
6. Immigrants from the former colonies;
7. Immigrants from other continents (can be subdivided into two categories);
8. Special groups (for example, the ethnic German repatriates (*Aussiedler*) in Germany, or the Roma in Southeastern Europe).

Result: The Measurement Instrument

Using a country-specific list of categories, the instrument for the measurement of ethnic background covers both the majority group and the minorities found in the country in question, irrespective of whether these minorities are defined by language, religion, country of origin, or culture. The national list produced by each participating country should feature all visible groups. An open residual category can be used to accommodate small groups. Respondents self-identify their ethnicity. They may assign themselves to a maximum of two categories.

In a second step, output harmonisation is carried out by allocating the national groups to superordinate categories to facilitate a comparison of types.