

**TECHNICAL REPORT OF THE SWISS HOUSEHOLD PANEL :
RECODIFICATION OF VARIABLES FOR FIVE SOCIAL STRATIFICATION SCHEMAS**

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1. INTRODUCTION

The Swiss Household Panel includes five social stratification schemas that have been added to the original data file. A detailed scientific description can be found in Bergman and Joye (2001). This technical report is more explicit about how these schemas were derived with regard to the methods and variables.¹

Five social stratification schemas will be described in this text. These are, in alphabetical order, the Cambridge Social Interaction and Stratification Scale (CAMSIS)², the Goldthorpe Class Schema³, the Swiss Socio-Professional Categories (CSP-CH)⁴, the Treiman Prestige Scale⁵, and the Wright Class Structure⁶. The CSP-CH has been constructed specifically for Switzerland, while the other four are part of an international tradition of stratification and mobility research. Three of the schemas are categorical and multidimensional in their construction (CSP-CH, Goldthorpe, and Wright), while the two others (CAMSIS and Treiman) follow a unidimensional logic and are continuous (although their theoretical presuppositions and methods of construction differ greatly).

The construction and graphs in this report refer to the current situation or position of the respondents. They may be adapted to the respondents' parents or the respondents' former situation or position. The correspondence between the variables and

¹ Obviously, the algorithms used here are the most recent. They are available at the Swiss Household Panel (<http://www.swisspanel.ch>), as well as at SIDOS (<http://www.sidos.ch>).

² Cf. Bergman et al.(2002).

³ Cf. Erikson and Goldthorpe (1992).

⁴ Cf. Joye and Schuler (1995).

⁵ Cf. Treiman (1977).

⁶ Wright has developed a number of recodifications. Here, we use the most recent version. Cf. Wright and Cho (1992) or Wright (1997).

the various social stratification positions are presented in the appendix, as are descriptions and the list of the variables for each recodification.

2. THE BASE INDICATORS

All social stratification measures presented here are fundamentally based on the respondents' occupational titles, which were coded in great detail by the Swiss Federal Office of Statistics⁷. This Swiss-specific code was then recoded into the International Standard of Classification of Occupations (ISCO-88), which was developed by the International Labour Office⁸. The use of stratification schemas based on occupational titles – traditional in this field – has as a consequence that only people who declare an occupational title can be classified. Some researchers have used former occupational titles or the occupational title of the head of household to infer the social position of those individuals who are currently not employed. Because this practice is theoretically problematic, we have not made this step but leave it up to the researchers to pursue this avenue.

Other variables included in the construction of certain stratification schemas:

- a) Occupational status (self-employed or not);
- b) The number of employees (for the self-employed);
- c) An indication on the hierarchical position for employees;
- d) Attained educational level.

The way in which the various variables are taken into account depends on the specific details of the occupation and the theoretical or practical choices that were made by the originators of the schemas. These and other aspects account for the complexity of most recodification tables.

⁷ Cf. Joye and Schuler (1995). For a discussion on how occupations are to some extent reflections of their national and temporal context, see Levy (2002).

⁸ If some minor adjustments are made in order to adapt it to the European context, the label ISCO-88 (COM) is used. Cf. International Labour Office (1990). *International Standard Classification of Occupations, ISCO-88*. Geneva: ILO.

3. RECODIFICATION SUMMARY

3.1. Wright's Class Structure

The classification presented here was developed several years after the first and second versions (cf. Western & Wright, 1994). It was used in particular for the study of social mobility. Its main advantage, already present in Wright's second classification, rests in the explicit use of three dimensions: authority, expertise, and property. These dimensions form seven categories, instead of the twelve that Wright proposed in his second version. The reduction from twelve to only seven cells obviously increases the cell counts and, thus, statistical power.

A number of choices were made for the operationalisation and adaptation of this schema, some of which are by necessity rather arbitrary.⁹

- a) Most cases of self-employment were unproblematic. In some cases, we attributed this status to family members employed in their own family business, as well as to those who considered themselves employees of their own enterprise.
- b) The demarcation between "middle-class" and the "petty bourgeoisie" is often based on whether or not the respondent has employees. Here, by homogeneity with other classification schemas, we set the minimum qualification criteria to ten employees.
- c) Competence derived from educational attainment are qualified in several ways:
 - i) Directly relating to the occupation: ISCO-88 includes in its occupational classification an explicit reflection on the relations between educational attainment and occupational titles;
 - ii) According to educational and training trajectories normally followed by those with a particular occupation as established from the Swiss Population Census of 1990;
 - iii) Based on the respondents' attained educational and professional qualifications, whatever the relevance to their occupation.

Technically, the following rules were followed:

- a) "Owners/Employers": self-employed and at least 10 employees;
- b) "Petty bourgeoisie": self-employed and less than 10 employees

⁹ This recodification differs slightly from that of Levy et al. (1997).

- c) “Managers-Experts”: professional leading¹⁰ or supervisory role, as well as an advanced educational attainment;
- d) “Managers”: salaried with supervisory position and not yet classified in any of the above categories;
- e) “Professionals”: salaried with advanced educational attainment but without supervisory functions;
- f) “Semi-Professionals”: salaried with either advanced or middling educational attainment and with middling professional requirements;
- g) “Worker”: other workers.

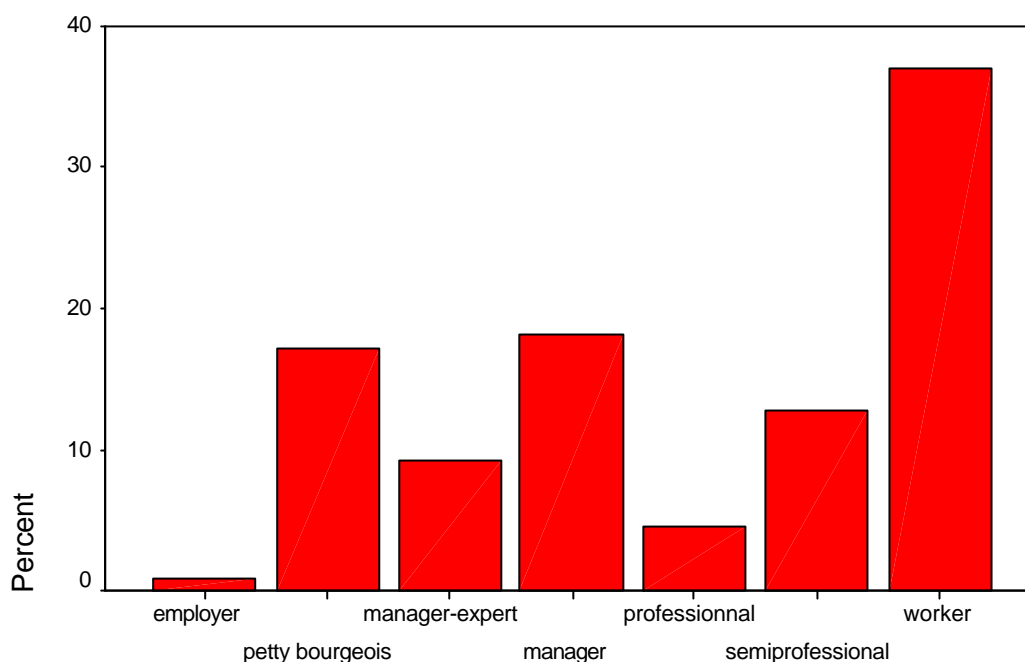
Table 1: Wright 3 Class Distribution in Switzerland (in %; n=4946; SHP 1999)

Owners		Employees		
		manager-	professionals (4.6)	Experts (13.8)
employers (.9)		experts (9.2)		
	petty bour- geoisie (17.3)		semi- professionals (12.7)	Semi- Experts (12.7)
		managers (18.2)	workers (37.1)	
				Nonexperts (55.3)
Managers (.9)	Non- Managers (17.3)	Managers and Supervi- sors (27.4)	Non- Managers (54.4)	

This classification can be applied with even less information. This makes it possible to classify the respondents’ parents or their spouses, for whom there is less information available.

¹⁰ Using the 1-digit major groups.

Figure 1: Classification of Respondents according to Wright 3 (in %; n=4946; SHP 1999)



Wright:Current main job

Cases weighted by WEIP99TS

The variables used here are occupational title, occupational status (self-employed or not), and, if applicable, the number of employees. Variable details can be found in the appendix.

3.2. Swiss Socio-Professional Categories

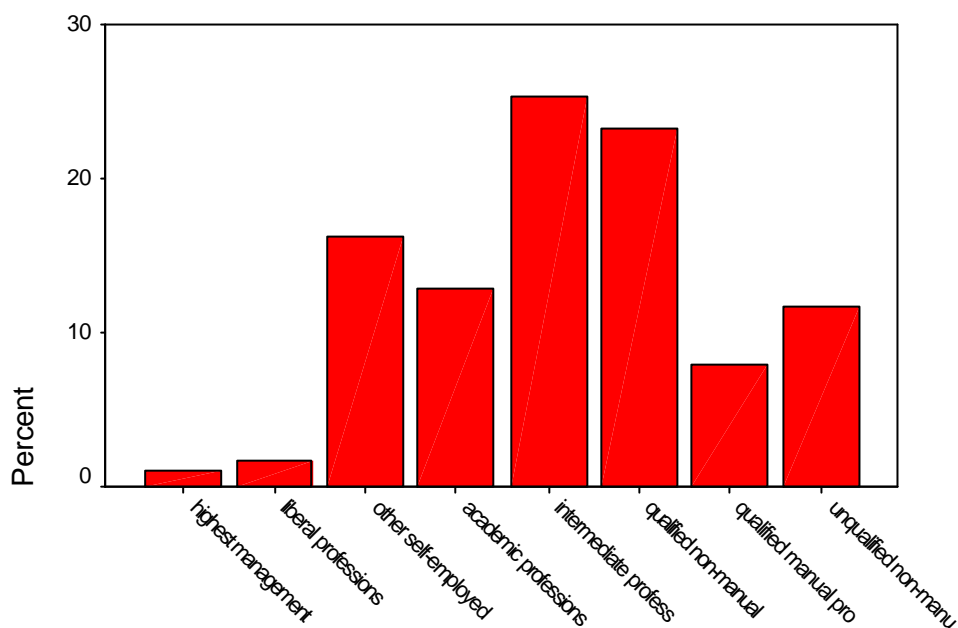
The Swiss Socio-Professional Categories (CSP-CH; Joye & Schuler, 1995) are based on the occupational coding of the Swiss Federal Office of Statistics, as well as educational achievement. The logic of the first level of the CSP-CH is as follows:

Table 2: Swiss Socio-Professional Categories

EDUCATION POSITION	University	Technical and Professional	Apprentice- ship	Compulsory Education or Less
Top Executives	1) top executives			
Self-Employed	2) liberal professions	3) self-employed		
Wage-Earners	4) intellectuals and managers	5) middle employees	skilled: 6) non-manual 7) manual	8) unskilled

The significance of an educational attainment may vary according to the details and title of an occupation, which has been taken into account in this schema. For example, a particular employee could be classified as being part of the intellectual professions based on her degree of managerial responsibility, without necessarily having a university education. Other detailing qualifications were initially planned but its actualisation is rarely possible due to data limitations. The table of the CSP-CH codes is reproduced in the appendix.

Figure 2: Classification of Respondents according to CSP-CH (in %; n=4600; SHP 1999)



Swiss socio-professional category: Current main job

Cases weighted by WEIP99TS

The variable name for this schema is CSPMAJ\$\$¹¹ and incorporates information from the following variables: occupational title, educational achievement, occupational status (self-employed or not), and, where relevant, the number of employees. The categories are described in detail in the appendix.

¹¹ CSP-CH of the respondent; \$\$ refers to the year of data collection.

3.3. Goldthorpe's Class Schema

The first Goldthorpe class schema was based on occupation and occupational status (self-employed, salaried). Originating from Goldthorpe and Hope's prestige scale (1974) and Goldthorpe subsequent class schema (1987), two levels of classification were developed that included seven or 36 categories. Further development in conjunction with the CASMIN (Comparative Analysis of Social Mobility in Industrial Countries) project makes the seven-category schema more suitable for comparative investigations, and it has now established itself as the most prominent schema for comparative intergenerational mobility studies¹². Contrary to earlier versions, the current incarnation requires information on the respondents' number of employees and supervisory function. As a class schema that is primarily used in comparative research, it is most frequently based on ISCO-88.

Ganzeboom¹³ has successfully adapted the most recent Goldthorpe class schema and uses the following codes:

- 1) Higher controllers;
- 2) Lower controllers;
- 3) Routine nonmanual employees;
- 4) Self-employed with employees;
- 5) Self-employed without employees;
- 7) Manual supervisor;
- 8) Skilled manual employees;
- 9) Semi- and unskilled manual employees;
- 10) Farm labour;
- 11) Self-employed farmers.

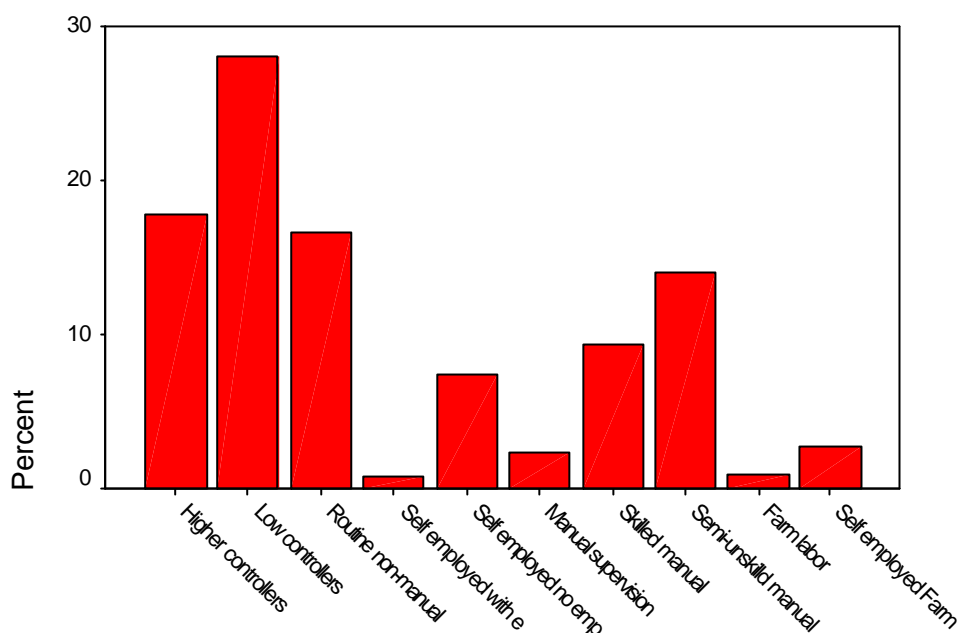
It is more difficult than with other schemas presented here to assess how respondents are classified because several dimensions are integrated in complex and unspecified ways.¹⁴

¹² Cf. <http://www.fss.uu.nl/soc/hg/isko88/>. The code 6 does not exist in this version.

¹³ Cf. <http://www.fss.uu.nl/soc/hg> but also Ganzeboom and Luijckx (2001).

¹⁴ See Bergman and Joye (2001) for a more detailed discussion.

Figure 3: Classification of Respondents according to Goldthorpe (in %; n=4874; SHP 1999)



Goldthorpes class schema: Main job

Cases weighted by WEIP99TS

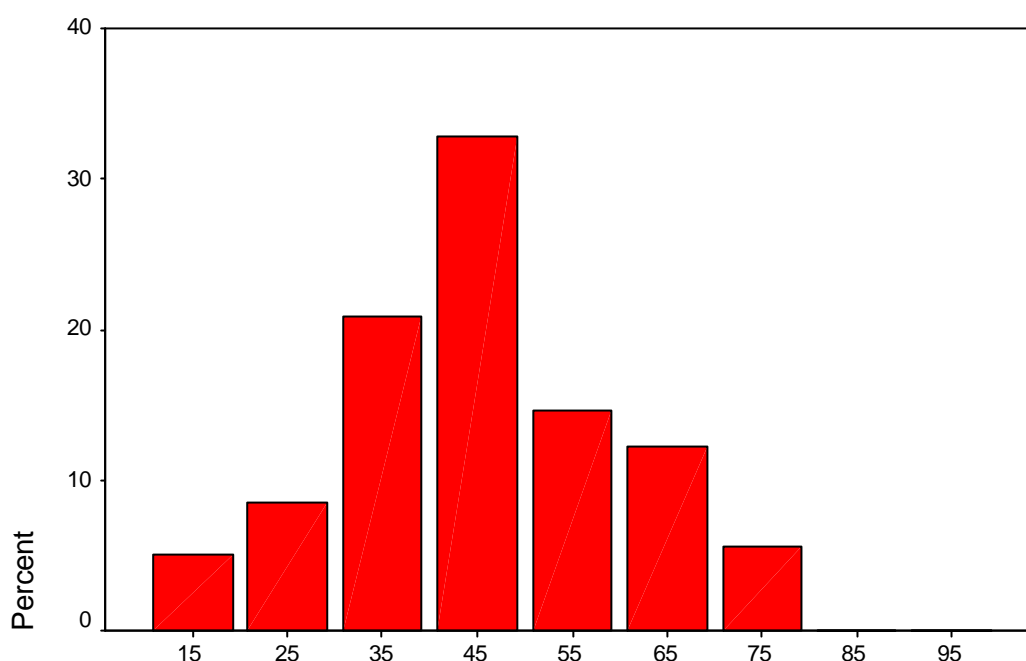
The variable name for the Goldthorpe class schema is GLDMAJ\$\$ and has been derived from the occupational title, educational achievement, occupational status (self-employed or not), and, if necessary, number of employees. Details can be found, once again, in the appendix.

3.4. Treiman's Prestige Scale

According to the procedures followed by Treiman, prestige is measured directly from occupational titles. The prestige scores range between of 0 (lowest prestige) and 100 (highest prestige; Treiman, 1977). Also, this stratification schema has been adapted to the ISCO-88¹⁵. Although updated in collaboration with Ganzeboom, it should be noted that the Treiman Prestige Scale dates from the 1970s, which raises a number of questions with regard to whether the scale and its implications still apply today. Nevertheless, its high correlation with other stratification measures is reassuring in this regard.

¹⁵ Cf. <http://www.fss.uu.nl/soc/hg/isko88/>.

*Figure 4: Classification of Respondents according to Treiman
(recodification of a continuous scale, in %; n=4871; SHP 1999)*



TRIMAJ99

Cases weighted by WEIP99TS

Following the syntax files made available by Ganzeboom, only the occupational groupings according to ISCO-88 were used.

3.5. CAMSIS

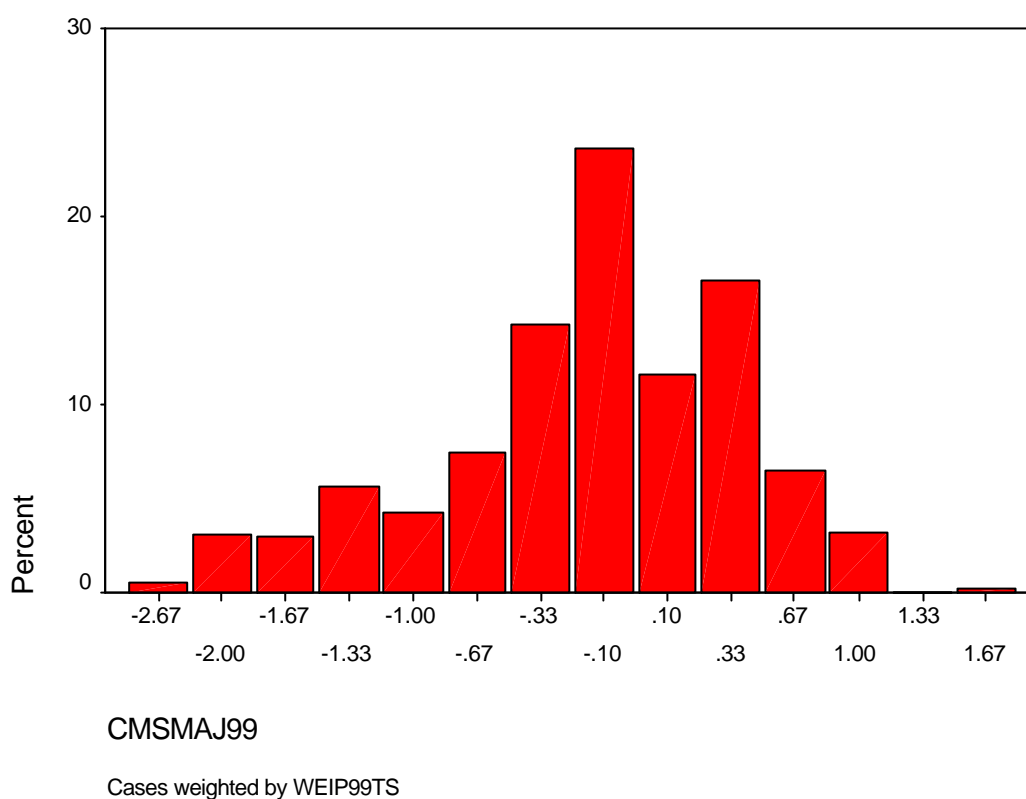
The Cambridge Social Interaction and Stratification Scale (CAMSIS) is based on the idea that social structure can be expressed by the social distance between individuals, for instance through the co-occurrence of occupations that individuals hold and the relationships that they form with each other¹⁶. The social proximity is reflected in the occupations people hold and the associations that they form. CAMSIS has been developed initially from friendship networks and, subsequently, from cohabiting couples (Stewart, Prandy, & Blackburn, 1980). For Switzerland, the Population Census of 1990 was used to examine the probability of co-occurrence of occupational titles between cohabiting couples.

¹⁶ For more details, see Bergman, Lambert, Prandy, and Joye (2002).

In the simplest model¹⁷, the distances between occupations of couples are calculated on the basis of the contribution of the cell toward the χ^2 of a contingency table. The χ^2 contribution for each cell is entered into a traditional correspondence analysis, which represents the best possible solution in a two-dimensional space. The first dimension represents the combination of occupations among couples who have the same occupational title (typical examples are couples, who both work together on a farm or a restaurant). The second dimension represents the social distance that is reflected in the typicality of pairings between couples' occupations. It should be added that the scores of a dimensional analysis do not have sociological significance in themselves but only in relation to each other. Here, the value allotted to each occupation (i.e. the score of the dimensional analysis) indicates its position on this hypothetical social axis and, consequently, its distance to others. Subsequently, each occupation of the 4-digit ISCO-88 classification is allotted a CAMSIS score. The current version adjusts for national variations and is sensitive to gender. Other dimensions can be easily accommodated (e.g. ethnicity, geographic region) in order to incorporate specific research interests and hypotheses, and to improve the correspondence between this measure and the social categories within their context.

¹⁷ The current methods for deriving CAMSIS scores are the product of a more sophisticated process and are documented in Bergman, Lambert, Prandy, and Joye (2002), as well as in Lambert, Prandy, and Bergman (2002).

Figure 5: Classification of Respondents according to CAMSIS
(recodification of a continuous scale, in %; n=4875; SHP 1999)



Based on the calculation procedures, the CAMSIS scale is measured on a continuous scale by definition. It is standardised such that its scores range between 0 and 100. The greater the CAMSIS score, the higher the social status of the respondent.

4. CONCLUSIONS

This documentation has introduced some technical aspects of the five social stratification schemas included in the Swiss Household Panel. We would like to end with three qualifiers:

- a) The basis of these social stratification schemas, which tend to hide a significant technical investment, is anchored in different theoretical traditions and versions of social context. Thus, they highlight different views and facets of the social structure and its processes.
- b) Allotting a social position to respondents according to occupation that they held years ago may be highly problematic in that, first, the status of these occupations may have changed in the meantime and, second, they may have experienced significant *intragenerational* mobility since holding their last occupation.

- c) All these stratification schemas are ultimately based on the occupational code of the Swiss Federal Office of Statistics, which contains more than 15000 occupations. The attribution of a social position is highly complex and strongly influenced by numerous and sometimes arbitrary decisions and imprecisions.¹⁸

More generally, the multiplicity of the possible solutions for stratification classification invites continuous comparative work, theoretical reflection, and empirical investigation (Levy and Joye 1994).

5. APPENDICES

5.1. Question Wording

P99W28 : What profession do you hold in your CURRENT job? What exactly do you do?

P99W29 : In your CURRENT job, are you employed by a private household (houseworker, baby-sitter, ...), an employee of a Public Limited Company or Limited Liability Company which belongs to you, self-employed, partner in your relatives' firm or employee of another

P99W31 : How many persons do you employ on a regular basis (not counting yourself)?

P99W34 : Do you hold a position in management, training or production?

5.2. Variables Included in the Stratification Schemas

	Name	Wright	CSP-CH	Goldthorpe	Treiman	CAMSIS
Profession (code OFS)	P\$\$w28	P\$\$w28	P\$\$w28	P\$\$w28		P\$\$w28
Profession (code ISCO)	ISxmaj\$\$ x: the number of digits in ISCO 3, -4, and -5.	ISxmaj\$\$ x: the number of digits in ISCO 3, -4, and -5.	ISxmaj\$\$ x: the number of digits in ISCO 3, -4, and -5.	ISxmaj\$\$ x: the number of digits in ISCO 3, -4, and -5.	ISxmaj\$\$ x: the number of digits in ISCO 3, -4, and -5.	ISxmaj\$\$ x: the number of digits in ISCO 3, -4, and -5.
Formation	educat\$\$	educat\$\$	educat\$\$	educat\$\$		
Position hiérarchique	P\$\$W34	P\$\$W34	P\$\$W34	P\$\$W34		
Situation dans la profession	P\$\$W29	P\$\$W29	P\$\$W29	P\$\$W29		
Nombre d'employés	P\$\$W31	P\$\$W31	P\$\$W31	P\$\$W31		

¹⁸ For a good discussion of this topic, see Elias, P. (1997). Occupational classification: Concepts, methods, reliability, validity, and cross-national comparability. *Occasional Papers*, 20, OECD, Warwick: Institute for Employment Research.

In this table, \$\$ refers to the year of data collection. For example, P99W34 is the variable W34 for the 1999 wave of the Swiss Household Panel.

5.3. Table of Correspondence

	Ego	Father	Mother	Current or most recent occupation
Occupation (FOS code)	P\$\$w28	P\$\$O12	P\$\$O29	P\$\$W111
Occupation (ISCO code)	ISxmaj\$\$ x: the number of digits in ISCO 3, -4, and -5.	IsFAJj99	Is3moj99	IS3LMJ\$\$
Education	educat\$\$	P\$\$O17	P\$\$O34	Educat\$\$
Hierarchical position	P\$\$W34	P\$\$o16	P\$\$O33	P\$\$W117
Occupational status	P\$\$W29	P\$\$o13	P\$\$o30	P\$\$W112
Number of employees	P\$\$W31	P\$\$o14	O31	P\$\$W114

5.4. Second level of CSP-CH

Table 3

Basic Categories for the CSP-CH

Branche prof. CSP Niveau 1	Agriculture	production et construction	services aux en- treprises et dis- tribution	services sociaux et personnels
1. dirigeants				
2. professions libé- rales				
3. indépendants de l'agriculture et des arts et mé- tiers	3.1 agriculteurs ex- ploitants	3.2 artisans	3.34 commerçants et autres indépen- dants des ser- vices	
4. professions intel- lectuelles et d'en- cadrement	4.12 cadres tech- niques		4.3 cadres des ser- vices aux entre- prises et de dis- tribution	4.4 cadres des ser- vices sociaux et personnels
5. professions in- termédiaires	5.12 intermédiaires techniques		5.3 intermédiaires des services aux entreprises et de distribution	5.4 intermédiaires des services so- ciaux et person- nels
6. non-manuels qualifiés : em- ployés	6.12 employés tech- niques		6.3 employés des services aux en- treprises et de distribution	6.4 employés des services sociaux et personnels
7. manuels quali- fiés : ouvriers	7.1 ouvriers de l'agriculture	7.2 ouvriers de la production et de la construction	7.34 ouvriers des ser- vices	
8. travailleurs non- qualifiés	8.1 travailleurs non qualifiés de l'agriculture	8.2 travailleurs non qualifiés de la production et de la construction	8.34 travailleurs non qualifiés des ser- vices	

6. REFERENCES

- Bergman, Manfred Max, and Dominique Joye. 2001. "Comparing Social Stratifications Schemas: CAMSIS, CSP-CH, Goldthorpe, ISCO-88, Treiman, and Wright." *Cambridge Studies in Social Research* 9:1-37.
- Bergman, Manfred Max, Paul Lambert, Kenneth Prandy, and Dominique Joye. 2002. "Theorization, Construction and Validation of a Social Stratification Scale: Cambridge Social Interaction and Stratification Scale (CAMSIS) for Switzerland." *Revue suisse de sociologie* 28:7-25.
- Erikson, R., and John H. Goldthorpe. 1992. *The constant flux*. Oxford: Clarendon Press.
- Ganzeboom, Harry B. G., and Ruud Luijkx. 2001. "Recent Trends in Intergenerational Occupational Class Mobility: Men in the Netherlands 1970-1999." in RC-28. Mannheim.
- Goldthorpe, John H. 1987. *Social Mobility and Class Structure in Modern Britain*. Oxford: Clarendon Press.
- Goldthorpe, John, and Keith Hope. 1974. *The social grading of occupations*. Oxford: Clarendon Press.
- Joye, Dominique, and Martin Schuler. 1995. *Stratification sociale en Suisse: catégories socio-professionnelle*. Berne: Office fédéral de la statistique.
- Lambert, Paul, Ken Prandy, and Max Bergman (2002). *CAMSIS project report: CAMSIS Swiss occupational unit score construction*. Cardiff: School of Social Sciences.
- Levy, René. 2002. "Meso-Social Structures and Stratification Analysis - a Missing Link?" *Revue suisse de sociologie* 28.
- Levy, Rene, and Dominique Joye. 1994. "What is Switzerland's Stratification Like: Classes, Prestige, Gradation, Professional Categories?" *International Sociology* 9:313-335.
- Levy, Rene, Dominique Joye, Olivier Guye, and Vincent Kaufmann. 1997. *Tous égaux? De la stratification aux représentations*. Zurich: Seismo.
- Stewart, Sandy, Kenneth Prandy, Kenneth, and Robert M. Blackburn. (1980). *Social Stratification and Occupations*. New York: Holmes & Meier.
- Treiman, Donald J. 1977. *Occupational Prestige in Comparative Perspective*. New York: Academic Press.
- Western, M., and Erik Olin Wright. 1994. "The Permeability of Class Boundaries to Intergenerational Mobility among Men in the United States, Canada, Norway and Sweden." *American Sociological Review* 59:606-629.
- Wright, Erik Olin. 1997. *Class Counts: Comparative Studies in Class Analysis*. Cambridge: Cambridge University Press.

Wright, Erik Olin, and Donmoon Cho. 1992. "The relative permeability of class boundaries to cross-class friendships: a comparative study of the United States, Canada, Sweden and Norway." *American Sociological Review* 57:85-102.