ISCO-08: Perspectives, prospects and applications

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ISCO in the past

- The International Standard Classification of Occupation [ISCO] has been revised recently into a fourth edition: 1958, 1968, 1988 and now 2008.
- Stratification researchers (and survey researchers in general) have used the 1968 version extensively (e.g. Political Action 1974 study, the Treiman SIOPS scale, various national classifications are derived from it).
- ISCO-88 has become the de-facto standard for classifying occupations in international survey project (ESS, ISSP, SHARE, etc.)
- For both the 1968 and 1988 ISCO edition there are derived scales available for social classes (EGP, ESEC), socio-economic status (ISEI) and prestige (SIOPS). These are heavily used.

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Stated goals of ISCO-08

- Bring occupational classification in line with changed technologies and division of labor (e.g. ICT/IT).
- Make ISCO applicable in a wider range of countries and economies.
- To mend often noted problems with the application of ISCO-88.
- To produce a minor revision, not a totally different classification.

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Problems with ISCO-88 (1)

- Unlike its predecessor (ISCO-68), ISCO-88 is primarily <u>skill</u> oriented. However, in practice the major group differentiation does not closely correspond to major ISCED (education) levels.
- ISCO-68 was more sensitive to employment status (self-employment) and industry.

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Problems with ISCO-88 (1)

- Despite its stated principles, it is hard to pay tribute to skill level differentiation in manual work. ISCO-88 differentiates between (7000) Craft workers, and (8000) Machine Operators, which is similar, but not the same as Skilled versus Semi-skilled Manual Workers.
- In addition, many occupations occur both in the 7000 and 8000 categories.

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Problems with ISCO-88 (2)

- ISCO-88 argued that occupation and employment status are different things and need to be measured separately.
- As a consequences some employers became classified with their employees, in particular there is no distinction between managing proprietors and managers, and not between working proprietors and their employees.

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Problems with ISCO-88 (3)

- Managers were organized into three levels:
  - Corporate managers
  - Department managers [Production, Support]
  - General [Small enterprise] managers.
- The primary distinction here is the <u>number of managers</u> in an organisation, which is not often available in data.
- It is somewhat hard to classify work supervisors [Foremen] in ISCO-88.

Problems with ISCO-88 (4)

- Farmers are hard to classify in ISCO-88, because they appear in 5 places:
  - Operations Department Manager (1211)
  - Small Establishment Manager (1311)
  - Skilled Agricultural Worker (6100)
  - Subsistence Farmer (6200)
  - Farm Laborer (9200)
- None of this corresponds closely to distinctions made in farm work in national classifications.

Problems with ISCO-88 (5)

- ISCO-88 is overly broad in (5000) Service and Sales Occupations.

Problems with ISCO-88 (6)

- It is hard to find fitting codes for 'crude' occupations: factory worker, skilled worker, foreman, semi-skilled worker, apprentice.
- However, in some instances, there is no problem if one used major and sub-major groups codes: e.g. (9000) for Unskilled Worker.

ISCO-08 versus ISCO-88

ISCO-08 groups	ISCO-88 groups
• 10 major	• 10 major
• 34 sub-major	• 28 sub-major
• 120 minor	• 115 minor
• 403 unit	• 363 unit
Total: 567 groups	Total 516 groups

Mergers and Splits

- Mergers: Many-to-one recodes.
- Splits: One-to-one recodes.
- Mergers & splits: Many-to-many recodes.
- All of these occur when comparing ISCO88 to ISCO08.
- When we crosswalk from 88 to 08 (and have no further information), only mergers are relevant.
- When we have ISCO88 and further information (like original verbatim info of original source classification), we also need to consider splits.

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Mergers

Table X2: Mergers that occurred to occupation codes when transferring ISCO-88 into ISCO-08, by number of digits of ISCO-08.

	MERGER						Total
DIGIT08	1	2	3	4	5	5+	
1	10						10
2	30	4					34
3	105	14	1				120
4	317	64	13	5	2	2	403
Total	462	82	14	5	2	2	567

Splits

Table X1: Splits that occurred to occupation codes when transferring ISCO-88 into ISCO-08, by number of digits of ISCO-88

	SPLITS						Total
DIGIT88	1	2	3	4	5	5+	
1	10						10
2	24	1	3				28
3	92	14	7	1		1	115
4	274	56	21	4	1	7	363
Total	400	71	31	5	1	8	516

Major groups

- 10 major groups: Essentially unchanged, with minor changes of titles.
- However: If minor groups have been moved between major groups (see below), this *de facto* changes major groups too!
- The major group that is likely most affected by such shifts is (5000) and in particular (5200) Sales Workers, that now contains a number of Elementary Sales Occupations.

Sub-major groups (2 digits)

- 34 sub-major groups: expanded from 28 major groups.
- Truly NEW:
  - (0100, 0200, 0300) Army ranks (3x)
  - (9400) Food Preparation Workers
- Other 'new' major groups are 'upgraded' or 'merged' minor groups. Roughly speaking, about half of the sub-major groups has remained the same, the other half has a different composition than in 1988.

ICT occupations

- Altogether, ISCO-08 distinguishes ca. 20 ICT occupations, that occur at several levels:
  - (2500) ICT Professionals (11x)
  - (3500) ICT Technicians (5x)
  - (1330) ICT Service Manager (1x)
  - (2356) ICT Teachers (1x)
  - (2434) ICT Sales Professionals (1x)
- Neither (2500) nor (3500) are new – actually both existed already in ISCO-68!

Problem 1: Imperfect skill orientation

- Some ambiguities between (7000) Craft Workers, and (8000) Machine Operators have been removed.
- An NEW feature is the distinction between (8100) Stationary Machine Operators, and (3130) Process Control Technicians, which probably refers to the complexity of the process / machine controlled / operated.

Problem 2: Employment status

- Although somewhat indirect, ISCO-08 has better fitting codes for Large Entrepreneurs and Foreman.
- There is an ambiguous distinction between (1420) Retail and Wholesale Trade Managers, and (5221) Shop Keepers.

Problem 3: Managers

- The implicit reference to firm size (i.e. number of departments) has disappeared, the same things are now referred to by main activity.
- At the sub-major group level Corporate Managers are now longer grouped with department managers, but with (high) Government Officials.
- Major changes occur at the 3-digit and 4 digit level.
  - (1330) ICT Services Managers
  - (1340) Professional Services Managers (9x)

Problem 4: Farmers

- Self-employed farmers can still be coded in as (1310) Managers in Agriculture etc.
- However, it also remains possible to code them with (6100) Market-oriented Skilled Agricultural Workers.
- Interestingly, a NEW feature is that (6200) Subsistence Farmers has now four minor groups.

Problem 5: Crude Sales / Service

- Sales salespersons are split:
  - (5221) Shop Keepers
  - (5222) Shop Supervisors
  - (5223) Shop Sales Assistants
  This is an improvement.
- Also, more levels and locations of sales (market, stall, cashiers) have been regrouped in the sub-major group (5200).
  This has made the sub-major group even more heterogeneous than it was.

Interesting ..

- Cooks are now split up into
  - (3434) Chef [a "Culinary Associate Professional"]
  - (5120) Cooks
  - (9400) Food Preparation Workers
    - (9411) Fast Food Preparers
    - (9412) Kitchen Helper
- I am very happy with this...

Problem 6: Crude occupations

- Some of the new features mend this problem:
  - "Foreman" can now be classified as (3120) Production Supervisor.
  - "Shop keeper" can go in two places.
  - "Skilled Worked" can be more conveniently coded as (7000).

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Interesting ...

- Specialized Secretaries and Office Managers are now in (3000) Associate Professionals.
- Some new occupations:
  - (2230) Traditional and Complementary Health Professional
  - (5245) Service Station Attendant
  - (7234) Bicycle Repairman
  - (9334) Shelf Filler
  - (9412) Kitchen Helper
- Disappeared:
  - (2121) Mathematician, Statistician
  - (6142) Charcoal Burner

How can we reclassify existing data?

- A simple conversions of ISCO-88 into ISCO-08 is not possible.
- Conversion tool will become available, that will do two things at the same time:
  - Straight recode of ISCO-88 into ISCO-08 ('best fit'). Truncate trailing decimals, if this is the only thing that you want or can do.
  - Trailing decimals suggest the amount of alternatives (splits). You will have to consult a separate document to list these options. For this to be usefull you will need original strings or classifications.

How can I generate an ISEI (etc.) for the new classification.

- It will take a while before new data become available in ISCO-08.
- Survey researchers should / will not be keen on using ISCO-08 before derived status scales are available.
- I will recode existing (ISMF) data into ISCO-08, using the preliminary conversion.
- Rerun the old analysis that lead to the construction of ISEI, EGP, SIOPS.

Conclusions

- ISCO-08 is in some respects an improvement of ISCO-88, but it does not solve all its problems.
- One problem may be that the classification has become more heterogenous as the sub-major group level.
- While the changes altogether can be regarded as a 'minor revision', implementing ISCO-08 is by no means minor.
- New occupations have hardly been added. Most of the changes are a reconceptualization of ISCO-88 and in some instances this has lead back to ISCO-68.