11th World Telecommunication/ICT Indicators Symposium (WTIS-13)

Mexico City, México, 4-6 December 2013

Contribution to WTIS-13

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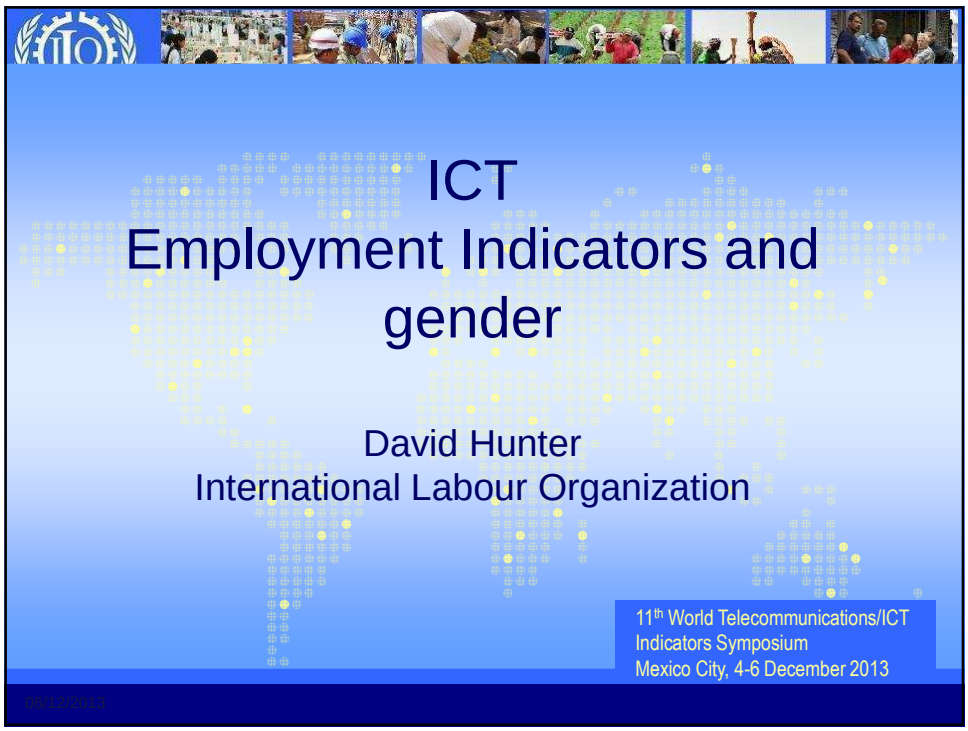

ICT Employment Indicators and gender

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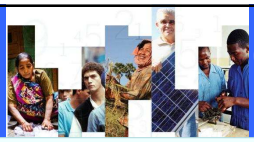
06/12/2013

Why do we need indicators of employment in ICT?



Strong impact of ICT on labour market, and occupational skills and structures

- Persistent need to capture and analyse employment effects associated with the production and deployment of ICT
- Shortages of ICT skills may have a strong impact on economic development and employment growth
- 19 out of 23 responses to OECD questionnaire on ICT policy identified ICT skills and employment as a priority

Inequality in acquisition of ICT skills and employment opportunities among population groups (including women)

- Increasing importance of ICT skills for ensuring social inclusion and access to services and employment opportunities

Policy debate has not been well-informed by good quality statistical information on the structure of the ICT labour market

- No unified, internationally accepted definition of ICT employment

ICT employment and gender

Gender specific issues

- Significantly fewer women than men are employed as ICT specialists and in the ICT sector
  - ➢ Women's share of employment in OECD countries:
    - As ICT specialists = 18%
    - In ICT sector = 30%
  - ❖ Significant variation between countries in women's share of employment as ICT specialists and in the ICT Sector
- Higher proportion of women employed in jobs requiring skill as ICT users?
  - Many of these jobs are in occupations traditionally dominated by women, but detailed analysis by gender has not been done

3 approaches to measuring ICT employment

Employment in ICT occupations

- Jobs that require skills in the production of ICT goods *and services*

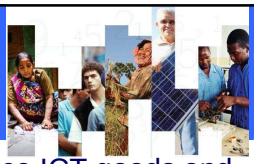
Employment using ICT skills and tools

- Jobs that require skills in the use of ICT

Employment in the ICT Sector (by industry)

- Jobs in establishments that mainly produce ICT goods and services

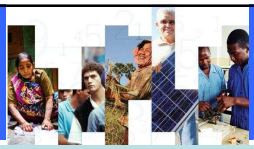
Employment in the ICT Sector



- Jobs in establishments that mainly produce ICT goods and services
- Proposed revision of existing core indicator:
  - (ICT 1) Proportion of total business sector workforce involved in the ICT sector (by sex)
    - ➢ Need to add disaggregation by sex
    - ❖ Includes some jobs that **do not** require ICT skills
    - ❖ Does not include **all jobs** that require ICT skills
- ICT Sector is defined as an alternative aggregation of the International Standard Industrial Classification (ISIC Rev. 4):

  'a statistical basis for the measurement, in an internationally comparable way, of that part of economic activity that is generated by the production of ICT goods and services'

ICT Sector in ISIC Rev 4



ICT manufacturing industries

2610 Manufacture of electronic components and boards

2620 Manufacture of computers and peripheral equipment

2630 Manufacture of communication equipment

2640 Manufacture of consumer electronics

2680 Manufacture of magnetic and optical media

ICT trade industries

4651 Wholesale of computers, computer peripheral equipment and software

4652 Wholesale of electronic and telecommunications equipment and parts

ICT services industries

5820 Software publishing

61 Telecommunications

6110 Wired telecommunications activities

6120 Wireless telecommunications activities

6130 Satellite telecommunications activities

6190 Other telecommunications activities

62 Computer programming, consultancy and related activities

6201 Computer programming activities

6202 Computer consultancy and computer facilities management activities

6209 Other information technology and computer service activities

631 Data processing, hosting and related activities; web portals

6311 Data processing, hosting and related activities

6312 Web portals

951 Repair of computers and communication equipment

9511 Repair of computers and peripheral equipment

9512 Repair of communication equipment

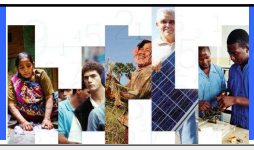
Employment in ICT Sector – data sources

- Requires industry coding at a detailed level of ISIC or a related classification
- Establishment surveys provide data on total employment by economic activity
  - Good quality industry information
  - Breakdown by sex not always available
  - Coverage of informal sector may not be good
- Household surveys (e.g. Labour force survey) and Population Census
  - Poorer quality industry coding
  - Disaggregation by sex is possible and usual
  - Better coverage of informal sector
- Administrative data sources
  - Varying quality, availability and coverage

Employment in ICT occupations

Proposed additional indicator	• Proportion of employment in ICT occupations by sex
Jobs that require skills in the production of ICT goods and services	• Termed 'ICT Specialists' in OECD publications
Includes jobs within and outside the ICT sector	• Approximately half are employed outside the ICT sector
Occupational groups to be defined in terms of the International Standard Classification of Occupations (ISCO-08)	• Proposed ISCO-08 'Thematic view' for ICT occupations

ICT Sub-major groups in ISCO-08



25 Information and Communications Technology Professionals

251 Software and Applications Developers and Analysts

2511 Systems Analysts

2512 Software Developers

2513 Web and Multimedia Developers

2514 Applications Programmers

2519 Software and Applications Developers and Analysts Not Elsewhere Classified

252 Database and Network Professionals

2521 Database Designers and Administrators

2522 Systems Administrators

2523 Computer Network Professionals

2529 Database and Network Professionals Not Elsewhere Classified

35 Information and Communications Technicians

351 Information and Communications Technology Operations and User Support Technicians

3511 Information and Communications Technology Operations Technicians

3512 Information and Communications Technology User Support Technicians

3513 Computer Network and Systems Technicians

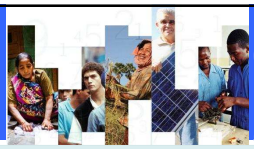
3514 Web Technicians

352 Telecommunications and Broadcasting Technicians

3521 Broadcasting and Audio-visual Technicians

3522 Telecommunications Engineering Technicians

Other ICT related groups in ISCO-08



1330 Information and Communications Technology Service Managers

2152 Electronics Engineers

2153 Telecommunications Engineers

2166 Graphic and Multimedia Designers

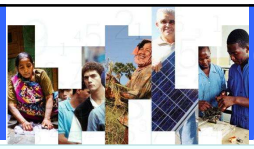
2356 Information Technology Trainers

2434 Information and Communications Technology Sales Professionals

7422 Information and Communications Technology Installers and Servicers

- Identification requires data coded to ISCO-08 4-digit level
- Variations in currently available datasets
- Agreement needed on which of these (and any others) to include

Employment in ICT Occupations – data sources

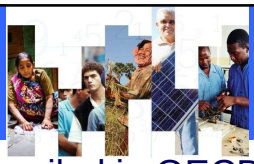


- ✓ For complete information occupation coding is needed at the most detailed 4-digit level of ISCO-08 or a related national classification
  - ➢ Partial information can be obtained from data at 2-digit level
- Establishment surveys frequently do not identify occupations
  - – Breakdown by sex not always available
  - – Coverage of informal sector may not be good
- Household surveys (e.g. Labour Force Survey) and Population Census
  - – The most common and reliable source
  - – Occupation commonly available (almost always in LFS and Census)
  - – Not always coded to 4-digit level
  - – Disaggregation by sex is possible and usual
- Administrative data sources
  - – Varying quality, availability and coverage

Employment using ICT skills and tools

- Jobs that require skills in the use of ICT
- Defined in terms of occupational categories
- Approximately 30% of total employment (OECD average)
- No globally agreed list
  - – OECD has developed a list for ISCO-88 and for several national classifications
    - ICT Specialists
    - ICT Advanced Users
    - ICT Basic users
  - ➢ Many of these occupations have a high women's share of employment
- A moving target!
  - ➢ An increasing number of occupations require ICT skills
  - ➢ Difficult to measure over time
  - ➢ Likely to require data at ISCO 4-digit level
- More development work needed

Currently available data



- Some international data are compiled in OECD and Eurostat publications and outputs
  - Limited coverage for non OECD countries
- National publications and databases
  - Mainly OECD countries
- ILO collects annual data disaggregated by sex for ISCO-08 Sub-major Group 25: Information and Communications Technology Professionals

Next steps

- Need to endorse disaggregation by sex for core indicator on employment in the ICT Sector
- Agreement needed on occupations to be included in proposed new core indicator 'Employment in ICT Occupations'
  - ILO proposes to circulate a discussion paper among practitioners in ICT statistics and national experts in occupation classification
- Further investigation of viability of an indicator of 'Employment using ICT Skills and Tools'