META-ANALYSIS OF GENDER AND SCIENCE RESEARCH

Un resum des del “steering committee”

RTD–PP–L4–2007–1
What is M-AG&SR?

- A study commissioned by the European Commission
  - A consortium led by Fundació CIREM (Barcelona)
    - INOVA Consultancy Ltd. (UK)
    - Université Libre de Bruxelles (BE)
    - Bergische Universität Wuppertal (DE)
    - Institute of Political History (HU)

Maria CAPRILE from CIREM is the Director of Research
Structure and organisation of M-AG&S

- **Coordination Team**
  - Consortium led by **CIREM** (Barcelona)

- **Social Sciences Correspondents**

- **Coordinators of Reports**

- **Bio-technological and natural experts**

- **Steering scientific committee**
  - Irgmard Schultz (Institute Sociological-Ecological Research, Frankfurt)
    - Rapporteur Topic Reports
  - **Teresa Torns**
    - Rapporteur **Country Reports**
Main Purpose of M-AG&SR

☐ to collect and analyse gender and science research:

■ Horizontal segregation in research careers:
  ☐ the choice of scientific subjects by girls and occupational choices by women
  ☐ the perception and attractiveness of science, engineering and technology
  ☐ the causes underlying these choices (e.g. stereotypes, influence of family and role models, etc.)
  ☐ the causes of success and failure at university level, etc.

■ Vertical segregation in research careers:
  ☐ the barriers for women to reach top scientific positions ("glass ceiling")
  ☐ mentoring/tutoring initiatives, etc.
The general objectives of M-AG&SR:

- Provide an exhaustive overview and analysis of all research carried out on gender and science at European, national and regional levels
- Make the study results accessible to researchers and policy-makers via publishable reports and an informed bibliography available
  - database (Gender and Science Database, GSD)
  - website: www.genderandscience.org
- Steer policy-making on gender and science in the years to come
- Define future research priorities within the 7th Framework Programme, in particular through good practice examples and gap analysis in the various research topics
We must remember also...

- **Science:**
  - is understood in its broadest meaning,
  - including social sciences and humanities

- **Geographical and time coverage:**
  - the study covers the 27 EU Member States and Norway, Iceland, Israel, Switzerland, Turkey, and Croatia
  - the research produced in all European languages from 1980 to 2007 will be revised
## Structure of the country Groups

<table>
<thead>
<tr>
<th>Country Group</th>
<th>Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anglo-Saxon Countries</td>
<td>IE, UK</td>
</tr>
<tr>
<td>Continental Countries</td>
<td>A, B, CH, D, F, L, NL</td>
</tr>
<tr>
<td>Eastern Countries</td>
<td>BG, CZ, EE, H, HR, PL, RO, SI, SK</td>
</tr>
<tr>
<td>Nordic Countries</td>
<td>DK, FIN, IS, N, S</td>
</tr>
<tr>
<td>Southern Countries</td>
<td>CY, E, GR, I, IL, MT, P, TR</td>
</tr>
</tbody>
</table>
The eight topics are

1. Horizontal Segregation
2. Vertical Segregation
3. Pay and funding
4. Stereotypes and Identity
5. Science as a labour activity
6. Scientific excellence
7. Gender in research contents
8. Policies towards gender equality in research
General Schema of Country-group report

8 topics

- Findings:
  - Content’s résumé
  - Main difficulties

- Gaps:
  - More specific highline required
  - To establish priorities

- Country-groups
  - Country particularities
Horizontal segregation: Main Findings

- General comments:
  - more female students at universities
  - care work as:
    - a feminine profession... or
    - a masculine absence
  - engineers and ICT’s are:
    - a big hole for women... or
    - the hit parade for men
Horizontal segregation: Main Findings

- **Country particularities:**
  - **Eastern countries**
    - the number of women entering University education increased in 50’s
    - the socialist period: men ≈ women in science/research activities
      - Bulgaria and Romania had more women than men in engineering education in socialist period
  - **Southern countries**
    - the number of women entering University education increased in 70’-80’
    - Portugal *exception*:
      - percentage of women engineers is almost twice as the one in Italy (13.5%), Turkey (14.7%) and Spain (16%)
Horizontal Segregation: Main Gaps

General comments:
- Absence of men studies
- Lack of comparisons of women’s employment in academia versus industry (entry level, experiences, attrition rates...)

Country particularities:
- Anglo-Saxon countries:
  - Lack of research on women’s non-traditional entry routes:
    - i.e. women starting in manual trades as entry routes into Engineering and ICT’s
Vertical Segregation: Main Findings

General comments:

- Decline of women’s advancement is linked to life cycle when:
  - academic careers begin to take off... and
  - qualified women want to have children...
  - glass ceiling and leaky pipeline as indicators of VS...
Vertical Segregation: Main Findings

- **Country particularities:**
  - **Anglo-Saxon countries**
    - women are more likely to be employed as technicians rather than professors
  - **Nordic Countries**
    - women’s involvement in low-prestige cross-disciplinary studies instead of mono-disciplinary
    - women’s predisposition to move to institutional sector from research to school education
  - **Southern countries**
    - low women’s presence in the reins of the research institutions or/and places of taking decisions
Diagram 1. Proportions of men and women in a typical academic career, EU-25, 1999-2003

**Figure 3.1: Proportions of men and women in a typical academic career, students and academic staff, EU-25, 1999-2003**

**Definition of grades:**
A: The single highest grade/post at which research is normally conducted
B: Researchers working in positions not as senior as top position (A) but more senior than newly qualified PhD holders
C: The first grade/post into which a newly qualified PhD graduate would normally be recruited

**ISCED 5A:** Tertiary programmes to provide sufficient qualifications to enter into advanced research programmes & professions with high skills requirements

**ISCED 6:** Tertiary programmes which lead to an advanced research qualification (PhD)

Proportions of men and women in a typical academic career, students and academic staff, EU-27, 2002/2006

Source: Education Statistics (Eurostat); WiS database (DG Research)


Head count (Grades A, B, C)

She Figures, 2009. Preliminary Results
Pay And Funding
Main Findings

General Comments

- Pay gap can not primarily be derived from direct discriminations in pay policies
  - Differences of income are the resultant of the worse chances of women for career advancement
  - Female Scientific&Research employees tend to be concentrated in lower status positions, receive lower pay and benefit packages

- Men receive most of the grants distributed

- Women are underrepresented among the recipients of scientific grants and funding
  - Evidence of an “old boy network” directing the allocation of jobs and positions of influence

- Scientific career not attractive for youngsters
  - Low salaries compared to other intellectual professions
Pay And Funding: Main Findings 2

- Country particularities
  - Nordic countries:
    - a common trend on this topic:
      - male bias in research funding
        - Iceland’s exception
    - The reason is:
      - men are to greater extend engaged in more advantaged and typically mono-disciplinary research proposals
Pay And Funding: Main Gaps

General comments

- What pay penalties do women incur because of career breaks?
  - is this greater than in other sectors?

- Part-time working is related with the gender pay gap in S&R jobs?

- Comparison of the gender pay gap in trade versus professional (academic and industrial) S&R occupations

- Lack of longitudinal approaches

- Gate keeping function and analysis of informal factors for getting access to research funding needs to be explored beside formal factors
Conclusions and Recommendations

- We must remember
  - The results of the meta-analysis should be oriented to help
    - researchers (GSD)
    - policy makers to improve Gender & Science policies
  - Accessibility to database and reports are basic tools

- In order to establish future priorities
  - to underline outstanding research
  - to identify common trends
  - to get deeper explanations

- we should be able to point out essential questions on Gender and S&T
Beyond the leaky pipeline
Challenges for research on gender and science

Final conference of the study 'Meta-analysis of gender and science research'

19th - 20th October 2010

at the Institut pour l'Egalité des Femmes et des Hommes, Brussels, Belgium

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Provisional programme already available
- Provisional programme