Working Group 1 Meeting - COST Targeted Network TA1201

“STRUCTURAL CHANGE IN ACADEMIA:
RECRUITMENT, RETENTION, PROMOTION AND LEADERSHIP
OF WOMEN WITH A FOCUS IN STEM FIELDS”

Women in Higher Education and Research

Prof. Dr. Gülsün SAĞLAMER
Istanbul Technical University

30th of March 2015
Lisboa
Round table 1: Recruitment and leadership in technical universities: two sides of the same coin? Perspectives from rectors and decision makers.

- Helena Nazaré, Former Rector, University of Aveiro, President EUA, PT
- Gulsun Saglamer, Former Rector, Technical University of Istanbul, TR
- Tomas Brage, Dean of Undergraduate Students, Lund University, SE

- Moderated by Inés Sánchez de Madariaga, Technical University of Madrid, former Director of Women and Science Unit, SP
Content

- In the first part of the presentation after a short introduction some quantitative figures will be outlined.
- In the second part of the presentation barriers and resistances towards recruiting and retaining women academics in technical universities will be discussed.
- In the third part, the role of leadership in the recruitment processes will be analysed some experiences will be shared.
- The conclusions will be the last part of the presentation.
Women Access to Higher Education

- The increase in women’s enrolment in higher education in the 20th century has been characterized as a “dramatic progress” (Stolte-Heiskanen, 1991).

- However, women underrepresentation among academics and gender inequalities in academia appear to be persistent and a global phenomena.

- On higher levels women are still heavily under represented and many obstacles remain for female students and researchers pursuing an academic career (Björklund,K., Olsson, A.C.,2004).
Recruitment and Promotions in STEM

‘In STEM areas, recruitment and promotion processes have certain criterion that are strongly based on “scientific excellence” defined by the indicators of research funding, scientific publishing, conferences, prizes and patents.’

Husu, Koskinen identify the tension in regard to excellence as the difficulty of combining gender equality and the promotion of scientific excellence (Husu, Koskinen, 2007).

Academic visibility, networking, mobility also play crucial role in these processes. On the other hand non-transparent structure of formal and informal decision making processes are reducing the chances of women for recruitment and promotions in consequence of cultural and structural barriers (Saglamer, et al., 2014)
Husu and Koskinen discuss the heavily gendered sphere of science and engineering in their research project with 13 member EU countries as well as Serbia, Russian Federation and Chile.

• According to the authors, the main concern for gender sensitive science and research policy lies at the possibility of a successful combination of the promotion of scientific excellence and the promotion of gender equality (2010, 128).

• They suggest that countries should increase transparency and accountability with regard to the criteria of excellence from a gender perspective (138).

• Second, they point at the crucial need for the participation of women to the gate-keeper bodies in science and engineering so that the contribution of men and women to the decisions of excellence could be balanced (138).
Horizontal Segregation-STEM

In order to make full description of the women participation in HE and Research we should look at the representation of women at all levels in HE (SHE Figures of 2012 (pg 31, Fig.1.9- pg.51, Fig.2.1)

• The total number of researchers EU27 and EU15 40% (TR41%)
• PhD graduates: For EU27 and EU15 46% and 45% (TR 45%)

SHE figures (2012, pg 26 Fig1.6)

• The proportion of female researchers in HE is 33% EU27 (TR 36%).
• There are disparities among the different fields of study for female researchers at European level
• Turkey has a far better female representation than the majority of EU(21) and OECD countries in science, engineering, mathematics and computer science. This applies to PhD graduates including also health sciences 60%
Horizontal Segregation - STEM


Proportions of Women with Higher Education Degree, 2000-2010 (Saglamer et al., 2013)
Horizontal Segregation-STEM

*She Figures 2012, Gender in Research and Innovation, Statistics and Indicators, p.54.
Distribution of Female Researchers with PhD Degrees Among the Disciplines in Europe (Saglamer et al., 2013)
Vertical Segregagation-STEM

Comparative analyses are made of the representation of women at different academic levels (A,B,C,D grades) including bachelor, master and PhD levels.

• It was observed that women start with a much higher percentage of representation than men at undergraduate level but this percentage decreases at PhD level and ends up at around 20% for full professorship in Europe, this being an example of a “leaky pipeline”.

• Women represent 44% of grade C, 37% of grade B and 20% of grade A results in EU27 (SHE Figures 2012, pg.Fig. 3.1).

• In science and engineering women’s representation in academia is even lower than other fields: 32% of grade C, 23% of grade B and 11% of grade A (SHE Figures 2012, pg 89, Fig.3.2).
Figure 3.1 /3.2: Proportions of men and women in a typical academic career, students and academic staff, EU-27, 2002–2010, , SHE figures, p. 88, 89

- Women representation at undergraduate level is higher than men in many European countries.

- There are considerable variations in the proportion of women students between disciplines.

- The percentage of full professors who are women is very low worldwide, for the most part, below 15%

Problem: Women in STEM
Vertical Segregation-STEM

• In Turkey in 2012, 42% of academics in higher education were female, with 29% of full prof., 33% of assoc. Prof., 37% of assist.prof. and 49% of res. Assist. are women.

• In EU27 overall, women professors have only 8% representation in engineering and technology, while this ratio is 24.2% in Hungary and 19.1% in Turkey.

• EU27 PhD graduates
  – 40% in science
  – 26% in engineering

• In Turkey PhD graduates
  – 49% of in science
  – 39% in engineering

• In spite of the positive developments in women’s representation in HE&R in Turkey, there are serious problems in the representation of women at decision-making levels. According to the SHE Figures (2010) the highest representation in decision making levels are in Finland, Norvey, Sweden, and Island. The mean value for EU27 countries is 15.5% (SHE Figures pg 115, Fig 4.1). Turkey has only 5.5% women representation at decision-making levels in HE that is the lowest in EU.
Criterion: Research Funding

Accessing national and international research funding resources and performing high success rates in research applications are important bottlenecks for women scientists especially in STEM areas.

The success rates of women for research funding in different EU countries. Among 19 countries women are more successful than men in several countries

Field of Study          No of Country
- Natural Sciences      4
- Engineering & Technology 11
- Medical Sciences      10
- Agricultural Sciences 5
- Social Sciences       6
- Humanities           5

SHE Figures pg 121 Table 4.2 (2010)

Mobility
MCA-IIF* 2007-2012  Gender Balance
2007   27%
2008   26%
2009   32%
2010   29%
2011   30%
2012   26%

40% Female (2007-2012) Total
30% Female (2007-2012) STEM

* IIF Int.incoming Fellow
Research Funding

Depending on the representation of female academics in different countries number of research project applications are lower than male academics but success rates differ from country to country. In some countries female researchers have even better success rates but not applied to all of the scientific fields.

Netherland
NWO Innovation Research Incentives Scheme 2002-2007
TOTAL Veni/ Vidi/ Vici (including additional budget)

<table>
<thead>
<tr>
<th></th>
<th>Male PI</th>
<th>Female PI</th>
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<tbody>
<tr>
<td>Number of applications</td>
<td>4470.5</td>
<td>2055.5</td>
</tr>
<tr>
<td>Number funded</td>
<td>921.5</td>
<td>473.5</td>
</tr>
<tr>
<td>Success rate</td>
<td>20.6%</td>
<td>23.0%</td>
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(TNO, Romijn, October 2008)
PI = Principal Investigator

Turkey
One of the main National Research funding agency is TUBITAK. Under two different programmes (BIDEP and ARDEP) success rates of female and male researchers show no significant differences;

BIDEP: female : 28%  male:26%
ARDEP: female : 37.6  male: 35.6%

(TUBITAK, Basaran 2008)

Scientific Awards by TUBITAK

<table>
<thead>
<tr>
<th>Field</th>
<th>M</th>
<th>F</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mathematics</td>
<td>10</td>
<td></td>
<td>(1974-2007)</td>
</tr>
<tr>
<td>Physics</td>
<td>23</td>
<td>1</td>
<td>(1967 - 2008)</td>
</tr>
<tr>
<td>Astronomy &amp; Space</td>
<td></td>
<td>1</td>
<td>(1977)</td>
</tr>
<tr>
<td>Chemistry</td>
<td>19</td>
<td></td>
<td>(1966- 2009)</td>
</tr>
<tr>
<td>Biology</td>
<td>6</td>
<td>3</td>
<td>(1975- 2004)</td>
</tr>
<tr>
<td>Engineering</td>
<td>38</td>
<td>2</td>
<td>1967 - 2014</td>
</tr>
<tr>
<td>Veterinary</td>
<td></td>
<td>1</td>
<td>(1976)</td>
</tr>
<tr>
<td>Health Sciences</td>
<td>34</td>
<td>5</td>
<td>(1969-2014)</td>
</tr>
<tr>
<td>Social Sciences</td>
<td>2</td>
<td>2</td>
<td>(2008 - 2014)</td>
</tr>
<tr>
<td>Total</td>
<td>13</td>
<td>7</td>
<td>14</td>
</tr>
</tbody>
</table>

TUBITAK SCIENCE AWARDS
1974-2014
137 M 14 F

SOCIAL AWARDS
2009-2014
12 M 1 F

HONOUR AWARDS
1969-2006
79 M 8 F
Barriers, Obstacles and Resistances to Recruitments and Promotions

In recruitment and promotion processes in HE institutions ‘POWER’ distribution should be carefully examined. Countries even in the same country HE institutions may have different power structures.

Who structure the process?

- Who decides about the need for academic staff?
- Who sets the criteria?
- Who forms the jury-evaluation committee?
- Do they make open call? and How ?
- What are the steps for finalising the process?
- Is the process transparent enough?
- Are there Possibility for gender segregation in these processes?
Barriers, Obstacles and Resistances to Recruitments and Promotions

• According to the EU (2012),
• in universities, research institutions and grant awarding agencies, editorial boards of scientific journals, referees, evaluation committees of prizes the vast majority of crucial decision-making processes were established at a time when the presence and impact of women was limited at best.

• While some decision-making processes may have adopted gender mainstreaming principles, in many institutions, gender is seen as a residual or irrelevant consideration in the enactment of power.

• Sometimes institutions try to improve the situation by establishing detailed regulations relating to equality and diversity (FESTA, WP 3.1 Report)

Barriers, Obstacles and Resistances to Recruitments and Promotions

Some Interviewees’ Quotes from ITU collected for FESTA Project

▪ Scientific Excellence

“Scientific excellence means to follow new research directions. One should follow what is newly happening in one’s areas of interest, one needs to learn new techniques, technologies and methodologies in order to achieve scientific excellence. Our departmental goal is to welcome new faculty staff who are open minded and from different backgrounds.”

“Above of all the criteria, we have some general rules such as being a good person. A researcher should have good communication skills and should be able to get along well with others. While doing progressive and creative research, one should respect other colleagues. Whenever a researcher from any level is joining our department, we all look for good communication skills since the laboratories are the places that we all use. If a small dispute occurs between people, then we all become discouraged. So, effective communication skills are one of the key elements, of course after the academic requirements that we apply while evaluating the candidates.” (M, ITU)

▪ Lack of Trust

“Although the criteria for promotion are clearly defined by the Council of Higher Education, it all depends how the jury members interpret those criteria. So, this is all about how lucky you are.” (F, ITU)
Barriers, Obstacles and Resistances to Recruitments and Promotions

Individual level

- Less chance mobility

“I had been accepted to take part in a very famous project carried out very famous academics in their subject area. A great project after all. They were also paying very well. I decided to take part and ITU also told me that they accept my participation. The project coordinators wanted me to begin immediately. However, my husband and my family told me to stay in Turkey by saying that I have kids and family. I couldn’t enjoy the opportunity for this reason. I was going to design robots for the elderly and the disabled but I had to sacrifice it for my family and children “(F, ITU).

- Preference to start family

“I have never thought to have a child until I became an assistant professor. It is very important to find a position at university at first and then to plan having a child at second. And I never thought of a second child. Explicitly, one’s career, one’s position has an influence on having a child. “(F, ITU)
Barriers, Obstacles and Resistances to Recruitments and Promotions

- **Career Breaks**

  "My motherhood comes first. I spend time with my children first. I have two children. I am a bad researcher. I became an associate professor after 10 years I got assistant professor position. I always give priority to my children. I admire female researchers who have successful careers. I could not become one of them". (F, ITU)

  “Household responsibilities and child caring might be obstacles for a female researcher’s career. The jury members cannot help women but their husbands can help. Husbands need to have training in this regard. The only thing that jury members can do is to understand when there is a career break due to childbirth, and this should be treated differently from a male candidate’s career break for which no reason is given.” (F, ITU)
Discrimination (NETFA, 2014)*

The most frequently mentioned examples of discrimination against women were (from the questionnaires);

- unequal representation in leadership positions in teamwork,
- allocation of economically rewarding functions/positions/duties to men,
- assignment of heavier work loads or teaching hours to women,
- comments on the private life of pregnant women

(ie remarks like “Don’t plan any more babies”, “You have slowed down since you had a baby”)

Informal Networks

Both women and men mentioned discrimination based on being a member of certain groups or cliques in the university. Such memberships, it was said, provided or barred opportunities of various sorts in recruitment, promotion, awards, etc.

* NETFA Network of Female Academics (National Project carried out by 7 Universities)
Barriers, Obstacles and Resistances to Recruitments and Promotions

**Organisational Level**

- **The case of pregnancy**

  ‘I got pregnant during the last year of my Ph.D. I could not tell that situation to my supervisor for a long time, I was so afraid of being kicked off. Supervisors tend to think that one cannot write a thesis in such circumstances’ (F, ITU)

  “for female faculty members having a baby is very critical. They take more responsibility for child caring inevitably as a result; their academic progression is slowing down. When I observe my female colleagues, I feel it is not smart to give a birth until becoming an associate professor.” (M, ITU)

- **Positive Institutional culture**

  ‘My gender did not affect my career negatively. Instead I got a Humboldt scholarship because of my gender. Positive discrimination for women helped me to gain the scholarship. If you are applying for a scholarship or a grant and if there is only a few women applying, then your chance is increased’ (F, ITU)
Barriers, Obstacles and Resistances to recruitments and promotions

Cultural Level

- **STEM for Men**
  ‘I believe engineering is mostly dominated by men. Female engineers who are determined to proceed in this field are also successful. But in general women do not prefer such areas and this is why such areas are dominated by men. (M, ITU)’

- **Family Responsibility**
  “Being married and having a child are necessities in a woman’s life and these necessities are all slowing down your career progression. But I believe such necessities are less influential in slowing men’s career progression. A male researcher can sweep away his wife with him to everywhere. If a man says lets go to a foreign county, then his wife can go with him from one place to another.” (F, ITU)

- **Informal Networks**
  There are male networks in the academy. Men help and support each other. A resistance towards women is seen clearly in research positions, research resources, power and influence. (Benchert, S., Staberg, E.M. 2001).
‘Women, Research and Universities: Excellence without Gender Bias’ defined the action areas to improve the women representation in Science:

- Leadership, vision and strategy
- Types of measures for structural change
- How to make implementation
- Gender dimension in research
‘Progress on gender equality at universities is critically dependent on visible commitment from the top. It is crucial that the ultimate responsibility for achieving change is steadfastly shouldered by the university’s highest leadership and that those responsible for implementing policy throughout the university have direct access to and leverage with the university rector and / vice rector with a specific responsibility for gender equality’

LERU, 2012
Leader and Leadership may play a crucial role here by

- Securing Transparency at all levels of the process
- Securing gender bias free criteria for appointment or promotion at different levels
- Achieving gender balance at all decision making levels
- Creating gender perspective and gender awareness
- Building Trust & Encouraging women academics to apply
- Improving Work-Life Balance
- Role Models and Mentoring
- Implementing and Monitoring Gender Equality Action plans
- Integrating top down and bottom up initiatives for gender equality to make the things happened
My Own Experience


- Setting a role model
- Improvement in work-life balance
  - In campus housing
  - Nursery-Primary and high schools
  - Flexible working hours
  - Providing fund for mobility
- More women in recruitment and promotion committees
- Achieving transparency in recruitment and promotion processes
- Encouraging women academics to apply for promotions
- Inviting more women advisors than men and increasing the visibility of women academic staff
- Appointing 3 women vice rectors in 8 years
- Appointing more women deans
- Organizing formal and informal meetings at faculty and university level to promote the reform process
ITU Case: Proportion of Female Academics/Students %

<table>
<thead>
<tr>
<th></th>
<th>94-95</th>
<th>99-00</th>
<th>04-05</th>
<th>09-10</th>
<th>2012</th>
</tr>
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<tbody>
<tr>
<td>•Professor</td>
<td>16</td>
<td>20</td>
<td>29</td>
<td>32</td>
<td>35</td>
</tr>
<tr>
<td>•Assoc.Prof</td>
<td>31</td>
<td>35</td>
<td>36</td>
<td>42</td>
<td>41</td>
</tr>
<tr>
<td>•Assist.Prof.</td>
<td>28</td>
<td>38</td>
<td>46</td>
<td>39</td>
<td>42</td>
</tr>
<tr>
<td>•Research Assist.</td>
<td>20</td>
<td>35</td>
<td>37</td>
<td>45</td>
<td>46</td>
</tr>
<tr>
<td>•Total</td>
<td>28</td>
<td>31</td>
<td>36</td>
<td>39</td>
<td>42</td>
</tr>
</tbody>
</table>

Female Students 34% Total, 38% Master, 42% PhD (2012)
European Women Rectors’ Conferences

I. “Women Academics Beyond the Glass Ceiling: Women Rectors Across Europe” (11th November 2008)
This meeting was organized as pre-conference meeting of the UNICAFE conference titled “Beyond the Glass Ceiling: Women Academics in Engineering, Technology and Life Sciences Across Europe”. 20 participant from 9 countries.

II. European Women Rectors’ Conference Women Rectors Across Europe, Women Leadership in Higher Education: (12-14 April 2010, Istanbul);
42 participants were registered (12 Turkish and 30 international)
49 participants were present (28 international and 21 Turkish)

III. European Women Rectors’ Conference: Beyond the Glass Ceiling Achievements, Challenges and Opportunities (21-23 May 2012)
79 participants, with some 60 of these coming from 29 countries in Europe and Asia, and also from Africa.

IV. European Women Rectors’ Conference May 2014, Istanbul
We have over 80 participants from 30 different countries
82 participants, with some 60 international from 29 countries and 22 national participants, 7 keynote speakers, 30 presentations in parallel sessions

V. European Women Rectors’ Conference May 2016, Istanbul
Istanbul Recommendations

RECOMMENDATIONS

Recommendations for Academic Leaders / Leadership

• **Creating awareness among decision makers** to make them recognize, observe, analyze and understand the mechanisms of horizontal and vertical segregation in their institutions, and forms and causes of resistance against removing this segregation and other inequalities.

• **Making visible the external and internal constraints for gender equality** and giving them priority according to their impact on the problem and also the institution’s and leadership’s capabilities to remove these constraints.

• **Showing leadership in making the university community aware of the importance of this problem and persuading them to foster the idea of gender equality** (acting as a change agent)
Istanbul Recommendations

• Planning and preparing a social environment for change to remove cultural barriers for gender equality
  – Organizing informal meetings to discuss the gender equality issue at department, faculty and university levels
  – Including questions on realization of gender equality in university level workplace surveys
  – Inviting inspiring role models to the university to meet with the academics and students
  – Sharing and disseminating good practices with academics in suitable events nationally and internationally
  – Being an active member of NGOs for gender equality in academia

• Crafting a new legal environment to speed up the change process by
  – Preparing and implementing gender action plans at university and faculty level
  – Allocating resources for drafting, implementing and monitoring of gender equality action offering incentives and recognitions for achievements related to gender equality
  – Providing/taking care of transparency in promotion and recruitment processes
  – Securing equal opportunities for research funding and regularly monitoring success rates
  – Designing work-life balance measures for all academic activities
  – Forming gender balanced decision-making bodies in the university
  – Organizing leadership training opportunities for women academics
  – Including gender equality issues in all leadership training, for women and men
  – Institutionalization and support of gender equality knowledge production by forming research centers, undergraduate/graduate degree programs, advisory groups, etc. on the subject area
Istanbul Recommendations

• Monitoring the change process, measuring the impact of the strategy applied for structural changes to improve the conditions for gender equality and making the necessary adjustment for further steps. Clarifying and specifying the responsibilities and division of tasks in gender equality promotion within the institution.

• Preparing proposals for national and supra-national organizations to remove the external constraints and establishing strong networks to be influential on these authorities
Thank You