Monitoring Gender Equality in Academia: the GenderTime experience

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S. Badaloni - Italian GENDER IN PHYSICS DAY - Rome May 10th 2017

GenderTime consortium

The Project's Consortium:

- Egalité des Chances dans les Etudes et la Profession d'Ingénieur en Europe (ECEPIE) (Coordinator)

- Interuniversitaeres Forschungszentrum für Technik, Arbeit und Kultur (IFZ) Austria

- Università degli Studi di Padova (UNIPD) Ita

- Linköping University (LiU) Sweden

- Université Paris Est Créteil (UPEC) France

- Mihailo Pupin Institute (PUPIN) Serbia

- Bergische Universität Wuppertal (BUW) Germany

- Loughborough University (LoU) United Kingdom

- Fundacion TECNALIA Research & Innovation (TECNALIA) Spain

- Donau-Universität Krems (DUK) Austria (evaluation)

- Among 10 partners, there are 8 scientific partners who have implemented self-tailored action plans in their institutions. A technical partner coordinates the project (Ecepie, France).

- 2013-2016

- www.gendertime.org

Self-tailored Action Plans

- Plans included actions such as recruitment, career development and networking, work/life balance measures, equal representation at decision level, elimination of gender stereotypes, promoting a gender culture, etc.

- To guarantee the real implementation of structural change in each Institution a central role was assumed by **Transfer Agents.** They are relevant stakeholders in the academy like heads of institutions or gender equality representative or persons in charge of human resources.

- Due to their Institutional role/position **TA** can follow the implementation of GEP in their own institutions: a way to involve more directly the whole Institution

- UNIPD team - multidisciplinarity

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2 Dept. of Statistical Science
3 Dept. of Philosophy, Sociology, Education and Applied Psycology
4 Vice Rector for Cultural, Social and Gender Relations – Transfer Agent
5 Dept. of Political Science

Mutual learning

- Institutions involved in GenderTime were intentionally very different in terms of size, discipline, history, etc. in order to experiment in various situations and to create a synergy among scientific partners.

- Keyword: mutual learning

- The diversity of the institutions involved can be seen as a positive feature: some granularity issues arise

- In collecting and comparing data (types of contracts, types of career progressions, salaries, ect) huge differences among partner come to evidence. Differences that must be taken into account, mapped in the correct way

- With which granularity we have to compare Institutions? And APs? How to compare a result achieved in a big University with that obtained in a small centre of research? No standard can exist

Granularity issues

General key-questions

- Temporal issues – different paths to measure changes at different times
  - AP at the beginning of the Project → monitoring tool applied after to verify is some structural change occurs → new AP
  - Analysis and monitoring tool applied to study the situation → AP → new monitoring tool
- Formal issues
  - in STEM we tend to give formal definition of concepts
  - When different disciplines are involved this process becomes quite difficult: eg what is an indicators? It's the results of a computation among specific variables or the empiric measure of a concept?
- Are guidelines at the end of a project useful? Yes but…how many guidelines exist? Now there are many toolbox online

http://www.gendertime.org/toolbox/toolbox.htm

Each **Gender Equality Action Plan (GEP)** is composed of **actions** which specify in detail what will be achieved in the GEP implementation timeframe.

One or more actions contribute to Objectives that can be linked to the implementation phases (see GenderTime process prespective) or to action application areas (see EIGE domains of application or the PDF document).

OVERALL OBJECTIVES

UNIPD Action: Observatory for Equal Opportunities

- **Osservatorio di Ateneo per le Pari Opportunità –** built in October 2013

- The aim of collecting and organizing data on the presence of women at any stage of their career path at UNIPD

- It is a gender equality organism connected to 'Commissione per le Pari Opportunità' and to the CUG 'Comitato Unico di Garanzia'

- Since many data are not available as statistical data, in 2014 we decided to launch a campaign of data retrieval on the Composition of Commissions, Boards, Decision Making bodies, etc from a gender point of view. The same research repeated in 2016

UNIPD Actions

- **Gender Budgeting** o Bilancio di Genere: keyword of Structural change projects
- at UNIPD we will do it before summer 2017 –
- Steps
  - Genovate Workshop in Naples in Febraury 2016
  - School for High-middle level Administrative Staff in June 2016
  - Commission nominated by the Dean that is working on collecting data from institutional sources: the services are directly involved
- **Education/dissemination of Gender Culture**
- PhD Students of BioScience School
- Two Courses titled ENHANCING GENDER AWARENESS IN SCIENTIFIC RESEARCH. SEMINARS ON GENDER EQUALITY IN SCIENCE
- New one open to all PhD Students May 25-May 26 2017

About sustainability

- About sustainability of achieved results when a project finishes:
  - the realization of a permanent organism (like UNIPD Observatory fo Equal opportunities) able to collect data on gender to monitor possible changes
  - the sustainability of electronic tools (portal, e-mailing lists, Electronic version of the Toolbox) as GenderTime will continue to do for at least 2 years after the project end
  - the synergic exchange of knowledge and practical experience in the framework of the Structural Change Projects to select the best practice, the best action to implement, what is worthy and what is not?

The world need Science and Science needs Women. And good solutions need reliable statistics and indicators.
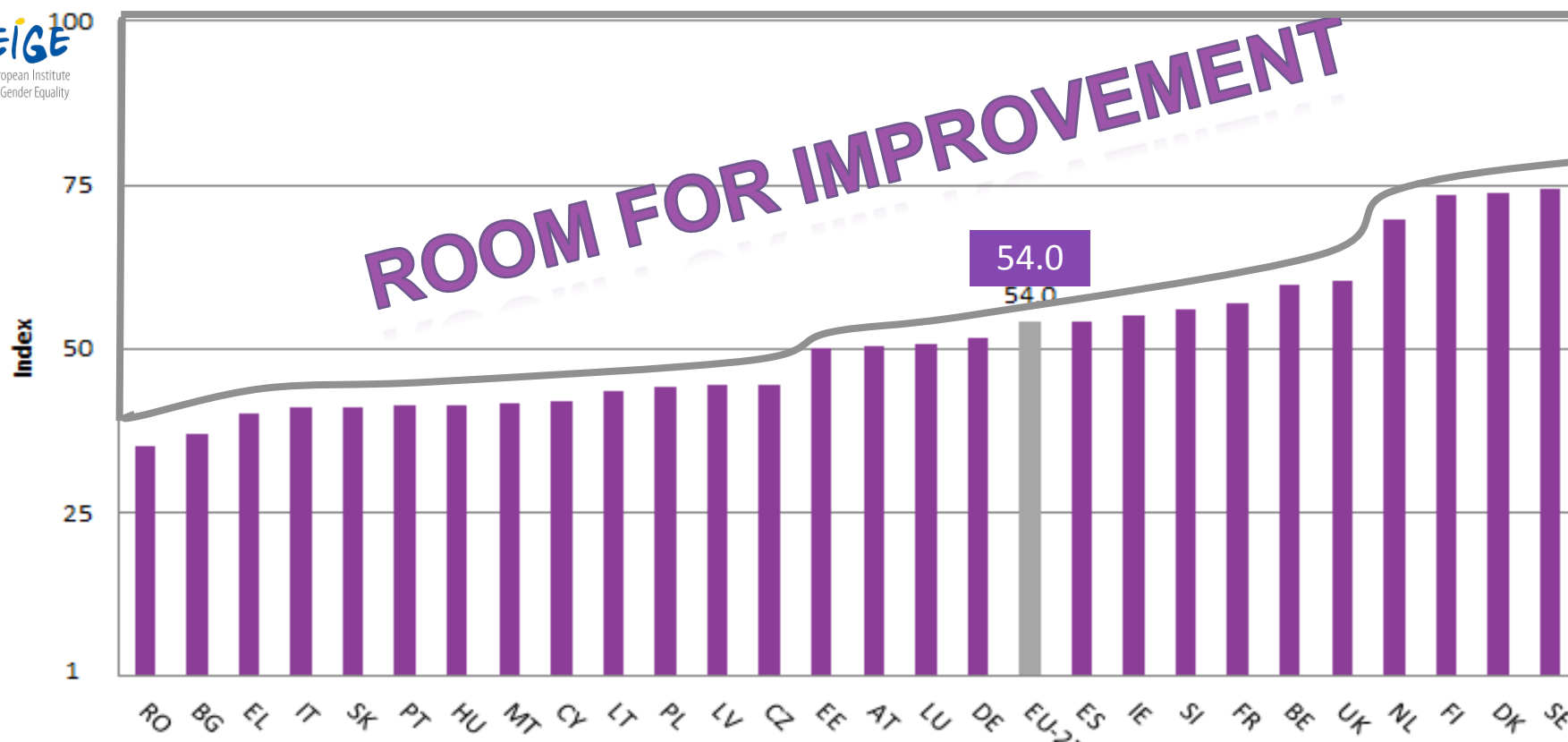
How to measure gender equality?

- Main objective: the definition of a new specific set of gender indicators to be used in Research and Academic Institutions.

- The idea was that of getting an instrument for measuring the degree of implementation of gender policies in Academia at different times

- State of the art of indicators

- The most robust measurement tool is the EIGE – *European Institute for Gender Equality* - Gender Equality Index

- It measures the gender equality in different european countries

- It is an absolute Indicator where 1 stands for no gender equality and 100 for full gender equality
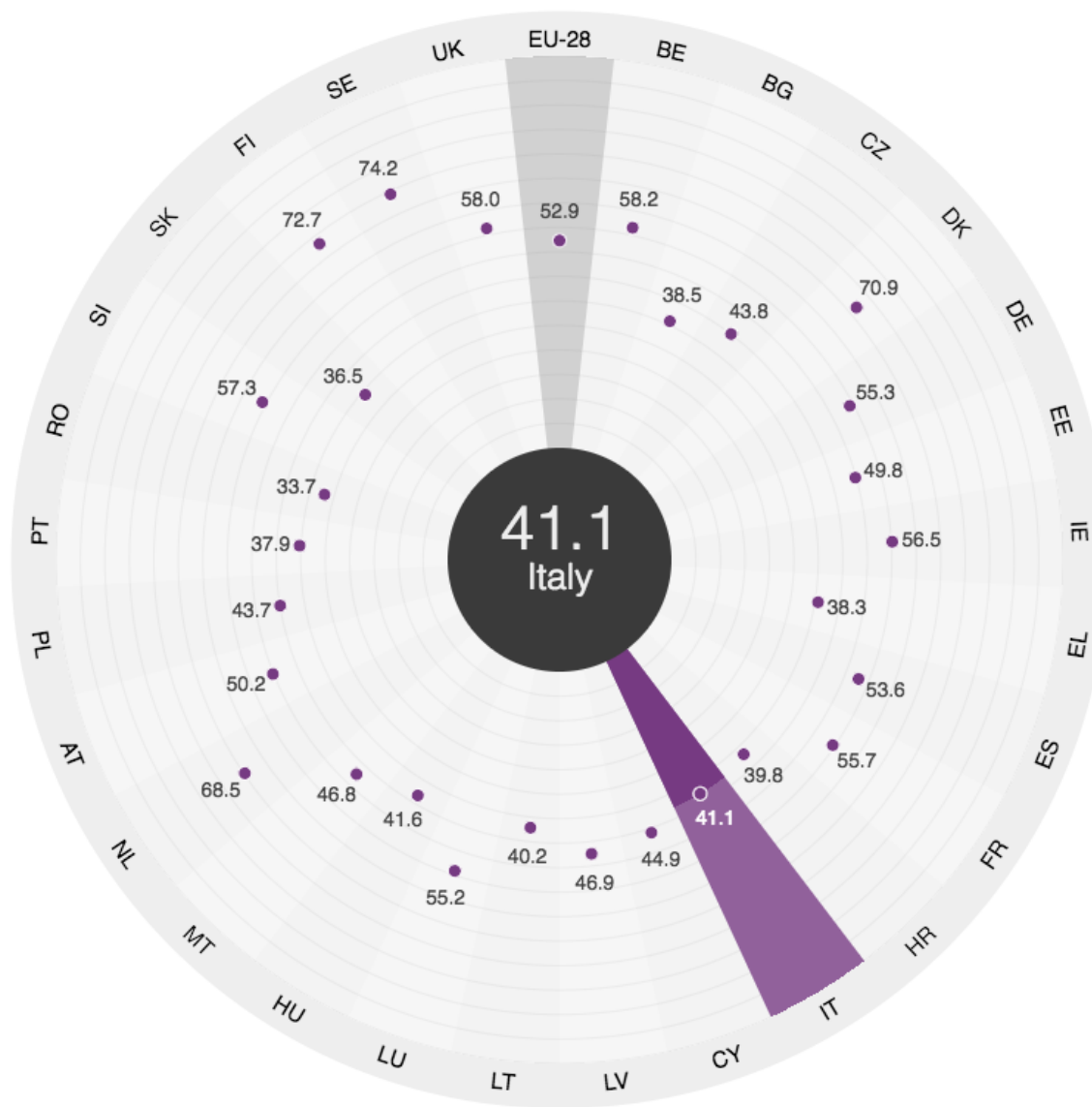
Halfway towards Equality

ROOM FOR IMPROVEMENT

54.0

54.0

Index

100 — 75 — 50 — 25 — 1

RO BG EL IT SK PT HU MT CY LT PL LV CZ EE AT LU DE EU-27 ES IE SI FR BE UK NL FI DK SE

EIGE approach has been developed for population and countries not for Universities - 2013

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The EIGE domains and sub-domains

GenderTime
Gender Equality Index UNIPD-GEI
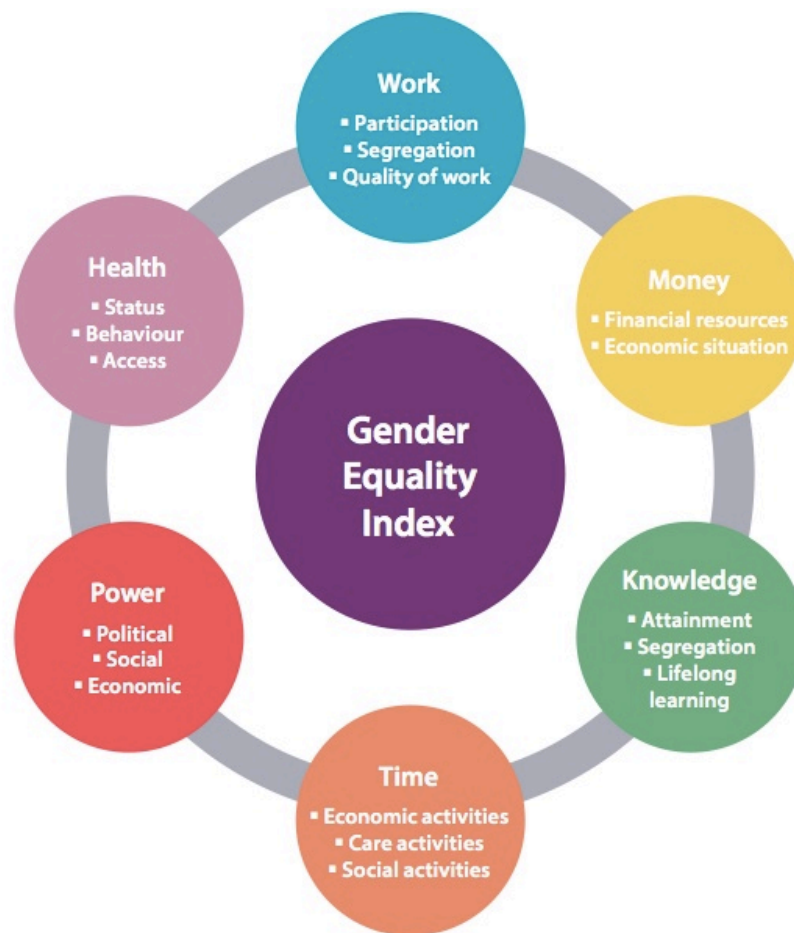
1. GEI for Academic Institutions:
   - EIGE approach has been developed for population and countries not for Universities or Research Institutions
   - We need to **re-define** and **specialize** the model for Academic Institutions
   - To integrate other approaches proposed for Academic Institutions in the framework of EU Project **GenisLab** that elaborated three indicators in the framework of gender budgeting: *time, space and money*.
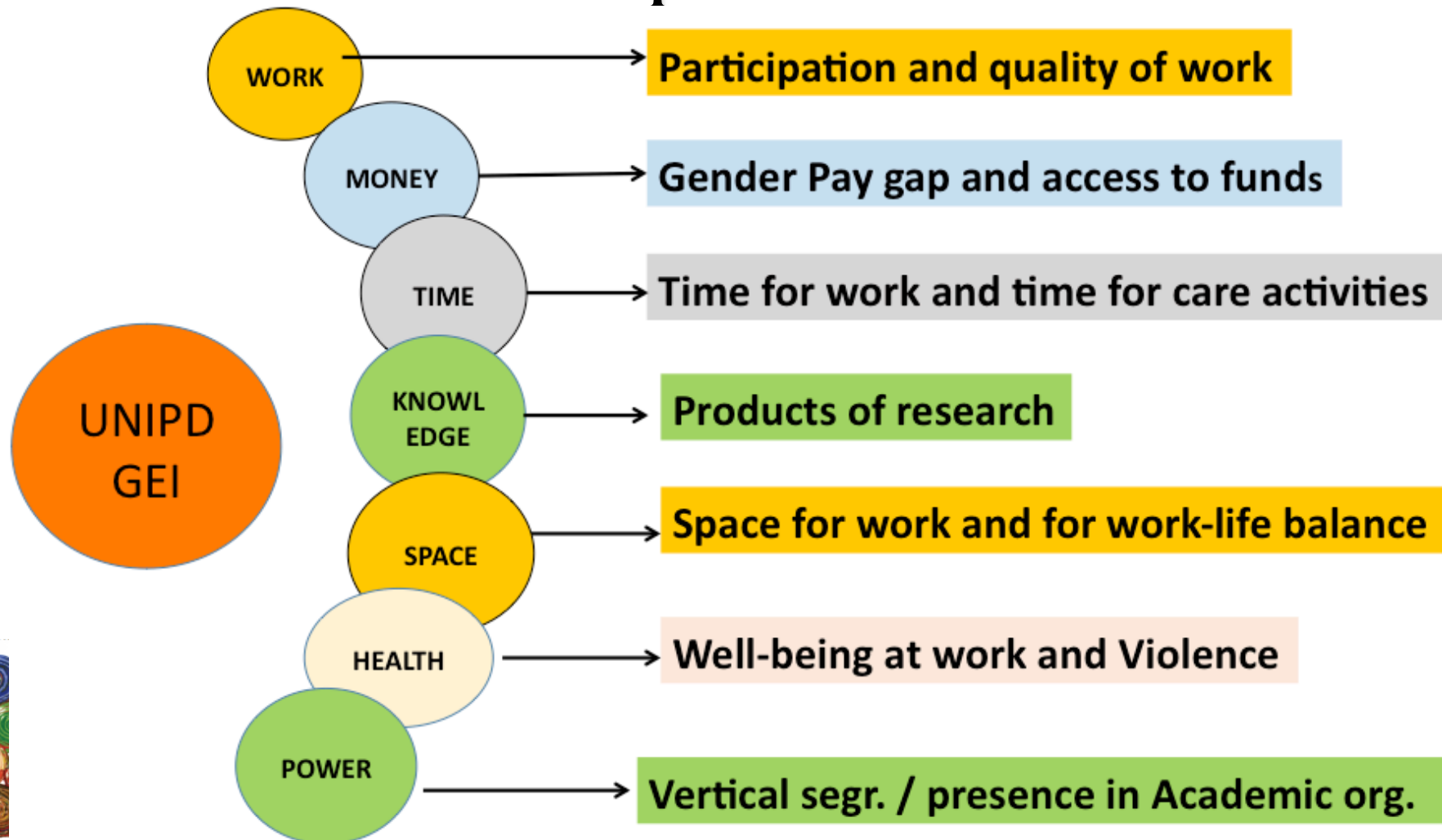
2. We want to measure the gender equality index with a *direction*. GE for women or against women?
   - For each domain: the first step consists in identifying the direction of simplex indicator → defining the conceptual model underlying it
   - eg work/partecipation: it is better to have a permanent contract than a non permanent one

GenderTime UNIPD-GEI conceptual model

WORK → Participation and quality of work

MONEY → Gender Pay gap and access to funds

TIME → Time for work and time for care activities

KNOWLEDGE → Products of research

SPACE → Space for work and for work-life balance

HEALTH → Well-being at work and Violence

POWER → Vertical segr. / presence in Academic org.

UNIPD GEI

Data

Data come from two different sources:

- the Management Control Office of the University of Padua when the required data were available;
- a survey that was built on the basis of the conceptual structure.

The questionnaire was distributed to Full and Associate Professors, Assistant Researcher, Research Fellow and Post-Doc Fellows of the University of Padua in September/October 2015.

The target population was composed by 3041 individuals. The respondents were 954 corresponding to the 31% of the target population. Women, being them the 38.4% of the academic staff, were the 47.2% of the respondents.

Example of UNIPD record
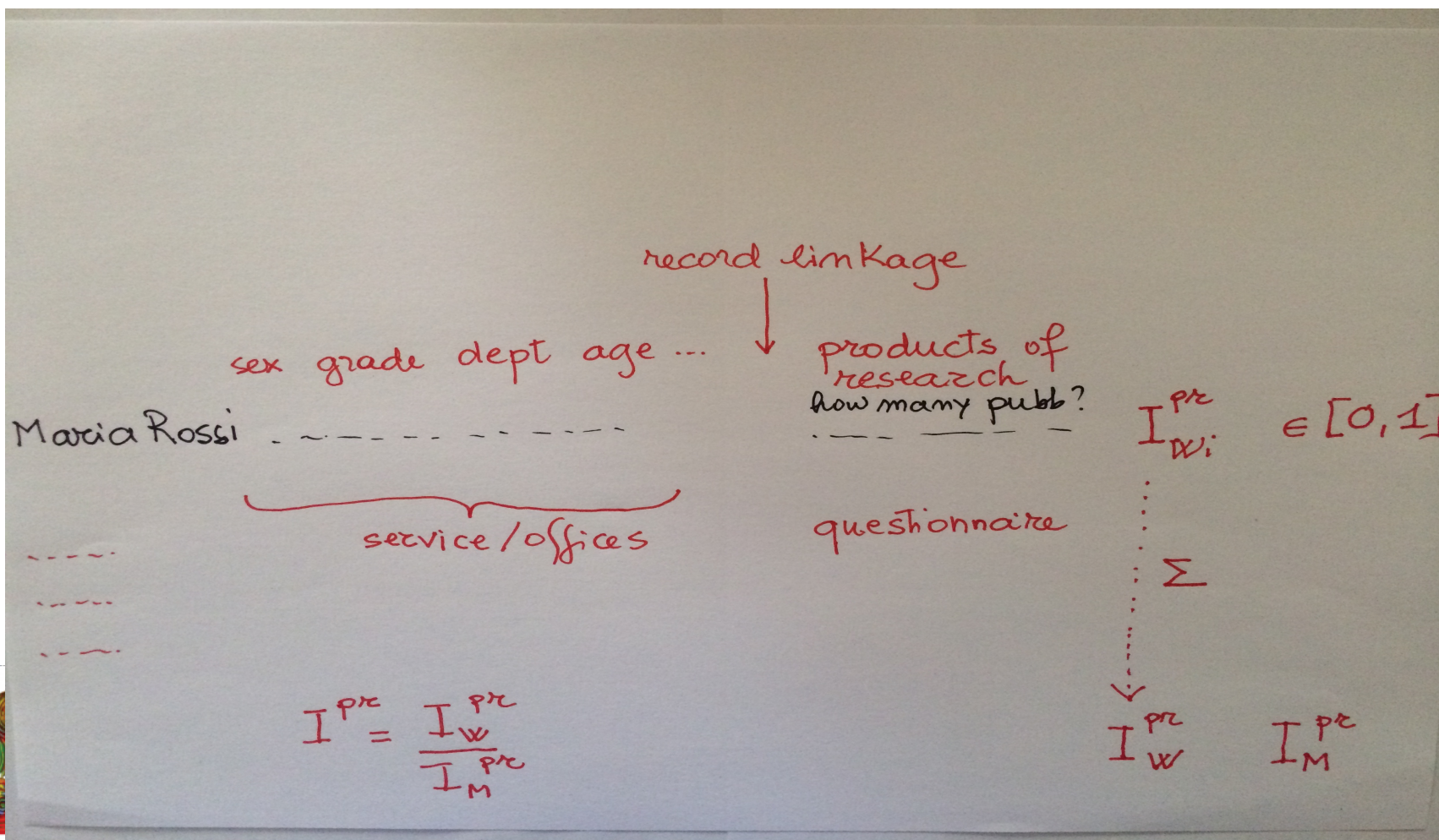
System of Indicators

- Data were coded into variables, adequately normalized in order to allow comparison

- $\forall$ variable, the indicators for Women and Men are computed, according to

$$I_{Wv} = \Sigma \; I_{Wiv} / n_F \quad \text{with } I_{Fv} \in [0; 1]$$

$$I_{Mv} = \Sigma \; I_{Miv} / n_M \quad \text{with } I_{Mv} \in [0; 1]$$

where I_{Wiv} is the value of the elementary indicator for woman i-th, normalized in 0-1 interval, and n_F is the number of women in the sample (and similarly for males).

- **$\forall$ domain, we have calculated the corresponding values of simple indicator I_{Wd} and I_{Md} and**

$$I_d = I_{Wd} / I_{Md}$$

- **if the ratio is equal to 1 → gender equality, if < 1 there is a gender gap against women, if > 1 there is a gender gap in favour of women**

- The final step is to calculate the composite indicator → UNIPD-GEI

- Crude indicators

Domain POWER

The domain Power is composed of two sub-domains: *Vertical Segregation* and *Presence in Academic Organisms*.

The process of construction of the indicator pertinent to a domain begins with the distinct analysis of its sub-domains.

Domain	Sub-domains	Variables	Categories	Sources
Power	**Vertical Segregation**	Academic position	• Full professor (grade A) (permanent) • Associate professor (grade B) (permanent) • Assistant Researcher (grade C) (permanent) • Research fellow (grade C) (non permanent) • Post-Doc Fellows (non permanent)	Offices
	Presence in Academic Organisms	Academic assignment	• University commissions • national Commissions • Selection committees / recruiting internal and external to the university • Committees for the evaluation of research projects • Department Board • Bodies of the University • Equality bodies • Commission scientific and / or teaching of Department • Chairman of the School of the University • President of the Study Course	Questionnaire

DIPARTIMENTO
DI INGEGNERIA
DELL'INFORMAZIONE

Data from Services
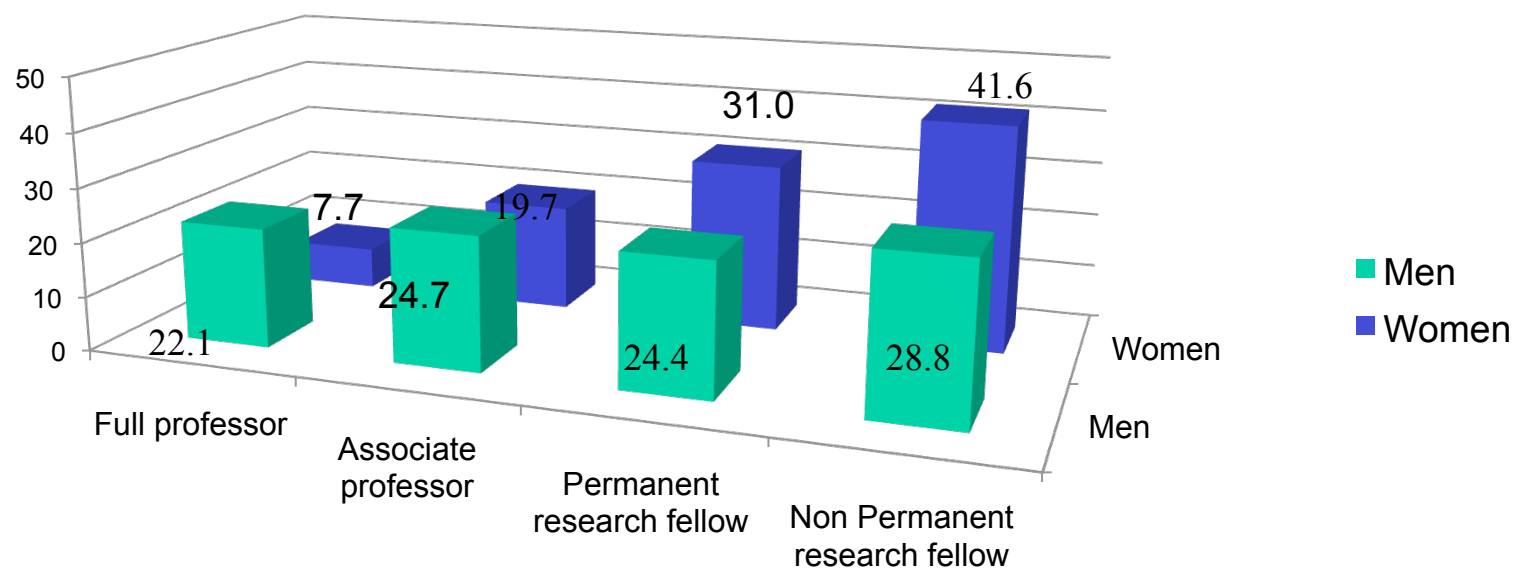
$\chi^2 (3) = 45.53, p < .0001$

Power

- *Vertical segregation*   W=0.338 M=0.492 W/M= **0.688**

- The indicator Vertical segregation equal to 0.688 means that there is a gap against women equal to 31.2%.

- *Presence in Academic Organisms* W=0.104 M=0.140 W/M= **0.741**

- The indicator Presence in Academic Organisms revelas that women have more difficulties to get a role in Academic Organisms with a gap of 25.9% .

- Combining the two sub-domain

$$I_{power} = 0.699$$

Not only metric indicators

- We added also this question in order to evaluate the achieved perception on **gender discrimination**:

- *On a scale from 1 to 10, please indicate whether you consider yourself at risk of gender-related discrimination at your workplace.*

- *(1 indicates no risk, 10 a systematic risk exposure)*
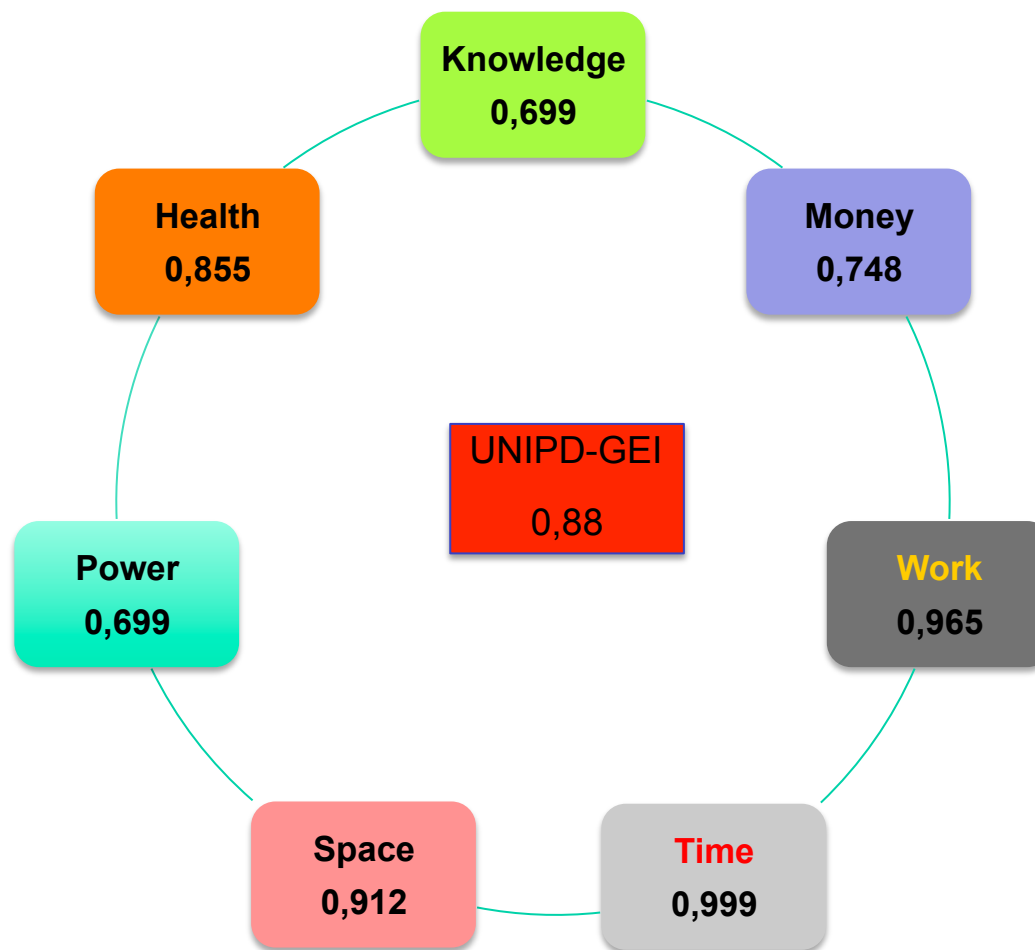
3.08 is the mean value

taking into account the sex of the respondents:

the average value for **women is higher** **4.56**

- These values are **alarm bells**

Systems of Indicators

Knowledge
0,699

Money
0,748

Health
0,855

Work
0,965

UNIPD-GEI
0,88

Power
0,699

Space
0,912

Time
0,999

Conclusions

- Times of partial ranking

- UNIPD-GEI can constitute a tool for a comparison among Universities and Research Centers based on a ranking that measures the gender equality

- http://www.padovauniversitypress.it/publications/9788869380983

- The European Commission funded 15

structural change projects since 2011,

more than 100 GEPs all over Europe

- Will change something?

Our tool can measure changes!

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A model for building
a Gender Equality Index
for academic institutions

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