Silvana Badaloni Lorenza Perini

A model for building a Gender Equality Index for academic institutions

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Presentation

Silvana Badaloni, Lorenza Perini

In this book we address the problem of measuring gender equality in Academia with the aim to define and develop a system of gender equality indicators (UNIPD-GEI) in Universities and Research Institutions. The research was carried out within the framework of the FP7 EU GenderTime Project[1] (2013-2016), of which the University of Padua is partner (www.gendertime.org).

The main objective of the project is to monitor the under-representation of women in the scientific research environment and to improve their working conditions and career opportunities. To this aim, the information collected involves many different aspects related to permanent and temporary teaching staff in scientific research, such as: the quality of work, access to funds for research, scientific issues and patents, space for research, involvement in decision-making, the quality of work-life balance and several other issues that can be sensitive from a gender point of view in academia.

This volume presents the methodological approach and the statistical model at the basis of the Gender Equality Index developed in our research group.

The *Introduction* highlights the general aim of the GenderTime Project and the main task of the UNIPD research group within it.

Chapter 1 - The problem of measuring Gender Equality in Science illustrates European data on the under-representation of women in Science. Through a brief description

[1] The UNIPD team of the FP7-SCIENCE-IN-SOCIETY- GenderTime Project (2013/ 2016) includes: S. Badaloni (DEI) – Scientific Referent; M. De Rossi, former Transfer Agent, (Fisppa); A. Oboe, Transfer Agent, (DISLL); A.M. Manganelli (FISPPA); E. Restiglian (FISPPA); L. Perini, (DEI). The research is conducted in cooperation with the UNIPD Dept. of Statistical Science (G. Boccuzzo, I. Rocco, M. Silan). The other partner institutions of the project are: the University of Paris Est Créteil (Paris, France), the Institute Mihajlo Pupin (Belgrade, Serbia), the University of Gothenburg (Sweden), the University of Wuppertal (Wuppertal, Germany), the University of Loughborough (Loughborough, Uk), Tecnalia Research & Innovation (Bilbao, Spain), and the Inter-University Research Centre for Technology, Work and Culture (Graz, Austria). The technical partner Egalité des Chances dans les Etudes et la Profession d'Ingénieur en Europe (ECEPIE), Paris, France, coordinates the project and the University of Donau, Krems, (Austria) is the independent evaluator of the project.

of the gender inequality scenario and through the calculus of the Glass Ceiling Index (Gci) in the institutions of the GenderTime consortium, the Unipd case study is introduced. Moreover, with the aim to understand and choose the appropriate instruments for measuring the degree and quality of the implementation of the Gender Equality Plan (Gep) adopted in Universities and in Research Institutions, the state of the art of the existing measures for evaluating and monitoring Gender Equality in the Eu is analyzed. In addition, also the different types of simple and composite indicators implemented so far in the international context are taken into consideration. However, none of the instruments available at the moment is perfectly tailored for the Academic environment.

Therefore, the first chapter focuses on the fact that an index such as the one we are developing at Unipd requires a lot of quantitative information and disaggregated data normally not easily available in Academic institutions. Hence the need to collect them through a specific survey.

Chapter 2 - Tools to measure Gender Equality in Academia clarifies, through specific definitions, terms such as *monitoring, assessing, evaluating*, with reference to specific features of the tool on which we are working. The chapter also presents an overall consideration on what types of indicators – qualitative and quantitative, or a combination of the two – might be the most suitable from a gender perspective in our research.

Chapter 3 - Domain-based conceptual model to measure GE in Academia, on the basis of the knowledge acquired so far, highlights how the Eige Gender Equality Index represents, in our opinion, the most robust measurement tool available at the moment, although it has been conceived to deal with population and not with people, as in our case. The six core domains considered by Eige are: *work, money, knowledge, time, power and health*, each of which is divided into sub-domains, key issues to which the index tries to "answer" through a system of indicators. In implementing our tool, we chose to integrate the Eige's experience with the approach proposed by one of the FP7 "*Sister Project,*" GenisLab, which elaborated relevant indicators in the framework of a "gender budgeting" approach to the academic environment. As a combination of the two approaches, the tool presented in this chapter (hereafter Unipd-Gei) shows a frame composed of seven domains.

Chapter 4 - Methodology of the Systems of Indicators describes the statistical model at the basis of Unipd-Gei, starting from the definition and the calculus of the simple indicators of each domain. The identification, or construction, of the data sources necessary for the computation of the indicators is provided together with the methodology adopted for the construction of the system of indicators. Finally, an example of the results obtained in the Money domain is presented.

The *Appendix* provides the questionnaire used to collect the data necessary for calculating the Unipd-Gei Gender Equality Index.

Introduction

Lorenza Perini

I. Objective of the research: enhancing women's career in Academia

This research focuses on the strong need – felt at Eu level as well as at the local level of academic institutions – to implement new effective tools in order to make the gender dimension more *transparent*. Transparent in the sense of clear, conscious, understood by the actual institution as a basic and deeply rooted value. It is of great importance that women and men living and working in the same scientific research world are deeply aware that the institution is the environment in which they spend most of their working time and in which they have invested their career expectations. It is not a "special" context placed outside of real life, or not influenced by "normal" social dynamics, in which the implications of gender as a culturally constructed relationship among sexes are void.

In the scientific research environment, as well as in everyday life, actions and regulations designed as "equal for all" may have different effects on men and women.

This diversity – inserted in an environment of equality of rights and opportunity – must be seized and exploited, instead of being concealed or transformed into an instrument of discrimination.

II. The need for new monitoring and evaluating tools

The academic policies' landscape is currently under significant pressure for change. Excellence in research, innovation policies and internationalization are just some of the main points of this complex framework. As a result of these new focus areas, Gender Equality efforts in Academia have become more diverse and manifold in the recent years. The target of making Gender Equality a stated objective appears to be natural and reasonable, in the light of the huge amount of studies conducted and of the quantity and quality of debates in this field over the last twenty years.

Moreover, one of the main reasons of interest is the significant financial investments operated in the same period of time by individual countries and the EU through framework programs supporting Gender Equality in scientific research.

Nevertheless, a great part of this interesting and important issue is still at the mere level of intention: most of the results expected have not been achieved yet, and the proposed solutions are still limited and fragmented. Above all, the efforts made so far seem to have scratched only in a minimal part the structural and cultural barriers that reproduce in Academia and in research institutions the same discriminatory system observable within the society (Ceci, Williams, 2011). Inequalities that, in the case of women's careers, are perpetuated under varying shape, often completely invisible (Acker, 2006), but with the result of producing the subtle effect of "accumulation" of various small discriminatory acts (Godfroy, 2015). A mechanism that in the scientific research environment like in any other sector of the labour market, does not seem to change or fade at the moment.

As a matter of fact, although highly desired by the European Union, no method is yet available for detecting and monitoring the gender issue in Academia. Likewise, there is no shared view for implementing harmonious actions and policies that can be adapted to specific national and local contexts (with a good degree of comparability). A major reason for this severe delay lies only in the lack of data and information.

However, the fundamental problem seems to actually reside in the impossibility to use the huge amount of data already available at institutional level, due to the different methods of collection used within the same country, sometimes even within the same institution, not to mention the differences that can occur among countries.

This results in a huge amount of interlaced diversities that do not allow to develop reliable common tools or methods for monitoring/evaluating Gender Equality. At the same time, it results impossible to outline the main knots of discrimination, and to develop effective and comparable gender oriented action plans (GEP), – tools that in many countries, at academic level, are prescribed by law (and Italy is one of these cases).

III. The GenderTime project's main aim

The GenderTime project – where the acronym "Time" stands for *Transferring Implementing Monitoring Equality* – is one of the so-called Sister Projects funded in the VII Framework Program "Science in Society." The aim of the project is to promote structural changes in organizations so as to lead to an increase of women in scientific research. In fact, by identifying and implementing specific self-tailored measures for scientific institutions there could be an increase in women's recruitment, career development, networking, work/life balance, equal representation in decision

making positions, management and policy making, while eradicating gender stereotypes, and promoting a gender oriented culture.

To ensure the project's success in all participating institutions, the strategy implemented in the consortium consists in involving top-level managers/appointed in the knowledge transfer process as t*ransfer agents*. These key role persons are heads of offices or departments, gender equality representatives, or human resources managers whose main task is to ensure a sustainable implementation of gender oriented actions in the institution they represent. Moreover, one of their most important duties is to ensure that the knowledge transfer process extends and continues beyond the GenderTime partnership and its duration, becoming a default perspective of their institution's action.

The institutions involved in GenderTime are intentionally different in terms of size, scientific field, history and role in the project. These differences, although causing several issues of fragmentation and the lack of a common language, are certainly a positive aspect, since comparing diversities can also be a challenge for finding better solutions, sharing perspectives and creating synergies among scientific partners.

In the last three years, the consortium – divided into seven work packages (Wp) with different tasks – has cooperated on common actions aimed at transferring knowledge among newcomers and institutions with experience on gender aware management.

The main outcome of the project is to produce a tested toolbox and management tools (a toolkit) that can help implement Action Plans with a solid gender perspective in Academic institutions interested in similar approaches. GenderTime's final objective is to contribute towards an organizational and structural change in European research and to disseminate at all levels the tools developed within the consortium.[1]

In particular, the aims of the WP6, the one in which Unipd is involved together with the University of Paris Est, Creteil (Upec) are: to take advantage of all the on-field experience gained by the institutions of the consortium when implementing their action plans; to confront them with the existing literature on the topic; to propose a general methodology for structural change as a toolkit (of which the Unipd-Gei will be a part), available to all institutions in different languages.

[1] Godfroy A.S., Clavreul B. (Upec), Badaloni S., Perini L. (Unipd), *Designing a toolbox for implementing structural change in context (in English)*, GenderTime Project, Deliverable D6.2 (month 36, 2015).

IV. The GenderTime UNIPD team's proposal

In this scenario, what kind of tools are necessary for reading and interpreting a reality as complex as the one of the academic institutions from a gender perspective? How can each member of this "community" arrive to recognize this as a value and give their share in solving the problem of underrepresentation and discrimination?

The answers that we tried to give – or rather – the instruments that we tried to implement in order to make explicit the gender dimension as a specific category of analysis of the reality in Academia, have a broad context of reflection and study, far beyond the specific case of our institution, that is the University of Padua.

We are definitely aware of the fact that the implementation of an "index" is always a complex task, requiring many important conceptual, analytical and empirical decisions. Therefore, in the last three years, the debate on the most suitable way to detect and monitor the different positions of men and women in the world of scientific research has involved not only the GenderTime consortium, but a wide range of universities and research institutions in many different European countries.

Central to the analysis carried out by the UNIPD group is the identification of the most relevant issues to finalize the data collection, the "quality" of which is a crucial element of discussion. In fact, although in the presence of interesting surveys being carried out in Academia with the aim to investigate issues very close to our interests, the gender dimension of the statistics is not always preserved, nor considered as an important category of analysis. Even when it is considered a relevant issue, data are not quickly and easily at disposal, and their consultation can be highly time consuming (Wennerås, Wold, 1997), (Van Den Brink, 2010) (Leslie *et al.*, 2015).

Therefore, due to the lack of common classifications, a large amount of useful and interesting data runs the risk to remain completely underexploited, with a big waste of time and opportunities. In most of the cases a *new survey* is the only (and faster) way to fill the gap and accomplish the tasks of a research that has a specific deadline like ours. In this book we will outline how the UNIPD team resolved to submit some crucial questions to the permanent and non-permanent academic UNIPD staff (more than 3,000 people) in order to establish a system of indicators consistent with our reality that we call UNIPD-GEI.

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Chapter I

The problem of measuring Gender Equality in Science

Silvana Badaloni, Lorenza Perini

1.1. The under-representation of women in Science: the scissor pattern

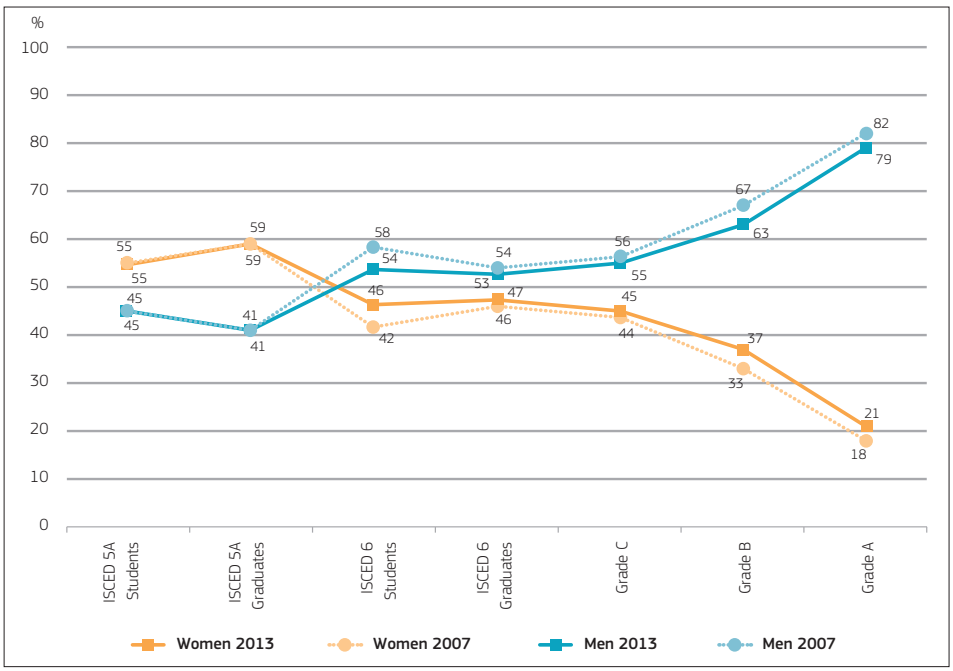
The state of under-representation of women in Science and Technology is confirmed by several statistical investigations that have been carried out over the last years in Europe. For a clear picture of the gender equality situation in research field in the Eu countries, the *She Figures* report is a crucial instrument. Being a periodical report (issued in 2003, 2006, 2009, 2012, 2015), *She Figures* is a useful monitoring tool providing disaggregated statistics concerning national education, showing the evidence of phenomena such as the *Leaky Pipe Line* and the *Glass Ceiling Factor*.

She Figures is the most complete academic gender oriented collection of compared statistical data at Eu level. It is also an important source of information showing the evolution of the presence of women in the education system. In time, *She Figures* has even broadened its perspective by exploring issues such as innovation, mobility or work-life balance reflecting a clear ambition to develop pan-European harmonized statistics, while facilitating cross-national comparisons in order to build a basis of gender-disaggregated data available at the Eu-level.

In its various issues (from 2003 to 2015), the report shows that women's academic career remains markedly characterized by a strong *vertical segregation* throughout Europe. The term *vertical segregation* refers to the under-representation of a clearly identifiable group of workers (in this case women) in top occupations or sectors (it can be also called 'hierarchical segregation'). Women's vertical segregation in Academic Institutions is illustrated in Figure 1.1 (She Figures, 2015). The graph reports the proportions of women and men in a typical career from student level to academic staff for the Eu-27. It shows a comparison between 2007 and 2013: there is evidence of a small improvement in women's position at PhD level and at the different steps of the academic career. Nevertheless, this progress seems to be too slow and, without the assumption of specific and tailored gender equality politics, the existing gender

gap will require decades to be reduced. The graph follows a typical pattern called the scissor pattern: when accessing, girls do well, they are the majority of ISCED 5A students and graduates (55%), but then the scissor opens and the proportion of women decreases when starting the academic career (grade C) dropping to barely 21% of women at Grade A.

Fig. 1.1 – Proportions of women and men in a typical career, EU-28, 2007-2013.



The She Figures report 2015 shows that there are some signs of progress towards gender equality at ISCED 6 level. On average, the number of female graduates in the EU increased by 4.4 percentage points each year between 2003 and 2012, whereas male graduates increased by 2.3 percentage points annually. Despite these positive signs, the data indicate that large differences remain at all levels, and the proportion of women researchers in 2012 for EU-28 amounted to 33% in all sectors: women remain a minority in the scientific research environment.

Although the proportion of female researchers varies considerably among countries, a clear pattern of female under-representation can be observed everywhere.

The evolution of the proportion of women in grade A varies very little from 2010 and 2013, confirming that women are vastly under-represented in top academic positions as well as within boards (decision-making positions).

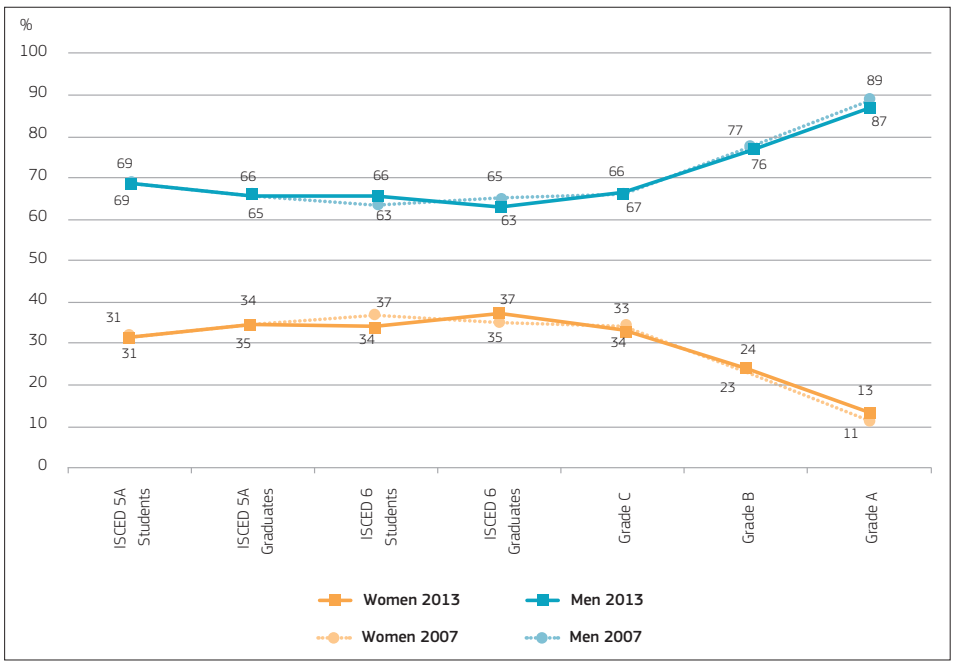
In 2014 women were less than 40% on the members of scientific and administrative boards, being close to 50% only in three countries (Sweden, Luxembourg and the Netherlands). The trend is similar all over Europe: women are the majority of the students and of the graduates, about half of the PhD students in many countries, but only few have scientific careers and achieve high level positions.

Moreover, they are under-represented as gate-keepers (the gate of power). For women to obtain a position as gate-keeper would mean to change the decision-making process by introducing a gendered lens in Science and Technology.

As a final remark we can say that these statistical investigations show that contemporary science in Western countries rewards, through various mechanisms, the male gender, despite the fact that more girls gain access to education than boys. Moreover, girls, on the average, do better in school than their male counterparts, and among these girls, a great many may have talent.

The gender imbalance varies depending on the sector in which researchers work. Women researchers are particularly under-represented in Science and Engineering where the scissor does not cross among students and academics, and women form a minority at all levels (Figure 1.2).

Fig. 1.2 – Proportions of women and men in a typical career in Science and Engineering, Eu-28, 2007-2013.

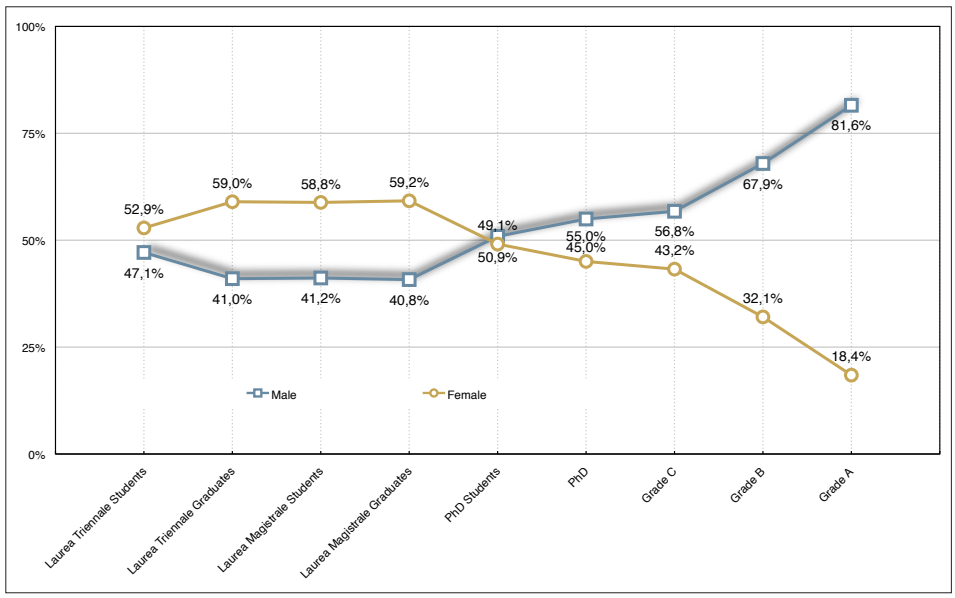


In this case, there is a problem of *horizontal segregation*, showing that there is an unequal distribution of women and men across the different scientific fields (Science and Engineering). This evidence is confirmed in the recent report of *She Figures* 2015.

We can say that Science and Technology have historically been and still are male dominated areas.

Data on the *scissor pattern* and the *non-scissor* pattern of the University of Padua widely confirm the European data as shown in Figures 1.3 and 1.4.

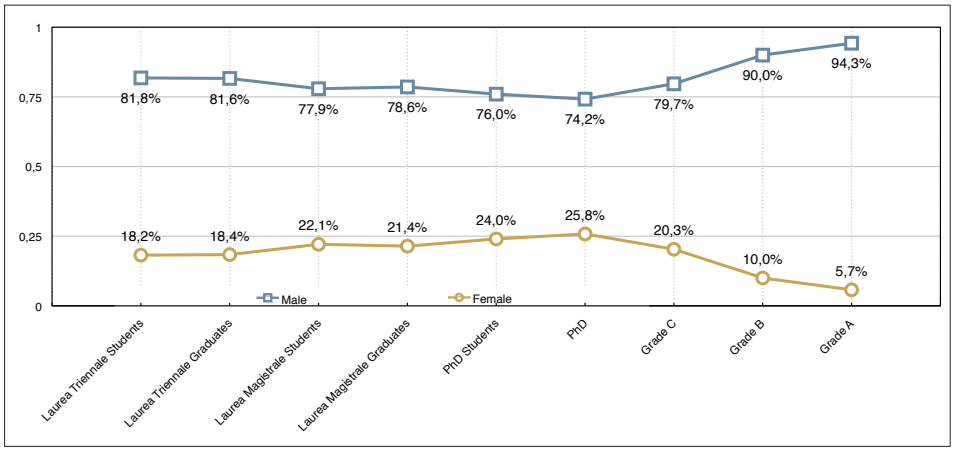
Fig. 1.3 – Proportions of women and men in a typical career at the University of Padua 2013/2014.



As stated in *She Figures* 2012, there is no evidence of a spontaneous reduction of gender inequality over time. All these policies, and many more, are needed to ensure constant progress towards gender-equality in research and in scientific careers. It is difficult to imagine that this situation will spontaneously move towards gender equality in the upcoming future.

The under-representation of women in Science constitutes a waste of talents, and threatens the objectives of science in achieving excellence.

Fig. 1.4 – Proportions of women and men in a typical career at the School of Engineering, Unipd, 2013/2014.



1.2. The Glass Ceiling Index (Gci): the GenderTime and the Unipd case studies

One of the most important keywords in this scenario is the *Glass Ceiling Factor*, i.e. the unseen, yet unbreakable barrier that keeps women from rising to higher positions, regardless of their qualifications or achievements. Women look up and see no obstacles because the atmosphere of equality that seems to reign in their environment encourages them to think that competition is open and clear. However, in their ascent, they meet the invisible barrier that prevents them from going beyond a certain threshold. It is as real as invisible, and favours men in top positions. It synthetically illustrates the difficulties that women encounter in gaining access to the highest hierarchical levels, measuring the relative chance for women, compared to men, to reach a top position.

As reported in She Figures 2012, Gci can be calculated comparing the proportion of women in grade A positions (equivalent to Full Professors in most countries) to the proportion of women in academia (grade A, B, and C), indicating the opportunity, or lack of it, for women to move up the hierarchical ladder in their professions. Similarly, this can be calculated for men.

On this basis, we can give an operative definition:

Being W women and M men and A, B, C the three levels of academic career, the Glass Ceiling Index Cgi can be calculated as:

CGI $_{women}$
= Proportion of women in Academia/Proportion of women in Grade A = % of women A+B+C on Total (W+M A+B+C) / % of women A On Total (W+M A)

CGI $_{men}$
= Proportion of men in Academia/Proportion of men in Grade A = % of men A+B+C on Total (W+M A+B+C) / % of men A On Total (W+M A)

If the value of CGI is equal to 1, then we can say that there is no Glass Ceiling. A CGI equal to 1 indicates that there is no difference between women and men in being promoted.

A score below 1 (e.g. $CGI_{women} < 1$) means that women are over-represented at grade A level; whereas, a CGI score above 1, points towards a Glass Ceiling Effect, meaning that women are under-represented in grade A positions. Similarly, this can be shown for men.

In sum: the higher the CGI_{women} value, the stronger the Glass Ceiling effect and the more difficult it is for women to move into a higher position. Usually, speaking about CGI, by default people refer to CGI_{women}.

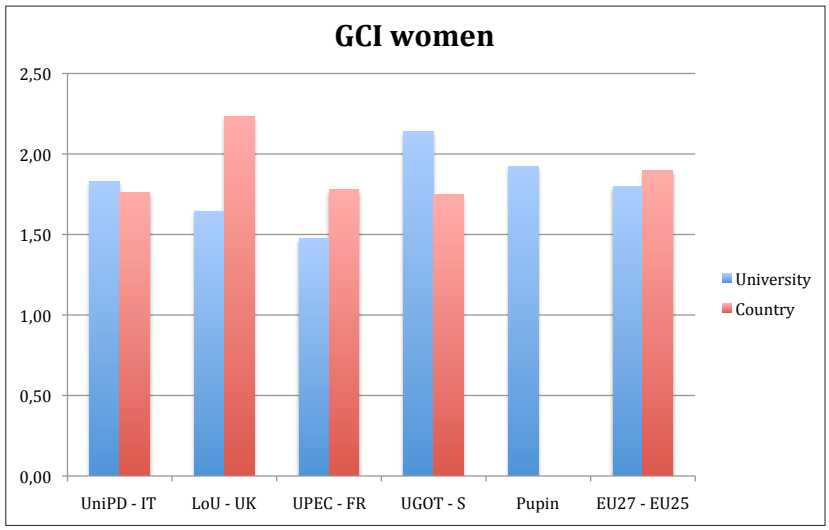
On average, throughout the EU-28, the CGI_{women} equalled 1.75 in 2013 (She Figures 2015).

This means that slow progress has been made since 2004, when the index stood at 1.9. In no country the CGI_{women} was equal to or below 1, except for two countries – Macedonia (0.75) and Malta (0.72)

The highest value was the one of Cyprus (3.16) and a part from it, the highest CGI was reported in Lithuania and Luxembourg. Between 2004 and 2013, the CGI decreased in most countries. It remained stable in Sweden and France (also in Norway, Croatia and Turkey). However, the Glass Ceiling thickened over this period in Luxembourg and Portugal.

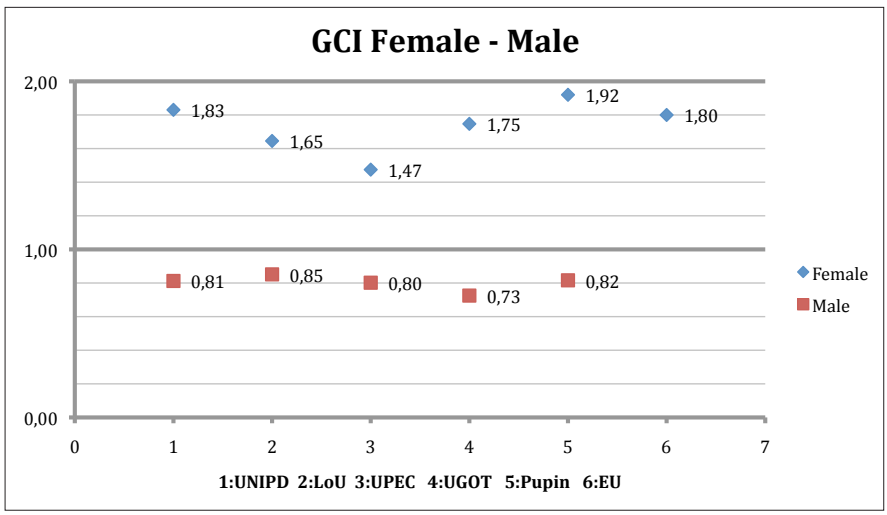
Referring to the network of GenderTime Project, we calculated the CGI_{women} for the partners of the consortium where data were available. Their values are reported in Figure 1.5 together with the values of the corresponding country (Badaloni *et al.*, 2015).

Fig. 1.5 – The CGI_{women} for different Units of the GenderTime Consortium together with the value of the corresponding country.[2]



In Figure 1.6 all the CGI, both for women and men, are reported for the considered Institutions.

Even if the network is very heterogeneous, the CGI_{women} are above 1 and CGI_{men} are below 1 for all the Institutions, as expected (Badaloni, Perini, Godfroy, 2015).



[2] Caption: *UniPD* University of Padua Italy, *Lou* Loughborough University Uk, *Upec* Université Paris Est Créteil France, *Ugot* Gothenburg University Sweden, *Pupin* Mihajlo Pupin Institute Serbia.

1.3. Searching for data from a gender perspective

Since the beginning of the project in 2013, the UNIPD research team has been working on the implementation of a specific tool capable of combining in a harmonious and original way, both a solid and already tested methodology for collecting and systematizing statistical data, as well as the datasets normally available in academic institutions.

The fact of working in a completely new framework of data collection produces the effect of highlighting the need to systematize the information already available (which means repositioning the existing data in a new framework of categories/domains). At the same time, it highlights some areas in which, as stated above, data are missing altogether. Indeed, interesting data at university level do not exist, or at least are not in a "usable shape" because collected for different purposes by the offices in charge and – most of all – collected without a gender perspective.

In these cases, the only way to fill the gap (at least in the time of an EU project) is to combine the data already available and provided by the offices with a new specific survey, in order to reach as much people as possible. At the same time, though, it is necessary to be aware of the fact that often the feedback of a questionnaire is rather low[3] due to the overwhelming number of daily or monthly surveys going on and involving the employees of the academic institutions at all levels throughout the EU.

An alternative – although slower – is to proceed through case studies, with a higher data quality, but with limited results as well.

The problem is that none of the instruments available at the moment is perfectly tailored to the context in which they are called to act

In the following paragraphs we will provide a brief description of the environment in which our reflections move and find roots. First of all, recognizing the state of the art of the existing monitoring tools, and secondly considering the community of the "sister projects," namely the other projects funded by the EU in the 7FP from 2013 until today.

[3] It is important to take into consideration that the data on the non-respondents are of great value in this type of research.

1.4. Searching for strategies to measure Gender Equality

So far, the issue of "Women and Science" has been addressed following three different approaches. The first approach (*fixing the number of women*) is based on the paradigm of Science neutrality. It focuses on programs and initiatives with the aim to spur women to choose science in order to increase their number in different paths of the scientific career. However, if numbers have been the first input to spur Eu Institutions to raise awareness concerning the underrepresentation of Women in the world of Science, these same numbers – considered in a broader context and interpreted through the categories of sociology, history and philosophy – have shown that the problem is much more complex (Badaloni *et al.*, 2008).

The lens of the "social sciences" on the problem of "women in science" has produced the relevant moving from the issue of "women" and their numbers to the issue of "gender", that is the social constructed relationship among genders and the different ways in which they are affected by decisions, laws, regulations, behaviours, social interactions. This new position has allowed to address the question of the neutrality of science more widely and effectively, leading to a different and the second approach: *fixing institutions*.

The aim is to put into action structural changes addressing institutions such as universities and research centres that developed their basic structures in the past without even considering women. Although the lesson has been learnt – in collecting data with a gender perspective we understood that the problem of women in the science career does exist – a common basis for addressing it with effective actions leading to changes in the mechanisms that permit the life of the scientific institutions has not been found yet.

The third approach, *fixing the knowledge*, despite several positive examples (Schiebinger, 2008), is quite far behind. At present, in the international scenario of gender related projects addressing the issue of "women in science," we can broadly recognize that the main issue is still to find reliable ways to collect data in a harmonic and organized framework. Two are the main strategies of action.

1.4.1. Providing scores for Gender Equality: a methodological debate

Most of the Gender Equality approaches studied have a trend downward and are related to the actions of governmental agencies and/or associations that provide tools and funding to those institutions that agree to follow certain rules in order to reach standards of Gender Equality in a definite lapse of time. As clearly pointed out (Bericat, 2012), the complexity of finding a way to address gender equality explains the wide variety of indicators created during the last 25 years.

All the "tools" proposed attempt to measure the same thing, gender (in)equality, but none of them define the concept they want to measure in the exact same way. Nor do they operationalize measurements in the same manner. None determine in the same way how to carry out measurements, and none respond in the same way to the question concerning which specific empirical indicators are to be selected to measure this (in)equality. Being gender equality a social change process, it is important to notice that an index is not only a scientific and technical "tool," but also the result of many "political" decisions. Moreover, it can be organized to measure Gender equality from different points of view.

For example, it can measure the current state of equality in a country as well as the factors that contribute to its future achievement (Bericat, 2012). What the indexes listed below have in common is a substantial lack of efficacy. However, the proliferation of all these methods to assess gender equality has the merit to support a lively and enriching methodological debate on this issue within the scientific community.

The Global Gender Gap Index (GGGI)[4] was developed by the World Economic Forum with a specific set of indicators measuring four specific social areas: economic participation and opportunity, educational attainment, general health and political empowerment. In 2010, the Economist Intelligence Unit also launched the Women's Economic Opportunity Index (WEOI), covering five dimensions: labour policy and practice, women's economic opportunity, access to finance, education and training, women's legal and social status, and general business environment.

The Gender Inequality Index of the United Nations (UNI-GII)[5] is an index that pays specific attention to poverty. It is used to better expose differences in the distribution of achievements between women and men measuring human development costs of gender inequality (the higher the *GII* value, the more disparities between females and males).

The Social Institutions and Gender Index (SIGI)[6] was launched in 2009 as an innovative measure to highlight discriminations against women (special stress on gender violence). The Development Centre's Social Institutions and Gender Index (SIGI) is a cross-country measure of discrimination against women in social institutions (formal and informal laws, social norms, and practices) across 160 countries. SIGI covers five dimensions of discriminatory social institutions, spanning major socio-economic areas that affect women's lives: discriminatory family code,

[4] http://reports.weforum.org/global-gender-gap-report-2014/
[5] http://hdr.undp.org/en/content/gender-inequality-index-gii
[6] http://www.genderindex.org/

restricted physical integrity, son bias, restricted resources and assets, and restricted civil liberties. SIGI's variables quantify discriminatory social institutions such as unequal inheritance rights, early marriage, violence against women, and unequal land and property rights.

The Social Watch Gender Equity Index (GEI)[7] was created in 2012. It is a composite index whose aim is to measure inequality in society and is composed of eleven indicators representing three dimensions that measure the gap between women and men in key social areas of education, empowerment and economic participation. An index is generated for each of these dimensions based on the values of the component indicators. This index ranks the various countries beginning from the "worst," the most unequal.

The EIGE Gender Equality Index (EIGE-GEI)[8] implemented in 2013 represents a solid methodology for measuring gender disparity among the EU countries. It states how far (or how close) the EU and its Member States are from achieving the ultimate goal of reaching a gender-equal and respectful society. It ranks all the EU countries from 0 to 100, where 100 represents the best situation of equality. The aim is to assess the validity and the efficiency of the policies undertaken by each Member State. The entire system of the EIGE's Gender Equality Index is based on an interesting framework of collecting data divided into six core domains and two satellite domains: *work, money, knowledge, time, power* and *health*, whereas the two satellite domains are *violence* and *intersecting inequalities*.

Although interesting and worldwide known and applied, none of the approaches described above is specifically designed to monitor and evaluate research institutions. Therefore, we considered other strategies in the EU scenario from which to draw inspiration, in order to set up a new tool aimed at addressing Gender Equality in academia.[9]

[7] http://www.socialwatch.org/taxonomy/term/527

[8] http://eige.europa.eu/rdc/eige-publications/gender-equality-index-2015-measuring-gender-equality-european-union-2005-2012-report

[9] It is important to mention that in the academic world several countries opted for the so called "Quality Assurance" method, typically a top down process, that establishes a plan for the gradual acquisition of requirements and a series of objectives that the institutions must strive for, in order to achieve some kind of "benefits." The *Athena Swan Charter,* involving in its commitments most of the universities of the United Kingdom, is one of these instruments. Established in 2005 to encourage and recognize commitments to advance women's careers in science, technology, engineering, math and medicine (STEMM) in higher education and research. The Athena Swan Charter is based on ten key principles. By being part of Athena Swan, institutions are committing to a progressive charter, adopting these principles within their policies, practices, action plans and culture (http://www.ecu.ac.uk/equality-charters/athe-

1.4.2. Other strategies to "fix the institutions:" the community of the sister projects

Besides the approaches that try to fix the institutions enhancing gender awareness through specific prescriptions and through ranking systems, there is another line of action more context sensitive. In fact, it involves the construction in each institution of non-standard and self-tailored tools, as well as the implementation of gender action plans consistent with the characteristics of each context in which they operate. Following this type of inductive perspective, the first and most difficult step to accomplish consists in having "good" micro data at disposal, which means disaggregated and harmonic information for each field of action of the institutions.

Most of the projects on gender equality approved within the VII Eu framework strategy from 2011 to 2014 share this inductive perspective (as well as the related "problem" of data collection mentioned above). They also represent an important community of similar projects with whom we can share perspectives in order to implement reliable and effective monitoring tools.

The network of the "sister projects" involves most of the European universities, representing the majority of the European regions. The common goal is to remove the gender gap in all the mechanisms that govern the life of an academic institution, especially in the field of scientific research (in terms of career and in terms of research in itself, considering gender as a mainstreaming mean of analysis). Through the implementation of an Action Plan (at the beginning of the project or at the end, depending on the type of Eu call) the institutions involved in these type of projects are asked to implement a solid and on-going process of data collection, data monitoring and evaluation of the output of the Action plans. A process that is intended as the most tailored and suitable to each institution, nevertheless maintaining a high comparative standard.

The big investment of the European Community on such 7FP projects in the 2007-2013 period (and again in 2013-2017) was first of all aimed at bringing all the academic institutions of the Member States at a comparable level of knowledge concerning their own gender equality situation. Then, with data at hand, proceed with the implementation of a series of tailored actions and tools in order to foster the production of policies at institutional, national and Eu level in the following years. However, the problem of gathering disaggregated data was, and still is, for all institutions, none excluded, the most difficult to address.

na-swan/). In the same direction, the roadmap provided by Leru, a private consortium of universities devoted to fostering actions on gender equality in research centres and institutions. Since its founding in 2002, the League of European Research Universities (Leru) has emerged as a prominent advocate for promoting basic research in European universities (www.leru.org).

The following table (Figure 1.7) shows the high number of institutions involved in common objectives shared by projects and diversities that make each of them unique.

Fig. 1.7 – The community of the sister projects (2013-2017).

Name	Start	Duration (years)	Coordination	AP	Main features	Output
Integer	2011	4,25	Cnrs (France)[1]	AP at the end	Topdown strategy (Athena Swann)	Guide-lines and web platfom
GenisLab	2011	4	Brodolini Foundation (Italy)[2]	working by topics	top down strategy	Guide-lines
Stages	2012	4	Italy (Nat. Dept. of Equal Opp)[3]	AP at the end	top down strategy (Athena Swann) but combined with AP	Guide-lines
Festa	2012	5	Uppsala University (Sweden)[4]	working by "topics"	each Wp engaged in a different task/ topic to carry out	Dissemination through website

[1] Partnership: Trinity College, Dublin; Centre National de la Recherche Scientifique, France; Siauliai University Centre for Gender, Lithuania; Center of Excellence on Women and Science, Germany (Gesis) (independent evaluator).

[2] Partnership: Csic - (Spanish Superior Council for Scientific Research) - Institute for Polymer Science and Technology, Spain; IPF, Leibniz-Institut für Polymerforschung Dresden, Germany; Ftm, Ub Faculty of Technology and Metallurgy, University of Belgrade, Serbia; Nic, National Institute of Chemistry, Slovenia (+ technical partners: Infn - National Institute for Nuclear Physics, Italy, BTH - Blekinge Institute of Technology, Sweden); Fgb, Fondazione Giacomo Brodolini, Itc/Ilo - International Training Centre of the International Labour Organization (Gender Unit), Un Agency, Ads - Associazione Donne e Scienza (Italian women in science organization).

[3] Partnership: Asdo, Italy; Fraunhofer Institute, Germany; University of Milano, Italy; Radboud University, Nederland; Aarhus University, Denmark; Alexandru Ioan Cuza University, Romania.

[4] Partnership: Uppsala University, Sweden; University of Southern, Denmark, Denmark; Rwth Aachen University, Germany; University of Limerick, Ireland; Fondazione Bruno Kessler, Italy; Istanbul Teknik Universitesi, Turkey; South-West University, Bulgaria.

Gender Time	2013	4	Ecepie (France)[5]	Ap at the beginning	bottom up strategy learning by doing and transferring knowledge	Tools to monitor and evaluate Ge; tools for building/ monitoring Aps
Genovate	2013	4	Bradford University (Uk)[6]	Ap at the end	top down approach (Athena Swann)	Guide-lines
Trigger	2014	4	Department of Equal opportunities, (Italy)[7]	Ap at the end	focus on gender in research	Aps as output
Egera	2014	4	France (SciencePo)[8]		top down strategy gender in research and top management	Guide-lines
Garcia	2014	3	Italy University of Trento[9]	Ap at the end	bottom up strategy focus on "*precarity*"	Guide-lines

[5] Partnership: Ecepie Egalité des Chances dans les Etudes et la Profession d'Ingénieur en Europe; Paris France; Ifz Inter-University Research Centre for Technology, Work and Culture, Graz, Austria; University of Padua, Italy; Gothenburg University, Sweden; University Paris Est Créteil, Paris, France; Mihailo Pupin Institute, Belgrade, Serbia; Bergische Universität Wuppertal, Germany; Loughborough University, Uk; Tecnalia Research & Innovation, Bilbao, Spain; Donau-Universität Krems, Austria.

[6] Partnership: University of Bradford - United Kingdom (coordinator); University College Cork – Ireland; Luleå University of Technology – Sweden; Ankara University – Turkey; Università di Napoli Federico II, Italy; Trnava University, Slovakia; Universitad de Madrid, Spain.

[7] Partnership: Dipartimento per i diritti e le pari opportunità, Italy; Assemblea delle donne per lo sviluppo e la lotta all'esclusione sociale – Asdo Italy; Università di Pisa, Italy, Vysoka Skola Chemicko-Technologicka V, Praze, Czech Republic; Institute of Sociology of The Academy of Sciences of The Czech Republic Public Research institution, Czech Republic; Birkbeck College - University of London United Kingdom; Universite Paris Diderot - Paris VII France; Universidad Politecnica De Madrid, Madrid Spain.

[8] Partnership: Sciences Po- Fondation Nationale des Sciences Politiques, France; Uab Universitat Autònoma de Barcelona, Spain; Sku Radboud University Nijmegen, The Netherlands; Metu Middle East Technical University, Turkey; Ua University of Antwerp, Belgium; UoV University of Vechta, Germany; Cvgz Centrum Vyzkumu Globalni Zmeny Av Cr v.v.i., Czech Republic; Cesis Centro de Estudos para a Intervenção Social, Portugal.

[9] Partnership: University of Trento, Italy; Université catholique de Louvain, Belgium; Radboud University Nijmegen, Netherlands; University of Iceland; University of Lausanne, Switzerland; Research Centre of the Slovenian Academy of Sciences and Arts, Ljubljana, Slovenia; Joanneum Research Forschungsgesel, Graz, Austria.

This is the scenario in which in 2014 the UNIPD team started to study the basic frame of a new gender equality monitoring tool, drawing inspiration from both the approach implemented by EIGE for the Gender Equality Index mentioned above, and the methodology experienced by the sister project GenisLab, consisting in a gender budgeting analysis of the academic institution.

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Chapter II

Measuring Gender Equality in Academia: several definitions

Lorenza Perini, Emilia Restiglian, Margherita Silan

2.1. Monitoring, evaluating, assessing

At this point it might be useful to clarify some terms, and outline the environment in which we have been placing our efforts in order to implement the new monitoring tool. The following definitions are the result of long and deep reasoning both within and outside the GenderTime consortium.[1] First of all: what do we intend with "tools for structural change"? This usually refers to two different but complementary conceptualizations developed by the Council of Europe in 2004 and by the Gender European Commission in 2012.

According to the Council of Europe, tools for structural change are defined as "groups or types of means to put the gender mainstreaming strategy into practice, i.e. to (re)-organize, improve, develop and evaluate policy processes in order to incorporate a gender equality perspective."[2]

According to the Gender European Commission, "Structural change in universities and research institutions means making them more gender-aware, thereby modernizing their organizational culture. This has important implications for equal opportunities, full use of talent, appeal of scientific careers, and quality of scientific research. It implies systemic, integrated, long term approaches rather than piecemeal short term measures.[3]

[1] Designing a toolbox for implementing structural change in context (in English), Deliverable 6.2, GenderTime Project, December 2015; http://www.gendertime.org/sites/default/files/GenderTime_D6_2.pdf

[2] Gender mainstreaming. Conceptual framework, methodology and presentation of good practices. Final report of activities of the Group of Specialists on Mainstreaming (EG-S-MS). 2004; https://www.coe.int/t/dghl/standardsetting/equality/03themes/gender-mainstreaming/EG_S_MS_98_2_rev_en.pdf

[3] Structural change in research institutions: Enhancing excellence, gender equality and efficiency in research and innovation. Final Report. European Commission. Directorate-General for Research and

From these complementary definitions, we can say that tools for structural change addressing gender equality imply a re-organization, an improvement, developing and evaluating policy processes in a systematic and sustainable way.

In this research the words "monitoring," "evaluating" and "assessing" are used to indicate the different steps of the implementation process and impacts of the tools.[4]

According to the European sources,[5] the proposed definitions can be summarized as follow:

Monitoring

A monitoring tool means an instrument used to measure the level of achievement during implementation in order to track progress towards the intended results, while identifying factors of success as well as barriers and challenges. A monitoring tool can be considered as a management tool, which implies the following question: what improvements, additional measures, actions should be made to achieve the goals (Monitoring process)? It is possible to monitor: implementation, application (i.e. changes observed in the achievement of the objectives), progress. In addition to monitoring the progress of an individual initiative, contextual information should be collected as well.

Evaluating

An evaluating tool means an instrument used to measure the extent to which the project has been intended, to which an action has been effective and efficient, relevant according to its objectives. Therefore, evaluating relates directly to the long-term results of the project trough impact indicators.[6]

Assessing

The European commission generally uses the concept of "assessment" indicating the issue of "Gender impact assessment." This analysis can be assimilated to the evaluating process in which analysis focuses systematically on both men's and women's situations and treatments. Consequently, an "assessing" tool (evaluation criteria, indicators) must take into account these dimensions.

Innovation. Directorate G – European Research Area. Unit B.6. Ethics and Gender: Sector B6.2 – Gender European Commission. Brussels. 2012; https://ec.europa.eu/research/science-society/document_library/pdf_06/structural-changes-final-report_en.pdf

[4] The definition of «monitoring» and «evaluating» were developed by the Work-package 3 (GenderTime Project) in the deliverable D 3.1 on "Monitoring Progress Report" (Month 30) and clarified as the result of the exchange raised between Work-package leaders in December 2014.

[5] *European Commission. Better regulation «Toolbox»,* 2015; http://ec.europa.eu/smart-regulation/guidelines/docs/br_toolbox_en.pdf

[6] We are not taking specifically into consideration the evaluation phase in this part of the research.

2.2. Indicators as "eye openers": how to choose the most suitable

In social research it not unusual to take into consideration general or abstract concepts – for example religiosity, power, integration –. The point is that, in order to be treated from the empirical point of view, these concepts must be subjected to a process of "operationalization". In this phase the crucial role is played by the *indicators*. According to an established tradition in research methodology, indicators can be defined as "simpler concepts, 'specific' and translatable in terms of observations, linked to the general concepts by a relationship of indication or of semantic representation" (Corbetta, 2014).

These simpler concepts, properly operationalized (for example, through the questions of a survey), give origin to the *variables*. If the purpose is to translate theory into research operations, the criterion of "empirical observability" as well as the difference between definitions of observable and unobservable objects are therefore very important,

The indicator allows to "operatize" theoretical constructs that do not refer directly to empirical referents (Bezzi *et al.*, 2010). The condition of "observability" of an indicator is defined as "the objectively observed sign, qualitative or quantitative, of a certain characteristic which often is high intangible" (Dodd, 1939). In order to translate a concept into a variable ("operationalization") we need to collect data as variables.

If the concept has a strong connection with some objective characteristics, this step is pretty simple, but when the concept is abstract (like religiosity or social integration) the "operationalization" can be a very hard task.

Furthermore, it is claimed that, in any case, it is difficult to establish a bi-univocal relationship between concepts and indicators (Marradi, 1980), because a concept can be defined through a multiplicity of indicators, that can cover different semantic spaces compared with the indicated phenomenon.

It is clear that our approach to the indicator has therefore mainly a stipulation and negotiation character, which assumes significance and validity being deduced from the reasoning that is described in this book.

The term "indicator" is also used to refer to an empirical measure, of quantitative type, that is set in relation to a complex social phenomenon; for example the ratio of the number of beds in the hospitals and the population living in a geographic area is an indicator of the level of health care in that specific area.

On the basis of the source of the information used to build them, indicators can be distinguished in "objective" and "subjective.

"Objective indicators focus on areas that are easy to quantify, such as wage rates or education levels. Due to this characteristics, quantitative indicators are usually drawn from specific offices, censuses, enumerations, and administrative records.

These types of indicators are also known as "hard" indicators. On the other hand, because they represent people's perceptions and viewpoints, subjective indicators are typically obtained from sources such as public hearings, attitude surveys, interviews, participant observation, and sociological or anthropological field work. These types of indicators are also known as "soft" indicators.

In gender indicators' literature the use of the terms "quantitative" and "qualitative" to refer to these two types of indicators is also frequent (Oxfam, 2014, Guide on gender sensitive indicators, 1997).

The literature on indicators' methodology stresses on the need to use both objective and subjective indicators for the measurement of gender equality.

As stated before, it is possible to distinguish between these two types of indicators by their source of information and by the way in which this information is interpreted and used. Objective (or quantitative) indicators can be defined as measures of quantity, such as the number of people who own a certain position (for example, the number of women parliamentarians or the number of women professors at grade A, B or C). Subjective (or qualitative) indicators can be defined as people's judgements and perceptions about a subject[7], for example the thoughts of women parliamentarians who believe or not that they are having an impact on decision-making

A further means of differentiating between these two types of indicators is by considering how they are interpreted and used.

Objective indicators are often presented as distanced from the events they are describing. For example, examining increases in literacy rates may tell you very little about the incredible effort women have made to become literate. On the other hand, most subjective indicators, which are generated for example by attitude survey, describe people's viewpoints. The two types of indicators are really complementary, and both are important for an effective monitoring as well as for a reliable evaluation.

The importance of quantitative indicators – for example rates of women and men professor at this or that grade – is clear. On the other side, the importance of people's views or perspectives on a certain issue is less clear. Users of subjective indicators often stress that these indicators are important because they focus on people's own experience. For this reason, subjective indicators are particularly useful in understanding local people's views and priorities related to fighting discriminations.

It is also often argued that the use of subjective indicators is problematic because their reliability and validity are suspect. However, reliability and validity of subjective indicators can be ensured by the use of careful survey techniques. Properly developed and interpreted, these indicators can play a significant role in identifying constraints to implementation and obstacles to success, which would otherwise not be readily evident.

[7] Guide to gender sensitive indicators, 1997; http://www.acdicida.gc.ca/inet/images.nsf/vLUImages/Policy/$file/WID-GUID-E.pdf

The use of subjective indicators can therefore play an important role in the promotion and understanding of stakeholders' perspectives, particularly those relating to women, and in fostering participation.

In our field of intervention (Universities and research centres) "gender indicators are a key tool for accountability, telling us whether our programmes are working". Gender indicators can also help "to monitor the fulfilment of commitments to women's progress, as well as mobilise support for stronger efforts in this regard" (Moser, 2007).

2.3. Simple and composite indicators

We can synthetize what argued up to now by saying that an indicator is a measuring tool of phenomena that cannot be observed directly, such as life quality, air pollution, smartness or – as in our case – gender equality (or inequality).

Moreover, an indicator is different from an index. An index is a computed data, usually a ratio between two quantities, and we usually need it to measure a well-known phenomenon, for which we have all the data. An indicator is something more: it is used to measure more complex situations, that can have more than one dimension and that need an interpretive scheme.

An important point that needs to be discussed is the partiality of the relation between an indicator and the construct that it represents: it is impossible to summarize a complicated concept with a single indicator. Moreover, an indicator may overlap the concept only partially and may be also conditioned by another concept, as mentioned.

It is important to be aware that an indicator can depend on more than one phenomena, but only one is the analysed concept. Therefore, it is crucial to choose the right indicator properly, having in mind the exact semantic content to be represented.

Since the concept to be represented can be really complex and difficult to depict with only one indicator, it is necessary to identify all the dimensions involved in the concept definition and to associate a proper indicator. In this way, a system of indicators is created by faithfully describing a concept without neglecting any aspect or dimension of it. For instance, if we want to represent verbal ability, we might take as dimensions vocabulary knowledge, the ability of written expression and verbal fluency.

Once determined all the useful dimensions, it is also possible to decide to aggregate them to build a composite indicator.

"A composite indicator is formed when individual indicators are compiled into a single index on the basis of an underlying model. The composite indicator

should ideally measure multidimensional concepts which cannot be captured by a single indicator, e.g. competitiveness, industrialization, sustainability, single market integration, knowledge-based society, etc." (Oecd, 2008)

Having a robust methodological apparatus is very important to determine the mathematical and computational model for the composite indicator's definition. The most valuable features of a composite indicator are its fitness for the purpose and peer acceptance.

The use of composite indicators presents many advantages (pros) and disadvantages (cons) that are widely discussed by the scientific community. Some of the pros of the composite indicators are:

- it is possible to summarize complex and multi-dimensional concepts with only one number;
- it is easier to interpret one composite indicator than a system of indicators;
- comparison over time and of countries is immediate and easy also for unskilled people;
- if the composite indicator is properly built, the information is summarized without losing any important data or aspects;
- it is easier to communicate and to comment for users, general public or decision makers. Official statisticians may tend to resent composite indicators because they also have important consequences;
- since it is only one number, it can sometimes be misinterpreted, giving misleading messages to decision makers and can lead to simplistic conclusions;
- if the methodology and the construction process are not unexceptionable, the composite indicators are useless and may be misused;
- the selection of indicators and weights could be influenced also by subjective policy decisions;
- a composite indicator can be compensatory regarding deep deficiencies in some dimensions, so decision makers may only have a partial and optimistic view of reality;
- if there are some dimensions that are not properly represented, the composite indicator is necessarily distorted.
- Despite all these considerations, if the composite indicator is properly defined, it can be a very useful and powerful tool to evaluate policy, concepts and complex realities.

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Chapter III

Domain-based conceptual model to measure Gender Equality in Academia

Silvana Badaloni, Anna Maria Manganelli, Lorenza Perini, Ilaria Rocco

3.1. The Eige approach: the domains' structure

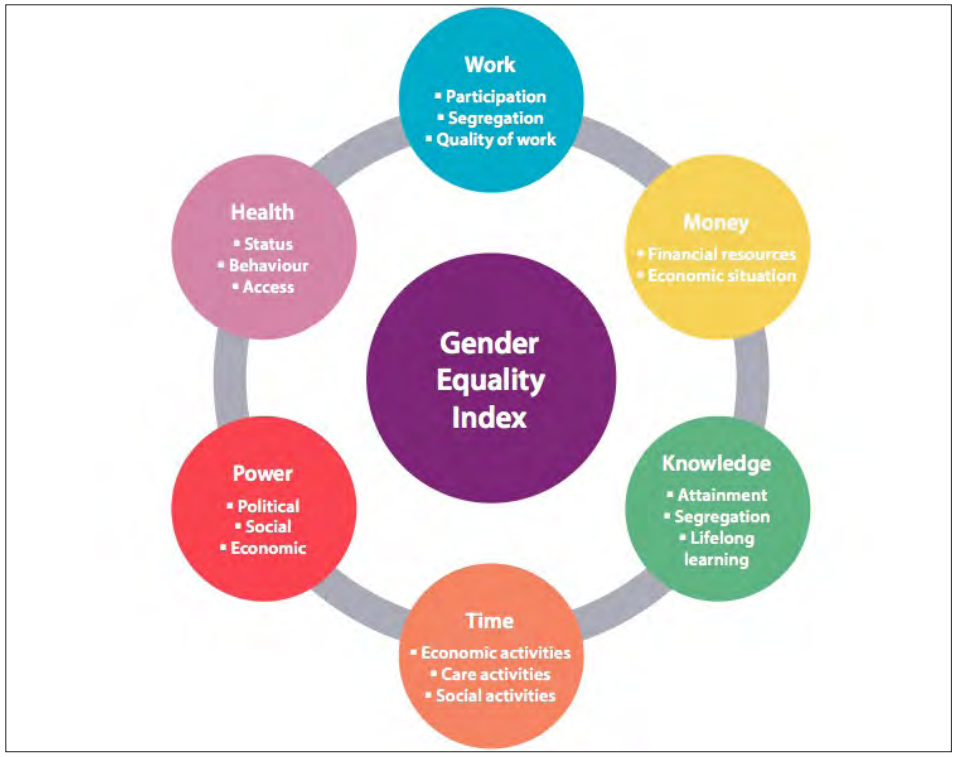
In order to develop a reliable system for measuring gender equality in Academic Institutions, our idea is to start from a well-founded conceptual approach relying on a solid statistical methodology, such as the one developed by Eige – the European Institute for Gender Equality – for the Gender Equality Index (Gei) (Saltelli et al., 2011; Bericat, 2012; Eige Report 2013, 2015).

The Gender Equality Index assesses the impact of gender policies in the European Union and in Member States over time. It is a unique measuring tool that synthesizes the complexity of gender equality as a multi-dimensional concept into a single summary measure: its value ranges from 1, standing for absolute gender inequality, to 100, standing for full gender equality.

Thus, it provides a synthetic measure of gender equality easy to understand and to communicate. Its value has been continuously updated since 2005, both for the Eu and for the Member States: the overall score for Eu-28 was 52.9 in 2012.

The architecture of the Gender Equality Index (Eige-Gei) is based on a conceptual framework that consists of eight domains. The first six - work, money, knowledge, time, power, health – are combined into a core index, plus two additional satellite domains, that is intersecting inequalities and violence. The schematic representation of the Eige Gender Equality Index structure in terms of domains is reported in Figure 3.1. We will briefly illustrate the structure of the domains according to the Eige approach.

Fig. 3.1 – Representation of the frame of the Eige-Gei index (Eige Report, 2015).



WORK Domain

It is used to measure to what extent women and men can enjoy the same rights in this area. In particular, this domain concentrates on equal access to employment and appropriate working conditions. It measures the gender gap between women and men in their involvement in the labour market. It shows a numerical difference between women and men in full-time employment rates, in the duration of working life, in the sectorial segregation patterns as well as in the quality of work. It must be noticed that measuring the "quality of work" is a difficult task, since it involves three main aspects: flexibility, health and security at work, training. The work score for Eu-28 was 61.9 in 2012.

MONEY Domain

Considering "money" as one of the domains on which the Gender Equality Index is based, lies on two important reasons: firstly, the will to address the degrading phenomenon of the feminization of poverty and differences in income; secondly and

more generally, to assess equality in terms of chances that women and men have to access financial resources. Basically, this domain consists of indicators that measure how far each Member States is (and even the European Union as a whole) in reaching equal economic independence between women and men. The composite domain is formed by two sub-domains: one focuses on the gender gap in the distribution of financial resources and the other on the situation of the basic income of women and men. The money score for Eu-28 was 67.8 in 2012.

KNOWLEDGE Domain

This domain is based on the collection of data related to equal access of women and men to education and training, including lifelong learning or the attainment of specific levels of education. The analysis of the gender gap shows a reversal of the participation rates in tertiary education: while historically more men than women achieved higher levels of education, since 2008 the situation has inverted. It is important to monitor the trend in order to detect the stabilization of the phenomenon. What remains unchanged is the pattern of gender segregation affecting several disciplinary fields. One important subdomain to consider in this field is "Lifelong learning" targeting a population aged 25-64. It comprises all learning activities (formal, non-formal, informal or on an ongoing basis) and the main goal is the improvement of one's own knowledge, skills, and competence. The knowledge score for Eu-28 was 49.1 in 2012.

TIME Domain

Time refers to the different ways in which women and men handle the concept of "work-life balance," therefore the different ways in which they allocate their time with reference to the various activities that characterize everyday life. It is divided into two sub-domains which assess respectively "care activities" and "social activities" (the economic ones are left aside since they are already present in the indicators that measure the women's participation in the labour market).

In all Member States, women spend more time than men in caring activities, while men are more present in social activities such as sports, cultural or leisure activities. The undeniable fact that it still seems somehow compulsory for women to spend more time than men in caring activities affects different aspects of their lives, in particular their careers: the gender employment gap is strongly linked to family and care activities, making statisticians declare that with the exception of Sweden, Portugal and Slovenia, the employment rate for women with children is surely lower than the one for women without children. In Eu-28, in spite of all the steps forward and the strategies undertaken in these years, the gender gap in activities related to care is still wide and therefore deserves attention, as well as the one related to social activities. The time score for Eu-28 was 37.6 in 2012.

POWER Domain

This domain focuses on the important differences in the amount of women and men holding a key leading position in the working area. Therefore, it highlights the gender-based balance in decision-making positions. Since the causes for the under-representation of women are multiple and assorted, a comprehensive approach is surely needed in order to tackle the problem at best. The [Eige Report, 2015] provides two basic reasons for which a gender-balanced representation of power is a priority to be achieved as soon as possible: firstly, because it regards the equal access for all to the concept of "social justice," and secondly, due to the notable importance of reaching a gender-balanced representation of the society as a whole and of the positions of power. This domain should be divided, conceptually speaking, into three sub-domains: economic, political and social. Unfortunately, though, the social sub-domain of power is provided with too little gender based indicators. Thus, only two sub-domains are considered. The political power is measured through the collection of data regarding three different sectors: ministries, parliaments and regional assemblies. Two opposite cases: Finland, where about one third of board positions is occupied by women, and Malta with 4% of board positions occupied by women. In average, men are more over-represented in the economic decision-making field than in the political one. The power score for Eu-28 was 39.7 in 2012.

HEALTH Domain

The last core domain concentrates on the existing relationship between gender and health, implying two different areas: heath status and access to health structures. This domain, more than the others, presents a mixed picture, almost touching equality in certain areas, while highlighting worrying data in others. Indicators of the "Health" domain show that there is the need to address strong efforts in this direction, since it is crucially linked to other fundamental aspects of life such as economic independence or human dignity. In the 2015 Gender Equality Index Report, amongst the "key trends" of this domain, there is the idea that these data confirm the old adage "women get sicker and men die younger." The health score for Eu-28 was 90.0 in 2012.

The satellite domains **Intersecting Inequalities** and **Violence** are conceptually related to gender equality, but cannot be included in the core index because they measure an illustrative phenomenon – that is, a phenomenon that only applies to a selected group of the population (e.g. violence is against women). Since women and men cannot be considered to be homogeneous groups, it is difficult to measure different patterns in the population. Surely, violence is a critical area of gender equality and it becomes crucial to collect data on this domain.

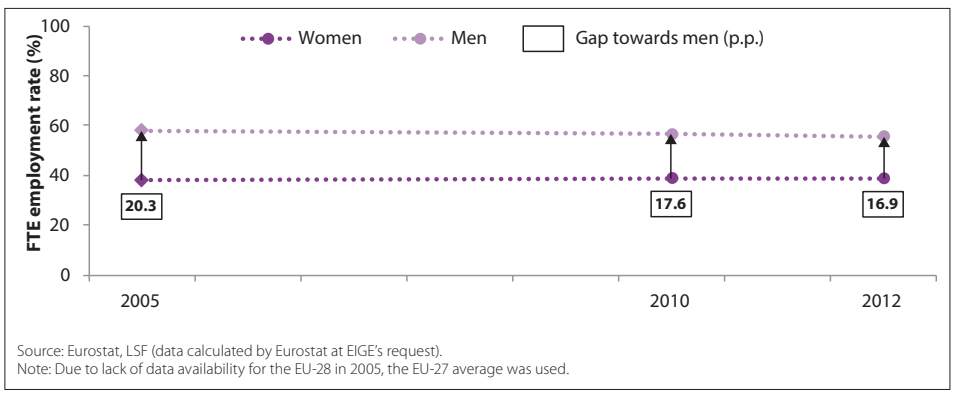
INTERSECTING INEQUALITIES Domain

Different concepts are included in this domain. In order to have an accurate and indicative assessment, the 2015 Report of the Gender Equality Index focuses on three major groups: people born in a foreign country (used as a general proxy for minority groups); people aged 55 to 64 (used as a general proxy for older workers); and people living in a household with a single adult and one or more children (used as a general proxy for situations regarding lone parents). The source of information used to gather information and data on these groups of individuals is the 2011 Eurostat's Eu Labour Force Survey.

VIOLENCE Domain

As previously mentioned, the violence domain is a satellite domain: it is the most characteristic because of its broad nature. Importantly, in identifying this satellite domain, the two sub-domains of which it should consist (*direct* and *indirect* violence) remain blank because of a lack of harmonization of data in 2013. Then, in the 2015 Report, most of the data are linked to *disclosed violence* only, which means that it provides only information that respondents decided to share during interviews, excluding all those cases not reported to the police or in interviews, and therefore not providing a complete picture of the actual presence of violence against women.

Fig. 3.2 – Full-time equivalent participation by sex in EU Member States, 2005-2012.

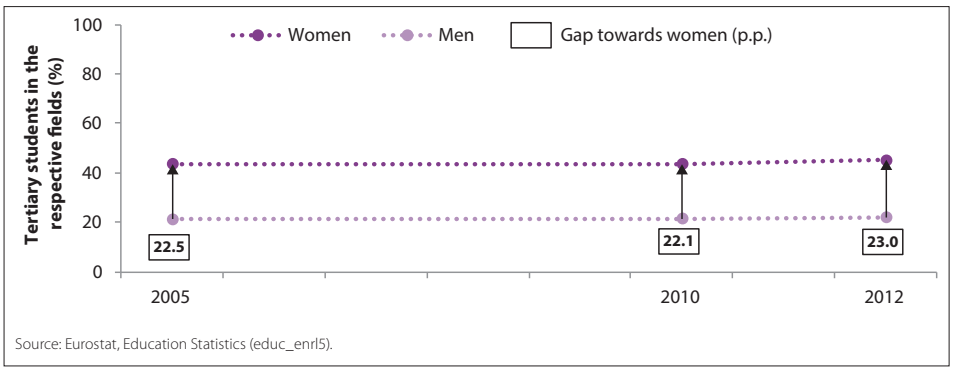


Source: Eurostat, LSF (data calculated by Eurostat at EIGE's request).
Note: Due to lack of data availability for the EU-28 in 2005, the EU-27 average was used.

To show how the gender gap indicators proposed by Eige are computed in different domains, let's consider the data reported in the graph of Figure 3.2 for the domain Work, in the sub-domain Participation with full-time contracts. For Eu-28 in average, in 2012, the women represented amounted to 39% and men to 56%, with a gender gap towards men of 16.9.

Similarly, gender gaps in other domains are positive towards men, except in the Knowledge domain in which the gender gap in educational fields of studies across Member States was always towards women. As an example, the gender gap in participation in the educational fields of Teacher training and education science, Health and welfare, Humanities and arts in Eu Member States, in 2012 was 23.0 towards women (Figure 3.3).

Fig. 3.3 – Participation of tertiary students in the fields of 'Education', 'Health and welfare', 'Humanities and arts' (Isced 5-6) by sex in Eu-28, 2005-12.



Source: Eurostat, Education Statistics (educ_enrl5).

It is important to highlight that, combining the different variables, Eige does not take into account the direction of the gender gaps, i.e. if they are towards men or towards women. Particular attention must be given to a specific aspect in the methodology used in the Eige approach to derive a synthetic indicator from data. As well explained in the 2013 Gender Equality Index Report, a metric evaluation is introduced first considering the position of women and men with reference to each other and then considering the absolute value of the difference as reported in the following formula:

$$Y_{(Xit)} = | X_{it}^{w} / X_{it}^{a} - 1 |$$

where *w* stands for women and *a* stands for average, the calculation being carried out for the variable X for the *i*-th country (*i*=1..28 *i*-th) in the period *t*. This is a relative

indicator with values that fall in the interval [0; 1] and can be computed for any values for women and men.[8]

As already mentioned, the main consequence of this choice is that gender gaps lose their sign. In other words, a gender gap in which women are disadvantaged compared to men, is treated in same way as if men were the disadvantaged group. Thus, compensation effects between these two groups are avoided and the direction of the indicator toward one or the other group is lost. In the Eige model, to get a direction, it is necessary to go below the index and come back to the single variables related to gender gaps towards women or men.

Moving toward the calculation of Eige Gender Equality Index, further correcting coefficients are considered in the Eige approach: the explanation and description of these steps assumed in the Eige methodology to compute the synthetic indicator is outside the scope of this paper.

Thus, what is calculated as Gender Equality Index is an absolute value where 1 stands for absolute gender inequality and 100 for full gender equality. Referring to this scale, the average score for Eu-28 was 52.9 (2012). Halfway towards equality!

Moreover, progress since 2005 has only been marginal, with the score increased by less than two points since 2005, when the Eu achieved a score of 51.3 in average.

Despite more than 50 years of gender equality policies at Eu level, the findings show that gender gaps are still prevalent across the Eu. With an average score of 52.9, the Eu remains far from reaching its gender equality target. The range across Member States, from 33.7 (Romania) to 74.2 (Sweden), shows the broad scale of variation throughout the Eu in the level of overall gender equality achieved. Nearly half of the Member States are below the score of 50 (Italy 41.1).

3.2. The role of the "sister projects" community: the GenisLab gender budgeting approach

In order to develop a method aimed at implementing a Gender Equality Index for Academic Institutions in the framework of the GenderTime Project, we carried out a research on the international and Eu existing methodologies. In this context, the Eige's approach results to be an excellent and validated method, providing a tool of great potential and interest from the methodological point of view among the set of approaches available in the state-of-the-art. However, the Eige approach, conceived to compare countries, is not intended for the academic environment, based on people.

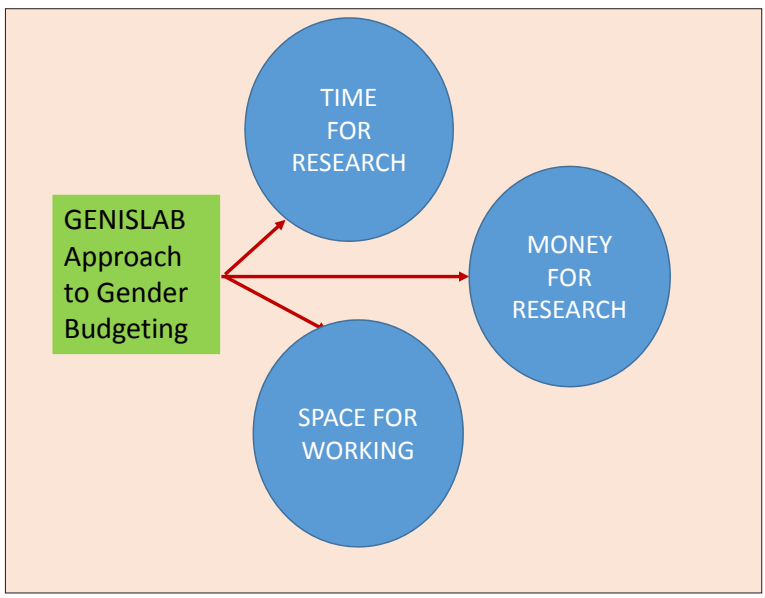
[8] The value 0 for $Y_{(Xit)}$ identifies a condition of gender equality. For reasons of interpretability, this indicator is reversed by taking: $\mathbf{1 - Y_{(Xit)}}$.

In the existing literature on the systems for measuring gender equality in Academic and Research Institutions, a good solution for these open problems can come from the Sister Projects community.

The GenisLab Project has defined several important indicators in the framework of the "gender budgeting" approach to the academic environment (Genova et al, 2014), considering that a gender responsive budgeting is a complementary tool to the gender mainstreaming perspective (Villagomez, 2004). From our point of view, the GenisLab approach, differently from the Eige-Gei methodology that addresses differences and discrimination in population, is one of the first attempts to take into consideration the "small size" of the institutions and deal with people.

The GenisLab approach starts from the identification of specific areas of interest looking for hidden stereotypes. In the gender budgeting dimension, stereotypes producing discrimination among sexes, can easily hide in specific areas such as *space* (addressing both the characteristics of the office and the availability of spaces for care), *money* (translated into *funds*) and *time* (work-life balance) (Figure 3.4). Dimensions that are also very consistent with the feminist discourse.

Fig. 3.4 – The GenisLab Gender Budgeting approach.



In the GenisLab perspective as regard to the domain *time,* women seem not as fully committed as men (due to work-life balance duties, for example); *space* (intended as space for research and where to live academic life) seems not to be a dimension considered relevant by women (they do not consider space as a symbol of power as men do); and finally *money*, translated as "managing finances," is usually perceived by women as a major commitment, thus interpreted in poor commitment in funds or grants for research. All perspectives that seem very interesting to analyze more in depth.

Since our goal is to adapt methodologies based on existing indicators to a context that relies on micro-data regarding specific local research institutions and individuals, we take into account this approach for an integration with the more expressive Eige-Gei one. At this point, a question arises: is it possible to merge the two approaches?

3.3. The conceptual combination of the approaches

It is true that knowing the numbers is not enough: studies conducted in recent years at the University of Padua on gender culture in Academia (Badaloni *et al.*, 2011; Badaloni, Contarello, 2013) showed how the careers of women in research, starting with the choice of university until the end, produce an effect of accumulation of large and small discriminations that end up weighing on women's careers (Godfroy, 2015). Disrupting this invisible and insidious mechanism is the primary objective that must be achieved by an institution devoted to education such as a University. In fact, we think that the specific tool we are building comes as a contribution in the direction of making the inequalities more transparent and giving the institution more chances to solve them. Moreover, an approach of this kind – i.e. building new tools for measuring gender equality based on domains and meta-analysis of data – will be an opportunity for a serious reflection and evaluation on the real significance of tools already existing at Universities (at least in Italy). Monitoring gender equality should become systematic in any institution, because it helps to build the kind of culture which is still missing in our academic contexts, accustomed to respond only to individual cases and individual needs, but not yet prepared to think in terms of equality for all.

Given that a lot of tools and good practices are now at our disposal owing to the Eu decision to fund projects focused on "fixing the institutions," it is important to notice that, despite all these efforts, a simple and flexible tool to monitor gender equality has not been implemented yet at University level.

In the following paragraph, we provide a description of the process through which our research group built the system of indicators called Unipd-Gei.

Firstly, it is important to mention that we are trying to highlight the gap toward women, not just a "neutral" gap. We believe that it is important to build a Gender Equality Index that takes into account this direction explicitly.

In our approach we intend to express each time if the gender gap detected is in favour of women or against them. Then, for each domain, the first step consists in identifying the direction of the simplex indicator that defines the conceptual model. For example, in the Work domain (sub domain participation) we assume as true that it is better to have a permanent contract than a non-permanent one, in this establishing the "direction" of the gap we are going to detect.

The Eige index is made of eight different domains. At the moment, six of them are included in the Index, and are as follows: work, money, knowledge, time, power, health. Each of them is divided into sub-domains, for a total of twelve items corresponding to different "questions" (indicators) declined into different variables. Our efforts have been focused on tailoring this frame to the academic world, slightly changing the conceptual model, re-formulating all questions and modifying almost all of the variables, but leaving intact the domain-based structure.

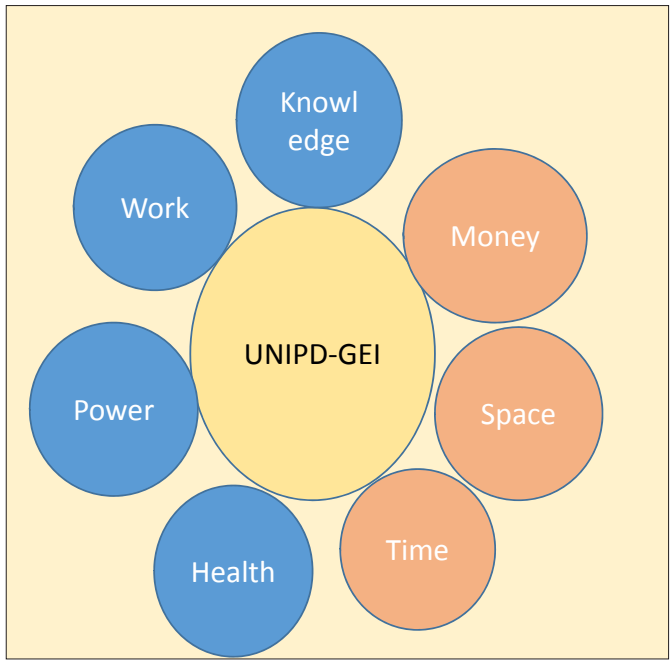
To this frame, we have added several specific elements coming from the gender budgeting analysis in the academic context (for example space for research, time for work and life, and allocation of research funds). The combination of the two approaches (Eige revised and GenisLab) is now leading us to build our first tailored tool for measuring gender equality in Academia using and putting into practice all the resources that the considered institution (Unipd) already has in its official datasets (numbers of people per role, action plans, code of conducts, expertise, etc). The idea that these two methods of analysis can be crossed in the academic context appears of great originality as well as of big potential.

There are at least two main differences that distinguish the Eige approach from the Unipd-Gei approach:

– Unipd-Gei refers specifically to research and academic institutions;
– Unipd-Gei allows to establish, for each domain, in favour of which gender the gap is to be measured by the indicators. Instead, in the Eige approach the gaps are calculated in their absolute value, thus losing the information concerning the disadvantaged gender.

Moreover, one of the main features of Unipd-Gei is that, since we can rely on people, all the respondents can evaluate personally the importance of each domain through specific questions, while for Eige, dealing with the population, a panel of experts in each country is strongly needed to decide the weight of each domain in the specific national context.

Fig. 3.5 – The UNIPD-GEI approach as combination of the two methodologies.



3.4. The UNIPD model for measuring gender equality

In this paragraph we will describe each domain in detail and the meaning assumed in our model.

The conceptual model has led the collection of data and information to fit the values of each considered domain. On this basis, a set of indicators was chosen capable of comparing the different situations of women and men in the academic world. The combination of the comparative indicators related to the domains allows to define the Gender Equality Index for Academia and Research Centres. Implemented at the University of Padua, it will constitute a useful instrument of comparison among Universities and Research Centres, both in Italy and in Europe.

Now let's describe the main steps followed in our approach.

Working Hypothesis. The first step is to identify the direction of the simple indicator, outlining the conceptual assumptions underlying the construction of the indicator.

Collection of information. Data come from two different sources: official sources, when the required data are available; a survey, when no information is provided by offices.

Coding into variables. After collecting information, data are coded into variables. To compare different variables, a process of normalization must be considered, according to the definition that will be given in Chapter IV.

Calculation of the simple indicator by sex

At this point we put together the individual indicators for the two sexes, calculating the specific indicator of a certain topic separately for males and females.

$$\mathbf{I_F = \Sigma\, I_{Fi} / n_F} \text{ with } \mathbf{I_F \in [0; 1]}$$
$$\mathbf{I_M = \Sigma\, I_{Mi} / n_M} \text{ with } \mathbf{I_M \in [0; 1]}$$

As it will be explained in the following Chapter, the individual indicators $\mathbf{I_{Fi}}$ and $\mathbf{I_{Mi}}$ need to be further weighted taking into account non-responses.

Calculation of the simple unique indicator

To compare the indicator obtained by male and female related to a certain topic we will calculate the ratio:

$$\mathbf{I = I_F / I_M}$$

If this ratio assumes a value of 1, it means that males and females have the same value between 0 and 1.

Instead, if this ratio assumes values below 1, the indicator for men is higher than the one obtained by women, which means that men experience a better condition than women regarding the topic analysed.

We will now explain more in detail the seven domains, describing their articulation into sub-domains and their operative translation: for each domain we will indicate the hypothesized direction and the source of data collection.

On the basis of this conceptual and detailed structure, we carried out a survey in order to collect the missing information.

The questionnaire[9] was distributed to Full and Associate Professors, Assistant Researchers, Research Fellows and Post-Doc Fellows of the University of Padua in September/October 2015.

The target population was composed of 3,041 individuals.

[9] The text of the survey is in Appendix.

The respondents amounted to 954.

Women, being equal to 38.4% of the academic staff, corresponded to 47.2% of the respondents. In the next chapter, we will analyse more in detail the processing of the data collected through the survey.

WORK Domain

Domain	Sub-domains	Variables	Categories	Sources
Work	Participation	Types of contracts	Permanent Not permanent	Institutional datasets
	Quality of work	Time for work activities	Teaching activities Research activities Management activities (commissions, boards, meetings,…)	Survey
		Career improvement	Meetings/conferences/workshops Specialisation or advanced courses Research periods abroad	Survey

Subdomain: Participation

Variable: Types of contracts

Direction of the indicator: Having a permanent contract is preferable than having a non-permanent contract.

Subdomain: Quality of work

Variable: Time for work activities

Direction of the indicator: The ideal situation occurs when the distribution of time among the different academic work activities (research, teaching and management) stated by the respondents coincides with the distribution considered optimal.

Subdomain: Quality of work

Variable: Career improvement

Direction of the indicator

It is assumed that having the possibility to perform various activities considered important in the academic community (from participation in conferences to periods of research abroad) is *good* for professional achievement and academic career

MONEY Domain

Domain	Sub-domains	Variables	Categories	Sources
Money	Gender pay gap	Non-institutional activities	Activities conducted at the university but for third parties or in partnerships Teaching agreements with other public or private universities Consulting and/or assessment activities Paid participation in committees and commissions Publishing/editorial activities	Survey
	Access to funds	Funds for research	Funding received from: own university national sources European/international sources	Survey

Subdomain: Gender pay gap

Variable: Non institutional activities

Direction of the indicator: To assess sources of income in addition to the basic salary.

To perform additional remunerated activities, and therefore obtain extra money in addition to the basic salary (which is the same for women and men at the same stage of career) is considered positively.

Subdomain Access to funds

Variable: Funds for research

Working hypothesis: The possibility to access funding for research from different sources is positive and desirable

KNOWLEDGE Domain

Domain	Sub-domains	Variables	Categories	Sources
Knowledge	Products of research	Publications and patents	Articles in peer-reviewed journals Book Chapters Monographs (except guardianship) Patents	Survey

Subdomain: Products of Research

Direction of the indicator: To publish a lot is the most significant recognition a person can have for her/his research activities.

TIME Domain

Domain	Sub-domains	Variables	Categories	Sources
Time	Time for care	Care activities	Working activities (in the workplace or elsewhere) Caring activities (for children, elderly, disabled) Domestic activities Leisure (hobbies, sports, entertainment, cultural activities, etc.)	Survey

Subdomain: Time for care

Variable: Care activities

Direction of the indicator: The ideal situation occurs when the distribution of the time among the different daily activities declared by one person coincides with the distribution that the same person considers as optimal.

POWER Domain

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 body	Academic assignment	University commissions National Commissions Selection committees / recruiting internal and external to the university Committees for the evaluation of research projects Department Board University Bodies Equality bodies Commission scientific and / or teaching of Department Chairman of the School of the University President of the Study Course	Survey

Subdomain: Vertical segregation
Variable: Academic Position
Working hypothesis: For a researcher or a professor the best working hypothesis is to reach the top of the academic pyramid.

Subdomain: Presence in academic bodies
Variable: Academic assignments
Working hypothesis: To be present in the academic bodies allows professors to present and defend their ideas and those of the people they represent, but also to make decisions regarding the policies that the Institution intends to adopt (from resource allocations to didactics organization).

HEALTH Domain

Domain	Sub-domains	Variables	Categories	Sources
Health	Violence	Psychological harassment	Perceived risk (quantified on a scale from 1 to 10)	Survey
		Sexual harassment	Perceived risk (quantified on a scale from 1 to 10)	Survey
		Mobbing	Perceived risk (quantified on a scale from 1 to 10)	Survey
	Wellbeing	Wellbeing at work	Give your opinion (strongly agree/ agree/disagree/strongly disagree) for each statement: My colleagues help me and give me advice I have good friends at work My work gives me the feeling of a well done job I can apply my ideas in my job I am emotionally involved in my job I experience some stress in my work I can influence decisions that are important to my work I feel "at home" in my working environment My current situation at work encourages me to do my best	Survey

Subdomain: Violence

Variables: Psychological harassment, Sexual harassment, Mobbing

Direction of the indicator: Frequently we hear of bullying and sexual harassment at work, behaviours that should not belong to a civilized society. The workplace should be a peaceful and safe environment in which a person should not experience violence or feel threatened.

Subdomain: Wellbeing

Variable: Wellbeing at work

Direction of the indicator: The ideal working environment is a serene environment in which a person feels comfortable and appreciated.

SPACE Domain

Space	Space for work	Type of office	Give your opinion (strongly agree/ agree/disagree/strongly disagree) for each statement: My office has a good source of natural light. My office is away from bothersome sources of noise. I always find my office clean. I can set the temperature I prefer in my office at any time of the year. The computer I use is fast enough for my needs and the software is always up-to-date. My office is one of the most spacious of my department. My desk is large enough for my needs. I have never had to complain about the classrooms assigned to me for holding lectures (no problems of size, equipment, other issues).	Survey
	Space for work/life balance	Access to facilities	Indoor space for children Nursery school/ kindergarten Canteen Area equipped for Eating/heating/ storing food at the Department Car parking Proximity to public transport	Questionnaire

Subdomain: Space for work

Variable: Type of office

Working hypothesis: Referring to the literature on the subject, it is assumed that the ideal workplace for a teacher or researcher is a space for exclusive use. Moreover, this space should be comfortable and provided with the necessary equipment.

Subdomain: Space for work-life balance

Variable: Access to facilities. Access to certain services or facilities helps the balance between work life and private life.

Direction of the indicator: The data is detected through questionnaire.

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Chapter IV

Methodology of the System of Indicators

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4.1. Introduction

One of the main objectives of the FP7 Eu Project GenderTime is to develop methodologies and tools for measuring Gender Equality in Academic and Research Institutions. The previous chapter described the conceptual model proposed by the Unipd team. In this chapter, the statistical methodology used for the construction of the system of indicators capable for measuring the gender equality in the University of Padova will be presented.

Indicators should be developed through a logical modelling process leading from concept to measurement (Maggino, Zumbo, 2012). Following Lazarfeld's model (1958), the pathway for the construction of a system of indicators is: (a) conceptual model, (b) areas, (c) latent variables, (d) basic indicators, and (e) observed variables.

This is the structure of the top-down approach. This approach is certainly preferable when the objectives of the study are explicit. Anyway, the approach is complex and requires two steps of analysis for the practical construction of the system of indicators:

– the identification, or construction, of the data sources necessary for the computation of the indicators;
– the development of a methodology of indicator construction, aimed at gender comparison.

In this chapter we will describe these two aspects. Paragraph 4.2 will provide the data sources, in particular the survey (reported in Appendix), giving some descriptive data of the population analysed.

Paragraph 3 will explain the methodology adopted for the construction of the system of indicators. Finally, paragraph 4 will give an example of indicators for a domain. The chapter is closed with concluding remarks and proposals for future work.

4.2. Data sources

Given the choice of the top-down approach, we started by checking which data were already available and which data had to be gathered.

Firstly, we referred to the administrative database and checked for the available data.

Secondly, starting from the population list available in the administrative database, we implemented a survey in order to collect the information not available from the administrative database.

4.3. Administrative data

The administrative data refer to information collected primarily for administrative purposes. These sources provide the complete list of the population, indispensable for organizing a survey.

The target population of this study was the academic staff members of the University of Padua at 31st December 2014, including Full and Associated Professors, Assistant Researchers, Research Fellows (fixed-term) and Post-Doc Fellows.

The Management Control Office of the University of Padua provided, for all the members of the population, the following variables:

– demographic characteristics (gender and birth date);
– the characteristics of the academic position, such as grade (*full professor*, *associated professor*, *assistant researcher*, *research* or *post-doc fellow*), date of the beginning of the latest contract, type of contract (*full-time* or *part-time*);
– the scientific disciplinary field, the affiliation department and the competitive sector (just for professors and researchers);
– academic email address (indispensable for contacting the population units).

The population size is 3,041, 38.4% are women. More than half of the academic staff is aged between 35 and 54, while 20.6% is under 35 and 27% is over 55 (Table 4.1).

Table 4.1 – Distribution of the University of Padua academic staff by gender and age.

Age class	Women	Men	Total
34 and younger	24.8	18.0	20.6
From 35 to 44	32.0	26.5	28.7
From 45 to 54	22.9	24.4	23.7
From 55 to 64	14.7	19.6	17.7
65 and older	5.6	11.5	9.3
Total	100.0	100.0	100.0

The female component of the academic staff is on average younger than the male component. Indeed, while the percentage of women under 35 years of age is 24.8%, the percentage of men drops to 18.0%. We can also observe that men whose age is >= 65 are 11.5%, instead the women are less than a half of this percentage.

The post-doc fellows amount to 32% of the academic personnel, while the percentage of permanent research fellows is 26.9%, and the percentage of fixed-term research fellows is 1.4%.

Table 4.2 – Distribution of the academic staff of the University of Padua by position and gender.

Academic Position	**Women**	**Men**	**Total**
Full professor	7.6	21.4	16.1
Associated professor	19.8	25.5	23.3
Assistant Researcher (Permanent)	30.9	24.4	26.9
Research Fellow (Fixed-term)	1.7	1.2	1.4
Post-Doc Fellow	40.0	27.6	32.4
Total	100.0	100.0	100.0

Comparing the distribution of the academic positions between men and women, it is possible to observe that the percentage of full professors for men is about three times that of women. Instead, the percentage of post-doc fellows for women exceeds by about 12 percentage points that for men.

4.4. About the survey

In order to collect the information needed to complete our "dashboard," we implemented an ad-hoc survey.

As mentioned, the subject areas addressed in the questionnaire reflect the seven domains of analysis described in the previous chapter: work, money, knowledge, time, power, health and space.

The questionnaire contains forty questions. One of the questions asks to range the domains from the most important to the least important. This question will allow to use a participatory approach in the subsequent phase of the indicator assembly (Maggino, Ruviglioni, 2009). Indeed, the ranking provided by the respondents will be used to assign a different weight to different domains.

We implemented a web-survey. Given that all the email addresses of the population units are available and that the target population uses the web almost daily, this is the simplest and cheapest survey technique (Dillman, 2000).

On 22nd September 2015 we sent the survey invitations by email to all the academic staff members included in the list provided by the offices.

The collection of the responses lasted three weeks.

The response rate was equal to 31%, this result being in line with the expected response rate for a web survey (Cook *et al.*, 2000).

The respondents were 954. The women, who amount to 38.4% of the academic staff, are 47.2% of the respondents. This result is probably due to a stronger awareness of the survey contents.

Comparing the distribution by academic position of the respondents and the target population, it is possible to observe that the post-doc fellows are the members of the academic staff that answered the survey the most, while the full professors are the ones who answered the least (Table 4.3).

Table 4.3: Distribution of the survey respondents and of the target population by academic position.

Academic position	Respondents	Target population
Full professor	12.1	16.1
Associated professor	22.0	23.3
Assistant researcher	33.0	26.9
Research Fellow	1.9	1.4
Post-doc Fellow	31.0	32.4
Total	100.0	100.0

It is possible to observe several differences between the respondents' and the target population's distributions by school. These gaps may be due to different characteristics of the academic staff: age structure, awareness of the survey contents, academic role, and several others (Table 4.4). In particular, some schools such as Medicine and surgery are under-represented among respondents, while others, like Science, are over-represented.

Table 4.4 – Distribution of the survey respondents and of the target population by School.

School	Respondents	Target population
Agriculture and veterinary medicine	8.91	9.24
Economics and political science	5.66	5.66
Law	1.78	3.45
Engineering	16.25	16.97
Medicine and surgery	18.76	22.46
Psychology	5.77	4.31
Science	27.25	23.78
Human science, social and cultural heritage	14.57	13.15
Other interdepartmental centres	1.05	0.99
Total	100.0	100.0

4.5. System of indicators: methodology and practical steps

In order to build a system of indicators for comparing men and women in the University, we decided to compute the elementary indicators for men and women for each variable of interest. This allows to analyse data separately for women and men, and to compare the data between the two groups. The comparison was carried out by simply dividing the indicators for women from the indicators for men. Therefore, the more the indicator of comparison is close to 1, the less is the gender gap:

$$Gap\ Indicator = (Indicator\ for\ women)/(Indicator\ for\ men)$$

The best outcome is to have a value equal to 1 because in that case the two indicators are similar, meaning that the condition for men and women is balanced. Moreover, if the value of the indicator is below one, there is a situation in which women are penalized compared to men; whereas, if it is above 1, women are privileged.

It is possible to interpret this ratio like a sort of relative risk, which is the measure of the excess of risk between two groups of people having different characteristics. So the Gap Indicator, computed as the ratio of women's and man's indicators, can be read as a measure of the excess risk (to have determinate characteristics or to reach some specific professional goals) due to being women instead of being men (Rothman *et al.*, 2013).

In the following, we will present and describe all the steps necessary to provide the set of indicators. To clarify the method, we will use an example: the sub-domain Gender Pay Gap of the Money domain, for which we will illustrate the results in the next section.

4.5.1. Indicators direction

As shown in Chapter 3, as a first step we defined the direction of the simple indicator according to the theoretical framework. In our system, "higher is better;" this means that all indicators have higher values for better situations. When this is not the case, the indicator is reversed, as explained in the following sections. This step is necessary because: a) the reader can understand immediately the meaning of the values, b) it is possible to put the indicators together so as to obtain a synthetic indicator.

4.5.2. Question form

In collecting data through the questionnaire, we made clear questions with answers oriented in the right way ("higher is better").

For instance, it is necessary to collect information on earnings outside the salary (i.e. consulting activity), in order to evaluate the presence of a "gender pay gap." This is the question we used in the questionnaire:

> "*Think about the last two years (2013- 2014) in your working life. In addition to institutional teaching and research activities, were you involved in other activities for which you were remunerated?*"
>
> ☐ *Yes* ☐ *No*
>
> *For "other activities" we mean:*
> – *activities conducted at the university, but for third parties or as part of partnerships*
> – *teaching agreements with other public or private universities*
> – *consulting and/or assessment activities*
> – *paid participation on committees and commissions*
> – *publishing/editorial activities"*

4.5.3. Coding of the variable

The answer should be "translated" in a variable recorded in the database for every unit. Following the previous example, Yes is always coded with 1, and No with 0. Therefore, the answers are correctly oriented.

4.5.4. Normalisation

Data can be collected by using several measurement scales. In order to compare the variables, it is necessary to proceed with a normalisation, which permits the comparison among variables measured with different scales (Ebert, Welsch, 2004).

There are several methods for normalizing variables. We chose the Min-Max method, that makes the variables vary in a range between 0 and 1. So, the normalised variable I_{ji} related to the person *i*, who has gender *j* (where j is male or female) is:

$$I_{ji} = \frac{observed\ value - theoretical\ minimum}{theoretical\ maximum - theoretical\ minimum}$$

If the variable is measured with a scale where "Lower is better", then it is necessary to invert its value and consider not I_{ji}, but $(1\text{-}I_{ji})$.

When the variable is equal to the theoretical minimum, the normalized variable is 0 and it means that it is the worst situation possible; instead if the variable is equal to the theoretical maximum, its normalized value is 1 and it means that it is the best situation possible.

Following the previous example, the normalised variable of pay gap related to the person *i* that has gender *j* (where j is male or female) is:

$$I_{ji} = \frac{observed\ value - 0}{1 - 0}$$

4.5.5. Weighing answers

When data are collected with the web-survey, it is useful to weigh responses in order to consider non-responses (Holt - Smith, 1979). In fact we can assume that non-response percentages are different depending on gender, academic position and school. Under this hypothesis, the objective is to respect the same distribution of the population among the respondents, by weighing answers.

The formula used to compute weights is the following:

$$w_{jps} = \frac{f_{jps}}{r_{jps}}$$

where w_{jps} is the computed weight for a person with gender *j*, academic position *p* and school *s*, f_{jps} is the number of people with gender *j*, academic position *p* and school *s* in the whole population and r_{jps} is the number of people with gender *j*,

academic position *p* and school *s* among respondents (Table 4.5).

We computed a weight for each intersection of gender, academic position (full professor, associated professor, assistant researcher, research fellow, post-doctoral fellow) and School.

For example, 40 male full professors are employed in the Agriculture and Veterinary Medicine School, which is equal to 1.32% of the whole population, but only 6 of them answered the questionnaire (0.63% of the respondents).

Therefore, to represent them properly, we have to assign to their answers a weight equal to 6.67 (the rate between the presence in the whole population and the presence in the answering sample).

However, in correspondence of some combinations, we had no respondents (mostly in classes in which there were few people also in the whole population). Therefore, we had to put some of these groups together. For instance, fixed-term research fellows have different weights only for different gender (with the same weight in every school).

Once weights are computed, we can assign them to answers, which are no longer values between 0 and 1, but weighed in order to consider non-responses:

$I^*_{ji} = I_{ijps} \cdot w_{jps}$, where I^*_{ji} is the weighed variable related to the person *i* that has gender *j* (where *j* is male or female), I_{ijps} is the normalised variable related to the person *i* with gender *j*, academic position *p* and school *s* and w_{jps} is the proper computed weight (from table 4.5).

For example, the weighted variable of pay gap related to a male Full Professor employed in the Agriculture and Veterinary Medicine School takes the value 6.67 (6.67*1), if he has received at least one kind of additional earning, and 0 (6.67*0) otherwise.

Table 4.5 – Calculated weights for every combination of gender, academic position and school.

	Schools of:	Full professor	Associated professor	Permanent research fellow	Fixed-term research fellow	Post-doctoral researcher
Women	**Agriculture and veterinary medicine**	2.33	4.25	1.95	2.00	4.10
	Economics and political science	6.00	3.40	3.63	2.00	1.70
	Law	2.00	3.33	2.40	2.00	10.00
	Engineering	5.00	2.50	1.50	2.00	3.39
	Medicine and surgery	4.00	2.79	3.27	2.00	2.91
	Psychology	2.40	1.22	2.33	2.00	2.08
	Science	3.25	2.14	2.00	2.00	2.21
	Human science, social and cultural heritage	3.11	2.67	2.40	2.00	3.12
	Other interdepartmental centers	-	-	-	2.00	2.67
Men	**Agriculture and veterinary medicine**	6.67	3.46	2.47	2.75	4.17
	Economics and political science	8.33	5.00	2.23	2.75	2.43
	Law	38.00	38.00	7.00	2.75	7.00
	Engineering	3.64	3.74	2.24	2.75	5.22
	Medicine and surgery	10.25	4.48	6.44	2.75	3.37
	Psychology	8.00	5.50	1.50	2.75	3.67
	Science	2.90	3.34	2.29	2.75	4.82
	Human science, social and cultural heritage	3.31	5.22	2.54	2.75	2.56
	Other interdepartmental centers	-	-	-	2.75	3.14

4.5.6. Computation of the elementary indicator by gender

Starting from the weighted variable measured for every unit, we can proceed with the computation of the elementary indicators for women and men. We compute two indicators in every sub-domain: one for men I_M and one for women I_F, as follows:

$$I_F = \sum_{i=0}^{N_F} I_F^* \Big/ N_F$$

$$I_M = \sum_{i=0}^{N_M} I_M^* \Big/ N_M$$

where I_{Fi}^* and I_{Mi}^* are the weighted variables (using weights from Table 4.5) measured for every woman and for every man, N_F is the number of females and N_M of males in the whole population.

Since we are dividing the sum by the number of men and women, we obtain two indicators that are between 0 and 1.

For instance, the pay gap elementary indicators for women and men are I_F=0.396 and I_M= 0.549: 54.9% of men and only 39.6% of women have additional sources of income.

4.5.7. Computation of the comparison indicator

Once obtained the indicators for men and women, these need to be compared. We chose to compute the ratio between the female and the male indicator for each sub-domain:

$$I = I_F / I_M$$

When I =1, the situation among women and men is the same; if I <1, women are in a worse situation than men; if I >1 women are in a better situation than men. In the second case, the difference between 1 and I is a measure of the gap between men and women.

The comparison indicator for pay gap is

$$I = I_F / I_M = 0.721$$

This indicator is less than 1, which means that women are penalized compared to men, with less additional sources of income. Moreover, the gap to reach a balanced situation is equal to 0.279, the gap for women being 27.9%.

4.5.8. Age standardization

The comparison between male and female could be biased by the different age structure of the two populations. We know from table 4.1 that the considered men are older than the considered women, consequently there are many differences between the indicators computed for women and men. Even the academic position could depend on the age structure. To control the contribution to age in the value of the indicator, we computed crude and also standardized indicators using five-year age brackets, applying direct standardization (Naing, 2000).

The question that we had in mind when standardizing was, "Which would be the value of the indicator if the male/female population had the same age structure?"

For the pay gap indicator we found elementary indicators equal to 0.549 for men and 0.396 for women, but it is plausible that a part of this difference is due to the different age structure. The first step for standardizing these indicators is to compute age specific indicators for every five-year age bracket. Then, we estimated the weight that every age bracket has in the whole population. By multiplying the age specific indicators by these weights, and summing the results, we get the standardized indicator:

$$I^{std} = \frac{\sum I_k * P_k}{\sum P_k}$$

where I_k is the Indicator for the age bracket k and P_k is the Number of people in the age bracket k in the whole population. The standardized indicator is equal to 0.535 for men and 0.395 for women, so I=0.738 and the gap is 26.2%, slightly less than the gap computed with the non-standardised indicators. This means that the age structure has a weak effect in the additional sources of income.

4.6. Example of the construction of indicators for the Money domain

In this paragraph we offer a practical example of the construction process of the indicators (Oecd, 2008) of the *Money* domain. The Money domain is composed of two sub-domains: *Gender pay gap* and *Access to funds*. The process for constructing the indicator related to a domain begins with the distinct analysis of its sub-domains.

4.6.1. Sub-domain: Gender pay gap

Working hypothesis

The sub-domain *Gender Pay Gap* of the *Money* domain is aimed at evaluating the earning differences between the men and women of the academic staff.

In Italy the salary of a member of the academic staff depends only on the academic position. Therefore, we considered additional sources of income.

Data collection

The data needed for this sub-domain were collected through the questionnaire. Two questions were asked to specifically collect the performance in non-institutional activities of the academic staff. The first question, shown in 4.3.2., is a filter and mandatory for the respondent: if the respondent answers 'Yes,' it is necessary to specify the type of activity carried out for perceiving additional earnings.

Coding of the variable

The *Gender Pay Gap* variable takes on the value 1 if the respondent has received at least one kind of additional earning and 0 otherwise. It is already normalised, because it lies in [0-1].

Weighing answers

The objective is to rebuild the same answering percentage composition that we would have had in the whole population. Therefore, we assigned a weight equal to the rate between the presence in the whole population and the presence in the answering sample.

For example, the weight assigned to the response of a female full professor of the school of Law is 2.0 (see Table 4.5). This means that her response takes on the values 2.0 (2.0*1) if she received at least one kind of additional earning and 0 (2.0*0) otherwise.

Calculation of the elementary indicators by gender and the comparison indicator

The elementary indicators related to men and women are calculated as mean of the individual indicators:

$$I_j = \sum_{i=0}^{N_j} I_j^* \Big/ N_j \quad .$$

Table 4.6 – Gender pay gap indicators by gender.

	Crude Indicators	**Standardized indicators**
Women	0.396	0.395
Men	0.549	0.535
Total	0.490	0.488
W/M	**0.721**	**0.738**

Table 4.6 shows the indicators (crude and standardized) related to women, men and the total of the academic staff.

Forty-nine percent of the respondents received at least one kind of additional earning; this percentage is equal to 54.9% for males, while decreases to 39.6% for women.

The ratio between the indicator related to women and the one related to men gives the final crude indicator of this sub-domain:

$$I = I_F / I_M = 0.396 / 0.549 = 0.721$$

while the standardized one is:

$$I = I_F / I_M = 0.395 / 0.535 = 0.738$$

A *Gender pay gap* indicator equal to 0.721 (or 0.738 if standardized) means that there is a gap against women equal to 27.9% (or 26.2%).

Characteristics of the gender Pay Gap Indicator

An indicator is a summary measure. Therefore, to examine in depth the gender gap in earnings, we propose several other results. Table 4.7 shows the gender pay gap indicator calculated for five age bracket.

The age bracket from 35 to 44 years presents the lowest indicators. This means that relatively to the additional earnings the women in this age bracket are the most disadvantaged compared to men.

For the bracket from 55 to 64 years of age the indicator is 1.305, so in this case the gap is 30%, women being in advantage.

Table 4.7 – Gender pay gap simple indicators by gender and age.

Age class	**W**	**M**	**Tot.**	**W/M**
34 and younger	0.265	0.338	0.304	**0.784**
From 35 to 44	0.233	0.420	0.338	**0.555**
From 45 to 54	0.498	0.622	0.572	**0.801**
From 55 to 64	0.594	0.455	0.496	**1.305**
65 and older	0.445	0.614	0.553	**0.725**
Total	0.396	0.549	0.490	**0.721**

Age has a strong association with carrying out non-institutional activities. For this reason, in the next tables we propose both crude and standardized indicators.

With reference to the types of non-institutional activities, the percentage of women involved is lower than that of men in all types of activities (Table 4.8).

In particular, the activities in which the gap is greater are consulting/evaluations and publishing activities, with a gap of 53% and 47% respectively.

Comparing the crude and the standardized indicators, no relevant difference is observed.

Table 4.8 – Gender pay gap indicators (crude and standardized) by type of non-institutional activity and gender.

Type of non-institutional activity	**Crude indicators**				**Standardized indicators**			
	W	**M**	**Tot.**	**W/M**	**W**	**M**	**Tot.**	**W/M**
Activities for third parties or agreements in universities	0.128	0.209	0.178	**0.615**	0.119	0.206	0.176	**0.578**
Contracts / awarding of teaching in other universities, public or private	0.097	0.122	0.112	**0.796**	0.089	0.120	0.111	**0.742**
Consulting/evaluations	0.067	0.166	0.128	**0.405**	0.077	0.164	0.131	**0.470**
Participation in committees involving remuneration	0.105	0.140	0.127	**0.753**	0.113	0.131	0.127	**0.863**
Publishing activities	0.105	0.224	0.178	**0.470**	0.114	0.214	0.179	**0.533**

Table 4.9 shows the differences between Schools. About other interdepartmental centres, the construction of the standardized indicator is not feasible because of an insufficient sample size.

If we evaluate the crude indicators, the school in which women are more disadvantaged is Medicine and Surgery, with a gap equal to 54%. However, considering the standardized indicators, the greater gap against women is the School of Law.

Excluding the effect of the age structure, the gap of 18% against men in the School of Psychology decreases becoming in favour of men, even if it is very low (5%).

With reference to the school of Economics and political science, the standardization strongly reduces the gap against women, from 43% to 11%.

Table 4.9 – Gender pay gap indicators (crude and standardized) by school and gender.

Schools of:	**Crude indicators**				**Standardized indicators**			
	W	**M**	**Tot.**	**W/M**	**W**	**M**	**Tot.**	**W/M**
Agriculture and veterinary medicine	0.494	0.684	0.614	**0.721**	0.542	0.673	0.626	**0.805**
Economics and political science	0.322	0.566	0.465	**0.569**	0.434	0.488	0.435	**0.889**
Law	0.523	1.000	0.826	**0.523**	0.457	1.000	0.815	**0.457**
Engineering	0.407	0.606	0.567	**0.672**	0.374	0.660	0.622	**0.567**
Medicine and surgery	0.266	0.572	0.427	**0.465**	0.304	0.550	0.412	**0.553**
Psychology	0.570	0.485	0.536	**1.176**	0.521	0.550	0.526	**0.947**
Science	0.360	0.360	0.360	**1.000**	0.331	0.363	0.360	**0.912**
Human science, social and cultural heritage	0.528	0.600	0.564	**0.880**	0.495	0.535	0.524	**0.925**
Other interdepartmental centres	0.333	0.429	0.403	**0.778**	-	-	-	**-**

Finally, the indicators by academic position can be observed.

The construction of the standardized indicator for the fixed-term research fellows is not possible because of the insufficient sample size.

While the crude indicators suggest the presence of a quite strong gap against women in all the academic positions (associated professor is the only exception with a very low gap), the standardized indicators lead to different conclusions. Removing the effect of the age structure, the gap against women remains for assistant researchers and post-doctoral researchers, while it becomes almost null for associated and full professors.

Table 4.10 – Gender pay gap indicators (crude and standardized) by academic position and gender.

Academic position	Crude indicators				Standardized indicators			
	W	M	Tot.	W/M	W	M	Tot.	W/M
Full professor	0.560	0.713	0.686	**0.785**	0.667	0.676	0.680	**0.987**
Associated professor	0.513	0.551	0.538	**0.932**	0.488	0.473	0.474	**1.032**
Assistant researcher	0.429	0.595	0.522	**0.721**	0.435	0.593	0.524	**0.734**
Research fellow	0.200	0.375	0.292	**0.533**	-	-	-	-
Post-doctoral fellow	0.290	0.383	0.339	**0.757**	0.552	0.682	0.627	**0.809**

4.6.2. Sub-domain: Access to funds

Working hypothesis

The sub-domain *Access to funds* of the *Money* domain is aimed at comparing the research funding available for men and women belonging to the academic staff.

Data collection

The data needed for this sub-domain were collected through the questionnaire.

The following two questions were posed to specifically collect data concerning the availability of funding for the academic staff.

Think about the last two years (2013-2014). Did you have access to research funds?

☐ *Yes* ☐ *No*

What kind of funding did you receive?
Funding received from your own university
Funding received from Ministry
Funding received from other national entities
Funding received from European or international sources
Funding received from foundations and private entities
Other funding

The first question is a filter and is mandatory for respondents; if 'Yes,' respondents should specify which type of funding was received.

Coding of the variable

The variable *Access to funds* takes on the value 1 if the respondent had access to research funds and 0 otherwise. It is already normalised.

Weighing answers

We assigned to responses a weight equal to the rate between the presence in the whole population and the presence in the answering sample, thus rebuilding the same answering percentage composition that we would have had in the whole population.

For example, the weight assigned to the response of a male full professor of the school of Science is 2.9 (see Table 4.4); that means that this response takes on the values 2.9 (2.9*1) if he had access to research funds and 0 (2.9*0) otherwise.

Simple indicators by gender and the comparison indicator

Table 4.11 shows the indicators (crude and standardized) related to women, men and the total of the academic staff.

Table 4.11 – Access to funds simple indicators by gender, total and final.

	Crude Indicators	**Standardized indicators**
Women	0.400	0.400
Men	0.516	0.514
Total	0.472	0.472
W/M	**0.775**	**0.778**

Forty-seven percent of the respondents had access to research funds; this percentage is equal to 52% for males, while drops to 40% for women.

The ratio between the indicator related to women and the one related to men gives the final simple indicator of this sub-domain.

The crude indicator is:

$$I = \frac{I_F}{I_M} = \frac{0.400}{0.516} = 0.775$$

while the standardized one is

$$I = \frac{I_F}{I_M} = \frac{0.400}{0.514} = 0.778$$

The crude and standardized indicators of the sub-domain *Access to funds* are practically the same. These indicators reveal that women have more difficulty in accessing research funding, with a gap of about 22%.

Characteristics of the "Access to fund" indicator

To examine in depth the *Access to funds* indicator, we propose several other results.

In Table 4.12 the indicator is calculated by age brackets.

The age bracket 34 and younger presents the lowest indicators; this means that with reference to the access to funding, the women in this age bracket is the most disadvantaged compared to men.

For the other age brackets the gap decreases but remains against women.

Table 4.12 – Access to funds simple indicators by gender and age.

Age class	**W**	**M**	**Tot.**	**W/M**
34 and younger	0.200	0.405	0.311	**0.494**
From 35 to 44	0.378	0.433	0.408	**0.873**
From 45 to 54	0.573	0.669	0.630	**0.857**
From 55 to 64	0.361	0.556	0.499	**0.649**
65 and older	0.468	0.539	0.513	**0.868**
Total	0.400	0.516	0.472	**0.775**

Concerning the type of funding, table 4.13 shows that the greater gap against women is related to the funding provided by National entities (about 60%).

Observing the standardized indicators, it is possible to notice that, excluding the effect of the age structure, there is a gap in favour of women equal to 28% in the funding from foundations and private entities.

Table 4.13 – Access to funds indicators (crude and standardized) by type of funding and gender.

Type of funding	**Crude indicators**				**Standardized indicators**			
	W	**M**	**Tot.**	**W/M**	**W**	**M**	**Tot.**	**W/M**
From respondent's own university	0.288	0.322	0.309	**0.894**	0.279	0.326	0.308	**0.856**
From Ministry	0.067	0.157	0.122	**0.427**	0.067	0.154	0.123	**0.626**
From other National entities	0.036	0.103	0.077	**0.350**	0.040	0.099	0.077	**0.404**
From European/ international sources	0.085	0.150	0.125	**0.567**	0.083	0.147	0.123	**0.813**
From foundations and private entities	0.089	0.109	0.101	**0.817**	0.096	0.108	0.101	**1.280**
Other funding	0.029	0.047	0.040	**0.617**	0.032	0.044	0.039	**0.727**

Observing the differences between schools, as proposed in Table 4.14, it is possible to see that the percentage of women who had access to research funds is lower than the percentage of men in all the Schools, except for the School of Law, where the frequency with which women have access to research funding is more than five times higher than that of men.

This result is probably related to the sub-domain *Gender Pay Gap*: the male component of the academic staff of the School of Law is more interested in non-institutional activities than in accessing research funding, so women can have more chances to obtain funds.

Also the standardized indicator calculated for the school of Human science, social and cultural heritage shows a gap in favour of women, but it is only equal to 3.9%.

Table 4.14 – Access to funds indicators (crude and standardized) by school and gender.

Schools of	**Crude indicators**				**Standardized indicators**			
	W	**M**	**Tot.**	**W/M**	**W**	**M**	**Tot.**	**W/M**
Agriculture and veterinary medicine	0.417	0.536	0.492	**0.777**	0.449	0.590	0.505	**0.761**
Economics and political science	0.523	0.597	0.567	**0.875**	0.529	0.617	0.561	**0.857**
Law	0.470	0.106	0.239	**4.433**	0.615	0.117	0.274	**5.256**
Engineering	0.297	0.542	0.493	**0.548**	0.475	0.564	0.529	**0.842**
Medicine and surgery	0.326	0.447	0.390	**0.729**	0.387	0.568	0.535	**0.681**
Psychology	0.345	0.667	0.475	**0.517**	0.320	0.512	0.427	**0.625**
Science	0.505	0.610	0.576	**0.828**	0.320	0.512	0.427	**0.625**
Human science, social and cultural heritage	0.418	0.435	0.426	**0.962**	0.371	0.357	0.376	**1.039**
Other interdepartmental centers	0.000	0.143	0.105	**0.000**	-	-	-	**-**

Finally, it is possible to observe Table 4.15, in which the indicators are calculated by academic position.

Both the crude and the standardized indicators suggest the presence of a strong gap against women in only two academic positions, full professor and post-doctoral fellows. In the other three academic positions the gap is in favour of women.

Table 4.15 – Access to funds indicators (crude and standardized) by academic position and gender.

Academic position	Crude indicators				Standardized indicators			
	W	M	Tot.	W/M	W	M	Tot.	W/M
Full Professor	0.425	0.680	0.634	**0.626**	0.273	0.875	0.722	**0.312**
Associated Professor	0.577	0.565	0.569	**1.021**	0.726	0.698	0.701	**1.040**
Assistant Researcher	0.495	0.471	0.482	**1.050**	0.535	0.341	0.417	**1.569**
Research Fellow	0.600	0.375	0.482	**1.600**	-	-	-	**-**
Post-doctoral Fellow	0.226	0.387	0.311	**0.584**	0.186	0.603	0.378	**0.308**

4.7. Conclusions and future research

In this chapter we illustrated the pathway for the construction of a system of indicators of gender gap in Universities. This research was developed at the University of Padua in the framework of the FP7 Eu Project GenderTime with the aim to define a new Gender Equality Index Unipd-Gei for Academic Institutions.

Our proposal is based on the conceptual framework presented in Chapter 3 and follows a hierarchical top-down approach: starting from the general concept, several domains and sub-domains are identified, presenting indicators, the necessary variables and the data collection.

In addition, we described the methodology for the computation of the elementary indicators, the indicator that compares women and men and gives the gender gap for each sub-domain. Several aspects should be taken into account, such as: the direction of the indicator, the normalization, the age standardization, the weighting coefficient for non-responses.

It is important to remark that the database implemented is given by merging administrative and survey data related to Academic Staff of the University of Padua, and that data are available at individual level.

This means that in the future it will be possible to go deeper into the matter, for instance by means of multivariate analyses.

Finally, in order to calculate the Unipd-Gei we proceeded in our research defining a composite indicator of gender gap.

As mentioned, we intend to utilize the respondents' answers concerning the weights for the domains since we used a participatory approach in our survey (Oecd, 2008) and we received data concerning the importance of every domain.

Our future research will concern the conceptualization and methodology for defining a composite indicator of gender gap that can be computed both at micro and macro level.

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Appendix

WP6 - toolbox - questionnaire

Dear Colleague,

Our University is one of the partners in the Eu 7FP Project *GenderTime - Transferring Implementing Monitoring Equality* (FP7-SCIENCE-IN-SOCIETY-2013/2016 - www.gendertime.org). As part of this project, the Unipd research group (1) has developed the questionnaire that we are now submitting to you.

The objective of this survey is to monitor and contribute to improving the working conditions and career opportunities of permanent and temporary teaching staff in scientific research by collecting information on the quality of their work, their access to funds for research, scientific issues, space for research, involvement in decision-making, and so on.

We consequently kindly ask you to answer a questionnaire by 12 October 2015, by connecting to the following link: http://survey.stat.unipd.it/index.php/survey/index/sid/548455/token/e59v9n4edqbrnnx/lang/it

The questionnaire consists of about thirty questions, and it will take 15 to 20 minutes at most to complete. For the success of our survey, we kindly ask you to respond as spontaneously and sincerely as possible.

The information that we obtain with your contribution will be used exclusively for research purposes.

In this regard, we would remind you that all the information you provide for our research will be kept strictly confidential, in accordance with the Code for the Protection of Personal Data (Italian Legislative Decree No. 196/2003) and will be used, along with the data provided by other participants in the research, for the purpose of a statistical data analysis. The data collected by means of the questionnaire will be deleted by 31.12.2018.

Thanking you warmly for your kind cooperation, I send you my best regards,

Prof. Giuseppe Zaccaria

For any further information, please contact the project managers and the person in charge of data processing:

Silvana Badaloni - Dei silvana.badaloni@unipd.it

Ilaria Rocco – rocco@stat.unipd.it

[1] The *GenderTime* project (FP7-SCIENCE-IN-SOCIETY- 2013/2016 - www.gendertime.org) UNIPD team includes: S. Badaloni (DEI) – Scientific Manager; M. De Rossi, Transfer Agent (FISPPA); A.M. Manganelli (FISPPA); E. Restiglian (FISPPA); L. Perini, (DEI). The research is conducted in cooperation with the UNIPD Dept. of Statistical Science (G. Boccuzzo, I. Rocco, M. Silan). The aim of the project is to monitor the under-representation of women in scientific research and decision-making, and to contribute to the definition of an indicator of gender equality in scientific research and in academia. The same questionnaire will be adopted by some of our partner institutions in the project, i.e. the University of Paris Est Créteil (Paris, France), the Institute Mihailo Pupin (Belgrade, Serbia), the University of Gotheborg (Sweden), the University of Wuppertal (Wuppertal, Germany), the University of Loughborough (Loughborough, UK), Tecnalia Research & Innovation (Bilbao, Spain), and the Inter-University Research Centre for Technology, Work and Culture (Graz, Austria).

Dear Colleague,

Thank you for agreeing to answer the questionnaire on the working conditions of men and women in scientific research at the University of Padua.

Demographic information	
1 Genere Uomo Donna	**1. You identify yourself as** Male Female
2. Età Fino a 30 anni Da 31 a 35 anni Da 36 a 40 anni Da 41 a 45 anni Da 46 a 50 anni Da 51 a 55 anni Da 56 a 60 anni Da 61 a 65 anni Oltre 65 anni	**2. Age** 30 and younger From 31 to 35 From 36 to 40 From 41 to 45 From 46 to 50 From 51 to 55 From 56 to 60 From 61 to 65 65 and older
3. Ruolo accademico: Professore ordinario Professore associato Ricercatore a tempo indeterminato Ricercatore a tempo determinato Assegnista di ricerca	**3. Academic position** Full professor, grade A (permanent) Associate professor, grade B (permanent) Research fellow, grade C (permanent) Research fellow, grade C (fixed term) Post-doctoral researcher (fixed term)
4. Dipartimento Scegli **solo una** delle seguenti: Dipartimento di Agronomia Animali Alimenti Risorse Naturali e Ambiente - DAFNAE Dipartimento di Beni Culturali: Archeologia, Storia dell'arte, del Cinema e della Musica - DBC Dipartimento di Biologia Dipartimento di Biomedicina Comparata e Alimentazione - BCA Dipartimento di Diritto Privato e Critica del Diritto - DPCD	**4. Indicate the department you belong to** (indicate only one option)

4. Dipartimento	**4. Indicate the department you belong to**
Dipartimento di Diritto Pubblico, Internazionale e Comunitario - DIPIC Dipartimento di Filosofia, Sociologia, Pedagogia e Psicologia Applicata - FISPPA Dipartimento di Fisica e Astronomia "Galileo Galilei" - DFA Dipartimento di Geoscienze Dipartimento di Ingegneria Civile, Edile e Ambientale - ICEA Dipartimento di Ingegneria Dell'informazione - DEI Dipartimento di Ingegneria Industriale - DII Dipartimento di Matematica - DM Dipartimento di Medicina - DIMED Dipartimento di Medicina Animale, Produzioni e Salute - MAPS Dipartimento di Medicina Molecolare - DMM Dipartimento di Neuroscienze - DNS Dipartimento di Psicologia dello Sviluppo e della Socializzazione - DPSS Dipartimento di Psicologia Generale - DPG Dipartimento di Salute della Donna e del Bambino - SDB Dipartimento di Scienze Biomediche - DSB Dipartimento di Scienze Cardiologiche, Toraciche e Vascolari Dipartimento di Scienze Chimiche - DISC Dipartimento di Scienze Chirurgiche Oncologiche e Gastroenterologiche - DISCOG Dipartimento di Scienze Del Farmaco - DSF Dipartimento di Scienze Economiche e Aziendali "Marco Fanno" - DSEA Dipartimento di Scienze Politiche, Giuridiche e Studi Internazionali - SPGI Dipartimento di Scienze Statistiche Dipartimento di Scienze Storiche, Geografiche e Dell'antichità - DISSGEA Dipartimento di Studi Linguistici e Letterari - DISLL Dipartimento di Tecnica e Gestione Dei Sistemi Industriali - DTG Dipartimento di Territorio e Sistemi Agro-Forestali - TESAF	(indicate only one option)
5. Ha figli? Sì No	**5. Do you have children?** Yes No

6. Almeno uno dei Suoi figli è minorenne? Sì No	**6. Is at least one of your children under 18 years of age?** Yes No
7. Durante la Sua carriera universitaria ha usufruito di congedi per maternità? Si No	**7. Have you ever taken maternity leave during your academic career?** Yes No
8.Lei è impegnato/a in attività di cura di persone adulte/anziane? Sì No	**8. Are you involved in caring for adults or elderly people?** Yes No
Time	
9. Pensando ad una Sua settimana tipo, consideri il tempo a Sua disposizione (escludendo il tempo dedicato a soddisfare i bisogni primari, come dormire e mangiare). **Se il tempo totale a Sua disposizione vale 100, come lo distribuisce tra le seguenti attività:** – Attività lavorative (svolte nel luogo di lavoro o altrove) – Attività di cura rivolte a famigliari (figli, anziani, disabili) – Attività domestiche – Tempo libero (hobby, sport, svago, attività culturali, altro)	**9. Think about your typical week and consider the time at your disposal (excluding the time taken up by basic needs, such as sleeping and eating).** **Assuming the total time you have available is 100, how do you distribute it amongst the following activities:** – working activities (in the workplace or elsewhere) – caring activities (for children, elderly, disabled) – domestic activities – leisure (hobbies, sports, entertainment, cultural activities, etc.)
10. Come distribuirebbe il Suo tempo avendo completa libertà di scelta? – Attività lavorative (svolte nel luogo di lavoro o altrove) – Attività di cura rivolte a famigliari (figli, anziani, disabili) – Attività domestiche – Tempo libero (hobby, sport, svago, attività culturali, altro)	**10. How would you distribute your time (100) if you were entirely free to choose?** – working activities (in the workplace or elsewhere) – caring activities (for children, elderly, disabled) – domestic activities – leisure (hobbies, sports, entertainment, cultural activities, etc.)

Work	
11. Pensando ad una Sua settimana tipo, consideri solo il tempo che dedica alle diverse attività previste dal Suo ruolo accademico (ricerca, didattica, attività gestionali). **Se il tempo che ogni settimana Lei dedica alle diverse attività vale 100, indichi come è distribuito tra:** Attività didattica Attività di ricerca Attività di gestione (partecipazione a Consigli, Commissioni, ...)	**11. Thinking about your typical week, consider only the time devoted to the various activities involved in your academic role (research, teaching, management activities).** **Assuming a value of 100 for the time you dedicate to these activities each week, indicate how it is distributed:** teaching activities research activities management activities (commissions, boards, meetings, …)
12. Come distribuirebbe il Suo tempo dedicato al lavoro avendo invece completa libertà di scelta? Attività didattica Attività di ricerca Attività di gestione (partecipazione a Consigli, Commissioni, ...)	**12. If you were entirely free to choose, how would you distribute your working time?** teaching activities research activities management activities (commissions, boards, meetings, …)
13. Pensi agli ultimi due anni trascorsi (2013- 2014). Lei ha partecipato a:* *Scegliere la risposta appropriata per ciascun elemento:* Convegni/congressi/workshop Corsi specialistici o avanzati Periodi di ricerca all'estero Altro	**13. Think about the last two years (2013-2014). Indicate whether you attended:*** *Choose the appropriate response for each item:* meetings/conferences/workshops specialisation or advanced courses research periods abroad other activities
14. Ha selezionato "altro": a quali altre attività ha partecipato negli ultimi due anni (2013-2014)? Scrivere la propria risposta qui di seguito:	**14. If you selected "other activities" in the previous question, please list below what activities you attended in the last two years (2013-14):** Write your answer here:

15. A quanti convegni/congressi/workshop ha partecipato negli ultimi due anni (2013-2014)? Solo valori numerici sono consentiti per questo campo Scrivere la propria risposta qui:	**15. How many meetings/conferences/ workshops did you attend in the last two years (2013-2014)?** Only numerical values are allowed in this field Write your answer here:
16. A quanti corsi ha partecipato negli ultimi due anni (2013- 2014)? Solo valori numerici sono consentiti per questo campo Scrivere la propria risposta qui:	**16. How many training courses did you attend in the last two years (2013- 2014)?** Only numerical values are allowed in this field Write your answer here:
17. A quanti periodi (mesi) di ricerca all'estero ha partecipato negli ultimi due anni (2013-2014)? Solo valori numerici sono consentiti per questo campo Scrivere la propria risposta qui:	**17. How many periods (months) of research did you spend abroad in the last two years (2013-2014)?** Only numerical values are allowed in this field Write your answer here:

Money	
18. Pensi agli ultimi due anni trascorsi (2013-2014). Oltre alle attività istituzionali di docenza e ricerca ha svolto anche altre attività per le quali ha ricevuto un compenso?* Sì No Per *altre attività* si intendono: – Attività in conto terzi o convenzioni in ambito universitario – Contratti/ affidamenti di insegnamento in altri Atenei pubblici o privati – Consulenze /perizie – Partecipazione a commissioni che prevedono compensi – Attività editoriali	**18. Think about the last two years (2013-2014) in your working life. In addition to institutional teaching and research activities, were you involved in other activities for which you were remunerated?** Yes No By *other activities* we means: – activities conducted at the university but for third parties or as part of partnerships – teaching agreements with other public or private universities – consulting and/or assessment activities – paid participation on committees and commissions – publishing/editorial activities
19. Per quali di queste attività ha percepito un compenso oltre al suo stipendio? – Attività in conto terzi o convenzioni in ambito universitario – Contratti/ affidamenti di insegnamento in altri Atenei pubblici o privati – Consulenze /perizie – Partecipazione a commissioni che prevedono compensi – Attività editoriali – Altro	**19. Which of these activities were remunerated, in addition to your salary?** – activities conducted at the university but for third parties or as part of partnerships – teaching agreements with other public or private universities – consulting and/or assessment activities – paid participation on committees and commissions – publishing/editorial activities – other activities
20. Pensi agli ultimi due anni trascorsi (2013-2014). Lei ha avuto accesso a finanziamenti per la ricerca (esclusi i fondi ex 60%)?* Si No	**20. Think about the last two years (2013-2014). Did you have access to research funds?** Yes No

21. Di che tipo? Scegliere **tutte** le corrispondenti: – Finanziamenti di Ateneo (per esempio Progetti strategici, Assegni di ricerca, Progetti di ateneo, Attrezzature scientifiche) – Finanziamenti ministeriali nazionali (per esempio Sir, Prin, Firb e Futuro in Ricerca) – Finanziamenti di enti nazionali – Finanziamenti internazionali (per esempio fondi europei, 7PQ, JPI o altri fondi internazionali) – Finanziamenti da Fondazioni ed enti privati (per esempio Fondazione Cariparo, Airc, Edison) – Altro	**21. What kind of funding did you receive?** (list all funding received from your own university, national sources, or European/ international sources)
22. Sono ben pagato per il lavoro che faccio Fortemente d'accordo Abbastanza d'accordo Abbastanza in disaccordo Fortemente in disaccordo	**22. I am well paid for the job I do.** Strongly agree Agree Disagree Strongly disagree
Knowledge	
23. Pensi agli ultimi due anni trascorsi (2013-2014). Indichi il numero di prodotti della Sua ricerca: (solo numeri in questi campi) Articoli su riviste indicizzate Capitoli di libri Monografie (escluse curatele) Brevetti	**23. Think about the last two years (2013-2014). Indicate the number of products of your research:** (only numbers are allowed in these fields) Articles in peer-reviewed journals Book chapters Monographs Patents

24. Facendo riferimento agli ultimi due anni trascorsi (2013-2014), pensi ai processi di revisione a cui sono stati sottoposti i Suoi lavori. **Indichi cortesemente quanti dei Suoi lavori sono stati accettati e rifiutati, specificando se il processo di revisione era blind o double blind.** (solo numeri in questi campi) ***Lavori accettati:*** Blind Double blind Non so come si è svolto il processo di revisione ***Lavori non accettati:*** Blind Double blind Non so come si è svolto il processo di revisione	**24. Referring to the last two years (2013-2014), think about the review processes that your works have undergone.** **Please indicate how many of the products of your research were accepted and how many were rejected, distinguishing between blind and double-blind review processes.** (only numbers are allowed in these fields) ***Papers accepted***: blind double-blind don't know how review process was conducted ***Papers refused:*** blind double-blind don't know how review process was conducted
Power	
25. Pensi agli ultimi due anni trascorsi (2013-2014). Lei è stato membro di: Scegliere **tutte** le corrispondenti – Commissioni di Ateneo – Commissioni nazionali (ad esempio commissioni ANVUR e Abilitazione scientifica nazionale) – Commissioni di concorso/ reclutamento interne ed esterne all'ateneo – Commissioni per la valutazione di progetti di ricerca (interne all'ateneo/nazionali/ internazionali) – Giunta di dipartimento – Organi di ateneo – Organismi di parità – Commissione scientifica e/o didattica di Dipartimento – Presidente del Consiglio di Scuola di Ateneo – Presidente di Corso di Studio – Non faccio parte di commissioni – Altro	**25. Think about the last two years (2013-2014). You were a member of:** (list all committees, commissions, boards at your institution and on a national and international level)

Health	
26. Per ciascuna delle seguenti frasi, La preghiamo di indicare il Suo grado di accordo/ disaccordo pensando alla Sua situazione nell'ambiente in cui lavora:*	**26. Thinking about your situation in your workplace, please indicate how much you agree/disagree with each of the following statements:**
Esprimi un'opinione secondo la scala accordo/ disaccordo	Give your opinion (strongly agree/agree/ disagree/strongly disagree) for each statement
– I miei colleghi mi aiutano e mi danno una mano – Sul posto di lavoro ho ottimi amici – Il mio lavoro mi dà la sensazione di un lavoro ben fatto – Nel mio lavoro posso applicare le mie idee – Mi faccio coinvolgere emotivamente nel mio lavoro – Provo tensione/stress nel mio lavoro – Posso influenzare decisioni che sono importanti per il mio lavoro – Nel mio posto di lavoro mi sento a "casa" – La mia attuale situazione lavorativa mi stimola a dare la mia migliore prestazione di lavoro	– My colleagues help me and give me advice – I have good friends in the workplace – My work gives me the feeling of a job well done – I can apply my ideas in my job – I am emotionally involved in my job – I experience some stress in my work – I can influence decisions that are important to my work – I feel "at home" in my working environment – My current situation at work encourages me to do my best
Space	
27. Parliamo ora dei Suoi spazi di lavoro. Facendo riferimento agli ultimi due anni (2013-2014), Lei ha condiviso il Suo ufficio con uno o più colleghi?	**27. Now let's speak about the "space" where you work. Referring to the last two years (2013-2014), have you shared an office with one or more colleagues?**
Si No	Yes No

28. Pensando al Suo luogo di lavoro, La preghiamo di indicare il Suo grado di accordo/ disaccordo con le seguenti affermazioni: – Il mio ufficio gode di una buona fonte di luce naturale. – Il mio ufficio è lontano da fastidiose fonti di rumore. – Trovo sempre il mio ufficio pulito. – Nel mio ufficio posso impostare la temperatura che preferisco in ogni momento dell'anno. – Il computer a mia disposizione è sufficientemente veloce e i software a me necessari sono sempre aggiornati. – Il mio ufficio è uno dei più spaziosi del mio Dipartimento. – La mia scrivania è sufficientemente grande per le mie necessità. – Non mi sono mai dovuto lamentare per le aule assegnatemi per svolgere le lezioni (nessun problema di capienza, proiettore, altro).	**28. Thinking about your workplace, please indicate your agreement or disagreement with the following statements:** – My office has a good source of natural light. – My office is away from bothersome sources of noise. – I always find my office clean. – I can set the room temperature I prefer in my office at any time of year. – The computer I have is fast enough for my needs and the software is always up-to-date. – My office is one of the most spacious of my department. – My desk is large enough for my needs. – I have never had to complain about the classrooms assigned to me for holding lectures (no problems of size, equipment, other issues).
29. Le Sue attività di lavoro e ricerca prevedono l'utilizzo di laboratori o apparecchiature particolari? Si No	**29. Do your working and research activities involve the use of laboratories or special equipment?** Yes No
30. Indichi se ne ha avuto accesso secondo le Sue necessità su una scala da 1 a 10. (1 indica la completa impossibilità di accedere agli spazi e alle apparecchiature necessarie e 10 indica la massima disponibilità in qualsiasi momento)	**30. Please indicate on a scale from 1 to 10 whether your access to such facilities suited your needs.** (1 means impossible to access the spaces and equipment you needed, while 10 means they were fully accessible to you at all times).

31. Considerando la seguente lista di servizi, indichi per ciascun servizio elencato se si tratta di un servizio di cui Lei ha necessità nel Suo ambiente di lavoro. – Spazio interno per bambini – Asilo nido/scuola dell'infanzia – Mensa – Spazio attrezzato per consumare/scaldare/ conservare il cibo in dipartimento – Parcheggio – Vicinanza ai mezzi pubblici	**31. Considering the following list of services, please indicate whether you need any of them at your workplace.** – indoor space for children – nursery school/ kindergarten – canteen – area equipped for eating/heating/storing food at the department – car parking – proximity to public transport
32. Considerando la seguente lista di servizi, indichi per ciascun servizio se può usufruirne nel Suo ambiente di lavoro. – Spazio interno per bambini – Asilo nido/scuola dell'infanzia – Mensa – Spazio attrezzato per consumare/scaldare/conservare il cibo in Dipartimento – Parcheggio – Vicinanza ai mezzi pubblici	**32. Considering the following list of services, please indicate which of them you have available at your workplace.** – indoor space for children – nursery school/ kindergarten – canteen – area equipped for eating/heating/storing food at the department – car parking – proximity to public transport
Health	
33. Indichi su una scala da 1 a 10 quanto ritiene di essere a rischio per episodi di molestie morali nell'ambiente in cui lavora (1 indica l'assoluta assenza di rischio e 10 la sistematica esposizione al rischio). **Definizione di molestie morali:** Per molestie morali si intende ogni comportamento ostile, diretto contro una persona, fisicamente o psicologicamente persecutorio, caratterizzato da ripetizione, protratto e sistematico, suscettibile di creare un ambiente non rispettoso, umiliante o lesivo dell'integrità psicofisica della persona.	**33. On a scale from 1 to 10, please indicate whether you consider yourself at risk of psychological harassment at your workplace** (1 indicates no risk, 10 a systematic risk exposure) **Definition of psychological harassment:** by psychological harassment we mean any repeated, protracted and systematic, physically or psychologically harassing, hostile behaviour directed against a person and likely to create an atmosphere that is disrespectful, humiliating or harmful to the person's psychological or physical wellbeing.

34. Indichi su una scala da 1 a 10 quanto ritiene di essere a rischio per episodi di molestie sessuali nell'ambiente in cui lavora (1 indica l'assoluta assenza di rischio e 10 la sistematica esposizione al rischio). **Definizione di molestia sessuale** Per molestie sessuali si intende ogni comportamento indesiderato a connotazione sessuale o qualsiasi altro tipo di discriminazione basata sul sesso che offenda la dignità delle donne e degli uomini nell'ambiente di studio e di lavoro, ivi inclusi atteggiamenti di tipo fisico, verbale o non verbale.	**34. On a scale from 1 to 10, please indicate whether you consider yourself at risk of sexual harassment at your workplace.** (1 indicates no risk, 10 a systematic risk exposure) **Definition of sexual harassment** Sexual harassment is any unwanted behaviour of a sexual nature or any other kind of gender-related discrimination that offends the dignity of women or men in the place where they work or study, including physical, verbal or non-verbal attitudes.
35. Indichi su una scala da 1 a 10 quanto ritiene di essere a rischio per episodi di mobbing nell'ambiente in cui lavora (1 indica l'assoluta assenza di rischio e 10 la sistematica esposizione al rischio). **Definizione di mobbing** Per mobbing si intende la sistematica persecuzione esercitata sul posto di lavoro da colleghi o superiori nei confronti di una persona, consistente per lo più in piccoli atti quotidiani di emarginazione sociale, violenza psicologica o sabotaggio professionale, ma che può spingersi fino all'aggressione fisica.	**35. On a scale from 1 to 10, please indicate whether you consider yourself at risk of mobbing at your workplace.** (1 indicates no risk, 10 a systematic risk exposure) **Definition of mobbing** Mobbing is the systematic persecution of a person by colleagues or superiors in the workplace, consisting mainly of small daily acts of social exclusion, psychological violence or professional sabotage, but that may even involve physical aggression.
36. Indichi su una scala da 1 a 10 quanto ritiene di essere a rischio per episodi di discriminazione di genere nell'ambiente in cui lavora (1 indica l'assoluta assenza di rischio e 10 la sistematica esposizione al rischio). **Definizione di discriminazione di genere** Per discriminazione di genere si intende ogni forma di discriminazione basata sul genere sessuale, come l'attitudine ad inquadrare uomini e donne in base agli stereotipi di genere e ai relativi pregiudizi.	**36. 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) **Definition of gender-related discrimination** By gender-related discrimination we mean any form of discrimination based on sex, such as the tendency to consider men and women on the basis of gender stereotypes and the related preconceptions.

37. Relativamente agli ultimi temi trattati (*molestie sessuali e morali, mobbing e discriminazioni di genere*), se lo desidera in questo spazio può raccontare una o più Sue esperienze.	**37. As concerns these last issues (psychological or sexual harassment, mobbing and gender-related discrimination), you may comment on your own experiences below.**
Domains	
38. Di seguito trova elencate sette affermazioni. Tutte possono essere giudicate importanti, ma Le chiediamo cortesemente di ordinarle da quella che Lei ritiene più importante *(la prima nella classifica)* a quella che considera meno rilevante *(l'ultima nella classifica)* per il lavoro da Lei svolto. – È importante che il lavoro svolto permetta di fare carriera e crescere professionalmente, lasciando la possibilità di stabilire il tempo da destinare alle attività lavorative previste dal ruolo ricoperto. – È importante ricevere i fondi necessari alla sua attività di ricerca e percepire una buona retribuzione per il lavoro che si svolge. – È importante che il lavoro e l'impegno siano riconosciuti e apprezzati; è importante infatti riuscire a produrre e pubblicare i propri lavori. – È importante essere soddisfatto/a degli spazi in cui si svolge il proprio lavoro e disporre di tutti gli strumenti necessari per svolgerlo al meglio.	**38. Seven claims are listed below. They may all be considered important, but we kindly ask you to arrange them in order of importance, from what you consider the most important (*the first in the ranking*) to the least important in your work.** – It is important that your job enables you to have a career and grow professionally, leaving you free to establish how much time to devote to the working activities involved in your post. – It is important that you obtain the funding needed for your research activities and that you earn a good salary for the work you do. – It is important that your job and your commitment are acknowledged and appreciated; it is important that you succeed in producing and publishing your work. – It is important that you are satisfied with the spaces where you do your work and that you have access to all the means you need to do it properly.

38. Di seguito trova elencate sette affermazioni. Tutte possono essere giudicate importanti, ma Le chiediamo cortesemente di ordinarle da quella che Lei ritiene più importante *(la prima nella classifica)* a quella che considera meno rilevante *(l'ultima nella classifica)* per il lavoro da Lei svolto. – È importante essere soddisfatto/a del proprio ambiente di lavoro e dei colleghi, non si devono subire pressioni, discriminazioni o molestie. – È importante avere la possibilità di far sentire la propria voce nell'ambiente di lavoro, sentirsi tutelato/a e rappresentato/a all'interno del dipartimento e dei diversi organi accademici – È importante essere soddisfatto/a di come si distribuisce il proprio tempo tra attività lavorativa e vita privata.	**38. Seven claims are listed below. They may all be considered important, but we kindly ask you to arrange them in order of importance, from what you consider the most important (*the first in the ranking*) to the least important in your work.** – It is important that you are satisfied with your working environment and colleagues, and that you experience no pressure, discrimination or harassment. – It is important that you have the opportunity to make your voice heard in the workplace, that you feel protected and represented within the department and the other academic bodies. – It is important that you are satisfied with the way in which your time is distributed between your work and your private life.
Acceptance	
39. Quanto ha trovato questo questionario nel complesso Facile Interessante Chiaro Fastidioso	**39. How did you find this survey on the whole (on a scale of 1 to 10)?** Easy Interesting Clear Annoying
Lo spazio sottostante è riservato a suoi eventuali suggerimenti e osservazioni.	**The space below is reserved for any suggestions and comments you wish to make.**
La ringraziamo per la Sua preziosa collaborazione	**Thank you for your kind cooperation.**

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The only way to find a larger vision is to be somewhere in particular
Donna Haraway, 1995

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In this book we address the problem of measuring gender equality in Academia with the aim to define an index of gender equality (UNIPD-GEI) in Academic Institutions. The research has been developed in the framework of the FP7 EU GenderTime Project (2013-2016) of which the University of Padua in one of the partners (www.gendertime.org). The objective of the project is to monitor the under-representation of women in scientific research and to improve their working conditions and career opportunities. Information on many different aspects of permanent and temporary teaching staff has been collected, such as on the quality of their work, on their access to funds for research, scientific issues and patents, on their space for research, on their involvement in decision-making, on their quality of work-life balance and on several other issues that can be sensitive from a gender point of view in academia. The methodological approach and the statistical model at the basis of the Gender Equality Index developed at UNIPD are described.

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