

## Well-being Gender Budgeting in Academia

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**Abstract.** This paper focuses on the implementation of gender budgeting to tertiary education institutions with a double focus: well-being and gender equality. The paper starts with the definition of the main steps and objectives of Well-being gender budgeting, where attention is focused on how the approach can be extended to research-performing organizations. This approach has been embraced by the Leading Towards Sustainable Gender Equality Plans in research performing organisations [LeTSGEPs] project, funded by the European Union's Horizon 2020 Research and Innovation program. The paper then proceeds with a case study on how this approach can be applied to a specific higher education institution in Italy. Methodological issues are specifically addressed in the paper, making the different phases for well-being gender budgeting implementation clear, within two preparatory steps (stakeholder mapping and the selection of capabilities) and four phases that include: Context analysis, Planning Analysis, Budget Reclassification and Implementation. The case study of the Gender Budgeting implementation at the University of Modena and Reggio Emilia provides a practical example of the outlined methodology and allows reflection upon the evidence and determinants of gender inequalities in academia on different dimensions of well-being. A clear interaction emerges between the context analysis and the analysis of costs by means of expenditure reclassification and analysis of the earnings composition by level, gender and fixed and variable part of pay.

Keywords: gender budgeting, well-being, university, gender wage gap, capabilities

### 1 Introduction

This paper seeks to analyse the role that gender budgeting can play in Academia, starting from methodologies and the steps that are involved. It then proposes a case study showing the results of its implementation in an Italian University by following the well-being gender budgeting approach. This case study aims to show how the gender reclassification of expenditures in the capability approach leads to detecting how the University affects the different dimensions of stakeholders' well-being as well as to what extent gender inequalities in the distribution of resources occurs.

## 2 Gender Budgeting in Academia in the Capability Approach

The general objective of gender budgeting, that is to say gender equality, has also been set forth in specific goals that have been achieved over the years.

1. Promoting equity, efficiency and effectiveness (the 3 Es) in planning and policy implementation (Sharp, 2003);
2. Favouring transparency in the allocation and redistribution of public resources;
3. Raising awareness through information and stakeholders' involvement;
4. Increasing the development of human capabilities from an equality perspective.

The human development perspective is a strategic choice of the United Nations in the framework of the Human Development Program, following the Aristotelian tradition that appraises social systems according to their capability to promote what is good for human beings. The capability approach was first developed by Amartya Sen. "...Sen uses a particular definition of well-being which avoids reducing it to a mere bundle of goods and services, defined as "standard of living" (Sen, 1987). Following a classical humanist tradition, he refers to the normative experience of a "good life", characterized by a composition of capabilities whereby women and men, individually and in relation to others, can enhance the value of their lives (Sen, 1993) ..." (Addabbo *et al.*, 2011, pp.106-107).

According to Sen, well-being is determined on the basis of capabilities, i.e., an individual's opportunities to achieve certain things (like being well-sheltered, in good health, educated ...). For instance, we can refer to the capability of working that can be developed by means of acquisition of skills, education and can be considered as an opportunity that can then be converted in the functioning of being employed. The conversion of a capability into a functioning can also be affected by social and individual conversion factors. In the case of academia, the presence of a dedicated service to placement can ease the process of observing the graduate student employed.

The capability approach was originally applied to gender budgeting in 2002, in the implementation of gender budgeting in the region of Emilia Romagna as well as to the district and municipality of Modena in Italy by the research group in the Department of Economics Marco Biagi of the University of Modena and Reggio Emilia. Addabbo, Lanzi and Picchio (2010) provided the theoretical basis of well-being gender budgets that was then applied in different institutions and at different levels of government. It was applied in the Municipality and Province of Modena, Municipality and Province of Bologna, Province of Rome, in the Regions of Lazio, Piedmont and Emilia Romagna, in ten municipalities in Turkey and in Senegal (Addabbo *et al.*, 2011; Addabbo, 2016; Addabbo *et al.* 2019). More recently this approach has been experimented with in the two-step feasibility plan for the EU Gender Budget.

“The use of Amartya Sen and Martha Nussbaum’s capability approach extends the focus of gender budgeting to the impact of policies on wellbeing, with its multiple dimensions and complexity, departing from an evaluation based exclusively on income or commodities. Wellbeing is defined at the individual level, and this, also according to feminist economics, requires investigating what happens inside the family and recognising the possibility of conflicts amongst its members on the construction of wellbeing.” (Addabbo, 2016, p.59)

Well-being gender budgets (thereafter WBGB) analyse budgets and public policies under the double perspective of well-being and gender equality.

## 2.1 Selecting Capabilities

A first important step in its implementation is to define a list of capabilities and, according to the WBGB approach, this can be a list of capabilities that are intrinsic to the institution being analysed on the basis of the functions and sedimented values of the institutions involved in the gender auditing/budgeting process. The intrinsic dimensions of well-being can then be matched with a participatory list of capabilities that can be defined by means of a participatory approach involving stakeholders and bringing them to define and, in some cases, also to order a list of dimensions of well-being that they expect the institution that is undergoing gender auditing/budgeting should contribute to develop. This double method to define the dimensions of well-being has been used in the implementation of WBGB to the gender budgeting of two European RPO’s: University of Modena & Reggio Emilia (Italy) and Universidad Pablo de Olavide (Spain) (Addabbo, Gálvez-Muñoz, Paula Rodríguez-Modroño, 2015).

The Capability Approach provides a theoretical foundation to gender budgeting. The implementation of gender budgeting based on the capabilities approach actually makes it possible to highlight the contribution of the institutions analysed on the construction of human development from a gender perspective.

In the context analysis, every dimension of well-being is analysed from a gender perspective, detecting inequalities in its development and different degrees of deprivation by gender.

In this framework, the actions of institutions, including higher education institutions, is then analysed not only according to their ability to offer a suitable system of services for women and men, but also in their role in the development of well-being dimensions.

A possible list of capabilities for universities may include fundamental capabilities, like access to knowledge and the capability to work. By applying WBGB to the University of Modena and Reggio Emilia and University of Pablo de Olavide budgets, Addabbo, Gálvez-Muñoz and Rodríguez-Modroño (2015) show how these two dimensions of well-being result as fundamental both by applying the intrinsic

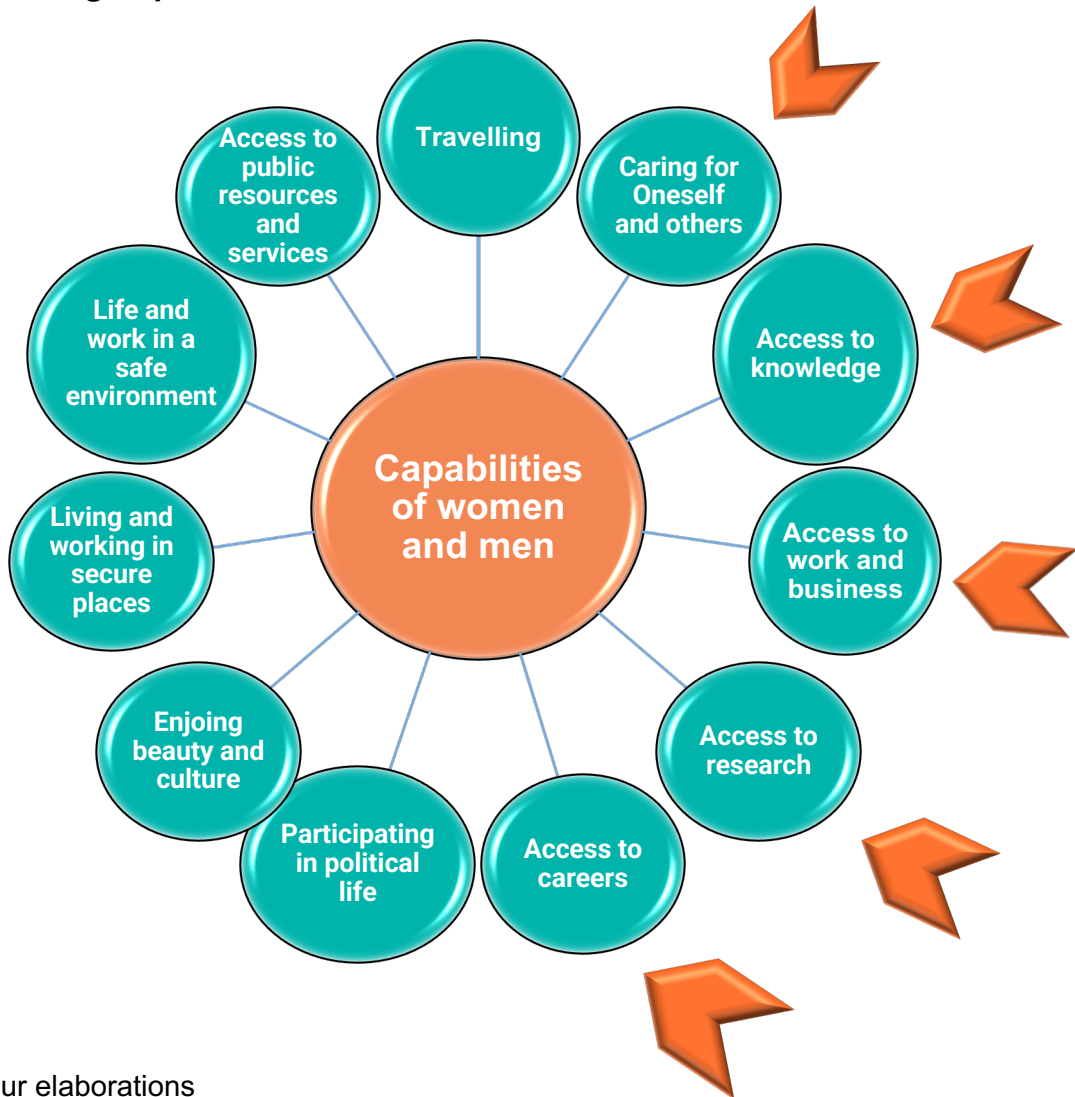
capabilities method to detect the universities' capabilities and by using a participatory approach involving students.

However, other capabilities can be placed at the heart of WBGB according to each university's elaboration on gender equality and well-being as well as to the social environment.

The university elaboration on gender equality and well-being issues can be inferred by the University Statute, Strategic plans, Gender Equality Plan and shows whether the institution has clear gender equality values. As depicted in Figure 1, the University, by providing work opportunities in research or in administration, can contribute to the development of work and research capabilities. Moreover, insofar they can allow researchers and employees to progress in their career without limits linked to gender, sexual orientation, ethnicity or other individual characteristics, universities can develop individual capabilities not only of working and conducting research activities but also of being able to reach apical positions in the institution. However, as the analysis on gender inequalities in career progression can reveal, the observable indicators of this capability of vertical mobility as far as gender is concerned, reveal an under representation of women in apical positions and consequently inequalities in career progression capability or limits on observing this capability translated into an equal distribution by higher academic role in universities. To what extent is this unequal development made visible and addressed by Universities' policies?

Turning to other dimensions of well-being that universities can affect, the way teaching is delivered, as for instance inclusive teaching methods, can allow students to develop their capability of caring for others. Counselling can make it possible for employees and students to whom it is addressed to develop the capability of caring for themselves. During pandemics counselling and psychological listening desks that have been offered by universities can be considered as an important means to develop the capability of caring for oneself. The University management proactive approach to implement work-life practices can affect employees' capability of caring for others.

**Fig.1. Selecting Capabilities**



Source: Our elaborations

## 2.2 Stakeholder Identification

The first methodological issue to face is the definition of which men and women are involved in the GB analysis. Most of the previous GB experiences, carried out by institutions such as States, Regions, and Municipalities, usually refer to men and women as citizens to comply with their democratic mission. In the case of a university GB analysis, we can identify Students, Researchers, Professors, Administrative and technical personnel as internal stakeholders.

External stakeholders refer to civil societies and institutions in the area where the University is located both in terms of the role of human capital production by the University and in terms of the increasing role played by universities in public engagement. National and European institutions are also external stakeholders contributing with guidelines, funding policies on research and education to the University development and choices. Stakeholder engagement in the gender

budgeting process plays a crucial role. Stakeholders can contribute to the definition of the dimensions of well-being with respect to which gender budgeting can be performed having an active role in the very process of gender budgeting in the capability approach.

### 2.3 Context Analysis

The context analysis aims at having an overall picture of the gender inequalities taking into account the stakeholder map.

The EIGE official definition quotes:

“...Gender analysis provides the necessary data and information to integrate a gender perspective into policies, programmes and projects. As a starting point for gender mainstreaming, gender analysis identifies the differences between and among women and men in terms of their relative position in society (RPOs for us) and the distribution of resources, opportunities, constraints and power in a given context. In this way, conducting a gender analysis allows for the development of interventions that address gender inequalities and meet the different needs of women and men...” (EIGE, 2019c, p. 3).

While designing a gender context analysis, the structure of data collection always has to take into account the main gender principles and topics:

- Productive and reproductive work: care activities and paid work
- Horizontal segregation (in education, research, work, etc.)
- Vertical segregation
- Gender Empowerment
- Gender Mainstreaming
- Intersectionality

With regards to intersectionality, it is crucial to be aware of the heterogeneity within the groups of women and men by ethnicity, social class, disability, age in order to be able to address it in the very phase of context analysis. Also a non-binary gender definition should be included by addressing the issues of making visible inequalities and perceptions of discrimination by sexual orientation. Changes that should be supported by a data collection that is sensitive to intersectionality and the very definition of gender. An awareness that needs special attention with dedicated actions.

To decide what to analyse, it is important to adopt a methodology of analysis which systematically goes through the list of the capabilities and decides the level of attention required (high, medium, low), the kind of stakeholders mainly engaged in the capability as direct beneficiaries or agents of change, which other capabilities are indirectly involved, which questions need to be answered, which gender data might be useful, which Department could release them.

An example on how to plan gender context analysis by capability is given in the following table:

**Table 1: How to plan gender context analysis by capability (example: Access to research)**

Main Capability Analysed	<b>Access to research</b>
Indirect capabilities	Access to knowledge, Access to career, Caring for oneself and others, Travelling
Level of gender relevance	High for universities and research centres.
F/M Stakeholders beneficiary	Students, doctoral graduates, researchers, professors.
F/M Stakeholders to involve	Students, doctoral graduates, researchers, professors, administration, Members of boards.
Department	Research department.
Questions to be answered	<ul style="list-style-type: none"> <li>- How many F/M are researchers in our RPO?</li> <li>- F/M In which field of research?</li> <li>- Product of research by gender?</li> <li>- How many F/M in citations?</li> <li>- Do F/M have the same research opportunities and resources? Conditions?</li> </ul>
Gender data available	<p>Women among doctoral graduates by field of education.</p> <p>Women among doctoral graduates by narrow field of education (STEM).</p> <p>Women among researchers by field of R&amp;D.</p> <p>Women among researchers by age group.</p> <p>Women among researchers by type of contract.</p>
New Gender data required	Survey: anonymous questionnaire for researchers by sex on gender, stereotypes, obstacles to career, number of citations, co-authorship, relationship with Grade A professors, difficulties in carrying out research activities, time budget.

Source: LeTSGEPS project, RPO's GA&GB Methodology Report (2020)

## 2.4 Planning Analysis

Planning Analysis consists in assessing the attention to Gender Equality paid by the University by examining institutional planning and strategic documents.

If the university is engaging in a Gender Budgeting experience for the first time, the analysis aims at detecting some gender equality cues in the University Strategic Plan, that may be directly or indirectly identifiable.

In the capability approach this analysis entails a double focus in terms of the implications on the selected capabilities and in terms of gender equality.

If a Gender Equality Plan (GEP) has already been approved, special attention will be devoted to the policies and indicators set in the GEP in the auditing phase. In this case as well, referring to the capabilities' scheme and stakeholder classification makes it possible to maintain a homogeneous pattern of analysis in every phase, which favours the general evaluation of the report and of the process as a whole.

## 2.5 Budget Reclassification

The main challenge while approaching a GB analysis is to create a connection between the budget items and their impact on women and men. Budgets are in fact made to account for the means that it is possible to quantify from a financial perspective (i.e. the services and the products that are purchased), and only in few cases do they make it possible to identify the women and men who are involved in terms of stakeholders. In this phase attention should be also paid to intersectionality to be able to detect also differences with regards to other characteristics, within the different groups of stakeholders. For instance, in providing special scholarships for female refugees, stakeholders are not only women but women being refugees with particular needs and experiences and needs that should be taken into account while disclosing the intersections of being refugee and being female.

For this reason, the budget items describe expenditures like, for example, salaries, allowances, services, maintenance, buildings, but it takes a further level of analysis to evaluate their impact on stakeholders, and a further one to assess the gender impact.

In order to link the main groups of stakeholders of the university to the budget and evaluate its gender impact on them, three levels of budget reclassification are required, drawing upon the reclassification methodologies that most Gender Budget projects have experimented so far and which have been adapted to better fit the universities' characteristics.

The Account Based Approach reclassification defines a gender scale of priorities, which represent the intervention areas having a greater impact on gender equality. As suggested, amongst others by Sharp (2003), four areas of "relevance" to gender may be identified. The *areas directly relevant to gender* represent activities expressly aimed



at equal opportunities and at overcoming inequalities between women and men. The *areas indirectly relevant to gender issues* are the areas of intervention whose impact refers to aspects indirectly connected with gender differences, even if they are not expressly addressed to women or men. *The environmental areas* include areas of intervention in which the gender mainstreaming approach is constantly taken into account with reference to environmental variables that may influence women and men's capabilities even if it is not possible to measure the impact in terms of specific contributors or beneficiaries since they refer to the University in general terms. The fourth area, the *neutral area*, represents Universities' activities which have no evidence of financial items that may be measured with gender impact indicators.

The second level of reclassification concerns the well-being objective and refers to the Capability Approach, and results in reclassification tables that reflect both the stakeholder map and the Capability map as defined above.

A third level of reclassification may be very useful mainly at a technical level for the following implementation phase by defining three levels of order in terms of expenditures gender impact:

*The first order* concerns budget items whose male-female internal stakeholders directly receive the resources (e.g.: like salaries, pensions, allowances, paid overtime etc.). The following implementation analysis may refer mainly to the inputs gender analysis and the outputs they produce.

*The second order* identifies budget items whose male-female internal stakeholders (Researchers, Professors) have access to services provided by service providers (e.g.: childcare facilities, languages and computer courses, training, travels, insurance, etc.). In this case the output gender analysis (services' beneficiaries) may be implemented by a gender procurement analysis about services providers.

*The third order* refers to budget items that provide for external services needed by the RPO for its operation. This order includes people (like male-female external experts) and supplying companies, whose gender impact affects/consists of the human resources they put at the RPO disposal. In this case a gender procurement analysis on gender providers is the main perspective that may be adopted,

All three orders of expenditure, obviously, may be analysed also in terms of the corresponding outcomes with the gender perspective, even if these kinds of research are very rare and difficult to implement.

The double perspective (gender equality and well-being dimension) and the knowledge of the stakeholders involved in each action will allow us to reclassify expenditures and revenues accordingly (Table 2).

**Table 2 – The Budget Classification as a Matrix of Capabilities in a gender perspective**

Scale of priority	Example of Capabilities	F/M Stakeholders involved	Department to refer to	Example of Revenues accounting items	€	Example of Expenses accounting Items	€
Direct Indirect Environmental Neutral	Access to knowledge	Students, Professors	Students' Department Human Resources Department	Grants from public institutions for teaching, University tuition fees and dues due by the students	000	Personnel Costs for Teaching Students support costs	000
	Access to work and business	Students	Outplacement Department	Grants from public institutions for students' outplacement	000	Costs for outplacement activities	000
	Access to research	Doctoral graduates, researchers, professors	Departments in the different research areas, Research Office	Grants from public institutions, private entities and sponsors for research	000	Personnel Costs for research	000
	Access to careers	Doctoral graduates, researchers, professors, members of board	Board, Human Resources Department	Grants from public institutions, private entities and sponsors for gender empowerment and career advancement	000	Costs for the members of board	000
	Caring for Oneself and others	All stakeholders	Board, Human Resources Department	Revenues for projects on facilities for personnel caregivers	000	Caregiving facilities, Expenses for smart working	000

**Source:** Our processing

## 2.6 Implementation Analysis

The implementation phase is aimed at detecting how resources, revenues and expenditures, the impact on the stakeholders they refer to, with a gender perspective. The gender mainstreaming strategy, to which Gender budgeting refers to, envisages providing for an overall screening of all the reclassified accounting items and the check of available and related gender disaggregated data concerning them.

In case the RPO already has developed a Gender Equality Plan, the Implementation analysis will be carried out starting from its previously planned measures whose gender impact will be assessed with a specific attention. An overall gender impact evaluation, which goes beyond the GEP measures and focuses on the remaining budget items and related activities, will then be developed in order to offer new ideas and suggestions for the following planning phase.

The results of the context analysis in the implementation analysis will be very useful, even if in this case more attention will have to be paid to specific gender disaggregated

data concerning beneficiaries specifically related to the budget item under examination.

### **3 Well-Being Gender Budgeting in RPOs: The Case of the University of Modena & Reggio Emilia**

In this Section we present a case study based on the well-being gender budgeting analysis of the University of Modena and Reggio Emilia (Unimore thereafter). A special attention will be paid to: the selection of capabilities (Section 3.1), the definition of stakeholders (section 3.2), context analysis (Section 3.3), planning (Section 3.4) and reclassification of expenditure (Section 3.5).

#### **3.1 Selecting Unimore's List of Capabilities**

In order to select the dimensions of well-being, which will be used to analyse the context in terms of gender equality, gender impact and classification of expenditure, we have used both a list of capabilities related to the intrinsic features of the Institution (as suggested by Addabbo, Lanzi, Picchio, 2010) as well as a list of capabilities that have been selected by means of a participatory approach by students as stakeholders (Addabbo, Gálvez-Muñoz and Rodríguez-Modroño, 2015).

The matching of the two criteria detects two capabilities as the most relevant: access to knowledge and work. The list of well-being dimensions will therefore result from a mixed methodology including both intrinsic capabilities and the dimensions of well-being that are the outcome of a participatory process involving stakeholders.

#### **3.2 Defining Unimore's Stakeholders' Map**

The University of Modena and Reggio Emilia is located in the North of Italy; it enrolls about 24,000 students with a teaching programme going from bachelor, master and PhD courses in fourteen departments with a wide range of areas of research and education. In compliance with national laws, Unimore established a Unified Committee for the promotion of equal opportunities (CUG) that aims at promoting gender equality and well-being and contrast any kind of discrimination within employee and student populations. A Rector's Delegate for Equal Opportunities is in charge of ensuring the implementation of gender budgeting and respect of equal opportunities in the University.

In the starting phase, Unimore's Stakeholders were identified in keeping with the procedures set out in an EIGE-GEAR tool (EIGE, 2016). Consultations were carried out in order to foster awareness raising about gender equality.

During the planning phase, meetings with key stakeholders took place in order to exchange experiences and information on gender mainstreaming and gender equality with an active role played by CUG and the Delegate of Equal Opportunities. A dedicated committee for the implementation of Gender budgeting was established.

Stakeholder involvement was crucial in the implementation phase for improving decisions and strategies and integrating gender-specific concerns.

All the identified stakeholders are also targets of the GB reclassification of the expenditures and gender equality accountability process.

In the process leading up to the selection of capabilities, as well as in the implementation phase, those internal stakeholders, which have been involved in gender sensitive consultation for awareness raising and are also targets of the GB reclassification of expenditures, include:

- Academic and technical and administrative staff
- Students
- Governance bodies

External stakeholders include:

- Suppliers (targets of GB reclassification of expenditures)
- External experts (targets of GB reclassification of expenditures)
- Other institutions (Ministry of University and Research, Municipalities, Region, Bank Foundations, NGOs) (Targets of GB reclassification of revenues and in the analysis of the strategic guidelines that can be affected by criteria for funding allocation and laws)

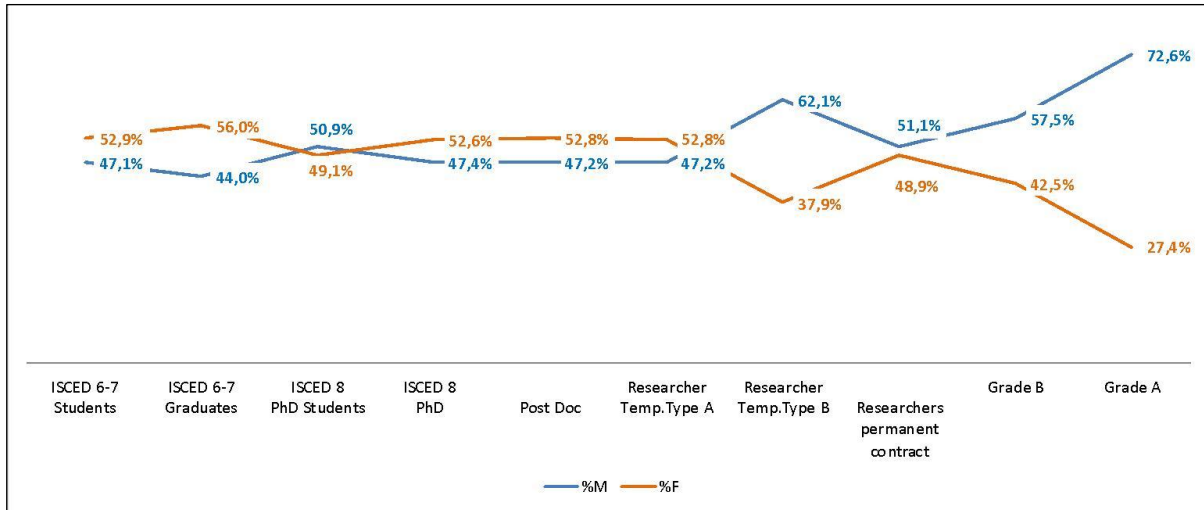
### **3.3 Context Analysis**

A first step of WBGP implementation in universities concerns the analysis of the Unimore gender equality context. We propose here the analysis of the context with special reference to the capability of working and access to knowledge by gender.

Consistently with the results shown in EC (2019), Unimore is characterized by a gender gap, as shown in Figure 2, that widens to women's detriment in the position of the type B researcher in a stabilization path in which men are more present (62%) than women (38%), a gap of 24 percentage points higher than what can be observed (17 percentage points) on average in Italian universities.

The gap is higher in the highest position of the career ladder where amongst Full Professor positions (Grade A) only 27% are women (25% on average in Italy).

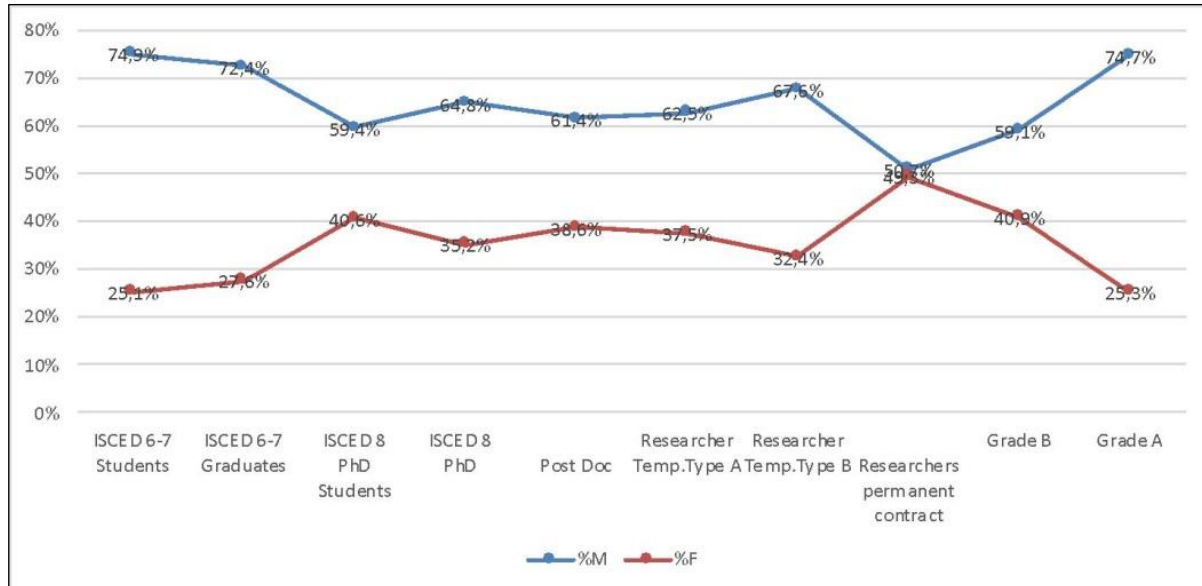
**Fig. 2. Proportion (%) of men and women in a typical academic career, students and academic staff, Unimore end 2019**



Sources: Our elaborations from administrative data <http://dati.ustat.miur.it/> and <https://cercauniversita.cineca.it/>

The gender gap to women’s detriment starts with access to knowledge/education capability in the STEM area (Figure 3), where the gap in attendance at the Bachelor and Master levels is about 50 percent to the advantage of men and about 30 percent points for Ph.D. holders. Gender gaps at the researcher type B and at Grade A role are wider than it has been found for the whole areas in Unimore. Disadvantages that can be found also on average in Italian universities.

**Fig. 3. Proportion (%) of men and women in a typical academic career, students and academic staff STEM, Unimore end 2019**



Sources: Our elaborations from administrative data <http://dati.ustat.miur.it/> and <https://cercauniversita.cineca.it/>

The Glass Ceiling Index, obtained as a ratio of the percentage of women compared to the total number of teaching staff and the percentage of women in Grade A positions, is higher than one (1.44) and, although lower than the national average (1.55), being greater than 1 point to the existence of a greater difficulty for women in reaching the highest levels of the academic career. Not only is there evidence of a glass ceiling effect, there are also difficulties in the initial phase of stabilization in the academic role and to express this difficulty we use an index proposed in the literature by Ilenia Picardi (2019, 2020): the Glass Door Index which is the ratio of the percentage of women carrying out activities of research in the academy in temporary positions (Type A + Research fellow) to the percentage of women in contracts leading to stabilization (Type B Temporary Research Contract + Permanent researchers). The index assumes a value of 1.17 for Unimore and 1.03 as the average of Italian universities. If other non-stabilized positions were also considered (collaborators in research activities, collaboration contracts in the health area, linguistic collaborators and technologists), the index would take on a value of 1.27 for Unimore. If the comparison is then extended to include those who are in a precarious position and those who are stabilized (including in addition to researchers, associate professors and full professors), the index of precariousness in the position in 2019 (that we have defined as Glass Wall Index) is equal to 1.35, not considering the collaborators, and 1.47 considering them. Gender inequalities have therefore been detected in the access to career.

The gross average earnings (not including committee attendance tokens and income from external contracts) gender gap to women's detriment is about 4% in administrative and technical positions and 11% for academic staff. However, in the higher level of careers, this rises to 22% in managerial administrative positions and also increases for higher grades in academic positions.

When data on external contracts and on committee attendance tokens are taken into account, the gender gap in earnings sensibly increases to women's detriment. This is linked to the different presence of men and women in committees and external contracts. This has been confirmed by analysing Grade A professors showing that the gender pay gap was not only to be related to the lower presence of women in Grade A positions and in their lower seniority in these positions, but it was also related to a women's lower average allowances and other remuneration items not predetermined by a national collective agreement. All the remuneration items not depending on the fixed part but on the variable part related to roles of power, assignments, professional activities reveal a clear gender imbalance to women's detriment. This kind of gender inequality occurs therefore in every activity depending on a certain margin of discretion by decision makers and also in roles and tasks that require the capability of self-proposing and that may be influenced in the case of women by their higher involvement in unpaid care work and care responsibilities.

In 2021 Unimore took part in the survey carried out by the Conference of Equal Opportunities Bodies of the Italian Universities (CEOBIU) on the impact of distance work that during pandemics involved a substantial percentage of Universities' personnel (Ghislieri et al., 2021). This survey makes it possible to identify the activity academic personnel are more involved in, by gender and by role. This analysis made it possible to detect a higher degree of involvement in care work activities for women and greater evidence of a work-family life conflict for women by using an indicator proposed in the literature by Colombo and Ghislieri (2008) and Netemeyer et al. (1996). Moreover, women in academia have a higher score than men in the off-work hours Technology Assisted Job Demand (off-TAJD), an indicator that measures the demand for working hours by using technologies outside of normal working hours (Ghislieri et al., 2017).

### **3.4 Planning Analysis**

Unimore has already developed a Plan of Positive Actions including specific actions on gender equality with special regards to the promotion of work-life balance, activities devoted to raise gender equality awareness (including also a gender sensitive language) and to combat violence against women (also with the interaction with external institutions that are active on this field).

Unimore CUG has recently approved Guidelines for gender equilibrium in panel composition in scientific events.

### 3.5 Gender Budgeting Reclassification

As an initial experimentation of Gender Budget Analysis at the University of Modena and Reggio Emilia, its “Economic and Investments Budget 2020” was examined for the expenditures section as represented in the chart of accounts for a total amount of €155,505,534.00.

Its classification in accordance with the gender budgeting methodology described in Section 2.5, returned the following gender budgeting table:

**Table 3 – The Budget classification of the University of Modena and Reggio Emilia from a gender perspective**

Priority	Stakeholders/Capability	Access to knowledge	Access to research and Academic work	Access to career and power	Access to work	Access to business	Neutral	TOTAL
Indirect Expenses	Students	21.720.572						21.720.572
	Professors and researchers		80.163.644					80.163.644
	Leaders			269.080				269.080
	Staff and Administration				27.955.520			27.955.520
	External Experts to support Academic activity				577.518			577.518
	External Experts to support Administration					635.519		635.519
Environmental Expenses	Suppliers					17.886.394		17.886.394
Neutral Expenses	Neutral						6.297.287	6.297.287
<b>TOTAL</b>		<b>21.720.572</b>	<b>80.163.644</b>	<b>269.080</b>	<b>28.533.038</b>	<b>18.521.913</b>	<b>6.297.287</b>	<b>155.505.534</b>

Source: Our data processing on Unimore budget data

The gender perspective is then pursued by analysing the resources distribution and impact between men and women identified within the above-mentioned groups of stakeholders and by assessing the different impacts on them.

#### Gender Auditing of Unimore 2019 Budget

Amongst current expenditure personnel costs represent 51% of the total costs and can be considered as having an indirect impact on the capability of work and disaggregated by gender according to the beneficiaries who can be considered as internal stakeholders. The observed academic career path will imply an unequal distribution of resources of the costs devoted to academic staff (38% of the total costs) and gender gap in earnings to women’s detriment mitigated in permanent research positions by



the higher seniority of women in the lower grade of academic career with lower chances of getting promoted and having access to higher wages.

Budget data can then be disentangled by gender and academic or non-academic personnel recovering individual earnings and estimating net gender earnings gap including observable individual characteristics on age, seniority, position, presence of children, type of contract, on-the-job training.

A clear analysis of the gender earnings gap together with the context analysis on the structure of employment by gender can contribute to plan specific actions on how to address observable inequalities by gender amongst personnel.

Costs related to student support (representing 10% of total costs) may also be classified as indirect expenditure and be disaggregated by the beneficiaries' gender. Moreover, in classifying expenditure devoted to supporting students, care should also be given to the actions funded. During pandemics, Unimore funded access to Wi-Fi and computers on lease for students in need. Data should be disaggregated by beneficiaries' gender while context data collected by means of a dedicated survey on students makes it possible to detect to what extent this type of support was more required by women or men students.

## 4 Conclusions

To what extent can gender budgeting help higher education institutions in detecting gender inequalities in well-being dimensions and in planning gender equality enhancing policies?

The process of selecting the dimensions of well-being that the higher education institutions can affect is a first step in the process that, having identified the stakeholders, proceeds with the analysis of the context under the double lenses of well-being and gender equality.

Budget re-classification is then carried out by classifying each expenditure according to its gender impact with regards to each well-being dimension.

The case study makes it possible to detect the interaction between the context analysis and the expenditure, serving also as background information on which to base new programmes to reduce the observed gender inequalities.

The context analysis shows the widening of a gender gap to women's detriment in the career progression already in the position of type B researcher (a position that is more likely to bring to a tenured position in Academia).

Both in the University of Modena and Reggio Emilia and on average in the Italian Universities, the gender gap to women's detriment calls for policies that could break the Glass door (as defined in Picardi, 2020). Mentoring programs (Dutta et al., 2011,

Gardiner et al. 2007, Farkas et al. 2019, Picardi and Agodi, 2020) should also be introduced to improve the access of women in post-doctorate or temporary researcher posts to tenure-track positions although more research is needed to identify the long-term effects of mentoring on mentees, and the institution on gender equality (Meschitti and Smith, 2017; House et al., 2021). The observed inequalities in the career progression and the lower share of earnings related to membership of committees or external contracts further widen the pay gap to women's detriment and call for dedicated actions tackling the glass ceiling and glass door effects.

Further developments of well-being gender budgeting include the recognition of intersectionalities and to also address non-binary gender definitions. This development will also bring about new ways of collecting and classifying data and new indicators to evaluate the programmes.

## Acknowledgements

The authors gratefully acknowledge funding from the European Union's Horizon 2020 Research and Innovation program Leading Towards Sustainable Gender Equality Plans in research performing organisations [LeTSGEPs] project (Grant Agreement no. 873072). Two anonymous referees and participants of the STS Conference Graz 2021 Session D.3: Let's talk about money, sister! - Governance strategies for structural change in science and research are also thanked for their stimulating comments.

## References

- Addabbo, Tindara; Arciprete, Caterina; Biggeri, Mario; Picchio, Antonella (2019): Gender budgeting from a capability approach perspective: evidences from Senegal, in Paoloni, P., Paoloni, M. & Arduini, S. (Eds) (2019): Proceedings of the 2nd International Conference on Gender Research, Roma Tre University, Rome, Italy, 11-12 April 2019, Reading, Academic Conferences and Publishing International Limited, ISBN: 978-1-912764-16-7, pp.15–23.
- Addabbo, Tindara (2016): Gender Budgeting in the capability approach: from theory to evidence, in Jim Campbell; Morag Gillespie (Eds.) *Feminist Economics and Public Policy: Reflections on the Work and Impact of Ailsa McKay*, Abingdon: Routledge, ISBN: Hardback: 978-1-13-895085-6, Paperback: 978-1-13-895086-3, 59–65.

- Addabbo, Tindara; Gálvez-Muñoz, Lina; Rodríguez-Modroño, Paula (2015): Gender budgeting in education from a wellbeing approach: an application to Italy and Spain, *Política Economica-Journal of Economic Policy*, XXXI (2), pp.195–212.
- Addabbo, Tindara; Badalassi, Giovanna; Corrado, Francesca; Picchio, Antonella (2011): A Social-reproduction and Well-being Approach to Gender Budgets: Experiments at Local Government Level in Italy' Addabbo, T., Badalassi, G., Corrado, F., Picchio, A. Chapter 5, in Florence Degavre; John Eriksen; Elisabetta Addis; Paloma de Villota (Eds) (2011): *Gender and Well-being. The Role of Institutions*, Ashgate, Aldershot, UK and Burlington VT (USA), ISBN: 978-1-4094-0705-8, pp.105–124.
- Addabbo, Tindara; Lanzi, Diego; Picchio, Antonella (2010): Gender Budgets: A Capability Approach, *Journal of Human Development and Capabilities: A Multi-Disciplinary Journal for People-Centered Development*, November 2010, 11(4), pp. 479–501.
- Colombo, Lara; Ghislieri, Chiara (2008): The work-to-family conflict: between theories and measures. *TPM - Testing, Psychometrics, Methodology in Applied Psychology*, 15(1), pp.35–55.
- Dutta, Rina; Sarah L. Hawkes; Elizabeth, Kuipers; David, Guest; Nicola, T. Fear; Amy C., Iversen (2011): One year outcomes of a mentoring scheme for female academics: a pilot study at the Institute of Psychiatry, King's College London. *BME Medical Education* 11(13), pp. doi: 10.1186/1472-6920-11-13.
- EIGE (2016): European Institute for Gender Equality, Gender equality in academia and research GEAR tool, <https://eige.europa.eu/gender-mainstreaming/toolkits/gear>.
- European Commission (2019): *She figures 2018*, Directorate-General for Research and Innovation, Luxembourg: Publications Office of the European Union.
- Farkas, Amy H.; Eliana, Bonifacino; Rose, Turner; Sarah, A. Tilstra; Jennifer A. Corbelli (2019): Mentorship of Women in Academic Medicine: a Systematic Review. *J GEN INTERN MED* 34, pp. 1322–1329.doi: 10.1007/s11606-019-04955-2.
- Gardiner, Maria; Marika, Tiggemann; Hugh, Kearns; Kelly, Marshall (2007): Show me the money! An empirical analysis of mentoring outcomes for women in academia, *Higher Education Research & Development*, 26 (4), pp.425–442, DOI: 10.1080/07294360701658633.

- Ghislieri, Chiara; Addabbo, Tindara; Bochicchio, Vincenzo; Musumeci, Rosy; Picardi, Ilenia; Tomio, Patrizia; Converso, Daniela; Sanseverino, Domenico (2021): Lavoro in università ed emergenza: primi risultati dell'indagine nazionale. Conferenza Nazionale degli Organismi di Parità delle Università Italiane, mimeo.
- Ghislieri, Chiara; Colombo, Lara; Emanuel, Federica; Molino, Monica; Cortese, Claudio G. (2017): Off-work hours Technology Assisted Job Demand (off-TAJD): definizione e applicazione della misura, paper presented at the Associazione Italiana Psicologia - XV Congresso Nazionale della Sezione di "Psicologia per le Organizzazioni".
- House, Allan; Dracup, Naila; Burkinshaw, Paula; Ward, Vicky; Bryant, Louise, D. (2021): Mentoring as an intervention to promote gender equality in academic medicine: a systematic review. *BMJ Open*, 2021; pp.11. <http://dx.doi.org/10.1136/bmjopen-2020-040355>.
- Meschitti, Viviana; Smith, Helen L. (2017): Does Mentoring Make a Difference for Women Academics? Evidence from the Literature and a Guide for Future Research, *Journal of Research in Gender Studies* 7(1): pp.166–199.
- Netemeyer, Richard, G.; Boles, James, S.; McMurrian, Robert (1996): Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81, 400–410, <https://doi.org/10.1037/0021-9010.81.4.400>.
- Picardi, Ilenia (2020): La porta di cristallo: un nuovo indice per rilevare l'impatto di genere della riforma Gelmini sull'accesso alla professione accademica, Milano, Angeli.
- Picardi, Ilenia (2019): The Glass Door of Academia: Unveiling New Gendered Bias in Academic Recruitment", *Social Sciences*, 8 (5), p.160.
- Picardi, Ilenia; Agodi, Maria Carmela (2020): Gender perspective in mentoring relationships: a case study of GENOVATE@UNINA, Ch.10 in Lawton Smith, H., Henry, C., Etzkowitz, H. and Poulouvassilis, H. (2020) *Gender, Science and Innovation New Perspectives*, Cheltenham, UK, Edward Elgar, pp.189–214.
- Sharp, Rhonda (2003): Budgeting for Equity: Gender Budget Initiatives within a Framework of Performance Oriented Budgeting, [https://www.researchgate.net/publication/237129554\\_Budgeting\\_for\\_Equity\\_Gender\\_Budget\\_Initiatives\\_within\\_a\\_Framework\\_of\\_Performance\\_Oriented\\_Budgeting](https://www.researchgate.net/publication/237129554_Budgeting_for_Equity_Gender_Budget_Initiatives_within_a_Framework_of_Performance_Oriented_Budgeting).