

# The Double D Dimension: Diversity and Discrimination among Economists in the Italian Academia

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**Abstract:** The economists' failure in predicting and forecasting the recent (and old) financial crisis gave a new impulse to the concept of diversity in the economic profession, underlying how diversity is an enriching factor for the development of economic theory and for a better understanding of reality. This paper aims to analyse data about current level of gender diversity in the Italian academia, focusing on economists. We show that the research assessments' identification of a univocal and standardized concept of research quality - mainly measured by bibliometric indicators - imposes a strategy of "homologation" for breaking the glass ceiling. Since women's academic career remains markedly characterized by a strong vertical segregation, we find that women able to reach the top of the career are more subject to assimilate their research activities to a homogeneous profile with respect to that of their male colleagues. We also provide a qualitative analysis of gender diversity within the academic economic profession in Italy: our survey suggests that women experience some form of discrimination at work almost three times more often than men do, and the main cause of discrimination is their gender identity.

**Keywords:** *Women Economists; Discrimination; Italy; University*

**JEL Codes:** *J16; J70; A14*

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## Introduction

The global trend of re-organizing the academic world according to the competitive logic of the global marketplace (i.e. the use of standardized bibliometric indexes to measure research quality) imposes considerable changes in the working condition in academia in the last decades. Nevertheless, the under-representation of women researchers is a chronic phenomenon across the EU. This contributes to a 'leaky pipeline' phenomenon, whereby an increase in the number of women graduates does not lead to an increase in the proportion of women amongst researchers (Jensen, 2005). In fact, according to the last data available<sup>2</sup>, in the European Union, while men and women's access to science in universities has improved immeasurably, the same cannot be said for women's access to scientific careers. Their presence at the top of scientific and academic careers is scarce. Only 20.9% of full professors in Europe are women, showing very limited progress compared to 2010 (20 %). Women and men in research show different career paths, since at lower grade – among researchers - the difference with men stands at 10 percentage points, while at the top of the career – full professors level - it reaches 58 percentage points.

The European Commission's Expert Group on Structural Change has identified among a range of institutional barriers that may be limiting advancement of gender equality the institutional practices that indirectly discriminate against women and gender bias in the organization of the workplace (DG Research and Innovation, 2012). Iris Bohnet<sup>3</sup> (2016) demonstrates empirically how research is addressing gender bias and how unconscious gender stereotypes are deeply rooted in our society - beliefs that implicitly punish those who do not conform, whether it is a woman steaming ahead in a career path or a man not working for looking after children. She also underlines how important is the process of collecting data to understand whether and why there is gender inequality. Therefore, in order to give value to existing gender diversity and to encourage the creation of balanced gender teams and behaviour towards equality, it is crucial analysing in details data about current level of gender diversity in research organizations.

This article aims to extend the current literature by exploring and updating the dimension of gender diversity in the Italian academia, focusing on economics.

The first studies about the "numbers" of the academic career, analysed in gender perspective, date back to the late nineties<sup>4</sup>. However, we still suffer from a lack of permanent monitoring of the condition of women in economics, since association such as the Committee on the Status of Women in the Economics Profession (CSWEP)<sup>5</sup> or the Committee for Women in Economics (CWE)<sup>6</sup> do not exist in Italy<sup>7</sup>. From our side, two research questions are crucial: (i) which are the main characteristics of Italian economists? (ii) being a woman is still a cause of discrimination in Italian universities?

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<sup>2</sup>SHE figures 2015:

[http://ec.europa.eu/research/swafs/pdf/pub\\_gender\\_equality/she\\_figures\\_2015-final.pdf#view=fit&pagemode=none](http://ec.europa.eu/research/swafs/pdf/pub_gender_equality/she_figures_2015-final.pdf#view=fit&pagemode=none)

<sup>3</sup>Director of the Women and Public Policy Program at Harvard University's Kennedy School of Government. In a recent publication (2016) has collected interventions by companies, universities, and governments in Australia, India, Norway, United Kingdom, United States, Zambia, and other countries to analyze how institutions promote diversity among their employees.

<sup>4</sup>Rosselli (1999).

<sup>5</sup>CSWEP, born in the early '70s, as an initiative of the American Economic Association (AEA) in order to monitor the status of women in the profession and to undertake professional activities to improve their status.

<sup>6</sup>The Committee for Women in Economics (CWE) within the Royal Economic Society since 1996 monitors and promotes the role of women in economics.

<sup>7</sup>There is an initiative by the Gender Committee of the Italian Economic Association (SIE), aiming to fill this gap: a first survey on gender differences among SIE members was carried out in 2014, and a new one is now in progress.

The paper is organised as follows: first, we propose a critical review of the literature about gender diversity in economics; secondly, we explore the gender imbalance at the top of Italian universities (in economics). Since women's academic career remains markedly characterized by a strong vertical segregation, we focus on the top of the career in order to describe how women have succeed in the last competitions for full-professorship in Italy, held in the last decade. The analyses of the evolution of the taxonomy of the successful candidates lead also to a reflection about "diversity" in research fields in economics. In our view, the identification of a univocal and standardized concept of research "quality" mainly measured by bibliometric indicators, heavily based on citations, imposes a strategy of "homologation" for breaking the glass ceiling in academia. Finally, in the last section we provide a qualitative analysis of the status of women in academic profession in economics, considering the perceived gender discrimination, gender division of labour and gender productivity gap in Italian universities. Our results show that a more gender-balanced division of labour within the individual departments, between research and teaching and/or bureaucratic activities, can have a positive impact on productivity levels of women economists, and consequently can bring to an increase in their visibility and chances of career advancement, as the staff selection processes are more and more strongly influenced by the number and "quality" of scientific products.

## 1. Gender diversity in economics: a review

Interest for gender diversity in organizations and therefore the issue of diversity management gains popularity from the late 1980s (Johnston and Packer 1987, Cox et al.1991). The early research on diversity management focused mainly on diversity in the organizational and career paths of gender and racial groups in US (e.g. Heilman 1997; Nkomo 1992), spreading then in the 90s in UK. Within the "diversity management" literature, gender diversity is expected to provide different perspectives and insights, stimulating workers' creativity, and making teamwork more effective and successful (Hoogendoorn et al. 2013). Therefore, a higher share of women is thought to be beneficial in terms of team's task performance by bringing a higher level of cooperativeness and information sharing within the group (Dezsó and Ross 2012).

The economists' failure in predicting and forecasting the recent financial crises<sup>8</sup> gave a new impulse to the concept of diversity in the economic profession. For example, the Independent Evaluation Office of the International Monetary Fund (IMF) in order to recalibrate its analysis that failed to emphasize risks and vulnerabilities during the years of the crises and to cultivate a culture that is proactive in crisis prevention, has agreed that more should be done to access thoughtful and diverse opinions within the Fund. The creation of an environment that encourages diverse and dissenting views is now a IMF management's key goal. Also the Federal Reserve has recently organized a conference<sup>9</sup> just on the topic, pointing out how diversity (in its broadest sense is not strictly gender, going to understand the ethnic minorities) is an enriching factor for the development of economic theory and for the understanding of the current reality. In this sense are the words of Janet Yellen in the opening speech of the conference work: *"...in trying to raise awareness of diversity in the economics profession, I'm aided by the fact that economists are well acquainted with the concept of diversity from their work. When conducting a survey, economists understand that the results will be more meaningful when the diversity of the sample approaches the diversity of the population being studied. (...) Often, in the things economists study and the methods we use, diversity is a good thing. To*

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<sup>8</sup>Please refer to article P. Krugman (2009) "How Did Economists Get It So Wrong?" *The New York Times Magazine*. Many associations were created to give visibility to a new way of thinking and doing business, for example the Inet association created in 2009 in New York to discuss ways to reshape the economy in the wake of the financial crisis . <https://ineteconomics.org/about/our-purpose> .

<sup>9</sup>National Summit on Diversity in the Economics Profession, Federal Reserve Board, Washington, D.C. 30<sup>th</sup> October 2014.

*cite another example, research by economists and other social scientists supports the view that considering a diversity of perspectives and ideas leads to better decisions in an organization.”*

In the literature, it is possible to identify two different approaches to the analysis of diversity in the economics profession:

(i) One strand of literature analyses the contribution of women to the discipline. Within this first category we can, however, distinguish different approaches. For example, Dimand et al. (2000, 2011), Ciccarelli and Ciccarelli (2003) and Madden et al. (2004), following a narrative approach<sup>10</sup>, provide contributions of women economists of the past who did not appear into the standard history of thought texts. They attempted to publish a more comprehensive dictionary of past women economists in order to fill the gaps in our institutional memory and recognized the right light to undervalued women economists. Moreover, Groenewegen and King (1994) provide a statistical analysis of women's contributions from 1900 to 1939 in top economic journals (American Economic Review, Journal of Political Economy, Quarterly Journal of Economics, *Economica*, and Economic Journal) by analysing 112 women authors of 222 articles. A broader survey of women researchers including less known titles is in Madden (2002). She provides a quantitative analysis of almost 1160 women authors of economics journals published between 1900 and 1940. Other researchers focus, instead, on gender differences in economic issues, methodologies, research approaches and interests. Davis (1997), Davis et al. (2011), Hedengren et al. (2010) and, for Czech Republic, Stastny (2010) find that women typically reach a much stronger consensus particularly on issues of equity and fairness both in the economics profession and in policy recommendation calling for greater governmental intervention. Albelda (1997), instead, focuses on gender and on how men economists are much less interested in topics such as women's labour force participation, the impact of fiscal and monetary policies on women and the family structure, wage discrimination, and the economic status of minority women. Recently May et al. (2014) reports important and significant gender differences in approach to policies such as minimum wages, health insurance and equal opportunities in the labour market. Finally, few studies have examined the evolution of gender differences in scientific production in economics. For example Forget (1995), for the US, analyses the evolution of PhD's dissertations in economics from 1912 to 1940, while Dolado et al. (2008), studying the scientific production of economists tenured in top international departments, addresses cohorts' differences in research fields' preferences by men and women. Moreover, Corsi and Zacchia (2014), studies women reaction, in terms of scientific productivity, to institutional changes such as new research evaluation systems for career advancement.

(ii) Another strand of literature focuses on institutions or rather on human resources' organization. The main object of analysis is how universities can provide a research environment that can benefit from the creativity and productivity of the presence of mixed research groups. Therefore, equality is central both in terms of equal opportunity issue and of performance improvement of an organization. As Acker (1990) argues, organizations are gendered processes where *“advantage and disadvantage, exploitation and control, action and emotion, meaning and identity, are patterned through and in terms of a distinction between male and female, masculine and feminine”* (Acker, 1990, p. 146). Universities are not different so it's important to remind that all internal processes, department organization, research activities, criteria for evaluation and career paths in academia are all gendered (Acker, 2008; Johansson and Śliwa, 2014). In a recent paper, Milkman et al. (2014) provides evidence suggesting implicit gender bias in university in US. The authors find that when letters of interest are sent to professors, the responsiveness varies according to race and sex: letters signed with names usually associated with Caucasian men are more likely to receive a response from the faculty members. The most striking differences appear among business professors, because the response rate decreases of 25% when a letter is signed with names associated with women or men from underrepresented minorities. In order to promote equal

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<sup>10</sup>For a full description of the methodological approaches in research in the history of economic thought see Marcuzzo (2008), <http://www.eshet.net/index.php?a=18&oc=16&d=26>

opportunity in universities Amanda Bayer<sup>11</sup> created in 2011 the web site Div.E.Q. (Diversifying Economic Quality)<sup>12</sup>. Div.E.Q. aims to provide a web platform for economics departments and faculty to disseminate and to discover data, analyses, and prescriptions for increasing the diversity of the economic discipline, in order to contrast the “Institutional Discrimination”, described as the adverse treatment of and impact on members of minority groups due to the explicit and implicit behavioural rules.

In Italy, recently gender discrimination in academia has been mainly documented with behavioural and experimental studies stressing on gender differences in competitive environments and therefore on the impact of gender composition of selection committees on the likelihood of obtaining tenure (Scoppa and De Paola 2015-2016; Abramo et al. 2016; Bagues et al. 2014-2015). We are more interested in studying the result of inequality of opportunities in terms of gender segregation and gender discrimination. Therefore, we propose in the next sections first a quantitative analysis of vertical segregation and the difficulties women face in reaching the top positions in academia and then a qualitative analysis of the personal perception of discrimination among Italian academic economists.

## **2. Women’s access and career progress within academia**

In order to account for the difficulties faced by women in gaining access to the highest levels of academia we compute a Glass Ceiling Index (GCI)<sup>13</sup>. The GCI accounts to 1.85 in 2015 compared to 2.55 in 2000, indicating that there has been some progress towards reducing the glass ceiling effect, although women continue to be less-represented in full professorship than in academia generally. Inequalities persist and progress is slow. Marked vertical segregation – defined as the under-representation of a group of workers at the top positions– persists throughout the women’s academic career. We propose in this section a detailed analysis of vertical segregation among academic economists looking first at the evolution of gender differences in academic paths from 2000, with a comparison with the UK, and finally analysing how the profile of economists who have become full professors in the last decade has changed in terms of individual characteristics and scientific productivity.

### **2.1 Vertical segregation and heterogeneity in economics in Italian universities**

Let us start by reporting three key elements for economists in Italian universities:

(i) women account for 42.5% of PhDs in economics<sup>14</sup>. Nevertheless, the share of women tenured is still low: academic women economists are 30%<sup>15</sup> of all tenured economists in Italian

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<sup>11</sup>Full professor of economics at Swarthmore College, USA.

<sup>12</sup>[http://www.diversifyingecon.org/index.php/Main\\_Page](http://www.diversifyingecon.org/index.php/Main_Page)

<sup>13</sup>The Glass Ceiling Index (GCI) is computed by the European Commission in the SHE Figures - a complete report about gender differences in careers and decision-making in Science. The index compares the proportion of women in academia with the proportion of women in top academic positions (full professors). The GCI can range from 0 to infinity. A GCI of 1 indicates that there is no difference between women and men in terms of their chances of being promoted. A score of less than 1 means that women are more represented at the top level than in academia generally and a GCI score of more than 1 indicates the presence of a glass ceiling effect, meaning that women are less represented in full-professorship positions than in academia generally. In other words, the interpretation of the GCI is that the higher the value, the stronger the glass ceiling effect and the more difficult it is for women to move into a higher position.

<sup>14</sup> Data collected from Cineca-Miur, <http://statistica.miur.it/scripts/postlaurea/vdottori1.asp>, updated to December 2014.

<sup>15</sup> Data updated to December 2015.

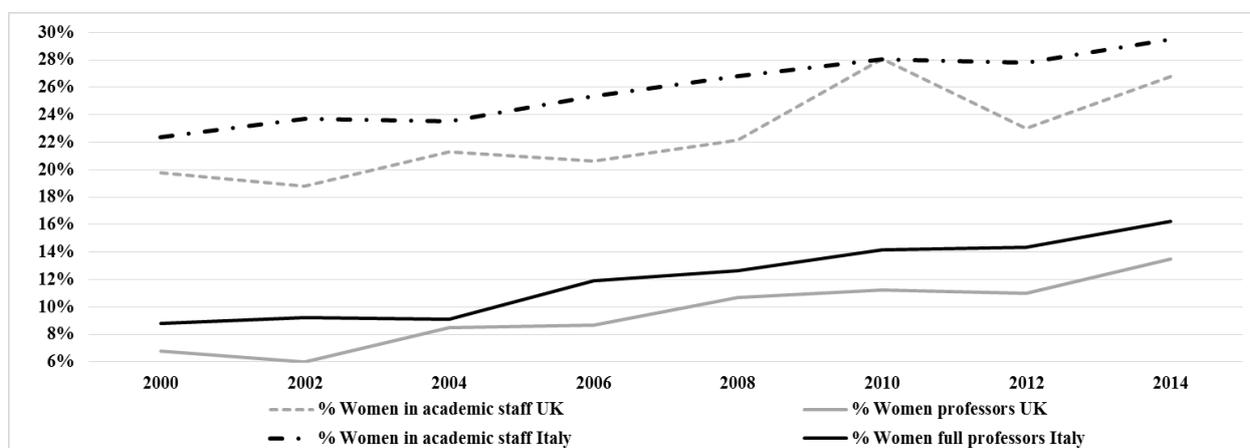
universities. By academic rank, women represent just 16% of full- professors, 32% of associate professors while, at the bottom of the academic career path, they accounts for 46% of researchers.

(ii) academic hierarchical structure is strongly affected by gender. In 2015, for women we report a classic structure pyramidal in the shape: full professors at the top (20% of all women economists), followed by associate professors (35%) and, at the base, researchers (45%). Instead, for men the hierarchical structure looks like a reversed pyramid: full-professors represent the higher share (44%), followed by associate professors (33%) and, at the top researchers (23%). Gender differences in careers are evident: persistence in the lower ranks of the academic hierarchy is more frequent and career progresses slower and more difficult for women than for their male colleagues.

(iii) gender differences in academic hierarchical structures has remained the same up to now starting from 2000.

The under-representation of women economists in academia is an international problem. We propose a comparison with United Kingdom, thanks to data collected by the "Survey on Gender and Ethnic Balance of Academic Economics"<sup>16</sup>. In order to facilitate the analysis we classify UK academic staff into three different groups that could be similar to the three Italian academic levels: Professors (comparable with full-professors), Readers & senior lecturers (associate professors) e Lectures & Researchers<sup>17</sup> (researchers). Women accounts for 26.8% of all UK academic economics staff in 2014; the share is slightly higher for Italy (29.5%). Despite a common increasing trend in the share of women at the peak of career, women at the top are still below 20%: in Italy the share of women full-professors has increased from 8.8% in 2000 to 16.2% in 2014 while in UK, in the same years, from 6.8% to 13.5% (see figure 1).

**Fig. 1 - Women economists: Italy and UK (2000-2014)**



Also in UK, there are gender differences in hierarchical academic structure: the lower share of women are at the top of their careers (Professors 14.1%, Readers & senior lecturers 26.1%), while the majority are enrolled as Lectures & Researchers (59.8%). Instead, for men in UK the hierarchical structure looks like a "hourglass", with the higher percentages of Lectures & Reserchers (40.7%) and Professors, (33%) and, in the middle as a transition category, Readers & Senior lecturers (26.3%). The main difference between Italy and UK is that, while in the latter both women and men are mostly

<sup>16</sup> Data are collected by the Committee for Women in Economics (CWE) that sends a questionnaire to all academic economists. The results can be biased by the rate of response to the survey.

<sup>17</sup> Including both *fixed term* and *permanent*.

employed as Readers & Senior lecturers, in Italy most women are employed as researchers while men are mostly full- professors. This gender differences in Italian hierarchical structure has remained unchanged over the last 14 years. That is why it is important to analyse gender differences in reaching the top of the academic career path in Italy more in-dept.

## 2.2 Breaking the glass ceiling

Women economists that broke the glass ceiling in Italian universities have increased of 84.1% from 2000. We are particularly interested in underlining possible strategies adopted by successful women in order to compete at the top with their male colleagues. Therefore, we analyse the competitions for full-professorship in order to identify how the taxonomy of the successful candidates has changed in the last decade in Italy.

We take in account 20 competitions for full-professorship held before 2008 (in 2001-2003), 20 competitions in 2008 and the results of the last two rounds (2012-2013) of the National Scientific Qualifications for full-professorship (2012-2013). In the logic of the proposed gender analysis, 2008 marks a turning point in how the rules governing competitions for associate and full professors have undergone a significant change: it is in fact introduced by the Decree-Law n. 180 of November 2008 a new system of selection for commissioners that involves a random drawing (by lottery) of four external commissioners (to be added to an internal commissioner appointed by the Faculty which runs the competition) out of a pool of previously elected professors, for the same disciplinary field. This procedure aims to avoid the creation of ad hoc committees and to expand the circle of 'gate keepers'. The mechanism of random selection of the members of the committees has had a significant effect: in 2008, there was the highest percentage of competitions with at least one women commissioner (from 34.7% of all pre-2008 competitions to 44.4%).<sup>18</sup> Other date breakthrough in the selection system in Italian universities is 2012 as Decree Law no. 76 of 2012 makes operational the law 240 of 2010 by introducing a new evaluation mechanism for the selection of full professors. Since 2012 researchers wishing to be promoted to full professor must be eligible for National Scientific Qualification (Abilitazione Scientifica Nazionale, ASN) of their disciplinary area. For each area candidates are evaluated by a committee made up of 5 members<sup>19</sup>; only those who meet the minimum requirements fixed at national level by the National Agency for the Evaluation of University and Research (Agenzia Nazionale per la Valutazione dell'Università e Ricerca, ANVUR)<sup>20</sup> may be successful. Necessary but not sufficient for achieving the National Qualifying is the overcoming of one of the following requirements:

- number of books with ISBN higher than the median number of scientific production of full professors;
- number of journal articles and book chapters higher than median number of scientific production of full professors;
- number of articles in top journals higher than median number of scientific production of full professors.

For the definition of the list of top journal in economics ANVUR has adopted purely bibliometric criteria, based on WoS indexed by Thomson Reuters, Scopus rankings and more recently Google Scholar indicators (h index)<sup>21</sup>.

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<sup>18</sup> We analysed 67 full professorship competitions between 2001 and 2008.

<sup>19</sup> Commission composed by four full professor random draw in Italian universities and a foreign member from an OECD country.

<sup>20</sup> Anvur is a public institution supervised by the Ministry of Education, University and Research (MIUR), established in 2006 in order to assess the activities of universities and public research institutions in Italy.

<sup>21</sup> The critical debate about the construction and the calculation of the minimum requirements in particular for the economic area is rich (see Baccini, 2016 and Corsi et al., 2011), and follows a critical view already widely

In order to analyse the evolution of the typical profile of successful woman candidate in the years effected by the reforms of the Italian university system described above, we consider a sample of 20 full professor competitions held between 2001 and 2003, 20 in 2008 and the results of the last two rounds of the ASN. We analyse 233 candidates of which 18.9% women<sup>22</sup>. The first interesting, and encouraging evidence, is that the full professors are currently younger than in the past. In 2001-2003 the average age of women who were able to break the glass ceiling was 51 years (against 46 men), in 2008 the average age was 41 years and for the successful candidates in the ASN qualifications is 44 years. The second evidence concerns the time required for the becoming full professor after the appointment as associate professors: on average in 2008 women economists became full professors after six years, against 5 years and a half for men.

We have then calculated the rate of gender discrimination (GDI) for the considered competitions, as the ratio between the percentages of successful candidates over the share of all women candidates in each competition. The GDI index range from 0 to infinity: a score higher than 1 indicates the presence of a “sticky floor” for women who experience greater difficulties in reaching top positions than men. Unlike the Glass Ceiling Index, which over the years has decreased in Italy, the GDI remains high and stable over the years, as it is equal to 3.12 for competitions between 2001 and 2003, to 3.83 for competitions in 2008 and 3.16 for ASN qualifications (2012-2013).

While the GDI index has remained constant over time, the visibility, in terms of scientific production, of successful candidates has drastically increased. For this purpose, we have analysed the publications of all candidates in the decade<sup>23</sup> before the competition they won, taking to consideration the Econlit<sup>24</sup> and Google Scholar databases. As a whole, we have considered 2,000 publications (617 relating to 2001 to 2003 competitions and 1383 for 2008 competitions).

For the ASN competitions, we analyse 16,493 publications, identified by merging the candidates' curricula with their Econlit entries.

As table 1 shows, the median number of publications has increased more significantly for women over the years, regardless of the database used. Consequently, we observe a reduction in the gender productivity gap particularly in the case of ASN candidates (the median is 34 publications for women and 38 for men).

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debated in the UK as a result of first evaluation exercises of research for the purpose of redistribution of funds to individual universities (see Lee 2011 e Lee et al, 2013).

<sup>22</sup> More precisely these are 78 candidates in the pre-reform 2010 competitions, of which 25.6% women and 155 candidates in the 2012-2013 ASN, 15.5% women.

<sup>23</sup>As a result, for example, for candidates to 2008 competitions we calculated all the articles published between 1998 and 2007.

<sup>24</sup> Econlit is one of the most complete databases and used in the economy, which collects journal articles, theses, monographs, conference proceedings, working papers relating to all fields of economic research. It has a wide geographical coverage and since 1969 it is updated monthly. However some bias in our data may be due to a structural change in Econlit database that increase in recent years, the coverage of journals and working papers.

**Tab. 1 – Visibility: Gender productivity gap in competitions for full professorships**

		Median no. of publication		Publication Type (%)			
2001-2003	W	<i>GS</i>	<i>Econlit</i>	Journal Art.	Books	Collective Volume Art.	Other
	M	11.5	3	66.7%	17.9%	39.2%	0.0%
2008	W	<i>GS</i>	<i>Econlit</i>	63.3%	2.3%	14.9%	19.5%
	M	34	7.5				
ASN 2012-2013	W	34		52.6%	3.2%	10.0%	34.2%
	M	38		49.5%	2.3%	13.5%	34.7%

Women economists show a good ability to adapt to the rules of the game, increasing their scientific production at the same rate as their male colleagues and choosing the same type of publication. We can indeed speak of a process of “homologation” in the choice of the type of publication in favour of journal articles and working papers (“other”, in table 1) at the expense of books and collective volume articles: only 3.2% of the publications submitted by ASN candidates are monographs and 10% essays in collective volumes, much lower figures than the one observed for competitions between 2001 and 2003 (17.9% and 39.2%).

Shifting the focus to the content of the publications, or better, to research topics dealt with, we have calculated the Duncan segregation index to identify the degree of heterogeneity among the topics chosen by men and women economists.

The index is defined as:  $Sf = \frac{1}{2} \sum_{i=1}^n |m_i - f_i|$  in which  $m_i$  ( $f_i$ ) represents the percentage of men (women) in a particular field). The segregation index reports the proportion of women (men) who have to swap fields with a man (woman) for both sexes to be represented in all fields in proportion to their representation in the whole system. Therefore, 0% indicates that the distribution of men and women across fields is the same, while 100% means that women and men are interested in completely different research fields. To define the fields we use the JEL codes<sup>25</sup> from Econlit.

From the results of the segregation index it is clear the tendency to a homogeneous profile of a successful male/female candidate: the Duncan index accounts 42.95% between 2001 and 2003, while for competitions in 2008 amounts to 23.65% and for ASN candidates decreases to 21.9%.

This means quite clearly that the choices of research topics of those who can reach the top of the academic career tend to converge to a uniform profile. Diversity is definitely under risk, both in terms of research interests and research team composition.

### 3. Gender diversity means discrimination? A qualitative analysis

Up to now we have analysed only one of our “D”, i.e. diversity. We now turn to study the main characteristics of Italian economists taking in consideration gender difference in training, productivity, division of labour and perception of work environment. For such a purpose, we have

<sup>25</sup>JEL classification codes is a system of classification of the articles in economic journals created by the Journal of Economic Literature (of the American Economic Society). The JEL code consists of three characters, the letter identifies the primary sector (they are 19 in total).

adopted a qualitative methodology to explore the personal work experience of women and men economists in Italian universities. We have used a questionnaire structured to ask participants their biographical data (including their participation to housework), education, scientific productivity and inquiring about the challenges, they have faced during their career path (perception of being discriminated). Following the Spradley's (1979) guide to formulate different types of question, we have concentrated on descriptive and evaluative content<sup>26</sup>. For example, we have used descriptive questions to collect biographical information such as the caring responsibility, the role within the university and the number of publications in the last five years. While we have used evaluative question to understand the personal feelings towards their work experience in academia, like: "Have you ever felt discriminated at work?" and "Which is the main cause of discrimination in your case?".

We have chosen to send an on-line questionnaire (see appendix 1) to members of the Italian Economic Association (SIE)<sup>27</sup>. We received answers by 185 members with a response rate for women significantly higher than that of men (29.24% of women members 20.7% of men members).

About the age and levels of training (Ph.D.) we didn't find significant gender differences: the average age of researchers is 41 years both for women and men while for associate professor is 48 years and 58 years for full professors. They were awarded a Ph.D. on average at age of 31 years. The 75.8% of the surveyed women economists holds a PhD, slightly higher than the percentage for men, 71.5%. Such a difference almost disappears among young researchers.

The main gender differences come out concerning marital status and number of children: 62% of women economists is married/cohabiting against 78.9% of men. In addition, 38.7% of women economists has no children against 22.8% of their male colleagues.

In particular, a striking difference is observed for women economists older than 65 years, among which 40% has no children against 9.5% of male economists of same age. For all ages, the percentage of childless women is greater than for their male colleagues, with a reduction only for the age group 51 -55 years (see appendix 1.1.).

### **3.1 Gender perceived discrimination in academia**

In literature, an increasing number of surveys gather information about presence of gender-bias discrimination in academia. Carr et al. (2000) in their analysis of U.S. medical school departments find that women are more than 2.5 times more likely than men to perceive gender-based discrimination in the academic environment. Moving to UK, Knights and Richards (2003) report the dominant position of masculinity within academia and the active marginalization of femininity in all aspects of academic life from the promotion process to the selection of panels. More recently Howe-Walsh and Turnbull (2016), lay out how, despite the department adopted policies to mitigate gendered practices, women respondents perceive direct and indirect discrimination mainly in the recruitment and selection process and in the lack of recognition of their professional successes that are reported to be "*left uncelebrated compared to their male colleagues*" (p.7).

So we have asked if being a woman is still a cause of discrimination among Italian academic economists. Answers are quite alarming: 41.9% of the women respondents said that they have experienced discrimination, against 14.6% of men. The perception of discrimination is stronger at the end of the academic career among the full professors aged between 61 and 65 years. As figure 2 shows, the majority (61.5%) of women economists said that they have been discriminated because of their sex<sup>28</sup>, while the remaining 38.5% has identified age, research interests and the lack of a

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<sup>26</sup> Spradley (1979) considers four different type of questions: descriptive, structural, contrast and evaluative.

<sup>27</sup>SIE was founded in 1950 to favour and stimulate economic research in Italy. Their members are predominantly professors and academic researchers in various fields of economics. The responses have been collected in August- September 2013.

<sup>28</sup> One of the responder wrote: "*I do not think there was any conscious discrimination, but at the same time I believe that, under the same circumstances, I would have progressed in my career a bit 'faster' if I were a man*".

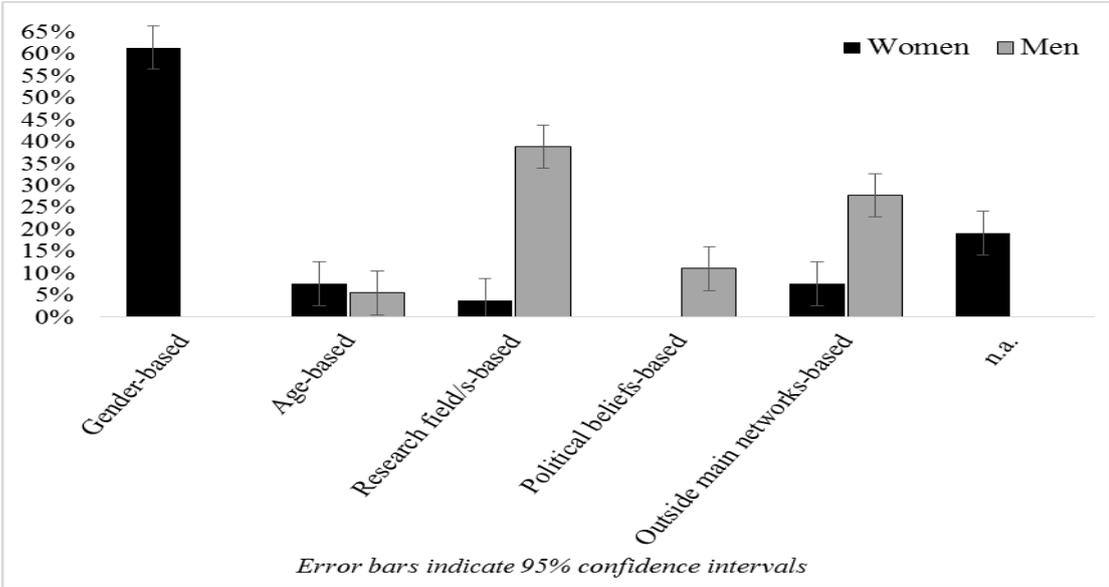
strong network as causes of discrimination. By contrasts, 43.7% of man economists who have declared some forms of discrimination have referred to research interest (mainly identified with History of Economic Thought, Methodology, and Heterodox Approaches and Microeconomics), lack of strong network, their political ideas and age as causes of discrimination.

Quite surprisingly both men and women who have claimed to have suffered discrimination in the course of their academic career present a greater visibility in terms of publication in peer reviewed journals compared to those who have not declared any kind of discrimination (see appendix 1.1).

Looking at marital status among women, the share of single women who felt discriminated against is higher than for men (39.1% for the women against 16.6% for men). At the same time, the number of children does not appear to have any impact both for men and women on discrimination. However this evidence is constrained by the number of children, as among mothers with one or two children, the percentage of those who felt discriminated is lower they for women without children.

By contrast, among women with a greater burden of household work we find the highest rates of discrimination, while for men it has no impact. Furthermore, considering the time variable but declined in this case as a percentage of working time exclusively devoted to research, women economists with a higher load of teaching and paperwork perceive in greater extent the work environment as hostile: 40% of women economists who spend less than 50% of their working time for research claims to have been discriminated, against 13.11% of their male colleagues.

**Fig. 2 - Rates of perceived discrimination in academia**



**3.2 Gender division of labour**

In this context the division of labour can be seen both within the family as the disproportionate amount of time women spend on family care and housework (Zuckerman et al. 1991; Ginther e Kahn, 2006; Ceci et al, 2014) and within the university since women carry out more burocratical and department services while men spend more time on research (Winslow 2010; Misra et al. 2011; Pyke 2014). Being an academic is generally characterized by having a large amount of flexibility and autonomy. But Heijstra and Rafnsdóttir (2013) in their study of Iceland universities pointed out that time is linked to gender in academia since “at the same time as the flexible working hours help

*academic parents to organize their working day and fulfil the ever-changing needs of family members, the women, rather than the men interviewed seem to be stuck in the responsibility of domestic and caring issues; indeed, because of this very same flexibility.” (p. 11 and p. 12)*

Our qualitative analyse confirms this gender imbalance in the role within the family also in Italy. Indeed, we have formulated a more general question on the domestic workload borne: the majority of women economists claim a load between 51% and 75% of the overall work within their own family, while for men the load equal to 26-50%. No woman said to have no household commitments, against 5.7% of men respondents; on the contrary, among those who cannot count on anyone in the family, the proportion of women is much higher: 11% compared to 2% of men. There are not significant differences among generations since gender gap remains high for all age groups even among the youngest (under 40 years) there is not a fairer distribution, since among researcher with less than 40 years, 82% of women held more 50% of family responsibilities compared with 6% of men the same age.

Also the gender division of work within departments is significantly imbalance, since 11% of the women economists wrote that they do not have time for research compared to just 0.8% of their male colleagues. By contrast, 12.2% of men economists devoted most of their working time to research against 9.7% of women colleagues. The differences are most pronounced at the top of the academic career, where among full professors 13% of men declared to dedicate between 76% and 99% of their work time to the research against only 7.7% of women colleagues (see appendix 1.1).

### **3.3 Gender gap in scientific output**

In literature, since Cole and Zuckerman (1984), gender differences in productivity among academic scientists is usually reported as a key element influencing gender discrimination in academic careers (Levin and Stephan 1998; Xie and Shauman 2003; Fox 2005; Leahey 2006; Fox et al. 2011). Women have been shown to lag behind men in terms of the size and impact of their scientific production (Larivière et al, 2013). Abramo et al. (2009) gives some evidence of a progressive reduction of the productivity gap over time for Italian scientists at least in hard sciences and life sciences. From our analysis, however, despite a lower median overall productivity of women, the most significant gap is just among the younger generation: at the beginning of the academic career, among researchers, there is for men a median number of 3.5 publications per year while for women colleagues the number of publications is just 2. However, if we consider only the publications in peer reviewed journals such differences disappears (the median number of two publications per year is the same for man and women).

The productivity is also deeply related to gender division of labour. In fact, according to some authors (Taylor et al. 2006, Kossi et al. 2013) the more productive researchers spend less time for teaching activities and administrative tasks. Also in Italy, a recent study by Baccini et al. (2014) suggests that researchers' productivity is negatively affected by bureaucratic and administrative tasks.

Then we have examined the impact of different workload (both familiar and burocratic) on academic output. For women the different household workload does not seem to affect the number of publications, while for men, the median number of publications is reduced by the increasing workload within the family (see Figure 3). By contrast, women economists are strongly influenced by the percentage of time devoted to research, compared to the one dedicated to the teaching or more bureaucratic work within the departments they belong: increasing this percentage increases consistently the median of publications (see fig. 4). Among those who have the possibility of devoting to the research between 76% and 99% of the work, the women economists have a median number of publications considerably higher than that of their male colleagues<sup>29</sup>. So, in order to promote a correct visibility of women in the any evaluation process, strongly influenced by scientific

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<sup>29</sup>Median number of publications per year for women is 5 items while for male colleagues is equal to 3.5.

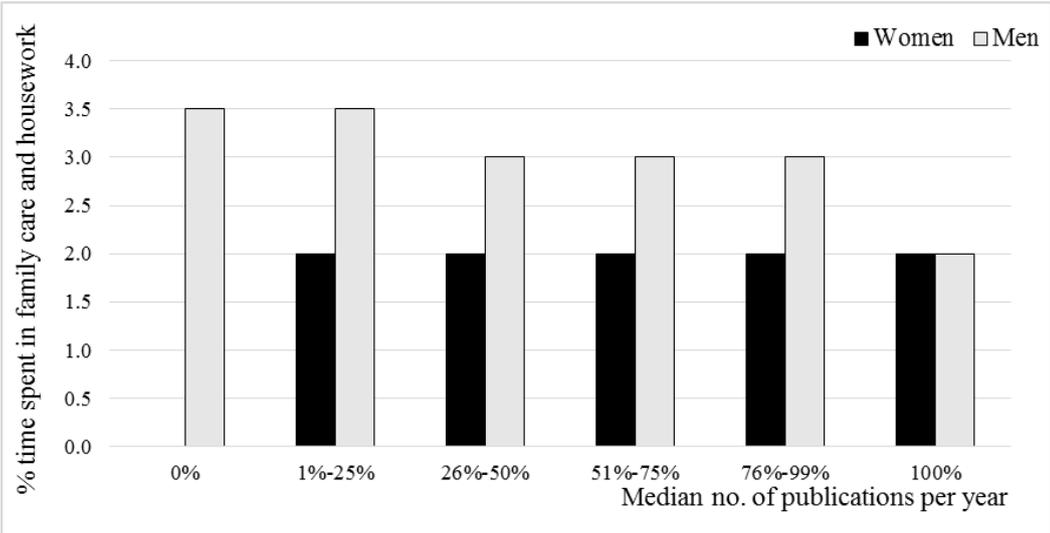
productivity (both in quantitative and qualitative terms)<sup>30</sup> it would be important to implement corrective mechanisms in the gender distribution of working time between research and other activities (teaching and administrative work) within departments.

Gender differences are found even in the publishing habits. On average, women make more use of co-authorship: only 8% of women economists write on their own against 19% of men. The use of co-authorship is particularly evident for young women researchers, showing a tendency to networking.

Men publish in 38.2% of the cases with an author of the same sex, while only 12.9% of women have as a fixed co-author a woman.

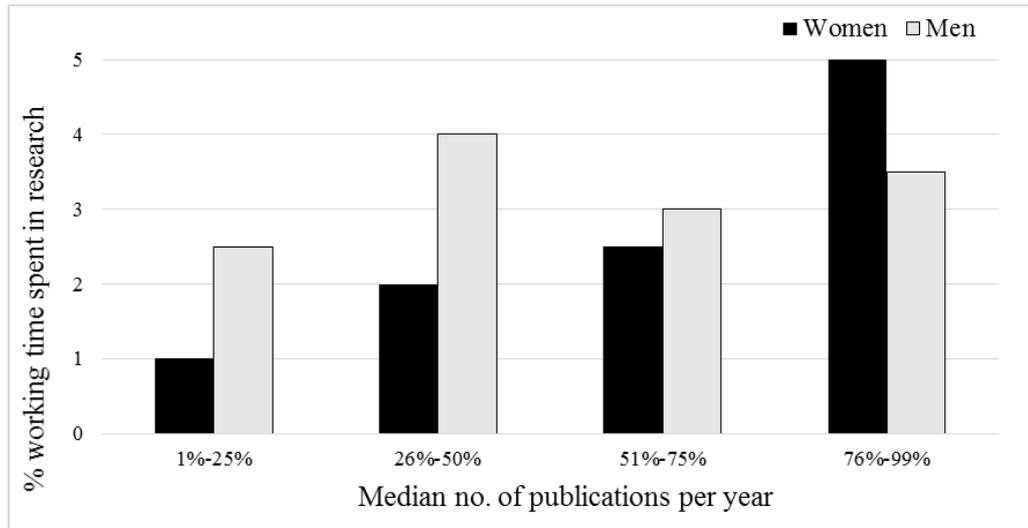
Another important element for the publication of research results (and therefore career advancement) is the relationship with publishers. Despite the documented absence of women in the board of the Italian economic journals, and the presence of exclusively male networks (Addis and Villa, 2003), women economists claim a higher rate of acceptance of their publications, as many as 17.7% of them never had a publication refused by the publisher, while for men the proportion is slightly lower, 15.4%. Among women the highest percentage (33.9%) declares to have a rejection rate between 1% and 25% for the papers submitted to peer reviewed journals, while among men as much as 35% claims a rejection rate between 26% and 50%.

**Fig. 3. Productivity and gender division of labour: time spent in family care and housework**



<sup>30</sup>For a detailed and updated analysis of the evaluative mechanisms introduced by the reform of the university system in Italy, please refer to the rich debate on the website [www.roars.it](http://www.roars.it)

**Fig. 4. Productivity and gender division of labour: working time spent in research**



#### **4. Concluding remarks**

We contribute to the study of women academic Italian economists, analysing in detail the trends and strategies adopted by women to compete in academic career paths with their male colleagues over the years. Since women seem to be more affected by institutional changes, many interesting questions remain. Why do women tend to change their research fields more often than their male colleagues? Is pluralism at risk in scientific production of women Italian academic economists? Is gender segregation of fields driven by institutional changes such as different national research evaluation systems?

The latter question is of particular interest in the case of Italy, because, in contrast with the international trend of redefinition of responsible metrics for research assessments, a bibliometric approach is increasingly prevailing, and tends to rank scientific productivity on the basis of the bibliometric indexes of the journals. Considering the increasing popularity of bibliometric indexes in Italy, it is important to establish a debate about how to account for diversity, using a range of indicators to reflect and support the plurality of research and researchers career paths, and trying to anticipate the systemic and potential reaction by researchers to the adoption of any indicator.

A constant monitoring of the status of women in economics in Italy, the creation of a specific committee or monitoring group that could straighten the practice of fair and transparent selection of staff and equality impact assessment would be helpful to support equality and diversity among researchers and among research fields in order to foster the progressive and equitable development of the economic thought.

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## Appendix 1

Questionario SIE
A1) Name A2) Last Name A3) Gender A4) Age A5) Marital Status A6) Number of daughters/sons A7) Age of daughters/sons A8) Percentage of household work in her/his family B1) Did you get a PhD? B2) Numbers of PhDs B3) Date of your PhD dissertation B4) Where did you study for your PhD (Country) B5) PhD dissertation: research field B6) PhD dissertation: keywords
C1) Average number of publications per year in the last five years C2) Average number of publications per year in peer-reviewed journals in the last five years C3) Average number of coauthor(s) per publication C4) Gender of principal coauthor(s) C5) Main research fields C6) Jel codes used C7) Percentage of rejection of the submitted articles to peer reviewed journals C8) Average amount of time, in months, between the submission and publication of the articles submitted C9) Title and journal / publisher of your most representative publication C10) Percentage of working time devoted to research D1) Last career advancement D2) Years spent in the previous position since the last advancement
D3) Have you ever felt discriminated at work D3) Main cause of discrimination

## Appendix 1.1

### a) Demographic data and gender division of labour

		Women	Men
<b>No. of children</b>	Mean	1.23	1.49
	Median	2	2
<b>Age</b>	Mean	50.9	52.4
	Median	51	50
<b>Phd</b>	Yes	75.8	71.5
	No	24.2	28.5
<b>Civil status</b>	Couple	61.3	78.9
	Single	37.1	21.1
	n.a.	1.6	
<b>% time spent in family care and housework</b>	Mean	52.2	29.5
	Median	63	37
	%		
	0%	0.0	5.7
	1%-25%	21	36.6
	26%-50%	22.6	48.8
	51%-75%	37.1	5.7
	76%-99%	6.5	0.8
	100%	11.3	2.4
	n.a.	1.6	0
<b>% working time spent in research</b>	Mean	51.1	48.7
	Median	63	37
	%		
	0%	11.3	0.8
	1%-25%	32.3	13.0
	26%-50%	43.5	39.0
	51%-75%	1.6	34.1
	76%-99%	9.7	12.2
	n.a.	1.6	0.8

**Gender discrimination in academia**

		<b>Women</b>		<b>Men</b>	
		<b>Discriminated</b>		<b>Discriminated</b>	
		<b>YES</b>	<b>NO</b>	<b>YES</b>	<b>NO</b>
		41.9% (26)	54.8% (34)	14.6% (18)	78.9% (97)
<b>No. publication in peer reviewed journals per year</b>	Mean	2.13	1.5	2.9	2.1
	Median	2	1	3	2
<b>no. of children</b>	Mean	1.3	1.1	1.4	1.5
	Median	2	1.5	1	2
<b>Age</b>	Mean	51.9	48.5	53.7	52.5
	Median	54	49.7	53	51
<b>% time spent in family care and housework</b>	Mean	61	45.8	31.2	28.8
	Median	63	50	37	37
	0%	-	-	0	100
	1%-25%	23.1	76.9	16.3	83.7
	26%-50%	46.2	53.8	33.3	66.7
	51%-75%	36.4	63.6	18.2	81.8
	76%-99%	75.0	25	0	100
	100%	71.4	28.6	0	100
<b>% working time spent in research</b>	Mean	55.8	48.3	48.8	48.0
	Median	63	63	63	37
	0%	-	-	0	100
	1%-25%	14.3	85.7	25	75
	26%-50%	50	50	9.1	90.9
	51%-75%	42.9	57.1	20	80
	76%-99%	66.7	33.3	15.4	84.6

**c) Gender Productivity Gap**

		Women		Men	
		Mean	Median	Mean	Median
Publication per year		3.03	2.00	1.72	2.00
Publication in peer reviewed journal per year		3.58	3.00	2.21	2.00
No. of coauthors		1.36	1.00	1.13	1.00
<u>academic position</u>					
Associate Prof	Publication per year	3.14	2.00	3.52	3.00
	Publication in peer reviewed journal per year	2.21	2.00	2.21	2.00
	No. of coauthor/s	1.37	1.00	1.16	1.00
Full Prof	Publication per year	3.70	2.00	3.41	3.00
	Publication in peer reviewed journal per year	1.65	2.00	2.19	2.00
	No. of coauthor/s	1.25	1.00	1.10	1.00
Researchers	Publication per year	2.28	3.60	3.50	2.47
	Publication in peer reviewed journal per year	1.53	2.00	2.00	2.00
	No. of coauthor/s	1.60	1.50	1.20	1.00
<u>% time spent in family care and housework</u>					
0%	Publication per year	0.00	0.00	3.33	3.5
	Publication in peer reviewed journal per year	0.00	0.00	2.20	3.00
1%-25%	Publication per year	3.45	2.00	3.75	3.50
	Publication in peer reviewed journal per year	1.82	1.00	2.12	2.00
26%-50%	Publication per year	2.38	2.00	3.57	3.00
	Publication in peer reviewed journal per year	1.42	1.00	2.30	2.00
51%-75%	Publication per year	3.52	2.00	3.17	3.00
	Publication in peer reviewed journal per year	2.09	2.00	2.33	2.00
76%-99%	Publication per year	2.67	2.00	3.00	3.00
	Publication in peer reviewed journal per year	1.33	2.00	3.00	3.00
100%	Publication per year	2.29	2.00	2.67	2.00
	Publication in peer reviewed journal per year	1.29	1.00	1.33	1.00
<u>% working time dedicated to research</u>					
1%-25%	Publication per year	1.29	1.00	2.75	2.50
	Publication in peer reviewed journal per year	.86	1.00	1.73	1.00
26%-50%	Publication per year	2.21	2.00	3.98	4.00
	Publication in peer reviewed journal per year	1.22	1.00	2.17	2.00
51%-75%	Publication per year	3.69	2.50	3.45	3.00
	Publication in peer reviewed journal per year	2.15	2.00	2.35	2.00
76%-99%	Publication per year	4.83	5.00	3.86	3.50
	Publication in peer reviewed journal per year	2.33	2.00	2.57	2.50

<u>Co-authorship</u>					<u>rejection rate</u>			
No. of co-authors			Sex of co-authors			Rejection rate (articles not accepted)/tot. art.	W	M
	W	M		W	M	0	17.70	15.40
0	8.06	19.01	W	12.90	6.50	1%-25%	33.90	33.30
1	54.84	49.59	M	16.10	38.20	26%-50%	29.00	35.00
2	32.26	25.62	Mixed	67.70	44.70	51%-75%	14.50	13.80
3	3.23	5.79	n.a.	3.20	10.60	76%-99%	3.20	2.40
4	1.61	0.00				n.a.	1.60	0.00