

ДЖЕНДЪР СТЕРЕОТИПИ В НАУКАТА И ДЖЕНДЪР АСПЕКТ НА ПРОЕКТНОТО ФИНАНСИРАНЕ

GENDER STEREOTYPE IN SCIENCE AND WOMEN'S ACCESS TO RESEARCH FUNDING

Assoc. Prof. Dr. N. Sretenova, Institute for philosophical researches at Bulgarian Academy of Sciences
ninasretenova@yahoo.com

Резюме: Проблемът за равнопоставеността на половете в научните изследвания придоби особена актуалност през последните 10 години и от 1999 г. насам стана интегрална част от европейската научна политика, а темата за 'жените в науката' се обособи като отделно изследователско поле. Вертикалната сегрегация по пол в научната йерархия, т.е. специфичният за жените учени спад в темпа на израстване в научната кариера, както и по-слабото им присъствие в управленски тела където се вземат важни решения свързани с развитието на научните изследвания, е емпирично документиран факт с различни вариации за отделните страни членки на Европейския съюз.

Анализът на джендър стереотипите в науката на национално равнище е надеждна обяснителна схема за вертикалната и хоризонтална сегрегация по пол в кариерното развитие на жените учени и за тяхното участие в управлението на науката. От друга страна заеманият пост в академичната йерархия предполага по-голям шанс при кандидатстване за проектно финансиране на конкурсен принцип.

Целта на тази статия е да хвърли светлина върху състоянието на изследванията по темите 'джендър стереотипи в науката' и 'джендър аспект на проектното финансиране' в България въз основа на мащабно проучване на всички български публикации в областта на 'жените и науката' излезли от печат през последните 20 години. Докато първата тема е широко застъпена в редица международни изследвания, то втората е нова за почти всички европейските изследователи.

Какво е състоянието на българските изследвания по тези две теми? След 1990 г. в България започнаха да се правят социални изследвания на пола. Колеги от областта на хуманитарните науки публикуват статии върху феминизма, феминистка етика и история на жените и половете в България. В тези хуманитарни изследвания темата за джендър стереотипите се анализира и теоретизира от гледна точка на социалното конструиране на идентичността, т.е. не се специфицира по отношение на науката. От друга страна някои колеги от областта на обществените науки (икономика, социология, психология, право и др.) обикновено включват джендър аспект в конкретните си научни изследвания, но този аспект не е задължително свързан с професионалната група на жените учени. С други думи за сега няма нито едно българско изследване с предмет 'джендър стереотипи в науката', независимо че тази тема е обект на особено внимание от страна на международната научна общност в областта.

Втората тема за 'джендър аспект на проектното финансиране' изобщо не присъства в българските изследвания в областта на 'жените и науката'. Тази тема е обсъдена в статията въз основа на резултатите от конкурсите проведени през 2007 от Фонда за научни изследвания към МОН.

В заключение е направен извода, че областта 'жените и науката' е ново изследователско поле за България, а специализирани изследвания по редица теми, включително важните теми за 'джендър стереотипите в науката' и джендър аспект на проектното финансиране' са предмет на бъдещи изследвания в областта.

Introduction

The gender issue did not socially exist in Bulgaria either during the communist period or the years of transition. It deserves also noting that terms as 'horizontal segregation' and 'vertical segregation' as well as terms like 'glass ceiling' and 'leaky pipeline' are rarely articulated in the writings of the Bulgarian gender experts. Instead one uses terms like 'professional realization' and/or 'professional development' when discussing the issue of underrepresentation of women scientists at the higher levels of the academic hierarchy. The difference in terminology used by the Western and Eastern, in particular the Bulgarian scholars might be explained by two circumstances:

1. As it has been nicely pointed in the ENWISE report 'in communist countries, the existing *glass ceiling* was not reflected on, named or criticized by women. Neither was it a theme in social sciences' (p. 26 of the report).

2. In Bulgaria under communism due to egalitarian and collectivist ideology it was not even accepted to speak openly on the issue of 'career building'. The very term 'career' and/or 'career advancement' had a negative connotation at that period.

What did change for women scientists during the last two decades? The most dramatic and severe situation reported by the carried out studies in the fields of *Economics, Sociology and Population Studies* is related with professional **women in engineering**. Two or three decades ago these women (being yet girls) made a choice to study engineering because the engineering profession was the most prestigious in Bulgaria at that time and because of the official policy that the country needs engineers for its prosperity and last but not least because of the encouragement of young women to study in Higher Engineering Schools/Technical universities. Nowadays (because of the collapse of the Bulgarian industry) these numerous women engineers have been fired from their working

places and have to look for new qualifications and realizations on the labor market.

In 2003 a 'Law on Protection against Discrimination' was enacted in Bulgaria (30 September 2003). The anti-discrimination policy however focuses attention on equal opportunities of women and men in the labour and social areas and **still has not been translated into policy of gender mainstreaming in Higher Education (HE) and R&D sectors**. According to recent EU report 'Benchmarking policy measures for gender equality in science' Bulgaria is among a group of five EU member states (Bulgaria, Cyprus, Hungary, Poland and Romania) who are not yet committed to gender mainstreaming (EC, 2008, p.42). During different workshops and conferences held in Bulgaria in the last five years many local gender experts voiced the urgent need for the transfer of current policy and politics of 'non-discrimination by sex' into a policy and politics of 'gender equality in academia and research' and shared experiences and disappointment that their advocacy in this respect at the different levels of state authorities remained unheard. The main stereotype in run is that according to the statistics data the issue of gender equality in HE and R&D is settled in Bulgaria¹. In my view the issue is related rather with the question: 'Why are women researchers and academics underrepresented at the higher posts of academic hierarchy and at the decision-making bodies?' than with statistics data. The answer of this question could rely on the research findings of two topics:

¹ According to the data provided by 'She Figures 2006' in Bulgaria in 2004 the proportion of female academic staff by 'Grade A' (full professors) is 18% and by 'Grade B' (associate professors) – 34.9%. These figures are close to EU-25 average.

- A) Gender stereotype in science;
- B) Gendered access to research funding.

This paper aims at providing insight into and to highlight the current state-of-the-arts of research carried out in Bulgaria on the above two topics.

Bulgarian research landscape of the gender stereotype in science

This topic is poorly researched in Bulgaria. The Bulgarian feminist scholars have published on the issue of '*social construction of identity*' but without any regard to science. There is no any identified study in the field of feminist epistemology of science and/or feminist theory of science as well. In turn the Bulgarian philosophers of science have written on the issue of '*social construction of science*' mainly from critical perspective. They use to criticize the very idea of inserting *power relations* in the theory of science and its dynamics. The gender perspective has not been researched in the field of epistemology of science because of the general disagreement with the thesis of the social constructivists and the questioning of the value of this approach towards theoretical representation of science.

Nevertheless the issue of gender stereotypes appears as particular aspect/dimension of almost all publications related with other topics like horizontal and vertical segregation, professional career, science as labor activity, policy issue, etc. Usually it is referred to still traditional patriarchal organization of the Bulgarian society or is connected with the lack of information about the contemporary ongoing European discussions on women and science.

There are however some empirical studies on female managers, which use to emphasize the importance of the gender stereotypes for the career advancement of women in manager positions.

Some of the research findings of the Bulgarian feminist scholars are as follows:

- The socialist doctrine and its follow-up which use to de-emphasize the difference between the genders actually concealed the existing patriarchal mechanisms and in long run preserved the male patterns of behavior and thought.
- Several empirical studies on women in managerial positions show that to some extent the women are sensitive to the existing prejudices against them yet they frequently view these *as their own problems, not as barriers erected by others or as issues which should be brought to the awareness of the public.*
- Scarce of women 'role models' for young women academics and researchers.
- Young women in science show low sensitivity towards the issue of equal opportunities in science.

Identified Gaps

The lack of studies in the field of feminist epistemology of science and/or feminist theory of science which are assumed to back the specific investigations on the relation of *gender and power* in science construction as well as empirical studies about gender stereotypes in HE and R&D sectors.

Gender pay gap and gendered access to research funding

The current level of R&D funding in Bulgaria is generally low. During the past 10 years R&D spending oscillated around 0.5% of GDP, in 2006 it was 0.48% of GDP, which is far below the so-called 'Barcelona target'. The major part of the Bulgarian research potential is still concentrated in the GOV R&D. The recent report 'Remunerations of Researchers in the Public and Private Commercial Sectors' (commissioned by the European Commission's DG Research) presents an overview of researcher salaries across Europe. According to this report, in about half of the European countries researchers average net yearly remuneration is in the € 20,000–€ 30,000 range (in purchasing power). Bulgaria can be found at the bottom of the list – the average total annual salary of Bulgarian researchers (in purchasing power) is € 9,800; Austrian researchers make over € 30,000 a year, Swiss researchers (top of the list) average € 46,500.

There is no any identified study in Bulgaria on this topic. During the recent years however appeared few researches dedicated to the

broader topic of the gender pay gap in the Bulgarian economic sector. They are not aimed at pay inequality between female and male scientists across the institutional sectors and fields of science. Nevertheless these studies provide some information about gender pay gap by level of education. The reason for this lack might be referred to the fact that the official statistics about the gender pay gap in Bulgaria does not existed before 2002. In 2002 appeared the first publication of the National Statistical Institute of Bulgaria providing *aggregate statistical data* about gender wage gap, which included the time span from 1997 to 2002. However this statistics was built on *a single indicator* – 'ratio between female's and male's average monthly wage and salary'. According to it the relative share of the average female's monthly salary was 70.8% of the average male's monthly salary in 1997 and it reached 82% in 2002. In 2002 the average monthly salary of a Bulgarian woman with university degree (bachelor and master) has been 75.5% of that of her male counterpart. The average gender pay gap among the male and female holders of PhD appears smaller, but still exists – the difference is of 11.3%.

The access of women academics and researchers to research funding

In what follows I discuss the practice of the Bulgarian National Science Fund (NSF) which is the only national institution for competitive project financing in all fields of science, in particular the data of its 2007 Competition.

By 2007 the NSF administered seven financial instruments/competitions for supporting different research projects or programmes² in all R&D sectors.

- ✓ Thematic project call - regular annual thematic competitions (TC) in a priority fields (top-down approach)
- ✓ Young scientists competition (three different competitions)
- ✓ General project call (bottom up approach)
- ✓ Encouragement of research at Universities
- ✓ Bilateral international cooperation
- ✓ Cooperation between science and enterprises
- ✓ Support to Bulgarian scientific periodicals/journals

The thematic priorities targeted at economical and social development of the NSF for 2006 were: 'Genomics', 'Information society', 'Nano-materials and nanotechnologies', 'Bulgaria – part of Europe', 'Energy efficiency', 'Innovation capacity of SMEs', 'Medicine' and 'Cultural heritage'. The beneficiaries of the NSF were: research institutes of the Bulgarian Academy of Sciences; research institutes of the National Centre for Agricultural Sciences, Bulgarian Universities; University hospitals; other research units, SMEs and NGOs. (See NSF Report 2006)

Data on success rates by gender during NSF 2007 Competition

The NSF is not engaged either with gender equality planning or with gender equality monitoring in all aspects of its activities. However this statement is **partly true** by the following reason. The competitive project-based financing in Bulgaria is based on a kind of 'young scientists mainstreaming' policy which have been implemented at all levels including the criteria of evaluation of the submitted projects under the announced Calls for proposals. The current aim is to reach *a balance by age and not a balance by gender*. However the **young women academics and researchers** are part of the privileged target group of young scientists and they could profit from the current science policy.

The application forms of the proposals ask information for the Title, Rank and Degree of the Project Leader but not for the sex of the applicant. For the Bulgarian speaking person it is not a problem to identify the sex of the Project Leader, because the female and male names in Bulgarian language differ by ending. However for a non-

² 'Program financing' means the financing of programmes, which are implemented in the form of scientific research or infrastructure projects

Bulgarian speaking person it might be a problem to identify the sex of the applicant.

The website of the NSF used to publish the list of winners under each competition, which is not enough for assessing the success rate by gender.

In this connection I approached Ms. Lora Pavlova – a Senior Expert at the Department Scientific Programs of the Ministry of Education and Science with request for providing disaggregated by sex data for applicants and for winners in NSF Competition 2007. I obtained these data without any problem.

Table: NSF Competition 2007: Number of Submitted and Supported Projects by Calls and Gender (sex of the project coordinator)

Competition 2007	Submitted projects	Applicants-male coordinator	Applicants-female coordinator	Supported projects	Male coordinator	Female coordinator
Scientific and information complexes	23	12	11	15	8	7
Research infrastructure	44	34	10	8	8	0
TC 'Nanosciences'	43	33	10	9	7	2
TC 'Cultural heritage'	19	14	5	7	4	3
TC 'ICT'	37	25	12	8	6	2
TC 'Energy efficiency and safety'	43	27	16	13	10	3
TC 'Health and Medicine'	48	27	21	23	12	11
'Nanotechnologies and new materials'	91	59	32	20	9	11
'Cultural and Historic heritage'	21	13	8	8	5	3
Development of doctoral thesis in PRO	20	14	6	14	10	4
Upgrading research potential in the field of biotechnology	16	9	7	9	4	5
Bilateral cooperation	69	40	29	44	25	19
Young researchers competition	18	9	9	17	8	9
Total	492	316	176	195	116	79

Source: Information provided by the NSF upon request

From this Table is evident that during the two rounds of 2007 Competition of the NSF female researchers submitted about two times less applications in comparison with male researchers – 35.8% (out of the total applications) vs. 64.2% (out of the total applications) respectively. The share of the projects with female coordinators of the awarded grants was 40.5% (out of the total) and that of the projects with male coordinators of awarded grants -59.5%. Therefore the **female success rate** (i.e. the number of awarded grants with female coordinator of projects as % of the number of submitted applications with female coordinator) was indeed good – 44.9% compared with the **male success rate** – 36.7%.

Unfortunately the information about the concrete amount of financing of the awarded grants is not available and I cannot assess whether the good success rate of the projects with female coordinators of the awarded grants (in aggregated figures) had or had not accumulated the respective 'good portion' of the overall allocated budget for the 2007 Competition of the NSF.

Since the beginning of 2008 the NSF has increased budget (*five times more in comparison with 2005*) and improved evaluation procedures which include international evaluation *of all submitted proposals* for the 2008 Competition round (16 opened Calls). The officially announced target by the Bulgarian government is the ratio between non-competitive institutional project financing and the competitive project financing to reach a balance of **50:50** in the coming few years.

It will be helpful for the analysis of gendered access to research funding if the publicly available statistics about the awarded grants in 2008 Competition of the NSF appears as disaggregated by sex and in more details (which is not the current case) so that one can assess whether the positive developments which took place in 2008 affected the female academics and researchers - in particular the young female academics and researchers.

Some Conclusions:

The research activities in the area of women and science issues are at its very beginning in Bulgaria. We badly need specialized if possible empirical studies on the following topics:

- ✓ Gender stereotypes in science;
- ✓ Theoretical and/or empirical studies which address excellence's definition and/or peer-review practices of evaluation

across all institutional sectors and fields of science in general and from gender perspective, in particular;

- ✓ Studies on gendered access to research funding;
- ✓ Representative quantitative empirical studies as well as longitudinal studies on gender and scientific careers; the 'masculine' model of success in science and building of scientific career has been just mentioned in some publications but did not appear as a specific subject of study;
- ✓ Studies in the field of feminist epistemology of science and/or feminist theory of science;
- ✓ Large-scale empirical studies addressing the institutional practices of research organizations and universities in terms of work organization, working conditions and working time and their impact on work-life balance and female scientific careers.

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