



## Meta-analysis of gender and science research

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# D31 – Country report Romania

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# 1. Introduction

An analytical approach on the gender issues in Romania, within the period 1980-2008, would undoubtedly start from the observation that two periods should be taken into consideration: before and after 1989. Since 1989, the radical social-political and ideological changes and the abandonment of the communism generated important mutations that affected all institutional frameworks, values, people's life styles etc.

At a first glance, the analysis of gender and science research would undoubtedly highlight that following the recent social history and its turning point in 1990 the issue of feminism/women/gender has followed different routes. They are identifiable if one looks at the themes approached by the scientific literature of the time.

For the period 1980-1990 the scientific literature on women's issues, including women in scientific career, was dominated by the image of the 'heroic woman'. It is comparable with the woman portrayed by the first feminist wave as having the same capabilities and performances like man, no matter what field of activity is about - industry, research, policy, education, sports etc.

Even if during the communist times the women issues, especially the formal equality among women and men, have been priorities, implemented through a compulsory quota system of proportional representation, the topic of gender and women became an educational field a research theme and only after 1990.

After the 1990, the social-political changes undertaken under the umbrella of 'reform and transition to democracy and market economy' contributed to the development of the feminist civil society<sup>1</sup> as well as to the setting up of the 'feminist and gender studies' in the main state universities in Romania (National School of Political and Administrative Studies, "Alexandru Ioan Cuza" University" of Iasi, Bucharest University, "Babes Bolyai" University of Cluj).

Within the decade, 1990-2000, the topics approached by the feminist literature focused on issues considered to be a priority for Romanian post-communist society. Among them, the theme of 'restitution and memoirs'<sup>2</sup> (martyr women), of the 'disenchantment' of the idealised communist woman got an important attention.

At the same time, an important body of scientific literature published within this decade was closely connected to the academic developments of women's studies and aimed at familiarising both the researchers and the students with the philosophical, ethical and political aspects of the feminist movements and theories<sup>3</sup>. It was mainly theoretically oriented. Even if in a less extent, and less representative, another direction also set up in this decade focused on the small empirical analysis aiming at evaluating the 'gains and loses' of women during transitional time. The first tentative empirical researches on gender vertical and horizontal segregation are dating from the decade 1990-2000.

However, in Romania, women's issues became a topic of national interest integrated within the official policies only from 2000<sup>4</sup> onward, once with the starting of the EU negotiations of accession. Under the obligation to harmonise with the 'acquis communautaire' the legal-

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<sup>1</sup> Several NGO's aiming at promoting women's rights, women's studies and research, women in management, women belonging to ethnic minorities etc have been set up. We are listing some of them: The Association of Women in Romania; The Association of Roma Women; The Association of Women in Business; The Society of Feminist Analysis; The Association Pro Women etc.

<sup>2</sup> See for example, Constante Lena, 1996, *The Impossible Escape. The Political Women Prison at Miercurea Ciuc*, Bucharest, Ed.Florile Dalbe; Vizinic, Gabriela, 1999, *Martyr Women in Persecution Time*, Bucharest, Ed.Anastasia etc

<sup>3</sup> See for example : Miroiu Mihaela, 1996, *Convenio*, Bucharest, Ed.Alternative.

<sup>4</sup> Romania became member of the EU from 1<sup>st</sup> of January, 2007.

institutional frame has been considerably enriched. Among these, the setting up of the Ombudsman, of the National Agency for Equal Opportunities (with territorial branches), of a National Council for Anti-Discrimination, a special Gender Statistics Division at the National Institute of Statistics etc., as well as the elaboration of an important set of legal regulations aiming at implementing the 'equal opportunities among women and men' in all the spheres of social, political, educational, scientific, economic etc., life are only some of the measures taken. The state's legal and institutional measures aiming at observance of gender issues in all the activities have been actively accompanied and complemented by the projects undertaken by academic research bodies and NGO's, under the frame of EU funding /pre-accession programmes. Their common focus was the raising awareness of the authorities, policy-decision-makers, civil society etc., on the important gender gaps Romanian society was and is still experiencing.

One of the few general reports on gender and science/technology in Romania is dated in this pre-accession period. It was part of a wider analysis<sup>5</sup> that investigated the situation of women scientists in the ENWISE countries.

## 2. Analysis by topics

### 2.1. Horizontal and vertical segregation

#### **Research questions**

So as I have mentioned above, the quota system applied during the communist period (1945-1989) and also the official policies aiming at the equality among women and men contributed to an equilibrate distribution of women in science/research activities. Apparently (statistical data for that period are scarce) for the Romanian communist society horizontal segregation was less present.

Even if to a less extent, under the umbrella of the official policy of equality, women have been represented in the top managerial political positions (parliament, ministers etc), as well as in different other public bodies. However, one of the main fields where women have been underrepresented (or not at all represented) was science and research bodies (universities, research institutes, Romanian Academy etc).

There were few notable exceptions when women –with internationally recognised scientific reputation- became managers of the research institutes and members of Romanian Academy. It is famous the example of Dr. Ana Aslan who acceded the top managerial and scientific positions based on her internationally recognised research and contributions to the explanation and treatment of the aging phenomena (gerontology). All in all, there were only few (notable) examples in the 45 years of communism.

The vertical segregation in science/research was the rule before 1989. Top positions in science and research were '*men's empire*'.

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<sup>5</sup> Marina Blagojevic, Hana Havelková, Nikolina Sretenova, Mioara Florica Tripsa and Daniela Velichová, 2004, *Waste of talents: turning private struggles into a public issue Women and Science in the Enwise countries*, A report to the European Commission from the Enwise Expert Group on women scientists in the Central and Eastern European countries and in the Baltic States, Office for Official Publications of the European Communities.

<b>HORIZONTAL AND VERTICAL SEGREGATION : RESEARCH QUESTIONS AND PROBLEMS</b>
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| <ul style="list-style-type: none"> <li>• How did the changes after 1989 affect women's education and career (especially in science fields)?</li> <li>• Did these changes toward a democratic society have a positive impact on women's rights promotion and observance?</li> <li>• Do the education for science and a career in the scientific research still represent an option for female students?</li> <li>• Are women better represented in the leading positions in education, science and research institutes and academic bodies?</li> <li>• What are women's 'gains and loses' after 1989 in Romania?</li> </ul> |
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### **Research approaches**

Before 1989, the centralised, planned system of labour market resulted in a strategic orientation of both female and male high school graduates toward technical/engineering education. It was the field where the most places of work were guaranteed by the state. Technical/engineering profiles of study were receiving between 60-65% of the state's funds for higher education, closely followed by the medical and agricultural fields. Social sciences, humanities and art higher education were the 'Cinderella' of the system benefiting by the smallest percent in the state budget for higher education.

According to the statistics until 1990 there were a slightly equal number of female and male students both in technological as well as in medical higher education. Agricultural field was male dominated while SSH was female dominated.

After 1989 the trend has almost reversed.

### **Findings**

Within the first decade (1990-2000), generally, the number of the students in science and technological education dropped down and, within this downward trend, female became underrepresented in these educational fields and career. Female students' educational choice focused toward SSH disciplines and less and less towards science/ technology/ engineering.

The second decade (2000-present) did not witness important changes in spite the fact that female still accounted for more than 50% of high education graduates as well as of the higher education graduate students (from 55% to 58% in this decade).

Among the teaching staff in higher education females represent only 43% (in 2006). Female's employed in research-development activity display even a worst situation. Among the employed researchers, the females represent around 43% and among PhD researchers, the females are only 38%.

Statistically, for Romania, these inverted distributions of women and men across research sectors and fields of science, referred to in technical terms as *horizontal segregation*, started after 1990.

Regarding the distribution of women in top managerial positions in scientific/academic bodies, referred to as *vertical segregation*, the situation is similar and it continues the trend existing before 1990. In Romanian Academy (the highest academic and research body in Romania) there is only one academician woman.

In public and private universities the number of women in the top managerial positions increased slightly, but their responsibilities focus, mainly, on the activities with the students and only seldom with research, education or other core activities.

In the top managerial positions in different governmental bodies, in Romanian Academy's Institutes and other research institutes women are only seldom assigned in top managerial positions. Most of the time, female researchers are assigned to the executive positions.

The technical/engineering /ICT fields are male dominated. The small percent of female scientist are in executive positions and their average age falls within of 45-65 years old. The young female researchers have either get off or chose different other European / non-European research institutes and bodies.

For the time being there is no official interest for a systematic analysis of the low interest the females have for the education and career in science and generally for the equal opportunities between women and men in these fields.

The existing evaluations and pieces of research have been made at the initiative of the European Commission, other International organizations (UNESCO) and also of the academic research bodies and NGOs. Among them, some have examined generally gender horizontal and vertical segregation and only few the distributions of women and men across research sectors and fields of science. Illustratively we mention below some of them:

- The studies carried out by UNESCO/CEPES (for example Good Practice in Promoting Gender Equality in Higher Education in Central and Eastern Europe, 2001)
- The study carried out by the European Commission for ENWISE countries (Waste of talents: turning private struggles into a public issue. Women and Science in the ENWISE countries, 2003)
- The studies made by NGOs: "Ana: The Society for Feminist Studies" carried out a series of researches aiming at evaluating the gender gaps in labour market (including the science and research activities); Pro-Women NGO has also made empirical analysis on equal opportunities between women and men in public and private companies (2007).
- The studies and researches carried out by academic research centers: The research "Centre for Social Management and Community Development" carries out under different national and European research programs studies on females' motivation and barriers for education and career in technology/engineering/ICT (2007-2009/FP6 "Understanding and Providing a Developmental Approach to Technology Education" etc).
- Our research made evidence that important barriers and a-motivators and de-motivators operate alongside the educational cycles that have as direct effect the dropping number of female from the science/technological/ICT education and career<sup>6</sup> (D.Balahur, P.Fadjukoff, 2009, under print).

### **Gaps**

So as we have mentioned above there are only few studies and researches aiming at mapping the gender horizontal and vertical segregation. In spite the fact that the existing pieces of empirical research mention the gender gaps, especially in science and technology/ ICT /engineering, there is neither concern nor a clearly stated policy to address this situation. It is considered the effect of women's free choice as well as the effects of the free labour market.

Generally the gender issues are not perceived in Romanian society as an issue that should be addressed and redressed. Even if under the European integration pressure some legal and institutional measures have been taken the feminist and gender issues are still perceived as an 'exotic' topic, sometimes by the women themselves. The 'stability' and the persistence of the gender stereotypes suggest that the education, the manuals, the media etc., contribute to the re-enforcement of the prejudices not to its removal.

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<sup>6</sup> Doina Balahur, Paivi Fadjukoff (2009) "*Encouraging and recruiting female students in technology education*", "Alexandru Iona Cuza" University Press ( under print)

## 2.2. Pay and funding

### **Research questions**

Within the transitional period the wide spread ideology was (and is) that the free market (including the labour one) is the main 'natural' engine which regulates, with any interference of the state, the offer and demand of professionals, their wages etc. This perspective resulted, initially, in dropping down of female from the most of the political, social-economic, scientific etc domains. So as an early report mentioned (Romanian Women in Transitional Times: Gains and Losses, 1994) women have been more affected by unemployment, have been almost totally missing from the first Parliamentary Assembly elected after the 1990, had less chances to be hired/ promoted in comparison with men, even if they were having the same qualification and requested competencies etc. These forms of 'extreme discrimination' have been signalled, by small, mainly qualitative, pieces of research, a systematic approach has never been undertaken.

The main research questions aims (or should) at:

- The development of a complex model of analysis able to make evidence of the gender pay gap especially in turbulent and unstable labour markets.
- Identifying if the principle of the equal opportunities of women and men within labour market, in respect with selection, hiring and promotion is really observed.
- The evaluation of the equal opportunities of women and men in the domains traditionally considered (actually social-culturally constructed) as 'men's empire –so as science and technological careers are.
- Identifying the gender pay gap.

### **Research approaches**

Gender statistics started to be among the official statistical indicators collected by the Romanian National Institute of Statistics and its special gender Division (INSSE) mainly after the EU negotiations of accession started, that is, since 2000. According to the CEDAW the statistics is a strong indicator and a proof of discrimination, anti-discrimination, equal/non –equal opportunities etc., generally of the policies in the field of gender. The official data collected by the INSSE are an usefull instrument for detecting, for example, horisontal and vertical segregation, the rate of women's employment in different domains and activities etc. However there is no official data collected regarding the gender wage.

The existing research on gender pay gap have surveyed non-representative samples and are mainly qualitatively oriented.

### **Findings**

The single systematic meta analysis on gender pay gap in Romania in communist and postcommunist times has been undertaken by one of the discussion paper published in the research series of the Institute for the Study of Labor authored by Daniela Andr n and Thomas Andr n (2007).

One of the main conclusions their research analysis has arrived at underlines that:

*"The overall gender wage gap, measured as the difference between mean log wages of male and female workers, stands at 0.28 during the communist era. In other words, the average female worker earned about 72% of the mean male wage. While the observed gender wage gap has remained almost constant over time, the relative importance of the individual components of the decomposition varies across years, with much higher variations in both female-dominated and male-dominated sectors during the transition period (...). The communist direction of gender equality spotlighted examples of "women heroes" working in typically masculine areas: from working in mines underground, or in industrial, chemical and metallurgical operations, to areas such as surgery and experimental sciences. Our results show that on average, women were better off during the transition. However, this holds only for the*

*formal market. Given that the informal market was growing substantially during the analyzed years of transition, it might be that on average women are much more discriminated now*<sup>7</sup> (Daniela Andrén, Thomas Andrén, 2007:26).

Among the conclusions the authors of the above mentioned study appreciate that, especially after 1990, *“the occupational differences explain a big part of the overall gender wage gap”* (Daniela Andrén, Thomas Andrén, 2007:36).

In the authors' view the occupational differences in their turn would be the effect of the *“fact that women were less aggressive than men in the new free market economy created an advantage for men, who become over-represented as managers and politicians at all levels”* (Daniela Andrén, Thomas Andrén, 2007:36).

In the research study we have undertaken within a PHARE project on Equal Opportunities of Women and Men on hiring and promotion in public and private companies the interviewed persons (both women and men) appreciated that at the same position and professional expertise women are generally less paid than men (D.Balahur, Companies and Equal Opportunities among Women and Men, 2006).

### **Gaps**

There is no systematic analysis and research on the deep changes in Romanian labour market after 1990. There have been only some small scale pieces of research which identified women discrimination on labour market. However, no systematic research aiming at analysing the structure and the dynamics of the labour market and the payment equity after 1990 has been done, so far.

Payment issues are especially difficult to be approached as long as both at the state and at the private organizations the wages are 'secret'.

The missing of the systematic gender policy, the discontinuities in the organizational structures (The Minister of Labour, Family and Social Protection and its agencies), the almost 'decorative' role of the National Agency for Equal Opportunities (ANES)<sup>8</sup> generally contribute to the general 'invisibility' of gender issues including the payment ones.

## 2.3. Stereotypes and identity

### **Research questions**

An important body of literature on gender issues published after 1990 aimed at familiarising Romanian researchers and students with the concept of 'gender' as a social - cultural construct as well as with the wide range of feminist theories, feminist ethics, feminist trends and movements. Closely connected, the issues of the stereotypes, discrimination and prejudices associated with gender differences became a topic of interest for some of the publications.

The analysis undertaken under this trend had a multiple motivation, rooted both in historical, ideological and cultural circumstances. So as I have observed above some of them have focused on what I have called the 'disenchantment' of the 'heroic portrait' of the communist women while others focused on the constructed gender identity.

<sup>7</sup> Daniela Andrén, Thomas Andrén (2007) *Occupational Gender Composition and Wages in Romania: From Planned Equality to Market Inequality?*, Discussion papers series, Forschungsinstitut zur Zukunft der Arbeit Institute for the Study of Labor, Discussion Paper No. 3152, November 2007

<sup>8</sup> In 2007 a group of academics, researchers, officers in NGOs sent an open letter of protest to the then Prime Minister of Romania denouncing the incapacity of ANES to accomplish the duties this organization was set up for.

Among the priorities the research should set up, some need indeed a special attention:

- The gender stereotypes in education and especially in science education;
- The gender biased strategies that prevent women to be represented in scientific and academic top positions;
- The gender stereotypes that contribute to the constant dropping of women in ICT education and career.
- The institutional policies and practices that hinder gender mainstreaming especially in science education and career.

### **Research approaches**

Only few publications dealt with the issue of the feminist epistemology and the social construct of science. Within the existing ones the approach is mainly descriptive, theoretical or with illustrations from the history of science and (seldom) with case studies based on the biographies of “successful women”.

Even fewer analyses of early gender segregation of the education as well as alongside the educational cycles have been undertaken

### **Findings**

The empirical analysis undertaken within the frame of FP6 UPDATE project made evidence that there are important gender biased educational strategies – starting with early childhood education and continuing with all educational cycles –that prevent female to chose the an educational path in science/technology/ICT.

They range from early gender stereotypes (“la vie en rose- la vie en bleu”/N.Chodorow) and continue with the formal educational cycles. Among them there are

- Theoretical, non-experimental teaching style;
- Few or no connections with real life;
- Teachers’ gender biased attitudes;
- Transforming performances at one discipline (math, generally) in standards of general evaluation of the pupils (*if you are not good at math, you are not good at all*);
- Unsuccessful and failure experiences; the pressure of competition etc.

### **Gaps**

The existing research let however open many questions regarding, among others:

- The refined mechanisms of subtle forms of discrimination and resistant stereotypes that prevent women of being represented at the level of top managerial positions (vertical segregation).
- The complex mechanisms that step by step drive away women from ICT education and career (this problem is a persistent one and can be identified not only in Romania but also in EU states a well as at global level). While the number of women choosing an education and a career in engineering/technology is (slightly) increasing the number of women in ICT education and career is constantly dropping down.

## **2.4. Science as a labour activity**

### **Research questions**

Bringing more women in science career is a strategic objective both at the European and national level. A recent statistical evaluation made by EUROSTAT at EU 27, indicates a growing tendency of female graduates (ISCED 5-6) in mathematics, science and technology. However, it is appreciated that the growing rates are still too slow compared to the near future needs of human resources in HI-Tech in EU countries. At the same time there are important disequilibria among the science and technological domains of graduation. In some domains there is indeed a

growing trend but in others, like ICT, in spite of the numerous programs, the trend of female graduates is descendent<sup>9</sup>.

The future analysis should be oriented:

- To the identification of the flexible working/professional development scheme which could support women to accomplish both professional and private obligations;
- To the identification of good practices that contributed to bringing more women in science career.

### **Research approaches**

The existing publications and studies in this field mapped mainly the biographies of “successful women” in different fields as well as in science without being focussed on the phenomena of the development of women’s professional career neither in science nor in other fields.

Within the existing literature, the historical and anthropological approaches dealt with women in different periods and cultural regions emphasizing the positive role they played in education, civic and philanthropic actions.

The publications which developed a feminist historical approach made also evidence of the multiple discrimination women belonging to ethnic minorities and women in rural areas have experienced.

The ‘inspiring woman’ is also a theme approached by some of the publications. It was a wide spread idea, especially under the influence of the European Romanticism that behind the successful man there is always a woman. Some publications dealt with ‘the portraits’ of these ‘inspiring women’, who sometimes have been themselves creators in arts, poetry, theatre etc., however not in science!

A recent comparative research, which integrated students’ samples in 16 European countries (Romania is represented), evaluated the female’s motivation and expectations regarding a career in science/ research as well as the difficulties/barriers they might encounter as employed researchers.

### **Research findings**

Some recent empirical research using the meta-analysis of the data collected, made evidence that the perceived difficulties regarding the possibility to conciliate: career and child bringing up; professional obligations and private life; the conciliation of both partners’ professional and private obligations etc., represent important de-motivators that drive away females from a career in science and technology (D. Balahur, 2008:74).

The same study also suggests that there are important commonalties among the ‘personal profile’ of both female and male students who chose scientific/technological/engineering education and are willing to have a career in these fields. A statistically significant percent of the respondents in the 16 European countries (Romania is represented) have a strong intrinsic motivation for science/technological education and career. These domains could offer: ‘the possibility to use my initiative’, ‘to have responsibilities’, ‘to achieve something’, ‘to meet important people’, ‘to use my entire potential ’etc.

The same comparative research made evidence that women researcher/scientist (in all the countries in the sample) encountered sexist attitudes and difficulties at hiring and promotion in scientific institutions/labs.

The ‘dominant’ literature, developed especially in the field of feminist history acknowledges the portraits of ‘particular’ women, belonging generally to the Romanian royal families who have

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<sup>9</sup> Doina Balahur, 2008, *Encouraging and recruiting female students*, Reserach Report

been poets, writers, painters etc. Carmen Sylva, Martha Bibescu etc., are only few examples of 'important' women who had a remarkable contribution to the Romanian arts and culture.

### **Gaps**

The existing publications emphasize mainly the "exemplar" biographies of women in different historical and cultural periods integrating thus women's labour and contributions in different fields in a sort of "exceptionalism".

A systematic research of women's professional career in science and research has not yet been done. The image we can have is a synthesis of different small scale empirical researches combined with statistical data and indicators provided by INSSE.

However, in spite the fact that there are some publications dealing with women and labour activity there are no specific analysis/ researches on women's professional career in science. The few existing analysis, qualitatively oriented, mention the special difficulties women encounter in respect with the conciliation between professional development, career and private life.

## **2.5. Scientific excellence**

### **Research questions**

There is no direct analysis/research on women' scientific excellence. The existing study approached the issue of the excellence in science from a historiometrical point of view and aimed at understanding how the excellence is transmitted from a generation to another one without taking into consideration the gender aspects.

The statistical indicators on women's /men's scientific productivity are also very scarce and do not permit any evaluation.

The main research inquiries should give priority:

- To the general quantitative and qualitative evaluation of scientific productivity of the research activity;
- To the evaluation of equal opportunities and access to the funded research of women;
- The evaluation of scientific productivity of female and male researchers measured as total number of publications and publications in ranked journals and editing houses;
- The evaluation of the effects of "brain hunting" strategy in the dropping number of female and male researchers and ageing of HRS at national and European level.

### **Research approaches**

Within the mapped publications we found only one title dealing with the excellence in science. The research combined quantitative and qualitative analysis in order to identify the complex matrix of factors that influence the transmission of the excellence from a generation to another one. The analysis used also the historiometric methodology in order to evaluate the impact of role models and mentors in scientific career.

### **Research findings**

The research confirmed the paramount importance played by the early stimulation of epistemic curiosity through an adequate (holistic) education and by its constant reinforcement within the escalation of the educational cycles.

It also made evidence that a successful career in science is actively influenced by the role models and the mentorship relations.

The research operated with several samples of male and female students in science and technological education. The students have been selected based on a minimum number of patented innovations. Both female and male students in the samples reported the constant support and reinforcement from mentors (one of the parents, one of family members, a teacher). From the people in the sample analysed more than a decade ago, 2/3 are researchers and academics in USA, and the others are spread in different EU countries (mainly Germany and United Kingdom) and in Australia.

### **Gaps**

There is no systematic research evaluation on women's scientific productivity and excellence. We can only hypothesise that, probably, the difference in the number of women and men employed in science activity might generate important gaps in scientific excellence. It would be another side-effect of the horizontal segregation.

But these entire hypotheses have to be empirically tested within the frame of future research.

There is no systematic approach regarding the successful careers many Romanian scientist women have abroad –mainly in USA and Canada- but neither in Romania nor in Europe.

There is no systematic approach on why women prefer mainly a career in a company and less and less a career in scientific research and closely connected

Why do they consider that success and excellence are offered by activities witch have more connections and direct relevance for everyday life

## 2.6 Gender in research contents

### **Research questions**

The issue of the feminist epistemology has not yet been properly addressed through research analysis. Within the existing literature the peculiarities of women as researchers/scientist are approached mainly from a theoretical point of view. Most of the times different feminist theories, trends etc., are presented and critically debated but without an empirical support.

The feminist epistemological issues are generally analysed within the wider approaches on "identity", "gender and power relations", "gender and discrimination", "gender and the policy of differences", "gender and the reproduction of motherhood" etc.

Women's contribution in science is also presented in the framework of the history of science, feminist (cultural) anthropology, gender and discrimination etc., but without any special concern for the epistemic issues. All these approaches emphasize mainly the *biographical aspects* of successful women in different domains, including science, but without any further concern for the analytical investigation of the contribution of women to the growth of knowledge.

The research questions in this field should aim at:

- Identifying women's contribution/career in different scientific fields;
- Identifying the gender stereotypes that block the access of women in different scientific disciplines and research;
- Identifying the potential stereotypes and barriers in getting funds through the national competition for research grants;
- Identifying the gaps in scientific excellence;
- Identifying the scientist women life style;
- Identifying the impact of "brain hunting" policies on the development of national and European Research Area (ERA).

### **Research approaches**

The analysis of the existing Romanian publications on “gender issues”, especially after 1990, suggests that the scientific community dedicated to the promotion of the feminist topics and direction in science, research, arts, and civic action etc., passed through some hierarchical stages. They range from the theoretical, conceptual social-political approaches (which, for the time being, predominate) till some small scale research promoted mainly under the umbrella of the “projects of intervention”, “popularization of women’s human rights”, “violence against women” etc.

This dynamic perspective could help in understanding why, at least for the time being, the “structurally differentiated” approaches on ‘gender and the content of science’ are merely an exception. The few notable exceptions are coming through the networking experiences, European and international cooperation in the complex field of women and scientific research/career etc.

### **Research findings**

The research findings are coming mostly from the pieces of research undertaken under the umbrella of different European and international research projects and analysis.

An important aspect raised by the research on women and scientific education and career made evidence that female encounter systematic barrier on the access and promotion in scientific career.

There are important differences among the fields of research. Social sciences and biology are the fields apparently dominated by women. However, even in these fields, they occupy mainly the executive positions. The “pipeline effect” successfully operates in this domain as well. Top positions in academic and non academic research bodies are occupied by male scientists.

### **Gaps**

There are only few systematic researches in the filed of women and science research undertaken mainly under the cooperation in different European and international projects.

The existing data on “gender and science” are coming mainly from some official statistics provided by the National Institute of Statistics (INSE) and from some small scale pieces of research undertaken by NGOs active in the filed of women’s rights.

For Romania the topic of “gender and science” is, for the time being, a challenging issues that expects to be taken under debate, analysis and research.

## **2.7 Policies towards gender equality in science**

### **Research questions**

So as we have already observed in the introductory notes, after 1990, the gender and feminist issues in Romania had different sources. They were connected to the setting up of the new academic filed of study, to the movement developed in civil society for equal opportunities and human rights etc. However, in spite of its presence in academic curricula and in civil society, within the first decade after 1990 (1990-2000) the topic of gender was almost missing from the public official state’s policies.

The main legal and institutional measures aiming at the observance of gender issues have been set up mainly after 2000. They coincide with the beginning of EU negotiations of accession and the obligation to integrate the “acquis communautaire”.

Within the pre-accession period:

- A new legal frame aiming at regulating the equal opportunities among women and men has been adopted (2002);
- New regulations regarding gender discrimination in labour relations has been adopted (2003);
- Romanian Parliament has set up special Commission on Equal Opportunities among Women and Men.
- Special governmental institutions aiming at monitoring the observance of implementation of non discrimination and equal opportunities have been established: The National Council against Discrimination (2002); The National Agency for Equal Opportunities (2004); The Gender Division of the National Institute of Statistics (2001).
- In 2006, the National Agency for Equal Opportunities launched the first “National Strategy for the Equal Opportunities among Women and Men” (for the period 2006-2009) etc.

All these social-legal frame had, at least for the time being, mainly a decorative role. They did not have a significant impact and contribution to the better observance of gender issues in different organizational settings or domains, including science. Unfortunately *equal opportunity* did not yet become part of the organisational culture and practice, of the managerial strategies and objectives –so as some of our empirical researches made evidence.

- There are only few publications and research reports dealing with general topics on gender policies and equal opportunities.
- There is no specific approach on policy and gender equality in science.
- The problem of gender equality in science is collaterally approached by two publications (1993, 2007) and two research reports (2006, 2008)

### **Research approaches**

The existing publications have approached from a general perspective (gender and society) the issue of policy of gender equality and equal opportunities. They are mainly theoretically oriented and for the illustrative purposes use the statistical data and indicators provided by the National Institute of Statistics.

Among the two publications one deals with equal opportunities in higher education and aims mainly at providing guidelines for implementation of this value in higher education organizations in Central and Eastern Europe.

Among the two research reports:

- One deals with the policy of equal opportunities in public and private companies;
- The second one, in spite the fact that has different objectives, evaluated the impact of education on female’s motivation and equal opportunities for a career in science and technology.

### **Research findings**

Among the findings, the first empirical research made evidence that the policy of equal opportunities is not a priority for companies and generally, it is not perceived as an asset for the image of company.

The second research made evidence that there is a set of cumulative disadvantages alongside the educational cycles that contributed to the female dropping out from science education and career. The cumulative disadvantages constantly reduce female’s opportunities for both education and also for a career in science. It has recommendations for policy decision maker.

### **Gaps**

For the time being there are only general, theoretically oriented approaches on the issue of gender equality with an application for higher education.

There is no publication and no empirical research dealing specifically with gender equity.

An important aim of the future research should be the evaluation of how (and if) the general policy measures set up after 2000 had an impact on gender equality in science and technology.

### 3. Conclusions

The mapping of the existing publications on gender/ gender and science supported some observations and conclusions:

- a) There are several directions which reflect the steps towards the development of a scientific community dedicated to the gender issues analysis and research as well as to the civic action.
- b) The existing literature on gender issues has been focussed mainly on the familiarization with feminist issues and debates, theories, concepts, human rights etc. It aimed mainly at raising the awareness of different communities (scientific, students, policy-makers, wider public etc) on the gender issues.
- c) An important direction of analysis dealt with the “complex of identity” and the cutting off with the tradition of the “heroic-communist woman”.
- d) An important direction of analysis dealt with the “historical restitutions” aiming at highlighting the contribution of women in different domains including science.
- e) The mapping of the existing publications (books, paper in journals, research reports etc) suggest that the segmentation and thematic differentiation of the Romanian research directions in the field of gender is still an objective to be accomplished. For the time being the approaches are still generally and theoretically oriented illustrating mainly the international outcomes and in a less extent (generally based on small scale empirical research with weak methodology) the existing situation in Romania.
- f) The future directions of research should take the mission to deepen the analysis and to mould the peculiarities of Romanian women scientific career (motivation and barriers, the conciliation of the professional development needs and private life), women’s scientific production and excellence, women and the management of science and research bodies, women and the gender policy etc.

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