

**CAREER PERSPECTIVES AND CAREER DEVELOPMENT. MAIN PROBLEMS OF THE ACADEMIC
SCIENTIFIC CAREER; WAYS AND MECHANISMS OF PROFESSIONAL PROGRESS
CONCISE ANALYSIS OF THE SURVEY RESULTS**

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GENERAL METHODOLOGICAL NOTES

One of the research modules of the 6FP funded project “Building a European Network of Mentoring Programmes for Women in Academy and Research” with local coordinator Dr. Nikolina Sretenova, Senior Researcher at the Institute for Philosophical Research, Bulgarian Academy of Sciences, comprises an empirical study of opinions, assessments and attitudes of two target groups: women PhD students and early career researchers before their habilitation, affiliated at different research institutes of BAS and the universities.

Two sociological methods were applied during the gathering of the information: focus group study (main method) and survey with separate questionnaires (supplementary method). The questionnaires consist only of open questions-cases which should be answered in written form by any of the participants. The content of the questions is related mainly to specific gender problems, which the young women face in their scientific career.

The object of the present analysis is the information, gathered through the survey. It is necessary to note some of its peculiarities in advance.

First: all respondents filled the questionnaires – these who participated in the group discussions as well as those who were invited as “reserves” if some of the main participants could not take part in the discussion. This means that the number of the participants in the survey is a little bit higher than that of the respondents in the focus groups. This is the reason why we have investigated the opinions of 15 PhD students (while the participants in the group are 10) and of 13 young researchers (11 of whom participate in the group discussion).

Second: due to the relatively small number of persons investigated (respectively 15 and 13) it would be improper to use their distribution in percentage. That is why the data would be interpreted through the formula “the greater/the smaller part of the respondents”. Sometimes some polar opinions (although single) would be mentioned since they represent interesting attitudes.

Third: the analysis of the results from the survey has supplementary value, additional to the analysis of the focus group study since in the questionnaires sometimes the verbally expressed opinions and assessments are further explicated; in other cases they are merely reaffirmed.

Fourth: in the questionnaires there are some small differences due to the specific profile of the two target groups.

The PhD Students

In the survey participated 15 PhD students. 10 of them participated in the group discussion and 5 only filled the questionnaires.

Respondents' social and demographic characteristics are as follows:

Average age: 30,2 years

Marital status: Unmarried – 11; Married – 3; Divorced – 1

Children: Without children– 11; With one child – 4.

(It should be noted that the coincidence between the number of married/divorced respondents and the number of those with one child is accidental since among the married ones there are women without children and among the unmarried – there are some having children.

Average duration of the scientific career: 2 years and 9 months

Scientific domain: Humanities – 5; Natural sciences and technical sciences – 9; Agricultural sciences - 1

The first question in the questionnaire refers to the multirole position of women engaged in academic career – scientists, wives, mothers and the difficulties ensuing from this multifunctionality.

The concrete way of expressing the question is: *“How do you see the future combination of your professional career, your family obligations and raising children (it is well known that one year spent outside science is a lot of time). What kind of support do you expect from the institution after the maternity leave?”* The greater part of the respondents think that they cope with the situation or that they would cope with it, combining successfully the scientific career and the family “career”. This kind of optimism has several sources:

First: probably the fact that most of them have no children yet and are not married which means that they have no clear idea of such situation; they lack relevant personal experience and consider the things hypothetically (see the social and demographic characteristics).

Second: the average duration of their stay within science is only 2 years and 9 months –not enough time to acquire clear notion of the difficulties one meets in a serious scientific career.

Third: they think that the modern information technologies would provide the chance to work at home with no need to be present all the time at the workplace. In such a sense they could combine successfully their scientific activities and raising children. One of the respondents, pregnant at the time, claims that for her it is more difficult to combine writing the PhD thesis and teaching than writing and taking care of a child.

Fourth: they rely on their ambition and attitude suitable for scientific career and consider them being a sufficient stimulus and motive for successful multirole realization.

Fifth: they rely on the help of their families, sometimes of babysitter.

Only two women claim that they expect difficulties to arise in their career if they have also a family. The things would become even harder if the PhD thesis requires making experiments at the workplace, during professional trips in another city or abroad. One respondent says she shall think of the difficulties “when and if she has a child”.

Most of the PhD students show an attitude, favouring the parallel scientific development and child care – they do not intend to give up none. Only their combination could bring satisfaction. Yet it could be stated that a certain extent of priority is given to the career since only 4 from the 15 respondents have children and the average age is 30 years and 2 months. One of them literally said that she “postpones the decisions related to family life in order to be able to finish her PhD thesis” (respondent 4). In such a context another fact must not be neglected: all national and international demographic inquiries conducted in the last decades show a trend towards raise of the average age of the women giving birth to their first child as well as the age for marriage. In Bulgaria these are stable tendencies, the same is typical for most of the European countries.

Most of the respondents expect the institution to offer them only moral support, to show understanding and to reckon with their new obligations. No legal or practical measures and facilities supporting the scientific development of young mothers are commented (for example establishment of special centres for child care, offer of part-time work positions, floating work schedules, etc.)

The second question from the questionnaire refers to the equal status of genders in the scientific area: *„If you work in an environment dominated by men, do you feel yourself somehow isolated, underestimated/tolerated or privileged, are you taken seriously? Share some personal experience.”* Most of the respondents are absolutely convinced that they have experienced no gender discrimination by sex. Moreover a significant part of them say that they work in environment

dominated by men and their male colleagues think of them as scientists serious and equal in all respects. Of course, there are some opinions, expressed from the smaller part of the respondents, according to which a woman in science must work much harder all the time in comparison with her male colleague and to demonstrate without a break her qualities in order to be treated as equal to her male colleagues. This opinion prevails among the respondents coming from the technical and agricultural sciences. One of them even says with a good sense of humour: according to the men working in engineering “women cannot be engineers, let alone scientists” (respondent 4). The same respondent adds that she “has never felt isolated, but sometimes – the exact term should be - “checked” or “examined”; if we say – “underestimated” – it would be too strong as expression; the results achieved by her are just checked. But I think that this depends not on gender but on the different dispositions of the different persons”. This specification is important since it reaffirms the prevailing opinion that in principle there is no gender discrimination by sex in the scientific area in Bulgaria; everything amounts merely to subjective attitudes and behaviours of the different researchers.

Another opinion reminds of the reciprocity in the relations between men and women. According to it “if I behave as a “chick” – I will be treated like such” (respondent 1). It shows that the seriousness and stability of the women scientists depend on their behaviour and achievements and not on gender.

The third question is as follows „ *What does it mean for you a successful woman in your scientific area? Do you have an example for such a woman in science and particularly in your domain which motivates you to pursue a scientific career?*”

The most often mentioned opinion of the PhD students address mainly the first part of the question. Almost equally are distributed the opinions according to which success relates mainly to the scientific achievements and these, according to which the successful woman researcher should successfully combine her academic career with her family ‘career’ without neglecting none of them. The respondents think that in order to reckon among the leading figures in a given scientific domain, a woman researcher should possess the following qualities: interdisciplinary knowledge, innovative approach, expert level, gained prestige, national and international popularity, enough and interesting publications, participation in projects. One of the most interesting opinions belongs to a respondent who relates success with scientists’ contribution to public benefit and society or some of

its subgroups and communities' well-being: „In my professional area, a successful researcher (no matter man or woman) is someone who succeeds in going beyond the limits of science and whose achievements have significance for society as a whole or for particular communities.” (*respondent 10*)

The PhD participants in the survey list some personal traits necessary in order to describe a woman researcher as a successful professional: permanent activity, responsiveness, readiness to support her younger colleagues. Outside the context of the concrete answers it could be noted that when the respondents outline the profile of the successful woman they in fact outline the profile of their possible future mentor.

Rarely, however, the respondents have particular examples of successful woman scientist in view. Most of them claim that they do not know any. According to some extreme opinions there are no such women researchers in the respondents' scientific fields. That is why the claims of some PhD students coming from technical sciences are particularly interesting: „Definitely there are successful women with notable career in engineering but in my particular field I'd rather conceive myself as a pioneer.” (*respondent 3*). Respondent 4 claims „In chemistry the only successful woman is Maria Curie”.

On the ground of the preceding comments two conclusions could be drawn **First**, in Bulgaria on higher levels of the academic hierarchy and of scientific prestige dominate male scientists. There are a lot of reasons for the current-state-of-the-art and probably one of them is the implicit discrimination of women scientists, impeding them from reaching the top levels of the academic career. This is the reason why the respondents cannot point out concrete examples of successful women: obviously there are not enough successful women. **Second**, even in humanities where women dominate, the respondents do not point out leading women scientists, because they think there are none (with one exception from the field of sociology). One possible explanation could be related to the lack of clear criteria for scientific achievements' measurement in the fields of social sciences and humanities – the consequence is the impossibility to clearly define the leaders. Another one is related to relatively slow up development of these fields in comparison to the technical sciences for example.

An interesting case is represented by the fourth question: „*Let's assume that your partner/husband also pursues an academic career and you both have obtained a scholarship abroad simultaneously. What would you do?*”. The answers could be divided into three groups.

- 1) Traditional (conservative) type: the women who are ready to sacrifice their career in the name of their husbands/partners or in the name of the family.
- 2) Pragmatic (independent) type: the women who are ready to fight for their own interests and consider their career as much important as the career of their partners/husbands.
- 3) Dialogue-oriented type: these PhD students claim that first they will consider the advantages and disadvantages of the two scholarships and then together with their partner/husband will make the decision.

Here it must be noted that these considerations are mostly hypothetical, not grounded in personal experience, because a small part of the respondents are married. The respondents belonging to the first and the second group are distributed almost equally (one more for the second) and to the third – only two. Another two women expressed no opinion on this casus.

The conclusion that could be drawn is as follows: the information received from this question reaffirms the information already obtained from the question No.1, i.e. for the respondents of this target group the building of scientific career dominates over their supposed social role of mother and wife.

The last question: „*Are you involved in professional networks of women in science? What is the benefit from such participation?*” raises relatively concise and laconic answers since most of the respondents lack information related to the essence of the problem. Only one respondent identified the Internet site www.phd.gate.com as such network. But it is obvious that there is a misunderstanding since the site is designed not only for women. It could be said that none of the respondents is involved in professional network for women in science.

Because of the lack of information, a small number of the respondents expressed positive opinion towards the usefulness of such networks. Most of them could not answer the question. Two of the surveyed respondents defined them as useless, pointing out another forms of scientific exchange (e.g. personal and professional contacts; creating more opportunities for accessing information and literature; subscription to periodicals and Internet sites, etc.). Three of the respondents claim they are not interested in participation in networks based on gender differences.

EARLY CAREER RESEARCHERS BEFORE HABILITATION

In this target group 13 respondents participated in the survey; 11 participated also in the group discussion 2 were “reserves” and filled only the questionnaire.

The social and demographic characteristics are as follows:

Average age : 30,8 years

Marital status: Married – 6; Unmarried – 6; Divorced – 1

Children: without children– 7; with one child – 6.

Average duration of the academic career: 6 years and 4 months

Scientific area: Humanities – 4; Natural Sciences – 7; Technical sciences – 2.

If we attempt at comparing the social and demographic characteristics of the participants from the first and the second target groups (PhD students and early stage researchers respectively) we should note that they are almost the same age – the difference is 6 months. But the other indicators show significant shift in opinion. In the group of the PhD students prevail the unmarried women without children. The distribution between the married and unmarried in the second group is almost equal. Almost three times longer is the average duration of the academic career in the second group– 6 years and 4 months; in the first group it is 2 years and 9 months. The distribution according to scientific fields also differs– in the first group predominate representatives of the natural and technical sciences and in the second – the number of these working in humanities and these working in the natural and technical sciences is almost equal.

These differences could serve as an explanation of the differences in opinion and attitudes between the two groups of respondents.

The second group answers 6 questions (the first - 5). The first one is “*Which are in your opinion the three most important things (besides the financial problems) for your career development in the near future (e.g. for the next 3-4 years)?*” It is quite difficult to summarize the priorities, pointed out by the surveyed participants – they are various, numerous and multifarious. Some of them are related to the legal regulations for career development (specializations, publications abroad, acquiring PhD degree, habilitation, etc.); other – to the scientific work and activities of the respondents – there are opinions that it is very important for their development to create applied scientific product, to see the results from their work implemented in the actual practice. There is a

group of opinions referring to the academic climate in the respective department: as an important condition of success they see the effective team work and cooperation, the support of the head of the department, the assessment of the colleagues. The fourth group of opinions stresses the personal qualities, which are prerequisite for success: patience, ambition, ability to organize one's time and tasks, etc.

The next five questions are the same as the questions, designed for the first group. This makes the comparison between the two target groups possible.

The second question is: *"How do you see the future combination of your professional career, your family obligations and raising children (it is well known that one year spent outside science is a lot of time). What kind of support do you expect from the institution after the maternity leave?"* The analysis of this question shows that factors like marriage, children and longer period of academic career influence their opinions and the optimism does not prevail any more as it is in the case of the PhD group. Here, the prevailing opinion is that combining family obligations and career is relatively hard to achieve. Besides willingness and ambition, support from the institution is necessary and all respondents stress this point. One of them, having six years old daughter, says that during her maternity leave she has never stopped doing her research at home. And she adds: *"The institution gave me this chance since they agreed to terminate the maternity leave in order to participate in an international project and then to renew it."* (respondent 4) In other words, the support of the institution, according to the prevailing opinion in this group, is significant factor for their success in both spheres – professional and personal.

Similar is the opinion of several of the unmarried early career researchers. One of them claims that if she does not receive such support, she will go to another academic institution. There is an impression that these respondents do not answer directly to the question how would combine their family obligations and academic career since they do not have immediate experience.

The third question concerns the informal equality between men and women in science and the assessment of the attitude of male colleagues: *„If you work in an environment dominated by men, do you feel yourself somehow isolated, underestimated/tolerated or privileged, are you taken seriously? Share some personal experience."* The main part of the opinions and assessments show that women in the second group also do not conceive themselves as objects of discrimination. They think that their male colleagues accept them as equal, if they have proved their qualities and skill. One respondent even claims she feels herself tolerated since she receives extra holidays because of

her child. According to another, it is quite easier and more effective to work with men than with women.

Rare, but yet present, are opinions that there is, to some extent, an attitude towards women in science “not to take them seriously”, particularly in the natural and technical sciences. The explanation should be connected not only to the gender issue, but also to the prejudices towards interdisciplinarity in the dominated by men scientific community.

The analysis of the fourth question „*What does it mean for you a successful woman in your scientific area? Do you have an example for such a woman in science and particularly in your domain which motivates you to pursue a scientific career?*” shows clear differences between the two target groups. The early stage researchers mostly think that the successful combination between family life and career is absolutely necessary in order to count a woman in science a “successful” scientist. Very small is the number of those holding that only the academic and scientific success is enough. Interesting, yet a little bit extreme opinion expresses one respondent: “Successful woman?! It is hard for me even to imagine something like that! If she has real, not fake, achievements, they are costly and have taken a lot of suffering. As far as I have such female colleagues they possess man’s strength and due to lack of understanding and intolerance, often their families could not endure the tension” (*respondent 1*).

In the second group usually the list of the necessary professional qualities is supplemented with a list of personal qualities. The focus is not only on the scientific capacity, the international experience, contacts, habilitation, but also on the good sense of humour, the readiness to support younger colleagues, good temper, etc. In other words, according to the early stage researchers only a fully developed personality could be “successful woman in science”.

About 1/3 from the surveyed respondents claim that in their field indeed there are women who serve as a role model for them. Eloquent and laconic is the opinion of one participant: „Yes, she is an example for me, because she is an excellent professional, a good mother and a great person” (*respondent 1*). However the majority of the early career researchers could not point such a woman or do not see any woman scientist who could be a role model for them and might motivate them for career building. It appears that the situation is quite similar to that of the first group and the impression is that men dominate in science, in spite of the tendencies towards its feminization, especially in the fields of social sciences and humanities.

The answers to the question „*Let's assume that your partner/husband also pursues an academic career and you both have obtained a scholarship abroad simultaneously. What would you do?*” also could be divided in three groups: quite similar to those we identified at the target group of the PhD students, but not so “pure”. Here dominating is a kind of ‘mixed type’, i.e. a particular mixture of the ‘Traditional type’ and the ‘Dialogue - oriented type’. It might be defined as “Dialogue which appreciate traditionality” since most of the respondents claim that they will consider the situation together with their partner/husband and then will make the decision, taking into account which scholarship offers better opportunity. The general attitude of the respondents is towards compromise: the decision which is best for the family should be made. It is interesting that this opinion bears no relation to the marital status of the respondents. In other words the early career researchers think of career and family as equally important with some superiority given to the family.

Here the pure types are rare. Among the unmarried respondents only two have pointed that they definitely will choose staying with their partner/husband than pursuing their own career (which means that they belong to the purely “traditional” type). One participant (marital status “divorced”) claims “we could both use the opportunities, it is just for some time not forever” (*respondent 11*) – this is the only representative of the pure “pragmatic” type among the 13 participants.

The last question is: „*Are you involved in professional networks of women in science? What is the benefit from such participation?*”. Only one respondent says that she is involved in such network. Most of the others not only do not participate, but also claim that do not see the point in an involvement, based on gender differences. The dominating opinion is that „science is not made only by men or women” (*respondent 5*) and that “mixed teams could give best solutions to professional problems” (*respondent 2*). Yet three of them think that maybe such participation could be useful to certain extent for their career development.

Conclusion in spite of the similarity of the questions, designed for the first and for the second target groups (PhD students and early career researchers before habilitation), the opinions and attitudes expressed and investigated through the survey, are different. The observed differences might be explained by the factor ‘duration of the academic career’. Because of their experiences

obtained in the course of the time the early career researchers made more realistic assessments of problems related with their career building in comparison with the PhD students – the starters.

Secondly, the different marital status of the respondents also affected their answers: at the target group of the PhD students (the unmarried prevail) the claims are hypothetical and maybe because of that – more extreme and categorical while at the target group of the early career researchers (half of which are married with children) the express opinions are based on their actual experience.