

# Baltic Science Network.

Connecting Through Science

## Challenges to researchers' mobility in the Baltic Sea Region

Research and Higher Education  
Monitoring and Analysis Centre

## Further details on the publication

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## Project in brief

**Baltic Science Network** (BSN) serves as a forum for higher education, science and research cooperation in the Baltic Sea Region (BSR).

BSN is a policy network gathering relevant transnational, national and regional policy actors from the BSR countries. The Network is a springboard for targeted multilateral activities in the frame of research and innovation excellence, mobility of scientists and expanded participation. These joint activities are modelled with an overall aim to ensure that the BSR remains a hub of cutting-edge scientific solutions with the capacity to exploit the region's full innovation and scientific potential. The activities are modelled as examples of best practice which form basis of the policy recommendations drafted by the Network.

The platform is tailored to provide advice on how to enhance a macro-regional dimension in higher education, science and research cooperation. Recommendations jointly formulated by the Network members address the European, national and regional policy-making levels.

BSN is a flagship of the EU Strategy for the Baltic Sea Region under the Policy Area Education, Research and Employability, as well as one of two cornerstones of the Science, Research and Innovation Agenda of the Council of the Baltic Sea States.

Disclaimer: This working paper is based on input from stakeholders and BSN partners and does not necessarily reflect the views of all participating Member States and organisations.

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## Introduction

Research mobility is widely acknowledged as one of the major factors facilitating excellence in science and competitiveness in innovation and technological development. Countries and regions are actively involved in designing and implementing academic mobility policies through academic exchange programs aiming at all levels researchers from graduate students to established, internationally recognised academicians. Major players which are involved in designing and administering mobility programs are national governments, even though regional governments as well as scholarly societies and higher education institutions and research institutes play a significant role in both supporting and facilitating academic exchange programs.

Despite the general agreement on benefits stemming from the academic mobility and due to different historical perspectives, academic traditions, cultural differences and the political environment the views on the specifics of implemen-

tation of the mobility programs may differ quite significantly. Even neighbouring, such as the Baltic Sea Region (BSR) countries, may have different and sometimes conflicting views regarding the benefits and challenges they are exposed to in the context of the increasing mobility of researchers in particular, and highly skilled and educated labour resources, in general.

The guiding assumption is that the cooperation within BSR as well as harmonisation of approaches towards the researcher mobility has a potential to both contribute towards the development of the macro-region as a whole (a non-zero-sum game) and alleviate currently faced challenges. Moreover, it could increase the trust between major science and research stakeholders based in the BSR and researchers. The following overview of national seminars as well as the analysis of survey aim at elucidating major challenges the individual countries are exposed to.

## Mobility survey

### Main objectives and design of the survey

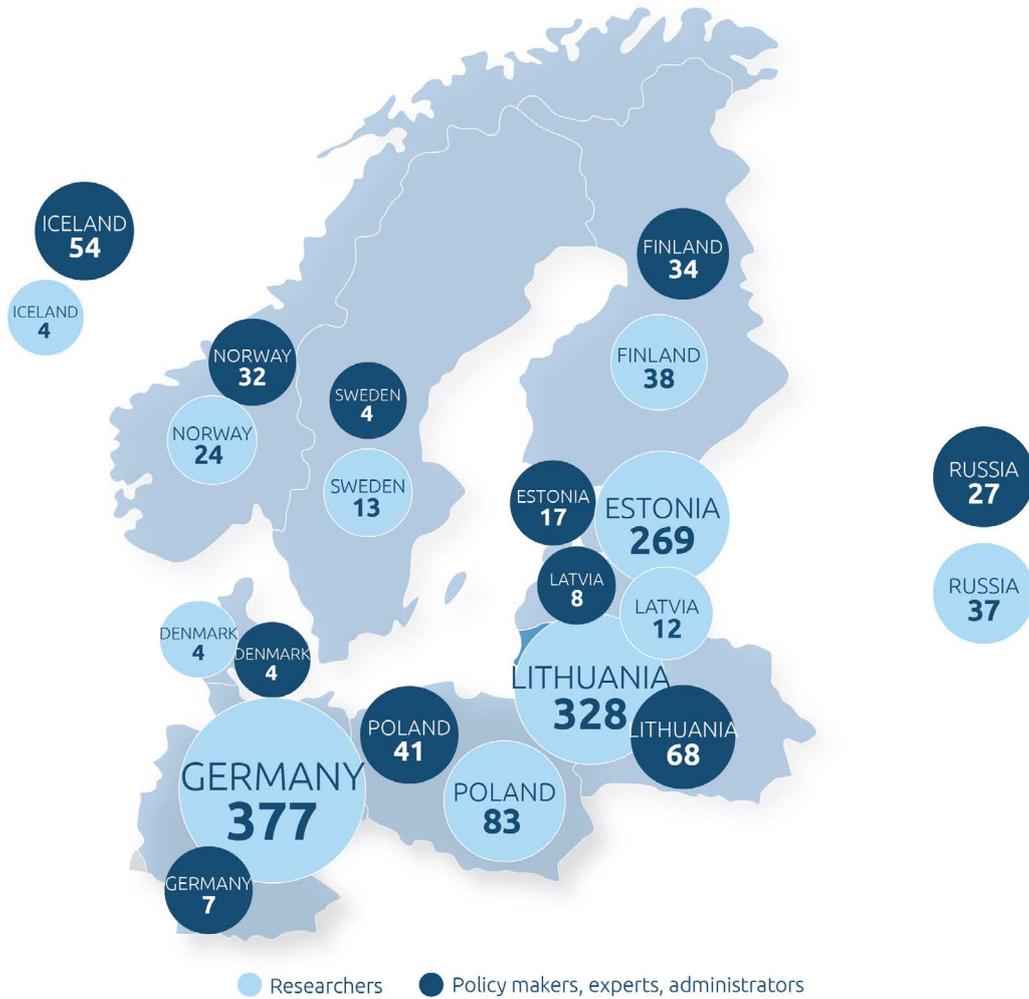
The survey was designed to get information about the general attitudes of both researchers and policy makers, administrators as well as social partners (hereinafter referred to as Partners) towards the research mobility as one of the important elements of modern research and development (R&D) system. The questionnaire consists of closed-ended questions and one section of open-ended question asking to share respondent's views of "good practices" related to the facilitation of the researchers' mobility. Questionnaires to researchers and partners addressed the same general issue, though differed in the perspectives, thus leading to certain differences in their content. In particular, questions in Sections B in both questionnaires were the same. However, sections C, D and E enquiring about the mobility facilitating and discouraging factors were different because personal experience and knowledge of the target groups may exhibit significant

differences. Section F in the questionnaire for researchers addresses personal experience of researchers about the support measures, therefore the section of a such content is not present in Partners' questionnaire. Instead Section F for the Partners asks to present the views of respondents on existing good practices. Same request for researchers is presented in the G section of the questionnaire. For details please refer to the questionnaires presented in Appendix I and Appendix II. The surveys were opened in November 2016 and ended in February 2017.

### General information

Total numbers of respondents were 1189 (Researchers) and 296 (Partners). The breakdown of the respondent across the countries of their primary residence/professional activity is presented in Figure 1.

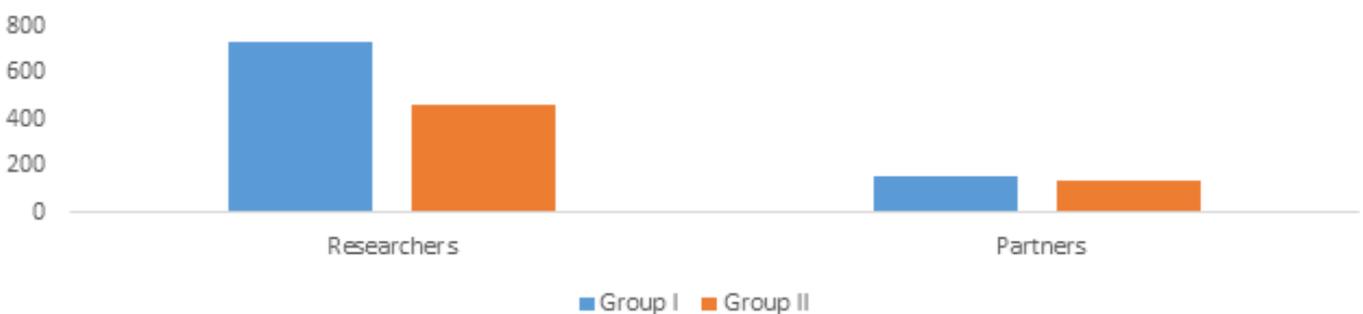
**Figure 1.** Primary residence/professional activity countries of respondents



For further analysis countries were grouped into Group I: Estonia, Latvia, Lithuania, Poland, Russia (St. Petersburg), and Group II: Finland, Germany, Iceland, Norway, Denmark and Sweden (Figure 2). It must be noted that the respondents from the BSR countries are not represented proportionally to the number of i) researchers and ii) partners in a corresponding country. In addition, the response rate from some countries (Denmark, Sweden, Norway) was low, so no generalisations as well as comparisons can be made between two or more individual

countries. The countries were grouped according to their GDP per capita into two groups. Group I consist of BSR countries with GDP per capita below \$20000 (Estonia, Lithuania, Latvia, Poland, Russia), and Group II consist of BSR countries with the GDP per capita above \$20000 (Denmark, Finland, Germany, Iceland, Norway, Sweden). Even though underrepresentation of the respondents from the Group I countries is obvious some comparisons of the survey results will be done.

**Figure 2.** Researchers by country group



## Respondents characteristics

### Researchers

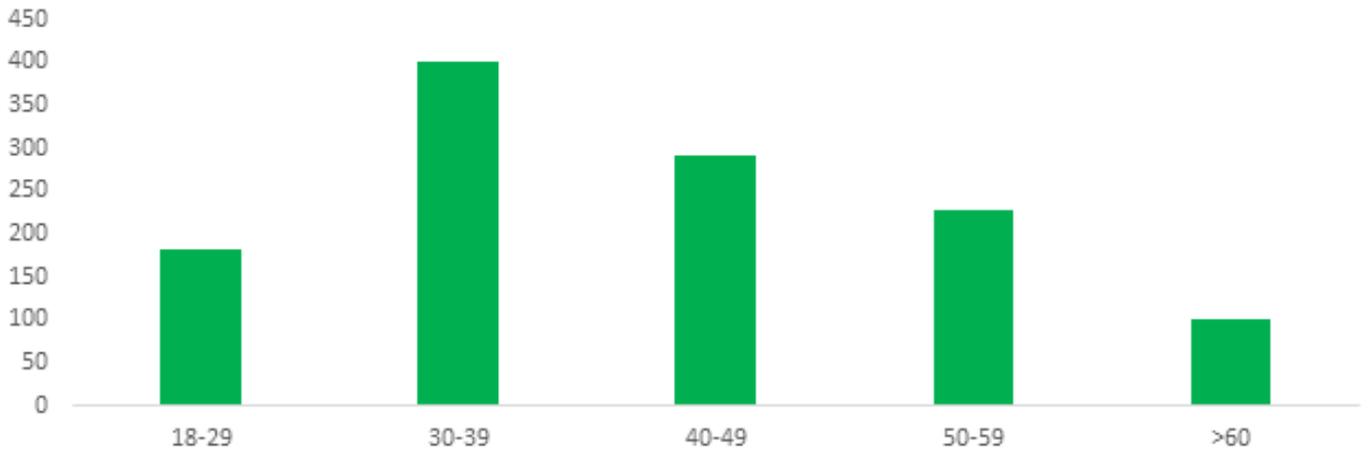
- Most of the respondents at the moment of the survey resided in the country in which they attained their secondary education: 1061 (88.12%) vs. 143 (11.48%).
- Vast majority of the researcher respondents (84.47%) affiliate themselves with the Universities or other academic institution. Researchers from the private entities comprise 3.65% of respondents. Such representation of respondents means that all further findings represent opinions and viewpoints of the representatives of universities and/or other academic institutions.
- Some comparisons and correlations will be attempted between the universities and public research and technology development institutes. Most of the respondents are (see Table.1): junior academic employees, however, mid and senior academic level positions match junior researcher positions quite well. Academic administrators comprise nearly 15% of the respondents, enough to compare their responses to the opinions of the academic staff.

**Table 1.** Employment positions of respondents

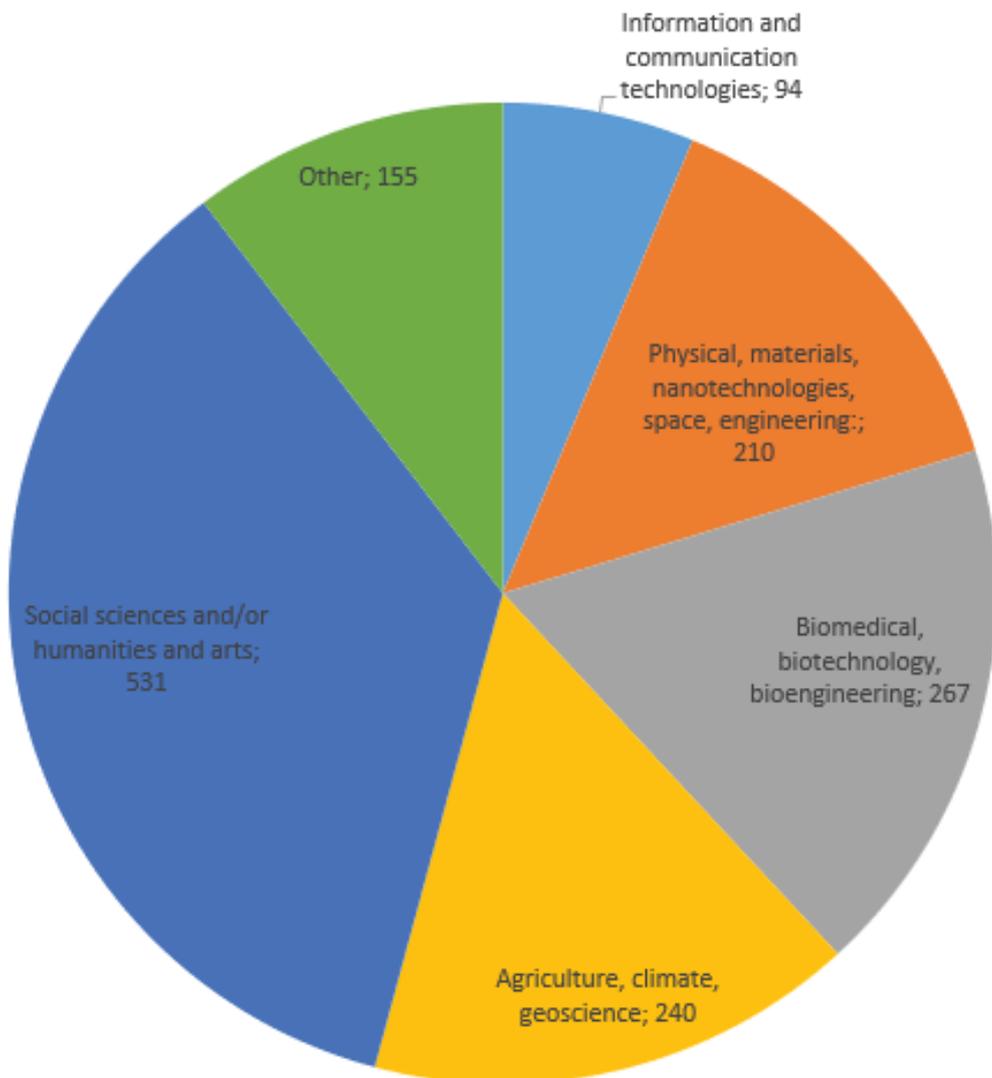
Type of employment position	Respondents	Percentage
Junior researchers	326	27.12%
Mid-level research position: researcher/analyst and others	279	23.21%
Senior academic positions: professor/associate professor and others	270	22.46%
Any academic position that also includes administrative duties: department chair/center director/division chief and others	176	14.64%
Senior researcher positions: chief scientist, senior researchers and others	119	9.90%
Expert, including freelance expert/advisor/specialist	29	2.41%
International exchange visitor/international exchange student	2	0.17%
Other	1	0.08%

- Half of the respondents (50.75%) have been previously enrolled in academic and/or professional mobility programs/visits. Others (49.25%) indicated no such activities.
- Total number of respondents that have initiated incoming visits of the foreign researchers is 359. These respondents will be used to answer the question what employment positions are mostly active in attracting foreigners into their institutions.
- Total number of respondents that have initiated outing visits of the members of their research group is 370. These respondents will be used to answer the question what employment positions are mostly active in attracting foreigners into their institutions. Approximately 67% of those who answered "yes" answered also "yes" to the previous question.
- Gender distribution was 659 females and 545 male respondents. The distribution allows comparisons and correlations if such exists between the attitudes and viewpoints of these two different groups.
- Age group distribution of respondents is plotted in Fig. 3. Dominant group is 30-39 years age, it exhibits 33.4% rate.
- The research fields the respondents are involved in are distributed slightly biased toward the technological fields, while the social sciences and humanities comprise nearly 40% of the respondent pool (see Fig.4)
- Research grants are the most frequent source for funding of research mobility. Business and charities exhibit quite insignificant frequencies.

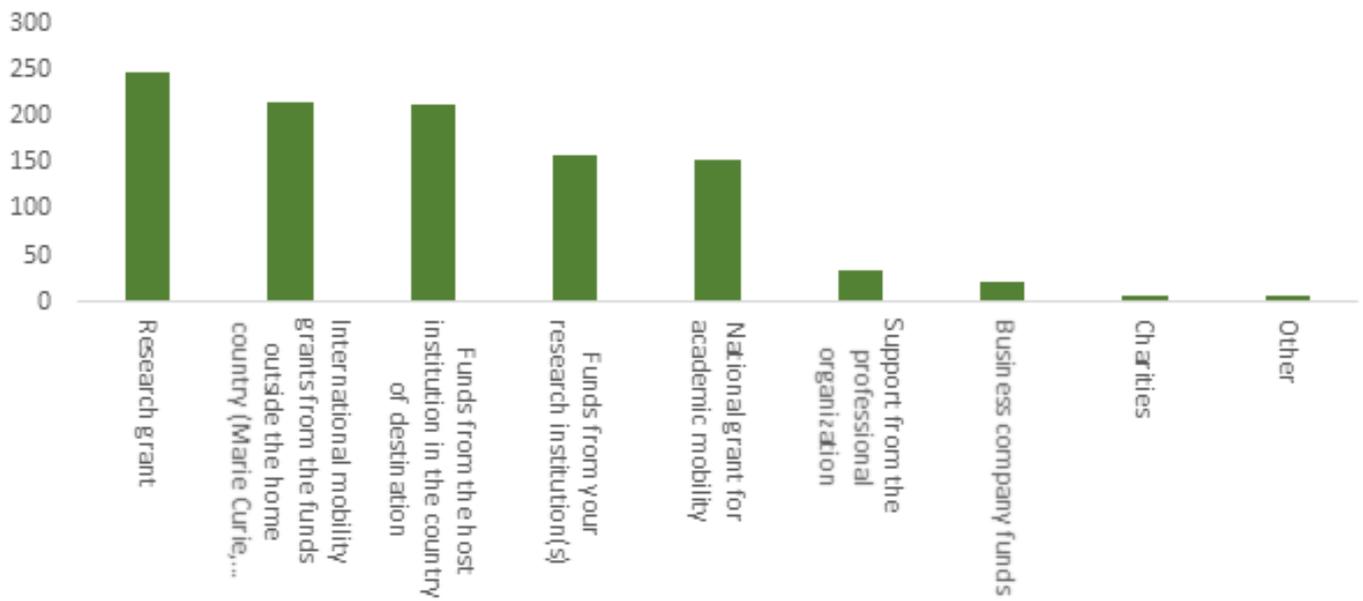
**Figure 3.** Distribution of age groups of researchers



**Figure 4.** Distribution of respondents along their research areas



**Figure 5.** Support sources which provided the support for the researchers previously involved in the mobility schemes.



## Social Partners

- Partner respondents were distributed quite uneven across participating countries. Largest representation numbers are from Lithuania (68) and Iceland (54), smallest numbers of respondents came from Denmark and Sweden (4). Group I and Group II countries are represented in the proportion of 161 (54%) and 135 (46%).

**Figure 6.** Distribution of Partner respondents across the participating countries



The vast majority of respondents were from universities or research institutions as follows from the Table 2. Such uneven distribution does not allow to

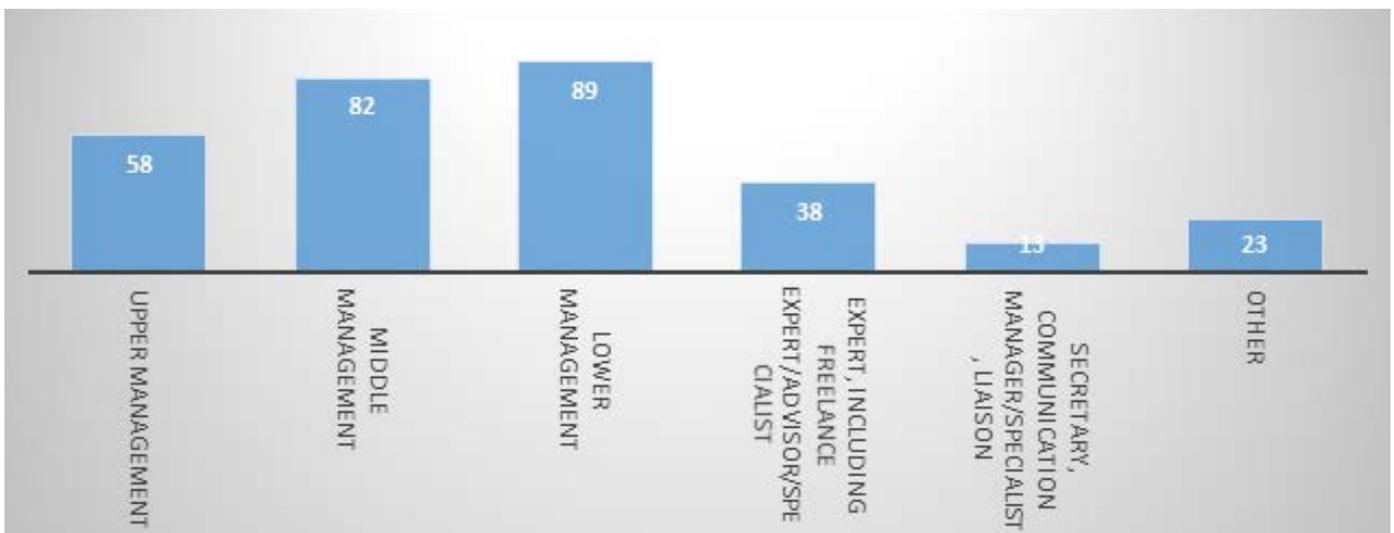
reliably interpret cumulative observations. For this reason, we will analyze individual groups with the number of respondents >20.

**Table 2.** Partner respondents’ distribution according to institutions

Institutions represented by respondents	Number of respondents
R&D policy formation institution such as: Parliament, Government, Ministry, President’s office	37
R&D policy implementation institution: Research council/technology development agency/other R&D	25
R&D activities monitoring institution: Public enterprises/analytical centers/ other	5
Academy/professional society	11
University, research institute, other R&D performing entity	215
Social partner/NGO	3
<b>Total</b>	<b>296</b>

- Two biggest groups are respondents representing lower and middle management positions. Quite significant group is represented by upper management respondents. Some respondents indicated “Other” positions, which as explained by the respondents are the academic positions.
- Partners are predominantly representing the research institution associated persons with the majority of the mid and lower level management officials.

**Figure 7.** Distribution of respondents according to their job positions

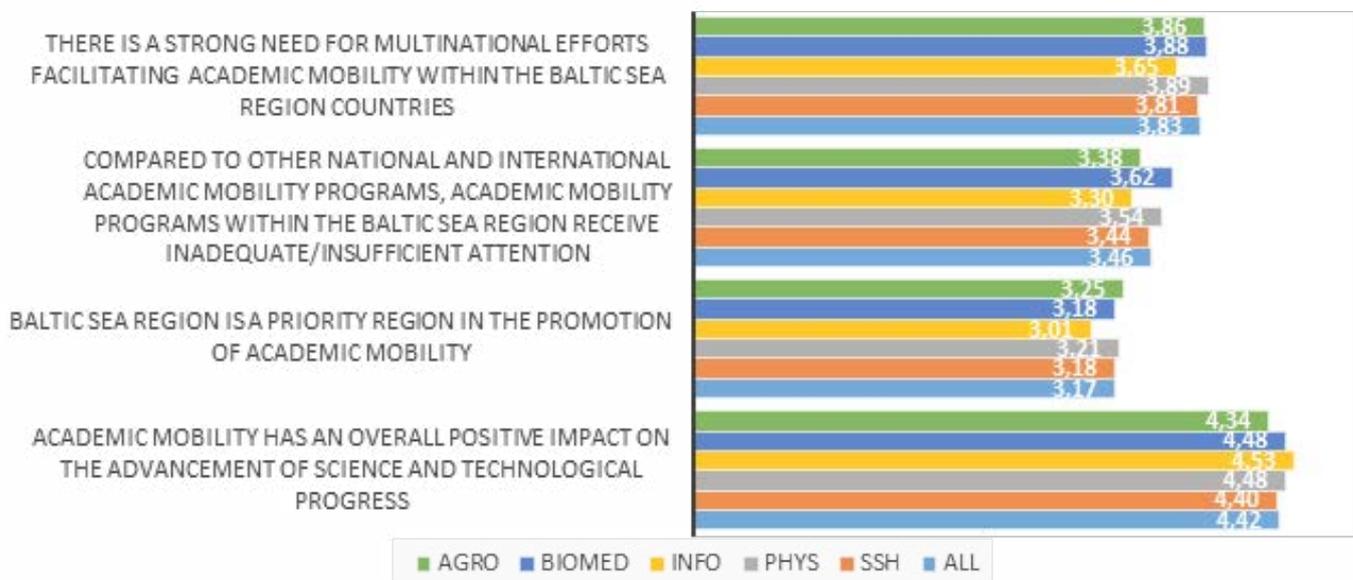


# Analysis of survey data

## Researchers

- Analysing general attitude towards the research mobility the responses were parameterized with the “strongly disagree” responses assigned value 1, while the “strongly agree” responses were assigned values 5.
- The data in Fig. 8 indicates that a large majority of respondents from the research community strongly supports the notion that “Academic mobility has an overall positive impact on the advancement of science and technological progress”.
  - Significantly lower support with an average rank of 3.17 (out of 5) is detected for the statement: BSR is a priority region in the promotion of academic mobility.
  - Assessing of the adequateness of the support for the mobility in the BSR, and on the necessity to facilitate the mobility in the BSR (first and second statement in Figure 8), respondents exhibited much stronger support.
  - Researchers strongly support notion of the overall positive impact of research mobility on the advancement of science and technological progress;
  - BSR as a priority region is seen only by a small majority of the Researchers;
  - Multinational efforts facilitating academic mobility within the BSR countries has a significant support;
  - No statistically significant differences are observed between opinions of researchers across different research areas.

**Figure 8.** General attitude towards the research mobility

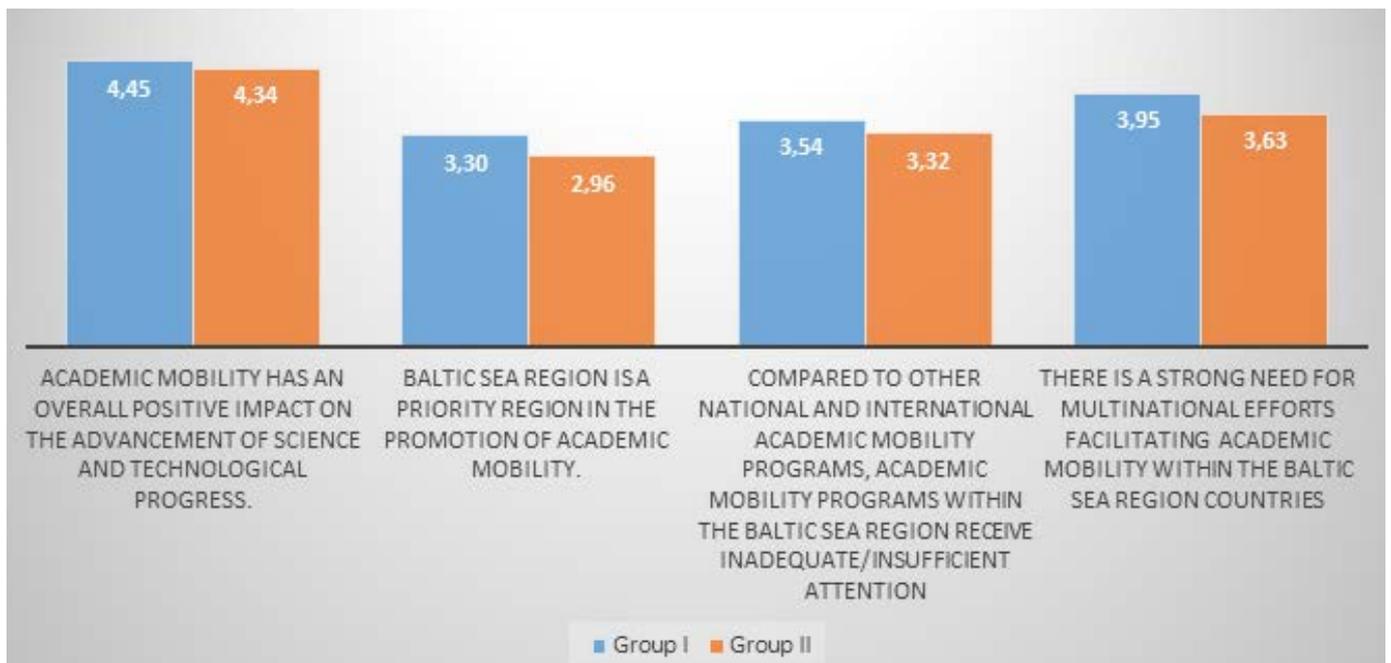


- The BSR countries differ significantly in economic strength. Aiming at establishing whether or not the economic strength may influence attitudes towards statements we analysed how these statements were supported by the researchers from two distinct groups of the BSR countries: Group I with GDP below \$20000, and Group II exhibiting GDP above \$20000. Data is summarized in Fig. 9.
  - The first statement is slightly less supported by the Researchers from the economically advanced BSR countries.
  - Group II countries are noticeably less (more than 10%) supporting the idea of the BSR as a priority region for the promotion of research mobility.

Asymmetry of perception of the BSR region as a priority region for research mobility was observed in respondents from Group I and Group II countries.

- Previous participation in research mobility projects strengthens support towards importance of the research mobility for science and technology development in general;
- No gender specificity was detected in responses towards these statements.

**Figure 9.** General attitude towards the research mobility of Group I and Group II



Group I countries: Estonia, Latvia, Lithuania, Poland, Russia (St. Petersburg).

Group II countries: Finland, Germany, Iceland, Norway, and Sweden.

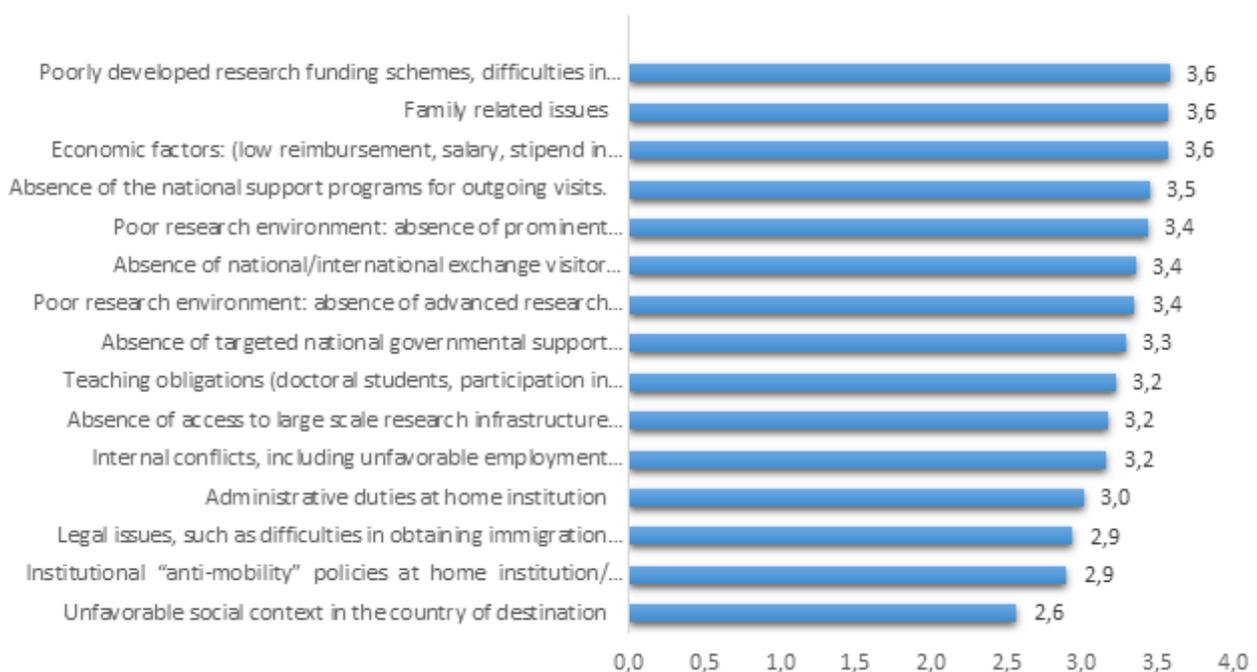
- Possibility of establishing international collaborative links, high quality research environment, including the presence of prominent scientists, advanced instrumentation, multidisciplinary environment, as well as personal development goals, all these are strong stimuli encouraging international research mobility.
- Naturally, the absence of such environment at the home institution also encourages researchers leaving their country for better environment for research in foreign countries.
- It must be noted that socioeconomic factors did not receive much of the support

**Figure 10.** Factors that may facilitate research mobility



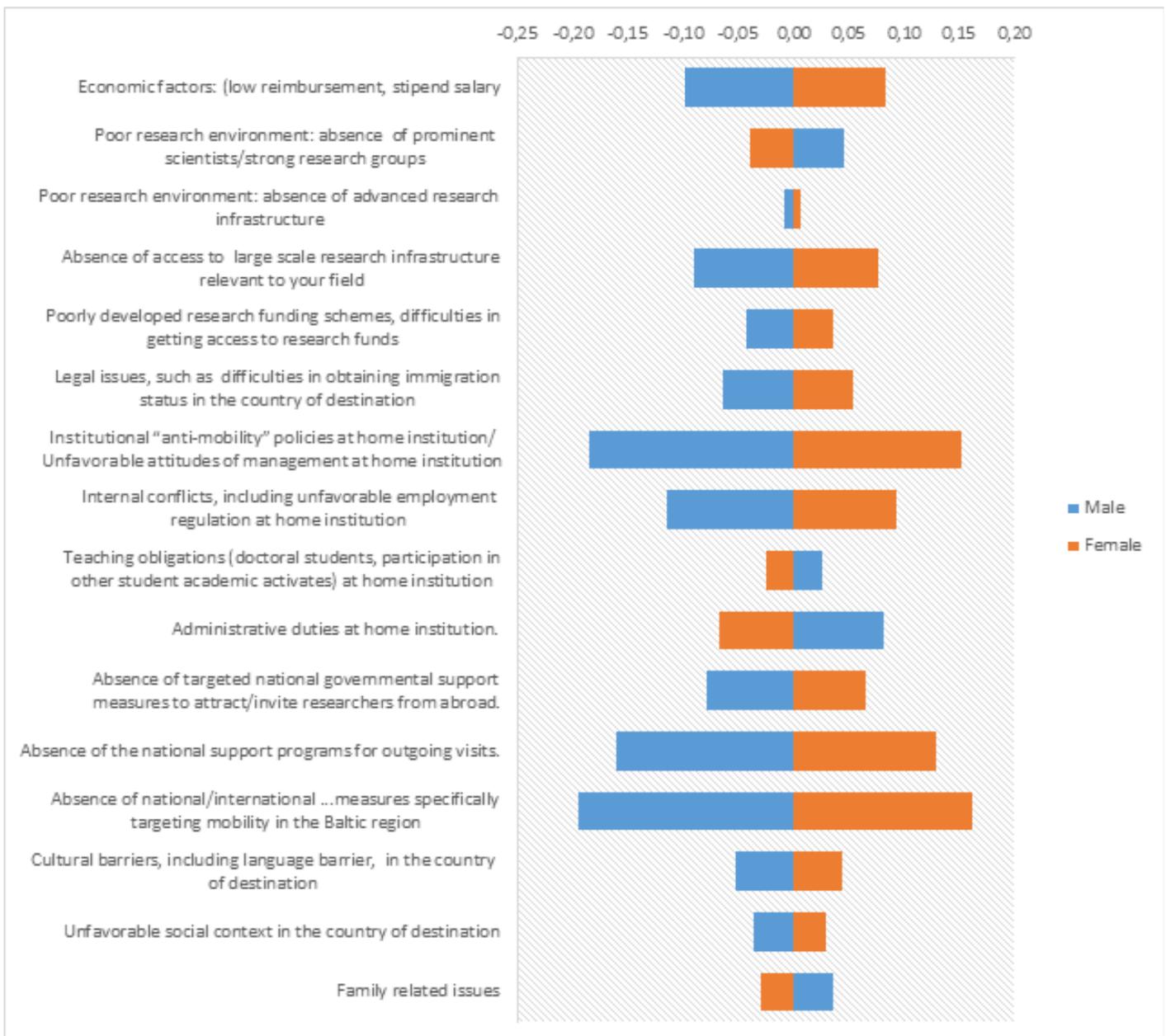
- Queries that aimed to elucidate factors that may discourage researchers from leaving their own country for doing research in a foreign institution. The statements cover a wide range of obstacles spanning from purely scientific to family related issues.
  - The respondents believe, that poor economic environment in the country of destination may be a serious obstacle for choosing a research project in that country.
  - Difficulties in obtaining and poor research funding environment is another mostly cited obstacle for research mobility. Generic family issues are also cited as obstacles.
  - If international research visits are not supported by the national mobility programs, including ones specifically targeting BSR, such situation may discourage researcher from the research outside their home country.

**Figure 11.** Factors that may discourage researchers from leaving their own country for doing research in foreign institutions



- Quite significant that women significantly more strongly feel institutional “anti-mobility” as well as internal conflicts in the departments, and even obstacles related to the mobility for their carrier advancement compared to male researchers.
- Absence of the national support schemes to move abroad is seen as much bigger problem by women compared to men.
- Even though at relatively low level there is some difference in evaluating family issues (which are most frequently indicated as one of major obstacle for mobility, see Fig. 11) as an obstacle for international mobility. Interestingly male see this as a problem more frequently than female researchers.

**Figure 12.** Factors that may discourage researchers from leaving their own country for doing research in a foreign institution by male and female respondents

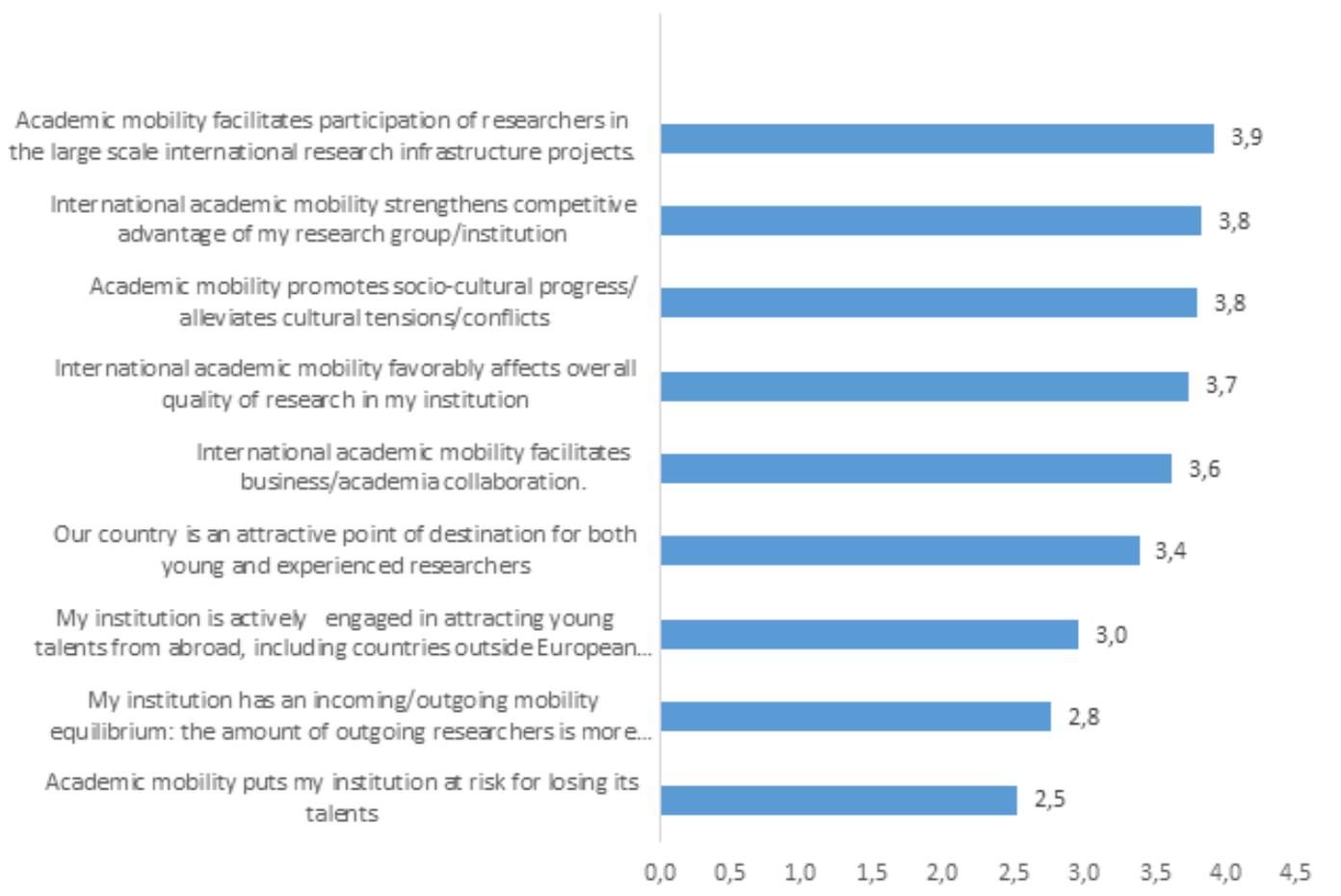


Respondents were asked to express their support for statements related to potential advantages and disadvantages stemming from the research

mobility as well as an attitude towards attractiveness of their country for researchers from abroad.

- Relatively moderate majority of respondents see (3.4) their country as an attractive point of destination for foreign researchers.
- Despite the fact that the mobility is not seen as a risk of losing talents (E2.5) on the country level, noticeably more respondents does not support (2.8) statement that their institutions have more or less balanced outgoing and incoming fluxes of guest researchers.
- Evaluation of the institutional efforts is neutral (3.0), even though the majority of respondents firmly support (3.7; 3.8) idea that international academic mobility favourably affects overall quality of research as well as a competitive advantage of their institutions.
- Similarly, strong support is indicated for statements, which list socio-economic benefits stemming from the international exchange of researchers.

**Figure 13.** Support for statements related to potential advantages and disadvantages stemming from the research mobility

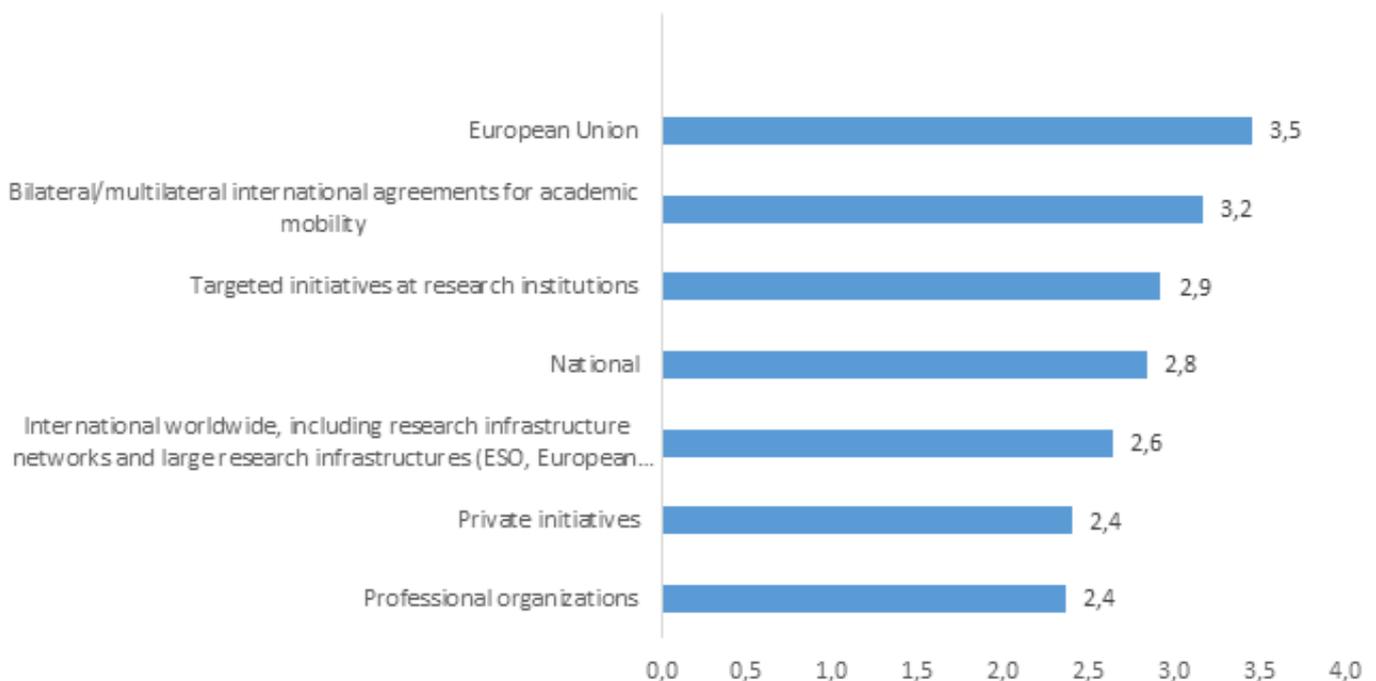


Respondents were asked based on their personal experience to rank governmental or institutional support schemes or initiatives and programs

according to their impact on (facilitating/enabling) incoming academic mobility at your institution.

- Incoming mobility is an important part of the human resource management in research institutions. Different countries apply different approaches towards regulating and facilitating incoming visits of high skilled researchers. According to researchers European Union (EU) and intergovernmental bilateral agreements (exhibit significant superiority over all other support schemes.
  - Targeted initiatives at research institutions are also a significant source (2.9) of support for the research mobility.
    - Among the researchers the poorest ranked or least valued are the support sources coming from the professional organisations, as well as private business initiatives.
      - In general, relatively low ranks of support in this group of statements may be due to an aggregation of the views of researchers that previously had or did not have experience in research mobility. Those who had no previous experience in research mobility tend to rank closer to neutral the impact of the financial source.

**Figure 14.** Personal experience to rank governmental or institutional support schemes or initiatives and programs



## Partners

Figure 15 displays general attitude by the “Partners” cohort of respondents towards the researcher mobility. A very strong support for the B1 statement regarding an overall positive impact resonates well with the one observed in the “Researchers” group of respondents. Weakest support is observed for the B2 statement which emphasizes the Baltic region as a priority region. This correlates

well with the distribution for B3 statement. However, the statement regarding multinational efforts to facilitate academic mobility in the BSR, receives much stronger support. In general, we clearly see the responses strongly emphasize the importance of academic mobility in general, while the BSR region requires additional efforts to facilitate academic mobility within BSR.

**Figure 15.** General perception of the importance of research mobility

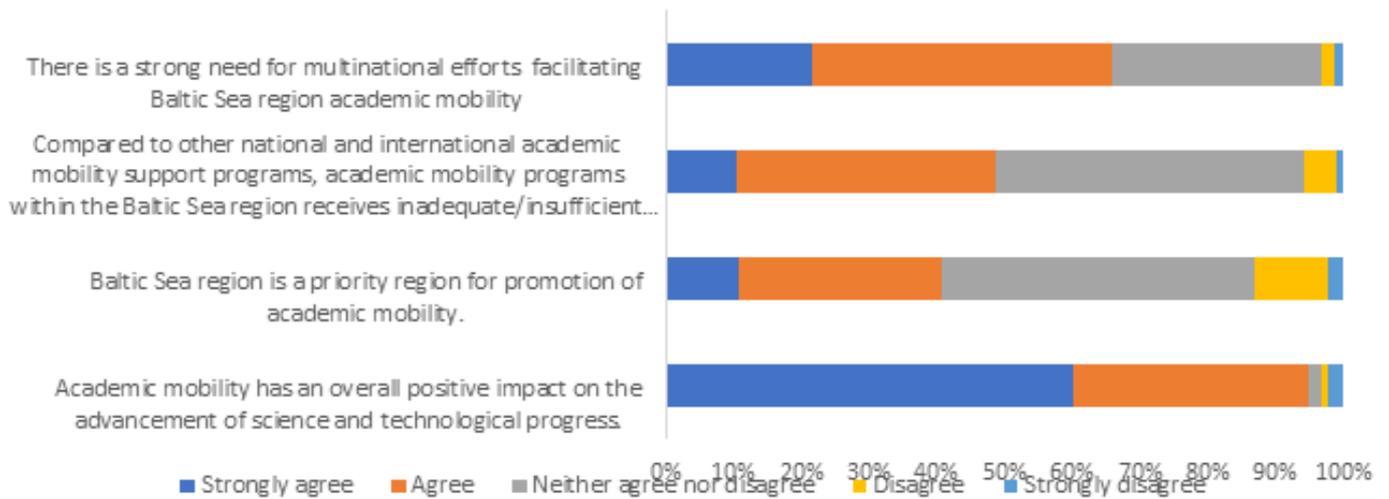
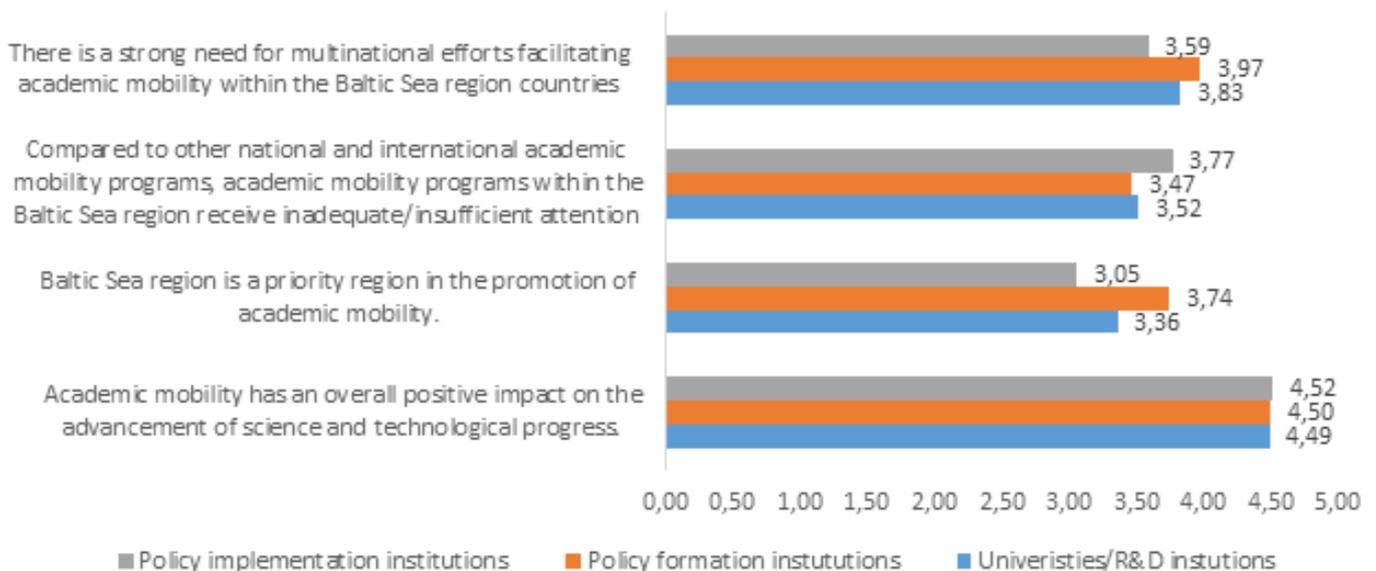


Figure 16 displays responses of various groups of respondents. While the university affiliated respondents essentially replicate responses observed for the Researcher group (see Figure 4), the university or institute affiliated respondents are more supportive (3.36 vs. 3.17) of the idea that the BSR should be considered as a priority region for academic mobility.

Another finding is an outstandingly strong support from politicians towards the importance of

the BSR as a priority region (B2=3.74 and B4=3.97 statements). It is obvious that the politically motivated attitudes may differ quite significantly from those of the researchers. On the hand, in this particular case this is a strong indication of the readiness of the policy-makers towards strengthening BSR collaboration, as well as scientific exchange in the macro-region. One needs to take into account that this group was represented by Estonia – 13, Norway – 8, Latvia – 7, Germany – 5, Russia – 3 and Iceland – 1 respondents.

**Figure 16.** Responses to Section B statements comparison of different respondent groups



Section C provides views of partners in the government, ministries, research councils, professional organizations and university or research institute

administrators towards the statements that list factors facilitating international mobility of researchers.

**Table 8.** Section C statements<sup>1</sup>

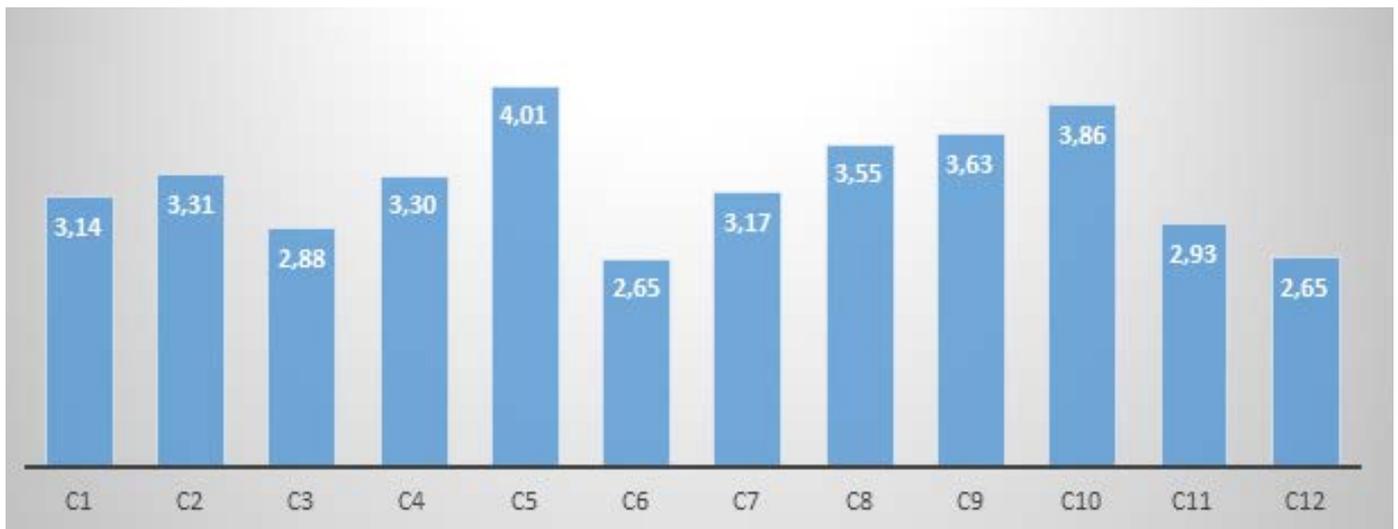
C1	Currently active government mobility programs in your country
C2	Economic factors (higher salary, stipend or other forms of reimbursement)
C3	Opportunities to access benefits of social, medical, family aid programs
C4	Institutional requirements of academic mobility experience for career advancement
C5	Possibility to establish international collaborative/professional links/networks/teams
C6	Opportunity to get job or internship in private businesses
C7	Participation of your country in large research infrastructure projects (EMBL, CERN, ESO, and others)
C8	Ease of access to research funding;
C9	Personal development goals including cultural enrichment
C10	Quality of research environment in the country of destination including, large number of prominent scientists,
C11	The presence knowledge intensive business environment
C12	The presence of private research sponsoring programs

Figure 17 displays support to the statements concerning the factors facilitating (encouraging) international mobility of researchers. According to the “Partners” most of which are either university or research institute associated respondents, the strongest factors that encourage researchers for international mobility are: 1) the possibilities to establish international collaborative/professional links/networks/teams (C5=4.01), and 2) the quality of research environment in the country of destination including, large number of prominent scientists (C10=3.86). Quite symptomatic that the research-intensive business environment (C11=2.93), as well as private research sponsoring programs (C12=2.65) are not considered as strong facilitating factors. The negative attitude towards these factors were also observed in “Researcher” part of the survey (see Figure 11) with <3.0 average indicator for both statements. Nevertheless, the frequencies of responses in Figure 19 show that these statements have a very wide “neutral” range, which essentially

signals about unawareness of respondents of the international mobility measures provided by the private knowledge intensive enterprises. Quite likely it is a signal of a relatively weak international contacts between academia and industry, in case they are located in different countries. Respondents generally are rejecting statements about opportunities to get job or internship (C6) in the industry or get access to social benefits in foreign country as a factor encouraging international mobility of researchers. These industry related statements (C11 and C12) are the most polarized with respect to the division of the countries into Group 1 and Group 2. Group 1 countries support these statements by more than 0.35 average units (Figure 20). It is quite conceivable that this reflect the fact Group 2 countries host much bigger numbers of the knowledge intensive enterprises, so there is less need for researchers to travel abroad for collaborating with research intense enterprises.

<sup>1</sup> Green-highlighted statements received highest support, while the pink-highlighted statements lowest support from respondents

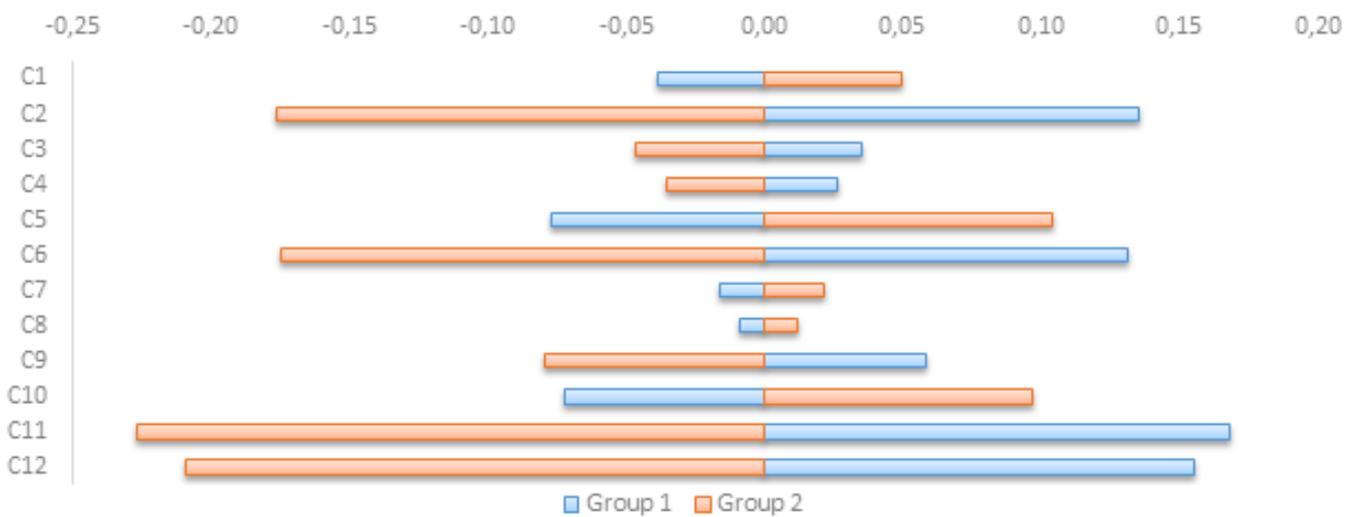
**Figure 17.** Support by Partner respondents of the Statements describing factors that may potentially facilitate international mobility of researchers.



Economic factors, according to respondents, does not seem to significantly affect mobility C2=3.32, though there are quite significant differences between respondents from Group 1 and

Group 2 countries. In particular, the economic factor (C2) is seen by the Group 1 respondents as significantly more important (Figure 18). The difference is almost 0.30 units.

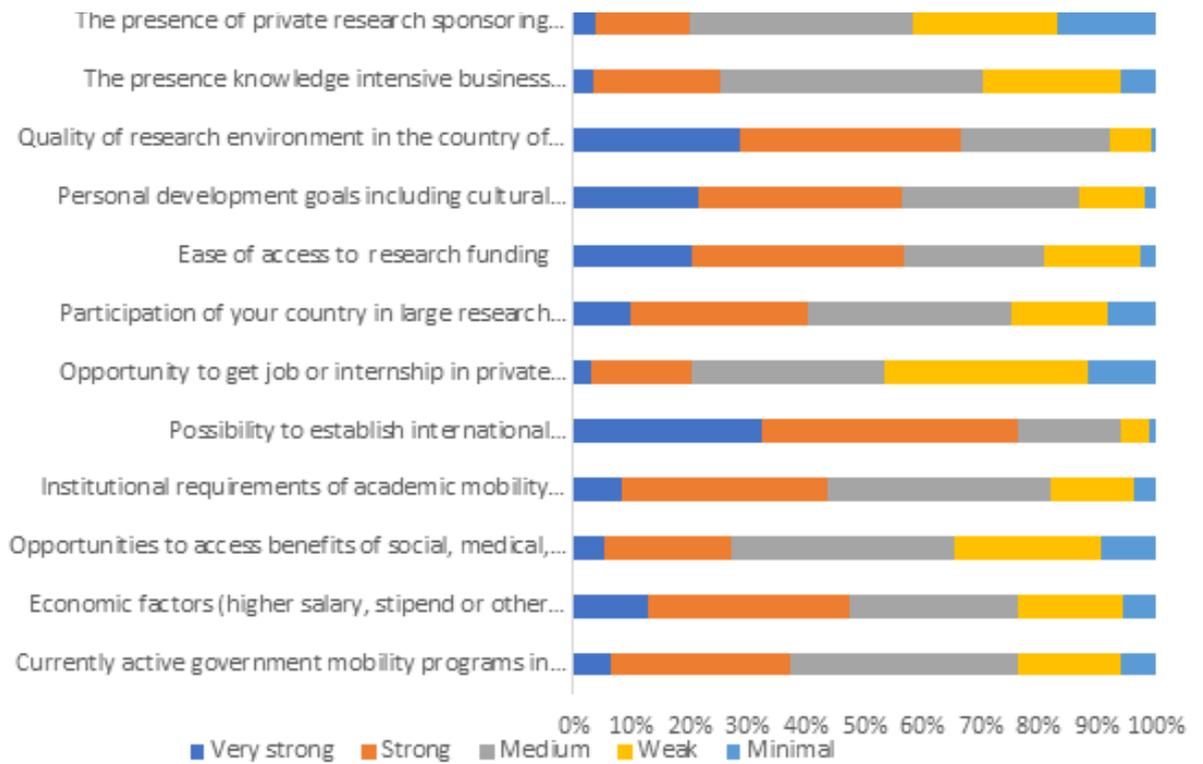
**Figure 18.** Differences between Group 1 and Group 2 responses towards the statements



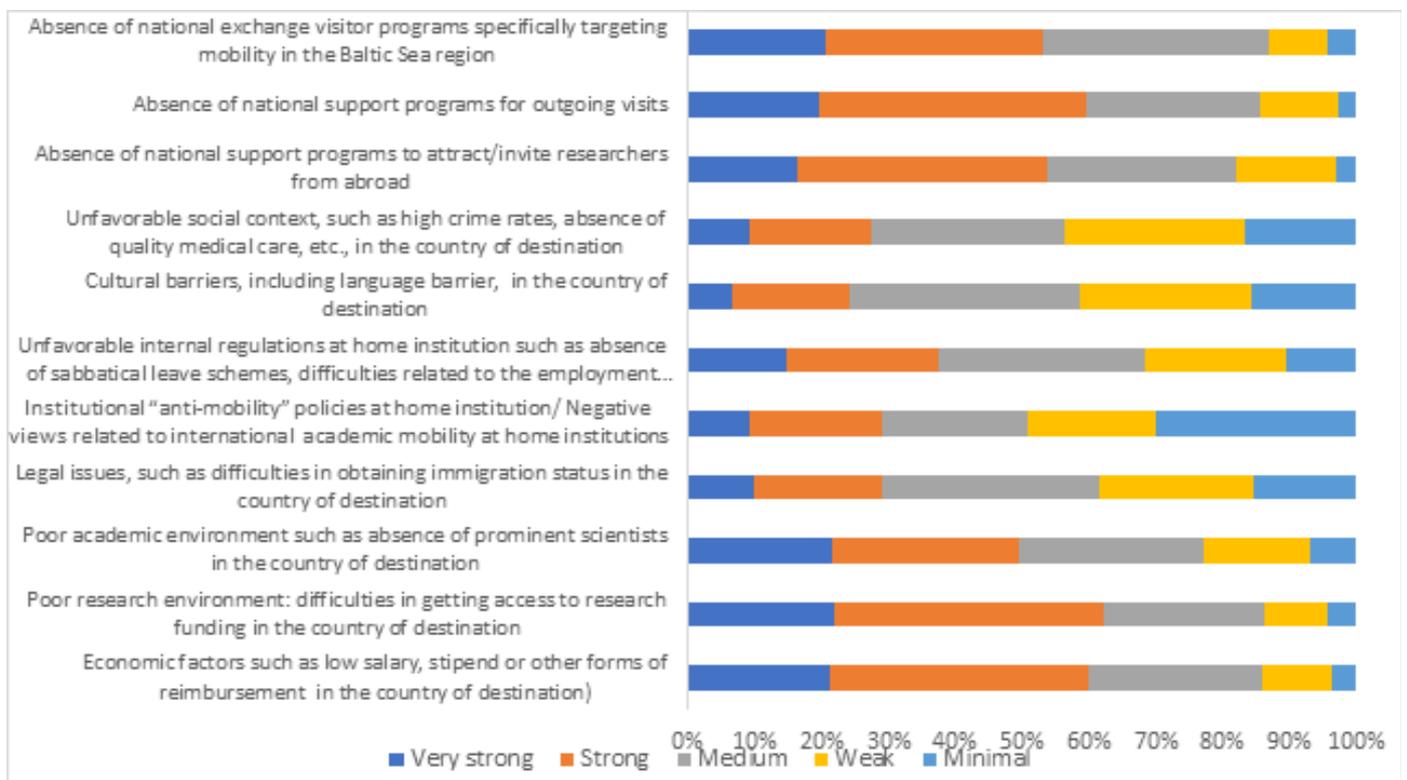
Group I countries: Estonia, Latvia, Lithuania, Poland, Russia (St. Petersburg).  
 Group II countries: Finland, Germany, Iceland, Norway, and Sweden.

Below, in Figure 19 the graphical representation of the distributions of ranking towards statements of Section C is displayed.

**Figure 19.** Relative distributions of responses towards the statements of Section C



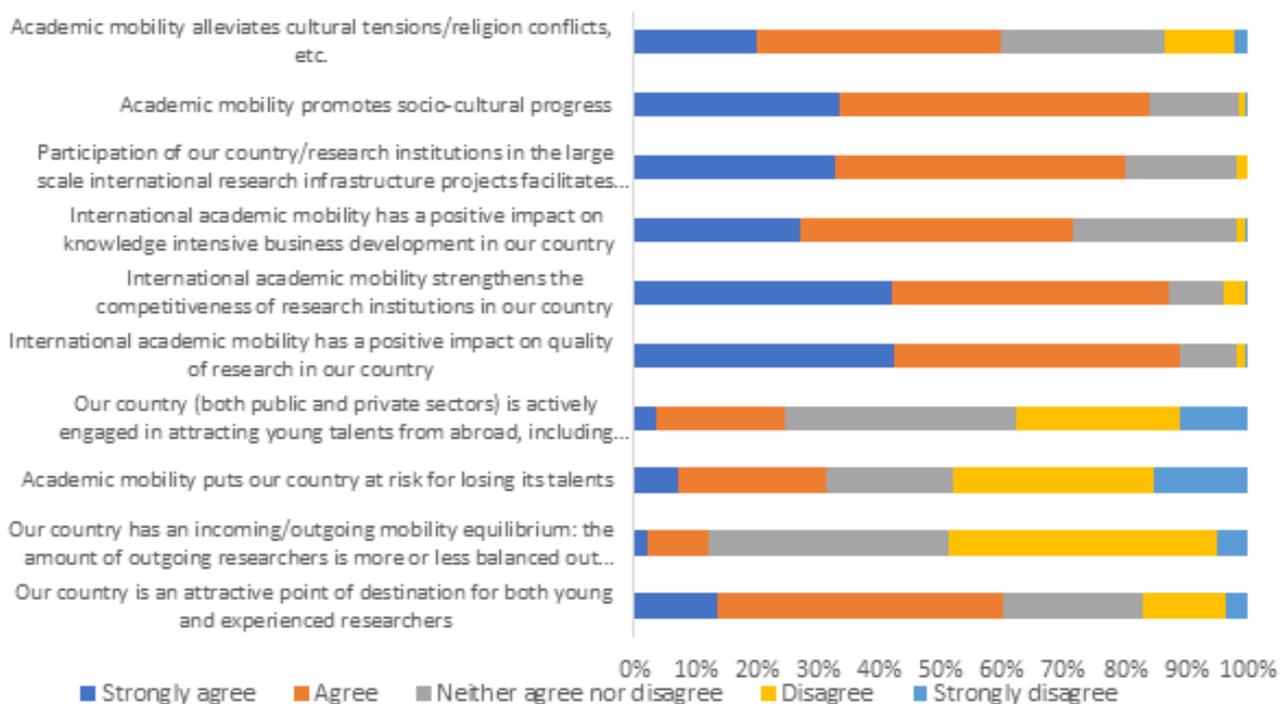
**Figure 20.** Relative distribution frequencies for opinions towards obstacles for the mobility of researchers



Opinions towards statements expressing cons/pros associated with the international mobility. This section aims at elucidating opinions on a status quo situation, potential effects, as well as benefits related to the international mobility of researchers.

The opinions, as seen from Figure 21, are related to the benefits that stem from the international exchange exhibits strong support with near or exceeding average score of 4.0. Respondents see their countries as an attractive point of destination for scientific mobility (3.53).

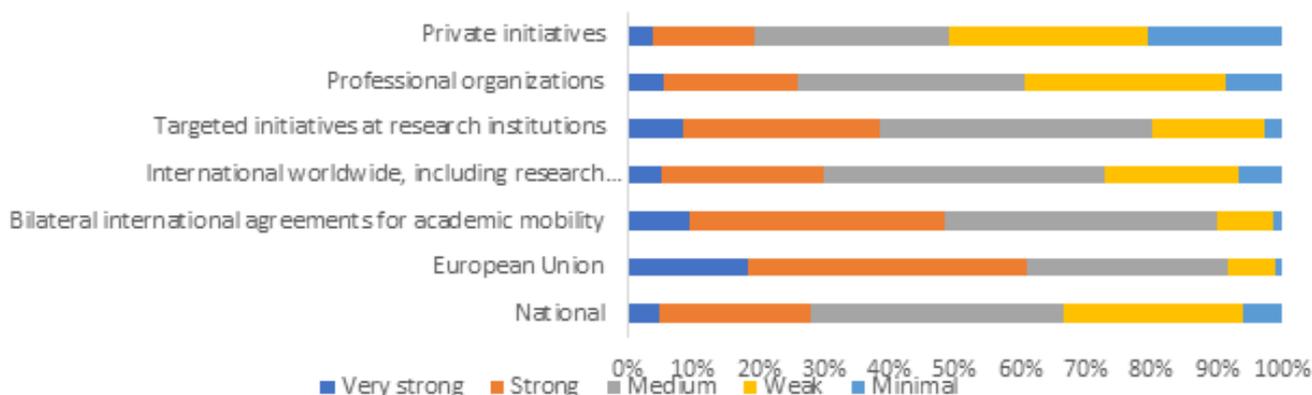
**Figure 21.** Relative distribution frequencies for opinions towards obstacles for the mobility of researchers. Statements.



Respondents were asked to rank governmental or institutional support schemes or initiatives and programs according to their impact on (facilitating or enabling) incoming academic mobility. The support schemes by the EU received highest ranks (more than 60% of respondents ranked them “very strong”, and “strong”) from administrators. Private initiatives, as well as support from the professional

organizations received lowest ranks. Interestingly, national support schemes received moderate ranks by large number of administrators (more than 40%). Interestingly, international bilateral agreements are named among the strongest support schemes, which resonates well with an opinion by researchers.

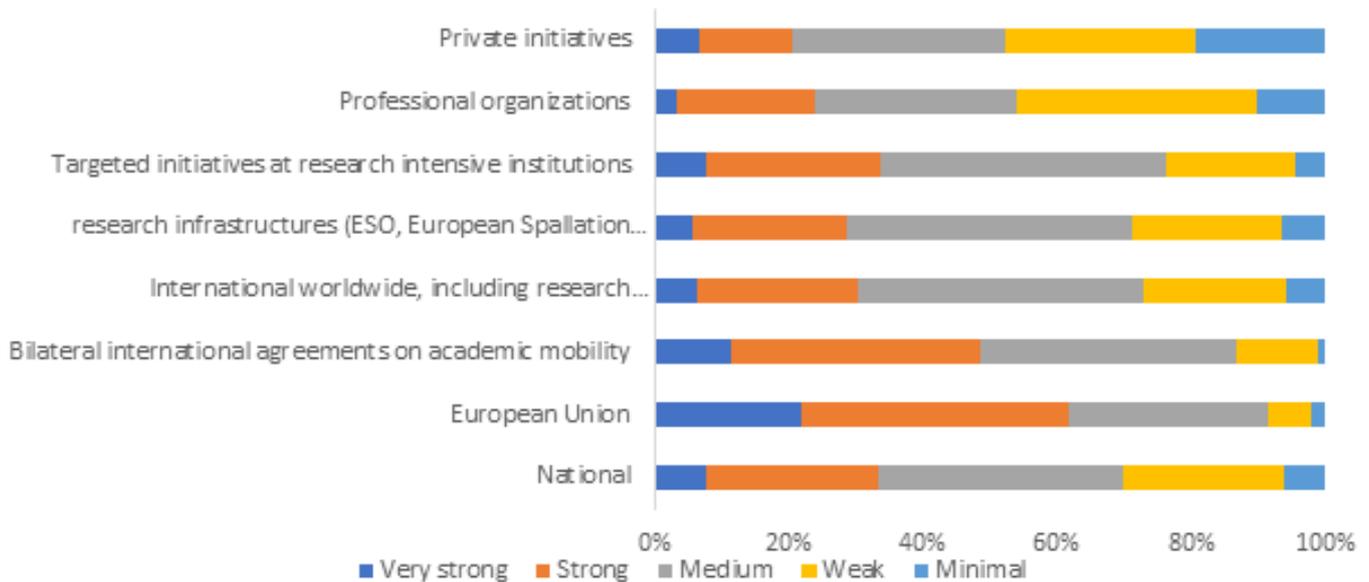
**Figure 22.** Relative distribution frequencies for opinions towards the statement: the effectiveness of the support schemes provided by different actors to encourage incoming mobility



Respondents were asked to rank governmental or institutional support schemes or initiatives and programs according to their impact on (facilitating or enabling) outgoing academic mobility. As in previous section, the support schemes by the EU received highest ranks (very strong and strong) from

administrators. Private initiatives, as well as support from the professional organizations received lowest ranks. Interestingly, international bilateral agreements are named among the strongest support schemes, which resonates well with an opinion by researchers.

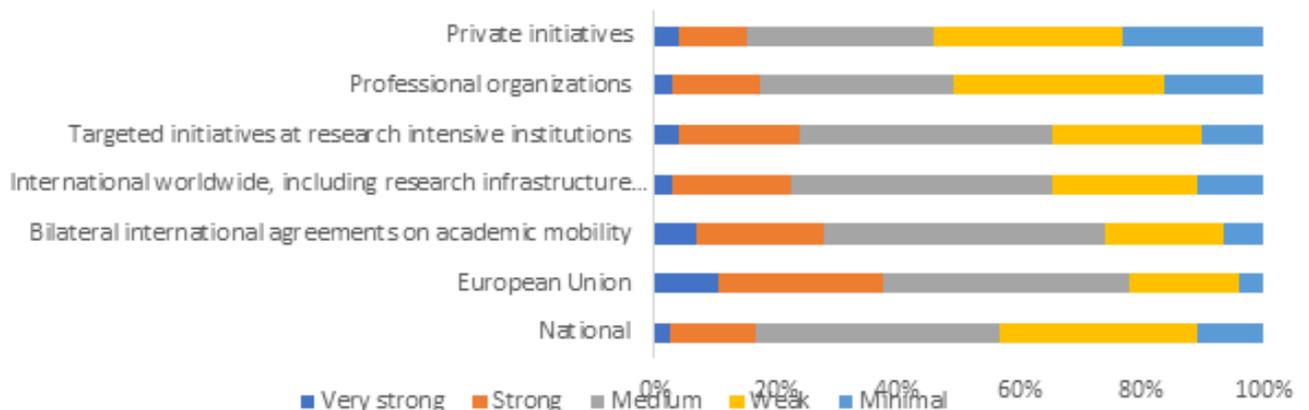
**Figure 23.** Relative distribution frequencies for opinions towards the statement: The effectiveness of the support schemes provided by different actors to encourage outgoing mobility



Respondents were asked to rank governmental or institutional support schemes or initiatives and programs according to their impact on (facilitating or enabling) academic mobility within BSR. The relative frequencies of responses are plotted in Figure 30. The administrators rank EU support schemes as the most influential forms of support. Private initiatives and support from the professional organiza-

tions are considered as relatively weak. Importantly, this data match well with the opinions expressed by the researchers (Figure 24). In general ranks in this section are noticeable lower compared to previous sections, which resonates well with the opinion expressed by the Researchers group of respondents. This indicates a strong need to introduce support measures specifically targeting BSR.

**Figure 24.** Relative distribution frequencies for opinions towards the effectiveness of the support schemes provided by different actors to facilitate mobility of researchers within BSR



## Recommendations

The following recommendations are presented based on a notable scope of sources, namely, the material obtained during BSN national and trans-

national seminars, overview of existing documentation and survey of both researchers and administrators.

### Overview of challenges to researchers' mobility in the BSR

Administrative issues	Instruments and funding	Regional dimension	Cultural or family related -issues
Difficulties of relocation: immigration process and high relocation costs.	Absence of national level measures for attracting talents.	BSR in general is not seen as a priority region for mobility.	Temporary separation of families, relocation of the family members.
Low level of initiatives at the research institution level to attract researchers from other countries.	Absence of the national support programs for outgoing visits.	Asymmetric perception of the BSR as a most important research mobility in country groups I and II.	Integration into different cultural environment, language barriers.
Unfavorable employment regulation at home institutions (absence of sabbatical leave schemes, difficulties related to the employment breaks, difficulties related to the vertical. advancement of researcher, etc.), and intense teaching load, administrative, other duties, preventing long-term research visits.	Difficulties of accessing funds/grants for mobility/research in the country of destination.	Technological differences in research instrumentation and infrastructure amongst institutions in BSR countries creates asymmetric mobility patterns in the region.	
		Research mobility related risks of the brain drain.	

### 10 key challenges and possible solutions

<b>Challenge 1</b>	BSR in general is not seen as a priority region for research mobility by the researchers, as well as by the research policy implementing bodies; including asymmetry perception in of the region in country groups I and II.
Solution	<ul style="list-style-type: none"> <li>• Policy implementing agencies: Bilateral agreements within BSR countries to jointly fund research projects that include bidirectional mobility activities;</li> <li>• Policy implementing agencies: Support schemes for the short-term mobility including conferences, fairs, business/academia meetings aiming at initiation of the bilateral collaborative links specifically targeting BSR;</li> <li>• Policy implementing agencies: Increase of participation in large scale infrastructure activities within the BSR;</li> <li>• State level/ policy implementing agencies/media: Political support and dissemination of the good practices in the media of the BSR countries;</li> </ul>

<b>Challenge 2</b>	Absence of the national level measures for attracting talents to the country through the research mobility schemes
Solution	<ul style="list-style-type: none"> <li>• State level: initiation of the programs for attracting talents from other countries;</li> <li>• Policy implementing agencies/university/institute: initiation or expansion of existing programs aiming at attracting young researchers from abroad;</li> <li>• University level: intensification of participation in international “headhunting” activities, participation in the EU Horizon 2020 (H2020) program (Eurochairs, Teaming, etc.)</li> </ul>

<b>Challenge 3</b>	Low level of initiatives at research institution level to attract researchers from other countries
Solution	<ul style="list-style-type: none"> <li>• Policy implementing body/university/institute: to include international mobility activity indicators into the performance agreement contracts between funding bodies and universities;</li> <li>• University/institute: Introduction of academic mobility requirement for career advance in research institutions (may be a part of the performance agreement)</li> <li>• Policy implementing body: To include international mobility activity indicators into the performance assessment (benchmarking) exercises.</li> </ul>

<b>Challenge 4</b>	Absence of the national support programs for outgoing visits
Solution	<ul style="list-style-type: none"> <li>• State level: bilateral agreements within BSR countries to jointly fund research projects that include bidirectional mobility activities;</li> <li>• Policy implementing agencies: introduction of the support programs by the national funding bodies;</li> <li>• Policy implementing agencies/universities: introduction of the supplemental funding schemes for ongoing research projects specifically supporting outgoing research visits.</li> <li>• Policy implementing agencies/universities: ensuring equal opportunities for women in obtaining funds for outgoing research visits.</li> </ul>

<b>Challenge 5</b>	Difficulties of accessing funds/grants for mobility/research in the country of destination
Solution	<ul style="list-style-type: none"> <li>• Funding agencies: Establishing/simplification of the support schemes for the foreign researchers to access mobility/research funds in the country of destination;</li> <li>• Funding agencies: ensuring equal opportunities for women in obtaining funds for travel and research.</li> </ul>

<b>Challenge 6</b>	Difficulties of relocation: immigration process and high relocation costs
Solution	<ul style="list-style-type: none"> <li>• State level: simplification of the immigration procedures for temporary employment at universities and research institutes in the country of destination</li> <li>• University/institute level: Introduction of the partial or full compensation of the relocation costs, advance payments/reimbursements towards expenditures related to travel and establishment of residence in the country of destination;</li> </ul>

<b>Challenge 7</b>	Integration into different cultural environment, language barriers, history and political system
Solution	<ul style="list-style-type: none"> <li>• University/institute level: counselling services (“how to”), mentorship programs covering both language, religion and political issues;</li> <li>• Local authorities: special educational programs for children coming from the foreign countries;</li> </ul>

<b>Challenge 8</b>	Technological differences in research instrumentation and infrastructure amongst institutions in BSR countries creates asymmetric mobility patterns in the region
Solution	<ul style="list-style-type: none"> <li>• Specific support schemes for incoming in existing centres of excellences in less advanced BSR countries;</li> <li>• Bilateral agreements within BSR countries to fund joint projects that includes bidirectional mobility activities;</li> <li>• Targeted investment in the development of the new centres of excellence in less advanced BSR countries using national and European funds (e.g. EU H2020 measures: Teaming, Twinning, etc)</li> </ul>

<b>Challenge 9</b>	Unfavorable employment regulation at home institutions (absence of sabbatical leave schemes, difficulties related to the employment breaks, difficulties related to the vertical advancement of researcher, etc.), and intense teaching load, administrative, other duties, preventing long-term research visits.
Solution	<ul style="list-style-type: none"> <li>• University level: introduction of sabbatical leave schemes for researchers,</li> <li>• University level: encouraging participation in EU funded programs such as Erasmus which beside teaching may include also research in participating institutions.</li> <li>• Policy implementing body: including international mobility activity indicators into the performance assessment (benchmarking) exercises.</li> </ul>

<b>Challenge 10</b>	Research mobility associated risk of the brain drain
Solution	<ul style="list-style-type: none"> <li>• State level: improving socioeconomic environment in the country, favourable and flexible legislation related to all research issues, including intellectual properties rights, research funding, research related ethical issues, regional development, immigration policy, and others</li> <li>• Policy implementing body: implementing performance based funding, increasing transparency and trust in research funding,</li> <li>• University/institute level: open and equal opportunity employment policy;</li> <li>• University/institute level: initiation of the internal grant, including starting grant system for young researchers;</li> <li>• University/institute level: open access to the research instrumentation and infrastructure policy,</li> <li>• University/institute level: active recruitment policy, measures attracting students from other countries to carry out practice, temporary placement jobs, etc.</li> </ul>