

## Gender and Mobility: Insights into the field of Physics



## 6. Conclusions

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This report has summarized theories and empirical evidence on mobility patterns of female and male scientists. It has done so from three perspectives that were distinguished as mobility and private life, mobility as a synonym of being flexible and the common/different view of mobility and its impact on career development.

Common reasons for scientists to travel are: gaining better career perspectives, participating in outstanding research groups, and potentially working at an institution with a good reputation and with available equipment. Yet, the most frequent reason for a scientist to travel was to extend their international network.<sup>1)</sup> The aspect of networking is of particular importance for the interviewed scientists.

International mobility is associated with a lot of preparatory organization in professional and private life. Moreover, tendencies are observed that mobility for female scientists is harder than for males. Furthermore the female interviewees were opener than the males which (in some cases) did not mention personal obstacles to be mobile.

Main obstacles of being mobile are organizational reasons and a lack of financial resources for research or for being internationally mobile.<sup>2)</sup> Moreover language and/or cultural barriers as well as a lack of support in the home and the host country were identified constraints.

Concerning the relation between the career position and a career progression or regression, it seems that in experimental physics it is more important to be mobile than in theoretical physics. Moreover mobility is a positive factor especially for young scientists. As a young scientist it is important to widen one's professional network, establish contacts to colleagues/experts in the research field, get to know the scientific community and gain personal development. On the other hand it is hard as a new scientist to step into the (international) scientific community.

For senior scientists it is easier to travel because they already have various connections. But a few disadvantages in personal and career development have been determined. Returning home in general can be seen as problematic. It is hard to return back on the same job or the same level in one's home country.

As seen in the sections above, mobility depends on one's situation in life, the professional circumstances and the work environment. Especially within different sub disciplines of physics there are different opinions on mobility. In some cases it actually can have negative outcomes.

Furthermore from a physicist's point of view - different factors foster and hinder mobility. It can, however, not yet be ascertained, to what extent international mobility can be seen as progression or regression of one's scientific career.

At least this report can recommend mobility in terms of knowledge transfer (drain/gain) and

knowledge sharing (networking, collaboration) as an important factor within science and also within physics. Both male and female scientists perceive personal as well as professional development connected with mobility as a progress. Especially for young scientists, travelling is helpful to improve one's image and join the scientific community. Nevertheless, mobility requires a lot of organizational preparation. One's situation in life, one's professional position and the work environment should be considered. An equal position after one's return is not guaranteed, which can be seen as problematic in some career stages.

Summarized, the results of the interviews indicate that being mobile in physics remains necessary. All stays abroad have to be planned and prepared individually and tailored to specific circumstances of the scientists.

## Tailored support and supervisor

The greatest support that was mentioned in the interviews is a central contact / service unit where scientists can come to ask for information. Reasons for this are the very specific needs of every single scientist.

To foster mobility of scientists and in our research interest physicists (female *and* male), there have to be tailored measures and programmes to support them in their individually private and professional stage of life. Studies as well as our interview results have shown that there are specific needs for financial support (e.g. grants, fellowships), organizational support (e.g. dual career service, counselling service), and family support (e.g. childcare) and other general support (e.g. finding accommodation in the host country).

Especially for young scientists, it is a great support to have a supervisor before or when going abroad. On the one hand they can motivate their scientists to go abroad and give them support to better cope with some obstacles. On the other hand they can provide their personal network to find the way around much better (e.g. contact person in the host country).

For a more thorough and complete understanding of mobility patterns related to gender, it is essential to continue and deepen these findings, by including more views and experiences from scientists in the physics field in the scope of an identification of more indicators for being mobile within the physics community in the scope of career progression or regression. Even for different career steps it is important to know about the specific needs they have when they go abroad. Further a study is required on key factors physicists consider when deciding whether or not to go abroad to concrete the general findings from existing studies. The question to be answered is: In which career phase mobility can be seen as a push factor and a career progression? Specific requirements need to be determined and steps need to be taken in individual support of scientists.



1)

DAAD/DZHW, 2016

2)

Appelt, S. et al., 2015; Netz, N., Schirmer, H., 2016

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