



## **EU and non-EU researchers' International mobility: A random intercept proportional odds model**

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For European researchers in higher education institutions (HEI), international mobility is an important feature of their career. European Commission (EC) statistics show that more than half (56%) of all EU27 HEI researchers have experienced international mobility at least once during their research career, 31% of post-PhD researchers in the EU27 have worked abroad (EU or worldwide) at least once during the last ten years, while 17% have been abroad but more than ten years ago.

There are many reasons (quality of training and education, working with leading experts, availability of funds, facilities and equipment, among others) that lead researchers to move to another country, but they are all strictly linked to career perspectives. Indeed, international mobility is associated with positive impacts on the future career progression. EC statistics reveal that female researchers are less mobile than their male counterparts and differences also occur across countries and across all broad scientific domains. The aim of this study is to analyse the effects of international mobility patterns on the EU and non-EU researchers' careers, taking into account individual characteristics and contextual conditions. The analysis is run using dataset from two large-scale surveys: the first one includes more than 10,000 individual researchers currently working in the HEI in the EU and the second one includes more than 4,000 individual researchers currently working in the HEI outside the EU. These surveys have been conducted between 2011 and 2013 years in the twenty-seven Member States plus six Associated and Candidate Countries, and plus the European Free Trade Association Countries, by a consortium of Institutions of research. They have been commissioned and funded by the European Commission to develop a set of internationally comparable indicators on stocks, flows, working conditions and career paths of researchers both in EU and outside EU. These data have a clear hierarchical structure where researchers are nested in countries (or alternatively in scientific domains), hence the use of a multilevel modelling approach is appropriate; moreover, a random effects model can take into account of the unobserved heterogeneity among countries. In particular, a random intercept proportional odds model is used to study the usefulness of the international mobility for the current career, which is self-assessed by researchers along an ordinal scale having three categories, and to determine how the mobility depends on a set of features of the job position of researchers and on a set of individual features.

**Keywords:** career; mobility; multilevel model; proportional odds model.