Examining Post-Graduation Career Plans of International Doctoral Students in the United States

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Abstract
Understanding the career trajectories of PhD recipients is an important topic of investigation, particularly for foreign students who may work in a different country from where their degree was obtained. In the United States, approximately 70% of PhD recipients enter employment in industry, government, or academia upon graduation, while nearly 30% seek further training through a postdoctoral appointment (NCSES, 2019). Over the last decade, post-doctoral appointments have become a more popular option for those who are seeking to transition into academia. The purpose of this research is to examine whether demographic variables and sources of financial support received during doctoral education influences the career decisions of international doctoral students in the United States. A multinomial logistic model and predicted probabilities were employed to examine relationships between primary sources of financial support and choices of faculty versus non-faculty positions – faculty, postdoctoral training, and other employment categories. The post-graduation location has the most significant and robust impact on career plans, with those who will remain in the United States being more likely to choose to work in academia. Plots of predicted probabilities show that research and teaching assistantships have greater influence on those from lower-income countries in choosing faculty positions.

Keywords: Doctoral students, international students, career plans
DOI: 10.7176/JEP/12-20-03
Publication date: July 31st 2021

1. Introduction
Traditionally, doctoral programs have trained students primarily for a career in academia (Agarwal & Sonka, 2010). Non-academic occupations may have similar norms but differ in terms of the work and utilization of the competences acquired through doctoral education (Thune, 2009). The literature in this area has suggested the career preferences of doctorate holders are formed to a certain degree during graduate work, and different factors affect the chosen career path for different fields. Practical experiences during doctoral work (Mangematin et al., 2000) and desire for stable employment (Cruz-Castro & Sanz-Menendez, 2005) tend to affect the choice to work in industry.

Doctoral degree holders who have worked with non-academic objectives and have collaborated with industry through internships during their studies are more likely to be interested in careers outside academia (Gemme & Gingras, 2012; Thune, 2009). Roach and Sauermann (2010) found science and engineering students who prefer industrial employment possess a weaker “taste for science,” a greater concern for salary and access to resources, as well as a stronger interest in downstream work compared to PhD students who prefer academic employment. This evidence suggest that PhD students self-select into employment sectors and, although the decision is made before graduation, these individuals do not consider the role of supply and demand on actual choices of employment.

Bloch et al. (2015) used data from the 2006 Careers of Doctorate Holders (CDH) survey for Denmark to analyze the effect of personal preferences and labor market factors on choice of employment sector. The authors sought to examine the extent to which push-and-pull factors influenced employment choices of doctorate holders, as well as the personal preferences that were most important for this choice. Bloch et al. employed a multinomial logit analysis in which the higher education sector was the reference group. Results indicated preferences for research determined employment in institutions of higher education, business sector R&D, and to a somewhat lesser extent, public sector R&D. Academic discipline generally has affected the decision to embark on postdoctoral fellowships, with those in the sciences tending to accept more fellowships than in other fields. In addition, postdoctoral fellowships encompass significant earning implications. Pederson (2015) found personal characteristics, such as age, gender, having children, and scholarly field, are important in decisions for employment. Mobility both across and within sectors was shown to decrease with age. Gibbs et al. (2014) examined career interest patterns based on social identity (race/ethnicity, gender, and their intersection) and found first-author publication rate, faculty support, research self-efficacy, and graduate research experiences were responsible for differences in career pathway interest between social identity groups.

Studies on doctoral education have researched time-to-degree (Agbonlahor, 2019; Ehrenberg & Marvos, 1995; Dongbin & Otts, 2010, Ferrer de Valero, 2001), race (Ellis, 2001), program characteristics (Ehrenberg et
al., 2007), postdoctoral researchers (Gluck et al., 1987), mentorship (Ku et al., 2008), gender differences (Patrick, Borego & Riegle-Crumb, 2021) and labor market destination (Agbonlahor & Ampaw, 2021; Ugwu & Adumti-Traché, 2017). For doctoral students who study in a country different from their home, the factors that impact domestic student choices may be different from theirs, particularly because they must deal with two economies that impact their financial sources and career sector choices. This study examines the effects of type of funding on career choices of international doctoral recipients using data from the SED and classification of students’ home countries to address the following research questions:

1. Are different sources of financial support related to the career sector choices of international doctoral students?
2. Does the relationship between financial support and post-graduation plans of international doctoral students differ by the student’s home country’s region and income classification?

2. Theoretical Framework

Human capital theory can explain the decision process of international doctoral students. Economists and higher education researchers have used the theory to explain the way in which and the reasons individuals decide to invest in higher education (Becker, 1964). The conceptual framework assumes opportunity costs affect student decisions that impact career sector choices. International doctoral students choose to pursue foreign higher education in anticipation of the expected benefits from the investment, which may be intrinsic and/or extrinsic. Extrinsic benefits consist of the future earnings expected by individuals as they use their education in economic activity (Becker, 1964). The H-1B constraints and immigration laws may affect the career sector choices of international students depending upon whether they prefer to remain in the US or return to their home country. The type of funding received during the doctoral years may influence the category of work performed (research, teaching, etc.), which ultimately impacts career decisions. This is because certain types of funding impact doctoral students’ mentoring and socialization opportunities. For example, students who received research and/or teaching assistantships will work more closely with faculty members and thus, be more prepared for future faculty roles. Doctoral and postdoctoral students who work more closely with faculty members as Graduate Research Assistants (GRAs) obtain more preparation for academic positions. On the other hand, students who relied on internships or government funding will experience less socialization with faculty and may be more likely to choose non-academic positions after graduation. This may differ by discipline, as well as by type of institution and the degree to which doctoral students are integrated within the department. Researchers have studied the different stages of the socialization process, which comprises anticipatory socialization, occupational entry and induction, and the beginning stage of the process of accepting a faculty position (Corcoran & Clark, 1984). Austin and McDaniel (2006) described graduate education functions as a socialization process for students as they prepare for future faculty roles. In this sense, doctoral and postdoctoral experiences serve as periods of anticipatory socialization. Hence, socialization and graduate school experiences in certain funding options have an impact in shaping the desires and choice of career sector upon graduation.

3. Methodology

In order to clarify the relationship between financial sources and the post-graduation plans of international doctoral students, two data sets were incorporated: Survey of Earned Doctorates from the National Science Foundation and the Integrated Postsecondary Education Data System (IPEDS) from the National Center for Education Statistics (NCES).

3.1 Variables

The dependent variable, Post-Graduation Plans, indicated whether students stated they would be working as a faculty member in an institution of higher education, as a postdoctoral researcher, or working for an “Other” type of employer after graduation. The independent variables were categorized into five groups: demographic, academic, financial, external responsibilities, and economic conditions. These demographic variables included gender, age, and first-generation status. The external responsibilities consisted of marital status and dependents. Financial aid variables included loans, assistantships, U.S.-awarded grants, and fellowships and scholarships from the home country.

Institutional-level variables included the Carnegie classification (research institutions R1/R2 and doctoral institutions). The academic variables were coded into seven categories: Biological Sciences, Engineering, Physical Sciences, Social Sciences, Humanities, Education, and Business. Home country region classification followed the World Bank (2017) categorization of seven broad categories: Europe and Central Asia, East Asia and the Pacific, Latin America and the Caribbean, North America, South Asia, and Sub-Saharan Africa. Home country income classification is based on the World Bank’s four categories – High income, Upper-middle-income, Lower-middle-income, and Low-income.
3.2 Analysis
The multinomial logit model was expected to regress the dependent variable of Post-Graduation Plans on the key independent variable of Source of Support and other covariates. Multinomial logit estimation is a variant of the loglinear model and is appropriate when the dependent variable represents a set of discrete categories (Garson, 2016). Because the dependent variable in this study was categorical, multinomial logit models estimated the probability of occurrence in each category (plans to be a faculty member, plans to be a postdoctoral researcher) relative to one base category (plans to obtain a job outside of academia).

4. Results
Table 1 presents the descriptive statistics for the categorical variables. The initial sample consisted of 63% men and 37% women (N=50,000). Students from East Asia comprised 47% of the sample and based on the World Bank classifications, High-income countries accounted for 25% and Upper-middle-income countries 51% of the total population. Forty seven percent of the students were supported by research assistantships, 20% by fellowships, 23% by teaching assistantships, and 4% by foreign government/entities.

| TABLE 1. DESCRIPTIVE STATISTICS FOR DEPENDENT AND INDEPENDENT VARIABLES |
|-----------------------------|-----------------------------|
| **Variable**                | **Mean**                    |
| Post-Graduation Plans       |                             |
| Faculty                     | 37.66                       |
| Postdoctoral researcher     | 53.65                       |
| Other employment            | 8.64                        |
|                            |                             |
| Dependent Variable          |                             |
| Post-graduation location: US| 77.1                        |
| Age                         | 32.22                       |
| Gender: Female              | 37.2                        |
| Parents Education           |                             |
| First generation            | 39.32                       |
| Bachelor’s degree or higher | 60.68                       |
| Region                      |                             |
| Europe and Central Asia     | 12.9                        |
| East Asia and Pacific       | 46.7                        |
| Latin America and the Caribbean | 7.2                       |
| Middle East and North Africa| 8.8                         |
| North America               | 3.1                         |
| South Asia                  | 17.9                        |
| Sub-Saharan Africa          | 3.2                         |
| Economy                     |                             |
| High income                 | 24.7                        |
| Upper-middle income         | 50.8                        |
| Lower-middle income         | 22.1                        |
| Low-income                  | 2.4                         |
| Prior Academic Experience   |                             |
| U.S Bachelors               | 8.8                         |
| U.S Masters                 | 59.1                        |
| Academic Disciplines        |                             |
| Biological sciences         | 18.3                        |
| Engineering                 | 29.3                        |
| Physical sciences           | 25.2                        |
| Social sciences             | 11.2                        |
| Humanities                  | 4.6                         |
| Education                   | 3.5                         |
| Business management         | 3.7                         |
| Others/Non-classified       | 4.0                         |
| Family/External Responsibilities |          |
| Single                      | 43.3                        |
| Dependents                  | 27.9                        |
| Married                     | 59.37                       |
4.1 Findings for Faculty Plans

Table 2 presents the results for doctoral student plans to be faculty. Compared with married students, single students (B = 0.038, ρ < 0.001) were significantly more likely to choose faculty positions. On the other hand, doctoral students with dependents (B = -0.116, ρ < 0.001) and those who obtained their Bachelors’ degree in the United States (B = -0.306, ρ < 0.001) were less likely to choose faculty positions. Contrary to a priori expectations, financial support does not play a significant role in the choice of faculty career for foreign students (again, in comparison to the reference group). For faculty positions, the estimated relationships between the different types of assistantships and post-graduation plans were statistically insignificant except for those supported by foreign governments, who had reduced odds of planning to become faculty members. Researchers (Fernandez, 2019) have found that teaching assistantships significantly increase the odds of wanting to become a faculty member for domestic students (when both were compared to the reference category), but this research finds no statistical significance for their international counterparts. International students differ greatly from their domestic peers in how they experience sources of support and their perception of the job markets both in the United States and in their home countries. The “Loans” category was not statistically significantly related to post-graduation plans to work as faculty or postdoc after graduation.

Compared to their peers from Europe and Central Asia, students from East Asia, Middle East, and North Africa (MENA), South Asia, and Sub-Saharan Africa had higher odds of planning to become faculty members, although the estimated effect is larger for students from East Asia and the Pacific. Compared with students from Upper-middle-income countries, students from High-income countries were less likely to choose faculty positions. We also find significant field/disciplinary differences in the plans of faculty and postdoc positions. Compared to the reference group, we find students from the Biological Sciences and Engineering were more likely to plan to become faculty members while students of the Physical Sciences had reduced odds. An important finding is the role of the anticipated post-graduation location on career sector choices. This is the most robust variable and accounts for the largest estimated effect across all models. We find that those choosing to work in the United States after graduation have greater odds of planning to become faculty members. Finally, doctoral recipients from research institutions (R1/R2) were more likely to plan for faculty positions.

**Table 2.** MULTINOMIAL LOGISTIC ESTIMATION TESTING INTERNATIONAL DOCTORAL RECIPIENTS’ LIKELIHOOD OF HAVING PLANS TO BE FACULTY, REFERENCE: OTHER EMPLOYMENT.

| Independent Variable | By Income | | | By Region | | |
|----------------------|-----------|----------------|-----------|----------------|-----------|
|                      | Coef.     | Std. Err.     | Coef.     | Std. Err.     |
| Gender: Female       | 0.032     | 0.057          | 0.032     | 0.057          |
| Age                  | 0.037***  | 0.007          | 0.035**   | 0.007          |
| Single               | 0.038***  | 0.060          | 0.045***  | 0.060          |
| Dependents           | -0.116*** | 0.069          | -0.151*** | 0.069          |
| Parental education:  | -0.029    | 0.056          | -0.008    | 0.057          |
| First generation     |           |                |           |                |
| U.S. Bachelor’s      | -0.306*** | 0.108          | -0.312*** | 0.108          |
| Master’s degree      | 0.079     | 0.056          | 0.705     | 0.056          |
| Doctoral time-to-degree completion | 0.002 | 0.020 | 0.008 | 0.020 |
| Year of doctorate completion | 0.005 | 0.052 | 0.002 | 0.052 |
| Post-graduation location: United States | 2.008*** | 0.063 | 2.011*** | 0.054 |
| Academic Discipline (Reference: Social Sciences) | | | | |
| Biological Sciences  | 0.213***  | 0.091          | 0.411***  | 0.091          |
| Engineering          | 0.352***  | 0.090          | 0.115***  | 0.090          |
| Physical Sciences    | -0.429*** | 0.085          | -0.437*** | 0.085          |
| Humanities           | -0.243    | 0.124          | -0.195    | 0.125          |
| Education            | 0.138     | 0.168          | 0.127     | 0.168          |
| Business Management  | -0.232    | 0.281          | -0.257    | 0.281          |
By Income

| Independent Variable                                      | Coef.  | Std. Err. | Coef.  | Std. Err. |
|----------------------------------------------------------|--------|-----------|--------|-----------|
| Financial Support (Reference: Others)                    |        |           |        |           |
| Fellowship/grants/scholarships                           | -0.108 | 0.147     | -0.145 | 0.147     |
| Research assistantship                                   | 0.585  | 0.148     | 0.591  | 0.148     |
| Teaching assistantship                                   | 0.139  | 0.150     | 0.137  | 0.151     |
| Foreign government                                       | -0.223*** | 0.170 | -0.218 | 0.172 |
| Loans                                                    | -0.082 | 0.064     | 0.026  | 0.065     |
| Research institutions (Ref: Other institutions)          | 0.319*** | 0.123 | -0.109 | 0.123 |
| Home Country Classification (Reference: High-Income)     |        |           |        |           |
| Upper-middle-income                                      | 0.310*** | 0.067 | -      | -         |
| Lower-middle-income                                      | -0.183 | 0.068     | -      | -         |
| Low-income                                               | 0.164  | 0.171     | -      | -         |
| Home Country Classification (Reference: Europe and Central Asia) |        |           |        |           |
| East Asia and Pacific                                    | -      | -         | 0.257*** | 0.082 |
| Latin America and the Caribbean                          | -      | -         | -0.055 | 0.112     |
| Middle East and North Africa                             | -      | -         | 0.243*** | 0.109 |
| North America                                            | -      | -         | -0.301** | 0.148 |
| South Asia                                               | -      | -         | 0.036** | 0.092     |
| Sub-Saharan Africa                                       | -      | -         | 0.220** | 0.161     |

Note: *p<0.05  **p<0.01  ***p<0.001

4.2 Findings for Postdoctoral Plans

Table 3 presents the results for plans to pursue a postdoctoral position after graduation. Among sources of support, we found that fellowships, research assistantships, and foreign government funding were negatively related to the odds that doctoral students planned to be post-doctoral researchers after graduation (when compared with the reference category, other employment). Amongst the demographic variables we found that single students (B = 0.197, p < 0.001) were significantly more likely to choose postdoctoral positions. Recipients with a U.S. Master’s degree as well those with longer time-to-degree completion were more likely to choose postdoctoral positions. Doctoral recipients from research institutions (R1/R2) were also more likely to plan for faculty positions. In terms of funding, the results are contrary to expectation. We find that students who were funded with a research assistantship (B = -0.471, p < 0.001) and fellowships (B = -0.745, p < 0.001) were less likely to pursue postdoctoral positions (compared to the reference group, other employments). The dataset used for this study does not contain information on postdoctoral earnings in these countries. Hence, it is difficult to speculate the reasons and motivations of the students.

For plans of becoming a post-doctoral researcher, students from East Asia and MENA were more likely to choose postdoc positions while students from South Asia had lower odds of choosing post-doc positions (compared to the reference group, other employments). Compared with students from high-income countries, students from upper-middle-income countries, lower-middle-income countries and low-income countries were less likely to pursue a postdoctoral position after graduation. Students from the STEM disciplines (Biological Sciences, Engineering, and Physical Sciences) have reduced odds of planning for post-doctoral research positions while their peers in the Business and Education fields have higher odds of choosing post-doc positions. Just like with choice of faculty positions, we find that those choosing to work in the United States after graduation have greater odds of planning to work postdoctoral positions.
### TABLE 3.
MULTINOMIAL LOGISTIC ESTIMATION TESTING INTERNATIONAL DOCTORAL RECIPIENTS’ LIKELIHOOD OF HAVING PLANS TO BE A POST-DOCTORAL RESEARCHER, REFERENCE: OTHER EMPLOYMENT.

| Independent Variable | By Income |          | By Region |          |
|----------------------|-----------|----------|-----------|----------|
|                      | Coef.     | Std. Err.| Coef.     | Std. Err.|
| Gender: Female       | -0.033    | 0.056    | -0.021    | 0.056    |
| Age                  | -0.011    | 0.007    | -0.005    | 0.007    |
| Single               | 0.197***  | 0.058    | 0.199***  | 0.058    |
| Dependents           | -0.357    | 0.067    | -0.108*** | 0.068    |
| Parental education: First generation | 0.001 | 0.055 | 0.027 | 0.055 |
| U.S. Bachelor’s degree | 0.789 | 0.102 | 0.137 | 0.102 |
| U.S. Master’s degree | 0.439*** | 0.055 | 0.436*** | 0.055 |
| Doctoral time-to-degree completion | 0.289*** | 0.019 | 0.036 | 0.019 |
| Year of doctorate completion | 0.050 | 0.051 | 0.049 | 0.051 |
| Post-graduation location | 1.237*** | 0.058 | 1.261*** | 0.057 |
| Academic Discipline (Reference: Social Sciences) |  |  |  |  |
| Biological Sciences | -0.846*** | 0.091 | -0.827*** | 0.091 |
| Engineering          | -0.077**  | 0.087 | -0.567*** | 0.087 |
| Physical Sciences    | -0.689*** | 0.082 | -0.669*** | 0.081 |
| Humanities           | -0.221    | 0.118 | -0.146    | 0.119 |
| Education            | 0.517***  | 0.159 | 0.546***  | 0.159 |
| Business Management  | 1.738***  | 0.253 | 1.723***  | 0.253 |
| Financial Support (Reference: Others) |  |  |  |  |
| Fellowship/grants/scholarships | -0.745*** | 0.139 | -0.739*** | 0.140 |
| Research assistantship | -0.471*** | 0.140 | -0.486*** | 0.141 |
| Teaching assistantship | -0.152 | 0.143 | -0.145 | 0.143 |
| Foreign government   | -0.365*** | 0.159 | -0.299*** | 0.162 |
| Loans                | -0.035    | 0.063 | 0.158     | 0.063 |
| Research institutions (Ref: Doctoral institutions) | 0.298*** | 0.122 | 0.291*** | 0.123 |
| Home Country Classification (Reference: High-Income) |  |  |  |  |
| Upper-middle-income  | -0.206*** | 0.065 |          |         |
| Lower-middle-income  | -0.611*** | 0.068 |          |         |
| Low-income           | -0.660*** | 0.174 |          |         |
| Home Country Classification (Reference: Europe and Central Asia) |  |  |  |  |
| East Asia and Pacific |          | 0.575*** | 0.079 |         |
| Latin America and the Caribbean |      | 0.195 | 0.108 |         |
| Middle East and North Africa |    | 0.325*** | 0.106 |         |
| North America        |          | 0.013 | 0.140 |         |
| South Asia           |          | -0.224*** | 0.091 |         |
| Sub-Saharan Africa   |          | 0.165 | 0.159 |         |

*Note* *ρ ≤ 0.05 **ρ ≤ 0.01 ***ρ ≤ 0.001

5. Discussion and Conclusion

To further address the research questions, Figures 1 and 2 present plots of predicted probabilities for interaction terms between region/home country wealth and source of support. All the predicted probabilities were statistically significant at the p < 0.001. Figure 2 and Table 4 (found in the Appendix) present predictions from the model for the probability of planning to work as a faculty member for the home country classifications with the various sources of financial support. Similarly, Figures 3-4 and Table 5 (found in the Appendix) present predicted probabilities for planning to work as a post-doctoral researcher for the various interactions between Home Country classification and Source of Support. The purpose of the plots is to show graphically whether the relationship between financial sources of support and post-graduation plans follows a similar pattern for international doctoral students.

The plots of predicted probabilities show that the interaction of research assistantships and students from low-income countries have the largest estimated effect on post-graduation plans to be faculty. The prediction for planning to work as a faculty member was highest among students from North America whose primary source of support were loans. Financial sources of support have a similar pattern of predicted probabilities amongst the international students as a group. This study contributes to the literature by empirically testing the relationship between different sources of funding and the post-graduation plans of international doctoral students.
Additionally, the findings are relevant to scholars and policymakers who are interested in leveraging funding to increase the representation of students from poorer countries who pursue faculty or research careers.

This nuanced understanding of post-graduation plans among international PhD recipients provides important points of consideration. This research was limited by the self-report nature of the SED dataset and the collection of the data prior to graduation. Thus, the difference between intended and actual career plans are unknown. However, this examination provides several important implications and directions for future research. Institutions of higher education must understand the impact of funding on their PhD recipients’ post-graduation career plans as they relate to employability. Additionally, it is important for institutions to consider the ways in which country of origin, financial support, and academic discipline intersect with post-graduation career plans in academia, government, and industry.

Future research could examine the PhD advisor relationship in addition to the factors already studied in this research and how they impact career plans. Future research could also use primary data to include the socioeconomic status of the student. This research is only able to capture the economic rating of the country and first-generation status. Additionally, more research is needed in understanding the motivations for pursuing postdoctoral training versus accepting a position in industry post-graduation, particularly as it relates to students from low-income countries and minority students amongst the international student population. In this regard, a qualitative research design could further investigate the underlying factors that go into their decision-making process. Graduate program directors may consider the types of funding awarded to international students and how they align with their career goals.

**Figure 1.**

![Predictive Probabilities: Plans to be Faculty (BY INCOME)](image1)

**Figure 2.**

![Predicted Probabilities: Plans to be Post-Doc (BY INCOME)](image2)
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**Appendix**

**TABLE 4.**

| Financial support#Income or Region of Home Country | Margin | Std. Err. |
|--------------------------------------------------|--------|-----------|
| **Primary source#BYINCOME**                     |        |           |
| Fellowship#High-income                          | 0.370*** | 0.012     |
| Fellowship#Upper-middle-income                  | 0.374*** | 0.011     |
| Fellowship#Lower-middle-income                  | 0.453*** | 0.016     |
| Fellowship#Low-income                           | 0.397*** | 0.045     |
| Teaching assistantship#High-income              | 0.319*** | 0.013     |
| Teaching assistantship#Upper-middle-income      | 0.285*** | 0.009     |
| Teaching assistantship#Lower-middle-income      | 0.416*** | 0.013     |
| Teaching assistantship#Low-income               | 0.622*** | 0.034     |
| Research assistantships#High-income             | 0.409*** | 0.011     |
| Research assistantships#Upper-middle-income     | 0.350*** | 0.006     |
| Research assistantships#Lower-middle-income     | 0.417*** | 0.010     |
| Financial support Income or Region of Home Country | Margin   | Std. Err. |
|-----------------------------------------------|----------|-----------|
| Research assistantships Low-income           | 0.627*** | 0.032     |
| Loans High-income                             | 0.356*** | 0.070     |
| Loans Upper-middle-income                     | 0.287    | 0.083     |
| Loans Lower-middle-income                     | 0.514*** | 0.095     |
| Loans Low-income                              | 0.436    | 0.148     |
| Foreign government High-income                | 0.238*** | 0.020     |
| Foreign government Upper-middle-income        | 0.288*** | 0.017     |
| Foreign government Lower-middle-income        | 0.467*** | 0.050     |
| Foreign government Low-income                 | 0.000    | 0.000     |
| Others High-income                            | 0.246*** | 0.019     |
| Others Upper-middle-income                    | 0.230*** | 0.021     |
| Others Lower-middle-income                    | 0.356*** | 0.032     |
| Others Low-income economies                   | 0.274*** | 0.079     |

**Primary source BY REGION**

| Fellowships Europe and Central Asia | 0.420*** | 0.017 |
| Fellowships East Asia and Pacific    | 0.365*** | 0.011 |
| Fellowships Latin America and the Caribbean | 0.339*** | 0.021 |
| Fellowships Middle East and North Africa | 0.364*** | 0.022 |
| Fellowships North America            | 0.372*** | 0.028 |
| Fellowships South Asia               | 0.465*** | 0.018 |
| Fellowships Sub-Saharan Africa       | 0.351*** | 0.033 |
| Teaching assistantships Europe and Central Asia | 0.318*** | 0.017 |
| Teaching assistantships East Asia and Pacific | 0.284*** | 0.009 |
| Teaching assistantships Latin America and the Caribbean | 0.283*** | 0.022 |
| Teaching assistantships Middle East and North Africa | 0.380*** | 0.022 |
| Teaching assistantships North America  | 0.275*** | 0.036 |
| Teaching assistantships South Asia     | 0.449*** | 0.015 |
| Teaching assistantships Sub-Saharan Africa | 0.371*** | 0.031 |
| Research assistantships Europe and Central Asia | 0.413*** | 0.016 |
| Research assistantships East Asia and Pacific | 0.354*** | 0.006 |
| Research assistantships Latin America and the Caribbean | 0.367*** | 0.021 |
| Research assistantships Middle East and North Africa | 0.414*** | 0.015 |
| Research assistantships North America  | 0.277*** | 0.037 |
| Research assistantships South Asia      | 0.428*** | 0.010 |
| Research assistantships Sub-Saharan Africa | 0.440*** | 0.030 |
| Loans Europe and Central Asia           | 0.287    | 0.095     |
| Loans East Asia and Pacific             | 0.303    | 0.118     |
| Loans Latin America and the Caribbean   | 0.313    | 0.111     |
| Loans Middle East and North Africa      | 0.505    | 0.153     |
| Loans North America                     | 0.283    | 0.130     |
| Loans South Asia                        | 0.462*** | 0.177     |
| Loans Sub-Saharan Africa                | 0.430*** | 0.089     |
| Foreign government Europe and Central Asia | 0.315*** | 0.035 |
| Foreign government East Asia and Pacific | 0.200*** | 0.021 |
| Foreign government Latin America and the Caribbean | 0.306*** | 0.029 |
| Foreign government Middle East and North Africa | 0.290*** | 0.022 |
| Foreign government North America        | 0.359*** | 0.100     |
| Foreign government South Asia           | 0.522*** | 0.103     |
| Foreign government Sub-Saharan Africa   | 0.420    | 0.121     |

Note ***p<0.001
TABLE 5.
PREDICTED PROBABILITY FOR PLANS TO BE A POSTDOCTORAL RESEARCHER FOR HOME COUNTRY CLASSIFICATION*FINANCIAL SUPPORT, 2010-2015.

| Financial support#Income or Region of Home Country | Margin | Std. Err. |
|---------------------------------------------------|--------|-----------|
| **Primary source#BY INCOME**                      |        |           |
| Fellowship#High-income                            | 0.507*** | 0.012     |
| Fellowship#Upper-middle-income                    | 0.540*** | 0.011     |
| Fellowship#Lower-middle-income                    | 0.423*** | 0.016     |
| Fellowship#Low-income                             | 0.515*** | 0.046     |
| Teaching assistantship#High-income                | 0.603*** | 0.014     |
| Teaching assistantship#Upper-middle-income        | 0.659*** | 0.009     |
| Teaching assistantship#Lower-middle-income        | 0.511*** | 0.013     |
| Teaching assistantship#Low-income                 | 0.441*** | 0.033     |
| Research assistantships#High-income               | 0.498*** | 0.012     |
| Research assistantships#Upper-middle-income       | 0.592*** | 0.006     |
| Research assistantships#Lower-middle-income       | 0.499*** | 0.010     |
| Research assistantships#Low-income                | 0.378*** | 0.031     |
| Loans#High-income                                  | 0.596*** | 0.071     |
| Loans#Upper-middle-income                         | 0.605*** | 0.088     |
| Loans#Lower-middle-income                         | 0.447*** | 0.094     |
| Loans#Low-income                                   | 0.472    | 0.143     |
| Foreign government#High-income                    | 0.642*** | 0.022     |
| Foreign government#Upper-middle-income            | 0.607*** | 0.019     |
| Foreign government#Lower-middle-income            | 0.379*** | 0.048     |
| Foreign government#Low-income                      | 0.617    | 0.316     |
| Others#High-income                                 | 0.702*** | 0.020     |
| Others#Upper-middle-income                        | 0.707*** | 0.023     |
| Others#Low-middle-income                          | 0.555*** | 0.032     |
| Others#Low-income                                  | 0.575*** | 0.084     |
| **Primary source#BY REGION**                      |        |           |
| Fellowships#Europe and Central Asia                | 0.453*** | 0.017     |
| Fellowships#East Asia and Pacific                  | 0.548*** | 0.012     |
| Fellowships#Latin America and the Caribbean       | 0.542*** | 0.022     |
| Fellowships#Middle East and North Africa          | 0.511*** | 0.023     |
| Fellowships#North America                         | 0.496*** | 0.028     |
| Fellowships#South Asia                            | 0.427*** | 0.018     |
| Fellowships#Sub-Saharan Africa                    | 0.536*** | 0.035     |
| Teaching assistantships#Europe and Central Asia    | 0.594*** | 0.017     |
| Teaching assistantships#East Asia and pacific     | 0.665*** | 0.010     |
| Teaching assistantships#Latin America and the Caribbean | 0.653*** | 0.023     |
| Teaching assistantships#Middle Eastern and North Africa | 0.571*** | 0.022     |
| Teaching assistantships#North America              | 0.606*** | 0.038     |
| Teaching assistantships#South Asia                 | 0.475*** | 0.015     |
| Teaching assistantships#Sub-Saharan Africa        | 0.587*** | 0.032     |
| Research assistantships#Europe and Central Asia   | 0.497*** | 0.016     |
| Research assistantships#East Asia and pacific     | 0.588*** | 0.007     |
| Research assistantships#Latin America and the Caribbean | 0.540*** | 0.022     |
| Research assistantships#Middle Eastern and North Africa | 0.520*** | 0.015     |
| Research assistantships#North America             | 0.609*** | 0.040     |
| Research assistantships#South Asia                 | 0.482*** | 0.011     |
| Research assistantships#Sub-Saharan Africa        | 0.484*** | 0.030     |
| Loans#Europe and Central Asia                      | 0.570*** | 0.101     |
| Loans#East Asia and Pacific                        | 0.697*** | 0.118     |
| Loans#Latin America and the Caribbean              | 0.559*** | 0.116     |
| Loans#Middle East and North Africa                 | 0.495    | 0.153     |
| Loans#North America                                | 0.717*** | 0.130     |
| Loans#South Asia                                   | 0.538    | 0.177     |
| Loans#Sub-Saharan Africa                          | 0.500*** | 0.089     |
| Foreign government#Europe and Central Asia         | 0.561*** | 0.037     |
| Foreign support (Income or Region of Home Country) | Margin   | Std. Err. |
|--------------------------------------------------|----------|-----------|
| Foreign government-East Asia and Pacific         | 0.676*** | 0.025     |
| Foreign government-Latin America and the Caribbean| 0.556*** | 0.032     |
| Foreign government-Middle East and North Africa  | 0.619*** | 0.024     |
| Foreign government-North America                 | 0.471*** | 0.101     |
| Foreign government-South Asia                    | 0.388*** | 0.100     |
| Foreign government-Sub-Saharan Africa             | 0.580*** | 0.121     |

Note: ***p<0.001