



**MAPPING THE POPULATION, CAREERS,
MOBILITIES AND IMPACTS OF ADVANCED
DEGREE GRADUATES IN THE SOCIAL SCIENCES
AND HUMANITIES (POCARIM)**

Policy Report 2

**Predictors of Unemployment of PhD Graduates in
Social Sciences and Humanities**

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Background: The POCARIM Project

This policy report is part of the larger POCARIM Project (Mapping the Population Carriers, Mobilities and Impacts of Advanced Research Degree Graduates in Social Sciences and Humanities), funded under the 7th European Framework. The project sample consists of doctoral graduates in the social sciences and humanities who received their degrees between 2000 and 2012 in 13 countries (France, Germany, Hungary, Italy, Latvia, Norway, Poland, Portugal, Slovakia, Spain, Switzerland, Turkey, and the UK). The project aims to understand the SSH doctoral populations with a particular focus on their mobilities across disciplines, sectors and borders; to understand the impact, engagement and contribution of SSH research; and to identify employment trends of SSH PhD graduates.

Two important objectives of the POCARIM project are the assessment of the career paths and the impacts of PhD graduates who obtained their degrees in the social sciences or humanities. This report focuses on the former objective and aims to address unemployment of SSH PhD graduates to understand demographic as well as contextual factors leading to experience of periods of unemployment of SSH PhD graduates in different countries. Accordingly, some policy implications are discussed and recommendations are provided.

Methods

POCARIM Project consisted of two phases. Each phase was coordinated by a key partner and carried out across all 13 partners.

In the first phase, a literature search was conducted about the themes of the project, such as employment trends, career paths and impact of SSH doctorate graduates. Policy approaches to interdisciplinarity, doctoral education as the first phase of an academic career, and responses to the economic crisis in terms of funding of doctoral education were reviewed. Moreover, existing statistical data sources were checked.

In the second phase, an online survey was distributed to over 2,500 SSH doctorate graduates. The survey addressed key themes of the project, including perceived impacts of respondents' work, and their international, intersectoral and interdisciplinary mobilities. Following the survey, in-depth interviews were conducted with 25 respondents in each of the 13 POCARIM countries.

Unemployment among SSH PhD graduates

Unemployment is an important concern mainly for individual researchers, but also for policy-making. It interests not only policy makers, but also funding bodies, state organizations and stakeholders at the national and European level. Amount of funds that are directed to SSH populations depend on the productivity and impact of these people and if unemployment is the outcome of a PhD degree, policies and practices need to be reconsidered to fit the needs of SSH PhD graduates as well as other bodies.

Given that support for the humanities and social sciences are relatively low in broader society, with fewer funds and tenure-track positions, some of the SSH graduates experience job crisis in their career paths. Unemployment in the POCARIM survey has been conceptualized as experience of periods of unemployment since completing PhD degrees. This report addresses the predictors of unemployment of SSH PhD graduates to see if demographics of the current sample, their disciplines and international activities as well as mobilities predict their experience of unemployment.

There has been sparse research in the literature about employment trends of SSH PhD graduates. A recent OECD survey (OECD, 2010) indicated that people graduating in the field of humanities face the highest level of unemployment in most investigated countries, and people in social sciences also

face usually higher-than-average rates among PhDs. Besides experiencing unemployment, a considerable number of SSH PhD graduates also have uncertainties in getting a proper position, obtain a temporary versus permanent contract or take on a lower-level job.

The issue of impact has been a more attractive topic in the field of social sciences and humanities than SSH PhD graduates themselves (Bakhshi et al., 2009; Ackers et al., 2010). Utilization of research results for the benefit of organizations, national and global society has been the main emphasis (Jeffrey, 2010). Therefore, one aim of this report is to shift the focus from impact to SSH PhD graduates themselves and observe predictors of their unemployment.

Some studies in Italy (one on the political sciences and one on PhD graduates from Northern Italy) have found that PhD graduates had difficulties finding academic and suitable non-academic employment (Graziano 2006; Ballarino & Colombo 2010). Necessity of PhD degree in academic or non-academic jobs, in public or private sectors has been a topic of discussion and debate in some countries. However, unemployment experience of SSH PhD graduates has not been a direct focus of attention. In order to fill this gap, this report addresses predictors of unemployment among SSH PhD graduates.

Higher education and postgraduate research training have been considered as an investment that would have social and economic returns. Therefore, policy makers sought ways to stimulate this investment through promoting mobility of researchers between disciplines, sectors and geographical borders, which would increase the chances of SSH doctorate graduates to find jobs.

Relevant policy reports on national and European level stress the importance of encouragement of graduate and doctoral schools to have trans- and interdisciplinarity, strong European dimension, backing from public authorities and from industry, recognized areas of excellence and quality assurance. All the policies aim to make Europe the most dynamic and competitive knowledge-based economy in the world capable of economic growth with more and better jobs and greater social cohesion (POCARIM draft final report, 2014).

The review of existing policy provides information in three areas: policy responses to economic constraints that may have an impact on the funding of doctoral candidates; doctoral education as the entrance to a professional career of early stage researchers; and policy responses to interdisciplinarity. The review of existing policies at national level within countries participating in the POARIM project did not provide much information about unemployment issue of SSH PhD graduates. Policies and programs are mostly directed towards understanding and measuring impact instead of understanding the reasons of unemployment. Nonetheless, policies targeting international mobility and international activities can be considered as endeavors to increase the likelihood of being employed.

POCARIM survey results

The POARIM survey was accessed by 4928 people and completed by 2723 people. In the sample there were 47% of males and 52% of females (with the remaining 1% of respondents not replying to the question on gender).

In the POARIM sample, 70% of respondents obtained their PhD degree in social sciences, 28% in humanities and 3% indicated that their PhD was multidisciplinary; the most important sub-discipline was economics and business (20.5% of respondents), followed by languages and literature (8.9%), sociology (8.6%) and education (8.2%). Ninety one percent of the surveyed sample were in paid employment or had received a fellowship, and another

5% were self-employed. Thus, the unemployment level in the POCARIM sample is well below the average overall unemployment level in the EU in the recent months (12% in February 2013; Eurostat, 2012). On average, 76% of the POCARIM respondents currently work in the public sector. 18% work in the private sector and 3% in the third sector.

POCARIM project asks questions concerning the first and subsequent jobs after the award of the PhD (up to five jobs in addition to the current one) and unemployment experience both as having periods of unemployment and number of months unemployed.

Our analysis takes demographic variables, disciplinary, partner employment and residency-PhD match, as well as international activities and international mobility into consideration for predicting experience of periods of unemployment. Descriptive statistics of the sample with relevant variables are provided below (Table 1).

Table 1. Sample Characteristics

	Total (N=2054)	Women	Men (N=946)
Sample Characteristics (%)			
Marital status			
Married	78.8	76	81.8
Have children	56.1	55.5	56.8
Partner employment			
In research career	16.7	18.2	14.9
Not in research	46.7	48.1	44.8
Unemployed	4.4	3.7	5.3
Discipline			
Social sciences	69.5	70.2	68.6
Humanities	27.6	26.9	28.5
Multidisciplinary	2.9	2.9	2.9
Residency-PhD match	78.6	81.7	75.3
Unemployment	22.3	22.4	22.0
Employment			
Full-time	83.5	79.8	87.8
Part-time	11.2	14.6	7.2
International			
Always	8.6	8.2	9.0
Regular	27.4	24.6	30.8
Occasional	40.3	40.7	39.6
No	23.8	26.5	20.6
International mobility			
Often	27.6	23.1	32.3
Regularly	32.0	32.5	31.9
Rarely	13.8	14.7	12.6
Once	6.0	6.7	5.4
Never	20.6	23.0	17.8
Short stays			
Once	16.7	16.0	17.7
1-3 times	0	0	0
More than 3	5.1	5.6	4.4
Never	78.3	78.5	77.9
Long stays			
Once	8.1	7.6	8.7
More than once	1.9	1.8	2.0
Never	90	90.6	89.3

Note. The current sample size is smaller than the original sample, because samples from each country are matched in size for the purposes of the current study.

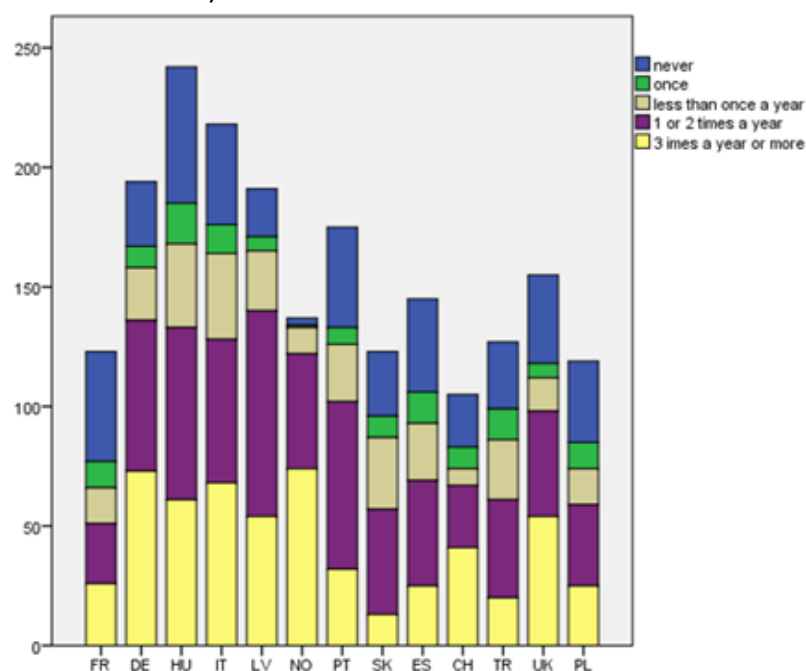
Demographic characteristics of PhD graduates in social sciences and humanities in POCARIM countries

Demographic variables in the POCARIM data might indicate some characteristics of respondents who experienced unemployment since they earn their PhD degrees. The proportion of women PhD graduates varies markedly by SS discipline in most POCARIM countries. Males make 47%, females make 52% of the whole POCARIM sample (with the remaining 1% of respondents not replying to the question on gender). The sample used for this report is smaller than the total sample in order to have matched number of people from each 13 POCARIM countries, but the male female ratio is the same. Seventy nine percent of the respondents are married and more than half of the respondents have children. Most of the respondents have partners working either in academic or non-academic labor market. Seventy nine percent of the respondents earned their PhDs from their usual country of residence.

International activities and international mobilities

Whether international activities, such as collaboration, short-term and long-term stays can facilitate access to international networks was a response to difficult labor market conditions. These variables can also be predictors of unemployment. The internationalization and mobility of doctoral candidates has become part of institutional strategies in most countries. In the current POCARIM sample, almost 80 % of the respondents travelled to other countries for professional purposes, such as conferences, consultancy, business trips, meetings with collaborators, study visits, training not exceeding one month.

Figure 1. Frequency of international mobility of respondents by POCARIM country



The frequency of mobility varies between the countries with 54 % of doctors from Norway going abroad three times a year or more, and 37 % of doctors from France never travelling abroad for professional purposes.

The percentages are lower in medium-term and long-term mobility. Only 22 % of respondents moved to another country for the purpose of work for a period longer than a month (short stay, including fixed-term contracts, posted work, study visits, research visits and lectureships) and Italy

has the highest percentage of doctors having medium-term mobility. Ten percent of respondents stayed abroad longer than a year (long stay for the purposes of contracts abroad, posted work and post docs), respectively. Seventeen percent of doctors from Germany and 15 % of doctors from Switzerland had long stays more than once.

Figure 2. Frequency of medium-term mobility of respondents by POCARIM country

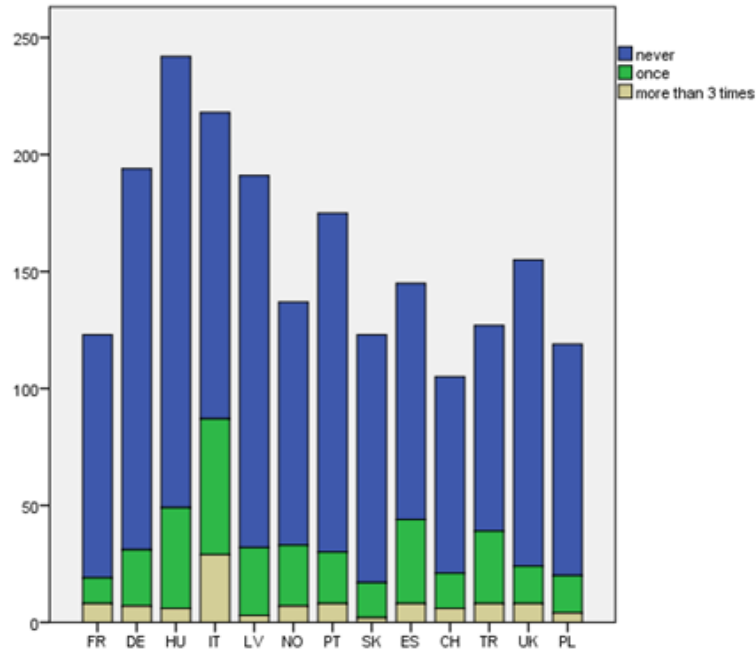
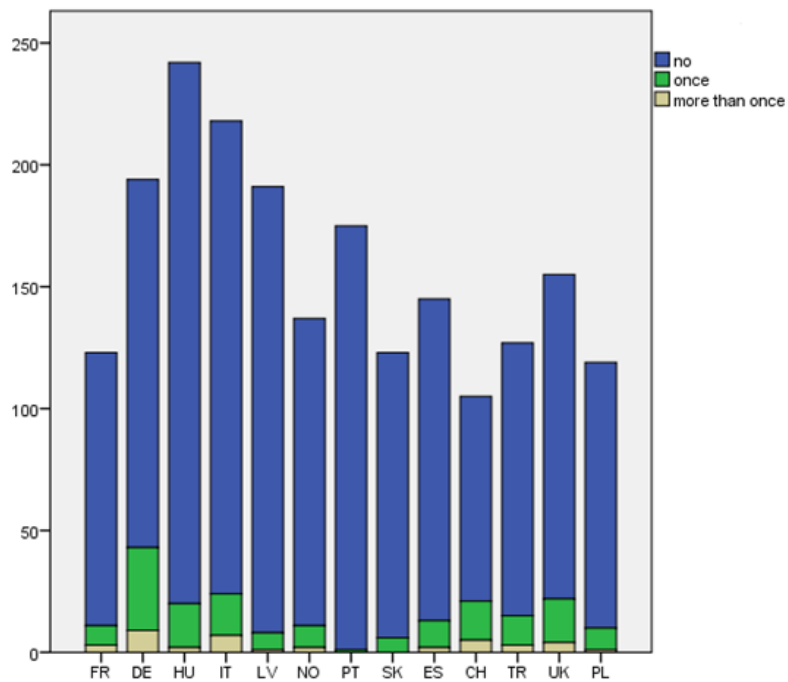
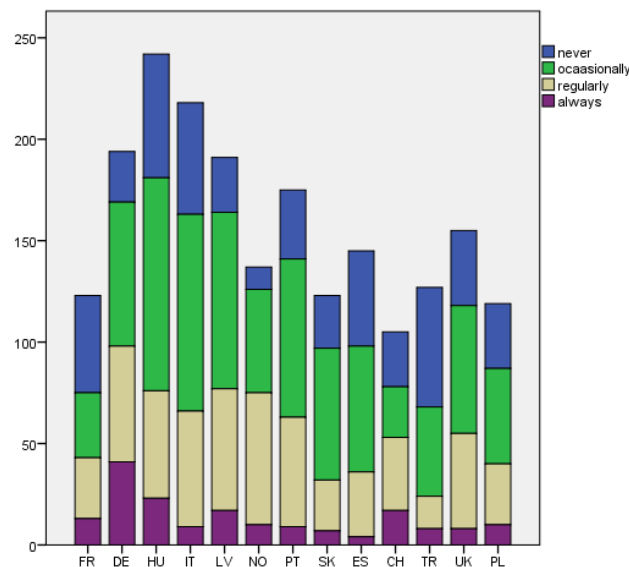


Figure 3. Frequency of long-term mobility of respondents by POCARIM country



With respect to international collaboration, the majority of respondents were occasionally in contact with partners abroad, followed by a large minority who were in regular contact with partners abroad, and also quite a large minority who were never in contact with partners abroad. There were important differences between countries. The most active PhD holders in terms of international collaboration are those who obtained a PhD in Norway (55% of doctors work regularly or always with partners abroad) and Switzerland and Germany (51% in each). The least active countries in terms of international collaboration include Turkey, Spain, Italy and Hungary. Eighty percent of interviewees who completed their PhD in Turkey, 75% in Spain 69% in Italy and 68% in Hungary only occasionally or never work with partners from abroad.

Figure 4. Frequency of international collaboration of respondents by POCARIM country



Career paths and employment trends

Social sciences and humanities PhD holders' career paths include measures of employment and unemployment. In the current sample, 22% of the respondents have had periods of unemployment since earning their PhD degrees. Arrangements in the job market of the countries differ, so periods of unemployment after PhD might vary, as well.

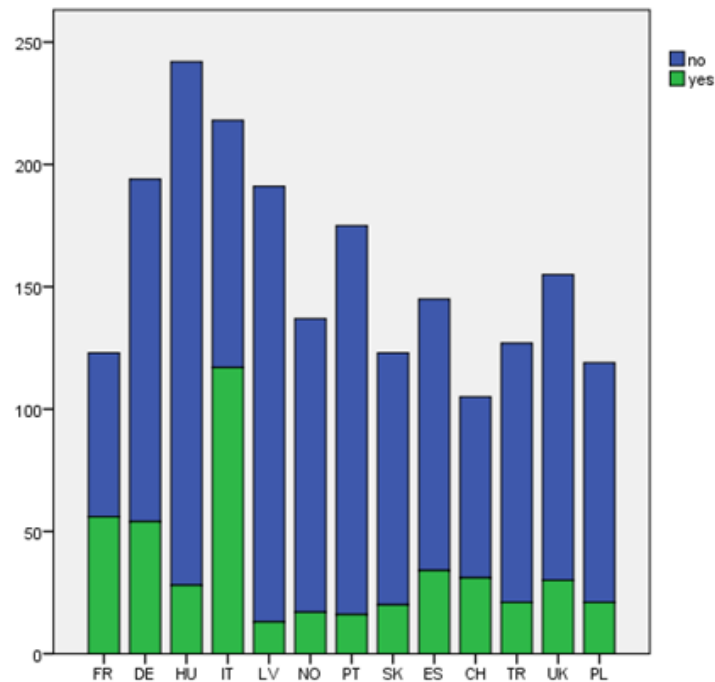
Most of the surveyed SSH doctors in the POCARIM countries work in the public sector. They are typically employed by higher education and research institutions. Over half of them have permanent contracts and four out of five work full-time.

Eighty four percent of the respondents have full-time employment in their current jobs. On average in the POCARIM countries, 80 % of the surveyed SSH doctors had full-time employment in their first job. In most countries the proportion of respondents with a full-time current contract was above 90 per cent, with the highest percentage in Turkey (97 %), Poland and Norway (96 %) and Portugal (95 %) However, in a few countries this share was significantly lower: only 41 % in Switzerland and 77 % in Germany and Latvia.

Experience of being unemployed concerns on average 22.5 % of SSH doctors surveyed in POCARIM, but varies from country to country, with Italy having the largest share of those with unemployment experience (56 %), followed by France (46 %). In new EU member states, Norway, Portugal, the UK and Turkey no more than one in five experienced

unemployment. As noted earlier, such discrepancies most likely arose due to varied institutional arrangements on the job market, especially on the academic job market of the countries concerned. Nonetheless, it is important to note that these numbers represent the POCARIM sample, not the individual countries as a whole; so characteristics of the sample need to be taken into account when interpreting the percentages of unemployment experience in POCARIM countries.

Figure 5. Frequency of experience of unemployment since PhD in POCARIM countries



Sex does not differentiate the share of those who experienced unemployment, but the discipline does: Sixty four percent of social sciences graduates, 32% of humanities graduates, and 4% of multidisciplinary graduates (though they are smallest in number) have had periods of unemployment since earning their PhD degrees.

Predictors of unemployment

The main research question in this report is as follows: What are the factors correlating with unemployment experience among SSH PhD graduates in POCARIM countries?

In order to find the predictors of having such unemployment periods, we conducted a logistic regression analysis. Variables used in the analysis are periods of unemployment, international collaboration, international mobility for professional purposes (short-, medium- and long-term), discipline, marital status, having children, partner employment and residence - PhD country match.

Logistic regression results revealed that international mobilities and activities, discipline, partner employment and residence-PhD country match have an effect on the experience of unemployment. Some of the effects are smaller compared to others, but still explain the variance in unemployment.

Among demographic variables, having children (no matter how many) has a negative effect on unemployment. Compared SSH graduates who have no children, those who have one,

two and more than two are 0.598, 0.413 and 0.291 times, respectively, less likely to have had periods of unemployment since completing their PhD.

Compared to SSH graduates who have partners in research career, those whose partners are unemployed are 1.778 times more likely to have had periods of unemployment since completing their PhD.

With respect to long-term mobility, compared to SSH graduates who had never been in another country for the purpose of work for a period longer than a year, those who have moved to another country once are 2.860 times more likely to have had periods of unemployment since completing their PhD. This finding seems contrary to what is expected and is open to speculation.

International collaboration has a positive effect on employment. Compared to SSH graduates who had never collaborated in their work with partners abroad, SSH graduates who have collaborated occasionally and regularly are 0.541 and 0.559 times, respectively, less likely to have had periods of unemployment since completing their PhD.

Compared to multidisciplinary SSH graduates, those from social sciences also those who do not have match between usual country of residence and PhD country are less likely to have unemployment periods, although they are less significant than previous variables and explain smaller variance in unemployment.

Table 2. Logistic regression analysis for predicting the probability of having periods of unemployment since completing PhD

Predictors	B	Exp(B)	Wald	p
Discipline (social sciences=1, multidisciplinary=0)	-.65	.524	4.56	.033*
Discipline (humanities=1, multidisciplinary=0)	-.41	.665	1.72	.189
International mobility (regularly=1, never=0)	-.34	.709	3.97	.046*
International mobility (often=1, never=0)	-.36	.698	3.24	.072
International stays (more 3 times=1, never=0)	.26	1.293	1.05	.306
Long stays (once=1, never=0)	1.05	2.860	28.91	.000***
Collaboration (occasionally=1, never=0)	-.62	.541	9.62	.002**
Collaboration (regularly=1, never=0)	-.58	.559	4.92	.027*
Marital status	-.30	.968	.023	.880
Having children (one=1, no=0)	-.52	.598	11.90	.001***
Having children (two=1, no=0)	-.88	.413	31.64	.000***
Having children (more than two=1, no=0)	-1.24	.291	23.12	.000***
Partner employment (unemployed=1, in research career=0)	.78	2.176	8.02	.005**
Residence and PhD country match	-.29	.750	4.22	.040*

Note. Dependent variable having a period of unemployment was coded as 1= yes, 0=no; N=2054; correctly classified 78%

Policy recommendations

- 1) The analysis of unemployment predictors of SSH PhD graduates can serve as provision of profiles of SSH PhD graduates who are likely to experience periods of unemployment since they get their PhD degrees. Demographic characteristics as well as their international activities and mobilities give some idea about their likelihood for finding jobs.
- 2) Although demographic characteristics might have some implications, international activities and international mobilities may better inform policies.
- 3) Given that there has been increasing support for internationalization and mobility of doctoral candidates in most countries and current research provides empirical support for its positive effect on likelihood of finding jobs, international mobility and international collaboration need to become a larger part of institutional strategies to increase the chances of PhD graduates for being employed.
- 4) Giving opportunity to PhD candidates to collaborate with partners can be through implementing agreements between institutions for co-tutoring or co-advising PhD theses, if they are willing to have an academic career. Exchange programs also reinforce such collaborations. In order to encourage more students to benefit from these practices, dual-diploma initiatives can be taken. Collaborations can also be useful for finding jobs outside academia depending on discipline, type of collaboration and also impact. Therefore, collaborations need to be managed according to the needs and aims of the PhD holders.
- 5) Residence and PhD country match seems to have a positive effect of finding job. However, increasing incentives for people to prefer doing PhD in their usual countries of residence would be one recommendation which needs to be taken cautiously, because there might be country differences with respect to characteristics of the available job markets. For some people receiving PhD in a country different than country of residence might be more convenient and advantageous in terms of finding jobs which make country-specific characteristics important to consider.
- 6) Country differences in the experience of unemployment also need to be taken seriously. The reasons why some PhD holders experience more periods of unemployment in some countries but not others might be due to different factors, including varying availability of jobs in the academic job market, industry or third sector. Training programs and university-industry and university-third sector links can be established in a more effective way in order to allocate PhD holders in a variety of jobs both in academic and non-academic areas.

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