

Mobility of High Skilled Professionals: The Brain Waste and the Brain Gain

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Abstract. The literature review allows us to conclude that the traditional perception of the brain drain has no empirical evidence on the aggregate level, being necessary the understanding of the circumstances and factors that influence the process in each country. This research aims to make a study of this type in the Portuguese context, still innovating in conceptual and methodological terms: first, refusing the logic of globalizing assumptions of human capital theory, guessing that migration can be caused by factors other than not pay gap by analyzing the set of factors of attraction-repulsion; on the other hand, guessing that the international job system is not a space entirely free and therefore is not only dependent on the free play of supply and demand, is also necessary to observe the biographical trajectories in order to understand the reasons and destinations of migration. The multiple case studies are intended to test the theoretical hypotheses presented in the literature.

1. Introduction

Emigration of high-skilled professionals from less developed countries to developed countries leaves the sending countries economies with a reduced supply of skilled people in research, production, and in public and private services. The resulting brain drain would limit the use of

educational investment in the sending countries, creating favorable conditions for their re-use by the more developed countries. Skilled emigration has been analyzed according to two contrasting models: a) the model of the exodus that stresses the idea that more skilled individuals are forced to the exile, allowing them to get a job and a remuneration corresponding to their training; b) the model of the Diaspora that stresses the mutual benefits of intercultural exchanges opened by the circulation of academic, scientific and cultural cosmopolitan elites. This research aims to test the comprehensive power of each of these theses referencing to the various types of mobility of highly qualified Portuguese professionals to Europe in the last decade. Although the existing statistics are poor on the methodology used and limited in its scope, it is recognized in international studies published over the past years that Portugal is one of the European countries where the drain is more accentuated in the last decade. The proportion of workers with higher academic degree who emigrated in recent years is estimated at 19.5% [1].

However, these preliminary data leave many unresolved issues which we describe and analyze in this pioneering study in Portugal: 1) What are the modalities, causes and characteristics of brain drain over the past decade in Portugal? 2) Which is the evolution of the stock and flows? 3) What are the forms of articulation between different modalities of the exodus of Portuguese skilled professionals and the process of international migration? 4) What are the forms of articulation between the brain drain and the increasing flow of academic mobility? 5) What are the consequences for the scientific system and Portuguese higher education? 6) What is the impact in the emergence or reduction of scientific networks featuring Portuguese scientists?

The research strategy is suitable to the characteristics of an exploratory study that allows enunciating questions and hypotheses that can be studied in later steps of the research. Articulating an extensive research with an in-depth analysis we seek to identify the subjectivity of the direct actors of emigration in some of its main working contexts. We use a mixed strategy which makes use of multilateral technical quantitative and qualitative data collection: a) the questionnaire surveys that aims to characterize the push and pull factors present in the decision to emigrate, as well as the effects of deskilling and re-skilling resulting from migration; b) life stories and interviews with focus groups that will draft the life trajectories, the differential effects of socialization on the biographical dispositions and the strategies of improving the educational capital. Using a multiple case methodology we will describe and compare the circumstances, the modalities and the characteristics of the mobility of two types of migration of high skilled Portuguese individuals in Europe: a) long-term migration to a European country for work in primary or secondary segment of the employment system; b) temporary or commuting mobility through European networks of science, production, services or culture.

2. Theoretical hypothesis

Our hypothesis consist in assuming that the different migration flows as well as the contexts, projects, the paths of life and how biographical expectations are constructed and therefore can be understood by the concurrent models. Case studies of each of these groups will test the research hypotheses presented in the literature in a comparative way:

a) *The hypothesis of brain drain.* Since human capital is not made profitable in the same society or country where it was generated there is a loss of capital invested in the training of these individuals and, therefore, a potential loss of externalities that result from this investment in the medium and long term. There is evidence of negative effects on economic growth and human capital training in the country of origin [2,3]. Thus the return of the educational investment can be loosed by the effect of emigration of human resources, measured through the return losses of capital or through loss development potential [4]. The brain drain results in a subsidy to the rich countries [5] because the growth of most developed countries also stems from the concentration of human capital [6].

b) *The hypothesis of a beneficial brain drain.* Since the emigration of skilled individuals results in higher individual income and this is made possible through their investment in education, then more individuals will be available to invest in their education and their children education and this will eventually increase the return rate to education in developing countries [7]. The results from this type of analysis are mixed. Some empirical studies proxying investments in human capital by the growth rate of the proportion of tertiary educated individuals find that the brain drain rate measured in the base period exerts a positive effect on the rate of change of the previous stock of human capital, interpreted as a brain gain [8,9,10]. On the contrary, Heuer [11] modeling anticipatory expectation-building and accounting for possible convergence forces in the accumulation process of human capital, reveal a strong negative effect of the occupation specific emigration rates on the sending countries employment shares, which suggests an inexistent brain gain compared to the brain drain.

c) *The hypothesis of the cross-fertilization movement of elites.* Since the international mobility of skilled human resources is often transitory and takes on characteristics of exchange of knowledge, skills, and temporary projects, this circular process is beneficial for both developed countries and developing countries. Olesen [12], criticizing the study of short-term impacts of brain drain, says that the benefit to the country of origin may occur in the medium term. The highly skilled emigrants who leave their countries of origin for more than 10 years send savings while abroad and transfer human capital, financial and social when return, beating the immediate negative effects. Faini [13] instead concludes that the qualified emigration provides remittance flows for instance reducing the financial return. Moreover qualified mobility can occur regardless of salary benefits obtained [14]. For these groups the economic motives represent only a part of the reason for migration, and may even be accompanied by negative economic effects [15].

d) *The hypothesis of brain circulation by creating networks.* Since scientific and business transnationalism results in networking in order to transfer technology and knowledge from the host countries to the countries of origin, it is expected that the increase in the circulation of knowledge and people in the context of globalization is inevitable, regardless of the level of development of countries of origin. The temporary movement of highly qualified individuals appears to complement with increasing frequency the long-term migration, especially among industrialized countries [16]. The networks formed by scientific Diasporas and business has frequently sought to use the knowledge and skills acquired by scientists and other expatriate professionals in the development of the country of origin [17].

e) *The hypothesis of latent brain drain due to the mobility training.* As mobility training, or for graduate studies or post-graduates, worsened in the last decade, the outputs to study abroad, with or without grants, originally planned as temporary, may become permanent due to the insertion in the labor market of developed countries or less affected by unemployment of young workers [18]. However, there is also evidence that a period of study abroad, followed by a work experience in the destination country can become a medium-term benefit on the return [19].

3. Research design

Being the brain drain a multifaceted phenomenon, the research design follows the relational nature of the social object, articulating many dimensions of analysis. From the comparative study of four cases representing different profiles of highly skilled emigration, the study have involved the understanding of each case, and, at the same time, seek to deliver factors and processes of comparison, translation and transfer, allowing a generalization not based on statistical probability and representativeness, rather on depth, intensity and density of analysis.

Thus, from each case and within each case, we combine qualitative and quantitative approaches, explanation and understanding, deduction and induction, while moving back and forth between theory and practice. Following a relatively open theory model, we embrace the possibility of reshaping the initial corpus of theoretical hypothesis throughout the field work, and will avoid them

as “straightjackets”, understanding them more as “exciting” heuristics, which brings us closer to the extended case method proposed by Burawoy [20].

The application of a relatively varied range of research techniques allow the operationalization of purposes assumed beforehand, and the comparison of lived, experienced, narrated and declared practices of the players of these migratory flows, triangulating the collection of information.

The selection of the cases studies follows the intersection of four main structuring principles: a) Time characteristics of mobility: permanent or temporary, long term or transitory; b) Social place in the employment system: primary segment or secondary segment of the labour market; c) Functional profile in the employment system: academic and scientist, other highly skilled professions; d) Type of mobility: direct (after having entered in the employment system of the sending country), indirect or latent (after a period of study in the receiving country).

In each case, we have began with an exploratory research based on the analysis of secondary sources, either documentary (official documents on this type of migration), or statistical, associated with informal conversations with privileged informant well placed in the organizations (associations and official institutions) who deal with these flows and players.

This will be followed by focus groups in the different cases under analysis [21]. Taking advantage of the intersubjective and shared nature of this technique [22], we believe that prior to the application of the survey, it will be particularly useful to identify push and pull factors and deskilling and reskilling factors, because the review of the state-of-the-art points to very general factors. In this way, the dimensions and indicators of the survey will be more accurate.

Due to the lack of systematized studies on migratory flows associated with academic mobility, it will be relevant, at the onset and from a methodological point of view, to use a crosscutting approach more suited to an effort to map the representativeness of this phenomenon. It is precisely the lack thereof that determines the establishment of a non-probabilistic intentional sample, which gradually helps (and by association to other research instruments) to understand not just the extent of the phenomenon, but also its intrinsic characteristics.

To this extent, the questionnaire deliberately chooses a dominant audience – with high academic skills –, but must contain the many situations expressed in the study cases to be developed, which, in a way, determines a prior categorization likely to ensure comparability with the survey instrument, a comparability that allows us to discriminate determining traits in the characterization of the phenomenon. Accordingly, the structure of the questionnaire, in addition to the independent variables that characterize the target population, will seek to list a set of scales covering the following topics: 1) push and pull factors; 2) factors perceived as crucial in the decision to migrate; 3) deskilling and reskilling factors; 4) brain gain and brain waste; 5) Social and cultural mobility.

The provisional findings and the shortcomings and clues resulting from the survey’s data analysis will provide guidelines to prepare the scripts on sociological portraits [23] focused on explaining contradiction from the intersection of the application of the survey, the exploratory analysis and the results of the focus-group.

The sociological portraits assume the existence of multi-socialized individuals, plural agents who, throughout their pathways, have acquired a wealth of predispositions, often contrasting and even contradictory, which in a way reflects both the complexity of contemporary societies and the multidimensional nature of projects and constraints associated with these migratory flows.

The final triangulation will allow us to confront practices and discourses, or, in other terms, compare the lived with the experienced (the memory of a past), the narrated (especially visible in the portraits), the shared (highlighted in the focus group), and the declared (shown in the survey). Similarly, we will emphasize a type of reflexive scientific practice, permeated by the intersubjectivity between social scientists and their object of study.

In this paper we will present and discuss some results of the focus group interviews only.

3.1 Interviews guidelines, sample selection and content analysis

Interviews guidelines: a) to identify the diversity of the migratory processes; b) to characterize the

type of inclusion in various European employment systems; c) to understand the strategies used to enhance the academic and professional capital; d) to describe the factors contributing to the process of deskilling and reskilling; e) to identify the type of relationship with the country of origin; f) to characterize the pull and push factors of the country of origin and the country of destination; g) understand the relationships between the factors of economic and financial globalization and the different modalities of exodus; h) understand the expectations about future projects; i) to analyse the type and intensity of integration in social and professional national or international networks.

Sample selection and administration: a) to identify and select the European countries with higher accumulated flows of mobility of high-skilled professionals; b) select eight focus groups (two in each case study) consisting each one of 4/5 individuals with the following features: homogeneity on the country or region of destination and temporal characteristics of mobility (long-term, short-term and transitional) and heterogeneity regarding the functional profile of integration in the employment system, the segment of the labor market, and gender; c) administration of the interviews by Skype.

Transcription and coding speech into categories: a) transcription verbatim; b) summaries of each of the interviews; c) coding speech into six thematic categories a priori: type of inclusion in employment systems of receiving countries; relations with the country of origin; expectations and future projects; network integration; push and pull factors of the sending and receiving countries; deskilling and reskilling factors of the employment systems of the receiving countries.

Content analysis including thematic categories a priori and sub-thematic categories a posteriori: a) synoptic table ordering the common characteristics of the migratory process; b) dimensions and list of indicators of push and pull factors of the sending and receiving countries; c) dimensions and list of indicators of deskilling and re-skilling factors of the employment systems of the receiving countries; d) synoptic table ordering and comparing the common and contrasting characteristics in four dimensions of the migratory process.

4. Preliminary Results

In this paper, we analyze the content of interviews carried out with four focus groups (17 individuals), considering the reasons put forward for mobility within the European area, and the temporal characteristics of mobility (permanent or temporary, long term or transitory).

4.1. Pull and push factors

What are the reasons that lead qualified individuals to leave their country of origin? What does exist in other countries that Portugal lacks?

The factors presented by respondents for their exodus are related to three main aspects: a) the crisis of the labor market in Portugal offers few opportunities for skilled work; b) the work content does not always effectively use the skills attained and certified by the educational system; c) the desire to accumulate internationalization capital. Most respondents expressed the idea that they could not find, in Portugal, satisfaction and professional achievement, or cognitive and professional stimuli critical to the development of the career they pursued.

The reason why I came to Liverpool was that, whenever I applied (I applied both for Portugal and abroad before going to the United States), I was always second or third in the interviews for the jobs I applied to; after coming from the United States, most of the places I applied to said I had too many things on my resume, I was over qualified. And I think the problem in Portugal is the lack of job prospects. (e6. Case A1)

At this time, I am not going back to Portugal before having an established career, because, at this moment, things are very bad, or at least this is my perception. Thus, now I am going to invest on a career here and I think there is a good chance to do that, to establish a career, I do not know if it will be a better one, but at least it will be more recognized internationally than in Portugal. (e1. Case A1)

[...] Here in London I do feel more comfortable or even safer, not because of the relationship I have with my current employer, but rather by the number of alternatives available on the market.

The market has an extraordinary depth and I can change whenever I want to, and, thus, it is a completely different relationship with work. (e6. Case D1)

[...] When I was finishing up my study programme, leaving Portugal was completely out of my plans; I wanted to stay in Portugal, no matter what. Then I started working, and I saw how the market was in reality, and there was a time that I overcame that barrier: “No, I have to leave if I want to do what I like doing”, and so I left. (e3. Case D1)

Why [emigrate]? Well, there are several reasons for that; more adventurous propensity, especially the idea that, so as to develop a career, an international career, or to have international visibility in the area, I could not attain that without a training abroad [...] From the career point of view, especially in Portugal, I think anywhere in terms of science in general, mobility is a prerequisite for progression, mobility is a condition, is a way to accumulate capital, especially in Portugal that is extremely strong [...]. (e1. Case D1)

As can be perceived through these testimonies, emigration appears as a way of “doing what one likes”, of developing a career and projecting it internationally. However, the existence of better job opportunities in destination countries is also quite stressed, giving emigrants a greater sense of stability and job security, insofar as there are more options.

[...] I had not planned of going anywhere, but I started sending resumes abroad, because I knew that, in Portugal, it would be very difficult to get something, and so I started sending resumes mainly to Europe. (e2. Case A1)

[...] I was a bit torn between getting a job in Portugal and coming here. After six months, I could not find anything, not even research grants, and I began to actively seek here. After six months of searching, so I've been unemployed a year, I found a job. [...] compared to the situation of my peers, those who finished in the same year as me, I'm well because a lot of people in Portugal are unemployed or are pursuing a PhD. Some people enjoy doing a PhD, others do it because it is the only alternative they have there [in Portugal]. (e3. Case A1)

[...] I was a bit precarious in Portugal, honestly; I was working with “recibos verdes” (“green receipts”) and saw no major developments in industry; thus, if I had stayed there, at this point I would, probably, be unemployed. (e2. Case D2)

[...] even though I wished to return, I found the situation very difficult; I started to seek work in Portugal to try to come back and got nothing. (e1. Case D2)

Other motivations leading to emigration, although at a secondary level, are related to emotional, personal or family autonomy factors.

I came for emotional reasons; my husband is here and I was in Lisbon and decided to come here too. (e1. Case A1)

[...] I became very fond of a Dutch person and, thus, when I returned to Portugal, I was a little torn between getting a job in Portugal and coming here. (e3. Case A1)

[...] It was, in a way, the decision to continue a few years depending on my parents or having the possibility, despite going out, of being independent and building my life and it also has much to do with a “cry for independence”. (e2. Case A1)

At that time, I was already married to a scientific researcher, whom I met in Coimbra, in the University, where I studied and where I am from, who had already left Portugal to pursue a PhD. (e2. Case D1)

Meanwhile, the reason why I emigrated again is that I got married and my partner already lived in Paris, so we were together but at a distance, and the time came when it did not make much sense, we were married and separated and I decided to move to Paris. (e. Case D2)

4.2. Long term or transitory mobility

One of the aspects that may determine the loss of human capital in the country of origin is the duration of the emigration period.

When a person emigrates, does that person consider that decision as a temporary or a long-term one? Is it a project for life or a short term one? Does the mobility period lived meanwhile change

the initial view? Why?

Most respondents refers that the prospect of mobility is, at least, in the medium term and, although initially contemplating a transient solution, the experience lived in the meantime changed the plans for a bigger migration period.

At this moment, the idea of being in London or of being open to the prospect of moving to another country is present in my mind; returning to Portugal, honestly, no. (e1. Case A1)

Personally, I do not see myself returning to Portugal in a five years time; it is a very short period to return. (e4. Case A1)

For me it was gradual, when I left I went with a two year contract, and I thought: "I stay for two years and then I see whether I come back or not". Meanwhile, I began to realize that the goal would be at the age of thirty, I put a wider goal and then started looking for the best things to do, and that's why I ended up in Copenhagen and, today, I put the goal of possibly forever [...] (e2. Case A1)

[...] The first five or six years will certainly be spent doing the specialty here [...] I was born in Lisbon, I'm from Lisbon and I grew up in Lisbon, of course I love being in Lisbon and being in Portugal and with the people I have there, but I don't have a very great need, I don't have a very great patriotic symbolism, so I don't intend to go back urgently. I am not saying I won't do that later, but for now I have my life well established here, I do not think I will go back soon. (e1. Case C1)

[...] When I am asked whether I always wished to return to Portugal, I say no, if I am asked whether I want to go back to Portugal today, I also say not. If I return to Portugal, it will necessarily be to work in a place that I regard as being in the geographical point corresponding to Portugal, but integrated into an international network, do you understand? (e2. Case D1)

Most of the times I came, I never thought that I would stay in the long term, because I have always come with very temporary jobs, short-term contracts, and I knew that, at some point, I would have to go back. At this time in particular, I wish to go to Portugal, I miss it already, I have been away from the country for many years, but I'm also not sure that I want to stay there forever [...] (e1. Case D2)

The idea of a temporary emigration has given rise to a long-term emigration. Opportunities found, together with the feeling of not getting the same in Portugal, are the most frequently mentioned reasons for this shift. Transient emigration out of Portugal is also a scenario that is now regarded more naturally.

Honestly, I keep an open mind, I'll see where destiny leads me, but, quite frankly, it is not a big deal if I do not return to Portugal... I'm well here, although I cannot imagine myself in Paris forever, but I have no problem moving to a place other than Portugal. (e2. Case D2)

I have no intention of returning to Portugal, but I also have no intention to stay here in London. [...] But I do not know, I do not know what will be my town, or village, or whatever, after London, but I would like to continue in countries further north, maybe in a Scandinavian city [...] (e2. Case C1)

[...] For me, that did not undertake Erasmus, and did not have that strong idea of going abroad, I had the idea of spending just one or two months abroad as a visiting researcher, I realized that coming abroad makes the person see other realities and becoming much more open minded. I think that the idea of emigration is much more open, it is easier for us to move by being abroad. (e1. Case A1)

I have everything open, staying here or going to another place, and my perception has changed since I left, because there are many opportunities outside of Portugal. (e5. Case A1)

Respondents' expectations about the future imply, thus, a long-term abroad stay. The idea that only for some reason of family emergency or for some irresistible employment offer they would return to Portugal in the short term is recurrent among respondents.

I would like to have a permanent contract at a university here, buy a house here and visit friends in Portugal or bring them here. [...] I think that only if it was something very serious with my

family. Not even a good job opportunity, because I have my husband here, and the gains of being here are good. (e1. Case A1)

[...] Only in case someone, a family member, would get ill, that is, there would be nothing, I cannot imagine nothing at all, having an offer in Portugal [...] (e1. Case C1)

It is not for life, not for life... I can only return to Portugal when conditions for doing the work I do at a level that I consider that complies with my... with my qualifications and experience (e2. Case D1)

5. Conclusions

1. The factors shown to boost European mobility and emigration are multiple and relational: a) The crisis of the skilled employment system in Portugal; b) Few opportunities to apply and develop professional skills acquired in formal education and in the professional induction period carried out in Portugal; c) Strong expectations of internationalization and creation of scientific and professional networks; d) Pursuit of personal autonomy; e) Construction and maintenance of personal and romantic relationships.

2. The temporal features of mobility are predominantly long or medium term.

3. The temporary or transitional mobility projects have given raise to long-term emigration projects.

4. Only family reasons have the potential to disrupt the current options for mobility.

5. We conclude that the factors perceived as crucial in the decision to migrate start with the economic crisis, the devaluation of local resources, the lack of career opportunities and the unemployment. The ties that migrants have with their country of origin, including ties with the contexts of production that best articulate their areas of knowledge help to understand when the migratory movements contribute more to situations of brain gain – a situation that offers employability and remuneration not likely to be obtained in the country of origin – or to situations of brain waste in which migration to a context with high intellectual standards may result in outsourcing that requires less skills than those held.

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