Irina BONCEA
Department of International Business and Economics
Bucharest University of Economic Studies

FROM BRAIN DRAIN TO BRAIN NETWORKING

Empirical studies

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Abstract

Scientific networking is the most accessible way a country can turn the brain drain into brain gain. Diaspora's members offer valuable information, advice or financial support from the destination country, without being necessary to return.

This article aims to investigate Romania's potential of turning brain drain into brain networking, using evidence from the medical sector. The main factors influencing the collaboration with the country of origin are investigated.

The conclusions suggest that Romania could benefit from the diaspora option, through an active implication at institutional level and the implementation of a strategy in this area.

1. Introduction

Romania has been facing the brain drain in the medical sector since the fall of the communist regime. The emigration flows intensified after the accession to the European Union and especially between 2010 and 2011, as a consequence of the austerity measures imposed.

Literature on medical brain drain evolved over the past 60 years, from the early stage, with scholars highlighting the neutral effect on source countries, sometimes even benefic, through the second phase, with the emphasis on the negative impact on donor countries and finally to the new economics of brain drain theory, accepting both the beneficial and detrimental effects on the country of origin.

Recent literature identifies several options that, under specific circumstances may turn the brain drain into brain gain: return migration, diaspora option and remittances.

This study aims to tackle the emigration of physicians from the beneficial perspective, investigating Romania's potential of turning brain drain into brain networking.

2. Literature review

The first papers investigating the brain drain phenomenon (Docquier and Rapoport, 2011) described it as a closed process, leading to a human capital loss for the country of origin and to a human capital gain for the country of destination.

Nowadays, the emigration of the highly-skilled is seen as a circular process (Hunger, 2003), this new approach emphasizing the possibility of positive effects in the country of origin: return migration, scientific networks or remittances.

Return migration is considered an important transmitter of technology and tacit knowledge between economies (Davenport, 2004). However, offering incentives for returning is only possible with investments in infrastructure and salaries. This is an option which was implemented successfully by new industrialized countries (NICs) or fast-growing developing economies like India or China (Meyer and Brown, 1999). In the absence of financial resources for investments, a much more reliable source of brain gain for the country of origin is the diaspora option.

Scientific networks enable the transfer of technology, know-how and socio-professional contacts, from the destination to the origin country (Docquier and Lodigiani, 2010, Beine et al., 2011). Scientific networks can exist either in virtual (Internet networks) of real form (scientific forums, exchange programs) (Hunger, 2003).

Some of the intellectuals may not want to return, either due to the lack of incentives offered in the country of origin or due to personal factors such as settling their personal life abroad. However, they may still be concerned with the situation in the country of origin and may want to contribute to its development. With the development in the communication and technology, the distances between countries are not perceived as barriers against scientific collaboration any more. So far, many countries adopted strategies in setting up scientific networks. A classification of them include five categories: student/scholarly networks, local associations of skilled expatriates, expert pool assistance through the Transfer of Knowledge Through Expatriate Nationals (TOKTEN) program of the United Nations Development Programme (UNDP) and intellectual/scientific diaspora networks (Meyer and Brown, 1999).

Current knowledge about Romanian scientific networks is insufficient. A study (Ciumasu, 2011:139) conducted among diaspora members found a 95% of interest in professional involvement in Romania. However, less than a half of the respondents maintained a form of collaboration with Romanian scientists during their stay abroad. Distance collaboration (brain networking) is preferred to brain circulation (only 25% prefer to return to Romania). The perspective of turning brain drain into brain networking seems very attractive.

3. Main findings

The aim of this study is to identify the main factors influencing the collaboration with the origin country among the Romanian medical doctors practicing abroad. In this respect, we use the results of an original questionnaire.

One study (Boncea, 2015) concluded that the diaspora option is the most accessible way Romania can turn the brain drain in the medical sector into brain gain. Return migration would bring more benefits, however, the results of the same study suggested that the conditions under which Romanian medical doctors would consider returning are associated with the factors that influenced their decision to emigrate (salaries, working conditions, infrastructure in the health system, career and education opportunities, respect for the medical profession). Romania lags far behind the main destination countries regarding the aspects mentioned. Offering the medical doctors the conditions for returning implies investments, which are less accessible, at least, on the short term, for Romania.

The collaboration with the country of origin among medical doctors practicing abroad is not influenced by the factors that influenced the decision to emigrate (the correlations are not statistically significant). Moreover, medical doctors in the age category 40 − 55 and over are more interested in maintaining scientific collaboration (Figure No. 1). Medical profession is a long-term commitment, taking between 9 and 13 years of training. In the

first part of the life, a medical doctor invests the time and energy in the accumulation of knowledge and experience, becoming productive in the second part of the life. The stronger willingness to collaborate among the medical doctors over 40 years is a positive aspect, as they are the ones with experience and knowledge. We mention that we took into account the current age, reflecting the current behavior of the respondents.

We use a binary logistic regression in order to identify the factors influencing the collaboration with the country of origin. The dependent variable is the collaboration with the origin country (0 if the respondent don't collaborate and 1 if the respondent collaborate). We use two models. The independent variables used in the first model are: current age, the attitude towards the importance for Romania to maintain scientific collaboration with the medical doctors who emigrated (5 points Likert Scale), the influence of the contact with the medical doctors already practicing abroad in the decision to emigrate (3 points Likert Scale), the level of payment in the destination country, the return intention and three dummy variables: sex (0=female, 1=male), remitting behavior (0=don't send money, 1=send money) and the studies abroad (0=didn't studied abroad, 1=studies abroad). The second model includes only the statistically significant variables (current age and studies abroad). The results of the models are presented in Table No. 1.

Both models are statistically significant. Initially, model I correctly classifies 63,4% of the cases, while the model with the eight variables included correctly classifies 72% of the cases. The value of the Hosmer & Lemeshow test (3,80; p=0,87) confirms that the model fits the data. The model explains 24% of the dependent variable variance (=0,240).

Initially, model II correctly classifies 62% of the cases, while the model with the two variables included correctly classifies 68% of the cases. The value of the Hosmer & Lemeshow test (6,59; p=0,58) confirms that the model fits the data. The model explains 13,5% of the dependent variable variance (=0,135).

In the first model, demographic characteristics (age and gender) don't influence the collaboration with the country of origin. There are two variables that influence the collaboration: the studies abroad and the return intention, both of the correlations being positive. Medical doctors that continued their studies in the destination country are more likely to collaborate with the country of origin. This is a benefic situation for Romania, as these doctors have the highest contribution, due to the knowledge they gained abroad. Moreover, the probability of maintaining collaboration with the country of origin increases if the medical doctor intends to return to Romania. The return intention is usually

explained by personal ties (family reunification). Also, some of the medical doctors intend to return because they want to contribute to the transformation of the medical system or because they feel responsible for the investment in their education and training.

In the second model, current age is a statistically significant variable. The correlation is a positive one, which is, again benefic for Romania, as the higher age is associated with a higher experience and a higher volume of knowledge.

Contrary to our expectations, theattitude towards the importance for Romania to maintain scientific collaboration with the medical doctors who emigrated and the influence of the contact with the medical doctors already practicing abroad in the decision to emigrate are not statistically significant. Moreover, the remitting behavior doesn't influence the collaboration with Romania. The collaboration is a supportive one, medical doctors from diaspora exchanging ideas, offering feedback or sharing experiences, rather than sending money to support or finance projects in Romania. The latter aspect is related to the institutional collaboration, which was appreciated by a high percentage of the respondents as unsatisfactory. We can conclude that the collaboration of the medical doctors from diaspora is rather at individual than at institutional level.

4. Conclusions

Turning brain drain into brain networking seems to be the most accessible option for Romania, at least on the short term. Current collaboration is rather at individual than institutional level, consisting in advices, feedback or experiences shared. Regardless the reasons behind it, the willingness of the Romanian medical doctors working abroad to collaborate is a good premise. Moreover, they are well organized, in the majority of the main destination countries existing a medical association (we identified medical associations of the Romanian medical doctors practicing in Germany, United Kingdom, France and Sweden). Some of these associations are more active than others. However, at this point, their action is more oriented towards attracting the physicians to migrate rather than impelling them to collaborate.

Current collaboration and the existence of active medical associations of the Romanian physicians in the main destination countries are two important pillars. Turning brain drain into scientific networking is only possible through an active implication at institutional level. A strategy in this area should take into account the examples of scientific networks from other countries and adapt them to the national context (Ciumasu, 2010:145).

To our knowledge, only a few initiatives were implemented so far. One example is the Intermedicas, a recent initiative that gathers health professionals from all over the world. The medical

clinic seems to respond to the brain drain issue, through the collaboration with the Romanian physicians working abroad, who came on a regular basis to Romania to offer consultations. The concept is an innovative one. More initiatives like this could contribute to the grounding of a scientific network of Romania health professionals.

Acknowledgement

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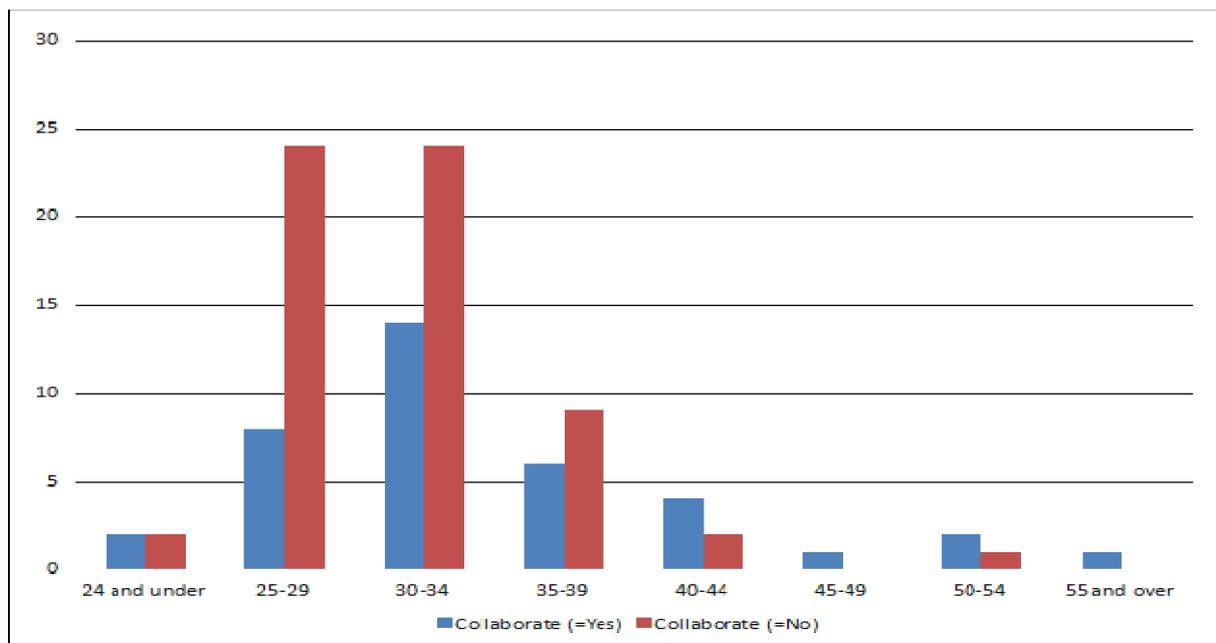
Appendices

Appendix A

Table No.1.
Results of the regression models

Variables	Model I						Model II					
	B	S.E.	Wald	df	Sig.	Exp(B)	B	S.E.	Wald	df	Sig.	Exp(B)
Current age	,046	,043	1,151	1	,283	1,047	,084	,037	5,146	1	,023	1,088
Sex	-,951	,587	2,624	1	,105	,386	x	x	x	x	x	x
Studies abroad	1,099	,520	4,461	1	,035	3,001	,834	,443	3,535	1	,060	2,301
Importance	-,041	,218	,035	1	,852	,960	x	x	x	x	x	x
Influence	-,118	,256	,213	1	,645	,889	x	x	x	x	x	x
Level of payment	,226	,191	1,399	1	,237	1,254	x	x	x	x	x	x
Remittances	,520	,558	,869	1	,351	1,682	x	x	x	x	x	x
Return intention	,644	,296	4,718	1	,030	1,904	x	x	x	x	x	x
Constant	-3,551	1,697	4,377	1	,036	,029	-3,703	1,247	8,824	1	,003	,025

Source: Author's calculations using SPSS

Appendix B

Figure No.1
Collaboration with Romania by age categories

Source: Author's calculations using SPSS