

BRAIN DRAIN PROBLEM IN LITHUANIA: POSSIBLE ACTIONS FOR ITS' SOLUTION VIA BRAIN GAIN

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Abstract

The migration of highly qualified knowledge workers is a natural phenomenon in the globalized economy, where knowledge has become a highly valued asset. From the national perspective, this process of migration is characterised in terms of the processes of “brain drain” and “brain gain”. Unfortunately for the less economically developed countries, such as Lithuania, the extent of “brain drain” is greater than that of “brain gain”. However, there are few policy measures that such countries can apply in order to effectively solve the problem of “brain drain”.

In this paper, we argue that the problems of “brain drain” can be most affectively addressed by taking a broader perspective and applying the policy measures for the “brain gain”. This argument rests on an assumption that if the “brain gain” policy instruments are successfully implemented, they will also solve the problem of the “brain drain”, i.e. if a country becomes an attractive place for the international knowledge workers, it will also be attractive enough for the national “brain” to stay in the country.

In the paper, we support this argument with the successful examples of the “brain gain” policy measures of the European and Asian countries (India, South Korea, Taiwan). We claim that many of these measures can also be applied in Lithuania, a “latecomer” country in the globalised knowledge economy. Most of the studies carried out in Lithuania so far tend to focus on addressing the problems of “brain drain”, while we try to extend this perspective into a more promising field of the policy of “brain gain”. The empirical survey covered three samples of the respondents: competent managers of the progressive Lithuanian companies (participants of the Executive MBA study programme), the high-potential Lithuanian students from the National Student Academy and foreign students in Kaunas University of Medicine. The research helped identify the most significant factors and policy measures that would discourage the actual and potential “knowledge workers” from taking an emigration decision. It also helped identify the most significant factors and policy measures that would make Lithuania an effective beneficiary in the international processes of the “brain gain”.

Keywords:

Brain drain, brain gain, knowledge workers migration, brain gain policies.

Introduction

Migration of the highly qualified professionals is one of the characteristics when talking about the problems of XXIst century. Specialists migration is an important and inevitable component of country's economical and social life. It's necessary to highlight, that orderly and properly managed migration process can be beneficial, both to individuals and to the society. However, the practice shows that this is the problematic area for many countries, as well for Lithuania.

In today's knowledge society, the emigration of highly skilled professionals is not a bad factor for Lithuania, the unwelcomed fact is, that they don't return to their home country. This process is called “brain drain” and this

means that for Lithuania it is very important to stop the brain drain and pursue to attract highly qualified persons from foreign countries. It is obvious that the world's most competitive countries and regions are those that are attractive area to creative professionals.

Considering above mentioned aspects, the **research problem** being solved in this article should be constructed: what conditions should be realized, that Lithuania would become an attractive place for highly skilled professionals to life and work?

The **object of the research** – brain drain phenomenon.

The **aim** of this article – to highlight brain drain problem in Lithuania and to find/suggest possible actions for its' solution via brain gain.

To achieve this aim there are four **tasks** to be solved:

- To crystallise the concepts of brain drain and brain gain;
- To highlight the main peculiarities of brain gain policies in European and Asian countries;
- To explore brain drain situation in Lithuania;
- To identify recommended actions for suppression of brain drain and stimulation of brain gain in Lithuania.

As the **research method** it was taken theoretical analysis of the scientific works in this field. Comparative analysis allowed crystallising the conceptual understanding of brain drain and brain gain phenomenon. Analysis of statistical data of the survey concerning brain drain causes and brain gain possibilities was applied as well.

Scientific originality and **practical significance** of the article is:

- Systemised theoretical features of brain drain and brain gain phenomenon;
- Summarized the main peculiarities of brain circulation policies of European and Asian countries. That allowed systemising actions for suppression of brain drain phenomenon in Lithuania;
- Presented situation of brain drain in Lithuania and recommended actions for the suppression of brain drain in Lithuania were suggested.

Crystallization of brain drain and brain gain phenomenon

As the world entered to the globalization and knowledge based era, brain drain and brain gain phenomenon became more relevant than any time before. The migration of knowledge workers has become a highly debated political issue relating to the globalization process as a result of the inexorable opening of national resources in a knowledge-based economy (Meyer, 2001). Highly qualified workers migrate across the countries with the purpose to find or to realise their work, fulfilment, life and many other needs. However, if one country meets brain gain – a very welcomed phenomenon, other nation has brain drain – harmful phenomenon.

In the global context, brain drain phenomenon is the object of the political discusses and scientific researches for more than forty years. The concept of brain drain is widely analysed in scientific works (Giannoccolo, 2006; Balaz, Williams, Kollar, 2004; Zweig, Fung, Han, 2008; Le, 2008; Daugėlienė, 2007; Gaillard, Gaillard, 1997; Mahroum, 2005; Meyer, 2001). Researchers analyse the peculiarities of this phenomenon and give definitions, when highlighting the main features and characteristics of brain drain.

According to Mahroum (2005), brain drain is the permanent emigration of skilled persons from one jurisdiction to another. The “sender” jurisdictions are typically the losing ones while the “receiver” jurisdictions are typically the “brain gainers”. While Rutherford (1992), provides the following definition of brain drain: it is international migration of highly qualified persons, e.g. surgeons, physicians, scientists and engineers, from low income countries to more prosperous economies. Differences in salaries and research facilities, together with the over-supply of specialized graduates in less developed countries, have brought about this increase in the human capital stock of advanced countries (Giannoccolo, 2006).

It is necessary to stress, that different authors’ definitions of brain drain, have many similar aspects and reveal the same idea: the emigration of highly qualified people to those countries, where better working and living conditions are provided.

Hence, the contrary phenomenon of brain drain is brain gain. Usually this process occurs in developed countries, rather than in developing ones. There could be done a generalization, that brain gain phenomenon symbolises country’s attractiveness for highly skilled people, its possibility to provide good studying, working and living conditions.

It is also important to stress, that the economic effects of highly skilled international migration is obvious both in sending and receiving countries (Fig.1).

Sending country	Receiving country
<ul style="list-style-type: none"> ▪ “Brain drain”, lose of productive potential due to absence of higher skilled workers and human capital; ▪ Lower returns from public investment in tertiary education (waste of national public resources); ▪ Loss of fiscal revenues from taxation of human capital. 	<ul style="list-style-type: none"> ▪ Increased R&D due to enhanced availability of individuals with a higher stock of knowledge; ▪ Inflow of entrepreneurship; ▪ Knowledge flows and collaboration with sending countries; ▪ Immigrants can foster diversity and creativity; ▪ Renewal of faculty and researchers.

Fig. 1. Economic effects of highly skilled international migration (Solimano, 2004)

The impact of brain drain phenomenon is very harmful for sending country’s economy development, its competitiveness in the knowledge based world. Country loses not only the investments in tertiary education, but also educated specialists, who are the guarantee for further country’s prosperity. Therefore, totally different situation occurs in receiving country, when highly skilled immigrants further stimulate R&D, provide this country with entrepreneurs, knowledge, new ideas etc.,

thus contributing to its progress. The gap in economic progress, as well as in nations' development level, between sending and receiving countries, can become very sharp and dangerous, when these processes become irrepressible.

As Zong (2002), highlights, that "brain drain" or "brain gain" is not simply a phenomenon of an outflow or inflow of professional migrants, and that it has to do with actual international transferences and utilization of human capital resources. In other words, what is more important is what and how countries make use of flowing talent rather than where do the exchanges take place (Mahroum, 2005).

The peculiarities of European and Asian brain gain policies

As the world entered to the XXIst century – knowledge-based economy era – knowledge creation and diffusion could be named as the engines stimulating countries competitiveness, economics growth. The accumulation of human resources can be interpreted as the main pillar sustaining this process. Thus there could be highlighted, that human resources, highly qualified persons/knowledge-workers are the factors of success when trying to stimulate country's economics development and its competitiveness as well. Each country must find the recipes of success how to attract, accumulate highly skilled workers and this can represent country's situation in a knowledge-based world.

The ability to attract talents to work to one or another country depends on many factors (Chacko, 2007; Mahroum, 2005; Gaillar, Gaillard, 1997; Zweig, Fung, Han, 2008; Suntharasaj and Kocaoglu, 2008). Country must be attractive for highly skilled workers and give

them comparatively better conditions to work than he/she has now. But there is no one universal recipe which could ensure the success of the brain gain policy. There is a necessity to subordinate many actions.

Many studies analyse the policies of brain gain (Saxenian, 2005; Kello, Wachter, 2004; Chacko, 2007; Vertovec, 2007; Tung, 2008; Tung, Lazarova, 2006; Mahroum, 2005). Brain gain appears to be the rage in international policy circles. It's necessary to stress, that nowadays European countries create the policies which motivate highly skilled workers to return to their motherland and to adapt their skills, knowledge. It is necessary to emphasize that the purpose of brain gain policies is to retrieve the talents or/and try to collaborate with their scientists living and working abroad. These policies can vary from immigration facilitation for researchers and highly skilled persons to tax discounts and easing of linguistic and other barriers. For some countries, the problem can be in the lack, or little, "internationalization" of the local research establishment (e.g. Germany, Finland, Denmark); while for others the problem is perceived as a classical "brain drain" one in which financial returns and career rewards are main drivers (e.g. France, UK) (Mahroum, 2005).

The main peculiarities of **Asian countries** brain gain policies are explored when analysing the best practice examples of brain gain. India, China, Korea is a good example of such success. These countries organized effective policies which helped to pull their scientists, researchers back to the motherland or to collaborate with the local actors, thus developing countries economy as well as competitiveness in the knowledge-based world.

Table 1 and Table 2, show the main features of brain gain policies in European and Asian countries.

Table 1. Common European and Asian countries actions towards brain gain

<ul style="list-style-type: none"> ▪ The development of multilateral economic, social and cultural relations; <ul style="list-style-type: none"> ▪ The establishment and development of High Technology parks; ▪ The establishment of regulations that simplify entry and exit for highly talented people and investors holding other countries citizenship; ▪ Communication with the scientists working abroad (Scientific diasporas); <ul style="list-style-type: none"> ▪ The application of beneficial legislation system for researchers; ▪ The introduction of beneficial taxation system for researchers; <ul style="list-style-type: none"> ▪ Increase in financing of R&D (% GDP).

Table 2. Different European and Asian countries actions towards brain gain

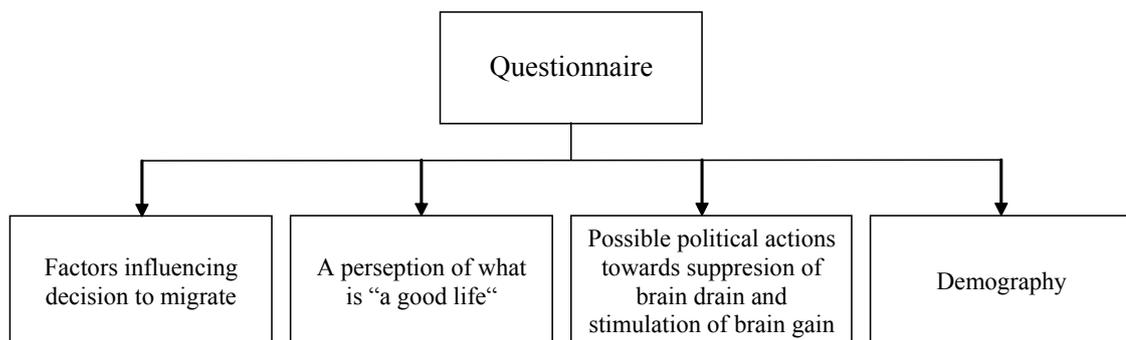
European countries actions towards brain gain	Asian countries actions towards brain gain
<ul style="list-style-type: none"> ▪ The creation and implementation of programmes stimulating scientists mobility (e.g. Marie Curie); ▪ The accreditation of diplomas; ▪ The reduction of cultural (linguistic) barriers (e.g. there is allowed to teach in English language, in universities). 	<ul style="list-style-type: none"> ▪ The establishment of research funds with the purpose to fund returnees scientific activities; ▪ The creation of postdoctoral centres in order to attract overseas Ph. D's to return for postdoctoral positions on the mainland; ▪ The establishment of world-class universities; ▪ The attraction of venture capital; ▪ The development of digital infrastructure in order to attract IT companies; ▪ Remuneration of returnees corresponds to the payment in the U.S. (in purchasing power terms); ▪ The creation of good domestic conditions for returnees.

Methodology for the survey of brain drain causes and possible in Lithuania

Most of the studies carried out in Lithuania (Jucevičienė, 2002; Žalandauskas, 2008; Kazlauskienė, 2006) so far tend to focus on addressing the problems of “brain drain”, while in this paper we try to extend this perspective into a more promising field of the policy of “brain gain”. The empirical survey covered three samples of the respondents: competent managers of the

progressive Lithuanian companies (participants of the Executive MBA study programme) (26 respondents), the high-potential Lithuanian students from the National Student Academy (28 respondents) and foreign students in Kaunas University of Medicine (29 respondents).

When trying to evaluate brain drain causes in Lithuania and possible actions towards brain gain, there was composed a questionnaire with four blocks of questions (Fig. 2).

**Fig. 2. The blocks of questions of the survey**

The first block of questions helped to identify if respondents consider the possibility to emigrate (Lithuanian respondents) or to stay (foreign respondents), as well as the main reasons, factors influencing a decisions to migrate. Other important element, that this block of questions helped to find –what factors plays the strongest part in stopping respondents to leave their home country and what should happen in Lithuania, that respondents would not consider the possibility to emigrate (Lithuanian respondents), would consider the possibility to stay (foreign respondents).

The purpose of the second block of questions was to find an answer – what needs represent a perception of „a good life“, and where they are better met, i.e. in Lithuania or in foreign (home) country.

The third block of questions was constructed when

analysing European and Asian countries best practise examples in brain gain. The purpose was to identify the policy measures, actions which could help to solve, suppress brain drain phenomenon in Lithuania, and/or even to encourage brain gain.

Analysis of brain drain situation in Lithuania

It is important to stress, that these three samples of respondents have different characteristics. The average EMBA respondent is from 30 till 40 years old, married and employed as executive or has his/her own business. In other words, it is a person with a strong social and economic basis. While other respondents – the students of Nacional Students Academy (NSA) – have totally different characteristics. These are young persons, from 18 till 25 years old, bachelors, with almost no

work experience and trying to find his/her way in life, when choosing what to do after graduation from school or university. It could be stressed, that these high-potential people are potential migrants, because they search possibilities to study in foreign countries. The third sample of respondents (KMU) is foreign countries people, from 25 till 35 years old, studying the sciences of

medicine and the majority are bachelors. In other words, these respondents are potential migrants, because these professions have great demand in worlds' work market.

The results of survey have showed, that highly-skilled people seriously consider the possibility to migrate (Fig. 3).

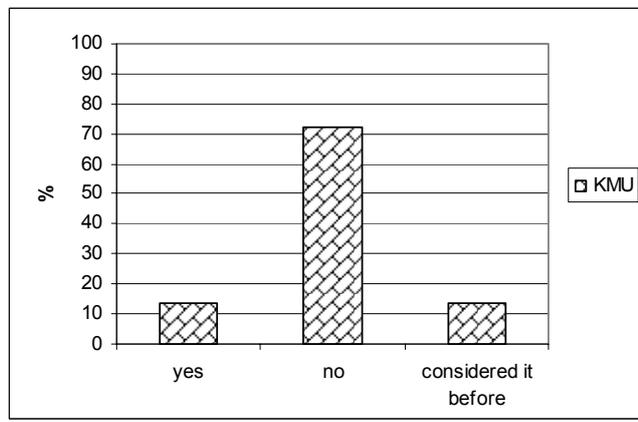
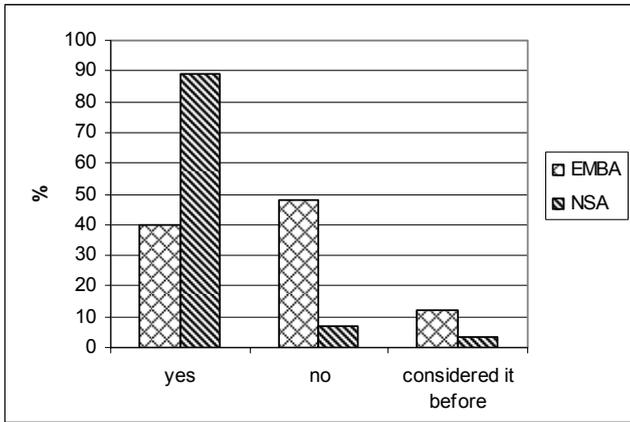


Fig. 3. Self-determination to migrate

The situation is dramatically bad in NSA group, where almost 90 % of respondents consider the possibility to emigrate. These scholars are high potential persons, which could be named as the future of Lithuania's development, its' prosperity. The results show, that they don't see their future in motherland and this perception has a great dangerous for Lithuania's welfare. EMBA respondents are not so negative in this field. The majority of them (almost 50 %) say that they do not consider the

emigration. But, under certain circumstances they would emigrate from Lithuania. While, foreign – KMU – respondents don't see their future in Lithuania and stress, that after graduation from the university they are seriously decided to come back to their motherland or go to other foreign country.

The survey also helped to reveal circumstances influencing a decision to migrate (Table 3).

Table 3. Circumstances, influencing a decision to migrate

EMBA	M*	NSA	M*	KMU	M*
1. radical deterioration of living standards in Lithuania;	1,72	1. attractive work opportunity in foreign country;	1,92	1. losing hope to find work according to qualification anywhere else;	2,20
2. attractive work opportunity in foreign country;	2,16	2. radical deterioration of living standards in Lithuania	2,48	2. attractive work opportunity in Lithuania.	2,60
3. i would emigrate if i had no wife/husband.	2,93	3. losing hope to find work according to qualification.	2,95		

* mean (scale from 1 to 5)

As it is showed in Table 3, the most important causes influencing a decision to migrate for all respondents are very similar. It is necessary to stress, that career opportunities, for highly qualified people, have a great impact. There could be done a generalization, that for NSA and KMU respondents economic circumstances as well as personal career opportunities are these factors which have the biggest influence. While for EMBA respondents social circumstances have more influence when considering a possibility to emigrate.

The study allowed to identify the main "push – pull" factors affecting the highly qualified/potential workers to emigrate (Table 4).

Table 4. “Pull – push” factors

Respondents	Factors	M*
EMBA	1. Unsafe living environment;	1,46
	2. System in Lithuania insufficiently supports my actions.	1,56
NMAD	1. Better conditions for self-fulfilment in other countries;	1,33
	2. Willingness to work in accordance with the qualification;	1,54
	3. Better opportunities to implement initiatives abroad;	1,59
	4. Better living conditions abroad.	1,64
KMU	1. Too low salary;	1,11
	2. Better living conditions in my home country;	1,22
	3. Willingness to work in accordance with the qualification;	1,25
	4. Better conditions for self-fulfilment in other countries;	1,32
	5. Limited career opportunities;	1,39
	6. Insufficient opportunities for carrying out my initiatives in Lithuania.	1,44

* mean (scale from 1 to 3)

The key pull – push factors are related to economic Lithuania’s environment. It could be confirmed, that highly qualified people are searching for self-fulfilment, career opportunities. Equally, they want to be professionally appreciated, thus salary could be identified as a measure to seek this. Unfortunately, this shows that in Lithuania there is a lack of professional opportunities and highly-qualified people feel a lack of personal/professional appreciation.

According to Jucevičienė et al. (2002), every person take a decision to emigrate, as well as to come back to its home country, when weighing one countries “advantages” and others “disadvantages”. This process is based on personal values, and a perception of what is “a good life”. Thus in the survey there was a question which helped to identify respondents opinion about what is a “good life” (Table 5).

Table 5. Factors representing a perception of “a good life”

EMBA	M*	NSA	M*	KMU	M*
1. professional self-fulfilment;	1,19	1. professional self-fulfilment;	1,39	1. communication with family and friends;	1,48
2. good salary;	1,27	2. sense of personal/professional growth;	1,46	2. tolerant and good-willing people;	1,57
3. career opportunities;	1,27	3. career opportunities;	1,68	3. democratic environment and respect to human rights;	1,62
4. sense of personal/professional growth;	1,31	4. communication with family and friends.	1,75	4. safe and clean environment;	1,64
5. communication with family and friends.	1,35			5. professional self-fulfilment;	1,66
				6. emotionally comfortable space of work and living;	1,67
				7. good salary.	1,69

* mean (scale from 1 to 5)

For Lithuanian (EMBA, NSA) professional self-fulfilment is at a top of a perception of what is “a good life”. Meanwhile to foreign respondents (KMU) this figure is only in the fifth place of importance, where communication with family and friends in their view is one of fundamental in a perception of “a good life”. Other needs of Lithuanian respondents associated with the perception of “a good life” are mostly reflected by career opportunities as well as by sense of professional and personal growth. It is important to stress, that foreign respondents highlight the existing of tolerant, good-willing people and democratic environment, respect to

human rights as the essential factors of “a good life”. It could be argued, that foreign countries people face with lack of tolerance and good-willing people in Lithuania, while Lithuanian respondents feel lack of self-fulfilment opportunities in the country.

It is important to highlight, that foreign, as well as Lithuanian respondents claim, that needs associated with their perception of “a good life” are better met in foreign country, but not in Lithuania. It could be argued, that respondent’s willingness to emigrate is influenced by insufficient realisation of their needs in Lithuania. Thus, public policy measures should focus more on the highly

skilled professional needs, in order to stop them to take a decision to emigrate and trying to implement brain gain in Lithuania.

The aim of the survey was to identify the most

important policy measures which could help not only to suppress brain drain, but also to stimulate brain gain in Lithuania (Table 6).

Table 6. Brain gain policy measures

Respondents	Policy measures	M*
EMBA	1. greater respect to individuals from the state institutions;	1,32
	2. ensuring the safe living and criminal-free environment;	1,44
	3. better social guarantees and services for knowledge professionals;	1,44
	4. attracting the international knowledge-intensive firms;	1,44
	5. promotion of tolerance and mutual respect in the society.	1,52
NSA	1. higher salaries for the professionals;	1,44
	2. attracting the international knowledge-intensive firms;	1,54
	3. better technologically equipped workplace;	1,56
	4. creation of international competence centres/technological parks in Lithuania.	1,59
KMU	1. higher salaries for the professionals;	1,32
	2. promotion of tolerance and mutual respect in the society;	1,45
	3. increased state financing for my professional activities;	1,55
	4. better social guarantees and services for knowledge professionals;	1,55
	5. better technologically equipped workplace.	1,57

* mean (scale from 1-yes it would help me stay in LT to 3-no it does not apply to my case)

Basically, for EMBA respondents the most relevant are social factors, when economic factors do not take essential part when influencing their decision to stay in Lithuania. While for NSA respondents the most important “brain gain” policy measures are related with work and career factors, i.e. higher salaries for the professionals, international knowledge-intensive firms in Lithuania, better technologically equipped workplace. These are the most relevant policy measures which could influence their decision to stay in the country.

The analysis of KMU respondent’s answers in the context of brain gain policy measures, helped to reveal, that higher salaries would be the most effective policy measure at convincing to stay and work in Lithuania. It is necessary to highlight, that foreign students/professionals feel the lack of tolerance in Lithuania’s society, thus they stress that promotion of the tolerance and mutual respect in the society. This would be an important policy measure while convincing to stay and work in Lithuania. There could be concluded, that the implementation of above mentioned brain gain policy measures could suppress not only brain drain in Lithuania, but also would contribute to the attraction of foreign specialists to the country.

Recommended actions for the suppression of brain drain phenomenon in Lithuania

Concerning to the best brain gain practises as well as the survey of brain gain causes and brain gain possibilities, there could be suggested recommended actions for the suppression of brain drain phenomenon

in Lithuania, via brain gain. In order to suppress brain drain phenomenon and stimulate brain gain in Lithuania, country’s government should implement and realize a complex, interrelated social and economical policy actions and measures.

The results of the survey have showed that highly qualified people do not see self-fulfilment opportunities in Lithuania. Equally, their needs are not satisfied in the country, thus their decision to emigrate is relatively strong.

It is important to stress, that brain drain phenomenon could be more effectively suppressed via brain gain policy measures, rather than searching for answers and focus on the reasons leading to emigration of highly skilled professionals. There could be highlighted that if a country becomes an attractive place for the international knowledge workers, it will also be attractive enough for the national “brain” to stay in the country.

Figure 4 shows the most relevant brain gain policy measures which could suppress brain drain phenomenon and stimulate brain gain in Lithuania.

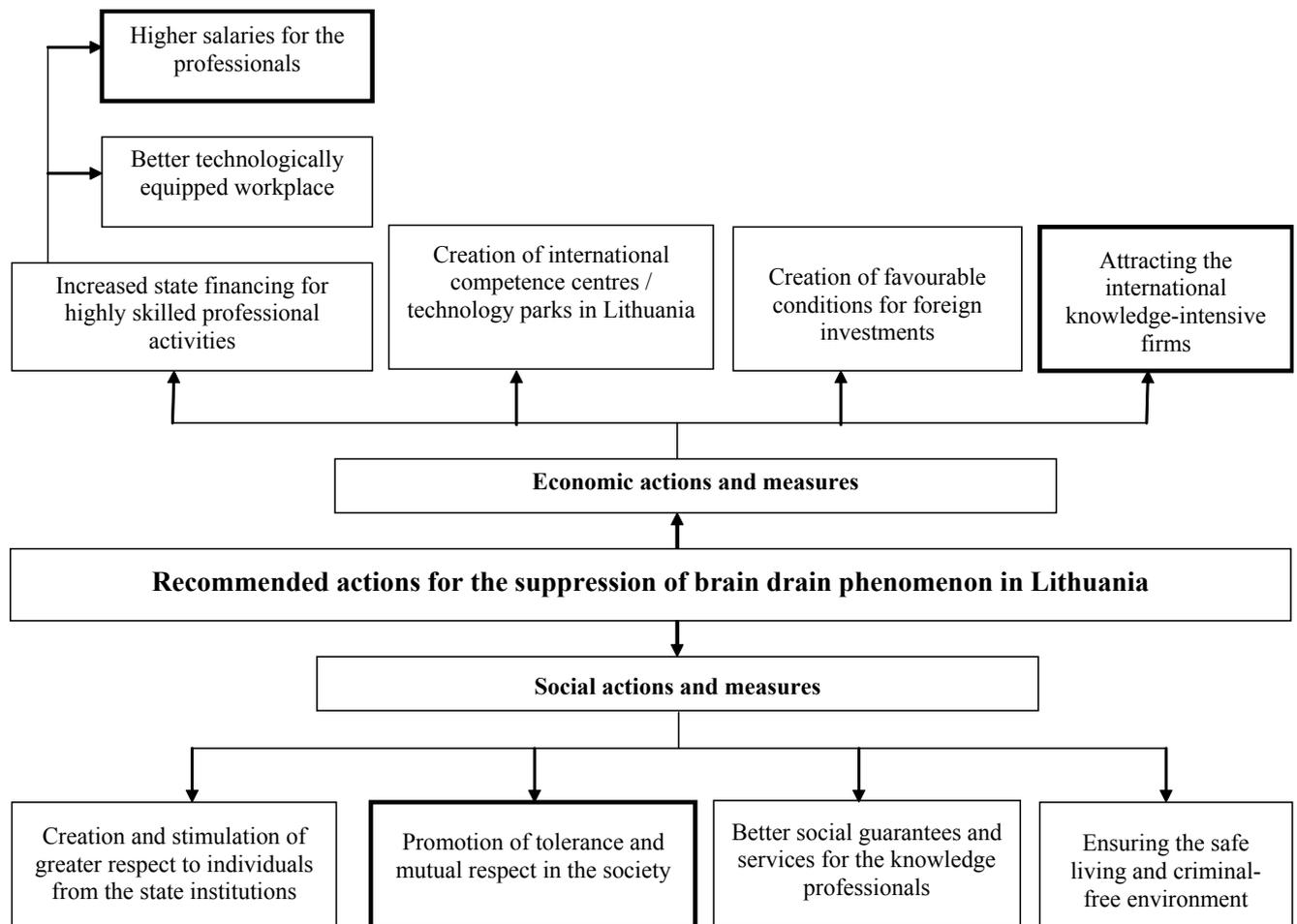


Fig. 4. Recommended actions for the suppression of brain drain phenomenon in Lithuania via brain gain

Conclusions

- *Analysis* of the brain drain definitions *has showed* that brain drain characterizes the migration of highly qualified professionals, in order to find better work and/or living conditions. There was highlighted, that brain gain emphasizes countries success, when implementing appropriate policy, with the purpose not only to retain country's professionals working abroad, but also to attract foreign professionals into the country. It was stressed that in the knowledge based economy, the impact of brain drain phenomenon has a very negative impact for sending countries development, its' competitiveness.
- There *was concluded*, that many European and Asian countries faced with the emigration of highly skilled professionals. However, just few of them managed to retrieve their professionals back to the country. The analysis of best practise examples of European and Asian countries brain gain policies has showed, that there were implemented many similar brain gain policy measures and actions both in European and Asian sates (i.e. the development of multilateral economic, social and cultural relations; communication with the scientists working abroad (scientific diasporas); Increase in financing of R&D). However, European countries pay more attention to the reduction of cultural barriers, while Asian countries try to attract venture capital, establish world-class universities, etc.
- *Analysis* of the survey of brain drain causes and brain gain possibilities enabled to *highlight*, that in Lithuania, highly skilled professionals face with the lack of work and self-fulfilment opportunities, as well as with the lack of assessment, low salary, intolerance. Equally, knowledge workers stress, that needs associated with the perception of "a good life" are better met in foreign country, rather than in Lithuania. Thus, this is one of the most important factors stimulating their decision to emigrate. There was revealed, that Lithuanian specialists are interested in career opportunities, possibility to work with the latest technologies, while foreign professionals wish higher salaries as well as greater respect and tolerance in Lithuania. According to the respondents, this could play and important part when trying to stimulate brain gain as well as to suppress brain drain.
- There *were suggested* recommended actions for the suppression of brain drain in Lithuania. Lithuania's government should implement social and economical actions towards the suppression of this phenomenon.

This includes the increased state financing for highly skilled professionals activities, the attraction of international knowledge-intensive firms as well as the promotion of tolerance and mutual respect in Lithuania's society, etc.

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