COGNITIVE SIMULATION OF EDUCATIONAL MIGRATION TRENDS AND CONDITIONS IN THE CONTEXT OF UNIVERSITIES´ COMPETITIVENESS

- assoc. prof. Olena Andrianivna Sergienko, PhD. - assoc. prof. Svitlana Oleksandrivna Stepurina, PhD. - Yuliia Andriivna Bilan

Abstract

The article conteins the cognitive model for studying the educational migration trends and factors. Scenarios of situation development were implemented: optimistic, realistic and pessimistic that allows to forming methodical recommendations for improving the attracting foreign contingent policies in the context of universities competitiveness management.

Keywords: cognitive model, scenario modeling, educational migration, university competitiveness, foreign contingent, rating, trends, factors

Introduction

The modern stage of civilizational development occurs under the influence of globalization trends, an integral part of which is population migration [1, 2]. Among the variety of migration flows, which are different in orientation, intensity, scale, quality, migration is increasingly allocated for the purpose of obtaining education, uniting the movements of schoolchildren, students, graduate students, doctoral students, trainees, trainees and directs them to the areas of concentration of educational institutions or organizations for improvement of qualifications. Educational migration has a number of positive consequences, including economic, social, demographic, political and is regarded as most desirable for the host country, both in the current and in the long term [3, 4].

During the last 10 years the scope of educational migration in Ukraine has significantly increased that is to certain point due to the introduction to the Bologna process in 2005 [5, 6]. The share of foreign students in Ukraine is reaching the indicators of the leading countries on the market of educational services but not only at the expense of increasing the inflow of educational migrants to Ukrainian higher education institutions. A complex demographic situation on the background of increasing number of Ukrainians going to study abroad needs the re-assessment

280

of the state educational and migration policies, with the aim to develop the one effective system of regulation of educational migration flows in Ukraine.

A great number of native and foreign scientists were engaged in researches on migration processes. The problems of regulation of migrations are highlighted in scientific works of M. Denisenko, E. Libanova, A. Malinovskaya, V. Moiseenko, V. Perevedentseva, A. Poznyak, I. Prybitkova, A. Homri, B. Khorev, T. Petrovoy, S. Pyrozhkova, I Polianskaya, M. Romanyuk, S. Chekhovich, M. Shulga, L. Shaulskaya, T. Yudina. The peculiarities of educational migration in the structure of migration flows were studied by O. Belyakovsky, Yu. Chekushin, O. Pismenna, G. Panin, M. Safonov, M. Karna, I. Tsapenko, K. Farrukh, E. Vilyareal. The aspects of educational migration in the context of development of educational system of Ukraine were studied by: A. Grinenko, V. Zhuravsky, M. Zgurovsky, A. Kolesnik, V. Kutsenko, L. Kurij, L. Semov, A. Fedosov, G. Chuiko and others.

Despite the quite significant number of scientific researches on migration processes, the main attention of scientists is paid to the analysis of scopes, possible consequences and regulation of labor migration. At the same time the problem of regulation of educational migration did not go into full coverage in scientific literature of its peculiarities, preconditions, factors, types, instruments and other elements of formation of effective educational migration policy in Ukraine. The importance of these issues causes a target orientation and relevance of this research.

The modern dynamics of educational migration processes witnesses the focus of migration policies of many countries in the world in the direction of attracting educational migrants who can be considered as significant capital. The Ukrainian system of education has a powerful potential that is proved with high international rating indicators. Moreover, the Ukrainian HEIs need not only finance but also entrants because of the complex demographic situation in the country. Many HEIs are trying by themselves to find the ways of attracting foreigners for studying. However, in conditions of increasing international competition in this issue it is necessary to have state policy of promoting abroad the Ukrainian educational system, which would take into account the positive experience of foreign countries and be oriented not only to attraction of foreign entrants but would also prevent Ukrainians form going to study abroad. The completed research on educational migration processes allows making out the main goal of educational migration policy – to attract foreign migrants to Ukraine from countries of near and far abroad in the interests of social, economic, political and demographic development of the country. Such educational migration policy requires the interaction and coordination

on three levels of realization of regulatory influence: state (Ministry of Education and Science, Ministry of Foreign Affairs, Ministry of Internal Affairs), regional (state regional administration and other regional state authorities) and separate HEI levels.

The main tasks of educational migration policy are to create the favorable conditions for staying and studying of educational migrants in Ukraine; to form the migration potential for perspective accession of number of foreign students; to improve the migration policy in direction of simplifying the regimes of entrance, staying and receiving citizenship for educational migrants; to stimulate the integration of educational migrants into Ukrainian society and economy [3, 7, 8].

Lately, the scenario modeling and forecasting is becoming more widely used in development of strategies of systems socio-economic development [4, 9, 10]. This approach is most fully corresponding to the tasks of investigating and forecasting the behavior of contradictory heterogeneous systems and processes. The scenario modeling as an instrument of building not separate development trajectories but a great spectrum of variants to assess the influence of different factors is very effective while choosing the target orients, strategies of system development and while assessing the possible risks [10]. Let's consider more in details the building of scenarios of regulation of educational migration processes and preconditions of their formation and realization:

1. In order to determine the factors and degree of their influence on decision making by foreigners about getting education in Ukraine, a questionnaire was conducted among 221 foreign students from three Kharkiv higher education institutions. On the basis of summarizing the results of the questionnaire the socio-economic profile of a typical foreign student was developed, in accordance to which an educational migrant is a young representative of the near abroad who is attracted with medical, technical, engineering and economic specialties. His main aim of coming is receiving a corresponding qualification to increase his competitiveness on the labor market. However, he is not going to choose our country for employment and/or domicile. He has enough financial support and is trying to enter the HEI with a quite high rating in "social networks".

2. By summarizing the results of two previous surveys there was formed a questionnaire to determine the expert assessment of dominating factors of educational migration at three levels – state, regional and HEI level. 19 practitioners, who directly take part in regulation of educational migration, were participating in the research. According to the results of the expertise, the most influential factors for educational migration at state level were defined

to social and political safety in country; cost of living in country, at regional level – cost of living in region; at HEI level – cost of studying, development of HEI infrastructure, quality of education, presence of social networks of foreign students. On the basis of summarizing the results of expert assessment the factors were distributed according to degree of influence on educational migration, their interplay and connections were determined.

The output characteristic of the system of managing the educational migration studied in work and the indicator reflecting the main result of the regulatory influences will be considered to be the indicator of number of foreign students who are coming in certain period marked as KSI. In correspondence to the levels of research, such indicator will be considered on three levels: state (KSI_D), regional (KSI_R) and on HEI level (KSI_W). In correspondence to the defined levels, the dependence of mentioned indicators is formed:

$$KSI_R = \sum_W KSI_W \; ; \; KSI_D = \sum_R KSI_R = \sum_R \sum_W KSI_W \; .$$

The totality of considered factors creates the conditions for living and studying for foreign students, which can be divided into three groups: social (S), financial (F) and educational (U), moreover, certain factors can influence the formation of not one but several groups of conditions at the same time (fig. 1).

Every separate group of conditions which are formed under the influence of factors can satisfy or dissatisfy the educational migrant. But in their totality the conditions have strengthening or compensative interplay.

3. 3. The totality of considered factors was grouped corresponding to the influence on conditions of staying and studying of foreign student – social, financial and educational. On the basis of summarizing the results of the research the range of effects was determined which causes the inflow of foreign students for state and regional level, HEI level and the foreign student himself. The quantitative assessment of the effects was conducted on the basis of which the possibility of building the cognitive model of regulation of educational migration only on the level of separate HEI was justified.

Fig. 1 Interconnection of factors of educational migration
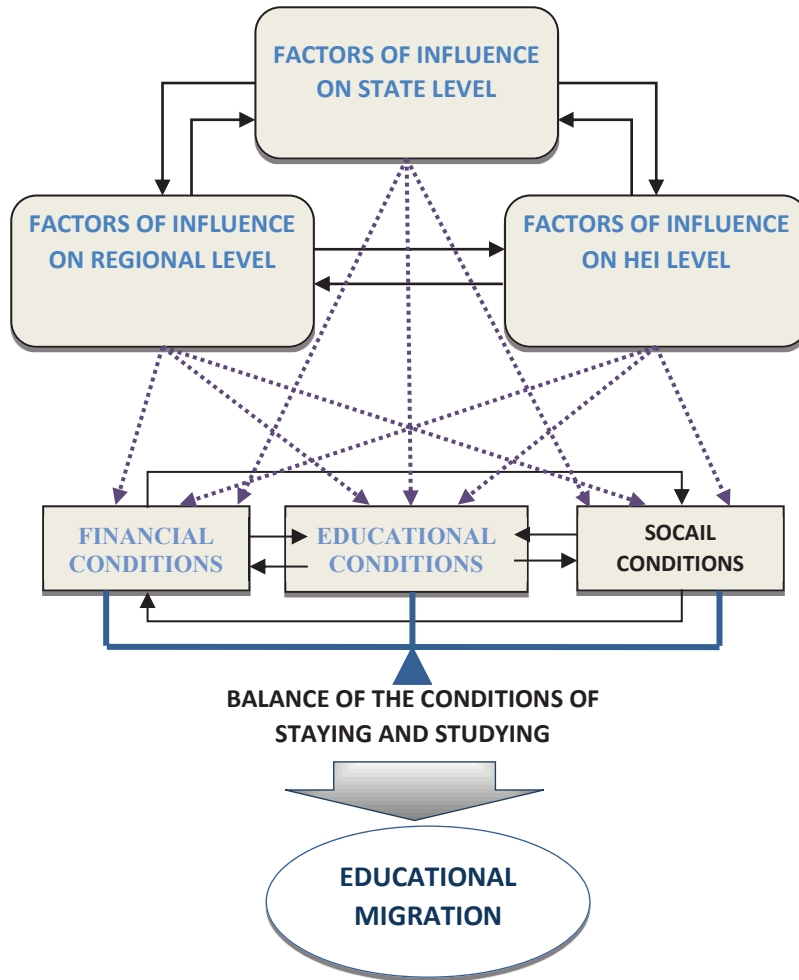
The listed effects and consequences can be conventionally categorized into four groups: social, economic, political and demographic.

The set of social effects includes: $E = \{E_2, E_6, E_7, E_8, E_0, E_1, E_2\}$;

the set of economic effects: $E = \{E_1, E_4, E_6, E_9\}$;

political ones include the effect of emergence of ethnic conflicts, misunderstandings: $E = \{E_3\}$;

demographic ones include the factor of improvement of demographic situation in Ukraine: $D = \{E_5\}$.

The considered effects can appear on state and regional level, on the HEI level and directly relate to foreign student, moreover, one and the same effect can emerge not only on one level but on several levels simultaneously (fig. 2).

Fig. 2 Distribution of effects of educational migration according to the levels of emergence
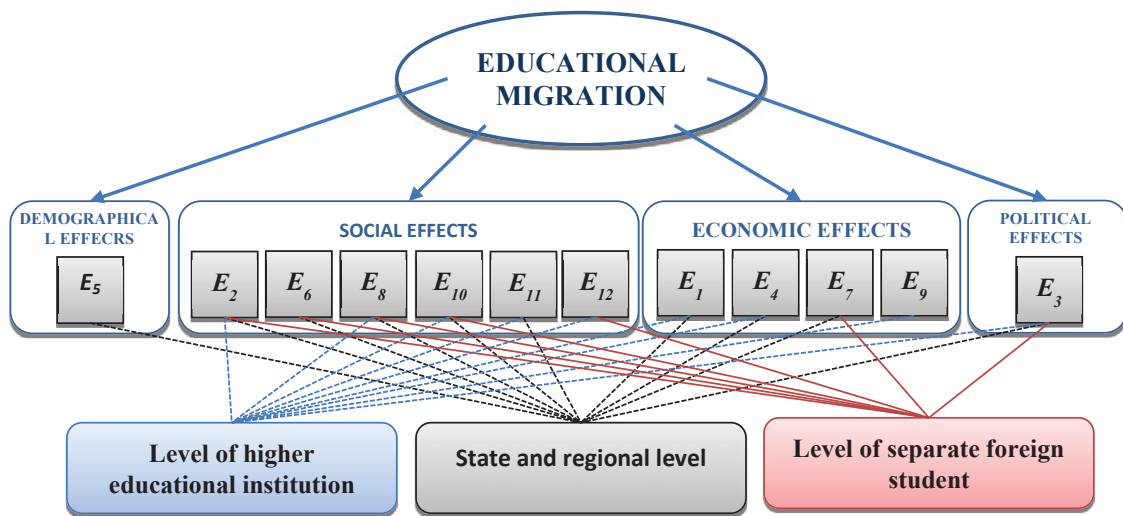
On macro- and mezo- levels the following effects emerge:

$$DRE = \{E_1, E_2, E_3, E_4, E_5, E_6, E_7, E_8, E_{10}, E_{11}\};$$

on the level of higher educational institutions the following effects emerge:

$$W = \{E_1, E_2, E_3, E_4, E_8, E_9, E_{10}, E_{11}\};$$

considering a separate student-foreigner the following individual effects are probable:

$$E = \{E_2, E_3, E_6, E_7, E_8, E_{10}, E_{12}\}.$$

4. Relying on results of previous assessments a cognitive map of the model of regulating the educational migration was built that, differently from the existing ones, combines factors with taking into account their interplay, conditions of staying and studying for foreigners, which in balance lead to educational migration, and defines the effects for the country, region, HEI and the educational migrant himself. The final step is building the cognitive model as an oriented graph [1, 5, 6, 7]. On the basis of oriented graph-structure scheme of cause-effect relationships between the elements of the studied system the cognitive model of regulating the educational migration was built with the help of application software VensimPLE (fig. 3).

5. A cognitive model is a basis for developing the scenarios of situation development. Scenario modeling will allow, basing on cognitive model, determining the possible variants of situation development, ways and mechanisms of influence

on the situation with the aim to reach the desirable results, avoid unwanted consequences, develop a complex of measures of influencing the situation [1, 8, 10]. Each scenario is characterized by output data, managerial influence and received result. Thus, all possible variants of system development are considered and the optimal managerial strategy is chosen to achieve the desirable goals. The scenario approach is a basis for cognitive modeling, which is a cyclic process.

Fig. 3 Cognitive map of the educational migration imitation model
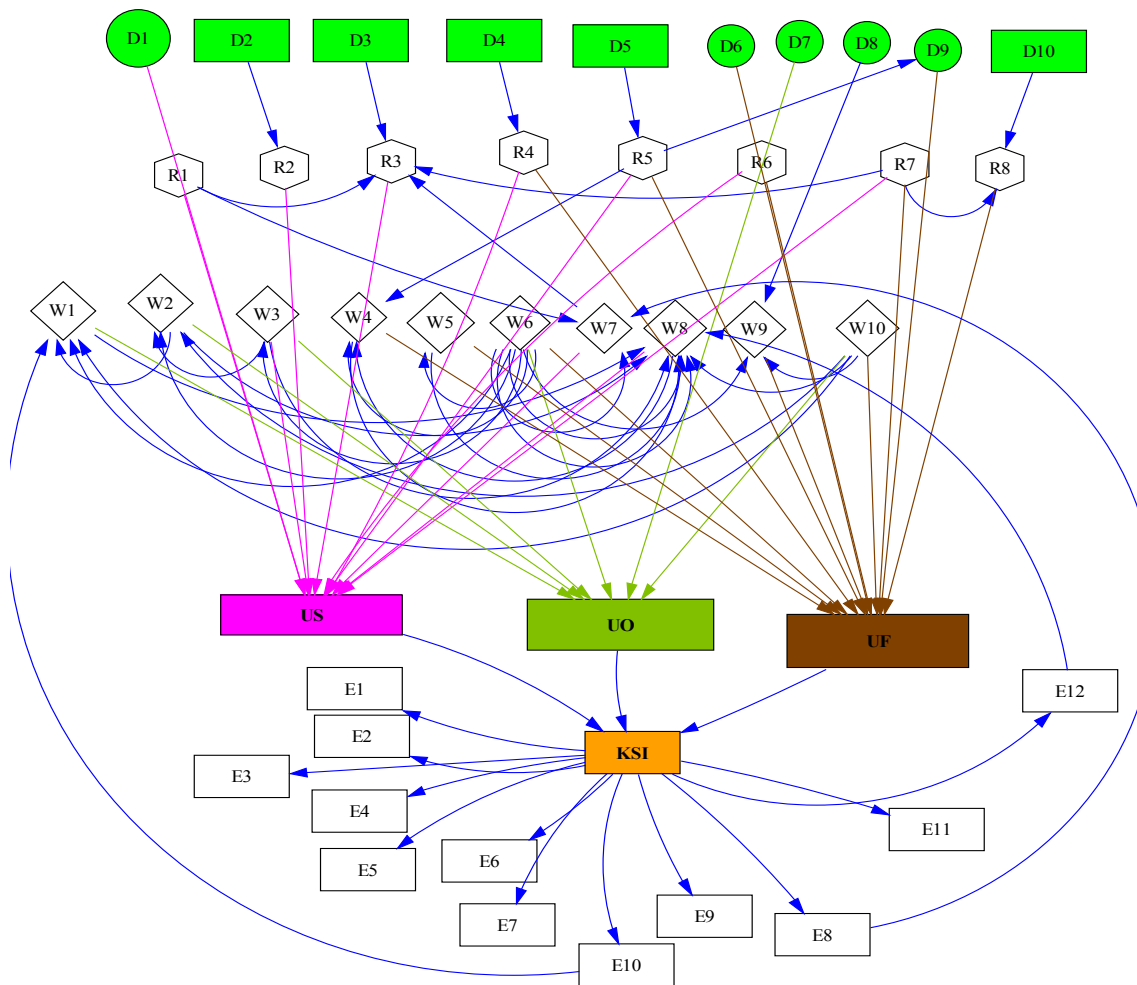
In order to build scenarios on the basis of the developed model the factors were determined which are factors of educational migration but are not participating in regulation of educational migration processes: geographic location of the country, climate and ecological conditions, social environment, cost of migration and foreigner's level of proficiency in language of communication in region, conditionally-constant factors that have their quantitative assessments but are not related to direct regulation of educational migration processes: social and political safety in the country, level and accessibility of health care system in the country, level of infrastructure development in the country, accessibility and integrity of educational system in the country, cost of living in the country. The rest of the factors was given the quantitative and qualitative assessment and functions of belonging were built to determine the scenarios of development of educational migration processes in Ukraine [5].

The work suggests modeling the scenarios of regulating the educational migration by two direction: self-development and direct task [1, 11, 12]. Let's consider the principles of building these scenarios. According to the suggested scheme, let's determine the list and value for external and internal factors influencing the formation of contingent of students-foreigners, which correspond to optimistic, realistic and pessimistic scenarios. For the situation of self-development the absence of any regulating influences is characteristic, that is why the conditions of forming the contingent of foreign students will form the factors not regulated on macro- and mezo-levels and on the HEI level.

Thus, a pessimistic scenario if formed under conditions of the lowest values of the factors-stimulators, the highest values of the factors-disintegrators. A realistic scenario is formed based on the combination of average values of the factors-disintegrators and the worst values of the factors-stimulators. An optimistic scenario is formed under conditions of combining the best values of factors-stimulators, the lowest values of factors-disintegrators. A fragment of values for the factors-stimulators is depicted in table 1.

In order to implement the scenarios, the values of the influencing factors remain on the level of initial values (according to the data of 2012-2013 academic years), these factors are normalized and entered to the system of functional dependencies of an unclear cognitive model and the integral estimations of the conditions of educational migration processes are calculated

Tab. 1 The fragment of the parameters values for modeling of educational migration scenarios

Factor denomination	Name of the factor	Significance	Value of the factor for scenarios of implementing the measures				
			Optimistic	Realistic 1	Realistic 2	Realistic 3	Pessimistic
R_6	Additional conditions and advantages in region for foreigners studying	0,034	67-100	34-66	34-66	0-33	0-33
W_3	Language of study	0,075	3-5	2	3-5	1	1
W_4	Availability of entrance conditions for students-foreigners	0,184	67-100	34-66	67-100	34-66	0-33
W_8	Social networks	0,055	67-100	34-66	67-100	0-33	0-33
W_0	Level of corruption at the educational institution	0,026	0-1,5	1,5-3,5	3,5-5	0-1,5	3,5-5

As a result, there were received the integral estimations of social, financial and educational conditions of forming the contingent of foreign students of KhNUE for 2016-2017 academic years for three scenarios (table 2).

Tab. 2 The results of modeling the scenarios of situation self-development

Scenario	Social conditions			Educational conditions			Financial conditions		
	Model data	Real data	Mistakes	Model data	Real data	Mistakes	Model data	Real data	Mistakes
Pessimistic	0,665	0,678	-0,085	0,229	0,208	-0,021	0,204	0,2	-0,004
Realistic	1,087	1,194	0,013	0,34	0,333	-0,007	1,6	1,48	-0,164
Optimistic	1,659	1,574	0,107	0,421	0,443	0,022	1,644	1,68	0,08

Thus, as a result of modeling the self-development of educational migration processes, the predicted values of foreign students' contingent for certain HEI (on KhNUE example) were received that makes it possible to objectively evaluate the tendencies of development of educational migration in certain region and HEI without any managerial influences.

The forecast of the situation development with the reverse vector of managerial influences is done in the following way: according to the significance coefficients of the factors of all three levels calculated on the basis of the expert assessments, which form the contingent of foreign students, the functional graph of regulating the

educational migration processes there is forecasted the influence of the change of the most influential factors.

The results of modeling the scenarios of situation development with the reverse vector of managerial influences are depicted in table 3.

Tab. 3 Scenario modeling results

| Indicators	2016-17	2017-18	2018-19	2019-20
Pessimistic scenario				
Social conditions	1,14	1,20	1,29	1,39
Educational conditions	0,35	0,36	0,39	0,42
Financial conditions	0,20	0,22	0,23	0,25
Number of foreign students	2244	2271	2296	2322
Income of the HEI, th.UAH	29771,7	30131,9	30466,8	30805,3
Realistic scenario				
Social conditions	2,74	2,77	2,80	2,83
Educational conditions	0,46	0,46	0,47	0,47
Financial conditions	1,60	1,62	1,64	1,66
Number of foreign students	2493	2524	2552	2580
Income of the HEI, th.UAH	33079,9	33480,2	33852,2	34228,4
Optimistic scenario				
Social conditions	2,78	2,81	2,83	2,92
Educational conditions	1,30	1,31	1,32	1,36
Financial conditions	1,64	1,66	1,67	1,73
Number of foreign students	2715	2740	2762	2850
Income of the HEI, th.UAH	36026,6	36350,8	36637,6	37810,0

According the results received, the following conclusions can be made: the chosen threshold of the significance of the influencing factors has shown that the most influential factors have social and educational character, so the managerial influences suggested for regulation of educational migration processes have to be oriented to improvement of educational and social conditions of formation of foreign students' contingent. That is why, the results of experiments for these two groups will differ from the results received while forecasting the system's self-development, and the financial conditions will remain the same.

When comparing the results of two groups of scenarios it is clearly seen that the scenarios of the second group are more effective because they consider developing a set of managerial decisions according to the most essential factors and conditions of formations of students-foreigners contingent and allow assessing the effectiveness of these decisions.

The last stage considers selection of the most effective decisions and levers of regulation of the conditions of forming the foreign students' contingent, determination of the strength and direction of their action, measures of preventing the negative consequences.

The work also suggests the imitational approach to implementation of this task. The model of assessment of the results of modeling the scenarios is depicted in fig. 4.

Fig. 4. Block for assessing the results of imitations modeling
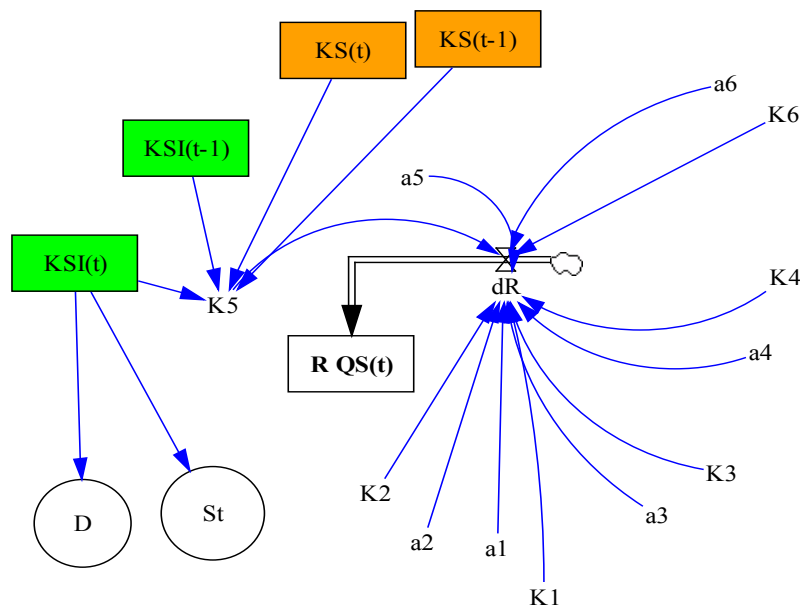
Number of foreign students, as the main result of the built cognitive model, is an important criterion (factor) of increase of the HEI prestige that is reflected in different rating systems, both national and international. One of such ratings is the rating of the world's universities QS [12], which is calculated basing on 6 criteria. In order to build the model, let's denominate the rating value for certain university during certain period as R_t, and the criteria values – as K_t. Then, taking into account all mentioned above, rating of the world's universities QS can be calculated using the formula of the average arithmetic:

$$R_t = \sum_{i=1}^{6} \alpha_i \cdot K_i \,,$$

where α_i - level of criterion significance.

As evaluation of effectiveness of managing the educational migration processes on the HEI level let's consider rating growth during certain period (year):

$$\Delta R_t = R_t - R_{t-1} = \sum_{i=1}^{6} \alpha_i \cdot (K_{i,t} - K_{i,t-1})\,.$$

In frameworks of this research let's investigate the influence the following criteria on rating growth (table 4): share of foreign students and reputation among employers, as the first one is formed from the contingent of foreign students, and the second one is a kind of evaluation of quality of training and received competencies of the students-foreigners who graduated from the educational institution and received the diploma.

Tab. 4 Results of modeling the growth of the rating of world's universities QS due to change of the share of foreign students according to the scenarios

Indicators	2016-17	2017-18	2018-19	2019-20
Pessimistic scenario				
Number of foreign students	2244	2271	2296	2322
Share of foreign students in total number, %	16,03	16,22	16,40	16,59
Growth of the share of foreign students, %	0,65	0,19	0,18	0,18
Rating growth, units	0,07	0,02	0,02	0,02
Realistic scenario				
Number of foreign students	2493	2523	2551	2580
Share of foreign students in total number, %	17,81	18,03	18,23	18,43
Growth of the share of foreign students, %	0,65	0,22	0,20	0,20
Rating growth, units	0,07	0,02	0,02	0,02
Optimistic scenario				
Number of foreign students	2715	2740	2762	2850
Share of foreign students in total number, %	19,40	19,57	19,73	20,36
Growth of the share of foreign students, %	0,65	0,17	0,15	0,63
Rating growth, units	0,07	0,02	0,02	0,06

Another criterion – reputation among employers – is also significantly influencing the rating formation, moreover, the significance level of this scenario is 0,1 (10%). With its quantitative estimation the following information is used as basic. According to the statistical surveys of the students' graduations from KhNUE in 2000-2016, the following data was received: annually, approximately 20% of the students, who studied in current year on graduation course, get the diploma; in average, half of them (10%) are students who studied on "good" and "excellent" and have a high level of professional qualification. Among them there are also students-foreigners. In average, 50% of graduates find job in the current year at prestige enterprises and organizations, which positively assess the knowledge and skills of the graduates. However, such statistics differs for the foreign students. As the conducted research showed, among the graduates-foreigners only 2% are going to work in Ukraine after graduation, 17% are going to work and study further, others go back home. Thus, form the total number of graduates-foreigners who studied well, only 20% will get positive feedback from employers.

Another part of the graduates (in average 25-30%) get employed to prestige work during the next years, others work for themselves, at small enterprises, private enterprises, start their own business or do not find work during the current and next years. General growth of the rating of world's universities QS due to the change of reputation among employers and share of foreign students according to the scenarios is shown in table 5.

Tab. 5 General growth of the rating of world's universities QS due to change of reputation among employers and share of foreign students according to the scenarios

Scenario	2016-17	2017-18	2018-19	2019-20
Pessimistic	0,21	0,22	0,23	0,24
Realistic	0,29	0,30	0,31	0,32
Optimistic	0,35	0,41	0,44	0,47

Conclusion

So, on the basis of cognitive model of educational migration imitation, given quantitative and qualitative indicators three scenarios of situation development were implemented: optimistic, realistic and pessimistic that allows, basing on them, forming methodical recommendations for regulation of educational migration

with the aim to attract educational migrants to Ukraine from the countries of near and far abroad in the interests of social, economic, political and demographic development of the country. In particular, the improvement of state system of regulation of international educational migration on the basis of the developed scenarios considers establishment of the main target benchmarks to provide the regulatory influence on all levels – state, regional and the HEI level. Target benchmarks are determined first of all into the renewed regulatory frameworks for the foreign students' studying; improvement of the educational migration processes accounting systems'; improvement of organizational provision of regulation of educational migration and improvement of informational provision of regulation of educational migration.

Thus, the realization of the suggested measures for regulation of educational migration will contribute to the integration of national education and science into the world's system, will increase the quality of education and its competitiveness on the international markets of educational services, will increased the level of income and compensations of negative consequences of demographic crisis in Ukraine in order to support the scientific and pedagogical potential of the country.

Literature

[1]   BIL, M. M. Upravlinnia mihratsiinymy protsesamy v konteksti yikh vplyvu na intelektualno-trudovyi potentsial Ukrainy / M. M. Bil // Stalyi rozvytok ekonomiky. – 2010. – № 1. – S. 49-54.

[2]   ZHOVTONIZHKO, I. M. Do problemy orhanizatsii samostiinoi roboty inozemnykh stu-dentiv 1,5-richnoho terminu navchannia pid chas dovuzivskoi pidhotovky (na pry-kladi vyvchennia matematyky) / I. M. Zhovtonizhko // Visnyk Kharkivskoi derzha-vnoi akademii kultury. –2009. – Vyp. 27. – S. 278-282. – Rezhym dostupu: http://nbuv.gov.ua/UJRN/hak_2009_27_34.

[3]   ALEKSEIEVA, T. V. Psykholohichni faktory ta proiavy protsesu adaptatsii studentiv do navchannia u VNZ : avtoref. dys... kand. psykhol. nauk : 19.00.01 / http://nbuv.gov.ua/UJRN/Pfto_2013_28_87. T.V.Aleksieieva ; Kyiv. nats. un-t im. T. Shevchenka. – K., 2004. – 20 s.

[4]   POROKH D.O.Tekhnolohiia treninhu v protsesi adaptatsii inozemnykh studentiv do navchannia u vyshi / D. O. Porokh // Pedahohika formuvannia tvorchoi osobystosti u vyshchii i zahalnoosvitnii shkolakh. – 2013. – Vyp. 28. – S. 564-569. – Rezhym dostupu:

[5] Monitorynh intehratsii ukrainskoi systemy vyshchoi osvity v Yevropeiskyi pro-stir vyshchoi osvity ta naukovoho doslidzhennia: monitorynh. doslidzh.: analit. zvit / Mizhna-rod. blahod. Fond «Mizhnarod. Fond doslidzh. osvit. polityky»; za zah. red. T.V.Finikova, O.I.Sharova– K. : Takson, 2014. – 144 s. – Rezhym dostupu: http://www.edupolicy.org.ua/_dx/assets/images/Analit2ua_web.pdf

[6] PODOLSKA, Ie. A. Novitni sotsialni tekhnolohii: osnovni zavdannia, napriamky ta formy vykhovnoi roboty z vitchyznianymy ta inozemnymy studentamy / Ie.A. Podolska, H.V. Zaichenko, K.A. Ivanova, O.P. Moskalenko, O.I. Matvieieva; red.: V.P. Chernykh. – Kh., 2000. – 131 c.

[7] ANDREICHYKOV, A. V. Analyz, syntez, planyrovanye reshenyi v эkonomyke: uch. pos. / A. V. Andreichykov, O. N. Andreichykova. – M.: Fynansы y statystyka, 2004. – 464 s.

[8] IERMACHENKO, V. Ie. Mizhnarodne spivrobitnytstvo universytetu / V.Yermachenko // Vyshcha shkola – 2010. – № 10. – S. 31-41.

[9] Aktualni statystychno-analitychni pokaznyky nadannia osvitnikh posluh inozemtsiam [Elektronnyi resurs] // Ofitsiinyi sait Ukrainskoho derzhavnoho tsentru mizh-narodnoi osvity Ministerstva osvity i nauky Ukrainy. – Rezhym dostupu: http://intered.com.ua/.

[10] Intehrovana systema "Vyshcha shkola – biznes-struktura»: metodolohiia ta kontseptualni zasady pobudovy : monohrafiia / V. S. Ponomarenko, O. V. Raievnieva, V. Ie. Yermachenko ta in. – Kh. : VD «INZhEK», 2011. – 160 s.

[11] HRYSHCHENKO, N. A. Osoblyvosti sotsializatsii inozemnykh studentiv vyshchykh nav-chalnykh zakladiv / N.A. Hryshchenko // Visnyk LNU im. T. Shevchenka. – 2012. – №5 (240). – Ch. II. – S. 192-196.

[12] DOVHODKO, T. I. Rozvytok systemy pidhotovky inozemnykh studentiv v Ukra-ini / T.I. Dovhodko // Vyshcha osvita Ukrainy. – 2012. – №3 (dodatok 2). – T. 2. – S. 102-104.

Contacts

assoc. prof. Olena Andrianivna Sergienko, PhD.
Department of Commercial, Trade and Entrepreneurship
National Technical University «Kharkiv Polytechnic Institute»
Kharkov, Ukraine
E-mail: serhelenka@gmail.com

assoc. prof. Svitlana Oleksandrivna Stepurina, PhD.
Department of Statistics and Economical Forecasting
Kharkov, Ukraine
E-mail: sv.stepurina@gmail.com

Yuliia Andriivna Bilan
Master Candidate in Economics, Specialty «Management of innovation activity»
Simon Kuznets Kharkiv National Economic University of Economics
Kharkov, Ukraine
e-mail: yuliabilan2@gmail.com