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## PRACTICES OF RETENTION OF YOUNG SCIENTISTS IN MODERN UNIVERSITIES OF RUSSIA AND CHINA

**Abstract.** The article discusses the modern features of attracting, developing and retaining young researchers in Russia and China. A brief review of the existing traditions in the field of formation of highly qualified personnel and trends in the field of quality control of their training, the existing models of modern universities is presented. The authors consider the results of opinions of experts from Russian universities regarding the problems of development of modern postgraduate studies and career strategies of young researchers, suggest current institutional practices for attracting and retaining young researchers and teachers in higher education: academic inbreeding; development of a motivation system for young researchers and lectures; thirdly, the practice of modernizing institutional tools to attract young scientists and lectures.

**Keywords:** reproduction of human capital, academic in-breeding, motivation of young researchers and teachers, institutions for attracting and retaining young scientists and teachers

Problems of reproduction of human capital in higher education in the context of increasing structural and digital transformation of national universities are relevant and require finding new mechanisms for attracting and retaining young scientists, developing the potential of scientific research using labor, infrastructure and material and technical resources of universities. It is known, the trends towards increasing competition and the development of technological entrepreneurship in the global system of higher education present modern universities to the problem of effective management of the existing human potential. Taking into account the indicators of the development of science in Russia (the indicator of the number of those who defended according to the results of postgraduate education decreases in 2012 - 26.1%, 2013 - 25.9%, in 2014 - 18%, in 2015 - 18%, in 2016 - 14% , 12.8% in 2017, as well as the average age of scientific and pedagogical workers who are 50 years old), we believe that at present there is a serious problem of staff renewal, reproduction of human capital in higher education (Fig. 1).

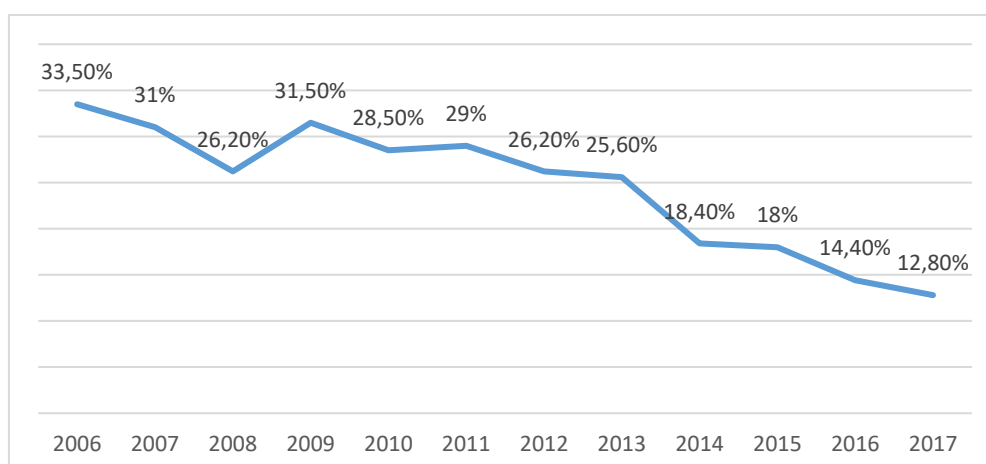


Fig. 1 – The dynamics of timely defended Russian postgraduate students in the total number of completed the learning process, 2006-2017.

In China, on the contrary, higher education development programs are becoming more active, the number of universities, students and teachers is growing. However, according to a number of

Russian researchers [1], in China there is a problem of the quality of the training of young researchers. The key factor in the quality and prestige of educational programs, as in Russia, in China is the quality of the university staff. Thus, the lack of effective mechanisms for attracting and retaining young and promising researchers and teachers both in Russia and in other countries determines interest in this scientific problem.

The academic market in Russia and China has similar characteristics and characteristics. So, universities in China are divided into four types:

- 1) Research universities,
- 2) Universities engaged in equal science and education,
- 3) Traditional institutions offering four-year study programs,
- 4) Colleges of a three-year educational cycle.

Chinese universities are also classified according to their subordination:

- 1) Universities directly reporting to the central government
- 2) Universities subordinate to the provincial authorities
- 3) Private universities.

In Russia there is a very extensive system of classification of universities. Since 2006, a project has been launched for federal universities, which currently number 11 in the Russian Federation. In addition to federal universities in Russia, there are *research universities*, *industry universities*, and since 2017, *supporting universities* have emerged that solve problems in the development of regional economic systems. Note that since 2011, all state universities of Russia have been divided into three types of institutions: public, budgetary, autonomous. Such a division makes it possible to distinguish between flows of subsidies for the performance of a government budget.

A modern proposal related to the reform of accreditation in the field of higher education in 2018 is the modernization of universities and their division into three types: basic, advanced and leading. The basic type of higher education institution means that an educational institution must implement programs in a network form, including using online courses of the National Open Education Platform, which is, using the potential of leading universities. An advanced type of university can create its own programs, training courses, conduct traditional lectures and classes. The leading university should, in addition to implementing its own programs, create and implement educational programs in the online form for basic universities. In general, the problem of upgrading the system of higher education is global and innovative. Current discussions about traditionalism or innovation, susceptibility to change are reduced to the definition of several types of models of universities of the future.

Among the models of universities, such as global project research universities, universities for on-line education, universities providing infrastructure, corporate universities, *universities for an innovative economy*, etc. are distinguished. An analysis of emerging models of universities confirms the fact that in a sectoral and innovative format, a university model for an innovative economy is suitable. The features of such a model are project training, domestic and international mobility, the unit of instruction is the team, competitive selection of projects, teaching methods — projects, cases, learning by experience. It should be noted that such a format in no way reduces the fundamental academic level of teaching, but only enriches it with new technologies and effective institutional practices. Despite the similarity or difference of systems and models of universities in Russia and in China. For both countries, there is the problem of ensuring the quality of training and reproduction of human capital, and above all, in the field of training highly qualified personnel.

According to the author, there are three key institutional practices of attracting and retaining young researchers and lectures in higher education: first, the practice of academic inbreeding; secondly, the practice of developing the system of motivation of young researchers in universities; thirdly, the practice of modernizing institutional tools to attract young scientists and lectures.

### **Academic inbreeding**

Academic inbreeding in the field of education is interpreted as attracting, hiring and retaining universities of their own graduates. University inbreeding is an integral part of personnel policy in

the modern education system. This topic is of particular relevance in connection with the problems of reproduction of human capital of the higher education system. A key role in the reproduction and strengthening of the practice of inbreeding is played by postgraduate study, that is, the environment and direction of training that forms the new generation of practicing teachers and research teachers.

Comprehensive interpretation and understanding of the problem of academic inbreeding and career development in an academic environment will allow determining which factors influence decision making in the field of job search and motivation in the field of academic employment. In this regard, we believe that in the absence of an academic labor market, internal inbreeding allows for the reproduction of human capital in higher education, mainly through the development of the institute of postgraduate education.

The spread of inbreeding in China, for example, was related to the way postgraduate study is organized. Therefore, in China, only research universities have the right to issue a PhD degree in some specialties. Accordingly, the level of academic inbreeding in universities with its own graduate school is higher and reaches 57%. Since 1999, the central government of China and leading research universities have been interested in reducing the level of inbreeding. However, the majority of universities in China still do not refuse to hire their own graduates.

Modern studies of domestic and foreign scientists [7] show that academic inbreeding is a common phenomenon, but in world practice, it is treated differently. However, in countries such as Russia, Ukraine, Slovenia, Argentina, Spain, universities openly give preference to their graduates [2]. This trend is explained not by the lack of academic mobility, but by the lack of a national academic labor market, problems with renting houses, cultural traditions and family values. The reasons related to the institutional culture (loyalty of the internal labor market in relation to colleagues, and not to external candidates for academic vacancies) and the stability of social relations in universities, are of great importance and determine the low mobility of teachers. That is, such reasons support the development standards of mono career. Thus, in modern federal and supporting universities of Russia, a steady trend in the development of the internal labor market is being formed, contributing to the maintenance of a closed personnel management system. During March-May 2018, the authors conducted a survey of 187 experts, within which opinions were obtained regarding the reasons for the ineffectiveness of training highly qualified personnel and the development prospects of the training system for young researchers<sup>1</sup>. The experts were members of dissertation and academic councils, heads of postgraduate studies, heads of structural subdivisions of higher educational institutions and research organizations, researchers and others involved in the process of preparing scientific and pedagogical personnel from the following regional and federal universities. According to the study, the following factors have a significant impact on the demand of young professionals of higher qualification: the lack of opportunities for universities to form attractive job offers for young researchers and lectures, a small amount of research and development, low vacancy rates for young professionals in the academic field due to institutional conditions and the traditions of the election of university staff by competition (as a rule, in such competitions, preference is given to university staff having experience). With a high frequency, experts noted a significant impact on the demand of young specialists on the level of academic inbreeding in universities.

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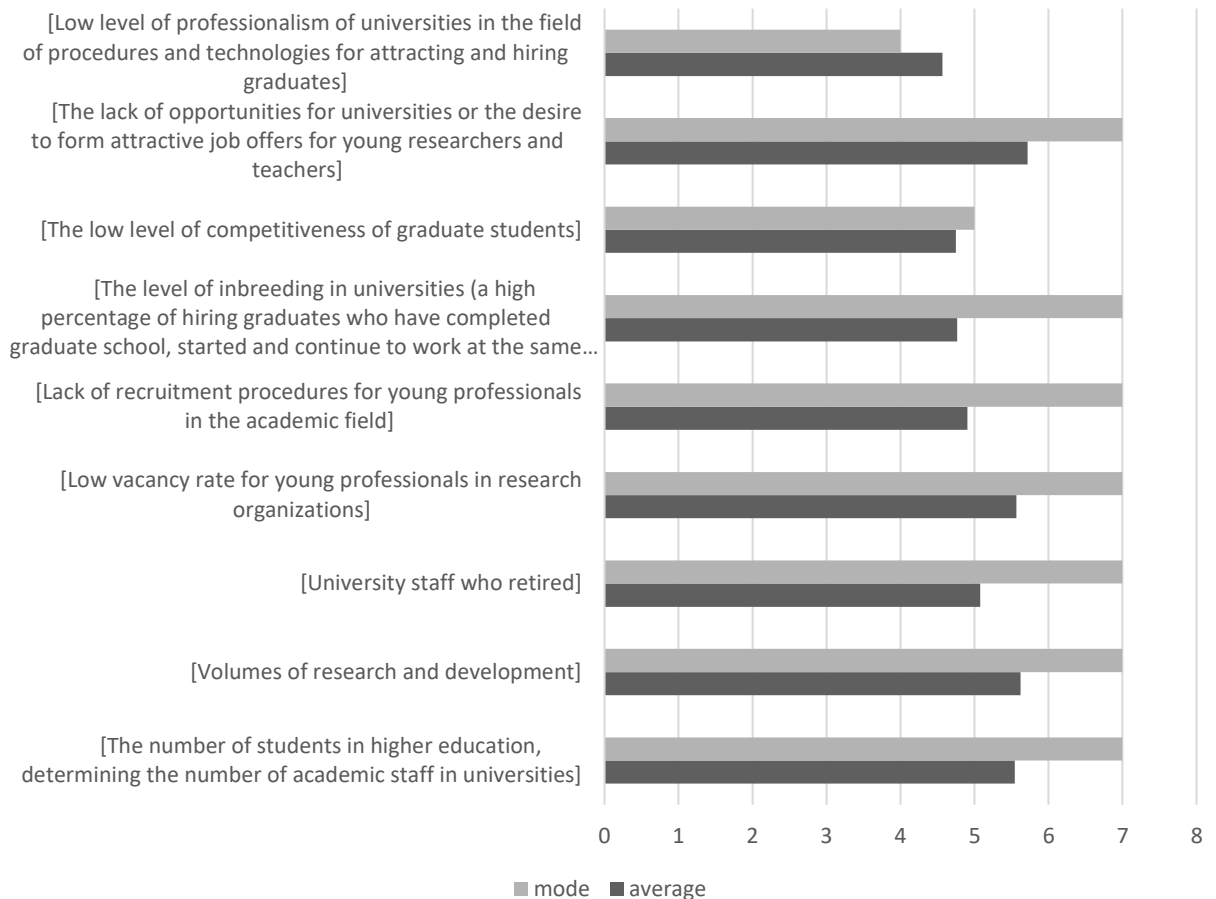


Fig. 2 - Demand factors for young specialists in Russian universities

At the same time, universities are building up resources for the development and reproduction of pedagogical staff within the university for the purpose of their subsequent retention (support for internships, participation in conferences and competitions, inclusion in research teams and small research groups).

The retention of effective employees of modern universities is associated with another problem - low motivation to improve performance.

### Managing the motivation of young researchers and teachers

Managing the motivation of young researchers and lectures at Russian universities is an essential component of the institutional modernization of personnel policy in the field of higher education. It is questions of motivation, involvement and stimulation of labor activity among young university staff that should provide the prerequisites for realizing the potential of Russian science, the education system, and the potential of the human resource as a key factor in the structure of intangible factors of innovative development.

As practice shows, the problem of retaining young scientists has a separate relevance while reducing the effectiveness of postgraduate studies as a direction for training highly qualified personnel. The problem currently being tested is that the number of people who have defended as a result of postgraduate education is decreasing, and graduates of graduate schools are not choosing the research field of activity as the main one and do not enter the academic labor market. Young people consider Ph. D' programs as the next stage of professional development, preferring other areas of professional development that are not related to academic activities. According to the results of a survey of experts, about 30.9% of graduates from Russian postgraduate studies can form a career in a non-academic labor market (coinciding, not coinciding with the direction of training, in the commercial sphere, in the public sector). In this regard, relevant systems of internal motivation and incentives at the university level, the proposal of various schemes for the

involvement of talented youth in the implementation of programs for the development of universities and individual departments. In particular, the development of postdoctoral fellowship.

### **The practice of modernization of institutional tools to attract young scientists and lectures**

A survey of experts from federal and regional universities in southern Russia showed a number of key problems and trends. *First*, it is necessary to form the core and content of educational programs for postgraduate programs. Many respondents pointed to the need to exclude from the main content of the postgraduate programs of the pedagogical, humanitarian part (philosophy, pedagogy). *Secondly*, it is necessary to support the development of a system of incentives in the academic sphere. In more than 70% of the responses, opinions were received regarding the increase in incomes of scientific and pedagogical workers, which should take place not only at the expense of wages, but also at the expense of the development of a system of scientific scholarships and the development of housing programs. *Thirdly*, it is necessary to form the attractiveness and prestige of work in the academic field, which, of course, requires government support (for example, a program to improve the social status of the scientist in society, systematically increasing interest in research and teaching). *Fourth*, systemic personnel decisions are needed related to the creation of jobs and working conditions for postgraduate students. Quite often, experts have paid attention to opinions about the growth of bureaucratization in universities, which hinders the work on the dissertation. *Fifth*, it is necessary to develop measures for the selection and selection at the stage of admission and selection to postgraduate educational programs. Many experts have paid attention to the parameters of entry to postgraduate school. Careful selection of capable and motivated candidates for postgraduate students is no less important a step than teaching and preparing a dissertation. *Sixth*, it requires the creation of opportunities for research, the development of academic freedoms and the protection of dissertations. Respondents often pointed to the need for the logistics of postgraduate studies: the availability of educational and experimental farms and a powerful laboratory base. Experts from regional universities also pointed out the difficulty of defending dissertations related to the lack of advice.

Thus, the modern practice of training highly qualified personnel in university, of course, raises many complex issues that require further research in understanding the causes and factors of decision-making regarding admission to postgraduate educational programs, the reasons for refusing to develop in the academic field, factors influencing the choice of professional development in research field, as well as projects on the formation of new institutions that affect the development of an effective infrastructure to support young researchers and academics one of the labor market.

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