

Conditions for the university innovative activity development from the teachers' standpoint

Condiciones de desarrollo de la actividad innovadora de la universidad desde la posición de los profesores

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ABSTRACT:

The article provides a description and assessment of the conditions for the University innovative activity development from the teachers' standpoint. The goals, content and features of the innovative activity implementation at universities have been described; the forms of the teacher involvement in various types of innovative activity have been indicated. The survey has revealed the experience of University teachers in the dissemination of educational, technological, structural and professional innovations, the forms of their participation in such work, has evaluated the innovation activity support environment. The proposals for the further development of the innovative activity environment at the University have been formulated.

Keywords: Innovative activity, University, teacher, environment, innovation.

RESUMEN:

El artículo proporciona una descripción y evaluación de las condiciones para el desarrollo de actividades innovadoras de la Universidad desde el punto de vista de los docentes. Se han descrito los objetivos, el contenido y las características de la implementación de la actividad innovadora en las universidades; Se han indicado las formas de participación del profesorado en diversos tipos de actividad innovadora. La encuesta ha revelado la experiencia de los docentes universitarios en la difusión de innovaciones educativas, tecnológicas, estructurales y profesionales, las formas de su participación en dicho trabajo, ha evaluado el entorno de apoyo a la actividad de innovación. Se han formulado las propuestas para un mayor desarrollo del entorno de actividad innovadora en la Universidad.

Palabras clave: Actividad innovadora, Universidad, docente, medio ambiente, innovación.

1. Introduction

At the present stage of education development the importance of innovative activity, through which the development of universities is carried out, increases. Due to various innovations, new educational services are being created, education and upbringing

technologies are being changed, flexibility of educational institutions is achieved to ensure a high degree of competitiveness (Akhmetzhanova et al, 2018, Belinova et al, 2017).

Innovative activity is a prerequisite for a successful strategic development. Thus, in the annual monitoring of universities' efficiency, a large number of indicators in all sections are associated with the implementation of the University innovative activities, including the number of publications, the amount of R & D and the amount of income derived from these, the number of grants and license agreements, the number of elements of innovative infrastructure (business incubators, technological clusters, small enterprises, etc.)

(Lebedeva et al, 2015, Ilaltdinova et al, 2017).

The University innovative activity means the implementation of various activities, united by the aim of the educational process upgrading and achieving a high quality of education in a continuous society technological development.

1.1. The modern University Innovative Activity Essence and Peculiarities

Revealing the importance of innovation for the development of a modern University, it is worth noting that this type of activity can be viewed from such standpoints as:

1. The mechanism of educational services modernization and improvement, which provides an update of the vocational training content, the development of modern ways of organizing the educational process, allows making the education more qualitative, effective and affordable. In this sense, the innovative activity is most often applicable to universities. (Gruzdeva et al, 2018, Ilyashenko et al, 2018).

2. The mechanism of transformation of the results obtained from educational, research, technological activities into a needful innovative product which can be further commercialized or contribute to the development of science and technology. In this sense, innovative activity makes it possible for the University to attract additional resources, to make a profit (Prokhorova, 2011, Prokhorova et al, 2017).

3. The mechanism of professional development of University employees. Involvement in various types of innovation activities allows developing new skills, deepen the insight, conduct interdisciplinary research (Fil'chenkova, 2015, Prokhorova et al, 2018,).

In modern University conditions, the innovative activity can take a variety of forms and scales, including the following:

1. Innovative activities to upgrade the content of vocational training, the introduction of educational technologies, forms and methods of training, the development of distance learning, which are carried out individually or by a group of scientific and pedagogical employees;

2. Innovative activity implemented in the framework of specialized structural units of scientific orientation (center, laboratories, experimental sites, business incubators, etc.)

3. Innovative activity carried out within the framework of grants, public and private programs aimed at solving the action-oriented issues;

4. Innovative activity implemented in network interaction with third-party network partners, providing a joint significant result for all participants, which is often subject to commercialization (Filatova et al, 2015, Ilyashenko et al, 2018). As a result of innovation, University can enjoy a number of positive effects of a systemic nature, forming its competitive advantages:

- due to the innovative activity, more qualitative and demanded educational services are provided, orientation towards the needs and interests of the client is achieved;

- thanks to the innovative activity the University is forging links with third party organizations;

- thanks to it there is an opportunity to get an additional income;

- due to the developed and regular innovation activity at the University, the culture of

"entrepreneurial University" is formed, making it possible to effectively respond to outer challenges (Prokhorova et al, 2016).

1.2. Conditions for the University Innovative Activity Development

Implementation and development of a University innovative activity require specially created and supported conditions. According to the study by I. F. Filchenkova, this complex includes:

- higher educational institution innovative infrastructure: material and technical support, provision of financial and information resources, the presence in the higher educational institution structure of research units as own sources of innovation;
- organizational and managerial support for innovations: team building, policy aimed at stimulation of innovations, system of material and non-material encouragement for the initiatives in the sphere of innovation process;
- comprehensive support of the innovative activity, including psychological and pedagogical support (Egorov et al, 2015, Fil'chenkova, 2017, Mineeva et al, 2018).

Thus, innovative activity plays an important role in University development, and the main participants of innovative activity are the scientific and pedagogical employees.

Experience gained in the implementation of innovation activities by Russian universities determines the scientific interest in the study of conditions that are created to support the innovation activity.

2. Methodology

This paper presents an attempt to assess the emerging experience of Minin University (Russia) in the implementation of innovative activities from the standpoint of scientific and pedagogical employees involved in this process. In 2017-2019, approximately 74% of the total number of scientific-pedagogical employees of Minin University have been involved in different types of innovative activity (Fil'chenkova, 2017).

The purpose of the study is to assess the innovative activity of the University from the standpoint of teachers participating in it.

This study was carried out by the method of questioning among teachers and employees of the faculty of management of social and technical services of Minin University. The total number of respondents has reached 52 persons.

2.1. Innovation activity conditions study content

The following issues were of interest for us:

- in what way teachers perceive the innovative activity and how important is, they believe, their participation in it;
 - who initiates the University innovative activity;
 - how close are innovative activity and traditional educational activity one to another in a modern higher education institution;
 - what objectives are followed by the innovative activity and what results it allows accomplishing;
 - what conditions are to be created for further development of the innovative activity.
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3. Results

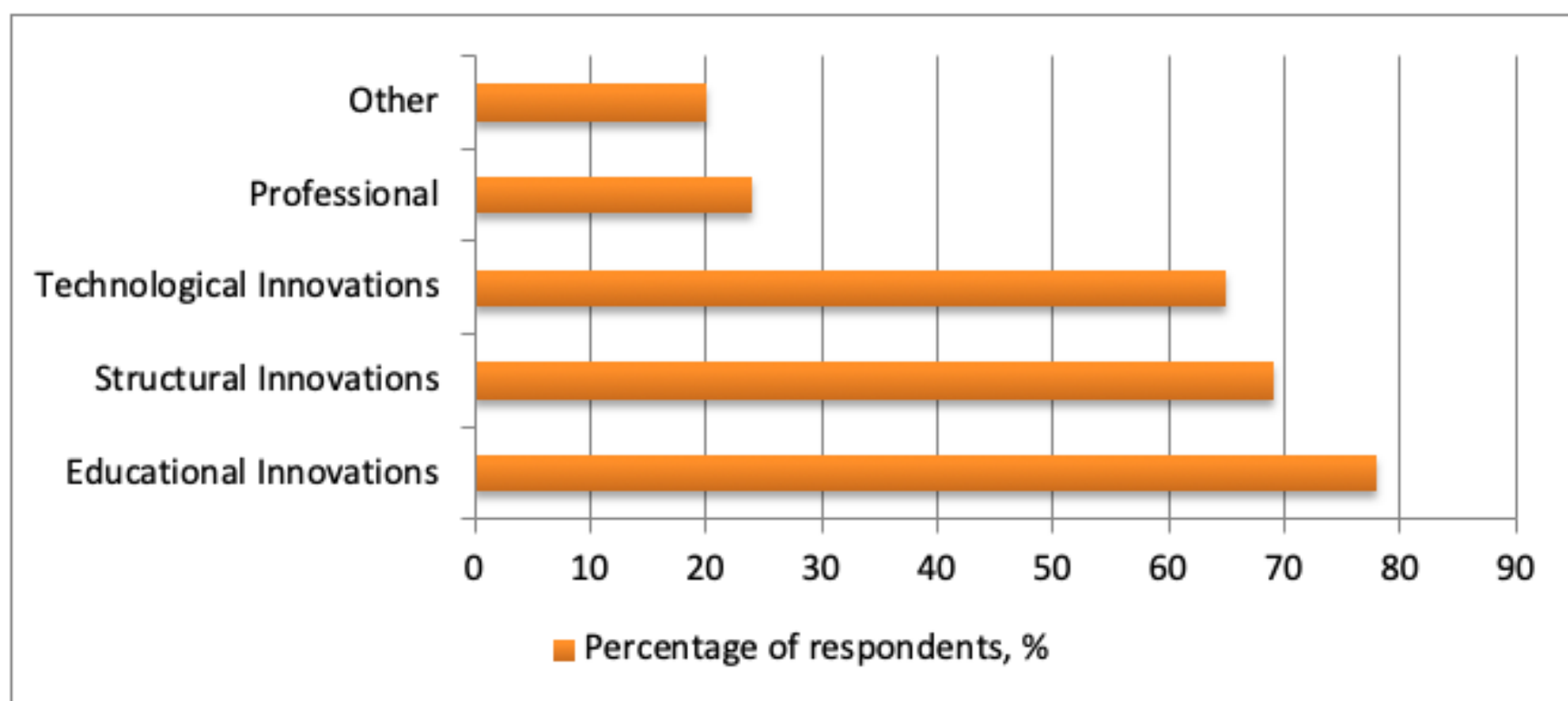
At the beginning of the study, the involvement of teachers and employees in various types of innovation activities was assessed. To provide their feedback the respondents were offered the following options for innovation:

- pedagogical (new content development, use of new training procedures and methods);

- structural (related of the educational process management – new methods of education, procedures, individual work, joint activity management);
- technological (use of Information and Communication Technologies (ICT), cloud technologies, electronic educational environment, Mass Open On-line Courses (MOOC), etc.);
- professional (participation in development of innovative products, technologies in the sphere of professional activity);
- other methods associated with mastering of new educational technologies.

The study outcomes are provided in Figure 1.

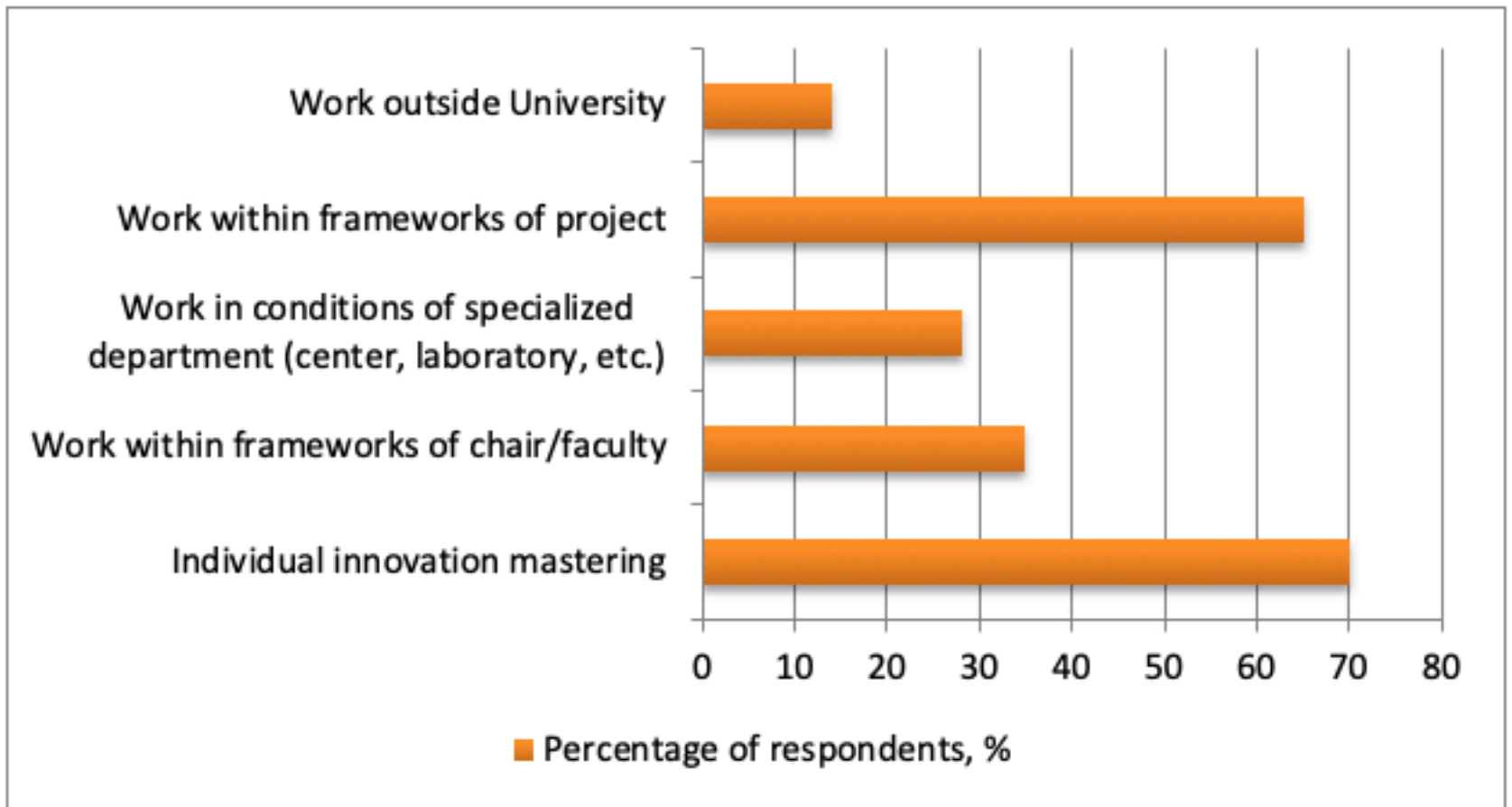
Figure 1
Available innovative activity
participation experience



It can be stated that in general, teachers and staff of the University are widely involved in various types of innovative activity: most of them actively use educational innovations (78%), take part in innovative transformations – develop new educational programs (68%), develop electronic support for the educational process (65%). Only 25 % of respondents participate in the development of innovations in their professional field.

Further, the forms of teachers' participation in innovative activity were studied, which allowed identifying the predominant mechanisms of teachers' involvement in the innovative activities. The results are reflected in Figure 2.

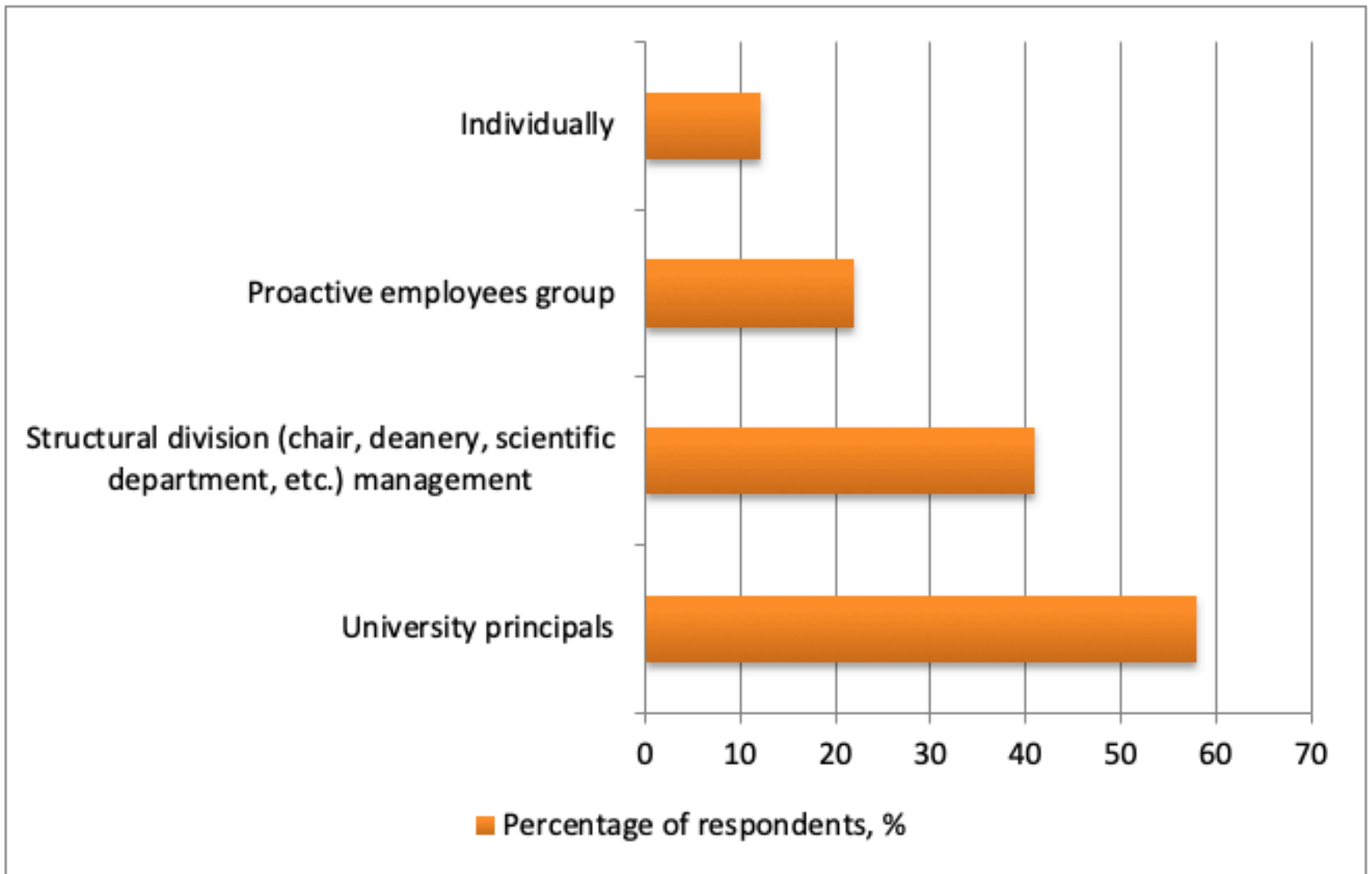
Figure 2
Forms of teachers' participation
in innovative activities



The majority of respondents (70 %) pointed to the mostly independent mastering of innovations associated with the updating of content, methods and techniques of the educational process. A slightly smaller number of teachers implemented innovative activities in the framework of projects (65%). 35% of respondents were involved in the development of various innovations within the chairs/faculties and only 28% - within the specialized units of the University. The data obtained confirm, in our opinion, the insufficient development of organizational mechanisms of teachers' involvement in innovative activities, due to the high dynamics of changing requirements in the system of vocational education and some spontaneity of the emerging experience of innovative activities.

Further, within the frameworks of this study, of interest is the identification of innovation initiators (Figure 3).

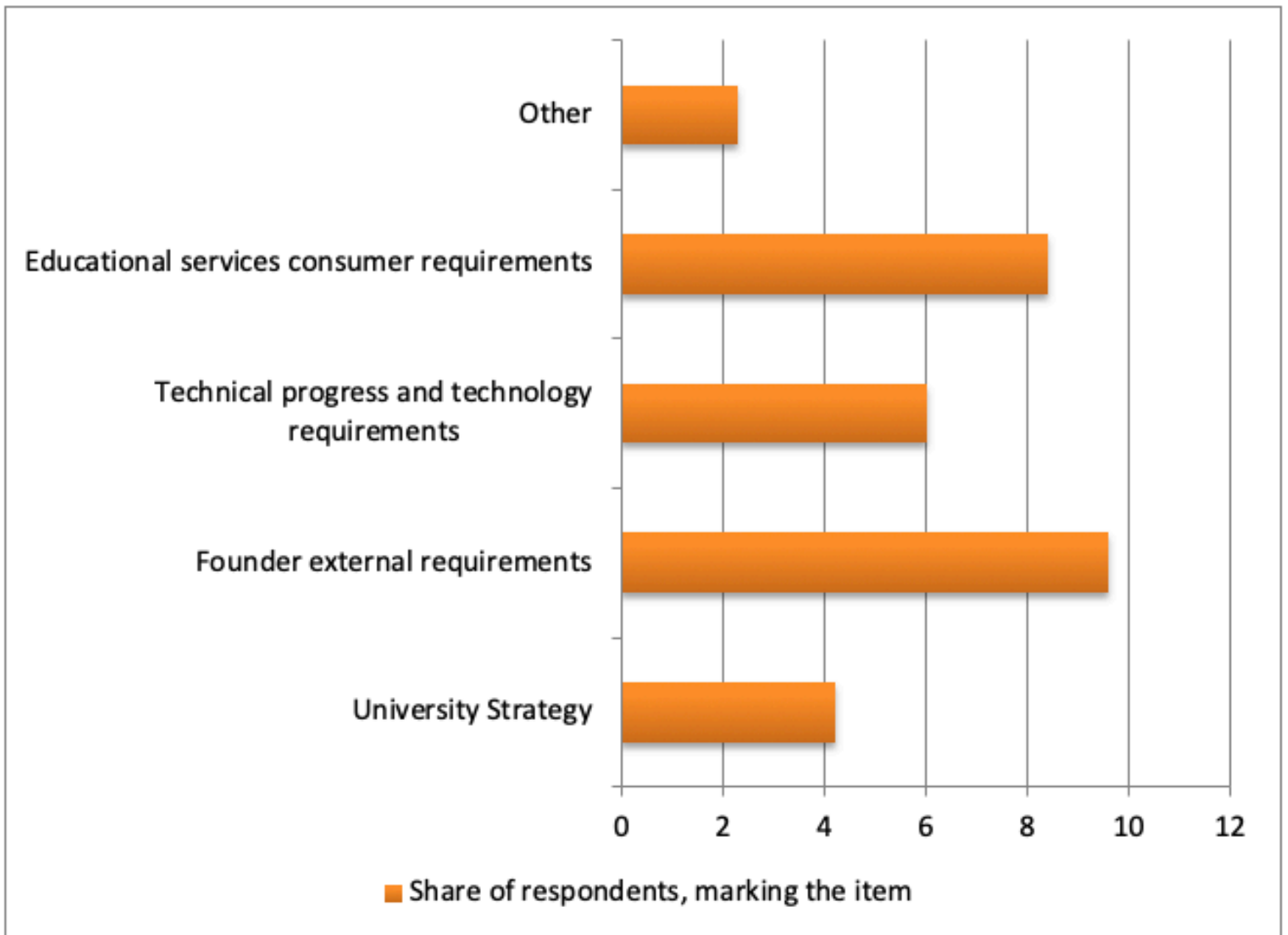
Figure 3
Major initiators of
the innovative activity



The findings suggest that the main initiator of innovative initiatives would be the University's principals (according to 58% of respondents), who engage the teachers in strategic projects, realization of grants, joint network projects, etc. This is explained by the strong importance of innovation for the University principals, the ability to demonstrate relevant outcomes and performance. Also quite often (according to 41% of respondents) innovative activity is organized by the structural unit leadership (chairs, deaneries, department of science, etc.). Independent and group manifestation of initiative in the organization of innovative activity is carried out quite rarely, in 12% and 22%, respectively. The results obtained point at potential need for teachers' initiative development while organizing the University innovative activities.

Then, within the study frameworks, the opinion of teachers about what priorities are set by the University in the implementation of innovation was determined. This issue was important from the perspective of identifying external factors that drive and stimulate innovative activity. The data obtained are shown in Figure 4.

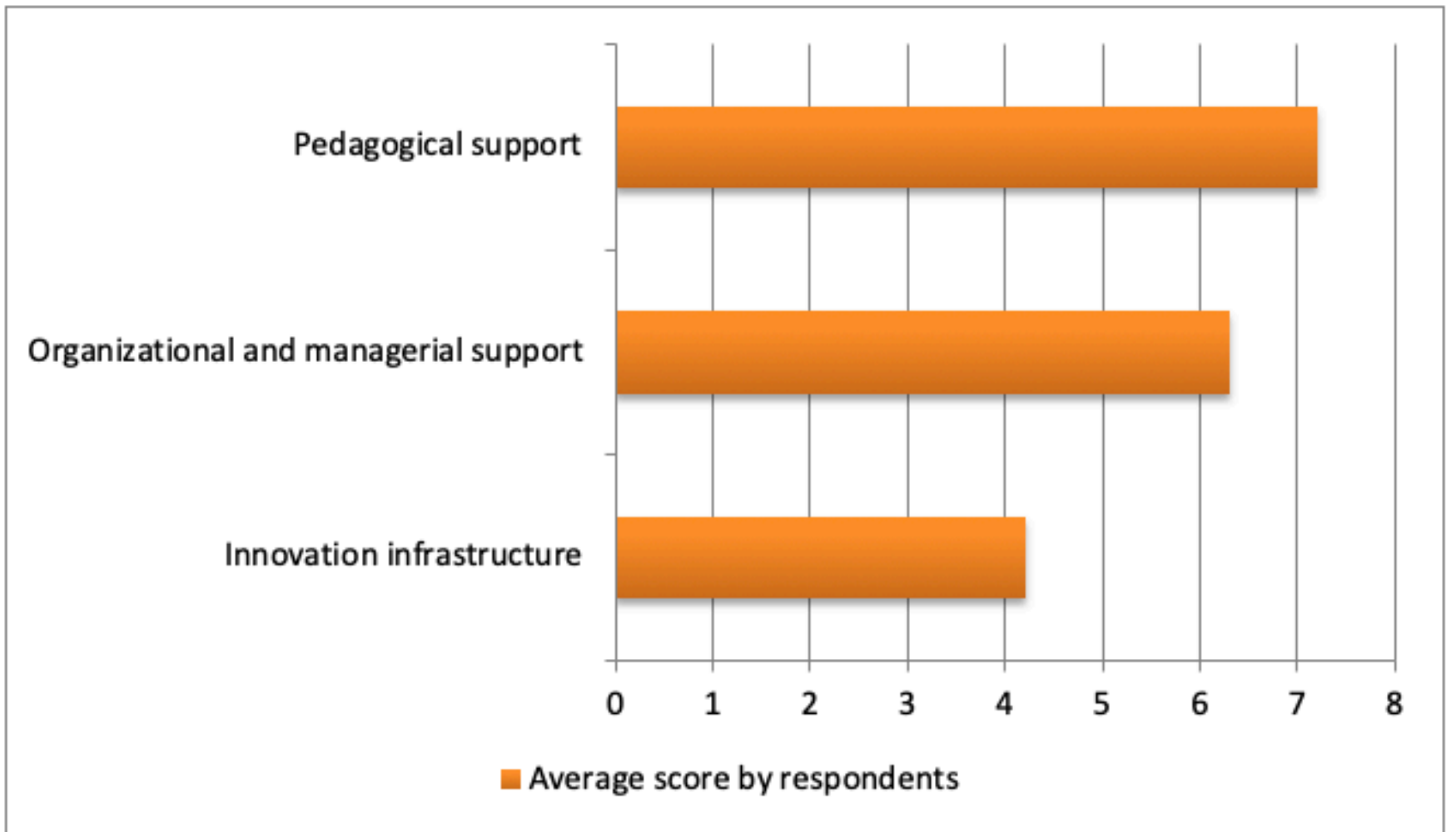
Figure 4
University innovative activity
priority importance estimate



The results showed that to the greatest degree the innovative activity of the University due to changes in the Founder requirements (average rating of the impact degree - 9.6) and changes of the educational services consumer requirements (average score is 8.4). Less significant impact, according to respondents, is produced by the requirements of scientific and technological progress and changes in technology (average impact assessment - 6), as well as the University strategy (average score - 4.2) and other factors (3.2). Thus, the innovative activity of the University is more focused on changes in legislation, ensuring the change of educational standards and the implementation of accrediting indicators, as well as on the achievement of market requirements.

Further, we assessed the conditions of the University educational environment for implementation of innovative activities (Figure 5). Respondents were asked to assess on a 10-point scale the set of conditions created by the University to support innovation.

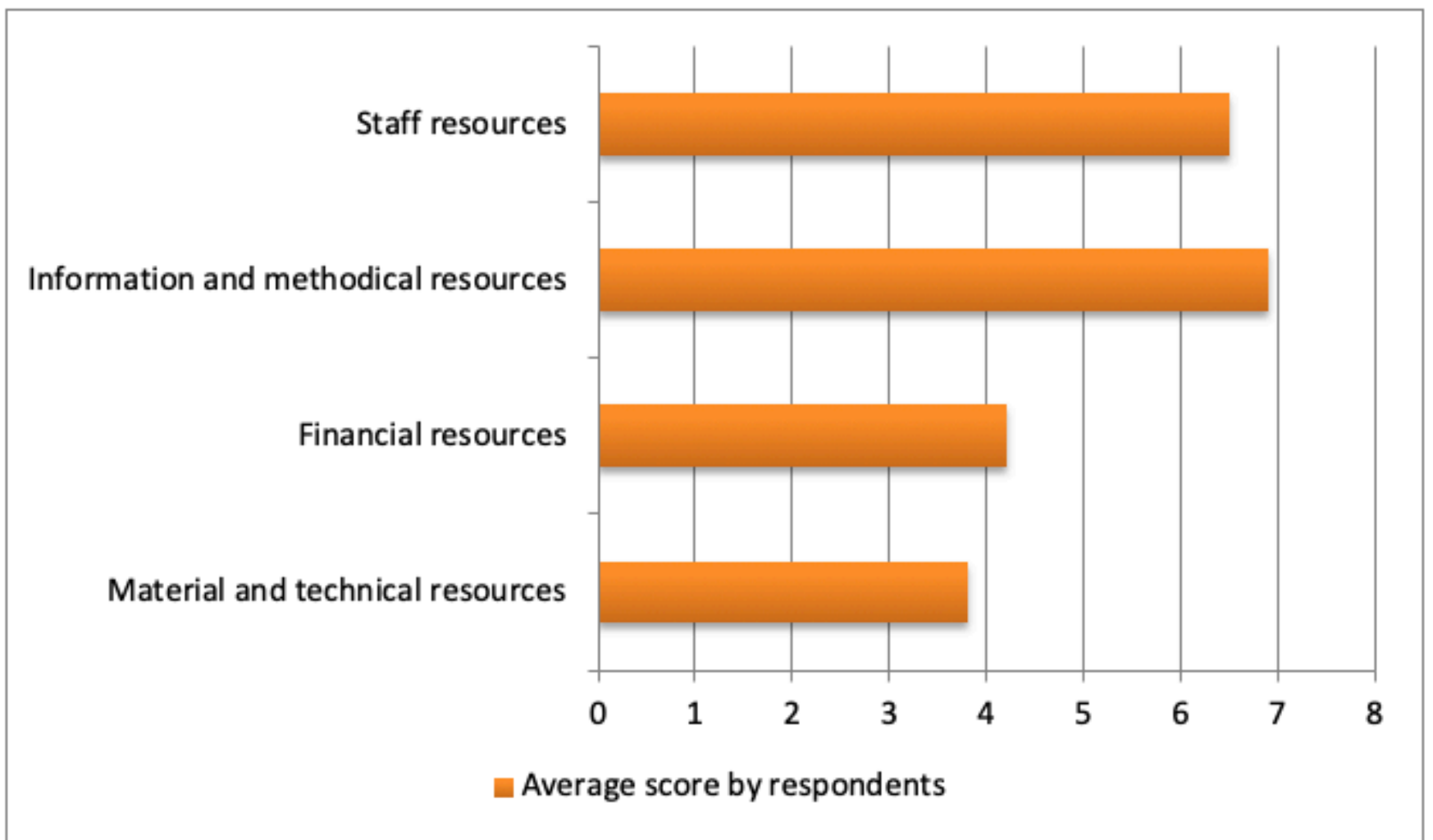
Figure 5
Average scores for University innovative activity environment



In general, high average estimates of University innovative activity environment were obtained. The University provides quality pedagogical support for innovation in the form of regular qualification upgrading, organization of webinars and seminars dedicated to innovative activity organization issues (average score – 7.2). The University innovative activity organizational and managerial support is expressed in the active system of material and moral encouragement for participation in innovation activities, regular implementation of various projects, etc. The level of organizational and managerial support was estimated in average as 6.3 points. The lowest average scores were given to the University innovative infrastructure (4.2), which is explained by a relatively small number of specialized structural units that implement innovative activities.

Next, we assessed the provision of innovative activity with the required resources: staffing, information, financial, methodical, material and technical (Figure 6).

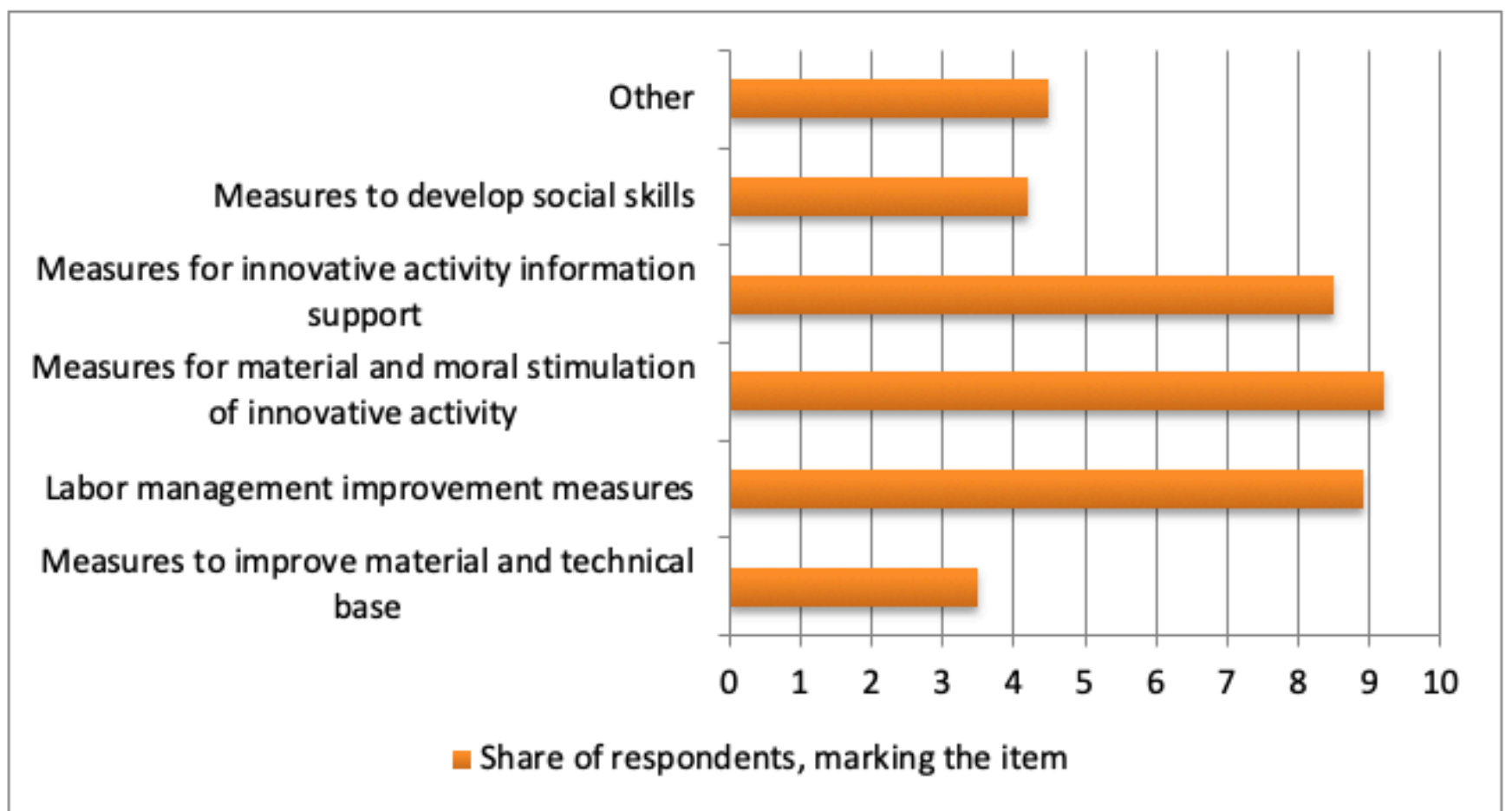
Figure 6
Average scores assigned to the University innovative activity resources endowment



According to teachers' estimates, innovative activity in the University to the most extent is provided with informational and methodical resources (access to information systems, obtaining information about grants and programs, networking opportunities, etc. – average score of 6.8) and human resources (average score of 6.5). This means that the University teachers highly appreciate their own opportunity to participate in innovative activity and have sufficient information in this area. Lower average estimates were obtained in the evaluation of financial and material and technical resources (4.2 and 3.7 respectively), indicating the need for their further development.

At the final stage of the study, measures were identified and ranked, which, in the opinion of teachers, should be created to support the University innovative activity (Figure 7).

Figure 7
Measures to support the University innovative activity



The results showed that to boost the University innovative activity, according to the teachers, the most valuable measures are: material and moral incentives (their significance has an average rating of 9.2), improvement of working conditions (8,8) and information support of innovative activities (8,5). In particular, a transparent system of encouraging innovation activity and the opportunity to officially combine teaching with participation in innovative projects are important for teachers. Slightly less important for teachers are measures to develop special skills (additional training in the field of innovation) (average score - 4.2) and the availability of modern material and technical base (3.5).

The latter is explained by the fact that pedagogical and humanitarian research and development do not require specialized high-tech equipment. In addition, the majority of respondents indicated as other measures to support the innovation, creation of opportunity to master foreign languages to be able to carry out joint international projects, to be published in foreign journals and to make full use of foreign language sources.

4. Conclusions

Summarizing the results of the study, it can be stated that the University innovative activity is a strategically important trend for University successful development. The emerging practice of innovation in Russian universities is largely spontaneous, due to the significant differences between traditional teaching and work on innovative developments. Further development of innovative activity in universities requires the introduction of flexible organizational models, combining educational, research and innovative activities, as well as stimulating innovative activity of teachers.

4.1. Suggestions

The study carried out within the framework of this work confirmed that the University teachers are aware of high importance of innovation as a factor in the University strategic development and as the main way to improve the quality of educational services. At the same time, the involvement of teachers in various types of innovative activities is constrained by such factors as the lack of financial, material and technical resources, the insufficiently transparent system of material and moral stimulation of innovative activity, the low level of development of the University's innovative infrastructure. Therefore, the need for the development of conditions for innovative activities within the University is becoming more acute.

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