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# Academic communication as a component of job satisfaction for academic staff

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**Subject.** Academic staff are one of the most important components of the innovative potential of the Russian national economy. The development of the work potential of academic staff is impossible without being satisfied with working conditions and results. The job satisfaction of academic staff is a complex and multi-aspect subject of study, therefore the use of classical methods for the assessment of industrial staff may provide inaccurate assessment or not reveal enough the changes that have to be made to the motivation system.

**Objectives.** The goal of this work was to form and test the multi-aspect methodology for the assessment of the job satisfaction of academic staff. To achieve this goal, we had to perform the following tasks: to analyse the methods for the assessment of job satisfaction; to study the significant factors of the work of academic staff; select and modify the basic method for the assessment of the job satisfaction of academic staff taking into account work related factors that are of significance for academic staff, and to perform a statistical verification of the modified method for the assessment of job satisfaction.

**Methods.** A wide range of methods for the multi-aspect and general assessment of job satisfaction were analysed in order to form a new method for the assessment of job satisfaction. To test the new method and the reliability of a new work factor being included in the basic method, we used statistical methods: we verified the significance of the coefficients of the correlation of the new factor to total satisfaction with other factors of the assessment system; we determined the rank of the new factor, and we compared average multi-aspect traditional and modified satisfaction assessment methods with the assessment according to the general (not limited by factors) method for the assessment of satisfaction.

**Conclusions.** The suggested modification of the international method for the assessment of job satisfaction is oriented towards the factors that are significant for academic staff. The significance of academic communication is greater than a number of factors for the traditional assessment of academic employees. The job satisfaction of academic staff must be increased.

Keywords: job satisfaction, academic communication, assessment method.

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## Introduction

The studies of different aspects of job satisfaction are popular in scientific publications. For example, 769 works on elibrary.ru have been published over the past ten years (between 2012 and 2021) in which job satisfaction is the main subject of the scientific publication. 65 of them were published in 2021, and they analysed how satisfaction is influenced by such modern trends in work as remote work and digitalisation. The topic of job satisfaction among the employees of industrial enterprises was also developed, and special features of motivation of medical, academic, and teaching staff were revealed. In this work we focused on the study of job satisfaction among academic staff of higher education institutions.

Job satisfaction is a multi-factor phenomenon which may go even beyond the organisational limits: "...the job satisfaction of a person is closely related to their perception of life on the whole, their family and themselves, and it directly or indirectly correlates with their state of health" according to Novokreshenova [3]. However, the assessment of satisfaction of the enterprise's employees allows focusing on the organisational factors and on how they are perceived by staff: "Staff satisfaction is defined as the state of balance between the employees' requirements to the content, nature, and conditions of work and the subjective assessment of the possibility of fulfilment of these requirements". Despite the subjectivity of the category of satisfaction as "an emotional or affective reaction to work or its certain aspects" according to Locke [12], the assessment of job satisfaction and its individual components are a reliable indicator for the assessment of job satisfaction at the level of an enterprise, industry, or region, confirms Orlova [4], if the study sample is representative and sufficient.

Despite a large number of publications dedicated to "the study of job satisfaction", we can identify basic methods in them that are widely used either as a ready-made assessment tool or as a basis for the further development of the theory.

The Facet Job Satisfaction and Global Job Satisfaction assessment methods are fundamentally different, according to Inoyatova [10]. The following multi-aspect methods were successfully tested and are considered reliable: 1) Minnesota Satisfaction Questionnaire (MSQ), 1967; 2) Job Descriptive Index (JDI), 1969; 3) Job Satisfaction Survey (JSS), 1985.

MSQ, developed at Minnesota University, is the first known tool for the assessment of job satisfaction. It is reliable and was successfully tested, and it is not limited by any professional specialisation. The developers prepared two versions of the questionnaire, a long and a short one. Of course, the first one is more preferable but it includes a great number of assessment points (100 points assessed by a five-star scale), which requires a lot of attention and motivation from the employees filling in the questionnaire. The long version by Weiss [21] includes the following components of job satisfaction assessment: use of capabilities, achievement, activity, promotion, authority, company's policy, creativity, independence, moral values, recognition, responsibility, safety, social service, social status, relationships with the manager, the manager's competence in decision making, diversity of activity, and work conditions.

JDI includes 72 points that cover five key aspects of job satisfaction: work, salary, promotion, management, and colleagues according to Smith et al. [18]. There are several answers to be chosen from (Yes, No, Cannot decide), which simplifies the task for the respondent and accelerates the process of conducting the survey.

JSS was originally developed for organisations providing social services, taking into account that they are significantly different from industrial enterprises, confirms Spector [19]. The questionnaire assesses job satisfaction by nine factors: salary; possibilities for promotion and career development; relationships with the management; additional privileges, guarantees, and remunerations; achievement rewards; working conditions; relationships with colleagues, work team; the nature and content of the work; providing information. Four statements are given for each factor, and positive and negative statements are alternated. The method of global job satisfaction assessment can vary from one question related to job satisfaction taking into account all job aspects that are important and relevant for the employees to rather complicated questions. Despite the lower number of points of assessment, these methods are quite accurate in the assessment of global job satisfaction. They have theoretical and empirical bases.

The method of typical faces allows assessing the general perception of job factors quite accurately. The advantage of this method is that employees measure their feelings regarding their job. They do not have to answer a series of questions that will later be interpreted as an assessment of emerging satisfaction. This method was created by Kunin [11] in 1955 and improved in 1975 taking into account the specific features of female perception, Dunham et al. [7].

The Employee Net Promoter Score (eNPS) that was derived from a similar consumer loyalty index (Net Promoter Score) is becoming more and more popular in international companies that use it for the assessment of job satisfaction. The net promoter score was introduced by Reichheld [14] who insisted that it is the only value that must be increased. The assessment method is the same both for customers and employees, although in the latter case it assesses the employees' willingness to recommend their company as a good employer. The assessment is conducted using a ten-point scale, where 0 points means that the employee will never recommend their workplace to others, and 10 points means that the employee will definitely recommend it. According to the basic method, both customers and employees can be divided into three groups: those with 10 or 9 points belong to the category of "promoter" or "supporter", those with 8 or 7 points belong to the "neutral" category, and those with 0-6 points belong to the "critic" category. Except for the percentage distribution of employees by categories, the eNPS index is also calculated as the difference between the percentage of promoters and the percentage of critics (the index may vary from -100 to +100 %). Despite the growing popularity of this method, there are some critical empirical works, although in general the method has been recognised as suitable for the assessment of employee satisfaction. The issue associated with this method is that it requires a national adjustment of the measurement scale. Reichheld categorised those who gave high points as promoters, which is quite typical for Americans who are a very optimistic nation, while Europeans are more modest in their expression of Sedlak [16] positive views. Then, the adjusted scale should be used in the following way: "promoter" gives 10, 9, or 8 points, "neutral" gives 7 or 6 points, and "critic" gives 0-5 points. There has been no large-scale research associated with this method for Russian people.

Satisfaction with Work Scale which was modified from Satisfaction with Life Scale has proven to be a reliable tool for global job satisfaction assessment Merino et al. [13].

Surely, there is a need for individual theories of global job satisfaction assessment which will allow using the tools of multi-aspect assessment and obtain both factor and general assessments. However, first of all, the methods of global job satisfaction assessment are shorter (only one question in extreme cases), which simplifies the conduction of a survey among employees and the processing of the results, and, second, although it may sound surprising, global job satisfaction assessment can be much more accurate. For example, while using the generally accepted method of multi-aspect assessment, Scarpello & Campbell [15] discovered that a number of important satisfaction factors dropped out in accordance with the opinions of the survey respondents. Moreover, the variables correlated with the global satisfaction value to a larger extent. The work of Highhouse & Becker [9] also showed that multi-aspect assessment did not necessarily include all the elements required for a strict assessment of job satisfaction.

The goal of this work was to analyse the methods of job satisfaction assessment, to select a basic method, and to supplement it with relevant factors in terms of target audience (academic staff), verify the method statistically, and update the knowledge regarding the current level of job satisfaction among academic staff.

### **Research methods**

We chose the JSS approach as the basic multifactor method of job satisfaction assessment because this tool has been widely used in many areas of the social sphere on the whole and for job satisfaction assessment of university employees Slavić et al. [17], Stankovska et al. [20].

The analysis of publication activity regarding important job factors for academic staff allowed supplementing the basic methodology with another factor that cannot be found in traditional methods, although it is an important factor for the specific activities of academic employees. This factor is academic communication which forms the basis for the development of academic staff, Romaeva & Zaikina [5]. Based on the range of direct and indirect academic communication, we formed the required questions for the "academic communication" section represented by positive and negative statements as it was done for other sections of the JSS questionnaire: 1) I think that this organisation has created all the necessary conditions for communication at conferences and seminars held by other participants of the professional community, publication of their research works, getting access to scientific publications, sources of statistical information, and other aspects of external communication; 2) communication inside the organisation allows discussing academic accomplishments and colleagues' experience as well as easily exchanging new knowledge; 3) I have no chance for academic communication with the representatives of academic community outside of my organisation and I have no access to promising academic information; 4) I am not satisfied with communication inside the organisation regarding scientific knowledge, experience, and ideas.

As a rule, the introduction of a new factor into the subjective indicator assessment system, among which, undoubtedly, is job satisfaction, requires statistical verification in order to identify its connection with the assessed indicator and the presence of connection with other factors reflecting the belonging to a group of factors. It is also necessary to make sure that this indicator is not collinear, which means that it is not duplicating some other job factor and that it is not unnecessary or artificially introduced. Such statistical verification is mandatory but we would like to apply even stricter testing criteria to the new factor the fulfilment of which will be an additional argument for using modified JSS tools for the assessment of job satisfaction among academic staff. In our research we would like to use two additional criteria. The first one is the excess of the significance of "academic communication" factor for one of the classic ISS factors. This requirement is rather strict as the introduced factor can be only significant for job satisfaction assessment, but in our case it can be fulfilled since due to the specifics of work it needs intensive academic communication. The second one is the comparison of the average satisfaction value of the modified multi-factor JSS method with the average global satisfaction value obtained in accordance with the SWWS method, which must be more similar to the global satisfaction value as compared with the average non-modified JSS job satisfaction assessment.

Therefore, we are introducing a new job satisfaction assessment tool for academic staff which combines reliable satisfaction components with the new ones that are important for academic employees. Statistical verification of the new set of tools includes not only the necessary criteria, but also additional testing criteria which, if confirmed, will guarantee the correctness of the extended JSS method for job satisfaction assessment among academic staff.

# Results

We conducted an anonymous survey of 52 lecturers and research employees of different universities using the modified method of JSS satisfaction assessment. The sample structure was as follows: 17.3 % were lecturers without a degree, 59.6 % were scientists with a PhD Degree, 23.1 % were scientists with a DSc degree; 23.1 % were men and 76.9 % were women; there were 21.2 % respondents under the age of 35,

#### Table 1

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Satisfaction factor	Correlation coefficient with multi-factor satisfaction assessment, Pearson	Correlation coefficient with multi-factor satisfaction assessment, Spearman	Correlation coefficient with global satisfaction assessment (SWWS), Pearson	Correlation coefficient with global satisfaction assessment (SWWS), Spearman		
Job compensation	0.86	0.83	0.57	0.57		
Possibilities for promotion and career development	0.75	0.71	0.46	0.38		
Relationships with the management	0.60	0.65	0.35	0.36		
Additional privileges, guarantees, and remunerations	0.68	0.66	0.43	0.38		
Achievement rewards	0.88	0.87	0.55	0.57		
Work conditions	0.55	0.58	0.38	0.45		
Relationships with colleagues, work team	0.67	0.62	0.42	0.40		
Providing information, possibilities of obtaining information	0.81	0.78	0.57	0.56		
Nature and content of work	0.73	0.71	0.66	0.60		
Academic communication	0.78	0.74	0.52	0.50		

Correlation of individual factors with job satisfaction: total multi-aspect (modified JSS); general (SWWS)

48.1 % were aged 35 to 50, 17.3 % aged 50 to 65, and 13.4 % were 65 and older. On the whole, the sample structure corresponded to the general population according to the data presented in sources1, although there was a slightly more expressed gender asymmetry.

Satisfaction assessment is the process of assessment by an ordinal scale (in this case it was a six-point scale: 1 – "totally dissatisfied"; 2 – "not satisfied"; 3 – "quite dissatisfied"; 4 – "quite satisfied"; 5 – "satisfied"; 6 – "totally satisfied"), which presupposed that Spearman's correlation coefficient was mostly used. However, sociological research, including the studies of satisfaction, shows that it is allowable to use Pearson's coefficient in this case. We calculated both coefficients for the assessment of the correlation between individual factors with a multi-aspect total satisfaction assessment as well as of the correlation between individual factors with the global satisfaction assessment obtained in accordance with the SWWS method (Table 1).

The analysis of the values of the correlation coefficients presented in Table 1 allows drawing a number of important conclusions:

All factors are significant both in terms of their influence on the total multi-factor assessment and on the independent SWWS index, the significance was verified by t-statistics in comparison with a Student's critical value of 2.009 (obtained at a significance level of 5 % and 50 degrees of freedom).

Academic communication has a great influence on job satisfaction.

Pearson and Spearman's coefficients for the assessment of correlations associated with job satisfaction have similar values, therefore

<sup>&</sup>lt;sup>1</sup> Women and men of Russia. 2020. M. : Rosstat, 2020 ; Information on the number of teaching staff of educational organizations, 2020. URL: https://minobrnauki.gov.ru/ opendata/9710062939-svedeniya-o-chislennostiprofessorsko-prepodavatelskogo-sostava-obrazovatelnykhorganizatsiy-osushch

further in our study we will use Pearson's coefficient as it is mostly often used for this area of study.

Of course, it is preferable to have a larger sample volume to check the pair correlation (Table 2) where coefficients may have lower values. Nevertheless, all the factors showed multiple correlations with the majority of other factors, and if we follow the Chaddock scale, all the factors showed at least a weak correlation. However, the comparison of the observed empirical criterion with the critical value did not allow a conclusion to be drawn regarding the correlation between individual factors and a small number of other factors. These cases were marked with an asterisk. At the same time, the salary factor showed a high level of correlation with such factors as additional privileges, guarantees, and remunerations, as well as achievement rewards. This group of factors also had close correlations in other studies but the excess of the correlation value of 0.7 leads to a discussion regarding this result.

The survey associated with the significance of factors (Table 3) confirmed our hypothesis that academic communication will exceed some of the traditional factors. Academic communication was not included in the group of the most important factors, which seems correct, but it was still more important than career, additional privileges, and providing information.

Fulled correlation coefficients									
Assumption	1	2	3	4	5	6	7	8	9
Job compensation									
Possibilities for promotion and career development	0.65								
Relationships with the management	0.37	0.35							
Additional privileges, guarantees, and remunerations	0.79	0.62	0.11*						
Achievement rewards	0.82	0.62	0.47	0.61					
Work conditions	0.53	0.24*	0.10*	0.36	0.46				
Relationships with colleagues, work team	0.41	0.34	0.67	0.16*	0.47	0.30			
Providing information, possibilities of obtaining information	0.64	0.55	0.35	0.51	0.65	0.50	0.60		
Nature and content of work	0.45	0.44	0.57	0.21*	0.61	0.33	0.62	0.55	
Academic communication	0.52	0.58	0.46	0.42	0.65	0.24*	0.52	0.65	0.70

Paired correlation coefficients

Table 2

\* Correlation not confirmed (with 52 respondents and significance level of 0.05)

Table 3

Average values of expert assessment of job satisfaction factor significance (in descending order of significance)

Factor	Average score			
Nature and content of work	8.9			
Job compensation	8.87			
Relationships with the management	8.87			
Achievement rewards	8.73			
Work conditions	8.65			
Relationships with colleagues, work team	8.63			
Academic communication	8.27			
Providing information, possibilities of obtaining information	8.0			
Additional privileges, guarantees, and remunerations	7.83			
Possibilities for promotion and career development	7.5			

An additional argument in favour of the modified JSS tools was the assumption that the modified JSS assessment corresponded more accurately to the global assessment method (SWWS). At first, we averaged the individual assessment of the respondents' global satisfaction by the number of the measured assessment points, which was 36 points for the non-modified JSS, 40 points for the modified JSS, and 5 points for the global SWWS, and then we calculated the average of all these assessments for the entire population of respondents, and it was 3.85 points for the non-modified JSS, 3.91 points for the modified JSS, and 4.18 points for the global SWWS. The modified assessment was closer to the assessment obtained by the SWWS method where many factors could be taken into account by the respondents based on their own subjective general perception of the situation which did not limit general satisfaction with the strict framework of JSS. To test the hypothesis on the equality of means, we used the paired Student's criterion as we were testing the hypothesis on the equality of means of dependent samples, and here we compared the assessments of job satisfaction provided by the same group of experts but in different coordinate systems. The verification of the statistical hypothesis allowed drawing a conclusion that average values of the modified assessment of satisfaction and global SWWS satisfaction did not differ much.

#### Discussion

The study of staff satisfaction in some national economy sectors that possess distinctive features regarding the factors of work activity and employee motivation is a relevant scientific trend, and the logic of our study was developed as a part of this trend. In this work we studied specific features of job satisfaction among academic workers who consider important a set of factors that determine the opportunities for the development of the intellectual and research component of their work potential

Krakovetskaya [1], Feldi & Bojko [8]. The general level of assessment of job satisfaction among academic employees that we obtained in this study can be described as "quite satisfied", which corresponds well with the results of large-scale studies of job satisfaction among academic staff Krakovetskaya [1] and Rudakov [6], although in a previous study the level of satisfaction was slightly higher, which could have been affected by the limited study sample, confirms Mihalkina [2]. The JSS method has been widely used internationally for the assessment of job satisfaction, but, as we confirmed in our study, its main disadvantage is the lack of the "academic communication" factor in the assessment system. Academic communication has been recognised as an important work factor in a number of studies. Our survey showed that the significance of this factor was higher as compared to such traditional factors as providing information, possibilities of obtaining information; additional privileges, guarantees, and remunerations; possibilities for promotion and career development. The assessment of satisfaction taking into account the "academic communication" factor was closer to the assessment of global (not limited by any factors) satisfaction by the SWWS method, which was an additional argument in favour of our methodology. The new factor was also tested by the criterion of statistical correlation with the total multi-factor and global job satisfaction as well as with other job satisfaction factors.

#### Conclusions

In this work we conducted a critical analysis of job satisfaction assessment methods studied by the groups of Facet Job Satisfaction and Global Job Satisfaction assessment. We justified the necessity of the introduction of academic communication into the multi-aspect method of job satisfaction assessment among academic staff and we revealed the content of academic communication as a satisfaction factor. We modified the JSS questionnaire which has been widely used for the assessment of job satisfaction, among academic staff as well. The section of academic communication was included into this questionnaire. It was based on the example of the JSS questionnaire, which means that it included four key statements, both positive and negative, related to academic communication. We statistically tested the correctness of the introduction of a new factor in the subjective assessment, and this verification was of a broader nature as compared to other studies. It is also interesting as a plan for a wide class of assessment of subjective indicators in case of the introduction of a new factor into the assessment system. However, the suggested additional categories work reliably only if the importance of the new factor exceeds one or several factors of the previous assessment system, which, surely, is a considerable limitation for the introduction of additional criteria. If a new key factor of job satisfaction assessment is found, and this factor presumably exceeds other basic factors in its significance, then its correlation with the total satisfaction and other job satisfaction factors must be verified and it must also be tested by additional criteria. First of all, its importance is assessed in comparison with other factors, and this way job factors are ranked. Second, two assessments (with and without the new factor) of multi-aspect job satisfaction are compared with the assessment of the global job satisfaction assessment method, which has also been successfully tested and which does not limit the respondent's choice of subjective job satisfaction reasons. If the new factor is definitely important, the ranking and the comparative assessment will confirm this, and the total multi-aspect job satisfaction assessment with this factor will be closer to global job satisfaction than the total multiaspect job satisfaction without this factor to the global job satisfaction.

Current assessment of job satisfaction factors (by a six-point scale) allowed determining the most problematic areas in the motivation of academic staff. For example, the satisfaction of academic employees was 3.40 points regarding salary, 3.10 points regarding additional privileges, guarantees, and remunerations, and 2.89 points regarding work conditions, which characterises satisfaction for this group of factors as "quite dissatisfied". The following work factors received a relatively positive reaction: possibilities for promotion and career development (3.74 points), achievement rewards (3.90 points), providing information (3.88 points), and academic communication (4.42 points). Some factors received scores which are closer to "rather satisfied". Satisfaction with relationships with colleagues was 4.50 points, satisfaction with relationships with the management received 4.73 points, and satisfaction with the nature and content of the work received 4.54 points, which characterised the attitude of academic staff to these work factors as "satisfied" although it was not extremely high by the six-point assessment system. Among the most often mentioned expectations of academic staff regarding the improvement of their work activity were increased salary, introduction of incentive payments for research and methodological activities as well as the reduction of bureaucracy through the simplification of the system of academic documentation, reduction of the number of papers and reports and the number of academic competencies, elimination of paper documents, introduction of information system into preparation processes, and storage and usage of documents. Second, the most often mentioned expectations were recommendations related to the improvement of infrastructure support of the study process, of the lecturers' work at university, and the management system. While discussing the development of academic communication, the respondents spoke in favour of the increased business travel expenses.

# **Conflict of interest**

The authors declare the absence of obvious and potential conflicts of interest related to the publication of this article.

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Вестник Воронежского государственного университета Серия: Экономика и управление

#### Экономика труда и управление персоналом

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# Научная коммуникация как составляющая удовлетворенности трудом научно-педагогических кадров

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**Предмет.** Категория научно-педагогических работников является одной из важнейших составляющих инновационного потенциала отечественного народного хозяйства. Развитие трудового потенциала научно-педагогических кадров невозможно без достижения удовлетворенности условиями и результатами труда. Удовлетворенность научно-педагогических сотрудников трудом представляется нам сложным, многоаспектным предметом исследования, для которого классические методики оценки промышленного персонала могут давать неточную оценку, неполностью раскрывать необходимые изменения в системе мотивации.

**Цели.** Целью данной работы является формирование и апробация многоаспектной методики оценки удовлетворенности трудом научно-педагогических работников. Для достижения данной цели в работе решается ряд задач: анализ методик оценки удовлетворенности трудом; исследование значимых факторов трудовой деятельности научно-педагогических сотрудников; выбор и корректировка базовой методики оценки удовлетворенности труда с учетом значимых для научно-педагогических сотрудников факторов труда; статистическая проверка модифицированной методики оценки удовлетворенности трудом.

**Методология.** В процессе формирования новой методики оценки удовлетворенности трудом анализировался широкий класс методик многоаспектной и общей оценки удовлетворенности. Для проверки новой методики, надежности включения в базовую методику нового трудового фактора применялись статистические методы: проверка значимости коэффициентов корреляции нового фактора с суммарной удовлетворенностью, с другими факторами системы оценки; определение ранга нового фактора; сравнение средних многоаспектных традиционной и модифицированной оценок удовлетворенности с оценкой, полученной по общей (не ограниченной факторами) методике оценки удовлетворенности.

**Выводы.** Предложенная модификация международной методики удовлетворенности трудом ориентирована на значимые для научно-педагогических сотрудников факторы. Значимость научно-педагогической коммуникации выше ряда факторов традиционной оценки для научно-педагогических работников. Удовлетворенность трудом научно-педагогических сотрудников нуждается в повышении.

Ключевые слова: удовлетворенность трудом, научная коммуникация, методика оценки.

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#### Конфликт интересов

Авторы декларируют отсутствие явных и потенциальных конфликтов интересов, связанных с публикацией настоящей статьи.

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