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CHANGE YOUR WORKPLACE**

# HOW CAN WE ATTRACT AND KEEP YOUNG TALENTS IN THE SCIENCE SECTOR? WORK SATISFACTION AND THE INCLINATION TO CHANGE YOUR WORKPLACE

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## Summary

Gradually dropping number of working age people, dropping rate of unemployment and continuously growing number of job vacancies, which remain open for a longer time, lead to a situation in which more and more often in the context of Poland people say the market belongs to the employee. What doesn't alleviate the situation is the arrival of a new generation, the so-called millennials, on the market. Millennials differ from earlier generations both in terms of their characteristics and expectations with regard to their workplace.

The fact that over a half of scientists below the age of 35 employed in national scientific institutions consider changing their work, makes it necessary to focus more on employees' needs. The goal of this article is highlighting the aspects of work which make it possible to young scientists to achieve satisfaction from professional sphere of life and thus could prevent their outflow from the sector of science.

In 2017 OPI PIB carried out a survey on a representative sample of scientific employees, which included 264 respondents born after 1981. The collected empirical materials allowed the author to analyze the expectations of young people from the sector of science with regard to their workplace. The assessments of scientists who consider changing their employer with the assessments of people who don't have such plans have been compared.

The conducted survey leads to the conclusion that young people should above all be given the opportunity to develop and work towards achieving their own scientific aspirations. It is also necessary to guarantee the feeling of stability of employment and satisfactory remuneration. What also turns out to be significant is the organization of space, as well as providing flexible work conditions and recognition from the superiors.

Satisfying at least some of the highlighted proposals won't be possible without introducing systemic changes. Failure to intervene in such a way will lead to a situation in which the national sector of science will in the nearest years be gradually losing valuable employees, which will be migrating to the company sector and foreign scientific institutions.

**Keywords: generation Y, scientific institutions, labour market, work satisfaction**



## Introduction

At the end of the 20th century, along with the dynamic development of information technology and growing scope of utilization of new technologies, scientific policy was subordinated to the strategy of economic development. Science became a basis for building society and economy based on knowledge and scientific units started playing a fundamental role in the process. The personnel of scientific institutes started being regarded as an important factor of economic development. This factor in itself constitutes a complex entity, as it comprises scientific employees from various generations characterized by various needs and expectations. Satisfying their needs is becoming a major challenge for contemporary institutions from the sphere of science.

What seems to be a particularly challenging group are employees from the youngest generation, who are currently entering the labour market, or have been on the market for just a few years. These are people who less and less often commit themselves to work and they care more about maintaining a balance between professional and private life (Deloitte, 2018). For this reason this article is devoted to the group of young scientists below the age of 35. The goal of the work is highlighting the aspects of work which allow young scientists to achieve satisfaction from the professional sphere of life and thus could prevent the outflow of young scientists from the sector of science.

The article presents the results of analyses carried out by the author on the basis of empirical material obtained from a survey on a representative sample of professionally active employees of national scientific institutions. The presentation of the results of the survey will be preceded by an assessment of the situation on the labour market and the resulting challenges that scientific units have to face. Next, the method used to carry out the survey and the composition of the sample will be discussed. In the last section of the article the results will be subject to discussion and on the basis of the discussion final conclusions from the conducted survey will be formulated.

## Diagnosis of the labour market

In an economy based on knowledge human capital is becoming the main resource. The knowledge that people have and the ability to transform it into new products, services and technologies constitute the source of economic development and social prosperity and on the micro scale they determine the market success of companies. In order to gain a competitive advantage, already since the 1990's organizations have been trying to attract employees who have reliable knowledge and high professional skills, have fluent command of foreign languages and new technologies and additionally are mobile and motivated to work in an efficient and creative way. What enjoys unremitting popularity, both in literature on the subject and in business practice, is the concept of talent management.

A review of various ways of defining the term talent with regard to employees (Borkowska, 2005; Cannon and McGee, 2015; Ingram, 2011; Mikula, 2006; Poczowski, 2016) made it possible to name their three basic features: competences, high potential for development and above-average results. In order to raise their competitiveness companies should both focus on obtaining talents from the surroundings and on developing valuable employees they already have. Nevertheless, the ability to attract talented individuals won't lead to the growth of value, if it is not accompanied by the ability to release their engagement, motivation to work and appreciating achievements. Without building employees' positive experience keeping talents in an organization may turn out to be impossible and thus ruin the efforts aimed at attracting and developing them. That's why it is so important to create for the people that an employer is investing in the opportunities for using their potential within the organization in a longer time perspective. That's because these activities should lead to greater loyalty of talents and counteract the migration of talents to competition.

Managing talented individuals and more broadly building employees' positive experience is becoming more and more important in light of the fact that now the labour market is to an ever greater extent ruled by the employee. What points to the strengthening of this trend on the national labour market is dropping unemployment rate, which according to the estimates of the Central Statistical Office in September 2018 reached 5,7%, which was the lowest level in 28 years. According to the latest, tenth edition

of Barometr rynku pracy (labour market barometer) prepared at the end of the third quarter of 2018, 49,7% of employers in Poland have problems with acquiring appropriate candidates for work (Work Service, 2018). About a half of companies admit they have problems with recruitment lasting more than a year. We can look for the reasons for the deficit of human resources in dropping supply of employees associated with demographic changes and greater mobility of human capital. The situation is further intensified by competition for personnel and raises pressure on salaries. The last report by Work Service suggests that up to 59,7% of employees expect higher salaries.

However, experts emphasize that we cannot say that right now the employee dominates the market in all regions and branches, as well as positions. Problems with finding work can still be observed in Eastern Poland and in small towns and villages. A report prepared by Puls Biznesu and Boston Consulting Group (2017) suggests that it is the hardest to acquire: IT specialists (46% of the responses of managers from companies in Poland), specialists with a profile depending on the branch (36% of responses), professionals specialized in data analysis (32%), high-ranking managers (25%) and skilled blue collar workers (21%). Nevertheless, we should expect that unfavourable demographic trends in form of dropping number of births and at the same time growth of the population of retirement-age employees over the next two decades will lead to gradual reduction of the supply of workforce, which as a result may bring a slowdown of economic growth.

What makes the situation even more complicated is the fact that generation Y, also called millennials, is entering the market. In association with the fact that behaviours and attitudes of every generation are shaped by unique experiences resulting from historical, economic and social conditions in which people grow up, the appearance of a new generation every time causes tensions in the work environment caused by differences between generations. What may show the existence of the phenomenon of generation Y is not just the growing number of publications on the subject in press and popular literature, reports of international concerns and consulting companies (see: Deloitte, 2015; Johnson Controls, 2010; Pew Research Center, 2010; PwC, 2013), and even government agencies (see: CEA, 2015), but also of scientific articles containing the results of empirical research (see: Kowske, Rasch and Wiley, 2010; McGinnis, 2011; Rentz,

2015). Differences between generations at work are discussed by, among others, Aparna Joshi et al. (2010) and Jean M. Twenge et al. (2010).

Taking into consideration great diversity of age brackets applied by researchers to distinguish generation Y<sup>1</sup>, it is possible to assume that it is formed mainly by people born between the 1980's and 1990's. What is crucial for the identification of this group is that they are called digital natives, that is, people born and raised in the age of digital technologies and thus getting used to computers and the Internet from early childhood. This description doesn't entirely match the people born in early 1980's in Poland, as these people were educated in schools with limited access to computers and the Internet. This fact may constitute the reason for incoherence found in the characteristics of the representatives of generation Y in Poland and in western world.

Kathryn C. Rentz (2015) presents the following description of generation Y:

- they have less respect for hierarchy and authority than older employees and are inclined to overestimate the value of their own opinions;
- they are too confident about their own skills and feel they are "destined for success", but they underestimate the effort that it will cost them;
- they desire quick solutions and effects, because they don't want to waste time;
- they prefer multi-tasking over focusing on one activity, or project over a long time;
- they demand broad feedback and guidelines, they also need more praise than previous generation and are sensitive to criticism;
- they don't tolerate ambiguity and want clear guidelines telling them how to achieve success and at the same time they are not interested in the whole image;
- they have a very good command of new technologies, but are inclined to abuse them.

Many authors emphasize that high knowledge of technology among millennials is accompanied by deficits of soft skills such as the ability to communicate, the ability of critical thinking and problem solving, as well as building and maintaining relations with others (Hershatler and Epstein, 2010; Myers and Sadaghiani, 2010; Hartman and McCambridge, 2011).



Lindsey Farrell and Andrew C. Hurt (2014) in their publication reviewed and summed up the characteristics of the representatives of generation Y contained in 14 scientific articles. An effect of their synthesis is a list of six features reoccurring in these descriptions, namely: multi-tasking, need for structuring, focus on achievements, understanding of technology, focus on the group and seeking attention and feedback. These specific traits of the young generation mean that its representatives have to make an effort to adapt to the existing work conditions. However, looking from the other side, also organizations cannot remain indifferent to them and have to change to satisfy the needs of their new employees and fully use their potential (Kilber, Barclay and Ohmer, 2014).

## Challenges for the sector of science

The problems of the national labour market are reflected by the situation found in the Polish sector of science. A symptom of this is, for example, the fact that scientific personnel in Poland is aging. According to data from the POL-on system, in 2017 academic teachers below the age of 40 constituted merely 30% of the scientific personnel of Polish universities, while 49% of academic employees were aged 40–59 and 21% were people above 60 (OPI IB, 2018). The forming generation gap may lead to a situation in which in the future there will be a shortage of academic teachers for educating employees for the economy. The lack of supply of new employees makes it harder to eliminate feudalism and feudal relationships present in the organizational culture of Polish scientific institutions (Hryniewicz, 2012; Antonowicz, 2015; Kwiek, 2016). These terms refer to the practice of dividing resources and making personal decisions on the basis of the hierarchy of positions and scientific titles. This phenomenon creates a situation of unfair game depending on the level of privilege in the hierarchy and leads to the growth of inequality among employees (Szwabowski, 2014).

Thus, while in the business sector we can see the symptoms of transition to a new reality defined as understood by Ed Michaels et al. (2001), scientific institutions in Poland seem to be stuck in the old order (see Table 1) and they rarely have the capacity to offer work conditions that could

attract and keep talented employees. This, in turn, exacerbates problems with the supply of valuable academic employees — graduates of doctoral studies and doctoral students.

Table 1. "Old and new reality" in times of war for talents

"old reality"	"new reality"
<ul style="list-style-type: none"> <li>● tangible assets, capital and location are the source of competitive advantage</li> <li>● having better talents is a distinctive feature</li> <li>● people need organization</li> <li>● positions are a rare good</li> <li>● people accept the standard package offered by an organization</li> <li>● employees are loyal and positions are safe</li> </ul>	<ul style="list-style-type: none"> <li>● talented people are a source of competitive advantage</li> <li>● having better talents is a huge distinction</li> <li>● organizations need people</li> <li>● talents are a rare good</li> <li>● people demand much more</li>   <li>● people are mobile and their engagement is short-lived</li> </ul>

Source: E. Michaels, H. Handfield-Jones, B. Axelrod (2001). *The War for Talent*. Boston: Harvard Business School Press.

As a study carried out by Agnieszka I. Baruk (2018) shows, universities are not regarded by students as an attractive employer. The results of the latest study titled Universum Talent Survey (Błaszczak, 2018) suggest that Polish students are more interested in starting work for international corporations. It is because such work creates an opportunity for them to satisfy their most important needs. Among the needs named by them there are: high earnings in the future (74% of responses), good credentials for future professional career (67%), professional development and trainings (60%), stability of employment (57%) and respect for employees (55%). High financial expectations (63% of responses) and demand for a lot of freedom and flexible work hours voiced by students and graduates have been highlighted also by the representatives of HR departments participating in the survey organized by BIGRAM (2017). This evokes the fear of emergence of the phenomenon of negative selection in the sector of science. This means a situation in which people who are too weak to work in the business sector engage in scientific-didactic work.

What is also a rather bad thing is the fact that many young scientists facing unfavourable conditions in the national sector of science consider

leaving Poland and working on their professional career abroad. Among the respondents of the survey ordered by the National Contact Point of European Union's Research Programmes at the Institute of Fundamental Technological Research of the Polish Academy of Sciences (Wycisk et al., 2018) the group constituted 65%. At the same time young researchers emphasized that they are ready to start work both in terms of language skills and content-related skills. Often, these are people who had a chance to experience the reality of western academic sector during the Erasmus student programme. Thus, they have the feeling that they are supposed to satisfy requirements on an international level, while they don't get terms of employment comparable with what can be found in developed countries. As a result, they perceive emigration as the only chance for contact with well-known researchers from countries other than Poland, but also an opportunity to obtain more attractive financial terms and access to better research infrastructure.

The named circumstances and traits of the young generation of scientists constitute a significant challenge for scientific institutions as employers and make us think about the approach to human capital management, organizational culture and promoted values.

## Research method

The following analyses concerning the national sector of science were carried out by the author on the basis of the empirical material collected in course of a nation-wide survey conducted from April to May 2017. The surveyed population was a collection of professionally active scientific employees working in national research institutes, units of Polish Academy of Sciences, as well as public and non-public universities. A total of 840 scientists chosen randomly participated in the survey. The sample included 264 young scientists born in 1982–1992. Their characteristics are presented in table 2.

In order to answer the research question "How can we prevent the outflow of young scientists from the sector of science?" the respondents were divided into two groups on the basis of their declarations with regard to taking into consideration changing work over the past six months. Here it was assumed that the differences in the level of

expectations and satisfaction from various aspects of work observed in these groups will make it possible to highlight the issues within which the perceived deprivation may lead to the decision to leave a workplace.

Table 2. Characteristics of the research sample

Number of scientists according to:	N
• sex	264
woman	133
man	131
• scientific degree/professional title	264
master	161
doctor	103
• type of scientific unit	264
public university	231
unit of Polish Academy of Sciences	15
non-public university	13
research institute	5
• area of science	264
exact and technical sciences	101
humanities and social sciences	95
life sciences	68

Source: Own materials.

An important stage of the survey was the selection of aspects of work, the assessments of which would make it possible to fully learn the preferences of respondents with regard to employment and at the same time wouldn't constitute for them an excessively big burden during interviews. In association with the fact that there is no single "golden standard" pinpointing a comprehensive collection of aspects, which should be taken into consideration in the process of measuring work satisfaction (see: Roelen, Koopmans and Groothoff, 2008). For the purpose of building author's set of such factors the classic model of the hierarchy of needs by Abraham Maslow (1990) was used. The hypothesis that was adopted here says that young people who consider leaving their current workplace in the sector of science are in a situation in which their needs — both higher and lower level needs — are satisfied by the employer to a lower degree than in case of other young scientists.

According to Maslow's theory, human feels five levels of needs (physiological needs, need of security, belonging, respect and self-realization), which he satisfies one after another, starting from the lower-level needs. Translating this into conditions on the labour market, we can recognize satisfying physiological needs as gaining as a result of work a pool of material means making it possible to satisfy the basic material needs of the employee and his, or her family. At the same time, the conditions created by the employer in the workplace and work organization may reflect the need for security named by Maslow. The equivalent of the need of belonging and respect will be contacts with people established in the workplace and the respect received from them. At the same time, the equivalent of self-realization may be the need for professional development. As a result in the research four groups of work aspects have been adopted: economic, existential, social and developmental. Each of the mentioned groups contains two to three detailed aspects of work subject to assessment. The way particular aspects are assigned to the four groups defined above is presented on picture 1.

Picture 1. Aspects of work assessed in the survey

<p><b>economic aspects</b></p> <ul style="list-style-type: none"> <li>● level of remuneration</li> <li>● availability of additional, non-financial benefits</li> <li>● feeling of stability of employment</li> </ul>	<p><b>existential aspects</b></p> <ul style="list-style-type: none"> <li>● organization of work space</li> <li>● the possibility of choosing work hours</li> <li>● the possibility of working from home</li> </ul>
<p><b>social aspects</b></p> <ul style="list-style-type: none"> <li>● interpersonal relationships</li> <li>● recognition for work expressed by the supervisors</li> </ul>	<p><b>aspects of development</b></p> <ul style="list-style-type: none"> <li>● the possibility of implementing your own scientific aspirations</li> <li>● the possibility of developing knowledge, or improving skills</li> </ul>

Source: Own materials.

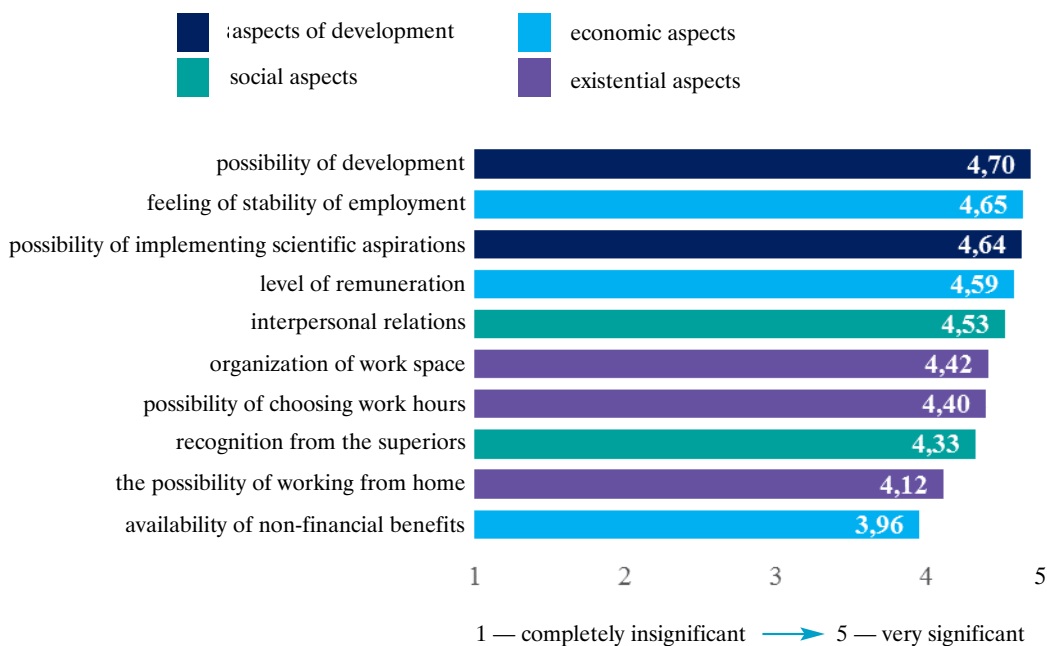
Eventually, the respondents expressed their opinions both on the general level of satisfaction with the current workplace and on satisfaction with ten detailed aspects of work: level of remuneration, availability of additional non-financial benefits (such as, for example: fitness club card, vouchers for language courses, holiday gifts, subsidized meals, medical care, insurance policy etc.), feeling of stability of employment, organization of work space (which includes the amount of space per employee, the quality and availability of office equipment and research equipment etc.), the possibility of choosing work hours, the possibility of working from home (that is, outside a scientific unit), interpersonal relationships, recognition for work from the superiors, the possibility of implementing own scientific aspirations and the possibility of developing knowledge and improving skills. The respondents gave answers on a five-degree scale, where 1 meant "I am definitely unsatisfied" and 5 meant "I am definitely satisfied". Additionally, the respondents were asked to define the significance of defined ten aspects of work from their perspective. In this case they also used a five-degree scale, where 1 meant "completely insignificant" and 5 meant "very significant".

## Results of the survey

Among three most important aspects of work for young scientists there were two associated with development: the possibility of developing knowledge and improving skills placed first and the possibility of implementing own scientific aspirations placed third (see: picture 2). Two out of three investigated economic aspects, namely the feeling of stability of employment, which placed second and the level of remuneration which placed fourth in terms of significance turned out to be only slightly less significant. At the same time, the third economic aspect, the availability of additional non-financial benefits, placed at the lowest position on the list of priorities of young scientists. What is also regarded as comparably less important are the issues which belong to existential aspects and in particular the possibility of working from home, which placed on the list just ahead of the availability of non-financial benefits. Meanwhile, interpersonal relationships placed in the top five of the ranking. The second

of the investigated social aspects, namely, respect expressed by the superiors, plays a less significant role, according to the respondents and as a result, this aspect placed eighth out of ten investigated aspects of work.

Picture 2. Young scientists' expectations with regard to work

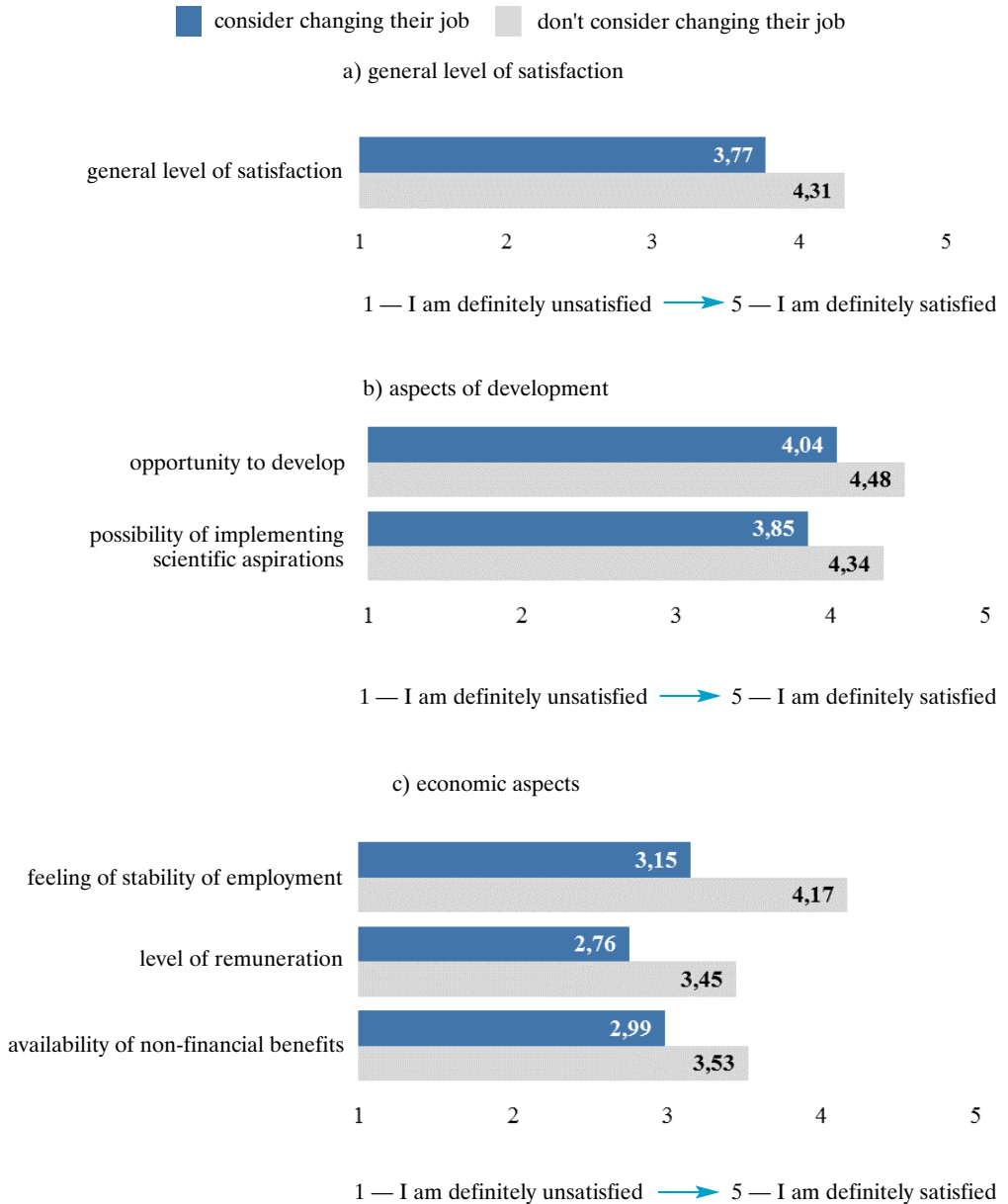


Source: Own materials.

Analysis of the significance of particular aspects of work among young scientists hasn't shown the presence of any statistically important differences depending on whether they considered changing their job or not in six months preceding the survey.

A different situation was found in terms of the assessment of general level of satisfaction from work in the sector of science (see picture 3). As we could expect, young scientists who don't consider changing their job are substantially more satisfied with their workplace than people who have such plans (see Table 3).

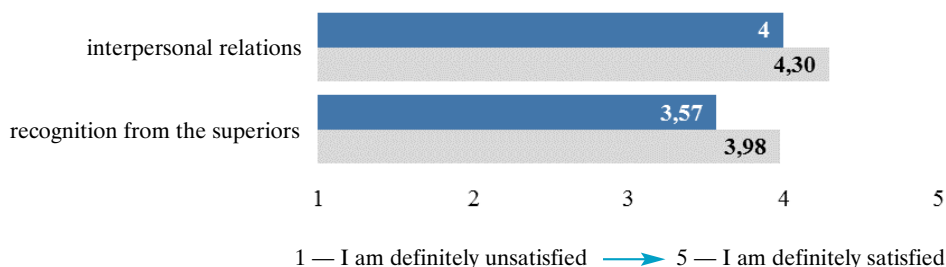
**Picture 3. Level of satisfaction from work among young scientists who are either considering, or not considering changing their job**



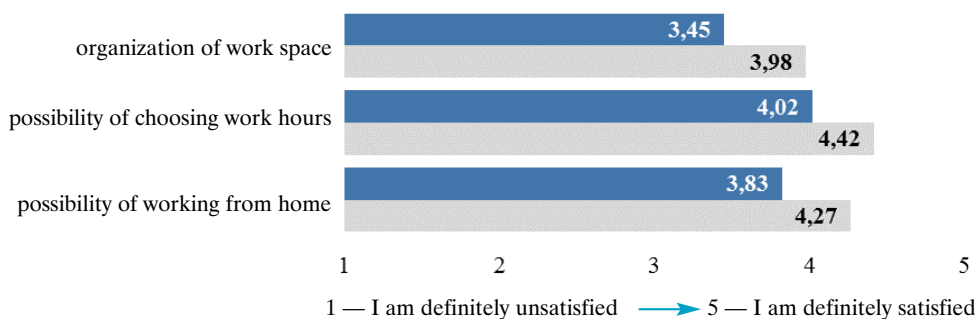


Cont. picture 3

d) social aspects



e) existential aspects



Source: Own materials.

Respondents from both of the surveyed groups appreciated the most satisfaction from development-related aspects, which they regard as most important at work. They also declared high level of satisfaction from two existential aspects: possibility of choosing work hours and possibility of working from home, that is, issues perceived as less important. Among the aspects which are a source of satisfaction for the respondents we can also name interpersonal relations. All of the issues mentioned above are a greater source of satisfaction for scientists who don't consider changing their employer than the scientists who think about changing their employer. These differences were found to be statistically significant. At the same time no statistically significant differences in terms of satisfaction from interpersonal relationships in the workplace were observed in both surveyed groups.

Table 3. Differences in the level of work satisfaction among young scientists considering and not considering a change of work — test

position	average ranks		test
	consider changing work	don't consider changing work	
a) general level of satisfaction	45,13	58,96	Z = -2,518*
b) aspects of development			
possibility of development	45,10	58,99	Z = -2,574**
possibility of implementing scientific aspirations	45,20	57,66	Z = -2,290*
c) economic aspects			
feeling of stability of employment	36,25	65,85	Z = -5,293***
level of remuneration	43,18	59,44	Z = -2,856**
availability of non-financial benefits	44,50	54,20	Z = -1,743
d) social aspects			
interpersonal relations	47,55	56,13	Z = -1,573
recognition from the superiors	44,05	55,41	Z = -2,066*
e) existential aspects			
organization of work space	44,33	57,74	Z = -2,398*
possibility of choosing work hours	44,45	56,39	Z = -2,260*
possibility of working from home	41,73	52,18	Z = -2,003*

\*\*\* Correlation is significant at the level of 0,001.

\*\* Correlation is significant at the level of 0,01.

\* Correlation is significant at the level of 0,05.

Source: Own materials.

The lowest grades according to the level of satisfaction were awarded to two economic aspects: salaries, which placed fourth on the list of significance, and the availability of non-financial benefits, which turned out to be least important for the respondents. Even though people who intend to change their workplace are less satisfied from both aspects of work than young scientists who haven't revealed such plans, the differences turned out to be statistically significant only in case of the level of remuneration.

The biggest (amounting to almost one point) and at the same time statistically significant difference in the level of satisfaction between the surveyed groups was observed with regard to the feeling of stability of employment. While in case of young scientists not considering a change of

work this aspect placed sixth in the ranking of satisfaction, among people planning a change of this kind it placed only eighth.

Young scientists who declare they are willing to remain in their current work, are to the same extent satisfied from the recognition they get from their superiors and from organization of the work space. People representing the second of the surveyed groups appreciated the mentioned aspects less and these differences turned out to be statistically important.

## Discussion

The results of the conducted analyses are to a large extent coherent with the conclusions from other surveys. Young scientists, similarly as other representatives of generation Y in Poland desire work that will stimulate their development, enable them to learn new skills and implement their professional aspirations. This aspect of work has been recognized as the most important also by young people who took part in the surveys conducted by Deloitte (2018) and KPMG (2017b).

The fact that young scientists expect stability of employment, which is the second most important factor, matches the results of surveys among students from Master's degree programmes conducted by Sylwia Stachowska (2012). The latter analyses show that people below the age of 30 appreciate stabilization and certainty of employment terms more than flexible forms of employment and organization of work hours. Similarly, young employees from the sector of science recognized the possibility of working from home and choosing work hours as less important issues.

At the same time, certain differences can be observed in case of expectations with regard to remuneration. While in the survey conducted by Deloitte (2018) the level of remuneration placed second in the hierarchy of factors decisive for the choice of an employer, according to the assessment of young scientists it turned out to be less important and placed only fourth. Also the participants of the survey conducted by KPMG (2017b) attached greater weight to this aspect of work, as they declared that in case this expectation is satisfied, they are able to accept other, possible inconveniences associated with their work. Nevertheless, the level of remuneration is still regarded as a more important issue than the

availability of non-financial benefits, or organization of work space. This is coherent with the results of research concerning the ways of building employee's experience conducted by KPMG (2017a) among management members and HR department employees of companies operating in Poland and representing 13 branches. The participants of the mentioned survey agree that employees find it easier to come to terms with the lack of trainings and hard work conditions than with excessively low remuneration.

Good atmosphere and relations with other employees are also issues which are appreciated by young people, regardless of the sector of employment. However, these issues placed lower in the hierarchy of importance than the aspects of development and the level of remuneration (see: Deloitte, 2018; KPMG, 2017b) and among young scientists they are appreciated less than stability of employment.

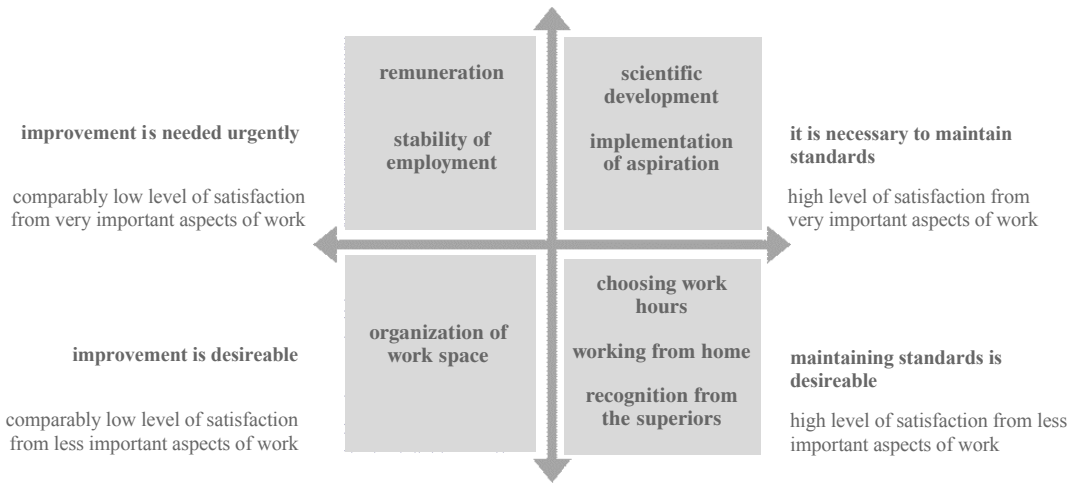
Another aspect, after interpersonal relations, important for young scientists is organization of space, that is, issues like having your own desk in the workplace, or the quality and availability of research equipment.

The comparison of expectations with the level of satisfaction from current work in the group of young scientists considering a change of work made it possible to create a matrix of retention (see Picture 4). This instrument pinpoints the areas in which the decision-makers should take action to retain young scientists in the sector of science.

Whereas work in the sector of science satisfies the most important need for generation Y, the need for development, economic aspects constitute the main source of deprivation. In particular, this concerns low salaries and temporary work contracts depriving employees of stabilization. The same conclusions can be drawn from the research conducted for the National Contact Point of Research Programmes of the European Union at the Institute of Fundamental Technological Research of the Polish Academy of Sciences (Wycisk et al., 2018), in which the last two factors were defined as the biggest barriers for the development of career in the national sector of science. Young scientists queried in both surveys display a comparably low level of satisfaction from organization and conditions of work in scientific institutions. Whereas the representatives of generation Y working in the business sector often get the comfort of working in space designed

according to their preferences, have access to a relaxation zone, or entertainment room, their peers employed at universities and research institutes can't always count on their employer to provide them with a quiet place for scientific work and access to necessary research equipment.

Picture 4. Matrix of retention of young scientists



Source: Own materials.

## Conclusions

The results of research on the level of satisfaction from particular aspects of work mostly allow positive verification of the hypothesis that young people who consider leaving their current work in the sector of science, feel their needs — both lower and higher level needs — have been satisfied by the employer to a lower degree than in case of other young scientists. Only expectations concerning the availability of additional non-financial benefits and interpersonal relations constitute an exception and it turned out they didn't distinguish the two groups of scientists.

What's interesting is that the results of research suggest that in case of young scientists their higher level needs such as the possibility of

implementing their aspirations and scientific development are satisfied to a higher degree than lower level needs concerning the level of remuneration and the feeling of stability of employment. This constitutes certain discrepancy in comparison with the hierarchical nature of needs presented in Maslow's theory, according to which needs are satisfied gradually (that is, basic needs are satisfied before higher level needs).

The observed regularity was found in a group of young people characterized by high diversity. For the purpose of further investigation of the subject and verification of the obtained results in further research projects it is worth analyzing the level of satisfaction from particular aspects of work in subgroups distinguished according to the type of scientific unit, represented area of science, or sex of the scientist. What may be an interesting direction of research, expanding the scope of analyses conducted by now is also taking into consideration scientific employees above the age of 35 and a diagnosis of their level of satisfaction from work in the sector of science and later comparing these results with the results of young scientists.

Regardless of the results of further surveys the fact that the needs of young scientists are not satisfied points to the necessity to work out systemic solutions, which would respond to the diagnosed problems. Above all, it is necessary to raise spending on science. According to data from Eurostat, in 2016 in Northern and Western European countries the relation of gross national spending on R&D activity (GERD) to GDP amounted to between 2% and over 3% (e.g. Sweden 3,25%, Austria 3,09%, Germany 2,94%, Finland 2,75%), at the same time in Poland it was less than 1%. Without greater amount of financial resources in the system the efficiency of obtaining grants for research will remain at a low level and this will lead to the feeling of lack of employment stability. What's more, the salary budgets of scientific units will remain at a low level.

In the conducted research over a half of scientists below the age of 35 declared their income from their basic workplace didn't exceed PLN 3,000 net per month. According to article 137 from the Act on higher education and science from July 20, 2018 (Dz. U. poz. 1668 i 2024) called Constitution for science, the salaries of academic personnel have to be linked to the minimum basic remuneration of a professor at a public university and can't be lower than 50% of the amount. According to the

resolution of the minister of science and higher education from September 25, 2018 concerning the minimum basic salary of a professor of a public university (Dz. U. poz. 1838), from January 2019 the minimum salary of a professor will grow to PLN6,410 gross. Thus, an assistant professor will be earning no less than PLN4,679.30 (73% of the above-mentioned basic amount) and an assistant no less than PLN3,205. Ministry of Science and Higher Education estimates that salary hikes will concern about 40% of university employees. For assistants it will mean an average hike of PLN800, while for assistant professors it will be PLN860. Moreover, the ministry has declared there will be further raises for academic employees in 2020 and 2021. Public universities will determine the actual level of salaries individually, depending on the possessed financial resources.

Even though these are steps in the right direction, a part of the community (e.g. the Conference of Rectors of Academic Schools in Poland, Committee of Scientific Policy, or representatives of the Crisis Committee for Polish Humanities) has voiced doubts, whether the amounts mentioned above are adequate to the requirements formulated for scientific employees. The proposed rates still remain at a lower level than the salaries in the business sector and salaries of scientists abroad. On the other hand, institutes of the Polish Academy of Sciences are demanding raises at least as high as those offered to university employees. Introduction of minimum salary thresholds for the scientific employees of the institutes of Polish Academy of Sciences equal to rates guaranteed to the scientific employees of universities has been recommended by the authors of the Report of the Academy of Young Scientists of the Polish Academy of Sciences (Dołowy-Rybiński et al., 2018). They regard the current level of remuneration as humiliating. This corresponds with the opinions of young participants of the survey conducted by KPMG (2017b), who concluded that appropriate level of remuneration constitutes an expression of respect for an employee.

Assuming that salaries for young scientists will be growing, in the long term we can expect the growth of their expectations with regard to other aspects of work, which are placed higher in Maslow's hierarchy of needs and now are comparably satisfied. The higher the employees' earnings and the more confident they are about their employment, the more

attention they pay to the atmosphere in their team, how their superiors treat them and to the reputation of a company. For example, young participants of the survey conducted by KPMG (2017b) along with adequate remuneration paid attention to atmosphere at work and voiced the need for respect and consideration of their views, taking their opinion into consideration, as well as expectations concerning investing in their development, organization of trainings, as well as flexibility in carrying out their duties and work time management. Similar expectations can be expected among young employees of the sector of science, who may voice greater needs associated with development and demand greater flexibility in terms of the time and place of work, or the need for greater recognition from the superiors.

## Ending

Learning and understanding young scientists' approach to professional work is particularly important in light of their high mobility and openness to changing work. Knowledge on this subject will make it possible for institutions from the sector to create attractive job offers and implement solutions facilitating the process of building their engagement. As the conducted survey shows what would make it possible to attract talents to the sector of science is raising salaries and the stability of employment. Thus, on the one hand it is necessary to raise spending on the sector of science and on the other hand it is necessary to implement solutions supporting employees' efficient transition between contracts, or maintaining the continuity of their employment between projects. Without the introduction of systemic changes, promoting the profession of a scientist as an interesting way of life and supporting its prestige won't be enough to keep talents in scientific institutions.

In a longer time perspective, along with the growth of salaries and the accompanying, potential growth of expectations with regard to other aspects of work, it may become necessary to implement solutions from the area of building employee experience. This approach will require from scientific institutions to put the employee in the centre of attention, following the example of companies.



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<sup>1</sup> For example, in a research project carried out by the British Library and Joint Information Systems Committee in 2007 people born in 1982–1994 (CIBER 2008) were recognized as millennials and the report by PwC (2013) recognized people born in 1980–1995 as millennials. At the same time, Lindsey A. Gibson and William A. Sodeman (2014) in their article used the term for people born in 1981–2000, while Don Tapscott (2010) assumed the period of 1977–1997.

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