

**8<sup>th</sup> ICEEPSY 2017**  
**The International Conference on Education and Educational  
Psychology**

**WORK MOTIVATION OF "SHIFT WORKERS" AND LOCAL  
SPECIALISTS IN THE ARCTIC**

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*Abstract*

The article compares the results of an empirical psychological study of the satisfaction with the quality of life and the work motivation in local employees who live and work in the Arctic regions and “shift workers”. The study aimed at determining the strategic directions of the state policy of the Sakha Republic (Yakutia) in developing the model of internal migration, measures to reduce outflows from the Arctic regions.

The subject of the study was highly qualified employees working in the industrial and mining enterprises as rotation and local employees in two Arctic regions of the Sakha Republic (Yakutia). The total sample size was 208 people. As a result of empirical research, it was found that most of the interviewed employees in both groups are satisfied with today's work and demonstrate a high readiness to work in the Arctic. The correlation between the socio-psychological parameters determining the degree of readiness and high work motivation in the Arctic was confirmed: the higher the quality of life and satisfaction with its main aspects, the higher the readiness and motivation.

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**Keywords:** Work motivation, "shift workers", local employees, the Arctic



## 1. Introduction

In the Republic of Sakha (Yakutia), the shortage of highly qualified personnel is acute in many areas of the industries like diamond mining, gold mining, coal mining, oil and gas, antimony, timber industries, diamond-cutting and jewelry industries. The majority of industrial and mining enterprises solve personnel issues through the use of the rotational method (“shift workers”), a special form of the labor process when the place of work is a long distance from the place of permanent residence of workers in the areas with special climatic conditions, and also for the purpose of carrying out other production activities.

However, experience shows that the rotational method is fraught with numerous economic, legal and social costs, an excessive severity of work, difficult living conditions during the term, lack of rights and social insecurity, high traumatism of workers, family disruption, conservation of the depressed state of small towns and villages, etc.

In recent years, the priority task of socio-economic development of the Arctic regions of the Sakha Republic (Yakutia) has been the creation of optimal conditions for securing local highly qualified personnel in industrial and mining enterprises, which would substantially solve the problems of not only professional employment in the region, but would also contribute to the development of the Arctic regions.

We set the task of the comparative study of the work motivation among “shift workers” and local employees in the Arctic regions.

## 2. Problem Statement

Please replace this text with context of your paper. The Arctic is a natural extreme zone, which places high demands on the adaptive capabilities of the human body, which causes the increase in anxiety, stress, drowsiness, fatigue, anxious and hypothetical attitudes toward one's health, and reduced working capacity (Krivoshchekov, 1989; Sobakin, 2004; Ofte et al., 2013). During the polar day, people often have symptoms of increased irritability, mood depression, insomnia, affective reactions and aggressiveness (Azovtseva, 2003).

B.D. Karvasarsky noted that in the first years of being in arctic conditions, deviations of behavioral and personal components predominate in a person, which affect the general state of health and sleep, followed by a shift in the personality structure towards neuroticization, an increase in anxiety (Karvasarsky, 1982).

The effectiveness of the professional activities of those working in the Arctic conditions is largely determined by the level of their physiological, psychological and socio-psychological adaptation to the social and natural environment. Despite significant efforts to reduce the impact of negative factors, work activities in the Arctic remain one of the most extreme types of labor. Researchers emphasize not only the possibilities of providing the necessary working conditions but also the adaptive resources of man.

Among the unfavorable functional conditions that rotation employees in the Arctic develop are psychological tenseness, stress (distress), fatigue, monotony and professional burnout (Simonova, 2011; Sobakin, 2004). N.V. Andreenkova (2010) notes that the workers are dominated by signs of emotional

burnout, which increase with the length of service. Workers try to create a compromise adaptation strategy that allows them to exist in their professional and non-professional spheres.

N.N. Simonova was the first to propose the systematic approach of psychological support of professional activity (Belykh, Simonova, et al., 2016). According to N.N. Simonova, the socio-environmental professional adaptation of "shift workers" in the Arctic is an open psychological system aimed at maintaining the required level of efficiency and functional status in the process of performing professional duties under various conditions (Simonova, 2009). Socio-environmental professional adaptation of employees working in the Arctic should include adaptation to extreme conditions of professional activity and socio-psychological adaptation.

The problem of work motivation has been sufficiently studied in sociology and psychology by the following authors: V.A. Yadov, A.G. Zdravomyslov (2003), and many others. Motivation is a dynamic complex formation with a complex structure, changing under the influence of factors of different orders. At the present stage, we can observe the complication of labor content and how requirements for the employees' competence get higher. The results of recent years' research allow us to distinguish features of the work motivation structure of Russian workers at the present stage of social and economic development. The data obtained from the European Social Survey (ESS), carried out by the population survey method every two years in most European countries since 2001, show the prevalence of external motivation. So, the most frequent motivation for choosing a place of work is the wage rate, whereas the internal motivation of "the opportunity to take the initiative" takes only 24th place.

Satisfaction of a person depends on the level of quality of life. Researchers, when examining questions of satisfaction, mark satisfaction with work (quality of working life) and satisfaction with life (quality of life). Satisfaction with life is viewed as an integral part of the broader concept of subjective well-being, which in turn is defined as "a broad category of phenomena consisting of people's emotional response, their satisfaction with certain spheres of life, and in their judgments about the quality of life in general"(.

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### **3. Research Questions**

In the literature, it is noted that for the Russian sample, a strong linear relationship between the satisfaction with life and the level of income is of characteristic. A factorial study was conducted by Andreenkova N.V. where she studied the influence of two groups of factors: external and internal (2010). The results show that factors of external order are the determining factor of life satisfaction, i.e. the attitude to the situation in the country as a whole. In our study, it was intended to assess the peculiarities of work motivation among rotational workers in the Arctic regions and local employees, and identify the relationship between the specifics of work motivation and satisfaction with the quality of life.

The subject of the study were highly qualified employees working in industrial and mining enterprises in two Arctic regions of the Sakha Republic. The respondents from the village of Ust-Nera of the Oymyakonsky district (121 people) work mostly like “shift workers” and the respondents of Saskyllakh village of Anabar district (87 people) live temporarily or permanently and represent mainly local staff members. The total sample size was 208 people.

#### **4. Purpose of the Study**

The purpose of the study is to carry out a comparative study of work motivation among “shift workers” and local specialists in the Arctic regions of the Sakha Republic (Yakutia).

And also to reveal the relationship between work motivation and satisfaction with the main aspects of life.

#### **5. Research Methods**

To study the self-assessment of the quality of life, a modified scale was used based on the questionnaire for assessing the quality of life by Z.F. Dudchenko, which allowed determining physical, mental and social satisfaction. The following parameters of the quality of life were assessed: material prosperity, housing conditions, climatic and environmental conditions, satisfaction with one's family, relationships with relatives, sexual life, nutrition, work, and rest. The work parameter reflects the satisfaction with one's work, one's relationship with colleagues and the opportunities for professional growth. The average score for each scale was calculated and the following levels were distinguished: normal, low and poor quality of life.

To determine the motivation and factors influencing the readiness to work in the Arctic, a questionnaire was used with the categories of satisfaction with wage rate, the work schedule and the diversity of work, and the correspondence of work to personal abilities and inclinations, the level of work organization, the relationship with colleagues and management, the level of technical equipment at the workplace and the possibility to solve housing problems. The questionnaire presented closed and open questions related to plans for the immediate future relating directly to work, opportunities for career growth and material remuneration, the psychological climate at work and self-evaluation of work activity.

During processing, we used correlation analysis, Fisher's criterion and factor analysis.

#### **6. Findings**

The concept of work satisfaction includes both satisfaction with work itself and satisfaction with the organization in which one's work takes place. The degree of satisfaction with both factors can vary for different individuals. The respondents, regardless of their place of residence, are satisfied with the work relations ("employee relations", "relations with a direct supervisor") and the job content ("diversity of work", "the need to solve new problems", "independence in work", "conformity of work to personal abilities"), and wage rates to a lesser extent.

### 6.1. Work motivation of employees working in industrial and mining companies in the Arctic regions

The respondents from Saskylakh are more satisfied with the hygienic working conditions ("work schedule", "sanitary and hygienic conditions", "level of work organization", "level of technical equipment", "opportunities to solve housing problems"). In their turn, the employees of Ust-Nera estimate the possibilities of career advancement higher than the hygienic conditions.

In general, there is an average level of satisfaction with work. Let us turn to a more detailed picture. Firstly, the share of the dissatisfied and the most unsatisfied is more reflected in the "wage rate" factor and it is 32%; Secondly, the greatest difficulty was caused by the assessment of satisfaction with the "career advancement" factor which is 29.2%; thirdly, there is a tendency to a positive assessment of all factors and the proportion of satisfied and more satisfied is more than 60%.

In general, the nature of the distribution of answers to the question "Assess your degree of readiness for permanent work in the Arctic on a 10-point scale, where 10 is fully ready, 1 is absolutely not ready" shows that 86% of the employees from Saskylakh show readiness. Of these, 65% expressed complete readiness and 21% with varying degrees of readiness. The rest of the respondents (14%) were more inclined to show unreadiness than readiness (see fig. 01).

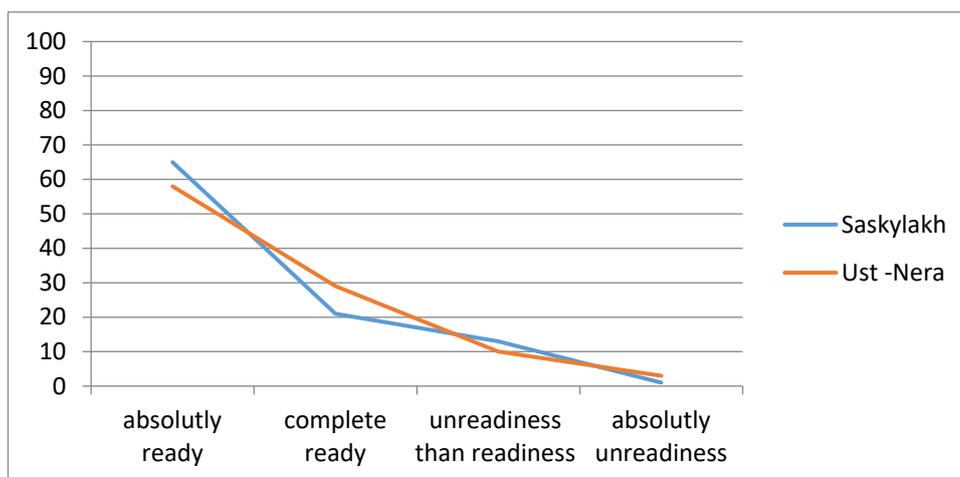


Figure 01. Readiness for permanent work in the Arctic

87% employees of Ust-Nera also positively assess their readiness. Of these, 58% expressed complete readiness, and 29% showed readiness with varying degrees. The rest 13% of respondents were more inclined to unreadiness, moreover, the share of those who are absolutely not ready is much higher than in the previous group.

To explain the obtained results, let us turn to the qualitative analysis of the attitude of respondents to work in the Arctic. Thus, in Saskylakh those who demonstrated the absolute readiness to work, often noted that the work for them is "a source of income", "financial stability", "improving the financial situation", "the opportunity to achieve material prosperity," "prospects". They also picked answers like "a good team", "way of life", "interesting", "generous nature - you can hunt", "calm, measured life". Those who demonstrated absolute readiness from the village of Ust-Nera, often noted that the work for them is

"a source of income", "way to earn", "interest", "the opportunity to realize themselves," "joy". In other words, the main factor influencing the readiness to work in the Arctic is the availability of work with a stable wage.

The unreadiness of the first group is more connected with the objective difficulties of the settlement of Saskylakh: "far from the center", "expensive travel", "high prices for food", "severe climate", "hard working and living conditions", "no improvement", etc. In addition, the respondents of this group noted subjective factors affecting readiness: "fear of leaving the family", "long separation from loved ones", "conditions forcing on morally and physically".

The unreadiness of the second group is mainly due to objective difficulties: "very cold, severe climatic conditions", "very long season", "lack of official housing, expensive travel, everything is expensive", "unbalanced nutrition, chronic diseases", "wages of northerners is equal to the ones on the mainland", "there are cases of deceit on the part of the employer", "there is no medicine, no conveniences, and no Internet", "working conditions are not proportional to wages", etc.

The respondents showed the greatest consistency in choosing the wage rates and the opportunity for professional growth as the most important characteristics of the work. The following motivators like high salary (18%), work equipment supply (14.4%) and professional development (13.2%) are most often put first. The second place also took wage rate (16.1%), professional development (11.9%), the possibility of career progression (11.2%). Moreover, the first and third motivators are also the most pronounced in the next position. The prestige of the profession (10,8%) and favorable working conditions (12,6%) are more often put on the fourth and fifth line of the rating. There is also a need to improve housing and living conditions (10.8%).

Thus, the most important motivators for employees working in the Arctic are material incentives and the need for professional growth. In addition, the "five" leading needs are also represented by the need for career growth, the prestige of the profession and the improvement of working and living conditions.

The respondents from Anabar also expressed their wishes: "reduce the prices for air tickets", "free annual travel", "travel privileges", "solve housing problems", "have well-equipped homes", "moderate prices for products", "salary increases", "make good money and retire early", "get a big pension", "additional workdays for retirement", "have a fast Internet", "so that the family is close", "more special benefits", "100% northern premium" and etc.

In the first place, the respondents put a high salary (22.2%), work equipment supply (14.6%) and professional development (11.8%). The second place is given to favorable working conditions (14.7%), the opportunity for professional growth (14%), and wage rate (13.2%). The need for a variety of work (15.3%) and in career growth (13.5%) finalize the top three motivators. In the fourth position we see the need for professional growth (16.8%). After that, the "five" of the most important work factors include the need for work equipment (11.6%) and the need for favorable psychological climate (11,6%). In general, the most important motivators of the respondents are material incentives, good working conditions, the need for professional development and a variety of work.

The respondents also noted the wishes of the majority working in Ust-Nera: "to improve financial capital and leave Ust-Nera", "providing housing in the central regions of Russia", "moving to the central

regions of Russia", "earning enough funds to solve personal family problems on the mainland" , "worthy payment for hard work", "good provision and organization of leisure at work", "to have a decent salary at old age", "to receive adequate medical care", "guaranteed high pensions and the confidence that the village will not be closed", " low prices for air tickets ", etc. Let us consider the correlation between the factors of labor motivation, affecting the scales of assessing the quality of life. The satisfaction with the relationships with the surrounding people ( $r_s = 0.230$ , at  $p \leq 0.05$ ), the level of work activity ( $r_s = 0.270$ , at  $p \leq 0.01$ ) and overall, the readiness to work in the Arctic ( $r_s = 0.255$ , at  $p \leq 0.05$ ) influence on the assessment of satisfaction with the quality of family relations. The employees, satisfied with the quality of material possibilities and housing conditions, are respectively satisfied with the wage rates ( $r_s = 0.263$ , at  $p \leq 0.01$ ), relationships with colleagues ( $r_s = 0.226$ , at  $p \leq 0.05$ ), the level of work activity ( $r_s = 0.311$ , at  $P \leq 0.01$ ) and they have a high level of readiness to work in the Arctic ( $r_s = 0.302$ , at  $p \leq 0.01$ ). The assessment of the quality of physical well-being is influenced by such factors as the position held ( $r_s = 0.196$ , at  $p \leq 0.05$ ), the place of permanent residence ( $r_s = 0.206$ , at  $p \leq 0.05$ ), the content of the work performed ( $r_s = 0.350$ , for  $p \leq 0, 01$ ), salary ( $r_s = 0,359$ , at  $p \leq 0,01$ ), satisfaction with hygiene factors ( $r_s = 0,241$ , at  $p \leq 0,01$ ), relationships with colleagues ( $r_s = 0,290$ , at  $p \leq 0,01$ ), level of work activity ( $r_s = 0.463$ , with  $p \leq 0.01$ ). The environmental quality assessment depends on the place of permanent residence ( $r_s = 0.251$ , at  $p \leq 0.01$ ), the content of the work performed ( $r_s = 0.287$ , at  $p \leq 0.01$ ), the wage rate ( $r_s = 0.215$ , at  $p \leq 0.05$ ) , hygiene factors ( $r_s = 0.436$ , with  $p \leq 0.01$ ), relationships with colleagues ( $r_s = 0.385$ , with  $p \leq 0.01$ ), career opportunities ( $r_s = 0.232$ , at  $p \leq 0.05$ ), level of work activity ( $r_s = 0.377$ , with  $p \leq 0.01$ ).

## **6.2. Comparative analysis of work motivation of “shift workers” and local employees in the Arctic.**

The obtained results show that the work motivation and readiness to work in the Arctic among local employees and still have some differences: local employees are more adapted to severe natural and climatic conditions, less meticulous about social conditions (adapted to lack of provision of amenities), the majority owns the skills of traditional activities (hunting, fishing, collecting wild crop), they know the language and culture of the local population, observe traditional environmental values, motivated not only to improve their material resources, but also have long-term plans to stay in the Arctic. To this end, many young specialists come to Anabar with their families and are interested in the socio-economic and socio-cultural development of the region.

“Shift workers” are characterized by the psychology of "temporary workers", less adapted to severe natural and climatic conditions, more demanding in the social and everyday terms, they do not have the traditional activities skills (they do not know how to hunt, fish, collect berries), do not know the language and culture of the local population, do not observe traditional environmental values, they are motivated mainly to improve the material resources, do not plan to live long in the Arctic (their families are elsewhere). In addition, having arrived for half a year, they work 12-14 hours a day, without taking into account social and hygienic norms, respectively, quickly overwork, "burn out" and are more prone to stress and depression.

Thus, we can state the advantages of securing local highly qualified personnel in industrial and mining enterprises, which would substantially solve not only the issues of professional employment in the region, but would also contribute to the development of the Arctic regions.

## 7. Conclusion

1. The majority of the interviewed employees of both groups is satisfied with today's work and demonstrates a high readiness to work in the Arctic. Employees from Saskylakh and Ust-Nera generally assess positively their readiness to work in the Arctic. Nevertheless, among the employees from the village of Ust-Nera there are more of those who are unready than among employees from Saskylakh. The employees from Saskylakh are more satisfied with the hygienic working conditions ("working schedule", "sanitary and hygienic conditions", "level of work organization", "level of technical equipment", "possibilities for solving housing problems"), and the employees from Ust -Nera estimate the possibility of career advancement higher than hygienic conditions.

2. The leading factor influencing the readiness to work in the Arctic and the basic motivator of work in the Arctic is the desire to improve one's financial situation, the availability of work with a stable wage. Most of the respondents are nevertheless dissatisfied with the size of their wages. The following motivators are significant in terms of their level of importance: work conditions/resources, opportunities for professional and career growth, diversity of work and the opportunity to improve housing conditions.

3. The factors reducing the motivation are extreme climatic and geographical factors, the high cost of air tickets, food, and essential goods, uncomfortable working and living conditions, information deprivation, lack of warm emotional communication, wage rates, lack of special benefits.

The hypothesis of correlation between socio-psychological parameters that determine the degree of readiness and high work motivation in the Arctic has been confirmed: the higher the quality of life and satisfaction with its main aspects, the higher the readiness and motivation. Accordingly, the prevailing level of satisfaction with the quality of life is average and readiness for work in the Arctic is average.

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