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**SOCIAL LOGISTICS IN COMPANY AS RESOURCE OF  
ROTATIONAL EMPLOYEES' LABOR BEHAVIOR  
DEVELOPMENT**

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***Abstract***

Finding and developing new resource areas are very perspective in the world economy. Transport logistics of rotational employees as a main component of a petroleum company economy takes one of the important places. Effective methods of employees' transportation determine qualitative oil and gas recovery in resource areas. This issue is important for Russia as the main part of the country's economy depends on oil and gas industry.

The authors think that studying peculiarities of rotational employees' social logistics to the oil and gas deposits can influence development of oil and gas complex. "Human factor" is a key element of labour efficiency growth, efficiency upgrading and competitiveness of an enterprise. An expert organization of rotational employees' transportation determines successful activity of a petroleum company. It is important to develop the most convenient route, which combines transportation cost effectiveness, employees' delivery speed, their safety and comfort. The last factor is not the least, as workers contentment with labour conditions increases their loyalty to the company.

The authors study the issue of social logistics development on rotational workers transportation to the place of work and back home within the scope of a petroleum company. The poll analysis allows making a conclusion that there is a discrepancy between opinions of employers and employees of the petroleum company on the organization of social logistics of rotational employees to the oil and gas deposit. Results of the survey evidence there is a necessity to change the social logistics organization in a petroleum company.

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**Keywords:** Social, logistics; worker; oil, gas, deposit..



## **1. Introduction**

Developing resource areas is a perspective task in the international economy. Social logistics takes the first place as a key component in petroleum companies economy as connected with rotational employees transportation to the work and back home (RETWH) (Antipenko, 2013; Borodina, 2014; Bykov & Onishchenko, 2015; Kozyreva, 2014; Melnikov, 2012; Silin, 2015).

Nowadays, there are scientific theories and studies denoting that RETWH is one of the motives for labour activity of the working population (Apenko, Odegov, Rudenko, & Merko, 2009; Karpikova, 2010; Latham, 2007; Lobanova, 2015; Nefedyeva, 2011; Ogorodnikova, 2012; Ozernikova, 2012; Steers, Mowday & Shapiro, 2004). However, they do not disclose the importance and potential of social logistics in the activity of the petroleum company. The authors believe that efficient operation on mineral deposits extraction depends on the logistics medium of rotational employees' transportation to the oil and gas deposits. In its turn, the study of this issue allows influencing on the international petroleum complex development in Russia and abroad.

## **2. Problem Statement**

Nowadays delivery of all resources (economical, technological, informational, human and others) to the oil and gas deposit is important for its functioning. We think people are the most important recourse at the petroleum company who determine all operations on deposits development. That is why, studying social logistics organization as a key element in the deposit functioning is important.

Rotational method of work is a key form of labour organization. As rotational work, we understand shift employment (personnel on rotating assignments). This kind of employment is used when the production sectors are at a considerable distance from the enterprise, herewith the personnel lives on site in specially created rotational settlements. This kind of employment is widely used at petroleum industry of Russian Federation.

The authors understand social logistics of a contemporary petroleum enterprise as rotational employees' delivery to the oil and gas field and back home with the account of such factors as safety, transit comfort, ecological safety, reasonable time of transit. These factors of social logistics should influence the labour behaviour of rotational employees.

## **3. Research Questions**

The subject of the study is determining the influence of social logistics organization at a petroleum company on labour behavior of rotational workers.

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

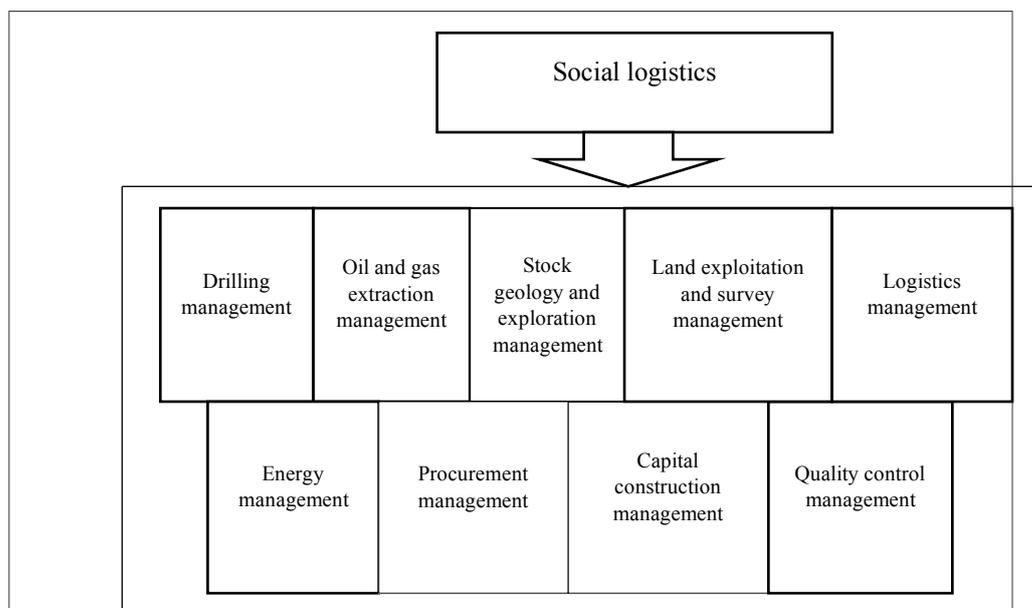
The purpose of the study is to determine possible social logistics development at a petroleum company to enhance labour behaviour of rotational workers.

## 5. Research Methods

Effective mineral extraction is acute for the Russian Federation as a significant part of the budget receives monetary funds from raw material export that develops this country's economical potential (Agafonov, 2015). Due to depletion of the deposits in Western Siberia and European part of the country there is an increase in developing of new areas with raw materials in Eastern Siberia by the biggest petroleum enterprises in the last decades (Bezhanidze, Titkina, Krylova, & Kolevatova, 1987; Davydova & Kozlova, 2018; Ehder, Filimonova, & Moiseev, 2015; Kuznetsova, 2018).

According to the Ministry of Energy of the Russian Federation the geographic centers of oil and gas extraction in the Russian Federation since 2015 are oil extracting areas in Eastern Siberia (for example, Irkutsk region), which will increase in the future (Agafonov, 2015; Ehder, Filimonova, Moiseev, 2015; Korodyuk, Novikov, & Bogomolova, 2017). Verkhnechonskneftegaz Joint-Stock Company is developing Verkhnechonsk OGSF, one of the biggest in Eastern Siberia, in Katagansk area of Irkutsk region, upstream the river Chona, 1100 km. from the regional center Irkutsk. It functions from 1978, but its pilot oil production started only in 2005. In October 2008, an industrial development of Verkhnechonsk OGSF started and it connected the pipeline system Eastern Siberia-the Pacific Ocean and discovery delivery started. We should note that Verkhnechonskneftegaz Joint-Stock Company is a subsidiary of the Public Joint-Stock Company Rosneft Oil Company. In 2015 a targeted level of oil extraction was 8.7 mln ton at Verkhnechonsk deposit. Rosneft Oil Company's share in oil extraction in Eastern Siberia is 72% of the whole amount, according to the estimation it will increase up to 80% by 2030. (Filimonova, 2016).

The authors think social logistics can influence the operation of the whole complex at Verkhnechonsk OGSF (figure 01).



**Figure 01.** Social logistics organization on oil gas deposit operation at Verkhnechonskneftegaz Joint-Stock Company

Analyzing the importance of social logistics at the petroleum company in 2016-2017 we conducted a survey at Verkhnechonskneftegaz Joint-Stock Company. Petroleum company administration and the rotational workers were the objects of the sociological survey. The subject was workers and employees' perception of social logistic possibilities at the petroleum company as a factor for developing labour behaviour of rotational workers.

As a method of information collecting in the survey, we used a semi-standardized expert interview for top management polling and a questionnaire of rotational employees at Verkhnechonskneftegaz Joint-Stock Company. Sampling population for the questionnaire survey was classified by sex, age and position. The number of people was 218.

The scope of the questions was:

- General estimation of social logistics ground at the petroleum enterprise;
- Influence of the social logistics at the petroleum enterprise on labour behaviour of rotational workers;
- Rotational workers interest in changes in social logistics organization methods at the petroleum enterprise.

## 6. Findings

Let us analyze the most significant results of the sociological survey. During the expert interview, a conception of rotational workers delivery to the site and back home has been described. The place where the rotational workers gather is "International airport Irkutsk"(Irkutsk). At the assigned time the flight for 80 people departures. From Irkutsk the workers are brought to "Talakan Aeroport" (approximate flight time is 1 hour 20 min.), where they change for all-terrain cars "KAMAZ" to get to oil and gas deposit Verkhnechonskneftegaz Joint-Stock Company (approximate travel time is 3-4 hours depending on weather conditions and the season). Throughout the entire itinerary, an escort vehicle with a rotating beacon accompanies the buses. In addition, there is a stop during the way for 15 minutes rest. On the arrival, the rotational workers inhabit the dormitories accommodations in the rotational camp, have lunch and go to their working places. The total transportation time is 6 hours.

Interviewing the workers allowed getting the information on their satisfaction with logistics organization to the field and back home. Approximately 30% rotational workers are satisfied the logistics organization while 60% of respondents are partially satisfied with it. While 10% are not satisfied at all. Classifying the answers by the length of the working experience the most dissatisfied are the workers with the working experience from 1 year to 3 years. The workers with the experience from 6 to 10 years are partially satisfied. The data are in Table 01.

**Table 01.** Classifying the answers to the question "Are you satisfied with rotational workers logistics in Verkhnechonskneftegaz Joint-Stock Company?" (% of the respondents)

Answer	Length of working experience			
	Less than 1 year	1 -3 years	3-6 years	6-10 years
Satisfies absolutely	32.4	33.3	32.0	16.3
Satisfies partially	61.8	49.2	58.7	76.7
Does not satisfies	5.8	15.9	9.3	7.0
Difficult to answer	0.0	1.6	0.0	0.0
Total	100.0	100.0	100.0	100.0

The expert interviewing showed that the administration of the company pays sufficient attention to rotational workers logistics and the process does not need any significant changes. The workers opinion showed that 61.5% of respondents do not consider rotational workers logistics comfortable, only 26.1% of the respondents think it to be comfortable and 12.4% had difficulty in answering the questions. During the study, we determined that the workers of technical and engineering professions are critical about logistics comfort to the oil and gas field (table 02).

From the point of view of the professionalism of the rotational workers logistic scheme to Verkhnechonskneftegaz field it is important how much the workers themselves care about logistics organization to the field and back home by their employer.

**Table 02.** Classifying the answers to the question, “What do you think, is the rotational workers logistics scheme comfortable in Verkhnechonskneftegaz Joint-Stock Company depending on the workers’ responsibilities in the company?” (% of the respondents)

Answer	Groups according to their responsibilities			
	Workers	Technician	Engineer	The head of the department
It is comfortable	31.4	12.5	12.2	26.3
It is not comfortable	52.9	87.5	79.6	68.4
Difficult to answer	15.7	0.0	8.2	5.3
Total	100.0	100.0	100.0	100.0

Classifying these answers according to the length of working experience showed the following regularity. The workers with the working experience less than 1 year think that the employer pays considerable attention to the logistics. The workers with the working experience less than 3 years think that the company does not pay enough attention to the logistics organization. The workers with the working experience from 3 to 10 years think that a company seeks only the cheapest way of rotational workers logistics to the field (Table 3).

**Table 03.** Classifying the answers to the question: “What do you think, does the employer worry about rotational workers’ logistics organization depending on the length of the working experience?” (% of the respondents)

Answer	Working experience			
	Less 1 year	1-3 years	3-6 years	6-10 years
Pays enough attention	47.1	36.5	36.0	30.2
Does not pay enough attention	5.9	28.6	16.0	19.0
The employer only seeks for the cheapest way of logistics	23.5	22.2	36.0	39.2
Difficult to answer	23.5	12.7	12.0	11.6
Other	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0

Within the scope of studies, it was important to determine what criteria, in the opinion of rotational workers are important for transportation organization of the workers to the oil and gas field and back home. The received data designated three main indexes (transit comfort, safety and time) which can influence the motivational behaviour of rotational workers to the labour (table 04).

**Table 04.** Classification of the answers to the question “Which factors do you think are the most important in organizing rotational workers transportation in the company “Verkhnechonskneftegaz”? (Note the three most important answers)”(% of the respondents)

Answer	Amount
Travel time	74.3
Travel comfort	83.0
Cost effectiveness	10.1
Travel safety	81.6
Travel environmental safety	3.7
These factors are not important for me	0.5
Difficult to answer	1.4

During the studies the workers were asked a question about the condition of the motorway “Talakan airport” – Verkhnechonsk field”, which allowed determining some problematic issues in social logistics of the enterprise. 49.1% of the respondents noted the state of the motorway as satisfactory, and 39.4% of the workers as bad. From the point of view of the post in the company engineers turned to be the most critical about the state of the motorway (table 05).

Basing on the issues above, the authors investigated what kind of transport the workers themselves considered the most comfortable for the most difficult part of the way “Airport “Talakan” – Verkhnechonsk field” as direct users of this kind of logistics. The most often choice was coaches (65.6%). But the authorities of the company think that the part of the way “Airport “Talakan” – Verkhnechonsk field”, consisting of the rocky ground with crashed stone macadam turns quickly into the bad condition due to vehicles with heavy loads and requires major repairs. Moving along the defective roads will disrupt the coaches and both the road and the coaches will need expensive repair. In addition, respondents chose air flights as the most preferable way of transportation (35.3%). This way of transportation is the most expensive but has several advantages (for example, time and comfort of travel) which can influence the labour behaviour of the workers. According to the company’s authorities, this way of transportation is less cost effective. Less popular kind of transport, according to the respondents, is all-terrain vehicles “KAMAZ” (5.11%).

**Table 05.** Classifying the answers “Estimate the motorway “Airport “Talakan” – Verkhnechonsk field” state, percent of the respondents” (% of the respondents)

Answer	Groups according to the occupation			
	Workers	Technicians	Engineers	Managers of the departments
Excellent state	0.7	0.0	2.0	0.0
Good state	8.6	0.0	6.1	0.0
Satisfactory state	46.4	62.5	47.0	68.4
Bad state	40.0	37.5	42.9	31.6
Difficult to answer	4.3	0.0	2.0	0.0
Total	100.0	100.0	100.0	100.0

During the expert interviewing it has been noted that the workers transportation on the way “Airport “Talakan” – Verkhnechonsk field” should be done by all-terrain vehicles “KAMAZ” as this way is the most economically rational and meets all the requirements of the transportation process. Until 2014, the workers

crossed this distance by helicopters. This way of transportation was very expensive but had some advantages (travel comfort, ecological safety, and travel time). The rotational workers preferred such kind of transportation as air flight and coaches; which could motivate the workers in comparison with the other kinds of logistics.

As well as to determine motivational potential of social logistics, a question was asked: how important is workers transportation in choosing a place of work. According to the interview 66.5% of the respondents, consider it very important, 26.6% respondents answered that for them it is not of primary importance, for 2.3% of the respondents it is not important 4.6% had difficulty to answer the question. Classifying the answers according to the length of the working experience proved that the length of working experience makes social logistics more important in the course of time in choosing a job.

Finally, there appeared a behavioral tendency among the rotational workers of the oil and gas field which was denoted by (63.3%) of the respondents. They noted that they are interested in some changes in social logistics organization at the company “Verkhnechonskneftegaz”.

## 7. Conclusion

Nowadays the issues of rotational employees' transportation to the oil and gas deposit take the first place in economical policy of the petroleum company. However, estimating the situation is dubious. On the one hand, the interview showed that the company authority adequately organizes social logistics to an oil and gas deposit. On the other hand, employees interviewing determined several difficulties in fulfilling transportation policy. We think this issue is important for formation of labour behaviour of rotational workers, which in its turn determines labour efficiency at a contemporary petroleum company and is important for Russian economy in general.

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