

The Effective Use of Human Capital through the Reduction of Working Time

Daniil V. Volkov^a, Anna G. Akhtian^a, Anna I. Semennikova^b, Muhamed R. Dgibabov^a and Olga A. Kusina^c

^aRussian State Social University, Moscow, RUSSIA; ^bJoint Stock Company "Hotel Company", Moscow, RUSSIA; ^cPlekhanov Russian University of Economics, Moscow, RUSSIA

ABSTRACT

The relevance of the topic is determined by the need to increase the use of human capital and reduce cost in the manufacturing process. Therefore this article is aimed at the disclosure of the issue of documentary and factual rest of staff in the workplace and the increase in targets with a decrease in the working hours. The leading method to the study of this problem is the survey that allowed revealing the main factors that positively and negatively affect the ability to upgrade the labor process at the enterprises of the different nature and industrial activity. The study results reflect what model of effective reduction of working hours suits to a greater extent to each production process, as well as public sectors which have already implemented a similar model.

KEYWORDS

Working day, labor productivity, human capital, human resources management model

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Introduction

In manufacturing process and sales of goods and services there is a number of phenomena that affect the implementation of appropriate functions of various structural units in different companies. Working conditions have a direct impact on the human performance (Kholkina, 2015). Taking into account the definition of working conditions as a combination of factors that affect the human performance we can make a logical conclusion that working conditions refers not only to the process of finding the employee in the workplace, but also to the organization of his free time and its duration. The conditions of labor are commonly understood as the characteristics of the

CORRESPONDENCE Daniil V. Volkov ✉ lord7799@mail.ru

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production process and working environment (Kraplin, 2014) that affect the company employee. The perception of reality by man through the outer world of sensations, perceptual activity of the brain give impetus to the implementation of its functions in the workplace with greater activity, the desire to carry out the functions which it must be carried out not just by the employment contract, but of their own will. It is important to emphasize the four components of the working conditions (Shadskaja et al., 2016):

1. Workplace;
2. The production process;
3. Relationships in the workplace;
4. Free time organization.

Setting aside the fact of the individual personality in the working team, most of the people come to the workplace in to obtain certain benefits. Each subject of the relationship employer-employee wants to get the most out of their actions: the employee wishes to work less and get paid, for example, more, and the employer wants implementation of tasks delivered in time at a lower cost (Gdychinskaya, 2011). Therefore, there is a need to motivate staff to improve performance across the enterprise. The motivation may be different, but the use of a particular type of motivation must be justified by economic expediency (Kraplin, 2014). The process of comparing the working conditions and productivity of the productive forces reflects the urgency of the problem. With the scientific and technological revolution occurring over time the workplace environment transforms in a fundamentally new system, where each system is individual.

Methods and techniques

Basic models and techniques

While organizing any production process the head should select the one of the various management models (Vinogradova et al., 2016a). Considering the management models, which increasingly affect the production process we should distinguish three models: Anglo-American, German and Swedish personnel management model. Moreover, we may deal with various mixed models. These models are remarkable as they have different effects on the production process and on the rest of employees. In the Anglo-American model (Ovchinnikov & Marusinina, 2015) of continuing education of managers at all levels they are trying to organize leisure time of subordinates communicating with them about the various intricacies of the production process in a relaxed atmosphere. Some models even involve joint rest during working hours, for example, joint visits of personnel and management staff to communicate in a relaxed atmosphere at sporting events. During such communication management and executing personnel are rewarded for trust to each other and in some organizations, such as, for example, Unilever (Gdychinskaya, 2011), even for friendships between managers and subordinates. Subordinates, in most cases, try not to let the head, fulfilling certain orders. In this model, it is important to work on the next series of factors (Vinogradova et al., 2015):

1. Relationships in the workplace - maintaining relationships out of the work environment contribute to the rapprochement and more effective work in some cases when employees from different departments, for example, co-operate without any additional documents.

2. The organization of free time - in fact, the use of free time, and occasionally work time for training within the in a relaxed atmosphere.

German management model (Kraplin, 2014) stricter in relation to the leisure time, but it is not necessarily the reason to ignore it as certain types of specialties fit best to that model. A worker with the first day is involved in the manufacturing process. The essence of this model is a clear distinction between free time and all that is associated with the workflow. Psychologically, this creates a sense of security for the worker and respects him and his time. Leader in the manufacturing process takes the role of the inspector, and the less number of inspections the more productive results. Accordingly, the additional free time may be used, but only as a reward.

But the most interesting in terms of the organization of production and realization of human capital is a delegation model - the Swedish model (Bachin, 2015). In this model, the head, taking into account the individual employee's abilities, delegates the list of duties and, in general, for the organization the head is the organizer of the most productive manufacturing process algorithms who takes into account peculiarities of human capital (Vinogradova et al., 2016b). The manager can not understand the subject more than the professionals involved in this during his lifetime, however, he can arrange the production process in such a way that the individual abilities of each employee will bring the greatest benefit to organization (Shadskaja et al., 2016).

The theoretical aspects of the study

In theoretical terms, the basis of this problem is similar attitude to labor and resources. Since we are considering is the socio-economic factors to increase production capacity in working conditions it is important to push away from the basic concepts of labor efficiency. For a person to reproduce sufficient number of units of the economic benefits it is important to be in a state of comfort, which is achieved by adequate rest and organization of the appropriate leisure activities. In the classical model of factor analysis of the productive forces considered the factors that have the greatest impact on production volumes:

$$V = I_p * d * t * v * 100\%$$

V-labor productivity

I_p-index of the proportion of workers employed in manufacturing

d-number of days fulfilled by one worker in manufacturing for 1 year

t-average length of the working day

v-hour employee productivity

From this model it follows that in order to increase productivity we must increase the number of working days in a year, and, according to many economists, to increase working hours and to increase worker's hourly output. Certainly, in the manufacturing of various types of products using special equipment such as NC machine tools, the more the machine is used, the more product is reproduced. But in today's post-industrial society, many companies are not producing any details, often earn much more than the company selling real goods. Work efficiency in this model must be considered as a ratio of labor costs per unit time, taking into account the structure of the working day. However, according to the Labor Code (The Labor Code of the Russian Federation1. Article152: Extra working hours, 2001) of the Russian Federation1 extra working hours should be paid at double the rate of daily wages per hour, which puts into question the economic viability of overtime employees, but we can enter a special module-rating system rewards performance and fulfillment of the plan in the workplace that will significantly increase the performance productivity and reduce the cost of staff salaries, if an unscrupulous employee decided to once again sit at work for



longer than usual, as the practice of many companies that need to carry out the plan, and the day's work on the implementation of the plan is not enough.

An important aspect of the introduction to the increase of free time for the staff of such models in the production process is the possibility of using such a system to the type of production.

Methodological aspects of the study

With an increase in free time for qualified employees, the employer gives an additional incentive for staff to grow within the organization for getting time for themselves. Thus, for structures where there is a career, this model may be appropriate. Analysis of the system should be carried out with the use of special economic methods, such as analysis in conjunction with the synthesis of adapting to the specific conditions or solving the problem in the current situation, conducting surveys at workplaces with different indices workplace safety and feasibility of increasing leisure time for staff and also carrying out factor analysis for the comparison of the survey results and the identification of the most important factors of working conditions for the employees of a particular sector. Within the framework of economic theory it is important to put forward the question of the absolute number of factors, a change which affects the implementation of the human capital in the workplace is most pronounced. In conclusion it is necessary to use the deductive-nomological method of philosophical knowledge to recreate a more objective picture of the problem.

The effectiveness of labor also depends on the intensity of labor. Different jobs have different requirements for the implementation of the intensity of labor in the workplace. Accordingly, it is necessary to consider specific models for these jobs, a model that will take into account the ability of certain psycho-operate in an appropriate pace. Individual features in this case are in the first place. And, as a rule, for jobs with a specific load, such as teaching in higher education, there are special privileges in the form of an additional month of vacation, for example. But within the framework of economic abstraction for our analysis work intensity indicators will be affected only indirectly.

The idea to increase free time for the realization of human capital is not new. This has already been written about, both abroad and in our country. Even L. Trotsky (1936) pointed out that for creativity and realization of individuals to build an ideal society people should be free from the shackles that it imposes this society. I.V. Stalin (1952) also considered the possibility of reducing working hours to 5-6 hours per day for an individual's social functions.

The implementation of these functions allows the employee to satisfy his need for self-realization. Feel important in the community, which makes his life more meaningful and worthy. For example, participation in voluntary actions to help those in need or who are in a difficult situation (Maloletko & Maloletko, 2016).

It is also important to note that the release of free time, which is due to the implementation of human capital increases the efficiency of the production process, can act as a new control technology (Zaitseva et al., 2016). This technology can even be compared with the introduction of new technologies, during the use of which surplus value increases, which an organization gets. Using fewer staff will optimize both the cost of labor and organize the process of maintaining production capacity.

This model has already been implemented in the Swedish city of Gothenburg. First, on the six-hour shift nurses were transferred from one nursing homes, and now they want to make a similar system in public utilities. In the future, this schedule can be spread don and the rest of the urban workers. According to local authorities, labor

productivity grows as employees rest more. For six hours, they do much more work than the first eight.

As for the non-state companies in Sweden, a lot of IT companies decided to reduce the duration of the workday to 6 hours. To stay productive throughout the day, employees are forced to be distracted, to do short breaks, and so on (Kirillov et al., 2016). There is another option: each worker would like to spend more time with your family or friends that encouraged them to work harder to save the reduced working hours.

Swedish scientists have confirmed that the productivity of proportion to the number of working hours in connection with the fall of the attention and increasing weariness (Brown & Zimmermann, 2017).

Deputy Head of the Department of Labor and Social Policy Institute of state service and management RANHiGS, Professor Alexander Shcherbakov, also convinced that the reduction of the working day in Russian can also lead to emotional recovery and to an increase in the intensity of the implementation superiors jobs (Kholkina, 2015).

In Russia, the proposal put forward the Council of Trade Unions (Andreev, 2015). An important element in the reduction of the working day should be noted in this case to establish a constant salary. During the processing of the quality of labor falls, and with proper rest, allow to realize themselves as active social unit productivity of many companies have in their organization to increase production process (Levitt et al., 2016). This measure improves the quality of life (Kataeva et al., 2015). Quality of life forms the economic picture of the country as a whole, it has a positive effect on development (Rudenko et al., 2015).

Results and Discussions

The full usage of human capital will increase productivity, and the reduction of the working day will contribute. Moreover, a person's attention during the working day is scattered more and more with the passage of time, and it makes labor less productive.

A study, in which 900 people from the different spheres of the production process companies were interviewed, was conducted. Formalized questionnaire was designed to reflect the different spheres workers opinion on the production process and on the period of rest. The representatives of office workers, workers of metal factories, workers of services and doctors were among the interviewees. This study was performed as an expert survey.

The results of this study demonstrate that the performance is not reduced, but increased with the reduction of the working day time. Wherein, the offer to increase planned performance in return for reduction of working time was not entirely from the management team.

Working time indicators reflect the amount of time spent on daily workflow. Analysis of this indicator can be considered as a starting point to study the correlation of performance of work, or the realization of human capital and free time.

Table 1. Distribution of respondents' answers to the question of working hours in their organization (in % of respondents in different production areas; N1 = 250; N2 = 300; N3 = 200; N4 = 150)

Working day	Office employees	Representatives of the sale sphere	Factory employees	Doctors
6 hours	-	-	6	72
8 hours	100	73	82	28
10 hours	-	27	13	-



Distribution of answers to the question about working time shows how much time should be spent by certain workers on the production process. It is important to emphasize that in all shown areas there are production targets. To count Quality indicators is not possible; however, Quantitative indicators present everywhere.

Specifically, for each category, we can note the following:

1. Office workers - representatives of organizations providing various public services. The eight-hour working day is the most common form of labor relations in Russia.

2. Representatives of the sales areas are the most interesting category, since this category is required to actually spend more time working on the organization of their activities, namely, to reach an average of thirty minutes early for check and balance of goods in addition to the prescribed in the employment contract working hours regulations, and after the working day to make certain documents for the closing shift, remove the product sold or bring it into the proper form for subsequent sale the next day. Working conditions are violated in this structure; however, most of the staff refers to this quite tolerant.

3. The representatives of the working class and the control in the factories are distributed at various stages of the manufacturing process, and length of their working day depends on the stage. It should be noted that the longest working day is fixed in the service of programmable CNC metal. These jobs are characterized by their autonomy, which means that the person serving this kind of equipment is to program the machinery to certain transactions and wait for the result.

4. The last category - the doctors who are in public service, most of which conducts research in the field of dentistry and maxillofacial surgery. It is noteworthy that the working day in this category is mainly shorter than that of other workers. Managing staff in the organization has the eight-hour day.

This figure reflects only how many respondents should be involved in the production process under an employment contract. As in the case of the sales sphere representatives, some members can work in the workplace more, and some can work less but with the same performance metrics.

There are many studies that show that non-smokers are more productivity due to lack of need for frequent breaks. Despite this, there are very few studies on the organization of breaks during working hours with maintaining performance.

The next question in the questionnaire shows how much time is actually spent on breaks by respondents on average.

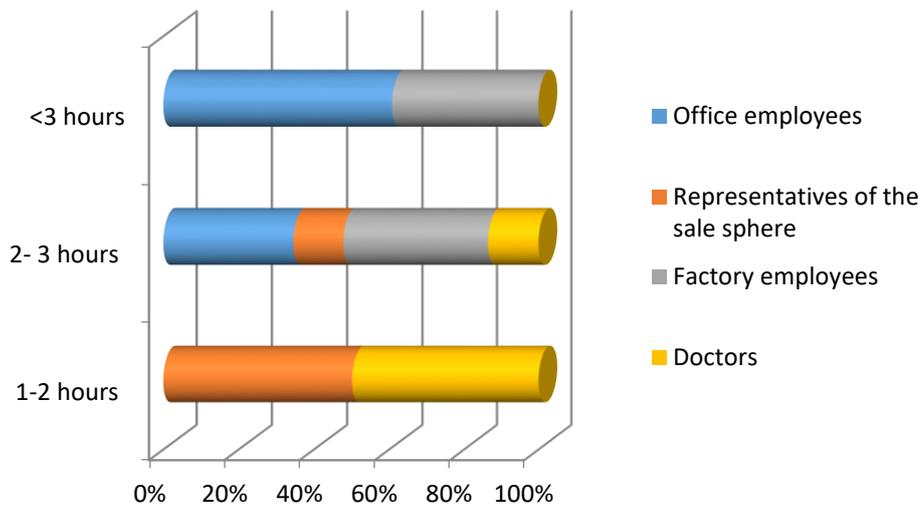


Figure 1. Distribution of answers to the question about the total time of breaks during the working day/ (in % of the number of respondents in different manufacturing sectors; N1=250; N2=300; N3=200; N4=150)

Responses on this issue, represent an interesting picture of reality. Rest is considered to be lunch time and breaks during the day. This distribution is due to the peculiarities of the work process. Thus, the office workers have more than three hours of rest due to the fact that a large part of the population in need their services at a certain time, that is, at lunchtime and after work. Workflow is formed by coming population. The same process we can see in the sphere of sales. In this category the rest throughout the day is regulated by the employment contract, which stipulates that during the day the employee is entitled to two hours of rest. But the rest is made up of the forty-five minutes lunch break and fifteen-minute breaks. In fact, most of the representatives of this type of production process are trying to spend more time in the workplace, so as not to miss customers.

During the working day factory workers spend on rest as much time as the representatives of the office workers. This is connected with the automated manufacturing process.

The majority of respondents among dentists spend less time to rest during the working day. Implementation of the human capital in the industry requires the best value for the individual, and similar values are obtained with values relating to working time. The duration of breaks is reduced to a minimum, both in the employment contract, as well as actually. But at the same time, working hours are reduced.

Leisure is also an interesting part of the working conditions at the plant. According to the Anglo-American model the management of the companies is obliged to influence their subordinates so that it contributed to the increase in labor productivity. That is, the employee must have a rest and gain some skills to increase their opportunities. In such a working vacation includes communication with the head of the organization for the purpose of training early in a relaxed atmosphere. This model is realized in sales in our study. Also, in this category training takes place in their time spare of the sales. It takes a tremendous amount of time, allowing you to keep your personnel in the

workplace, but also requires a lot of energy on the part of the employee. Hence the question whether the participants have enough time to rest and leisure?

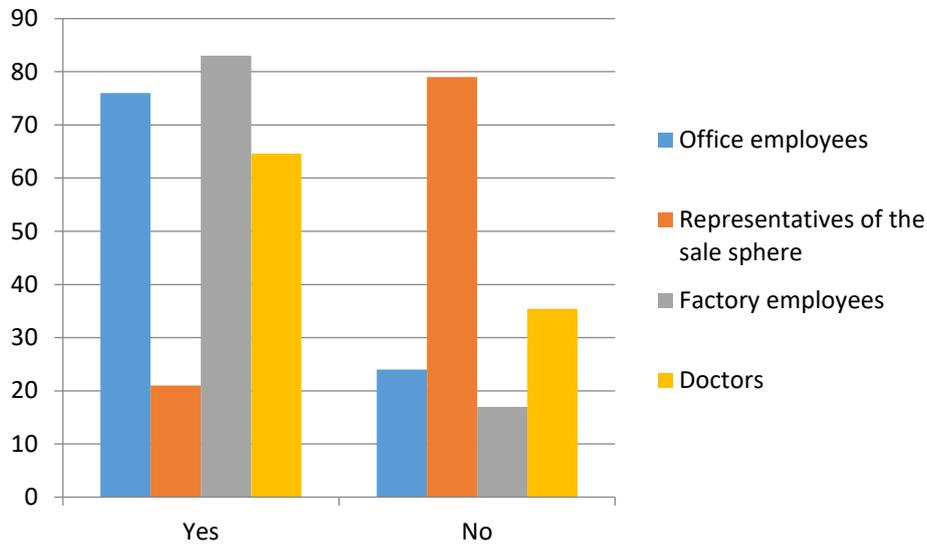


Figure 2. Distribution of answers to the question about "Do you have enough time to rest after work " (in % of the number of respondents in different manufacturing sectors; N1=250; N2=300; N3=200; N4=150)

The survey data shows the objective sufficiency of the working day for the representatives of the dental field, factory workers and office workers. Sales representatives work most and, respectively, the most get tired, which makes them less disposed to learning, for which their system gives enough time.

Efficient time management will open the possibility for development. It is much easier to absorb new material when the concentration is higher, and if there is not enough time to rest, the data rates are not achieved in the proper amounts. To realize the hidden human potential, rational use of human capital in terms of sales in the lower levels of the hierarchy is quite difficult.

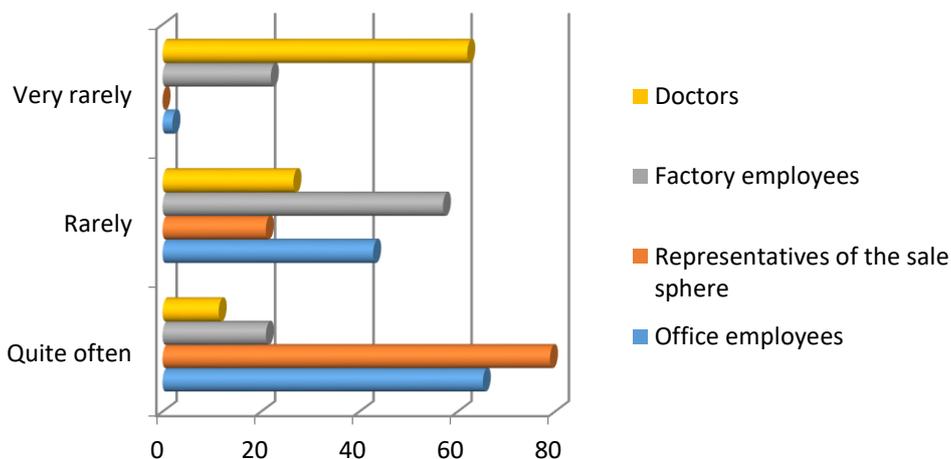


Figure 3. Distribution of answers to the question about "How often do you come to work rested not enough?" (in % of the number of respondents in different manufacturing sectors; N1=250; N2=300; N3=200; N4=150)

Lack of rest in sales may affect the volume of production come true. In this case, the element is suffering sales promotion in presenting it to the consumer. Adequate allocation of labor time to plant workers and dentists enables them to adequately fulfill their human capital. A case of the office workers can be described more as a desire not to use its human resources as much as possible, as many tasks are quite simple and do not require highly skilled intellectual labor, which can be seen from the following distribution of answers to the question.

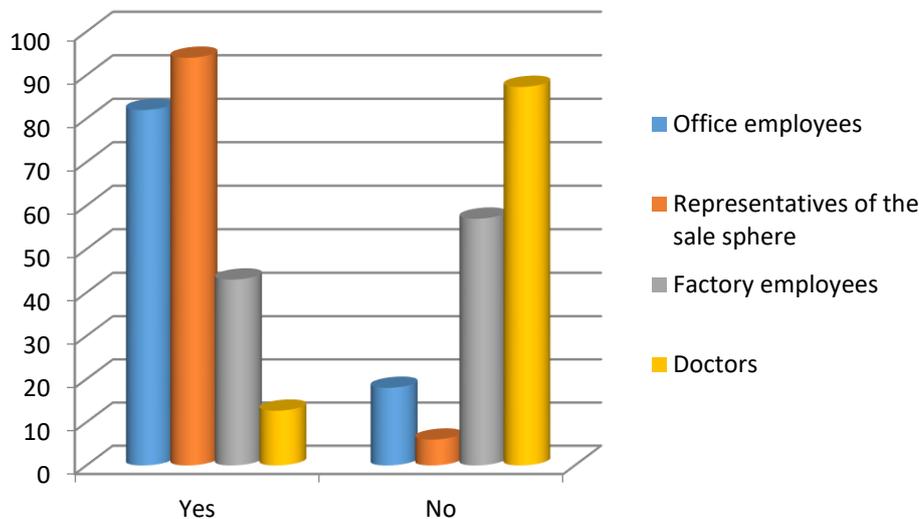


Figure 4. Distribution of answers to the question "Would you agree to a shorter working day under a labor contract in exchange for a reduction of the duration and number of interruptions?" about (in % of the number of respondents in different manufacturing sectors; N1=250; N2=300; N3=200; N4=150)

This distribution proves once again that in order to optimize the use of human capital is rational to establish a working day of six hours for the majors, where the implementation of the human capital required greater extent.

Staff who spend ample time for carrying out work in the less want to reduce working time, rather than professionals who spend a little time to rest. Respondents who are employees of the plant, are not willing to reduce the labor of the day, as automated processes require a certain period of time for implementation and realization of the labor process is the implementation of the plan, which must be performed.

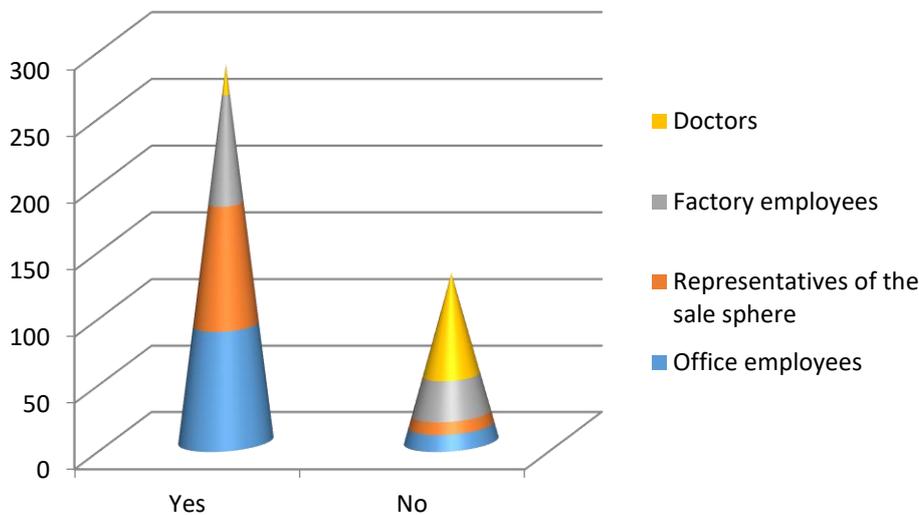


Figure 5. Distribution of answers to the question about "Would you like to increase the targets and to reduce working hours?" (in % of the number of respondents in different manufacturing sectors; N1=250; N2=300; N3=200; N4=150)

Questions of increasing targets is often the most difficult. Individual approach to each respondent on their personal workstations can be done through the exchange of targets for additional free time. Thus, a worker earns not only the means for existence in the workplace, but also free time for themselves and their interests.

Conclusion

The survey showed that state enterprises providing public services and in the sales sphere human capital is used irrationally. Lack of free time does not provide the possibility of individuals to develop their potential. Career growth in these structures is also difficult because of irrational setting of targets. The solution to this problem may be in the organization of specialized working hours, for example, it is good idea to shift time and start it working day at 11 or 12 to serve the maximum flow of citizens. For office workers this scheme is the most efficient solution, however, another problem may arise, and that is queues. But this is also a moot point, since less tired staff will work cohesively and quickly.

Enterprises N3 and N4 use working days of their employees much more better. As the survey has shown, reduction of working day as well as an increase in targets is not a rational decision, since the data is already optimized production processes.

This study shows that the optimization and reduction of working time makes it possible to implement human capital. Even if the performance will not be improved fully, it will remain at the same level, the reduction of costs for the implementation of work still reduced.

It is important to emphasize that some of the respondents agree to increase the targets in exchange for a reduction of the labor of the day, which also deserves special attention for the data management of the enterprises.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Daniil V. Volkov - Expert, Russian State Social University, Moscow, Russia.

Anna G. Akhtian - Head of organization of research activity department, Russian State Social University, Moscow, Russia.

Anna I. Semennikova – Head of HR-Department, Joint Stock Company "Hotel Company", Moscow, Russia.

Muhamed R. Dgibabov - 4Expert, Russian State Social University, Moscow, Russia.

Olga A. Kusina - Graduate student, Plekhanov Russian University of Economics, Moscow, Russia.

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