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**IDENTIFICATION OF RESERVES TO IMPROVE THE
COMPETITIVENESS OF THE PERSONNEL MANAGEMENT
SYSTEM**

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Abstract

Nowadays researches on the effective use of innovative approaches to personnel management processes have received a particular relevance. An important step in the framework of the developed mechanisms for improving the personnel management system is the assessment of planned activities through an economic justification and clarification of personnel's opinion on possible changes. The human resource is considered as the main value for the company along with the experience of long-term and successful activity on the market. The article states that in modern conditions highly qualified personnel are considered as an important competitive advantage that can be used for a long time. A firm can increase its efficiency if employees understand their mission, development goals and strategy. In the conditions of a modern market economy, the problems of efficient use of modern technologies in the field of personnel management require close attention as objects of theoretical and practical interest. To date the development of measures to improve studying and analyzing the costs of working time methods is an important area of research in the field of personnel management. The authors propose to hold events aimed at improving the efficiency of the personnel management system as a whole, regarding issues of organizing and studying working conditions, it is also recommended to pay attention to the study of the professional level of certain workers categories.

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1. Introduction

In modern conditions labor relations require innovative ways of implementation including mobile response to market needs contributing to the complexity of the interaction systems of the main participants of the information society.

It is especially relevant to take into account the human factor when analyzing the company's resources (Alpeeva, Afanasyeva, & Kopteva, 2015).

Human resource is one of the core values for the company along with long-term and successful experience on the market. In this regard, effective staff motivation becomes the main tool in managing an organization that allows to retain qualified, professional and loyal employees, and thereby contributes to the achievement of its goals and market leadership (Vaitkuvien, 2010).

In foreign and domestic economic literature it is possible to allocate a significant amount of researches devoted to the problem of the effective use of innovative approaches to personnel management processes. Forming a system of views on modern approaches to the study of personnel management processes is carried out on the basis of research by scientists and specialists in various fields of management and marketing.

In modern conditions highly qualified personnel are considered as an important competitive advantage that can be used for a long time. A firm can increase its efficiency if employees understand their mission, development goals and strategy. This is explained by the fact that the involvement of staff in the implementation of the company's objectives and motivation is increasing and some employees are making efforts to achieve the same goals with competition taken into account.

At the same time practically no professional development (additional education) is practiced among Russian workers. It should be recognized that such an orientation towards the acquisition of knowledge only at the beginning of a working career no longer meets the requirements of modern production. Moreover, this situation in modern Russia is also characteristic of representatives of other professional groups (Latova, 2018).

The multidimensional nature of this problem requires an integrated approach to its solution using modern theories of strategic management, primarily the resource concept of the company and human capital (Ignatov & Vasiliev, 2013).

Traditional management technologies based on the resource approach do not allow full realization of human capital. In most companies it is used by no more than 20% (Aksenova, 2008; Zaitseva, 2014), while the most of the knowledge and skills accumulated by personnel remain unclaimed due to poor management quality.

The founders of the resource concept (Prahalad & Hamel, 1994) note that companies accumulating and realizing human capital which provides training and effective use of the knowledge and skills that meet business needs have an advantage in competition.

Other authors note the important role of human resource management in maintaining organizational competencies at a competitive level (Makadok & Walker, 2000; Minbaeva, Pedersen, Björkman, Fey, & Park, 2003) since most of them can be obtained only by long-term training and personal growth of employees.

In addition, the human capital of Russian workers brings low rents (Karavay, 2016) that also does not encourage workers to upgrade and increase it. This partly explains the lack of workers' interest in advanced training. However, it does not take into account that in the Russian labor culture regular advanced training (the renewal of human capital) is generally not a universally recognized value since this kind of behavior largely depends on the worker's desire for success, the desire and ability for self-presentation etc.

According to many researchers the transition to the knowledge economy and the transformation of information into a source of economic growth and super-profits contributes to the introduction of high technologies in management activities. Professional training and staff development acquire increasing importance in the conditions of mobility and variability of the external and internal environments of the enterprise.

The results of the study confirmed that competitive companies involve employees in strategic planning and decision making more actively. Enterprises that have the characteristics of competitive and deprived of such show some differences in personnel management. In general, the hypothesis about more efficient strategies and practices of management and development of human resources used by Russian companies that have achieved global leadership was confirmed (Zavyalova, Kucherov, & Tsybova, 2017).

The results of this study are aimed at the solution of specific issues on the improving studying the costs of staff time methods.

2. Problem Statement

In the conditions of the modern market economy of the Russian Federation the problems of the effective use of modern technologies in the field of personnel management require close attention as objects of theoretical and practical interest. To date, the development of measures to improve the methods of studying and analyzing the costs of working time of the organization staff is an important area of research in the field of personnel management. This fact is explained by the importance of information about the time spent by the personnel on solving the tasks of the enterprise related to the organization and labor rationing.

According to the Labor Code of the Russian Federation of December 30, 2001 No. 197-FZ (amended on 07/29/2017): "Working time is the time during which an employee in accordance with the rules of internal labor regulations and conditions of an employment contract has to fulfil labor duties, as well as other periods of time that, in accordance with this Code, other federal laws and other regulatory legal acts of the Russian Federation relate to working time".

The main objective of studying the costs of working time is to identify reserves for improving the use of working time and increase the productivity of the contractor and the entire working team. The study of staff time expenses should be carried out taking into account the dependence of the execution time of each element of the operation on a variety of organizational, technological and psychophysical factors. To conduct successful studies of working time costs methods allowing to take into account the probabilistic nature of labor process are applied. Thanks to a systematic analysis of the time spent by the personnel of the enterprise, it is possible to check the production capabilities of each workplace, study

experience and identify the most advanced work methods, obtain statistical information for the development and subsequent implementation of the company's own standards.

The degree of efficiency of working time is an important criterion that characterizes the level of organization in the enterprise. According to A.I. Rofe to identify the efficiency of labor organizing and optimization of the working time costs is possible by determining the structure of the working time costs, analysis of information about losses, non-production costs, the use of staff time resources (Rofe, 2014).

For a successful study of the costs of working time and the development of standards, it is necessary to analyze the work processes in order to study carefully the actual cost of working time of the contractor and the time of using the equipment. Successful study of these indicators is possible by applying the classification of the cost of working time by category. This measure allows to create a certain uniformity to the concept of "working time costs", which allows to apply general methods of studying and analyzing this category, as well as a single regulatory framework and methods of labor valuation.

The study of work processes in order to identify the effectiveness of the use of staff time helps to solve a large number of tasks associated with the rationing of labor. When organizing work at an enterprise, there are two most relevant tasks connected with the study of working time costs: determining the actual time spent on performing elements of an operation and determining the time cost structure during a work shift or part of it (Kurochkina, 2014).

3. Research Questions

In the conditions of market relations the issues of rational use and improvement of labor efficiency require much more attention, since this is one of the possible ways to reduce the optimization of management personnel and, consequently, reduce production costs and increase profits.

Practical methodological approaches to analyzing the use of working time necessarily imply the further development and implementation of measures to ensure the rhythm of work, improve engineering preparation of production and improve the organization and service of workplaces. These measures are possible through the use of reserves of working time which can be identified through objective and operational accounting and control of its costs and losses.

4. Purpose of the Study

Identification and quantitative assessment of the causal relationships of the features of working time costs research was given on the basis of statistical data.

Evaluation of the impact of the level of working time costs on the economic efficiency of enterprises was carried out using production functions. The indicator of the level of economic efficiency of activity per 1 person / thousand rubles was chosen as the main indicator (resultant) indicator, which most fully reflects the efficiency of management activities of enterprises. In the course of the study the initial data were checked for multicollinearity (a linear relationship between them).

The construction of the model was carried out using the procedure of multi-step regression analysis. As the source a multifactorial equation was used:

$$y = a_0x_1a_1 x_2a_2 x_3 a_3 x_4 a_4 x_5a_5 x_6a_6 x_7 a_7,$$

where y - the level of economic efficiency of enterprises, %;

x_1 - the level of labor potential, %;

x_2 - total annual production, %;

x_3 - the level of working time costs, %;

x_4 - production labor, h;

x_5 - real fund of working time, h;

x_6 - the average annual number of staff, pers.;

x_7 - the level of personnel costs, %.

$a_0 - a_7$ - the coefficients of the regression equation.

As a result of the regression analysis of farms the following equation was obtained and the relationships between the level of economic efficiency of enterprises (y), total annual production (x_2), level of working time (x_3), (x_4), which were the most significant were revealed:

$$y = 6.62 x_2 - 0.003 x_3 + 0.084 x_4 - 0.001$$

All equation coefficients are statistically significant at the 5 percent level. The multiple correlation coefficient $R_{yx_2} = 0,893$ indicates a close relationship of the effective feature with the factorial. This equation explains the 79.8% ($R^2_{yx_2} = 0,7983$) variation in the dependent variable — production labor intensity. The probability of the null hypothesis is significantly less than 0.05, which indicates the overall significance of the regression equation. Correlation analysis showed a weak mutual correlation of factors in the regression. The residues are normally distributed and have a constant dispersion. Therefore, the model is adequate on all segments of the interval of change of the dependent variable.

For further studying of the influence of the factors of the regression equation on the resultant attribute β -coefficients were calculated. They allow to estimate the measure of the influence of the variation of each factor on the variation of the effective trait at a fixed level of other factors. Thus, the analysis of β -coefficients shows that the variation in the level of working time costs has the greatest effect on the variation of their efficiency.

The particular elasticity coefficients calculated show that the increase in the level of personnel costs by 1% is most responsive to the level of working time costs, it increases on average by 0.084%. The presented method allows to determine the priority factors used in consideration when evaluating the personnel management system as a whole more objectively.

5. Research Methods

As an example, we will assess the effectiveness of the working time use by a staff of an agricultural enterprise using information on the number of working days and the average duration of a working day in an enterprise (Table 01).

Table 01. The efficiency of the working time use, LLC Agrocomplex "Olymsky"

Indicators	Period					
	2015		2016		2017	
	Quantity	Percent	Quantity	Percent	Quantity	Percent
Calendar days	365	100,0	365	100,0	366	100,0
Weekends and holidays	118	32,3	118	32,3	119	32,6

Working days (nominal fund of working time)	247	67,7	247	67,7	247	67,4
Total absenteeism	39	100,0	36	100,0	31	100,0
Including:						
Regular and additional holidays	19	48,7	20	55,5	18	58,1
Student leave	2	5,1	1	2,8	2	6,5
Birth leave	3	7,7	4	11,1	2	6,5
Due to illness	11	28,2	6	16,6	7	22,4
For disrespectful reason	4	10,3	5	14	2	6,5
Truancy trumps and other absences allowed by law	-	-	-	-	-	-
Real Fund of working time, days	208	57,0	211	57,8	216	59,0
Real time fund, hours	1664	100,0	1688	100,0	1728	100,0
Intershift loss of working time, hours	76	4,6	81	4,8	83	4,8
Average working hours, hours	7,2	-	7,2	-	7,2	-
Effective fund of working time, hours	1588	95,4	1587	95,2	1645	95,2

Comparison of the volumes of nominal and effective working time funds showed that during the study period of activity of LLC Agrocomplex Olymsky the effective working time fund was 10.7% in 2015-2016 and 7.5% in 2017. The reason for this deviation is the absenteeism of employees of the enterprise to work, as well as intershift loss of working time.

Intershift loss of working time of the enterprise does not exceed 5% of the real fund of working time.

According to the data presented, the cause of the majority of employees absenteeism is regular and additional rest leave. We will conduct a factor analysis of changes in the staff working time fund of LLC Agrocomplex Olymsky (Table 02).

Table 02. Factor analysis of changes in the fund of working time of LLC Agrocomplex“ Olymsky ”

Indicator	Indicator Meaning		Change
	2016	2017	
The average annual number of workers, people (NW)	329	413	84
Days worked by one worker per year (D)	211	216	5
Hours worked by one worker per year (H)	1519,2	1555,2	36
Average duration of 1 working day, an hour (DUR)	7,2	7,2	0
General fund of working time, man / hour (FWT)	499816,8	642297,6	142481

The factor model of working time analysis is as follows:

$$FWT = NW * D * DUR$$

The calculation of the influence of factors is made by the method of absolute differences:

1. $\Delta FWT (NW) = 84 * 211 * 7.2 = 127612.8$ people-hour.
2. $\Delta FWT (D) = 413 * 5 * 7.2 = 14868$ people-hour
3. $\Delta FWT (DUR) = 413 * 216 * 0 = 0$ people-hour.

According to the data obtained based on the results of the factor analysis of changes in the staff's working time fund of LLC Agrocomplex Olymsky, the total working time of workers increased by 1,42481 people-hour. Due to:

- the increase of workers number by 84 people. The total fund of working time increased by 127612.8 man-hour.
- the increase of the number of days worked by one worker per year for 5 days. The total fund of working time increased by 14,868 man-hour.

6. Findings

Given the above, the most significant factor is the economic feasibility of the proposed measures. Figure 01 schematically shows the process of evaluating measures to improve methods for studying the costs of working time.

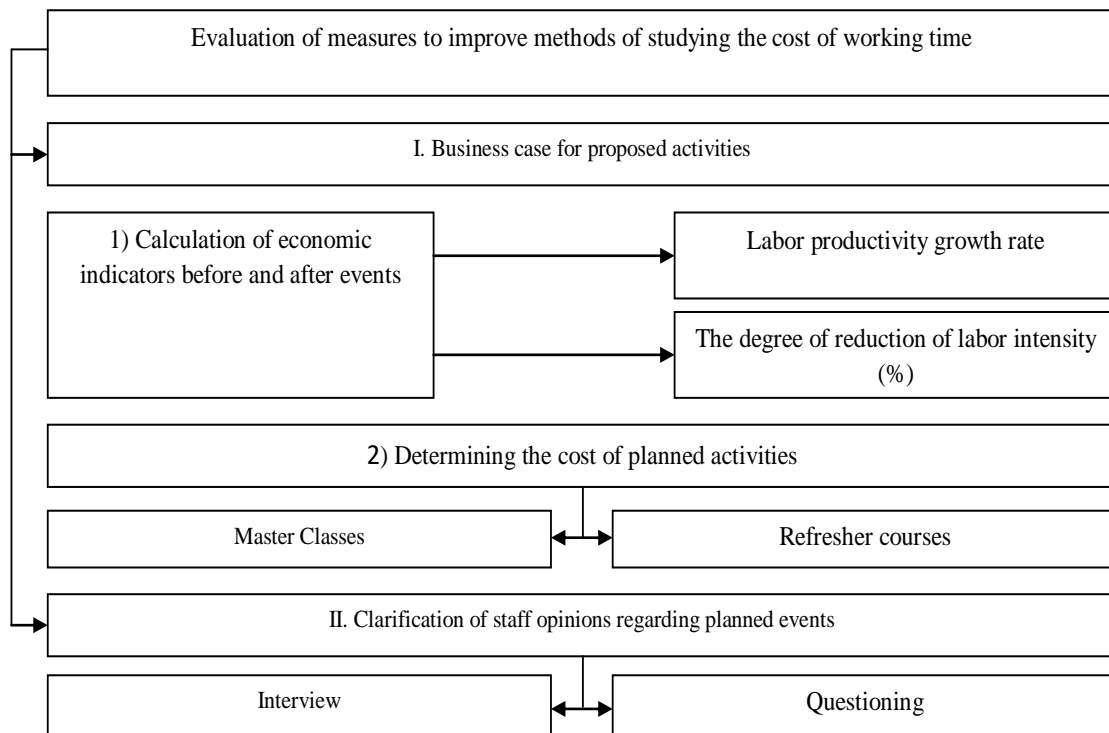


Figure 01. Evaluation of measures to improve the methods of studying the costs of working time in the enterprise

According to the developed mechanism for improving the methods of studying the costs of working time of LLC Agrocomplex Olymsky, these events will allow the company to teach specialists modern methods of measuring staff working time costs. Also, these measures include working with employees of the company to improve their qualifications and labor discipline since these factors have a strong influence on the efficiency of working time.

It is possible to appreciate the effectiveness of these activities as measures to improve the methods of studying the costs of working time in the enterprise fully after their implementation and the analysis of the results achieved.

We will conduct an economic assessment of the measures developed in the framework of the study of the working time cost using a photograph of the working day of the tractor operator-mechanic in LLC Agrocomplex Olymsky. The economic efficiency of improving labor processes in mechanized work in crop production is determined by comparison with the existing labor organization.

The main indicators of the effectiveness of the the proposed measures implementation are the growth rate of labor productivity and the percentage reduction in the labor intensity of a production unit.

The growth rate of labor productivity is calculated by the formula:

$$K_{\text{ПТ}} = \frac{T_c}{T_n}$$
$$K_{\text{ПТ}} = \frac{46,16}{37,76} = 1,22$$

where T_c and T_n is the time required for a shift per 1 hectare or 1 centner of products existing and designed, min.

Thus, the implementation of the developed event will allow the increase in the labor productivity of tractor operators and machine operators LLC Agrocomplex Olymsky by 22%.

The degree of reduction of labor intensity (%) of the work unit is determined by the formula:

$$P_{\text{T}} = \left(1 - \frac{T_n}{T_c}\right) * 100$$
$$P_{\text{T}} = \left(1 - \frac{37,76}{46,16}\right) * 100 = 18,2\%$$

Thus, the projected measures will reduce the working time of the employees of LLC Agrocomplex Olymskiy, as well as increase their labor productivity by 22% and reduce the labor intensity of grain harvesting on the area of 1 ha by 18.2%.

It is also important to determine the price of the measures planned and find out the opinion of the company's personnel on these activities using questionnaires. Personnel development is a set of organizational and economic measures in the field of training, refresher courses and professional skills of staff, stimulating creativity, etc. The opportunity for development should be given to everyone, because as a result of it, not only the person improves, but also the organization's competitiveness increases. In this case, it is necessary to take measures aimed at improving the level of knowledge of the methods of studying the working time costs by specialists of LLC Agrocomplex Olymsky, who are involved in the organization and study of labor. It is also worth paying attention to the level of professionalism of the categories of workers, if according to the results of the analysis of their working time, its inefficient use was revealed.

7. Conclusion

According to the study, the company needs to carry out activities aimed at improving the level of knowledge of the methods of studying the working time costs by the specialists of LLC Agrocomplex Olymsky, dealing with the organization and study of labor. It is also worth paying attention to the level of professionalism of the categories of workers, if according to the results of the analysis of their working time, its inefficient use was revealed. The development of the staff of LLC Agrocomplex Olymsky is a set of organizational and economic measures in the field of training, refresher courses and professional skills of staff, stimulating creativity, etc. Development opportunity should be given to everyone, because as a result of it, not only the person improves, but also the organization's competitiveness increases. As part of this work, it is necessary to develop a calendar plan and budget for the necessary activities, which are seminars, trainings, webinars with the participation of invited trainers from Moscow and St. Petersburg, as well as staff development courses. The implementation of the developed mechanism to improve the methods of studying the costs of working time and carrying out the proposed activities will allow the company to improve the efficiency of studying the costs of working time, and therefore to make the most accurate management decisions with more detailed information.

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