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Methodology for Assessing the Efficiency of Labor-Related Incentives at an Enterprise

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Abstract: This study identifies and examines the need for implementation at an enterprise of specific social programs as one of the mechanisms for improving not only the social aspects of an enterprise but also the economic ones. The issues of the reproductive programs' social efficiency (i.e., the maternity and childhood supporting programs) were previously addressed and estimated by means of sociological researches of the employees' satisfaction at an enterprise. However, the issues of economic effect had not been previously evaluated. The work suggests a technique for assessing the cost effectiveness of the reproductive programs. The disability indicators indicating the improvement of other economic indicators of the enterprise's operation are proposed and calculated using the data of the city-forming enterprise OJSC MMK (the Magnitogorsk Iron and Steel Works).

Key words: The economy and stimulating employment, reproductive labor, social programs, human resources, methodology, economic effect, human resource managemen

INTRODUCTION

Genesis of the main approaches: Today, the classical methods of productive labor incentives at an enterprise which are implemented by means of personnel motivation and stimulation through the system of bonuses, fringe benefits, etc. are well known. However, they are not always effective. One of the possible approaches to labor-related incentives is the enterprises' investments in social programs (and in particular in promotion of the employees' reproductive activity) which involves transformation of the public and state attitude to this kind of activity (on giving birth to and upbringing children as the labor activity) and consequently, establishment of the system of reproductive labor management and incentives. An enterprise as the major consumer of the existing and future human capital is the main party concerned in the inflow of labor resources and thus it is affected by the issues of reproductive labor-related incentives as one of the possible mechanisms for providing labor-related incentives in general (Rifkin, 2004).

Assessing contribution of domestic and foreign researchers in the development of the aspects related to the issue studied, we should note that today, the following problems exist:

- Lack of developments regarding the study and generalization of the methods of reproductive labor-related incentives at an enterprise
- Absence of techniques devoted to the assessment of the efficiency of the reproductive labor-related incentives in the conditions of an enterprise

The absence of a system of theoretical and methodological approaches to solving the above-mentioned issues determined the topic choice.

Integration of human resource management with the economic and social functions of an enterprise: Given the unfavorable demographic situation in the country and as a result, the reduction in the number of economically required age groups of the population and the increase in the share of retired persons, the volume of labor resources becomes limited. Consequently, each employee engaged in the real sector of the economy should produce a greater volume of the gross product to cover the retirement benefits and to provide other social guarantees, i.e., continuously enhance his labor productivity. The increase in the labor productive force is possible as a result of applying better technologies and improvement of the social working conditions (Skvortsova *et al*., 2014). From this standpoint, the enterprises' investments in

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social programs (and in particular in the incentives related to the reproductive activity of employees) can be considered as a part of the measures aimed at the enhancement of labor productivity. Therefore, the enterprise's investments in the personnel and its continuing professional development are the investments that on the one hand, ensure the employees' labor productivity growth in the industrial sector and on the other hand can be considered as the contributions affecting the reproductive activity of employees in the non-material sphere (Gershuny, 1983). Nowadays, enterprises face an urgent problem of economical substantiation of the interrelation between the efforts to invest in the human capital assets and the work efficiency of an individual employee, the whole enterprise in the industrial sector and derived effects in the non-material sphere. The competent human resource management integration with the economic and social functions of an enterprise is required. For this, a modern enterprise needs to develop the HR management system which will be adequate to the market demands and will not consider the enterprise merely as a commodity producer and a workforce consumer.

In this regard, the purpose of our study is to develop a technique for assessing the impact of social programs at an enterprise on the economic indicators of the enterprise's activity efficiency as a whole.

Theoretical and methodological background for the research: The theoretical and methodological background for the implementation of this study are considered in the following publications.

MATERIALS AND METHODS

The introduction of social programs at an enterprise involves certain costs and therefore, raises the question of their application appropriateness and assessment of the economic benefit of this type of activity.

The overall efficiency of the enterprise's activity: An analysis of the overall efficiency of the enterprise activity includes the assessment of not only the profitability indicators, the ratio of the prices for the final product together with its production costs and the volume of the raw materials procurement but also the overall assessment of the enterprise's activity efficiency, the nature of its economic growth and effectiveness. An economic benefit analysis at the level of an enterprise is associated with the study of changes in the production volumes as well as with the "input-output" problem. It is known that efficiency is expressed in the most generalized sense in the reduction of labor costs per a product or work unit, i.e. in the labor productivity growth. At the same time, labor productivity means the ratio of the beneficial production effects and human labor costs required to achieve them. Though the compensation for the insufficiently high level of labor productivity through the extra labor involvement entails the unemployment reduction and the employment increase, it still cannot be considered as the best instrument for increasing the economic efficiency and a commercially attractive solution for employers. The rational reserve of the economic efficiency improvement is the increase in the labor productivity of each employee.

In turn, labor productivity is closely interrelated with the human resources' status at an enterprise-their establishment, application and distribution. The human resources status is directly related to the overall demographic situation (change in the birth and death rates, age-sex structure, migration, etc., over time). Given that the markets for goods are expanding along with the population growth which leads to the reduction in unit costs, implementation of more productive technologies allows saving costs due to the production scale, thus increasing the overall production efficiency. The increase in the birth rate in a normal socioeconomic environment "expands the aggregate public demand and contributes to its long-term sustainability" thereby improving the economic efficiency of enterprises.

Interrelation of the economic and social functions of an enterprise: When offering a methodology for calculating the efficiency of social production, it should be noted that the both social and economic efficiency is the ratio of the economic and social benefit and the costs necessary to its achievement. Along with the manufactured goods sales revenue, the enterprise activity outcome is the development of a person as an employee and personality, his ability to provide for one's own family, acquire and invest savings, i.e. to "carry out the social reproduction of the human resources". The interrelation of these work streams of an enterprise (production of goods and social reproduction of the human resources) is reflected in addressing the major socio-economic objective of an enterprise which is to make the employee's labor efficient in its content, conditions and outcomes.

The importance of interaction between the economic and social functions of an enterprise is also emphasized by G.E. Slezinger. The fulfillment of the economic functions of an enterprise (production and sales of goods and services) requires solving problems related to the creation and elimination of workplaces as well as to the

production technology development. Implementation of the social function of an enterprise (reproduction of the human resources) involves providing employees with social services, staff training and social organization of labor and management.

In turn, providing employees with social services implies the possibility of using healthcare facilities that have highly qualified personnel which is certainly an attractive factor for the employees engaged in the reproductive labor. In order to develop the new technologies allowing to improve the labor productivity, it is required to train the staff and improve the qualitative level of employees which is also one of the elements of the reproductive labor outcomes undertaken by an enterprise as one of the subjects of this labor. Thus, an important role in improving the system of the HR management is played by a competent combination of economic and social functions of enterprises aimed at the "organic combination of humanization and labor effectivization". HR management with account of the capabilities of an employee, his interests as a personality and allocation of services involved in the social issues and guarantees for the employees including implementation of reproductive programs at an enterprise makes the labor conditions acceptable and attractive for the personnel. A combination of measures for the rational use of material, labor and financial resources together with the humanization of labor at an enterprise provides conditions for the much-needed increase in the labor efficiency (productivity).

A methodology for assessing the economic aspects of the enterprise's activity efficiency is well known whereas the assessment of the efficiency's social component still remains the subject of study by the socio-economic sciences. Some researchers believe that the category of efficiency is not applicable in relation to the activity in the social sphere, since its ultimate outcomes are difficult to be assessed in terms of quantity. According to other researchers, despite the complexity of determining the social component of efficiency, it still needs being studied and evaluated. Social efficiency is the conformity of the economic activity results with the public objectives of the society. Consequently, social efficiency should be considered in terms of meeting the diverse needs of employees at an enterprise, organization and society as a whole.

The effect of the reproductive programs implementation at an enterprise: It should be noted that the economic effect from the introduction of social programs at an enterprise can manifest itself in the reproduction of skilled labor forces, preservation of employees' health and enhancement of their intellectual potential which ultimately influences on the "socio-economic development of the society, growth of the gross domestic product, national income and national wealth" (Gronau, 1976). It should be taken into account that the effect of the social programs development at an enterprise can become apparent after a certain period and can influence on the indicators of the next years. Also, when calculating the indicators that reflect the social effect, the damage which may be incurred by the enterprise, must be accounted for if these social programs do not function at all.

Considering the effect from the implementation of reproductive programs at an enterprise as the efficiency of the ongoing social programs aimed at improving the reproductive activity of employees, it should be defined as the ratio of the effect resulting from the implementation of programs to all kinds of the enterprise's expenses for the establishment and development of the human capital of the employees and their children. The methodology for the reproductive efficiency assessment is reduced to determining the costs structure during the reproductive activities fulfillment and to the identification of its various effects.

The effect from the enterprise's investments in the reproductive processes is manifested through a variety of the outcome forms. Their nature may be economic and social, physical and monetary or direct and indirect. Experts distinguish the following effects from the enterprise's investments in the human capital:

- Improvement of the quality of labor resources being employed
- Labor productivity gain
- Increase in the product's volume indicators
- Gain in the economic performance of the enterprise
- Improvement of the quality of manufactured products
- Increase in the social relations effectiveness within the organization
- Increase in the enterprise's competitiveness
- Enhancement of the enterprise's social sustainability

Furthermore, the additional economic indicators for assessing the efficiency of the programs implementation focused on the reproductive activity establishment among the enterprise's employees can in our opinion include the following outcomes:

- Personnel "sustainability" (increase in the constancy of indicators concerning the size of personnel, qualification structure and decrease in the indicators of personnel movements at an enterprise)
- A reduced number of the employees' disability days

The implementation of new programs on any aspects of the enterprise's activity is characterized by a specific list of costs for their implementation. For example, in order to develop reproductive programs at an enterprise as well as the additional training and development of the personnel, it is required to attract additional investments in the development and implementation of these programs and in the maintenance of the personnel involved in their implementation and management. Various aspects of the enterprise's activity are characterized by their objectives and indicators reflecting the efficiency of this implementation. Thus, the investments in the development of reproductive programs at an enterprise as well as the personnel training and development entail the improvement of the employee's satisfaction and ensure the implementation of the objectives and future opportunities of the organization (occupancy of workplaces due to the internal reserves, the number of trained employees, the increase in the period of rotation at a workplace, etc.).

It is expedient to distinguish a number of indicators that allow reflecting the positive outcomes in the work of the HR services from the reproductive programs implementation at an enterprise in the long-term period:

- Reduction in the costs for recruitment ($\Delta C1$)
- Reduction in the costs for the personnel employment and training ($\Delta C2$)
- Reduction in the costs for the retraining and adaptation of the new personnel ($\Delta C3$)

where $\Delta C1$, $\Delta C2$ and $\Delta C3$ are the difference between the costs of an enterprise before and after the reproductive programs implementation.

The results of the enterprise's reproductive programs on the mother and child health protection (transfer of a pregnant woman to the light labor, maternity leave in the early stages of pregnancy) are their higher health indicators. After a female employee returns from her maternity leave, it becomes an essential factor for the enterprise, since it entails lesser working time losses because of her illnesses and care after her ill child. Obviously, the working time losses have a negative impact on the production outcomes (productivity, revenue, profit).

Methodology for the disability indicators analysis: The methodology for benchmarking the disability indicators before and after the implementation of reproductive programs includes calculation of the following indicators: the number of disability cases in the ith year (N_i). This index reflects the total number of disability cases (sick leave certificates issued) for the ith year to care for a sick child.

The average number of disability cases per 1 employee with a child in the ith year ($\overline{N_i}$). This index reflects the average number of disability cases due to child illnesses (registered in the ith year) per one enterprise's employee with a child. The index of the number of disability cases per 1 employee is calculated as the ratio of the number of disability cases in the ith year (N_i) to the overall average number of employees with children under the age of 15 during this period by the following equation:

$$\overline{N_i} = N_i / P_{i\ \text{child sick, 0-15 years}} \quad (1)$$

where, $P_{i\ \text{child sick, 0-15 years}}$ is the mean number of the enterprise's employees with children under the age of 15 for the period analyzed in persons.

This index calculated both before and after the implementation of reproductive programs at an enterprise makes it possible to assess the change in the quantity if the children-related cases of disability per one employee. The average duration of the employee's disability due to child illness in the ith ($\overline{D}_{\text{N.Ch sick, 0-15 years.i}}$) year is:

$$\overline{D}_{\text{N.Ch sick, 0-15 years.i}} = \frac{D_{N_i}}{N_i} \quad (2)$$

where, D_{Ni} is the number of disability days according to all cases in the ith year, days. N_i is the number of disability cases due to child illness in the ith year. The partial average duration of the employee's disability due to child illness in the ith year ($D_{\text{N.Ch sick, 0-15 years.i}}$).

This index characterizes the number of disability days per 1 sick child on the average in the ith year and is determined as the ratio of the total number of the childcare-related disability days according to all cases in the ith year to the number of sick children in the ith year by the following equation:

$$\overline{D}_{\text{N.Ch sick, 0-15 years.i}} = \frac{D_{\text{N.Ch sick, 0-15 years.i}}}{Ch_{\text{sick, 0-15 years.i}}} \quad (3)$$

Where:

$D_{\text{N.Ch sick, 0-15 years.i}}$ = The number of disability days according to all cases in the ith year (days)

$Ch_{\text{sick, 0-15 years.i}}$ = The number of children of the enterprise's employees who were sick in the ith year under the age of 15 (people)

The total mean duration of the employee's disability due to child illness in the ith year ($D_{\text{N.Ch sick, 0-15 years.i}}$):

$$\overline{D}_{N.Ch\ total,\ 0\text{-}15\ years.i} = \frac{D_{N.Ch\ sick,\ 0\text{-}15\ years.i}}{Ch_{total,\ 0\text{-}15\ years.i}} \quad (4)$$

This index is determined as the ratio of the total number of the childcare-related disability days on all cases in a given year to the total number of children under the age of 15 of the given enterprise's employees in this year. In combination with the previous index, this coefficient of the number of disability days per 1 child of an enterprise's employee, calculated during the period before and after implementation of the reproductive programs, allows assessing the quantitative changes during the period of illnesses both in relation to the illnesses (Eq. 3) and in relation to all children of the enterprise's employees (Eq. 4), the number of days of the enterprise employees' disability due to child illnesses. It also allows conducting qualitative assessment of the reproductive programs' performance at an enterprise.

The partial average duration of the disability of an enterprise's employee due to child illness at the age of j in the i years ($D_{N.Ch\ sick,\ j.i}$).

This index is determined as the ratio of the total number of disability days of the sick children of a certain age to the number of sick children of this age by the following equation:

$$D_{N.Ch\ sick,\ j.i} = \frac{D_{N.j.i}}{Ch_{sick,\ j.i}} \quad (5)$$

Where:

j = The child's age

$D_{N.j.i}$ = The number of disability days of the sick children at the age of j

$Ch_{sick,\ j.i}$ = The average number of the employees' sick children at the age of j

The total average duration of the employee's disability due to child illness at the age of j in the ith year ($\overline{D}_{N.Ch.j.i}$).

This index is determined as the ratio of the total number of disability days associated with the illnesses of children of a certain age to the total number of the employees' children of this age by the following eqaution:

$$\overline{D}_{N.Ch.j.i} = \frac{D_{N.ji}}{Ch_{j.i}} \quad (6)$$

Where:

j = The child's age

$Ch_{j.i}$ = The number of the employees' children at the age of j

An assessment of the number of disability days per one sick child on the average on the one hand in relation to all sick children and on the other hand in relation to the total number of children (being sick and healthy during this period) that are of the same age, before and after the reproductive programs implementation will make it possible to assess the dynamics of changes in morbidity and losses from disability due to the implementation of reproductive programs at an enterprise.

Other indicators that allow assessing the efficiency of the reproductive programs implementation at an enterprise (namely, reduction in the costs for recruitment ($\Delta C1$); reduction in the costs for employment and training of the personnel ($\Delta C2$) and reduction in the costs for retraining and adaptation of the new personnel ($\Delta C3$) if taken together allow judging on the change of the important socio-economic index of the personnel sustainability which is closely related to the index of personnel turnover at an enterprise. The level of the enterprise's personnel turnover is influenced by a variety of factors related to the type of enterprise's activity; age and gender of employees; the region in which the enterprise is operating, etc. It is noted that the female labor force turnover is higher than the male one which is partially associated with the direct involvement of women into the process of the reproductive labor implementation. Due to the labor force turnover, the following negative changes occur:

- Increasing costs of the HR services for the dismissal and employment of new employees
- Increasing costs for new personnel training
- Increasing losses from the higher percentage of marriages during the personnel training period
- Decreasing volume of the production due to the new personnel training

With a certain share of confidence, we can assume that the implementation of the reproductive programs at an enterprise has a positive effect on the sustainability of personnel (especially, on the stability of the female labor force) and at the same time, it is a measure aimed at reducing the employee turnover which has a direct impact on improving the efficiency of the enterprise activity as a whole. Thus, the long-term strategic effect from the costs reduction due to increasing personnel sustainability E_{ls} is:

$$E_{ls} = \Delta C_1 + \Delta C_2 + \Delta C_3 \quad (7)$$

The disability indicators calculated according to the suggested by us method allow measuring the savings from the introduced reproductive programs at an enterprise in the form of reduction in the volume of the lost revenue of the enterprise.

The decline in the volume of the lost revenue (ΔQ_{lost}) allows assessing the real enterprise's profit from

introduction of these measures. The reduction of this index demonstrates the efficiency of the reproductive programs implementation. The volume of the lost revenue is calculated by the following equation:

$$Q_{lost.i} = D_{N.Ch\ sick,\ 0\text{-}15\ years.i} \times P_{i\ child\ sick,\ 0\text{-}15\ years} \times W_i \quad (8)$$

Where:

$D_{N.Ch\ sick,\ 0\text{-}15\ years.i}$ = The average number of disability days on all cases associated with child illnesses in the ith year (days)

$P_{i\ child\ sick,\ 0\text{-}15\ years}$ = The average number of the enterprise's employees with children under 15 years being sick for the analyzed period (people)

W_i = The average daily labor productivity of one employee in the ith year, rubles/day per 1 employee

The difference between the lost revenue volume before and after the implementation of the reproductive programs at an enterprise is the measure of efficiency (certain result achievement) of this activity. The influence of the change in the indicator of disability duration per one disability case due to child illness can be assessed with the help of the absolute distinction method by the following equation:

$$\Delta Q\ (D_{N.Ch\ sick,\ 0\text{-}15\ years.i}) = \Delta D_{N.Ch\ sick,\ 0\text{-}15\ years.i} \times P_{i\ child\ sick,\ 0\text{-}15\ years\ 0} \times W_0 \quad (9)$$

where, $\Delta Q\ (D_{N.Ch\ sick,\ 0\text{-}15\ years.i})$ is the change in the enterprise's revenue due to the changes in the number of disability days per one disability case due to child illness after the implementation of the reproductive programs at an enterprise, rubles. $\Delta D_{N.Ch\ sick,\ 0\text{-}15\ years.i}$ is the change in the number of disability days per one disability case due to child illness after the implementation of the reproductive programs at an enterprise (days). $P_{i\ child\ sick,\ 0\text{-}15\ years\ 0}$ is the number of employees with sick children under the age of 15 before the implementation of the reproductive programs (people). W_0 is the average labor productivity of one employee before the implementation of the reproductive programs, rubles/day per 1 employee.

Implementation of the proposed methodology for assessing the efficiency of reproductive programs: During the implementation of the developed methodology for assessing the efficiency of the reproductive programs based on the data obtained by the Social Programs Department of the "Magnitogorsk Iron and Steel Works", OJSC on the number of disability cases in 2003 and 2013 and on the number of temporary disability days due to child illness in these cases allowed us to calculate the disability indicators before and after the implementation of the reproductive programs.

In 2003 (before the reproductive programs implementation), 2,258 disability cases due to child illness were recorded at OJSC MMK. In 2013, about 1,436 cases were recorded at OJSC MMK. Table 1 shows the results of the analysis of the disability cases due to child illnesses.

The average number of disability cases per 1 employee with a child is calculated by the Eq. 1 ($= N_i/P_{i\ child\ sick,\ 0\text{-}15\ years}$) based on the given index N_i and data obtained from the HR services on the number of employees at OJSC MMK with children under the age of 15 ($P_{i\ child\ sick,\ 0\text{-}15\ years}$). Based on the methodology proposed in the Eq. 2, it is possible to calculate the change in the number of disability cases due to child illness per 1 employee at the given enterprise (Table 2).

The reduction in this indicator by 0.06 days despite the decrease in the number of employees with children under the age of 15 indicates a favorable downward trend in the number of child-related disability cases per one employee.

The methodology for calculating the index of the average duration of disability period on one case is suggested in the Eq. 3. The calculation of this index is carried out based on the data on the number of disability

Table 1: Changes in the index of the number of disability cases due to child illness at OJSC MMK for the period 2003-2013

Index	2003 (before the reproductive programs implementation)	2013 (after the reproductive programs implementation)	Absolute gain in 2003-2013 (days)	Gain rate (%)
No. of disability cases (N_i)	2.258	1.436	-822	-36.4

Table 2: Dynamics of the index of disability cases per 1 employee during the period 2003-2013

Index	2003 (before the reproductive programs implementation)	2013 (after the reproductive programs implementation)	Absolute gain in 2003-2013 (days)	Gain rate (%)
Average No. of disability cases per 1 employee with a child (N_i)	0.23	0.17	-0.06	-26.09

Table 3: The change in the indicator of disability duration for one case for the period 2003-2013

Index	2003 (before the reproductive programs implementation)	2013 (after the reproductive programs implementation)	Absolute gain in 2003-2013 (days)	Gain rate (%)
Average duration of the disability period on one case (days)	9.1	7.05	-2.05	-22.53

Table 4: The change in the indicators of the duration of employee's disability due to child illness

Index	2003 (before the reproductive programs implementation)	2013 (after the reproductive programs implementation)	Absolute gain in 2003-2013 (days)	Gain rate (%)
Partial duration of the employee's disability period (days)	11.80	9.30	-2.50	-21.19
Total duration of the employee's disability period (days)	1.22	0.78	-0.44	-36.06

days on all cases due to child illness ($D_{N.Ch\ sick,\ 0\text{-}15\ years.i}$). According to the data collected on the sick leave certificates issued to the employees of OJSC MMK due to child illnesses in the years 2003 and 2013, it equals to 20,548 and 11,129 days, accordingly. Given the previously provided value of the number of disability cases (N_i), the index of the average duration of a disability period is calculated. The changes of this index are shown in Table 3. The decline in this index is a positive trend and occurs under the influence of two factors:

- The declining total number of disability cases
- The declining number of disability days per these cases associated with child illnesses

The reduction of this index by 2.05 days indicates the decrease in the average duration of disabilities due to child illness and the increase in the number of working days by 2.05 days which is ultimately reflected on the labor productivity improvement of each employee and thus on the reduction in the volume of the lost revenue of the enterprise.

In order to calculate the indicators of the partial and total duration of the employee's disability due to child illness which were suggested in Eq. 3 and 4, the data provided on the number of disability days ($D_{N.Ch\ sick,\ 0\text{-}15\ years.i}$) in the years 2003 and 2013 are used as well as the number of sick children in the years 2003 and 2013 and the total number of children of OJSC MMK employees. The change in the calculated indicators is shown in Table 4.

Taken as a whole, the results of the analysis of these indicators demonstrate the significant reduction in the child morbidity and consequently, the decline in OJSC MMK employees' disability duration due to child illness after the reproductive programs implementation at the enterprise. Thus, the disability duration per one sick child reduced by 2.5 days and the disability duration per each child of an enterprise employee in general reduced by 0.44 days. These changes indicate the high degree of the reproductive programs' effectiveness which manifests itself in the health improvement among the children of the OJCS MMK employees and consequently in the decreasing duration of disability of their parents.

RESULTS AND DISCUSSION

During the implementation of the developed by us methodology for assessing the efficiency of the reproductive programs on the basis of the data obtained by the Social Programs Department of OJSC MMK on the number of disability cases in the years 2003 and 2013 and on the number of temporary disability days due to child illness among these cases allowed us to calculate the disability indicators before and after the implementation of the reproductive programs.

Economic benefit analysis: The obtained results of the analysis on the indicators of employee's disability due to child illness demonstrates the efficiency of the reproductive programs action in the form of the reduction in working time losses due to child illnesses.

It is possible to calculate the decrease in the volume of the lost enterprise's revenue due to the changes in the disability duration index per 1 disability case on the average with the help of the absolute distinction method by the following Eq. 9:

$$\Delta Q\ (D_{N.\ Ch\ sick,\ 0\text{-}15\ years.i}) = -2.05 \times 1{,}436 \times 25.84$$
$$= 76.067 \text{ million rubles}$$

It should be noted that the results obtained earlier are used in the calculation:

$$\Delta D_{N.\ Ch\ sick,\ 0\text{-}15\ years.i} = -2.05 \text{ days}$$
$$N_i = 1{,}436 \text{ cases per year}$$

The data on the revenue of OJSC MMK for the year 2010 (201,824,294 thousand rubles) and the number of employees (21,400 people) were also used. Based thereon, the average daily output per man was determined (25.84 thousand rubles).

When the disability duration per 1 disability case on the average reduced by 2.05 days, the enterprise's revenue increased by 76.067 million rubles which is the indicator of economic efficiency of the implemented programs on stimulating the birth rate at OJSC MMK. Objective assessment of the reproductive programs' economic efficiency requires to compare the obtained economic benefits of all types with the reproduction costs: in 2004, these expenses of OJSC MMK amounted to 9.25 million rubles and in 2013-34.0 million rubles.

Practical significance: The practical significance of these findings is obvious as they demonstrate a real opportunity to influence on the significant economic efficiency indicators of an enterprise such as labor productivity and consequently, an increase in the production output, business profits, etc.

CONCLUSION

Thus, the performed analysis of the effective indicators at OJSC MMK during the period before 2004 and after the implementation of the reproductive programs (2013) revealed the trend of a sufficient decrease in the disability due to child illnesses according to the previously developed indicators and consequently, an increase in the labor productivity and reduction in the lost revenue of the enterprise.

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