

МАТЕМАТИЧНІ МЕТОДИ, МОДЕЛІ ТА ІНФОРМАЦІЙНІ ТЕХНОЛОГІЇ В ЕКОНОМІЦІ

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MANAGEMENT OF IMPROVING THE EFFICIENCY OF THE USE OF LABOUR POTENTIAL OF THE REGION

Harkava V.F. Management of improving the efficiency of the use of labour potential of the region. In the article, the reflexive modelling of the effective use of labour potential of a region is proposed. It grounds the necessity of the use of economic modelling techniques for the solution of questions of increase in efficiency of the use of labour potential of the region. For total reflection of the reflective interaction of Department of the economy of public administration and labour potential, there is constructed a reflexive model of the structure of reflexive interaction of the subject of management, i.e. the Department of the economy of state administration and self-employed persons, workers.

Keywords: reflective model, modelling, management, labour potential, efficient use of labour potential, region, self-employed persons, workers.

Гарькава В.Ф. Управління підвищенням ефективності використання трудового потенціалу регіону. У статті запропоновано рефлексивне моделювання ефективного використання трудового потенціалу регіону. У ній обгрунтовано необхідність застосування методів економічного моделювання для вирішення питань підвищення ефективності використання трудового потенціалу регіону. Для повного відображення рефлексивної взаємодії управління економіки державної адміністрації і трудового потенціалу побудовано рефлексивну модель структури рефлексивної взаємодії суб'єкта управління, тобто управління економіки державної адміністрації та самозайнятих осіб, працівників.

Ключові слова: рефлексивна модель, моделювання, управління, трудовий потенціал, ефективне використання трудового потенціалу, регіон, самозайняті особи, працівники.

Гарькавая В.Ф. Управление повышением эффективности использования трудового потенциала региона. В статье предложено рефлексивное моделирование эффективного использования трудового потенциала региона. В ней обоснована необходимость применения методов экономического моделирования для решения вопросов повышения эффективности использования трудового потенциала региона. Для полного отражения рефлексивной взаимодействия управления экономики государственной администрации и трудового потенциала построено рефлексивную модель структуры рефлексивной взаимодействия субъекта управления, т.е. управление экономики государственной администрации и самозанятых лиц, работников.

Ключевые слова: рефлексивная модель, моделирование, управление, трудовой потенциал, эффективное использование трудового потенциала, регион, самозанятые лица, работники.

Statement of the problem. In connection with the inefficient use of labour potential of a region, there is the need to develop management models to improve the efficiency of using the regional labour potential. The basis of management of the effective use of labour potential of the region includes forming a reflective model of management of labour potential of the region. The formation of the reflexive management model is due to the inefficient use of labour potential of the region that requires a reform at the state level.

Analysis of recent researches and publications. Problems of reflexive management is considered in the works of many foreign and domestic scientists, in particular, Vorobyov M. [12], Kholod B. [12], Lefebvre V. [6], Novikov D. [7], Petrachkova O. [8], Sergeeva L. [11], Lepa H. [5]. The problem of development of reflexive control models is presented in the research of Sergeeva L. [11], the definition of reflexive control and its main stages are presented in the works of the scientist Lepa H. [5]. But, despite significant scientific

and practical results obtained by the above-mentioned scientists, the problem of increasing the effective use of labour potential of the region on the basis of reflexive control has no sufficient scientific justification that necessitates the development of reflective patterns of increasing the effective use of labour potential of the region.

The purpose of this paper is to develop a reflexive approach to modelling of the effective use of labour potential of the region.

The main material. For the image model of the structure of reflexive interaction of the subject of management, i.e. Department of the economy of state administration and self-employed persons, there is used a graph, which vertices correspond to the real agents and their images. The model of the structure of reflexive interaction of the subject of management, i.e. management of Economics public administration (UE) and self-employed persons (Sz) is shown in Fig. 1.

Management of economy of state administration (UE) build the image self-employed persons, that is, clearly sets the goals and the possibility of the latter. The main duties of self-employed persons are:

- 1) proper legal registration;
- 2) observance of requirements of labour legislation;
- 3) compliance with requirements of the tax legislation;
- 4) providing workers at their request with complete and accurate information regarding their employment and free provision to employees of copies of documents containing personal information about them;
- 5) implementation of obligatory state social insurance;
- 6) providing complete and accurate information to authorities about the conduct of the activities.

The legislation provides for the stimulation of self-employed persons to create new jobs in priority sectors of the economy. Yes, such a person who creates new jobs and employs unemployed people for two years, during the year may receive a monthly compensation in the amount of single contribution. The workers who

were employed in the payment of compensation cannot be dismissed by the employer [5].

Reflexive mapping occurs in the minds of employees (P). The basic requirements of employees in the Department of the economy of state administration are:

- 1) strengthening of social protection of the unemployed and active employment assistance;
- 2) activities for professional development and retraining of employees;
- 3) strengthening social standards;
- 4) ensuring the continuous improvement of working conditions and control in the sphere of labour protection;
- 5) creation and implementation of the program "Work for Education".

This forms the image of himself in the mind of the employee ((R^R)V), that is, there are limitations:

- 1) according to the employee position;
- 2) age limits;
- 3) psycho-physiological limitations depending on the type of work performed (services).

The increase in the effective use of labour potential of the region is a priority for public authorities, so the next step will be deciding on additional investments in its development. Built according to the reflexive model of efficient use of labour potential of the region the investments will be carried out to improve the working conditions of the labour potential, improving the quality of goods and services produced employment potential.

One of the best indicators of the effective use of labour potential is the level of national income per capita, but the latter does not reflect all characteristics of the labour potential. The main characteristics of modern labour potential: quantitative (demographic factors and qualification) and qualitative (the ability of the labour potential to produce value added) and cost (salaries). The above features give a full assessment of the labour potential of the region. Therefore, the number will be to understand the dynamics (rates of employee turnover, turnover, turnover of disposal, the total turnover, permanence of personnel, ratio of primary and support staff,

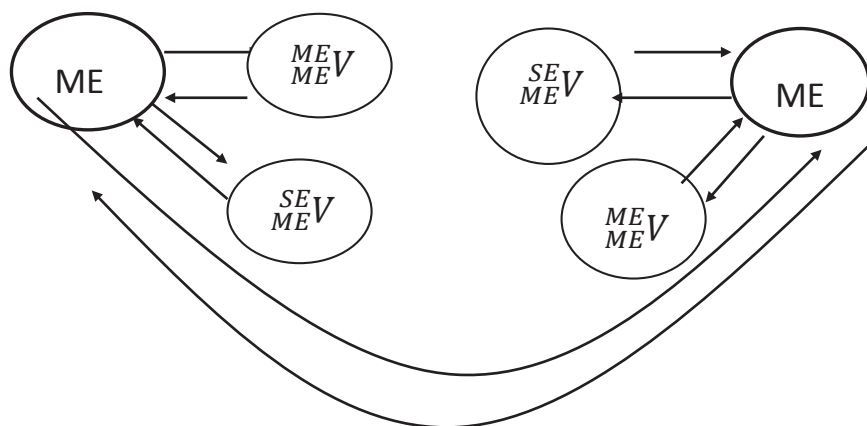


Fig. 1. Model of the structure of reflexive interaction of Department of economy of state administration and self-employed persons

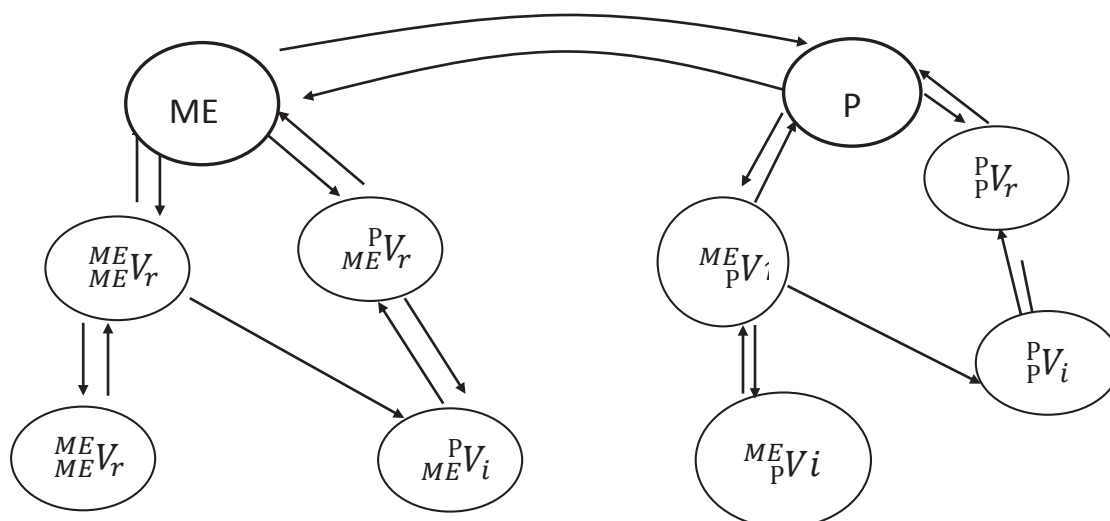


Fig. 2. The model structure of the interaction of economics management and employees with the reflection

the ratio of qualified and skilled workers, the index of labour migration). Under quality we mean efficiency (complexity of products; the index of labour intensity of production; increase in productivity due to the influence of economic size; the index of labour productivity; the index of labour market) and skills of the labour potential of the region (the share of labour potential of the region, that operates a specialty; the share of labour potential of a region with higher education; share of labour potential of a region with a high skill level) and status (presence of occupational diseases; health status of the labour potential of the region). The labour process involves organizational and managerial functions, that is, to evaluate the use of the labour potential, it is necessary to use the index (relative) estimation method in combination with estimates of natural and value indicators in order to make efficient assessments of employment potential.

The use of mathematical models and methods in the field of management of labour potential enables to improve the control system, allowing you to accelerate the economic analysis to consider the influence of many factors.

The scenario approach to modelling is based on the creation scenario. A scenario is a description of a picture of the future that of agreed, logically interrelated events and sequences of steps with a certain probability of leading a predictable end state. The use of the cognitive approach to modelling allows you to display the most complex problems and tendencies of development of the system in a simplified form, to explore possible scenarios of problem situations, to find ways and conditions of their permits in a model of the situation. The method of statistics includes three groups of methods: method of mass observation, method of grouping, method of generalizing indicators. The opti-

mization method is to select the most effective solution from possible alternatives. Using a rating approach in the management is quite broad: from a private enterprise to a national scale, a characteristic feature of the process of the rating control is that the rating acts as both an instrument and purpose of management. The essence of the synergetic approach is that you must choose one, the best of the many development paths. Synergetic model of labour potential management is based on the principle: "the purpose of labour potential – autonomy and self-organization". At the same time, reflexive management of labour potential of the process is identified with the control of the first person. In this form, the subject of management expands management activities on a variety of subordinate professionals (building activity of the enterprise) as a "structure" (graph, organization) to many experts as "constructs".

Despite a fairly wide range of mathematical models and methods of management of labour potential of the region, the main problem is the model that is used, the corresponding management tasks. Therefore, only the complex of mathematical models and methods of management of labour potential of the region will give a comprehensive overview of its status and structure, and determine the main parameters and reserves of its development.

Conclusions and prospects for further research.

The proposed reflexive approach to management makes it possible to increase the efficiency of the use of labour potential of the region. Therefore, the author developed a management model based on a reflexive approach to the increase in efficiency of the use of labour potential of the region that is the first step to the creation of theoretical-methodological bases of management of labour potential of the region.

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