

BAYRAM RAMADAN HASANI

**ASSESSMENT OF PERSONNEL MANAGEMENT
EFFICIENCY IN AGRICULTURAL HOLDINGS OF
KOSOVO**

Dissertation abstract for awarding the educational and scientific degree "doctor"
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Research supervisor: Associate Professor Petar Borisov, DcS

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I. GENERAL DESCRIPTION OF THE DISSERTATION

1. Relevance of the topic

The planned economic system, operating for many decades, limits the opportunities of enterprises in the Republic of Kosovo, and also imposes certain requirements on their personnel. The economic reform, which envisages a change in the forms of ownership, the right of companies to economic independence and disposal of the results of work, creates objective economic conditions for the implementation of management in the activities of companies.

Of course, the market economy often imposes higher requirements on the qualifications of specialists than those of the market economy. Therefore, in a market economy, managers must develop and recommend an effective strategy focused on market criteria, ensure continuous product innovation and create a favorable organizational culture.

Managers must constantly monitor changes occurring in the external environment, as well as evaluate changes occurring in the company's operations.

The successful development of the company is associated with a significant increase in the productivity of production resources and an increase in labor productivity. Managers need to be armed with different methods for evaluating the effectiveness of different resources and, first of all, the personnel of companies.

The problems of personnel management effectiveness have been studied by many scholars. Factors such as company culture, organizational-management structure, leadership style, type of communication channels, qualification of company personnel, etc., which appear to have an impact on the effectiveness of company personnel management, have been investigated. When considering the influence of these factors, the use of statistical methods is most often used in the research setting. The methods of index-factorial analysis, chi-square analysis, regression analysis, correlation analysis and dispersion analysis are most often applied.

Adaptation and practical recommendations on the use of certain statistical methods for evaluating the effectiveness of personnel management in companies operating in market conditions become important, in addition, there are no generally accepted methods for evaluating the effectiveness of personnel management, there are no forms of statistical reporting in companies, which would be used in this type of research.

The literature on personnel management in Kosovo, as a rule, is dominated by publications of an educational and educational-methodical nature, mainly considering the history and basics of personnel management, as well as special management issues such as financial management, asset management, situational and systemic approaches to management, sociology of organizations, marketing. At the same time, there is clearly not enough literature in the sea of publications on the problems of management of companies in Kosovo, for specialist managers, senior managers, namely for evaluating the effectiveness of personnel management.

Research in the field of improving the effectiveness of personnel management can be considered "permanently relevant". Their need arises whenever economic conditions change or when new, more efficient methods of production management appear. In fact, the development of the economic environment and management technologies is continuous and gradual, although from time to time they undergo very significant, revolutionary changes.

When evaluating the effectiveness of personnel management, it is of great importance to study the factors influencing personnel motivation. The condition that affects the adequacy of the performance assessment is the accuracy of the statistical data, the properly organized collection of information. It is

interesting to identify the main factors affecting the effectiveness of personnel management, whose growth should be stimulated in the first place.

Solving these problems will contribute to the further increase in the effectiveness of personnel management, which meets the urgent tasks facing economic science.

All this determines the relevance of the chosen research topic.

2. Purpose and tasks of the study

The aim of the dissertation work is to develop a methodology for statistical evaluation of the effectiveness of personnel management in companies operating in the agrarian sector of the Republic of Kosovo.

In accordance with the set goal, the following interrelated theoretical and applied problems were solved in the dissertation:

- The essence of the effectiveness of personnel management is derived, as well as the necessary conditions for its measurement are considered;
- The main problems of personnel management in the context of economic reform are identified, as well as a statistical evaluation of the effectiveness of personnel management;
- The factors affecting the situation in the field of personnel management are analyzed, and their classification is proposed;
- A system of statistical indicators for evaluating the effectiveness of personnel management is proposed and substantiated;
- A methodology has been developed for statistical assessment of the effectiveness of personnel management in the agricultural sector using a complex of statistical and mathematical methods;
- A generalized assessment of the relationship between labor productivity and the level of competitiveness of the agrarian firm was determined;
- The dynamics of personnel management efficiency indicators were studied;
- A model of the main trend in the development of personnel management efficiency indicators was built with extrapolation of the results;
- A forecast was made for the performance indicators of personnel management using the method of exponential smoothing;
- A regression model of the effectiveness of personnel management was built;
- Recommendations are given for improving the system for material incentives for personnel and the procedure for applying flexible working hours to increase the efficiency of personnel management;
- A methodology for economic justification of measures to improve personnel management affecting the final performance of the company is proposed.

3. Object and subject of research

The object of research is the personnel in companies working in the agrarian sector of Kosovo.

The subject of research is the effectiveness of personnel management as well as the organizational-economic processes under the influence of which the results of the workers' work are formed.

Business practice increasingly feels the need for a thorough analysis of the conditions that determine the development of companies, for identifying the connections and interdependencies between various factors.

Organizational structures, as one of the key elements of management, have undergone significant evolution and are intensively developing under the influence of new forms of production and

management. First of all, production structures, which were previously built on the principles of technological or subject specialization of production departments, are undergoing changes. Product diversification, convertible technologies, multifunctional automatic lines, the introduction of the concept of "individual product in mass production" fundamentally change the production structure.

The analytical aspect has a relatively independent importance in the light of the problems mentioned. The implementation of various organizational and technical measures to improve the effectiveness of personnel management should be based on an assessment of its current state, forecasting the impact of the measures (including the introduction of information technology) on the final performance of the company. These tasks are solved in the process of technical and economic analysis.

4. Theoretical and methodological basis of the research

Scientific works on issues of economic reform, analysis of the effectiveness of personnel management, the effectiveness of the organization of managerial work were used in the work on the dissertation. As well as monographic specialized literature of local and foreign economists, articles, materials from scientific conferences, materials published in periodicals, statistical compilations and reference books on the development of the economy, normative and instructional materials for working with personnel, for accounting and analysis of labor resources .

In solving the problems posed in the dissertation, methods and techniques of economic and statistical analysis, mathematical modeling, system and structural analysis were used.

In the processing of statistical materials, computer studies of time series and the relationship of indicators were carried out using the MESOSAUR and OLYMP packages.

5. Scientific originality of the research

The dissertation contains a new solution to the current scientific problem of evaluating the effectiveness of personnel management, which is essential for the search for further improvement of the effectiveness of personnel management and improvement of the statistical methodology of its research.

The dissertation emphasizes the growing importance of the use of statistical methods in companies operating in a transition period, and also examines questions about the appropriateness of the use of different methods by managers.

The scientific novelty of the dissertation consists in the fact that it explores issues that are under-researched and relatively poorly addressed in the economic literature of Kosovo, namely:

- Development of a methodology for statistical evaluation of the effectiveness of personnel management in the context of economic reforms in the agrarian sector,
- Classification of factors affecting the effectiveness of personnel management, taking into account the specifics of the current stage of development of the economy of Kosovo,
- Formation of a system of statistical indicators characterizing the effectiveness of personnel management in a transitional period,
- Development of recommendations for assessing the impact of measures to improve the effectiveness of personnel management on the final indicators of the company.

6. Contributions to scientific research

As a result of the conducted and following research, the following contributions were formulated and substantiated in the dissertation work:

1. Defined the essence of the category "personnel management" as an object of statistical research in the conditions of the transition period;
2. A system of statistical indicators for evaluating the effectiveness of personnel management is defined. The proposed system allows solving research problems in the field of personnel management in various aspects;

3. A methodology has been developed to determine a consolidated assessment of the relationship between labor productivity and the level of competition in the industry, which characterizes the effectiveness of personnel management;
4. A method has been developed for constructing and analyzing multiplicative multifactorial models of personnel management effectiveness and identifying the influence of various factors on its level and dynamics;
5. A methodology has been developed for the economic justification of measures in the field of personnel management.

7. Practical meaning of contributions

The practical importance of the work consists in the fact that it contains proposals for solving an urgent problem, which consists in increasing the effectiveness of personnel management.

The solutions to some methodological issues proposed in the dissertation allow to expand the arsenal of modern statistical and mathematical-statistical methods used in evaluating the effectiveness of personnel management, and on this basis to justify management decisions made with the aim of increasing the effectiveness of personnel management.

Some elements of the dissertation work can be used in professional development and training programs for managers at various levels.

8. Implementation and approval of the results of the dissertation work

The main results of the study were discussed and accepted for implementation in the following agrarian enterprises - CJSC Sivma and CJSC Focus.

9. Structure and scope of the dissertation work

The dissertation consists of an introduction, three chapters and a conclusion, set out on 136 pages of typewritten text, contains 20 tables and 1 figure. The list of used literature includes 159 titles. Appendices are given on 8 pages.

In the first chapter "Personnel management as an object of statistical research" a description of the current situation in the field of personnel management is given, the importance of the basic concepts of personnel management as necessary conditions for its statistical research are revealed, the main functions of management are considered of personnel, the place and role of managerial labor and the problems of its improvement in the context of the agrarian sector. The main problems arising in the statistical analysis of the effectiveness of personnel management are investigated.

In the second chapter "Methodological foundations of the statistical evaluation of the effectiveness of personnel management" the factors influencing the effectiveness of personnel management are analyzed, their classification is given. A system of statistical indicators has been created that characterize the effectiveness of personnel management, the selection of performance indicators is justified. The analysis of the main approaches and directions in the field of evaluating the effectiveness of personnel management.

In the third chapter "Statistical study of the effectiveness of personnel management" provides a methodology for analyzing the current situation in the field of personnel management, examines the position of the company in a competitive environment, evaluates the structural changes that have occurred in the enterprise and determines their impact on the productivity of labor. The dynamics of personnel management efficiency indicators were studied, the main trends in the development of effective indicators were identified and calculated. The forecasting of the development dynamics of the modeled indicators is carried out by the method of exponential smoothing. A regression model of the effectiveness of personnel management was built, the influence of various indicators was revealed.

Chapter I. PERSONNEL MANAGEMENT AS AN OBJECT OF STATISTICAL RESEARCH

It is known that the successful development of production in modern conditions largely depends on the competitiveness of the personnel. And this is achieved through constant training of the staff, increasing their qualifications and strategic determination of their number and professional orientation at the moment and in this production. But the current state policy in the field of human resources in Kosovo has proven to be ineffective: the vocational school has been significantly weakened, there is no system of personnel development in enterprises, and the previous links between vocational education and professional work have been broken. destroyed. The market for professions and the market for educational services in Kosovo are practically unrelated.

The narrowness of the skills of the management corps, especially at its top echelon, negatively affected the transition to market relations from the very beginning of the reforms. It turned out that "many managers are unable to organize the work of their subordinate institutions in general and to orient it towards studying and satisfying consumer demand in particular. It was also a great difficulty for them to determine the directions of use of resources, first of all, this applies to such important resources as personnel, fixed assets, financial resources"¹...

This gives reason to claim that the main problem for the vast majority of Kosovo enterprises is the problem of ineffective personnel management. Right now is the time when it is necessary to pay more attention to systematic training and especially to the retraining of qualified specialists. This will make it possible to react more quickly and more effectively to changes in the country, to strengthen the elements of stability, solidity, representativeness, sober calculation and refusal of excessively risky speculative game in market activities.

Nevertheless, there are still very few Kosovo commercial firms that prioritize staff training and continuing education. In most cases, in this matter, enterprises continue to live one day at a time, focusing all their attention on solving current problems. Without a doubt, the issue of talent is strategic, both for large successful firms and for small firms.

The market of educational services turned out to be practically unbalanced with the real needs of the skilled labor market. The quality level of the employees in the enterprises is significantly lower than the requirements of the international labor market.

The personnel management system in most enterprises does not correspond to the strategy of market reforms, which largely hinders the possibility of implementing programs for sustainable stabilization, revitalization of production and restructuring of the economy, improving the quality and competitiveness of Kosovo products²...

The existing work practice in the field of personnel management does not ensure quality renewal of personnel, specialists and managers. The frequency of professional development of almost all categories of personnel continues to grow and currently for managers and specialists it is on average 7-8 years, while in Western Europe and Japan it is 3-5 years and 3-6 years. Training programs for employees in enterprises are mainly aimed at obtaining primary qualifications in the form of simplified requirements.

It is necessary to train and significantly improve the qualification of the governing body in the field of management, marketing, innovation, personnel management and a number of other disciplines, taking into account the specifics of the current economic situation and the Kosovo market. The formation of the business services industry should become one of the main problems of the structural and investment policy.³

¹ Haykazyan A., Nisevich E. In search of managerial excellence. // Economic issues, 1997, No. 2, p. 154.

²The problems of increasing competitiveness were discussed in detail by Prof. Fathudinov R. "Management as a tool for achieving competitiveness" // Economic Issues No. 5, 1997, pp. 118-127.

³ Hayman S. Strategy of organizational and structural decisions // Economic issues, No. 5, 1996, p. 108

The set of programs used in the process of training and retraining of managers must correspond to the changed and increased requirements for managers. Programs should guide managers to assess management effectiveness and, as a result, increase competitiveness through maximum use of human resources in the workplace, as opposed to economic growth achieved through additional capital investment.

Despite the fact that many American companies have their own services for the organization of production, they often prefer to invite consultants from companies in the business services sector for a while, instead of solving the relevant problems themselves. For us, this practice is more than relevant. It will not be an exaggeration to say that the organization of production in each production unit - in the enterprise, in the workshop, in the site, essentially remains a "white spot".

In the last two years, unemployment has become a major macroeconomic phenomenon, becoming an independent factor in the development of the economy. Unemployment also causes significant damage to people's vital interests. It does not allow them to apply their skills in the activity in which a person can perform the most, or by depriving them of such an opportunity, due to which people suffer serious psychological stress⁴...

"One of the main reasons for the increase in unemployment is the growing differentiation of the population according to income. The elite strata of the population, in whose favor the national income is redistributed, cannot form a strong demand for domestically produced consumer goods, which contributes to its stagnation and, as a result, unemployment"⁵...

The situation in the age structure of personnel management services is alarming, where 20-25% of people will enter or are already of retirement age in the next five years. This speaks of slow renewal and insufficient influx of young personnel in these units.

Based on the above, it is obvious that the problem of unemployment is a key problem in the context of economic reforms, and without solving it, it is impossible to establish effective economic activity. The problem of unemployment is particularly acute now in Kosovo, which is not surprising, since the state of the Kosovo economy is now depressed. The huge economic downturn that devastated the industry could not help but affect the labor market⁶...

Among the most acute problems should be noted such as: the departure of qualified specialists, low productivity and work discipline of the staff, insufficient qualification of the staff and individual managers, unsatisfactory moral and psychological climate, low level of employee motivation and as a result on top of that, insufficient initiative of the workers in solving production problems, confrontation between the administration and the staff.

The tasks of statistics in personnel management

To solve these and other problems of personnel management, it is necessary to constantly improve the statistical methodology, to analyze more thoroughly the processes and phenomena occurring in the field of personnel management. Not a little work must be done to improve the organization of work at all levels of production and management. It is more important to improve the efficiency of personnel management in the context of economic reforms, this determines the tasks of statistics.

The most important task of company statistics is to study the number, composition, distribution, movement and dynamics of personnel, to identify reserves for increasing the efficiency of its use, which are necessary to ensure income growth with the same or smaller number of employees .

The task of statistics is to expand and deepen the analysis of labor productivity, to improve the

⁴Ismailov L. E. Factors of demand and supply in the labor market, unemployment and forms of its manifestation. IE RAN, A., 1993, Head of Department. in INION RAN, Vol. 48284, page 1.

⁵Andreev S. V. Human resources: conservation, use of development. // Abstract of a dissertation for the scientific degree Doctor of Economics. M.: 1997.-14 p.

⁶ The problems of unemployment were studied by A. A. Nikiforova. "Labor market: employment and unemployment", Moscow, 1991.

methodology for its measurement. Enterprise statistics should help reveal reserves for labor productivity growth, determine ways to more fully and efficiently use personnel and working time, eliminate downtime and non-productive costs, improve labor and production discipline, to reduce staff turnover, and strengthening the role of material and moral incentives for work.

Statistics examine the stimulating role of wages, the dependence of each employee's income on his personal work contribution and the team's contribution to the development of the company. Statistics is faced with the task of studying the composition and dynamics of wages and material incentives, their use, the ratio of growth rates of labor productivity and wages. It substantiates the wages of workers and employees by professions and positions, examines the results of raising wages and salaries.

In general, the tasks of statistics in personnel management can be represented as the following diagram:

Table 1. The tasks of statistics in personnel management. Own.

Complexes of tasks	Tasks
Statistics of staff composition and dynamics	<ul style="list-style-type: none"> - employee composition survey; - determining the number of employees by category; - staff movement research; - study of staff turnover and development of measures to reduce it.
Working hours statistics	<ul style="list-style-type: none"> - reporting of actual time worked; - analysis of the use of official time and overtime; - reporting of stays and absences; - compilation and analysis of the work time balance.
Labor productivity statistics	<ul style="list-style-type: none"> - measuring the level and dynamics of labor productivity; - determination of the degree of fulfillment of production standards; - identifying reserves for labor productivity growth.
Salary statistics	<ul style="list-style-type: none"> - study of the salary structure; - study of the level and dynamics of the salary; - material incentive fund study.
Statistics on working conditions and safety	<ul style="list-style-type: none"> - study of production and technical factors; - study of sanitary and hygienic factors; - study of general working conditions.

An important task of statistics is the development and improvement of the methodology for calculating indicators of the use of working time. At the modern stage of economic development, the compilation of the balance of working time is of great importance. Its correct construction and in-depth analysis allow to identify losses in the form of absences, stoppages of a shift and an entire shift, to outline ways of further use of working time and to identify reserves for increasing the efficiency of personnel management.

The responsible tasks of statistics are in the field of improving labor standardization, speeding up the introduction of technically sound production standards and service standards, especially for auxiliary and hourly jobs. Improving the effectiveness of personnel management largely depends on successfully solving this task.

Statistics are designed to study new phenomena in the development of society and show their influence on the effectiveness of personnel management. Statistics faces the problems of studying the relations of the company's personnel, great importance is attached to working conditions and labor

protection, on which the increase in the effectiveness of personnel management largely depends.

"Monitoring the implementation of decisions in the field of personnel management is the most important task of statistics. The statistical material presented should help reveal unused reserves and prevent the possibility of imbalances. "7For this purpose, it is necessary to continuously improve the system of indicators characterizing the company's development. Statistics are an integral part of the personnel management system, its information has a deep scientific character and is the basis for making important management decisions.

The comprehensive study of the phenomena and processes taking place in the field of personnel management requires further improvement of the statistical methodology of the system of indicators for researching the effectiveness of personnel management, the organization of work, its regulation and payment, for measuring the productivity of labor.

Basic concepts and functions of personnel management

Management is a complex interdisciplinary science whose goal is to find ways to ensure the effectiveness of the decisions made. Therefore, the use of scientific approaches, management principles and methods in the development of management decisions, the economic justification of each decision are the most important conditions for achieving effective functioning at all levels of management.

Personnel management is one of the most important directions in the strategy of the modern enterprise, because in the conditions of modern production, the role of a person grows and increasingly higher requirements are imposed on his abilities, level of knowledge and qualification.

The transition to market relations, the complication of economic relations, scientific and technical progress, the intensive development of productive forces lead to profound changes in work methods, which in turn requires the structure of management bodies to become clear and well-functioning, the decisions made more justified, more flexible management methods aimed at improving the efficiency of the use of human resources.

In order to effectively manage personnel and even more to evaluate its effectiveness, it is necessary to know what personnel management is and what the goals of this process are, as well as to determine the essence of the category "personnel management" as an object of statistical research in a transitional period.

In the literature you can find examples of different interpretations of the concept of "personnel management". Some authors in the definition emphasize the organizational side of management, operating with the goal and the methods by which these goals can be achieved, while others emphasize the content reflecting the functional side of management.

The translation literature strongly influences the differences in interpretations with its different terminology characteristic of different schools of government. The most common terms are:

Personnel administration - personnel management (recruitment, control, placement, training, use of personnel), relations between administration and subordinates;

Personnel management - personnel management (including selection, training, working conditions, pay, safety), labor relations, relations between administration and individual employees;

Personal attitude - relations with staff, etc.⁸

When trying to define and reveal the content of this or that concept, the authors focus on the most important side of the issue, in their opinion. Let's dwell on some of the definitions cited in recent years in the works of local and foreign economists.

⁷ Nazarov M.G., Parteshko N.S., Rumyantsev V.N. Labor Statistics, M.: "Finance and Statistics", 1981, - p. 15.

⁸For more details see EV Maslov. Enterprise personnel management, M.: INFRA-M, 1998, - p. 40.

Table2. Defining the essence of the "personnel management" category. Own.

Source	Definition
VP Galenko Personnel management and efficiency of enterprises, St. Petersburg: SpbUEF, 1994, p. 54	Personnel management is a complex of interconnected economic, organizational and socio-psychological methods that ensure the efficiency of labor activity and the competitiveness of the enterprise.
Management of the personnel of the organization / ed. Kibanova A.Ya., -M.: INFRA-M, 1998, p. 62.	Personnel management is the formation and direction of the motivational attitudes of employees in accordance with the tasks facing the organization.
SV Shekshnya Personnel management of a modern organization, M.: "Intel-Sintez", 1997, p. 43.	Personnel management is the provision of an organization with the required number of employees performing the necessary production functions. The effectiveness of personnel management is determined by the degree to which the overall goals of the organization are achieved.
Ivantsevich Zh. M. Lobanov A. A. Management of human resources, Moscow: "Case", 1993, pp. 11-22.	Human resource management is an activity carried out in enterprises that promotes the most effective use of employees to achieve organizational and personal goals. The effectiveness of personnel management is determined by the degree and timing of specific, verifiable tasks set by the UP-structures.
Marr R., Fliaster A. Dictionary // Man and Work, 1994, No. 1- p. 127. one	Human resource management is a field of activity, the most important elements of which are identification of needs, attraction, induction, development, control, release of personnel, as well as work structuring, remuneration policy and social services, management of costs for personnel and employee management.
Maslov E.V. Enterprise personnel management, M.: INFRA-M, 1998, - p. 46.	Personnel management is a systematic, systematically organized impact with the help of interrelated organizational, economic and social measures on the process of formation and redistribution of the workforce at the enterprise level, on the creation of conditions for the use of the labor qualities of workers to ensure effective functioning of the enterprise and the overall development of its employees. ... The effectiveness of personnel management is determined by the most complete implementation of the set goals while reducing personnel costs.

In our opinion, such definitions of the essence of personnel management do not fully meet the requirements of statistical research. Note that within the framework of the statistical work we do not pretend to be an exhaustive consideration of the nature of personnel management. However, this is necessary from the point of view of measuring its effectiveness, since the lack of a unanimous understanding of the essence of personnel management leads to significant discrepancies in the evaluations of its effectiveness.

By "personnel management" we understand the impact of the organization, through interrelated organizational, economic and social measures, on the process of forming the qualitative and quantitative characteristics of the staff in order to achieve economic and social efficiency.

Personnel management is an essential part of the overall enterprise management strategy. The main goal of such a strategy, in the context of the transition to market relations, is: obtaining an estimated profit value, increasing labor productivity, selling products or services in a certain volume and with a certain rhythm, achieving a certain degree of satisfaction of social needs of workers.

Practice shows that there are two extreme approaches to personnel management as an integral part of enterprise management - technocratic and humanistic. In the technocratic approach, management decisions are subordinated above all to the interests of production. The humanistic approach implies the creation of such working conditions and its content, which would reduce the degree of alienation of the employee from his work activity and from other employees.⁹...

Therefore, according to this concept, the effectiveness of the operation of the enterprise largely depends not only on the compliance of the number and professional-qualification composition of the personnel with the given requirements, but also on the level of motivation of the employees, the degree of consideration of their interests, etc.

Thus, from the general functions of personnel management, careful development of methods of stimulation, a differentiated approach to labor potential in the development of principles and rules for working with personnel common to all departments (planning of labor resources, development and implementation of programs for staff development, staff rotation, etc.) are of particular importance.), improvement of working conditions. Of particular importance is the organizational culture of the company.¹⁰...

The essence of any activity can be characterized by a certain list of its constituent functions.

The personnel management system is a complex of goals, objectives and main areas of activity, as well as various types, forms, methods and the corresponding management mechanism, aimed at ensuring a continuous increase in the competitiveness of the enterprise in market conditions, increasing productivity and quality of labor and ensuring high social efficiency of team functioning¹¹...

It consists of several subsystems that perform the respective functions. Let's present the functional subsystems and main functions of personnel management in the form of the following table:

Table3. Subsystems and basic functions of personnel management. Own

Subsystems	Basic functions
Legal services	<ul style="list-style-type: none"> - solving legal issues of labor relations; - solving legal issues of business activity; - coordination of administrative documents.
Personnel planning, forecasting and marketing	<ul style="list-style-type: none"> - developing a personnel management strategy; - human resources analysis; - labor market analysis, planning and forecasting of personnel needs; - the relationship with external sources that provide staff for the organization; - evaluation of candidates for a vacant position; - ongoing periodic certification of personnel.
Registration and reporting of personnel	<ul style="list-style-type: none"> - registration and accounting of admissions, dismissals and transfers; - information support of the personnel management system; - professional orientation; - employment provision.

⁹Maslov EV. Personnel management in the enterprise. M.: INFRA-M, 1998, p. 59.

¹⁰SV Shekshnya defines organizational culture as values, attitudes and behavioral norms specific to that organization. ("Personnel management of a modern organization", M.: "Business school" Intel-Sintez ", 1997, p.48).

¹¹ Personnel management of the organization // ed. Kibanova A.Ya., -M.: INFRA-M, 1998, p. 63.

Analysis and development of labor incentives	<ul style="list-style-type: none"> - management of work motivation; - development of payment systems; - the use of moral incentives; - development of profit and capital participation forms; - creating "corporate spirit".
The working conditions	<ul style="list-style-type: none"> - compliance with the requirements of the psychophysiology of work; - compliance with requirements for ergonomics of work; - compliance with the requirements of technical aesthetics; - labor protection and safety measures; - environmental protection.
Development of organizational management structures	<ul style="list-style-type: none"> - analysis of the existing organizational management structure; - design and construction of a new organizational management structure; - development of the staff schedule.
Staff development	<ul style="list-style-type: none"> - technical and economic training; - retraining and upgrading of qualifications; - working with the personnel reserve; - service and professional promotion; - professional and socio-psychological adaptation of new employees.
Labor relations	<ul style="list-style-type: none"> - analysis and regulation of group and personal relationships; - analysis and regulation of management relations; - management of production conflicts and stresses; - socio-psychological diagnosis; - compliance with the ethical norms of relationships.
Development of social infrastructure	<ul style="list-style-type: none"> - catering organization; - management of housing and consumer services; - development of culture and physical education; - provision of health care and recreation; - Provision of childcare facilities; - managing social conflict and stress.

All listed functions of personnel management are inseparably present in the activities of managers and departments at all levels.

Management functions are organically interconnected. In planning, the results of accounting, control and analysis are used, and the results of planning, in turn, serve as a starting point for organization, regulation, analysis and control. The need for regulation arises after, on the basis of accountability, control, analysis and planning, prerequisites are created for purposeful intervention in the course and results of the operation of the controlled object.¹²...

Every enterprise faces such goals as employee satisfaction, enterprise survival, its adaptability to changes, etc. According to A. A. Lobanov, which, in our opinion, should become the main concern of enterprise managers, "in organizations where profit overshadows all other goals in such a great

¹²Efimova M. R. Statistical methods in production management. - M: Finances and Statistics, 1998, p. 7.

importance that other goals are paid only minimal attention, problems arise in this sector of the pattern that reflects staff performance, such as increased absenteeism, less job satisfaction, complaints, etc.¹³...

Thus, an effective personnel management system is not only high production efficiency, but also overall social security of a person, favorable moral and psychological climate, comfortable working conditions and wide opportunities for personal self-realization. After all, this is a high quality of life that fully coincides with the main aspirations of a person.

Chapter 2. METHODOLOGICAL BASIS OF THE STATISTICAL ASSESSMENT OF PERSONNEL MANAGEMENT EFFICIENCY

For the successful implementation of strategic tasks in the field of personnel management effectiveness, the study of the factors affecting labor productivity, the timely and full use of reserves for growth and improvement on the basis of this scientifically based system of analysis and planning is of paramount importance. labor productivity and evaluation of the effectiveness of personnel management.

High growth rates of the effectiveness of personnel management in general and labor productivity in particular are ensured by scientifically based use of the entire complex of factors affecting the effectiveness of personnel management.

This is especially important now, when many Kosovo companies, mostly small and medium-sized, today are experiencing significant economic difficulties, they are limited in their resources, and the problem of their survival must be solved to a large extent at the expense of reserves, the use of which does not require large expenses.

However, there are no targeted theoretical and applied developments on this topic in modern Kosovo sociology and psychology. This leads to the fact that currently the issues of assessing the influence of various factors are solved either without taking into account the real economic situation, or from the point of view of common sense, everyday ideas about the similarity of various indicators.

The question of the correct classification of factors affecting the effectiveness of personnel management is of great importance. When preparing such a classification, it should be borne in mind that these factors do not act in isolation, but in interrelationship with each other.

The theoretical significance of the classification of personnel management efficiency factors lies in the fact that it allows us to more fully reveal the nature of labor productivity, to determine the relationship between factors, to identify peculiarities in the action of individual factors. , taking into account the specifics of each specific direction of the company.

The use of such a classification makes it possible to determine the influence of each factor separately, thereby eliminating double counting, as well as taking into account the effectiveness of factors for growth in labor productivity, which makes it possible to correctly identify and use reserves for promotion of the effectiveness of personnel management as a whole.

Recommendations for the classification of labor productivity growth factors have been repeatedly cited in the economic literature.¹⁴... The general principle of these classifications is to combine a more or less wide range of factors into extended groups according to their economic nature.

The presented approach to the classification of factors according to their economic essence is not original. So some economists, for example VS Knyazevsky, suggests the division of factors into direct and indirect, which allows to eliminate the double accounting of the influence of factors on the effectiveness of personnel management¹⁵... We also believe that the classification of labor productivity growth factors should be based on the research objectives.

At the analysis stage, these classifications are used not only to assess the achievement of the

¹³Ivantsevich JM Lobanov AA Human Resources Management, M.: "Delo", 1993, p. 26.

¹⁴Bashkatov B. I. Performance indicators in foreign statistics. Texts of lectures, Moscow: MESI, 1983; Kendrick D. Productivity Trends in the United States. M.: Statistics, p.16;

¹⁵Frenkel AA "Labor Productivity, Growth Modeling Issues". M.: Economy, 1984, p. 29.

planned level, but also to establish the actual impact of individual factors on the level of labor productivity and determine on this basis the effectiveness of personnel management.

The existing theory and practice of studying the factors of labor productivity growth allow to build a refined general classification depending on the purpose of the study. Based on the economic essence, we offer the following classification of factors influencing the effectiveness of personnel management (table 4):

Table4. Classification of factors affecting the effectiveness of personnel management. Own

Factors	Content of the factors
Physiological	<ul style="list-style-type: none"> - age; - Health status; - mental capacity; - physical abilities etc.
Technical-technological	<ul style="list-style-type: none"> - the nature of the tasks to be solved; - the complexity of the work; - technical equipment; - the level of use of scientific and technical achievements, etc.
Structural and organizational	<ul style="list-style-type: none"> - working conditions; - ratio of the number of personnel categories; - the volume of the enterprise; - mode of operation; - work experience; - qualification of employees; - staff utilization level, etc.
Socio-economic	<ul style="list-style-type: none"> - material incentive; - insurance; - social Security; - standard of living etc.
Socio-psychological	<ul style="list-style-type: none"> - moral climate in the team; - the employee's psychophysiological condition; - status and recognition; - organizational culture of the company; - gratitude; - perspective for career development, etc.
Territorial and situational	<ul style="list-style-type: none"> - company location; - time spent commuting from home to work; - the level of competition; - inflation; - unemployment; - income differentiation; - shareholding of enterprises, etc.

According to the degree of controllability, factors can be divided into unregulated, weakly regulated and regulated¹⁶...

Unregulated factors do not depend on management decisions; these include factors characterizing the location of the branch, the presence of competitors, etc.

Weakly regulated factors are most often understood as factors with great momentum, the change of which over a certain period of time depends little on management decisions. These factors include: the size of the company's representative offices, the volume and structure of fixed assets, the characteristics of the technical level of production (machine capacity, degree of mechanization and automation of production, etc.).

Regulated factors include the factors that characterize the quality of personnel management, the level of organization of production and labor, the degree of use of resources, etc. It is this group of factors that form their initial indicators, necessary for further research.

The proposed classification of indicators is convenient for studying the relationship between the effectiveness of personnel management and regulatory factors, as it allows solving the problem of the same name in different aspects.

In our opinion, the effectiveness of personnel management is primarily influenced by the competence of employees and the level of their motivation. At the same time, the competence of employees depends on the level of their education (knowledge), work experience (skills) and personal abilities (skills).

It can hardly be denied that remuneration or compensation of employees is an extremely important factor influencing the effectiveness of personnel management. "Employee incentives may not be the only way to improve individual, group, or even organizational performance, but it is likely a prerequisite for improving performance in most organizations over the long term."¹⁷...

The main importance of the compensation system is to stimulate the production behavior of the personnel, directing them to achieve the strategic tasks that are in front of them, in other words, to combine the material interests of the employees with the strategic goals of the company.

The analysis is based on the premise that motivation is the most important causal factor in employee performance. Furthermore, fostering high performance at the individual level will have a direct and significant impact on the performance of the firm as a whole. Motivation is necessary to achieve high efficiency in personnel management, but motivation alone is not sufficient for this. In our opinion, the productivity of an employee depends on the conditions in which (cleanliness, fresh air, etc.), on what equipment, in what team he works, how much he can use his intellectual potential in the workplace, whether he has the ability to make decisions and managing people etc.

"The impact of changes in the macroeconomic situation (unemployment, restructuring of the national economy, general decline in production) on work motivation is important to study based on the complex structure of the motivational complex itself. We consider work motivation as a contradictory unity of three components: work values, work requirements and the ability to fulfill these requirements"¹⁸... There are many of these factors that affect the effectiveness of human resource management that must be considered by human resource personnel.

In our opinion, the system of personnel management indicators should be based on the theory of production factors. Labor productivity is the main indicator of personnel utilization and characterizes the profitability of the production of one employee. This indicator is calculated as a ratio of the company's annual income to the average annual number of employees. In this regard, in order to

¹⁶We find such a classification in particular in A. A. Frenkel. "Labor Productivity, Growth Modeling Issues". M.: Economy, 1984, p. 30.

¹⁷Sink SD Performance management: planning, measurement and evaluation, control and increase, M.: "Progres", 1989, p. 319.

¹⁸Katulski E. Motivation in the labor market. // Economic issues, No. 2, 1997, p. 93

determine the level of productivity, it is necessary to statistically measure the total income of the enterprise and the factors that influence it.

The coefficient of variation of the rate of growth of labor productivity, proposed by Prof. V. E. Adamov¹⁹, in our opinion, is an acceptable practical characteristic of efficiency, but in our research it cannot be applied, since this indicator characterizes the change in the rate of growth of labor productivity for two compared time periods, therefore, the model should include incremental indicators for productivity. However, if we compare the values of the performance indicators for a relatively short period of time (1-2 years), then many of the indicators change little or not at all (and with an increase equal to zero, it becomes impossible to determine the influence of the factor on the coefficient of variation of the rate of labor productivity).

In our opinion, the evaluation of the effectiveness of personnel management is based on the criteria expressed in objective indicators of production development, which are presented in table 7.

Table 5. Statistical indicators of the effectiveness of personnel management. Own

Analysis direction		Indicators
Indicators of economic efficiency	Labor productivity	Sales volume per employee and its dynamics;
		Profit before taxes per employee and its dynamics.
	Improving the quality of products, services	The number of complaints and their dynamics;
		The share of marriage and its dynamics.
	Staff expenses	Total costs of the company for personnel for the period;
		The share of personnel costs in the volume of sales and its dynamics;
		Costs per employee and their dynamics.
	Effectiveness of management programs	Costs for individual areas and programs of activities of personnel management services per employee;
		The effect of the impact of individual programs on the work of employees and the company as a whole;
Social Performance Indicators	Social-psychological climate in the team	Relationship with colleagues;
		Liaison with management;
		Relations with the public, customers;
		Alignment between organizational and personal goals.
	Level of staff satisfaction	Staff turnover and its dynamics;
		The level of absences;
		The level of conflict in the team;
		Number of employee complaints.

As an effective indicator characterizing the economic efficiency of personnel management, we consider it possible to take the average annual output per employee as the ratio of average annual sales

¹⁹ Adamov VE Kuznetsov VI Statistical study of labor potential in industry. M.: MESI, 1988, p. 35.

per unit to the average actual number of personnel (Yyr, in \$ / person). In favor of its choice is the fact that this indicator of labor productivity can serve as an intersectoral one for all enterprises, and the methodology for its calculation is generally accepted. This indicator does not reveal a complete picture of management effectiveness, although in general it can be used to characterize the effectiveness of personnel management.

As an effective indicator characterizing the social efficiency of personnel management, we will choose the turnover ratio (YKtek). This indicator reflects the dynamics of the company's personnel, and also acts as a factor indirectly affecting labor productivity. This is an indicator of well-being in the field of personnel management. If a firm has good performance but staff turnover is high, then the firm has low staff stability and given that high turnover can be costly to the enterprise, a closer analysis of the reasons why people leave the organization.

The turnover rate is calculated as the ratio of the number of voluntarily retired, dismissed due to absences and other violations of employee discipline for a certain period (in this case for a year) to the average number of employees during the year, in percentages;

The absenteeism rate is also an important indicator of the social effectiveness of personnel management, but it correlates with the turnover rate, since both phenomena are caused by the same factors. A high level of absence is a sign that increased liquidity is likely in the near future, so further statistical research is, in our opinion, sufficient to do with one of these.

We will form a system of private indicators of the effectiveness of personnel management based on the classification of factors given in Table 8.

Table6. The system of private indicators of the effectiveness of personnel management. Own

Analysis direction		Indicators
Indicators for staff composition	Composition by qualification	Average salary category of workers
		The share of employees with appropriate qualifications,%;
	Composition by education	Share of employed with: average; incomplete higher education; higher education, %
	Composition by gender	Share of men (women) in the total number of personnel,%;
	Staff composition by marital status	Share of married (unmarried) employees,%;
		Share of employees with children,%;
		Share of unmarried workers with children, %.
	Composition of employees by age	Share of employees aged: under 20 years; 20-35 years; 36-50 years; over 50 years of the total number of employed, %;
		Average age of employees, (years).
	Composition of employees by seniority	Average length of service in the company, (years);
		Share of employees employed in the company: less than 1 year; 1-3 years; 3-5 years; 5-10 years; over 10 years, %.
	The composition of workers for bad habits	The share of smokers in the total population,%;
		Proportion of employees who consume alcohol: less than 50 g/week; 50-200 g / week; more than 200 g / week in the number of personnel,%;
Social indicators	Payment standart	Average salary (euro);
		Salary delays, (days)
		Expenditure on social benefits and benefits, (euro);

		Average salary of managers (euro);
	The working conditions	Share of people working with harmful working conditions, %;
		Average area per worker, (m2);
		Incidence rate, (people);
		Social infrastructure maintenance costs, (euro);
		Expenses for payment of benefits and compensation for unfavorable working conditions, (euro);
Organizational and structural indicators	Staff composition by category	The share of the relevant category in the total number of personnel,%;
		The number of key employees per employee to the management apparatus, (people);
		The share of employees in the management apparatus in the total number of personnel,%.
	Staff	Number of staff, (people);
		Number of vacancies, (units);
		Number of applicants for one vacancy, (people).
	Working hours	The share of employees working on a flexible schedule in the total number of personnel,%;
		The duration of the working day, (hours).
	Use of personnel	Employee utilization rate,%;
		Stay, (hours);
		Average time spent by employees commuting to and from work, (hours).
Staff development indicators	Vocational training statistics	Share of employees who underwent professional training during the period, %;
		Share of hours spent in professional training in the total balance of company time, %;
		Average number of hours of professional training per trainee, (hours);
		The cost of professional training (Euro).
	Improvement of qualification	The share of employees who increased their category during the reporting year in the total number of personnel at the end of the year,%;
		The share of employees who acquired new specialties during the reporting year, in the total number of personnel at the end of the year,%;
		Share of managers who upgraded their qualifications during the reporting year, in their number at the end of the year, %;
		Coefficient of internal mobility,%.

Now let's move on to justifying the factor indicators of personnel management effectiveness that should be included in the regression model. This stage in the literature is considered one of the most difficult and important stages of model building.²⁰...

Based on the system of specific indicators shown in Table 9, select the indicators to be included in the regression model.

²⁰Smirnova N.V. Economic and statistical analysis of the state of personnel and the effectiveness of the use of personnel in retail trade. // Abstract of the dissertation for the scientific degree candidate of economic sciences. L.: 1990.- 12 p.

Table7. Private indicators of personnel management effectiveness included in the regression model.
Own

No.	Name of the indicator	unit	Characteristics of the indicator
	I. Staff composition indicators		
X1	Average salary category of workers		Qualification of personnel
X2	Share of employees with higher education		The mind of the workers
	Share of women in the total staff	%	
X3	Share of unmarried workers		Personnel potential
	Share of unmarried workers with children	%	Personnel potential
X4	Average age of employees	%	
X5	Average length of service in the company		Personnel potential
	Share of smokers in the total population	%	Personnel potential
X6		years	Staff stability
X7		years	Personal qualities of employees
X8		%	
	II. Organizational and structural indicators		
X9	The share of employees of the management apparatus in the total number of personnel	%	Staff structure
X10	Number of staff	the people	Company size
X11	Share of employees working on a flexible schedule in the total number		
X12	Working hours	%	Consideration of employee interests
X13	Employee utilization rate	hour	Use of personnel
X14	The average time employees spend traveling to and from work	%	Content of work
		hour	Consideration of employee interests
	III. Staff development indicators		
X15	Share of employees who completed vocational training during the period	%	Improving skills
X16	The share of employees who advanced during the period in the number of employees	%	Career perspective
X17	Coefficient of internal mobility	%	Career perspective

	IV. Social indicators		
X18	average salary	scrub	Payment standart
X19	Costs for additional social benefits and benefits	scrub	Structure of staff income
X20	Average salary of managers	scrub	Differentiation in pay
X21	Share of workers with harmful working conditions	%	The working conditions
X22	Area per worker	m2	The working conditions

The formed system of indicators allows, by building a multi-factor regression model, to determine the degree of influence of each factor indicator on the effectiveness of personnel management as a whole, in order to identify the most significant of them. With its help, you can analyze and compare the results of your activities with competitors and lay the foundation for planning such indicators that will ensure the necessary level of competitiveness.

Chapter 3. STATISTICAL STUDY OF PERSONNEL MANAGEMENT EFFICIENCY

Building regression models of personnel management effectiveness

Communication models describe real, objectively existing causal relationships between socio-economic phenomena that arise under the influence of multiple external and internal factors.

"Modeling based on regression equations can be reduced either to the construction of a single equation with the inclusion of a large number of factor signs, or to the construction of a system of equations. In the latter case, a system of statistically unrelated equations is obtained, but the entire system is connected by a single chain of causal relationships." ²¹

An important stage in the construction of a communication model is the selection of factor signs. This is due to the fact that the factors that determine socio-economic processes are in one way or another dependent on each other. The task of building a regression model is not only to correctly determine the set of factors that influence the modeled indicator, but also to include in the model, as far as possible, unrelated factor signs.

After the differential indicator of the effectiveness of personnel management has been selected, the most significant factors affecting its level have been identified, the source data have been cleaned of unusual observations, the prerequisites for the occurrence of the phenomenon of multicollinearity should be checked. This phenomenon often poses a tangible threat to the correct identification and effective assessment of relationships ²²...

To reveal this effect, in our opinion, it is advisable to use a method based on the analysis of paired correlation coefficients.

For this purpose, it was created using the MESOSAUR package ²³, correlation matrix.

²¹ Korolev Y.G., Rabinovich P.M., Shmoilova R.A. Statistical modeling and forecasting, M.: MESI, 1985, -p. 20.

²² Frenkel AA gives three reasons for the danger of the multicollinearity phenomenon and several basic methods for its identification, "Labor productivity, problems of growth modeling." M.: Economy, 1984, -p. 66.

The analysis of the matrix of double correlation coefficients calculated for factor indicators for 1997 showed the presence of collinear factor indicators, namely the indicator X1 (category average salary) has a strong functional relationship with the factor indicator X18 (average monthly salary), indicator X4 (the share of non-member married workers) has a strong functional relationship with the factor X5 (the share of unmarried workers with children), the indicator X15 (the share of employees who received vocational training during the period) has a strong functional relationship with the coefficient X16 (the share of employees released during period, in the total number of personnel). The strong relationship between these indicators is logically easily explained.

Two indicators are considered to be collinear if the correlation coefficient of the pair is not less than /0.8/.

Thus, to eliminate multicollinearity, we will include one of the representatives of these groups in the regression model. For this, we left X18 in the regression model, because by changing the average monthly salary, in our opinion, it is possible to influence the effective indicators of the effectiveness of personnel management, as well as X4 and X16, since these indicators have a stronger relation to the effective indicators of the effectiveness of personnel management. ...

After the selection of factors affecting the effectiveness of personnel management has been made at the stage of a priori analysis and the form of communication has been determined, after which the initial statistical information has been collected and analyzed, you can proceed directly to the construction of an efficiency model. of personnel management.

To build models of the effectiveness of personnel management, a multistage regression analysis was used, based on the elimination of insignificant factors by means of the Student's t-test.

This criterion is used to test the hypothesis whether the regression coefficient is significantly different from zero \square at some given significance level ϵ , which indicates the probability of rejecting the correct hypothesis. Also, the lower the significance level, the lower the probability indicated. In our study, we take $\epsilon = 0.05$. Calculations were performed using the MESOSAUR package.

The output per employee and the staff turnover rate (Ktek) were taken as indicators of the effectiveness of personnel management. The generation was simulated using the nineteen factors chosen in §2.2.

The calculations were performed on data for 1997 for a homogeneous population consisting of 50 divisions of the company. The results of the multistage regression analysis in the construction of a model for the effectiveness of personnel management are given in Appendix IV.

After filtering out statistically insignificant factor indicators, the multiple regression equations for the models of staff turnover and output per employee are as follows:

$$YK_t = 11.327 - 1.5226 X_7 - 0.013326 X_{11} + 0.06907 X_{13} - 0.0011371 X_{18};$$

$$YEx = 13840 + 1878.7 X_7 + 40.945 X_{11} + 67.583 X_{13} + 3.1147 X_{18}.$$

Statistical testing showed the adequacy of the models. The calculated F-Fisher criterion value for the yield coefficient model is 21.536 and for production is 39.383, with the tabulated value for Ktek and production $F_{cr.}(0.05; 5; 50) = 2.42$.

The multiple correlation coefficient for Ktek and output is 0.8425 and 0.9041, respectively, indicating that these factor indicators are relatively closely related to the effective indicator.

The coefficient of multiple determination R^2 , equal to 0.7099 and 0.8174, respectively, shows that the variation of the effective indicator in the studied set of units by 70.99% and 81.74% is the result of the variability of all factor indicators, included in the model.

Let's move on to the economic interpretation of the models using a system of appropriate coefficients.

The coefficients of the linear multiple regression equation (\square_i) show the degree of influence of

the factor X_i on the analyzed indicator Y (with the influence of other factors included in the model and the average level of influence of the unreported factors fixed at a constant level). The regression coefficient interpreted in this way is used in economic and statistical analysis as an average estimate of the effectiveness of the influence of the i th factor-argument on the function.

Calculations for the group of considered enterprises showed that the factor indicators turned out to be the most significant for production:

X_7 is the average length of service in the company in years;

X_{11} is the share of employees working in the mode of cumulative working day, in the total number of personnel, in percentages;

X_{13} is the staff utilization rate, in percent;

X_{18} is the average monthly salary in euros.

In accordance with the obtained regression equation, the following conclusions can be drawn: the direction of influence of the factors included in the model does not contradict the economic meaning. With an increase in the average length of service of employees for 1 year, production increases by \$ 1878.7, with an increase in wages by 1 ruble. it increases by \$ 3.11, with an increase in the rate of staff utilization by 1% - by \$ 67.58, with an increase in the share of employees working in the cumulative working day mode in the total number of staff by 1% - with \$40.95.

The calculations showed that the most significant factor indicators for turnover were the same as for production.

The direction of influence of the factors included in the model does not contradict the economic meaning. With an increase in the average length of service of employees by 1 year, the turnover rate decreases by 1.5226%, with an increase in wages by 1 ruble. decreases by 0.0011%, with an increase in the staff utilization ratio by 1%, increases by 0.06907%, with an increase in the share of employees working in the cumulative working day mode in the total number of staff by 1%, decreases by 0.0133%.

The direct comparison of the regression coefficients in the multiple regression equation gives an idea of the degree of influence of the factor indicators on the effective indicator only when they are expressed in the same units and have approximately the same variability. For this purpose, some economists suggest using a whole system of indicators: average frequency coefficients of elasticity, beta coefficients and delta coefficients²⁴...

For this study, we propose to use the average partial elasticity coefficient²⁵... It allows you to measure in percentage the change in the effective indicator with an increase in each factor with the same relative value - by 1%. This interpretation is very convenient and understandable for any economist. However, we must not forget that the average frequency coefficient of elasticity does not take into account the degree of variability of the factors.

To eliminate measurement differences and the degree of variability, you can use another indicator - the beta coefficient. However, for this study, in our opinion, it is sufficient to estimate the model using the average frequency coefficients of elasticity (E_i).

The elasticity coefficients are expressed with the following values:

- for the production model:

$E_7 = 0.136$; $E_{11} = 0.088$; $E_{13} = 0.0852$; $E_{18} = 0.171$;

- for the yield rate model:

$E_7 = -1.277$; $E_{11} = -0.159$; $E_{13} = 0.295$; $E_{18} = -0.494$.

Among the factors included in the regression equation, the greatest influence on the indicator of effective output is the average wage (an increase of 1% would lead to an increase in output of 0.171%)

²⁴ Frenkel AA "Labor Productivity, Growth Modeling Issues". M.: Economy, 1984, p. 87.

²⁵ This coefficient is calculated according to the method described in the textbook "Statistics", ed. Ionina VGM: "INFRA-M", 1997, p. 136.

and the average length of service of employees (an increase of 1% would lead to an increase in production by 0.136%) ... An increase in the rate of staff utilization and the share of employees working in the cumulative working day mode in the total number of personnel by 1% would lead to an increase in production by 0,0852% and 0.088% respectively.

For the constructed regression model for the turnover ratio, the average seniority of the employees turned out to be a significant (significant) factor indicator (its increase by 1% would lead to a decrease in turnover by 1.277%). A 1% reduction in wages would increase turnover by 0.494%. A 1% increase in utilization will result in a 0.295% increase in turnover. If the share of employees working in the mode of cumulative working day in the total number of personnel increases by 1%, the turnover will decrease by 0.159%.

In this way, we identified the main factor indicators that influence the effectiveness of personnel management in the studied company. They should be the focus of your attention first. Their change (with the exception of the factor indicator X7 - the average length of service in the company) largely depends on decisions in the field of personnel management and is not related to significant capital investments.

It should be remembered that the model allows you to establish only the level of the studied indicators corresponding to the selected factors. But since it is practically difficult to isolate all factors affecting the effectiveness of personnel management, the deviations of the actual values of the analyzed indicators from the calculated ones can be explained by the action of unreported factors. Including more factors in the model significantly improves its adequacy.

In addition, these models are statistical, that is, when constructing them, the time factor is not taken into account. Therefore, spreading the patterns established using these models over long periods of time will yield large extrapolation errors (since the shape and direction of the relationship may change). The predictive properties of regression models are manifested only under certain conditions and cannot be extended even to phenomena of the same type that occur under different conditions.

Evaluation of the correlation between the performance indicators of personnel management using non-parametric methods

Unfortunately, correlation and analysis of variance methods are not universal; they can be applied if all the factors studied are quantitative. Meanwhile, when statistical evaluation methods are used, you have to face the problems of measuring the relationship between qualitative characteristics, to which parametric methods of analysis in their usual form are not applicable. The needs of social practice require the development of methods for the quantitative description of social processes, which allow accurate registration of not only quantitative but also qualitative factors.

Statistical science has developed non-parametric methods with which it is possible to measure the relationship between phenomena without using the quantitative values of the attribute and, therefore, the parameter of the distribution. When studying the degree of closeness of the relationship between qualitative signs, each of which is represented in the form of alternative signs, it is possible to use tetrachoric indicators. The calculation table consists of four cells (marked with the letters a, b, c, d), where each of the cells corresponds to a known alternative of the two signs.

For this type of tables, a number of indicators have been built: the Yula association coefficient²⁶:

$$K_A = \frac{ad-bc}{ad+bc}, (3.7)$$

In cases where one of the indicators is missing, the value of Yule's coefficient of association (CA) will inadequately reflect the estimate of the degree of closeness of the relationship between the traits; in these cases, the Pearson coefficient should be used, bearing in mind that its value is slightly underestimated compared to the association coefficient:

$$K_K = \frac{ad-bc}{\sqrt{(a+b)(c+d)(a+c)(b+d)}}, (3.8)$$

where a, b, c, d is a well-known alternative to both features.

This method, in our opinion, is most suitable for studying the closeness of the relationship between factor indicators, such as: availability of food, chemical exposure, occupational noise, additional benefits and an effective indicator - turnover rate. As well as a factor indicator: presence of a mini laboratory and an effective indicator - average income of the unit.

Let's summarize the known alternatives to the indicators listed in Tables 18-20:

Table8. Distribution of branches by availability and revenue of minilab. Own

Average income per unit	Availability of minilab (chemical attack, industrial noise)		
	there is	No	Total
Above average	24	4	28
Below average	nine	13	22
Total	33	17	50

Table9. Distribution of branches according to availability of minilaboratories, benefits and turnover. Own

Debit	Availability of minilab (chemical attack, industrial noise)			Additional benefits		
	there is	No	Total	there is	No	Total
Above average	6	4	ten	-	ten	ten
Below average	27	13	40	17	23	40
Total	33	17	50	17	33	50

Table10 Distribution of branches by food availability and percentage of turnover

Debit	Availability of food at reduced prices		
	there is	No	Total
Above average	3	7	ten
Below average	17	23	40
Total	20	thirty	50

After substituting the frequency values in formulas 3.7 and 3.8, we get:

$$K_A^{\text{ТЕКПИТ}} = - 0.266;$$

$$K_A^{\text{ДОХЛАБ}} = 0.793;$$

$$K_A^{\text{ТЕКХИМ}} = - 0.161;$$

$$K_K^{\text{ТЕКЛЬГОТЫ}} = - 0.359;$$

Where- Yule's association coefficient of the effective turnover indicator and the factor indicator - availability of meals at reduced prices; $K_A^{\text{ТЕКПИТ}}$

$K_A^{\text{ТЕКХИМ}}$ - the association coefficient for the effective index of the fluidity coefficient and factorial - the presence of chemical action;

$K_K^{\text{ТЕКЛЬГОТЫ}}$ - Pearson's contingency coefficient for the effective turnover indicator and factorial - presence of additional benefits;

$K_A^{\text{ДОХЛІАБ}}$ - the association coefficient for the effective indicator - average unit income and factorial - presence of a mini laboratory.

The relationship is considered confirmed if $K_A \geq 0.5$ and $K_K \geq 0.3$. The values of the coefficients of associations and conditionalities correspond to the average size of the relationship, and according to the results obtained, we can talk about the presence of a significant direct relationship between such indicators as the average income of the unit and the presence of a mini laboratory, as well as the inverse relationship between such indicators as the presence of fringe benefits and turnover rates. staff. The relationship between the effective indicator of turnover and the factor - presence of chemical exposure and nutrition - has not been confirmed.

The analysis of the proximity of the relationship between quantitative and qualitative characteristics has some features, provided that the values of these characteristics can be ordered or ranked according to the degree of decrease or increase of the characteristic. The measurement of the relationship between the ranked features is done using the Spearman (ρ) and Kendall (τ) rank correlation coefficients. The method of calculating these coefficients is well understood.²⁷... So the tightness of the relationship between features, assessed by the Spearman rank correlation coefficient, can be calculated by the formula:

$$\rho = 1 - \frac{6 \sum d^2}{n(n^2 - 1)}, (3.9.)$$

where d is the difference between the ranks of features X and Y ;

n - the number of observed units.

Kendall proposed another indicator for measuring correlation, also using feature ranks:

$$\tau = \frac{2 \sum (Q - P)}{n(n - 1)}, (3.10)$$

where P is the number of cases when the rank of feature Y in subsequent observations is less than that of the given one;

Q - the number of cases when the rank of feature Y in subsequent observations is greater than that of the given one.

Both rank correlation coefficients are used to solve the same problems. It should be noted that for sufficiently large n between the values of the rank coefficients the ratio $\rho/\tau = 2/3$. Additionally, the Kendall coefficient τ can be used in multivariate analysis.

In this way, we will examine the relationship between living conditions, relationship with colleagues, relationship with manager and labor productivity. Let's rank the values of the studied indicators. After the relevant calculations, we get the following values of the coefficients:

$$\rho_{\text{ВЫР}_{\text{БЫТ}}} = 1 - \frac{6 * 9430}{50(50^2 - 1)} = 0,547$$

$$\tau_{\text{ВЫР}_{\text{БЫТ}}} = \frac{2 * (839 - 386)}{50(50 - 1)} = 0,37$$

$$\rho_{\text{ВЫР}_{\text{КОЛ}}} = 1 - \frac{6 * 4566,5}{50(50^2 - 1)} = 0,781$$

$$\tau_{\text{ВЫР}_{\text{КОЛ}}} = \frac{2 * (979 - 246)}{50(50 - 1)} = 0,598$$

Based on the obtained results, it can be argued that the value of the Spearman coefficient indicates the existence of a direct relationship between living conditions and labor productivity, which is a practical confirmation of motivation theories. Kendall's coefficient also shows a direct relationship between signs, although less pronounced.

We identified a fairly significant relationship between the studied factors and effective indicators

²⁷Theory of statistics, // ed. Shmolova R.A. - M.: Finance and Statistics, 1996, pp. 282-289.

of the effectiveness of personnel management. Indicators from the sphere of personal contacts and relationships, such as relations with colleagues and with management, are particularly interesting, as they directly depend on the actions of direct managers, on how well they select personnel and organize work in the departments entrusted to them. . Based on this, we can say that they characterize the internal climate of the team and, in particular, the effectiveness of personnel management. Therefore, in order to achieve high efficiency of personnel management, not least the listed factor indicators should be taken into account.

Thus, within a certain framework, the model can replace the studied system in the course of computational experiments, the purpose of which is to clarify a possible picture of future development and predict the values of some variables depending on changes in others.

Methodology for the economic justification of measures to improve the personnel management system

In the previous paragraphs, we identified the most significant factors affecting the effectiveness of personnel management, we will consider each of them in more detail. The most significant factor, according to the statistics obtained in §3.2, is wages. The importance of this factor is also confirmed by the results of a sociological survey conducted by the Labor Research Institute²⁸, according to which 55.5% of men and 50.4% of women, as well as 60.7% of persons aged 25-29 define this factor as the most significant in the motivation mechanism²⁹...

The analysis of business practices showed that in the skillful use of various forms of incentives there are huge reserves for the growth of the effectiveness of personnel management.

Thus, the main factor affecting the effectiveness of personnel management is economic methods of motivating employees. Let's look at the most common methods of material incentives.

The traditional system of compensation is described in sufficient detail in the economic literature³⁰, as well as for a long time and successfully used in local companies, is therefore not of great interest to us. In our opinion, special attention should be paid to non-traditional methods of compensation. Because it is they who are able to make employees perform the real actions that are most useful for the company.

Non-traditional methods of compensation are characterized by variability due to the influence of various factors, primarily the results of the employee's activity.

Currently, the company is dominated by piece-rate wages for workers involved in the production process and an occasional form of pay for service personnel. The advantages and disadvantages of these forms of payment are well known, in the first case the quality of the work performed suffers, in the second case the employee is not interested in the result of his activity.

Thus, in order to increase material incentives for staff motivation, in our opinion, it is necessary, first of all, to increase the use of variable pay systems and group forms of pay, as well as increase their share in the total income of workers.

It should be borne in mind that "the nature and value of wages have a direct impact on a firm's ability to attract, retain and motivate the staff it needs"³¹...

The compensation system must be competitive with respect to the category of workers required by the firm. Wages should orient workers to the actions that are needed by the company. The remuneration system must be understandable to every employee in order to avoid an inadequate response of the staff, be easy to administer and also not contradict the requirements of the law. But at the same

²⁸ Travin V.V., Dyatlov V.A. Basics of personnel management, M.: "Case", 1997, p.118, table 4.1.

²⁹It should be noted that an increase in the income of workers can lead to a decrease in the role of this factor.

³⁰Muhambetov T. I. Motivational mechanism of labor management. - Alma-Ata: Gulym, 1991, - p. 86.

³¹SV Shekshnya Personnel management of a modern organization, M.: "Intel-Sintez Business School", 1997, p. 258;

time, it must correspond to the company's income, since unreasonably high wage costs can negatively affect the company's activity. Since personnel costs are the main expense for most businesses, managing them effectively is critical to the overall success of the company.

The choice of compensation methods for a specific company is determined by a number of factors - development strategy, state of the external environment, organizational culture and traditions. Having a clear understanding of compensation objectives enables company leaders to design an effective system that meets the real needs of the company, as well as to evaluate its performance and make necessary adjustments.

Thus, taking the above into account, we suggest using a mixed pay system as compensation. One part of each employee's remuneration depends on his individual characteristics, the official salary with additional benefits (food and travel subsidies) totaling at least 40% of the salary (while subsidies can be up to 50%). Another part is from the results of the group's work, i.e. premiums up to 60% of the amount due.

We propose to add the amount of the bonus from the following components: remuneration proportional to the volume of work performed (for employees of the sales department - commission) - 70% of the total bonus, and remuneration determined by the results of the work of the entire division - up to 30% of the bonus. This ratio makes it possible to motivate employees as a result of their work, while providing stable income during the seasonal downturn in the industry, and also focuses on teamwork, thus strengthening interpersonal relations.

As a commission, in our opinion, it is advisable to use:

- Fixed amount of money for each sold item in the list. This method focuses on the implementation of the maximum number of goods that should be promoted on the market, for this a list of several items is made (there should be no more than 10-15 of them, for better perception by employees), the lists are adjusted as necessary.

- Fixed percentage of sales volume. This method motivates sellers to increase sales volume.

The essence of remuneration based on the results of the work of the department is to determine a single fund for salaries of employees of the department, provided that this team performs certain production tasks. The use of reward systems based on the results of the work of a structural unit allows you to combine the financial interests of each employee with the goals of the unit. As a reward determined by the results of the work of the entire division, we propose to use:

- Payment of a fixed percentage of base salary upon completion of the performance plan. This method encourages employees to implement the plan, which ensures the stability of the entire company.

- Payment of interest based on the performance of the unit. A performance-based reward system links individual employee compensation to company-wide performance.

Also, as a methodology for calculating the income of an individual employee, you can apply the distribution of profits according to the Scanlon, Rucker or "Improshare" system.³²...

But whatever the compensation system is, it must first of all be well thought out and tested. And as practice shows, an effective sales promotion system should be:

- ordinary;
- comprehensible to those for whom it is intended and to those who manage it;
- targeted, i.e. aimed at achieving the goals set by the company;
- flexible ie open to changes and corrections;

³²SD Performance management: planning, measurement and evaluation, control and improvement, M.: "Progres", 1989, p. 332.

- self-sustaining³³...

Also, according to the results of the analysis carried out in §3.2, a significant influence on labor productivity of such a factor indicator as the average length of service in the company or the turnover rate (in the first version of the regression equation) was revealed. These factors refer to unregulated indicators, so they can only be influenced indirectly.

We believe that it is advisable to use economic methods, such as additional pay for seniority, to increase the average length of service in the company and therefore to reduce turnover. However, in our opinion, it is more profitable for the company and efficient for the staff to use not salary bonuses, but a bonus at the end of the year; this type of bonus is widely used in local enterprises "before perestroika" under the name "thirteenth salary".

So receiving a lump sum commensurate with basic income is perceived by workers as more significant than the same amount paid to them as a bonus to wages throughout the year, in which case the bonus would lose its primary meaning and regarded as a simple increase in salary. For the company, this type of bonus is also useful, because money is not withdrawn from circulation throughout the year, and therefore you can get more income.

It should be noted that economic approaches to motivation are not always effective, these aspects are described by us in §2.2. in various theories of motivation.

The presence of such a factor as the possibility for employees to choose their own work schedule, taking into account their individual characteristics, has a positive effect on labor productivity. This is confirmed by the data from the research conducted in §3.2. So, the share of employees working in the aggregate working day regime in the total number of personnel has a significant impact on both labor productivity and turnover.

"Scheduling can be an effective means of controlling labor costs."³⁴... Based on this, we propose to introduce flexible working hours into practice.

However, flexible working hours mean that workers can choose their start and finish times within the limits set by the line manager. So, depending on the economic activity during the day, week and month, employees, agreed with the administration, can choose the start and end time of work every day. At the same time, the length of the working day is variable, given that a total of 160 working hours must be released for full-time employees in one month, but no more than 200 (regulated by the Labor Code).), the mandatory attendance time set by the manager must also be taken into account for all employees.

The following types of flexible schedules are described in the literature:

- flexible cycle, when the employee chooses the start and end time of work, as well as work according to this schedule within a certain period of time;
- sliding schedule, you are allowed to change the start and end time of work, but at the same time work full time;
- variable day, "debit and credit" working hours allowed on a 40-hour work week;
- compressed work week, a work schedule in which there is an exchange between the number of hours worked per day and the number of working days in the week;
- very flexible working hours, "debit and credit" hours are allowed, but daily attendance at common time is required;
- flexible arrangement, the employee can change not only the working hours, but also the place of work³⁵...

³³SV Shekshnya Personnel management of a modern organization, M.: "Business school" Intel-Sintez ", 1997, p. 269.

³⁴SV Shekshnya Personnel management of a modern organization, M.: "Intel-Sintez Business School", 1997, p. 255.

³⁵Ivantsevich JM Lobanov AA Human Resources Management, M.: "Delo", 1993, pp. 263-264.

We offer, according to the specifics of the work (mandatory presence of at least one employee throughout the 12-24 hour working day), a variable working day, as it is tailored to a greater extent to the specifics of the company's work, allowing the release of personnel in periods of a seasonal economic downturn, which significantly reduces personnel costs.

You should also take into account the methods of optimizing the number of personnel.³⁶ such as transferring part of the employees to a shorter working day or dividing the work, this allows you to avoid redundancies, preserve the skills acquired by employees, while reducing personnel costs, this method also fits well with a flexible schedule, under the form of a variable day, as well as the provision of unpaid leave, although this method, in our opinion, is more demoralizing to the workers.

Flexitime programs are associated with increased productivity, improved morale, and the benefits of lower overtime costs due to less absenteeism. It also increases employee satisfaction with their schedule and, as a result, increases the efficiency of the return on the hours the employee spends in the enterprise, and reduces turnover and related costs.

However, many managers avoid the introduction of flexible working hours, as this is associated with an increase in the load directly on them, since their responsibilities, in addition to the main work of planning and coordinating production, include additional balancing of work schedules, ensuring employees with some schedule flexibility, planning actions for the future. Building such flexible systems requires a lot of cooperation and agreement between management and workers. Such an agreement can only take place if all the details and subtleties of each of the newly adopted alternative schedules are well clear and understood.

Another factor that significantly affects the effectiveness of personnel management according to the calculations in §3.2 is the degree of personnel utilization. It is known that the costs related to the use of labor for many companies are quite a significant part of the production costs. This determines the identification and use of reserves to save human resources.

Obviously, the company is interested in the fuller use of the maximum possible fund of working time by reducing downtime, on the amount of which the management of the company can have a purposeful influence. In particular, taking into account the losses of working time allows us to give a generalized assessment of the labor intensity of workers: the less different types of losses will occupy the structure of working time, the higher the labor intensity will be.

It is not difficult to identify such work items by analyzing the data from the reporting balances of working hours and comparing such balances for the estimated time periods, as well as comparing the available data on the state of the workforce. use in separate divisions of this company.

Due to the lack of sufficiently reliable information about the use of working time, it is necessary to resort to specially organized surveys. For this purpose, you can use the method of photographing the working day (FRD), in such observations during the work shift only work breaks are recorded, or, as a variant of this method, the selfie of the working day (SFD), when the registration of work breaks is entrusted to the employee himself. "In this case, the costs of organizing observations are minimal, but the danger of obtaining unreliable results is quite high."³⁷...

But the data obtained in the results of the application of FDD and FDF, as a rule, contain some errors of both random and systematic nature, the magnitude of which is quite difficult to objectively estimate.

For our research, we propose to use the SFDD method, in favor of this method is its profitability from the point of view of the organization and satisfactory results (due to the specificity of the activity of a commercial-manufacturing company, an accuracy with an error of 30 minutes is sufficient), even

³⁶This is especially true during economic crises such as August 1998.

³⁷Economics and statistics of companies // ed. S. D. Ilenkova. - M.: "Finance and Statistics", 1996, p. 113;

taking considering all errors.

To increase the accuracy of observations, it is necessary that the subjects themselves are interested in the results, in this regard, the work of lower-level managers is necessary to explain the importance of this event.

Also, the results obtained by the employees themselves (this applies to a greater extent to the employees of the sales departments) can be monitored using the tape of the cash register, which shows the time of all payments.

Thus, having relatively reliable information about the specifics of the work of each department during the period, it is necessary to carry out work on the distribution of employees by branches to equalize the degree of staff utilization. Here, in our opinion, it is also necessary to implement staff rotation between different industries during the season, which will allow to equalize the level of staff utilization in the context of seasonal fluctuations in the economic activity of the industry.

In order for this event to be more successful, it is necessary to motivate economic employees to acquire new knowledge about the specifics of the work of different industries, for this purpose it is recommended to introduce additional payment for competencies. The amount of the knowledge bonus, in our opinion, should be 5% of the employee's total income.

Labor content is one of the components of the labor potential of the enterprise, which characterizes the ability of workers to work. Therefore, the more accurate the labor content assessment statistics will be at this stage of the company's development, the more accurately the real ability to work will be taken into account and, therefore, the higher the effectiveness of personnel management, in particular and the entire enterprise as a whole.

It is also possible to combine the introduction of a flexible schedule and a staff rotation system, since both events are similar in their internal content, for these purposes, cooperation between line managers is necessary, which will reduce the costs of organizing these actions.

The intangible aspects of employment also have a significant impact on labor productivity and turnover. The importance of such social factors as relations with colleagues in the workplace and relations with the administration is increasing, which means that the need for an integrated approach to compensation, the introduction of a "compensation package" that includes all aspects of the employee's relationship with an organization³⁸...

To improve the situation in this area, more in-depth work is needed by direct managers, in the selection of personnel and educational work in the team, it is also possible to offer joint events, such as free one-day vouchers, holding banquets dedicated to the day on the foundation of the company. Line managers should also keep track of their subordinates' birthdays. All this will allow employees to feel their importance to the company and therefore they will strive to stay with this company, which will ultimately affect the company's revenue.

Living conditions play an important role in staff motivation. So, according to sociological research conducted by the Labor Research Institute³⁹ 52.9% of men and 59.2% of women, including 65.7% of 25- to 29-year-olds, noted comfort motivation as a priority.

Particular attention should be paid to environmental factors affecting health and safety. Undoubtedly, the most decisive factor is the professional nature of the work, determined by the production and technological working conditions in the enterprise. So in the field of photography services we have to deal with factors like chemical influences. Short-term and long-term exposure to polluted air and chemicals is a growing problem.

In the technological process of processing photographic materials, formaldehyde is used, which provokes the development of dermatitis, allergic lung diseases, lung cancer is possible.

³⁹Travin V.V., Dyatlov V.A. Basics of personnel management, M.: "Case", 1997, p.118, table 4.1.

The specifics of the work of laboratory assistants and sellers implies a lack of movement and, as a result, hemorrhoids, varicose veins and other diseases associated with insufficient blood circulation.

In units with the presence of mini-photo laboratories, an increased level of noise is also observed, which affects hearing loss and the increased possibility of stressful situations.

There are many preventive measures to improve living conditions and work safety. One of them is the establishment of appropriate engineering support in the workplace. The purpose of this event is to make work more convenient and less tiring.

Such activities include: equipment for local ventilation, especially for units with a mini-photo laboratory, organization of the removal and processing of waste chemicals, equipment, if possible, of plumbing communications. It is important to ensure normal climatic conditions (for this purpose it is necessary to equip it with a fan in the summer and a heater for the winter season), this is especially true in small isolated branches that do not have central heating, the calculation in general and, if necessary, local lighting in compliance with established standards.

Another approach to improving occupational safety is through safety training and incentive programs. This area includes the organization of breaks (for example, a 5-minute break with an interval of 1 hour), they not only help to relieve psychological stress, but also perform industrial gymnastics.

But not everything depends only on the organization of events, so JM Ivantsevich and AA Lobanov note that "the most important factor is the attitude of workers to safety and health conditions. It ranges from extreme concern for security and cooperation with regard to relevant programs to complete apathy. If the workers are apathetic, then a good safety program established by the employer and the strictest government inspection will not succeed."⁴⁰...

Thus, ensuring the effectiveness of programs to improve living conditions and safety measures also depends on lower-level managers, they must educate staff on the importance of the measures taken, interact with specialists who can help them to reduce the number of accidents and occupational diseases. Writing relevant reports and reports is another way to involve line managers in the overall effort.

However, it should not be forgotten that unreasonably high costs led to the bankruptcy of many organizations. Thus, HR managers should not forget about the costs associated with improving working conditions - the corresponding costs should be justified by increased efficiency.

All measures to improve the company's activity are reflected primarily in the growth of its profits. We believe that they will be effective only if the growth rates of the main indicators of the enterprise's activity (such as profit, labor productivity, indicators of the quality of goods and services, etc.) outpace the growth rates of investments in them.

The characteristics of the manifestation of the effectiveness of management development in the field of personnel management require the use of various methods for calculating the economic effect with unified principles of approach to the calculations themselves.

The principles of economic justification of measures in the field of personnel management include:

- taking the time factor into account when determining costs and benefits;
- considering the costs and benefits of the decisions taken, starting from the development and reaching the consequences of their use;
- application for calculation of systematic, integrated and other scientific approaches to management;
- ensuring the comparability of options in terms of volume, time, quality, methods of obtaining initial information, conditions for applying (using) calculation options;
- providing multivariate (at least three) management solutions. It is accepted for

⁴⁰Ivantsevich JM Lobanov AA Human Resources Management, M.: "Delo", 1993, p. 241.

implementation (implementation) a variant that qualitatively fulfills the set tasks with minimal costs.

So the complexity of evaluating the effectiveness of personnel management allows us to draw a certain conclusion. First, you need to study the output requirements of the system ie. to evaluate the actual effectiveness of personnel management using a system of relevant indicators. Next, you need to study the influence of the external environment on the quality of the system's functioning, i.e. the factors affecting the effectiveness of personnel management, the quality of entry, i.e. the effectiveness of the operation of the own personnel management services to take measures to ensure the consistency of input and output evaluations Last but not least, measures should be taken to ensure consistency between input and process evaluations, i.e.

Thus, the chain of analysis and ensuring the effectiveness of personnel management is as follows: output - external environment and input - process in the system. In the same sequence, it is necessary to invest in ensuring the effectiveness of personnel management.

The economic justification of measures to improve the personnel management system has its own characteristics, we propose to determine the expected economic effect of the development and implementation of measures to improve the quality of the personnel management process according to the following formula:

$$\mathfrak{E}_{T.\text{np}} = \sum_{t=1}^T \sum_{k=1}^{N_k} \left(\sum_{i=1}^{n_i} (W_{tki} - \Delta 3_{tki}) - \sum_{j=1}^{n_j} 3_{tkj} + \Delta 3_{kT}^{\text{co}} - 3_n^{\text{koHTP}} \right) - \sum_{k=1}^{N_k} 3_k^{\text{co}} \pm \sum_{t=1}^T \mathfrak{E}_{\text{co}}^t, \quad (3.11)$$

where $\mathfrak{E}_{T.\text{pr}}$ is the expected economic effect of the development and implementation of measures to improve the quality of the personnel management process for the period of their action (T);

n - the number of departments participating in the implementation of measures to improve the quality of the personnel management process;

W_{tki} - production of the i -th employee in the k -th department in the year t ;

$\square Z_{tki}$ - the absolute difference in costs for the i -th employee in the k -th unit, when switching to a new compensation system in year t ;

T_{kj} - expenses for the j th head of the k th department in year t ;

$\square G_{oitert}$ - the absolute difference in staff training costs, as a result of changes in staff turnover in the k -th department in year t ;

Z_{ncontr} - costs for organizing measures to determine the degree of staff utilization in the k th department in year t ;

Z_{ksoc} - expenses for improving the level of living conditions and labor safety in the k th division;

E_{tcop} - accompanying environmental or social effect (damage) in monetary terms from the implementation of measures to improve the level of living conditions and labor safety in year t . Such an effect can occur, for example, when compensating the content of precious metals in waste from film and photo production, after their processing.

Thus, the calculation of the expected economic effect of the development and implementation of measures to improve the quality of the personnel management process will provide an opportunity for economic justification of the program for evaluating and improving the effectiveness of personnel management.

CONCLUSION

The proposed work is devoted to the theoretical and practical issues of the methodology for statistical evaluation of the effectiveness of personnel management.

This article examines the influence of the mentality and aspirations of the company's management, the interests of external shareholders and labor collectives on the formation of the company's target settings, the development and adoption of management decisions and the reflection of these processes in the behavior patterns of enterprises and the results of their activity .

The study made it possible to draw the following main conclusions:

1. At this stage of the development of the economic situation, which is characterized by economic and political instability, the general problem of improving the effectiveness of personnel management can be defined as the need to switch the attention of managers and specialists of the company from organizational and technical tasks to organizational and economic issues. In this case, both the strategic goals of the company's development and the local problems caused by the instability of these external conditions in which the company is forced to work must be taken into account. And also taking into account the need to increase the real interest of the company's employees in the final results of its activity.

2. The analysis and evaluation of the effectiveness of personnel management is a necessary stage in the preparation of decisions to improve the personnel management system. The review of the proposed methods and approaches shows that the attempt to eliminate the shortcomings of each method inevitably leads to the appearance of new ones. This suggests that we should obviously give up trying to develop a certain ideal methodology that would allow us to give absolutely accurate estimates. In addition, accurate quantitative assessments are unlikely to have much practical value, since the analysis of the effectiveness of personnel management is not an end in itself, but only a means of justifying decision-making to improve the personnel management system. Therefore, when we evaluate managerial work,

3. Evaluating the effectiveness of personnel management requires systematic experience, a formalized measurement of the costs and benefits of the overall personnel management program and comparing its effectiveness with the company's performance over the same period. It is also advisable to compare the efficiency of the enterprise, as well as the ratio of the effectiveness of personnel management programs and company goals. Managers can be evaluated based on the effectiveness of the structures they lead. Since the nature of management work is to achieve goals with the hands of the people being led, therefore the result of the group's efforts is an indicator of the manager's skills. In examining the relationship between the effectiveness of personnel management and the factors that influence it,

4. The change in the average labor productivity as a whole for the enterprise is due not only to a change in labor productivity in each division of the company, but also to a change in the structure of the number of personnel in the departments and the whole company (structural changes). In order to determine the impact of changes in labor productivity in each department of the company and the impact of changes in the structure of personnel numbers in departments and the entire company, the index method of factor analysis was applied. The structure of the industry in which this company operates is examined and the effect of five forces that determine the nature of competition is analyzed. For the completeness of the analysis of the effectiveness of the company's personnel management under the influence of external factors, it was proposed to determine the summary assessment of the relationship between labor productivity and the level of competitiveness of the unit, and for this purpose a matrix developed by the Boston Consulting Group was used. Its use clearly demonstrates the position of the company's economic unit, while combining it with the results of the analysis of the dynamics of average values with the distribution of structural changes can help in making managerial decisions about the fate of problem areas of business.

5. As a result of the analysis of the dynamics of the main indicators, an unfavorable trend of changes in labor productivity and staff turnover is established. Thus, it can be noted that if there are no significant changes in the political and economic environment or management decisions affecting the effectiveness of personnel management are not made, there will be a further decrease in the economic efficiency of personnel management, which negatively affects work of the entire enterprise. In this regard, the study of the factors under the influence of which this trend has developed is of particular interest.

The regression model of the effectiveness of personnel management presented in the dissertation can be applied both in individual structural divisions and in general in the entire enterprise. The calculations made it possible to identify the most significant factors affecting the situation in the field of personnel management. A condition affecting the effectiveness of personnel management is material incentives: a system of economic measures to increase the material interest of workers in the results of their work and a flexible work schedule: a system of working time planning that allows you to combine the characteristics of seasonal economic activity of the industry with the individual characteristics of the workers.

One of the essential factors for the effectiveness of personnel management is the increase in the utilization rate of personnel. It has been found that under the current mode of operation, due to the seasonality of economic activity, there is downtime of the workforce in industries with seasonal declines, which leads to unreasonable personnel costs, while in industries with economic growth there is an overload of personnel, which is one of the main reasons for job dissatisfaction. , and therefore the reason for the increased fluidity. The above necessitated the use of methods that allow determining the degree of staff utilization, taking into account the identification of labor resources, with subsequent intersectoral staff rotation.

Based on the results of the study of the relationship between the effectiveness of personnel management and the factor indicators that have the greatest influence, recommendations are given for improving the system of material incentives and the procedure for applying the flexible working time regime. A methodology has been developed for assessing the impact of measures to improve the effectiveness of personnel management on the company's final performance indicators, which enables economically justified measures to improve the personnel management system; therefore, it is proposed to determine the expected economic effect of the development and implementation of measures to improve the quality of the personnel management process.

II. PUBLICATIONS

- (1) **Hassani, B.**(2021). Care development of bank personnel. Knowledge - International Journal, vol. 45/5, ISSN 2545-4439, 1081-1084<https://ikm.mk/ojs/index.php/kij/article/view/5410/5348>
- (2) **Hassani, B.**(2021). Banking performance activity in Kosovo. Knowledge - International Journal, vol. 45/5, ISSN 2545-4439, 1067-1070<https://ikm.mk/ojs/index.php/kij/article/view/5409/5347>
- (3) **Hassani, B.**(2021). The role of consumer care in Kosovo. Knowledge - International Journal, vol. 45/5, ISSN 2545-4439, 85-87<https://ikm.mk/ojs/index.php/kij/article/view/4622/4615>

III. CONTRIBUTIONS OF THE RESEARCH

As a result of the conducted and following research, the following contributions were formulated and substantiated in the dissertation work:

1. Defined the essence of the category "personnel management" as an object of statistical research in the conditions of the transition period;
2. A system of statistical indicators for evaluating the effectiveness of personnel management is defined. The proposed system allows solving research problems in the field of personnel management in various aspects;
3. A methodology has been developed to determine a consolidated assessment of the relationship between labor productivity and the level of competition in the industry, which characterizes the effectiveness of personnel management;

4. A method has been developed for constructing and analyzing multiplicative multifactorial models of personnel management effectiveness and identifying the influence of various factors on its level and dynamics;
5. A methodology has been developed for the economic justification of measures in the field of personnel management.