

## METHODS FOR ASSESSING INVESTMENTS IN HUMAN RESOURCES

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**Abstract:** Investments of human resources investment is a key factor in achieving organizational sustainability and competitiveness. Their presence and adequate evaluation of effectiveness contribute to the realization of future business benefits and the enhancement of human capital. This is due to the collective growth of knowledge, skills, attitudes, behaviors, professional experience, and motivation that employees possess, which significantly influence overall organizational performance. This scientific article examines methods for evaluating investments of human resources, emphasizing their role in the sustainable development of organizations. The main goal is to analyze various methods and highlight their advantages and disadvantages. This provides a better understanding of their impact on increasing human capital and, consequently, on organizational performance.

The article outlines the core activities within human resource management, detailing processes such as job planning, analysis and design, recruitment and hiring, onboarding, performance evaluation, training and development, payment and incentives, and ensuring healthy and safe working conditions. These activities generate outgoing cash flows. At the same time, costs related to planning, analysis, design, recruitment, onboarding, evaluation, training, and development are considered investments, as they increase employees' potential and bring future benefits to the organization. Investments in these activities, all other conditions being equal, lead to higher productivity, lower costs, reduced employee turnover, and overall increased company value.

Methods for evaluating human resource investment are generally categorized as financial and non-financial. Initially, the two most commonly used financial methods are discussed and explained. The "Cost-Benefit" analysis compares total human resource expenses with expected benefits. The "Return on Investment" (ROI) reveals the ratio between net benefits and invested resources. The advantages of these methods include simplicity in calculation, flexibility, and the availability of a specific quantitative measure of efficiency. A major disadvantage is their neglect of intangible benefits (e.g., increased motivation and improved workplace climate) in evaluating investments.

Next, the essence of non-financial methods, such as "expert evaluation," "forecasting," "surveying," and "turnover analysis," is examined. These methods assess indirect benefits from investments of human resources. Their advantages include objectivity, flexibility, broad applicability, the ability to combine quantitative and qualitative data, and a focus on specific indirect benefits of investment costs. However, limitations include subjectivity, high implementation costs, and the partial scope of the aspects of indirect benefits addressed.

The article concludes that no single method can independently provide a maximally accurate assessment of the impact of investments in personnel. Therefore, a combined approach is recommended as a reliable means of achieving more accurate evaluations. The report emphasizes the importance of applying combined methods to assess investments of human resources to ensure sustainability and long-term competitive advantages for organizations.

**Keywords:** investment, human resource, assess, costs, benefits.

### 1. INTRODUCTION

In today's dynamic and competitive business environment, investments in human resources are a key factor contributing to the achievement of organizational goals. Theory and practice have demonstrated that the quality of employees, represented through competencies (a combination of knowledge, skills, attitudes, and behaviors possessed by the employee), professional experience, and motivation, plays a decisive role in achieving sustainability and competitiveness (Kucharcikova et al., 2023). In this context, the need arises for the application of reliable methods to evaluate the effectiveness of investments in human resources by combining quantitative and qualitative approaches.

The first group consists of purely financial metrics, such as "Cost-Benefit Analysis," and the comprehensive indicator "Return on Investment" (ROI), which provide clear data on the economic benefits of personnel investments (Phillips, 2003). In contrast, qualitative indicators, such as employee satisfaction, staff turnover, and organizational culture, apply an indirect influence on corporate performance while simultaneously revealing the depth and complexity involved in measuring the benefits derived from investments in human capital.

The purpose of this scientific article is to examine the main methods for assessing investments in human resources, highlighting their advantages and disadvantages.

## 2. INVESTMENTS IN HUMAN RESOURCES – ESSENCE AND CHARACTERISTICS

Numerous authors have discussed the essence and necessity of a comprehensive concept for managing people in modern enterprises (Rahman, 2021; Dinkov, 2024; Stamenova, 2022). Human resource management can be viewed as a distinct process that runs parallel to the material and information flow and supports the execution of all other organizational processes. The core activities comprising the human resource management process include:

- ✓ Planning – Ensuring the required quantity (number of employees) and quality (competencies, motivation, etc.) of the workforce in accordance with the organization's strategy. This activity involves comparing the need for personnel, derived from the set performance goals, with the available employees.
- ✓ Job analysis and design – The foundation for developing and/or updating job descriptions. Job analysis involves describing the essence of each position, as well as the specific competencies and physical characteristics required to perform it. Job design outlines the “ideal” state of a position, primarily applied during job redesign or updates (Vedar, 2014).
- ✓ Recruitment and hiring – Determining the sources (both external and internal) for recruiting candidates with the potential to meet the requirements of the vacant position, selecting the most suitable candidates and carrying out all necessary actions related to their employment.
- ✓ Onboarding and evaluation – The integration into the work environment includes initial training, induction with regulatory documents and organizational policies, and adaptation period required to achieve the expected maximum productivity from the employee. Performance evaluation is a process of monitoring the alignment between job requirements and employee performance (Tsvetanov, 2021).
- ✓ Training and development – Processes and procedures for acquiring new knowledge, skills, and attitudes aimed at improving employee quality. The newly acquired competencies contribute to employee development through the assumption of more complex and responsible positions (Atanasova, 2015).
- ✓ Compensation and incentives – Developing systems for fair remuneration of employee labor, according to the hierarchy of the positions held, the quantity and quality of the work performed, as well as implementing a set of incentives to boost employee motivation.
- ✓ Ensuring healthy and safe working conditions – Establishing the necessary regulatory framework and exercising control over its compliance.

The implementation of each of the described activities generates specific costs that directly or indirectly influence the financial performance indicators of the organization, and consequently, its competitiveness. At the same time, the outgoing cash flows that support the planning, analysis and design of positions, recruitment and hiring, onboarding and evaluation, training and development are aimed at increasing the potential of the workforce in the company. This leads to the realization of future benefits in various forms (e.g., higher labor productivity, reduced defects and scrap costs, lower turnover, etc.), which, under equal conditions, results in increased revenue and/or reduced costs. As a result, an increase in the company's value and the wealth of its owners can be observed. From all the above, it follows that these costs can be regarded as investment costs (Zahariev, 2017) and subject to financial analysis and evaluation, as they form the foundation for the creation and growth of human capital in any organization.

Some studies (Keep & Storey, 2014; Vithana, 2021) indicate that the costs associated with investments in human capital are linked to training and development of personnel. It should be noted that the costs associated with the execution of other activities (planning, job analysis and design, recruitment and hiring, onboarding and evaluation) are also resource-intensive, contribute to the growth of human capital, and generate future benefits. Therefore, these costs should not be overlooked when conducting the analyses.

Investments in human resources lead to the increase in the value of human capital. "This capital consists of an individual's innate abilities and can be enhanced through education, experience, health, mobility, emotional stability, and the willingness to seek information" (Georgieva, 2023, p. 122), and, in turn, has a positive impact on modern organizations in several aspects. Properly conducted activities within human resource management, as described above, ensure:

- ✓ first, the accurate determination of the need for workers (in terms of time, place, and positions, according to the set goals);
- ✓ second, the appropriately prepared and/or updated job description;
- ✓ third, the hiring of employees whose personal and professional qualities and competencies align as closely as possible with the profile of the vacant positions;
- ✓ fourth, under equal conditions, a reduction in adaptation time and the achievement of maximum productivity;
- ✓ fifth, the enhancement of workers' qualifications and motivation through suitable training programs.

As a result of all these factors, improvements in job performance are observed, along with reduced turnover, increased job satisfaction, reduced defects and scrap, and overall increased productivity. Additionally, the flexibility

and resilience of the company are enhanced in relation to negative environmental impacts, as well as its ability to generate and implement innovative technological solutions. This guarantees the maintenance of competitiveness and the potential growth of the owners' wealth. All of the above explains the need for applying methods for assessing and evaluating the effectiveness of investments in human resources within companies.

### 3. ASSESSMENT METHODS

The return on investment generally represents the difference between the invested funds (the sum of assets, equity, recruitment, training costs, etc.) and the amount of generated profit (Mihaylov, 2022). However, in the case of investments in human capital, the link between the value of the invested funds and the future benefits derived from them is not always clear. For example, the effect of investments in human capital, expressed in terms of increased productivity, sales, and profits, as well as reduced defects and claims, can be directly measured (Tomov, 2016). In contrast, increased motivation, adaptation to corporate culture, and improved work climate apply an indirect influence on the increase in the value of human capital, but are difficult to quantify. Therefore, methods for assessing the effectiveness of investments in human resources are generally divided into financial and non-financial types.

The first group includes methods that directly measure the effect of investments in personnel on the financial performance of the organization. These methods are well-known in financial science but must be adapted to the specifics of human capital. This paper will focus on two of the most commonly used methods in practice.

The "*Cost-Benefit Analysis*" is used to assess a given investment by comparing the costs and expected financial returns. It is widely applicable in almost all areas of business and serves as one of the foundations for managerial decision-making (Koopmans, 2020). Its application requires identifying and calculating all costs related to the formation of human capital (such as costs for advertising vacant positions, salaries of the team responsible for evaluating and selecting candidates, rental costs for training rooms, payments to trainers, etc.) and the expected benefits (such as reduced defects and scraps, increased sales, higher productivity, etc.). The next step involves comparing the total benefits to the total costs. If the revenues exceed the costs, it is assumed that the investment in human resources is beneficial. In the opposite case, a review of the costs is necessary, and solutions for their optimization should be sought (Kirkpatrick & Kirkpatrick, 2006 as cited in Mdhlalose, 2020). A distinctive feature of this method is that it can be used both for subsequent and preliminary evaluation of whether a given expense should be made. For example, before implementing a training program, the costs and expected benefits are calculated and compared to predict the net effect of its execution. The same analysis can be conducted after the training is completed to determine the direct benefit to the company.

A significantly more complex assessment is provided by calculating the "*Return on Investment*" (ROI). It reveals the "percentage ratio between the company's profit and the invested capital" (Mihaylov, 2022, p. 179). Different variants of profit can be used, such as earnings before interest, taxes, depreciations and amortization (EBITDA), earnings before interest and taxes (EBIT), earnings before taxes (EBT) or net profit, but EBIT is usually recorded, as it reflects the company's ability to meet its operating obligations (Mihaylov, 2022). For the purposes of this study, the coefficient can be modified such that the numerator represents the sum of the directly obtained benefits, while the denominator represents the sum of investment costs in human capital.

The coefficient is calculated with the assumption that the direct benefits are reflected in the difference, obtained by subtracting the profit after the investment expenses from the profit before the investment expenses. For example, to calculate the ROI of newly hired employees in a department, the numerator of the indicator would include the difference, calculated by subtracting the profit realized by the company before the recruitment and assessment procedure from the profit afterward. The denominator of the coefficient would include the expenses related to conducting this procedure. The resulting value reveals the direct benefits obtained from each unit of investment expenditure. A characteristic of every company is the desire to maximize this indicator.

Advantages of the methods discussed:

- ✓ relatively simple computational procedures;
- ✓ flexibility and intuitiveness in managerial decision-making;
- ✓ availability of a specific quantitative measure for the effectiveness of human resource investment costs;
- ✓ the ability to conduct simulations by altering the factors influencing benefits and costs in either a positive or negative direction, and applying sensitivity analysis.

Disadvantages:

- ✓ subjectivity – inclusion of assumptions and estimates that depend on the evaluator's subjective judgment rather than reality (especially in the "*Cost-Benefit Analysis*");
- ✓ omission of factors – absence or partial consideration of external influences that may affect the results on the investment.

As a major disadvantage, the neglect of intangible benefits from investments (such as increased motivation, improved microclimate, etc.) should be noted, as the focus is solely on measurable parameters that have a direct impact on the financial state of the company.

To overcome this disadvantage, non-financial methods are applied to assess the indirect benefits of investment expenditures on human resources.

Through the *expert evaluation method*, a team of experts is tasked with assessing the impact of indirect factors (such as increased satisfaction, faster adaptation to work, and increased motivation resulting from investments in the workforce) on the generated personnel costs. One of the ways to obtain such an assessment is to assign each expert evaluator the task of determining the weight of various factors influencing the expected benefits. The total sum of the weights must equal 100%. Similarly, a score is assigned to indicate the degree of influence of each factor. Subsequently, a weighted score is calculated for each factor by multiplying the assigned weights by their corresponding scores. The final evaluation of the non-financial benefits derived from the investment costs is obtained by calculating the weighted arithmetic mean of the scores provided by the entire evaluation team.

When *forecasting* based on information from past periods, set goals and expectations, an assumption is made about the effect that the realized investment costs are expected to achieve. Various techniques are employed, which can be grouped into the following categories:

- data analysis – models such as linear regression, decision trees, and/or neural networks are applied, relying on the systematization of a large amount of input data (Kukenska, 2022);
- psychometric models – for instance, factor analysis, which examines cognitive abilities, motivation, and social support of employees to predict their response to the investment in their development, and/or “Structural equation modeling” (SEM) which combines various statistical techniques to test complex indirect causal relationships between different variables;
- assessment of individual differences – this involves the study of cognitive styles and preferences, based on the fact that people learn in different ways.

Using these differences, it is possible to predict which training method would be most effective for a specific individual. All these models are primarily applied to forecast the impact of employee training programs.

A widely applicable method for assessing indirect benefits is the use of *survey research*. This approach involves developing specialized surveys to determine the achieved impact of investment costs in human resources. These surveys can target various respondents, such as:

- direct supervisors, as they are familiar with both the nature of the work and the overall performance of employees, enabling them to assess the presence, absence, or degree of beneficial effects;
- employees (primarily in training programs), who can share their perspectives on the usefulness of the competencies they have acquired;
- clients and/or business partners, providing feedback on changes in communication between them and the organization resulting from investments in human resources.

Additionally, surveys can vary in type (e.g., structured, semi-structured, or unstructured) but each of them is conducted through questionnaires that respondents complete independently (Dimitrova, 2014). To obtain a comprehensive and accurate assessment, it is recommended to combine different types of surveys and categories of respondents.

*Employee turnover assessment* – this is conducted through the periodic calculation of various indicators and an analysis of the reasons for the termination of employment contracts for each worker. The most commonly calculated indicator is “Employee turnover rate”, which describes the ratio between employees who have left the company (due to dismissal, redundancy, retirement, or voluntary resignation) and the average number of employees over a given period. It is recommended that the reasons for employment termination be analysed. This is carried out through exit interviews and/or surveys aimed at identifying the factors and reasons behind the event from the employee’s perspective. As additional insight, these assessments can also reveal the beneficial effects of human resource investments, such as an improved work environment and other organizational benefits.

The advantages of the described methods include the following characteristics:

- ✓ objectivity and accuracy – experts can identify and evaluate numerous indirect factors that are difficult to measure quantitatively, and teamwork minimizes the subjectivity of individual assessments;
- ✓ flexibility – most methods can be adapted to analyze the components of human resource investment costs;
- ✓ wide applicability – both qualitative (expert assessment, surveys) and quantitative (employee turnover assessment) aspects of indirect benefits from investments are covered;
- ✓ combined data – some methods (e.g., surveys) allow for the collection and analysis of both quantitative and qualitative information;

- ✓ focus on specific factors – they enable a detailed analysis of the influence of indirect elements such as satisfaction, motivation, and staff adaptation.

The main disadvantages are:

- ✓ subjectivity in some methods – primarily in expert assessments, the development of forecasted effects, and the analysis of survey data;
- ✓ high costs – the application of these methods requires significant resources – financial and time – which makes them expensive;
- ✓ partial scope – each method addresses only certain aspects of indirect benefits, which may lead to inaccurate conclusions.

Based on the reviewed financial and non-financial methods, as well as the presented advantages and disadvantages of each group, it can be concluded that the best approach for evaluating investments in human resources is a combination of various methods. This way, the shortcomings are minimized, and the advantages of each are maximized. In this way, the financial manager can gain an accurate understanding and financial expression of the effect (positive or negative) resulting from the company's investments in human resources management.

#### 4. CONCLUSIONS

This scientific article examines the essence of methods for assessing investments in human resources in the context of their role in increasing the human capital of an organization. Additionally, their advantages and disadvantages are outlined. The analysis reveals that proper human resource management (planning, analysis, recruitment, training, payment, etc.) generates both costs and significant benefits for organizations. These benefits are reflected in increased productivity, higher sales, reduced turnover, enhanced motivation, and overall – in maintaining competitiveness. This underscores the importance of adequate assessment of investments in human resources, which requires a combination of financial and non-financial methods. Combining them minimizes their disadvantages and provides a more comprehensive view of the benefits arising from investments in human capital. The introduction of modern evaluation methods not only aids the decision-making process for managers but also contributes to raising awareness of the value of human capital as a strategic asset. This study provides the necessary theoretical foundation and practical guidelines for the optimized use of methods for assessing investments in human resources. This is crucial for the sustainable development of contemporary organizations, ensuring both an increase in the company's value and the wealth of its owners, as well as maintaining competitiveness.

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