EMPLOYEE EVALUATION IN THE CONTEXT OF A NEW EVALUATION METHOD

The following paper discusses the problem of employee evaluation. It aims to present the modern methods of evaluation in the context of the new alternative method developed by Wiktor Adamus, which is based on a hierarchical analysis of decision-making problems (Analytic Hierarchy Process). The first section of the article provides a synthetic presentation of selected, modern methods of employee evaluation, indicating their advantages and disadvantages in practical use in organizations. The second part is a description of the multi-criteria research method and the possibilities of its application. The third part presents the results of the study conducted in the IT company. In the study, a multi-criteria method was used to evaluate employees, who included process engineers from two teams: a team responsible for production process planning and a team supervising the production launch. The evaluation was based on a hierarchical model composed of three levels. The first level included the assessment criteria selected to suit the nature of work of particular teams. The second level of subcriteria included the 6-level assessment scale from 'very low' to 'very high'. The final level of the model comprised alternatives, i.e. the number of employees being evaluated. The conclusion was that the new method of employee evaluation is better than the previous methods since it enables the selection of evaluation criteria which are adequate for a particular job. This method allows for an easy and clear compilation of results regardless of the size and type of the company, and thus the number of workers subject to the assessment process.

Keywords: employees evaluation – evaluation criteria – Analytic Hierarchy Process

1. INTRODUCTION

Human Resource Management is currently getting an entirely new meaning to an organization. Over the years, this concept has expanded its dimension, containing not only the basic personnel matters, but also integrated systems of employee evaluation, motivation and staff development, including career path development. Increasing expectations of companies regarding the professional competence and qualifications of current and potential employees make them search for the best qualified staff. Therefore, employee evaluation is extremely important, starting from the selection and recruitment and ending with the current and periodic performance appraisals. Employee evaluation ceases to be regarded as "necessary evil" by employees or as a routine procedure by the management, since it has become a valuable piece of information for managers. The article is to present a new, multi-criteria method of employee evaluation, based on the analytic hierarchy process.

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2. MODERN METHODS OF EMPLOYEE EVALUATION

In Poland, employee evaluation is not a requirement. Companies can carry them out or relinquish them altogether; also, they themselves select the evaluation methods and techniques which they deem most suitable. The Polish Labour Code regulates the basic issues related to equal treatment in employment. Article 18(3) highlights the need for equal treatment of employees by the employer taking sex, age, disability, race, socio-political status, and employment into consideration. What is also important is the fair salary determination for the same work or the work of equal value, i.e. the work which requires from the employees comparable professional qualifications as well as comparable responsibility and effort. Not having an effective evaluation system increases the risk of inefficiency, poor office morale, and high turnover rates. Outstanding employees can be demoralized by feeling that their work goes unnoticed or by seeing lower performers receive the same treatment and compensation that they receive.

In any organisation it is important to have in place a measurement process that speaks to the performance level of individuals. The importance is not only to enable the organisation to ensure maximisation of individuals’ skill sets but also to ensure individuals’ performances are aligned to the needs of the organization.

The problem of subjective employee evaluation is now an important issue for HR managers of many companies. Being responsible for the selection of evaluation forms, methods and criteria, they are facing a big challenge. Despite having a wide choice between many possibilities of assessment, they are still struggling with their subjectivity. Inconsistent perceptions as to the purpose of the performance appraisal can throw the entire performance appraisal system off. It is obvious that this problem cannot be completely eliminated from the evaluation process; however, it is important to choose an appropriate method minimizing its effects, which could have a negative influence on the evaluated employee and the quality of his job performance.

The selection of an appropriate method for evaluating employees is a key issue in human resource management. On the one hand, it helps in determining a salary for each employee, taking into account their input and commitment to work. On the other hand, it helps to determine their career paths and training opportunities. Given the amount of available methods of employee evaluation, it would be advisable to analyze their advantages and disadvantages in order to select the most optimal one for each company. Modern employee evaluation trends in human resource management come down to the following three methods: 360-degree feedback, competency-based appraisal systems, and management by objectives.

360-degree feedback is a contemporary evaluation method, in which the role of the evaluator is played by different people who have contact with the assessed employee. P.
Ward describes the relationship between the appraisee and raters as a mutual interaction. People whose duty is to evaluate can be superiors, colleagues or subordinates as well as the organization’s external customers. The evaluated employee is to self-assess his job performance as well. J. Moczydłowska draws attention to the high degree of confidentiality of such assessment. She also underlines that it is necessary to choose the criteria which will be clearly formulated and which will mean the same thing for all evaluators. This form of evaluation is also known as multisource, multi-subject, multi-level or circular feedback. The advantages of this method include its comprehensiveness, which, according to Armstrong means providing employees with a broader perspective which shows them how they are perceived by the environment.

Increasing the number of raters reduces the subjectivity of the assessment. One of the main disadvantages of this method indicated by Gick and Tarczyńska is its labor and time intensity. People involved in the assessment process are torn away from their work, which may affect its quality adversely. Armstrong also notes that there might appear a certain amount of insincere feedback from employees. The introduction of this method of evaluation often necessitates the introduction of many changes not only in the culture of the organization, but also in the management system. It is also important to include all the members of the organization in the process of implementation of this method.

Competency-based appraisal systems is the method based on the selection of an employee’s competencies in the way so that they best fit his or her job. In this method, the competencies are the essential element of not only the employee evaluation, but they also make it possible to integrate the various functions of management into a whole. Therefore, competencies are regarded as the most important asset of an organization, necessary to its existence and development. The same view is expressed by Whiddett and Hollyforc, who take one step further and stress the importance of creating competency-based structures in a company, making management by competencies a company philosophy. They also point to the importance of appropriate selection of the strategy and appropriate manner of its implementation. Employees should participate in its creation and have information about the forthcoming changes. T. Oleksyn claims that the right definition of a competency is the basis of success, which enables the proper selection

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of employees and facilitates decisions connected with salaries, promotions or employee transfers. In this method, core competencies of the organization are defined, which are then subject to direct evaluation with the use of one of the following methods of competency appraisal: 360 degrees, competency tests (introspective, performance) or observation scales. Defining the competencies that are key to a given job position or forcing them upon employees might turn out to be problematic. The introduction of an inappropriate strategy can do a company more harm than good. In addition, the development of employee competencies does not necessarily translate into him achieving the set goals, neither does it guarantee an improvement in his job performance.

**Management by objectives** is a method promoting greater mutual cooperation between the evaluated employee and his immediate superior. Objectives to be met and tasks to be performed by the employee during a given period of time are mutually agreed upon. During periodic performance appraisal, there is a verification of the employee’s achievements and the degree to which he has realized the set objectives. Sidor-Rządkowska claims that the set objectives should be consistent with the SMART principle. According to A. Ludwicyński, assessment by determining the objectives should be the result of the overall management system adopted by the organization. It is also important that it results from the organizational culture instead of standing in contradiction to it. The advantages of this method include involvement of employees in the decision-making process, which streamlines the coordination of undertaken actions in a company. It is also important to develop in employees a sense of responsibility not only for the tasks to be done, but also for their own professional development. Paradoxically, the disadvantage of management by objectives may turn out to be an excessive focus on goals. The assessment of their accomplishment often ignores the means by which an employee has reached them. What D. Lewicka regards as another disadvantage of this method is the fact that it disregards the needs and goals of an individual, which do not always coincide with the objectives of the organization. Other disadvantages of a MBO system mentioned by Cintrón and Flaniken include a significant amount of paperwork, particularly in the beginning stages of a new system, and the concern that MBO tries to make unclear responsibilities and goals exact and compels employees to measure objectives that are not measurable. When choosing this method of assessment, it is important to pay special attention to the specificity of organizational

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20 J. Jędrzejczak, Oceny okresowe – Zarządzanie przez ocenianie, Gdańsk, Wyd. ODDK, 2000, p. 46
culture, which shapes the nature of the employer – employee relation, and to the level of maturity and responsibility of employees, since this method would be appropriate only in such cases\textsuperscript{23}.

3. THE ESSENCE OF THE AHP METHOD

The Analytic Hierarchy Process (AHP), whose creator and forerunner is Thomas L. Saaty, is a mathematical method that allows for solving problems and making decisions based on the multiplicity of criteria. In his book entitled The analytic hierarchy & network processes, W. Adamus presents AHP as a method which in a practical way combines two distinct disciplines of mathematics and psychology\textsuperscript{24}. The main advantage of this method is presenting immeasurable (intangible) elements in numerical values in the form of priorities. This allows the decision maker to find a decision which will best suit his goals, considering particular criteria. The basis of the decision (hierarchical) tree is the main objective, against which other criteria and sub criteria are compared to one another. Each comparison is accompanied by verbal evaluation formulated by a decision maker and the corresponding numerical value - Saaty's nine-point scale is used for comparison\textsuperscript{25}. Then, in the same way a comparison is made between different decision alternatives against the adopted criteria and/or subcriteria. The model created in this way is known as a function of priorities, which means that the decision alternative of the highest priority is the best to be chosen. The AHP method is used not only in implementing scientific research projects, but, as noted by Michael Scott, it is also used by managers to dispel doubts when difficult decision problems arise in their organizations as well as to put emphasis on reaching a consensus while assessing comparisons of many different criteria\textsuperscript{26}.

Among the main advantages of the Analytic Hierarchy Process, there is a possibility of making an objective choice based on the decision tree formed by experts. This method enables giving a numerical value to immeasurable elements; therefore, it is possible to measure things which are elusive, intangible and ephemeral and were previously impossible to be measured\textsuperscript{27}. In order to compare a large number of criteria and/or sub criteria, it is necessary for a decision maker to be focused and attentive in order to avoid errors of illogical answers.

The method of Analytic Hierarchy Process in the field of employee evaluation was first applied by W. Adamus. He characterized the existing evaluation methods and techniques, taking into account the advantages and disadvantages of their application in an organization. He also proposed an alternative method of objective employee assessment and on its basis he developed a hierarchical structure of evaluation. Its essence is giving the selected assessment criteria particular importance weights and ranking them according

\textsuperscript{24}W. Adamus, The Analytic Hierarchy & Network Processes, Kraków, Wydawnictwo Uniwersyte-
\textsuperscript{25}T. L. Saaty, Principia Mathematica Decernendi – Mathematical Principles of Decision Making,
\textsuperscript{26}J.M. Scott, Quantifying uncertainty in multicriteria concept selection methods, London, Springer-
\textsuperscript{27}http://www.ergonomia.ioz.pwr.wroc.pl/download/AhpSaaty TheSevenPillars.pdf Doc. Electr.
accessed on 9.11.2014
to these weights. The result for a particular employee is the product of importance weights of the selected evaluation criteria and sub criteria. In the final stage, a verbal appraisal is given, which depends on the number of points obtained by an employee from the evaluator.

4. THE PRACTICAL APPLICATION OF THE NEW EMPLOYEE EVALUATION METHOD

The following article presents a new method of employee appraisal on the example of employee evaluation carried out among process engineers in an international IT company dealing with the planning, appraisal and production of electronic subassemblies. The evaluation was conducted among the employees from two teams: the team planning the manufacturing process and the team responsible for preparing and launching the production line. In this particular company, performance appraisals are done once a year with the use of a standard form filled out by supervisors and employees. The analysis of the collected information shows that the forms are not clear enough, and that the evaluation process often does not provide the essential information about the work and achievements of individual employees. All employees from the selected teams were subject to the study and the assessment was done by a team manager and a human resource manager. The evaluation also included employees’ self-assessment. For each team, a separate decision tree was developed, whose main objective was to evaluate employees. The basis for evaluation in this model were the evaluation criteria adopted in the organization in the evaluation process, tailored to each team’s function. Another element of the model are the sub criteria for determining the degree of intensity of each of the main criteria. Expansion and breadth of decision trees, and in this case of "the evaluation tree", is highly dependent on the specificity of a given organization’s business activity. Some companies will prefer simple models with a small number of criteria, other companies will need to expand those models so that they fully meet their expectations and are useful in the assessment process.

Figure 1 shows a schematic diagram of the decision tree for evaluating the staff from the team responsible for planning the manufacturing process.

All staff evaluation used in the study are defined as follows:

1. Focus on results – action to achieve identified outcomes;
2. Visionary – ability to anticipate events and inconsistencies based on the likelihood of their occurrence in the planning stage of the manufacturing process and production line;
3. Troubleshooting – quick response to critical events or inconsistencies in the process occurring, initiative in action;
4. Building cooperation – taking team actions, implementation of common tasks, achievements of team objectives;
5. Coaching – acquisition and improvements of skills under the guidance of coach, support in action;
6. Work management – punctuality, compliance with procedures and work discipline;
7. Experience – acquisition of practical skills and knowledge of work-related, includes past and present;
8. Responsibility – professional duty, involvement to their work, commitment to coworkers and superiors;
9. Decisions – making – accuracy in assessing the situation, definitely in action;
10. Change management – change in the overall planning and implementation process of the production line, reaction to unforeseen events and situation.

Figure 1: The hierarchical structure of employee evaluation


In order to compare the sub criteria, a six-point scale was adopted to calculate the value of their priorities, which are as follows:

- very low: 0.0425
- low: 0.0642
- average: 0.1009
- above average: 0.1602
- high: 0.2516
- very high: 0.3806

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Transfer numerical ratings to verbal scales was made using six level scale developed by W. Adamus, listed in Table 1.

Table 1. Point and verbal employees evaluation

<table>
<thead>
<tr>
<th>Ranking (number of points)</th>
<th>Verbal assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;3161</td>
<td>Outstanding</td>
</tr>
<tr>
<td>2060-3161</td>
<td>Distinguished</td>
</tr>
<tr>
<td>1306-2059</td>
<td>Satisfactory</td>
</tr>
<tr>
<td>826-1305</td>
<td>Appropriate</td>
</tr>
<tr>
<td>533-825</td>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>&lt;533</td>
<td>Inadequate</td>
</tr>
</tbody>
</table>

far exceeds
the standards and values, significantly exceeds expectations

exceeds standards and expectations

slightly higher than expectations

as expected

slightly below expectations

significantly below expectations


As a result of the pairwise comparison of the preferences of synthetic criteria for the production process planning team their priorities indicating their importance in the assessment process were determined. This allowed for ranking them from the most important ones (with the highest degree of impact on the employee evaluation results) to the least important ones (only slightly influencing the results of the assessment). Figure 2 shows the hierarchy of evaluation criteria for the production planning team.

Figure 2 The hierarchy of evaluation criteria for the production planning team

Criteria priorities of production process planning team outlined above, were obtained by applying the geometric mean of the questionnaires filled by persons participating in the
evaluation process. Work done by the manufacturing process planning team is not the work of reproducing. However, it’s requires novel and innovative thinking, predicting the consequences of the solutions and location of critical points. Hence high values of the priorities of the criteria visionary and troubleshooting. High priority of the criterion, focus on the results, clearly indicates the need to implement and achieve business goals. Low priority criterion of experience points at focusing on young workers, often immediately after graduation. Table 2 shows the performance evaluation of the production planning team.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Employee I</th>
<th>Employee II</th>
<th>Employee III</th>
<th>Employee IV</th>
<th>Employee V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on results</td>
<td>High 0.2516</td>
<td>High 0.2516</td>
<td>Above average 0.1602</td>
<td>Very high 0.3806</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>Visionary</td>
<td>High 0.2516</td>
<td>Above average 0.1602</td>
<td>Average 0.1009</td>
<td>Very high 0.3806</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>Very high 0.3806</td>
<td>High 0.2516</td>
<td>Above average 0.1602</td>
<td>High 0.2516</td>
<td>Very high 0.3806</td>
</tr>
<tr>
<td>Building cooperation</td>
<td>Above average 0.1602</td>
<td>High 0.2516</td>
<td>High 0.2516</td>
<td>Very high 0.3806</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>Coaching</td>
<td>Low 0.0642</td>
<td>Average 0.1009</td>
<td>Very low 0.0425</td>
<td>High 0.2516</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>Work management</td>
<td>Average 0.1009</td>
<td>Above average 0.1602</td>
<td>Above average 0.1602</td>
<td>High 0.2516</td>
<td>Very high 0.3806</td>
</tr>
<tr>
<td>Experience</td>
<td>Above average 0.1602</td>
<td>Above average 0.1602</td>
<td>Low 0.0642</td>
<td>Very high 0.3806</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>Responsibility</td>
<td>High 0.2516</td>
<td>Above average 0.1602</td>
<td>Average 0.1009</td>
<td>Very high 0.3806</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>TOTAL POINTS</td>
<td>2404</td>
<td>1966</td>
<td>1272</td>
<td>3327</td>
<td>2798</td>
</tr>
<tr>
<td>VERBAL ASSESSMENT</td>
<td>Distinguished</td>
<td>Satisfactory</td>
<td>Appropriate</td>
<td>Outstanding</td>
<td>Distinguished</td>
</tr>
</tbody>
</table>

Source: own study

As a result of the pairwise comparison of the preferences of synthetic criteria for the team supervising the production launch their priorities indicating their importance in the assessment process were determined.

Figure 3 shows the hierarchy of evaluation criteria for the team supervising the production launch.
Figure 3 The hierarchy of evaluation criteria for the team supervising the production launch

Prioritizing staff evaluation criteria for the team supervising the production launch indicated that the maximum weight reached criterion focus on results – in the evaluation of employees are taken into account how and what the cost was achieved by each of them intended results to the construction and commissioning of pre-designed production line. The second criteria in other of importance is the change management – management skills associated with the processes of modernization, relocation and installation of the entire production line, slots machines in production and equipment necessary for its launch. Table 3 shows the performance evaluation of the team supervising the production launch.

Table 3. Performance evaluation of the team supervising the production launch

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Employee I</th>
<th>Employee II</th>
<th>Employee III</th>
<th>Employee IV</th>
<th>Employee V</th>
<th>Employee VI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on results</td>
<td>Above average 0.1602</td>
<td>High 0.2516</td>
<td>Above average 0.1602</td>
<td>High 0.2516</td>
<td>Very high 0.3806</td>
<td>Above average 0.1602</td>
</tr>
<tr>
<td>Decision-making</td>
<td>High 0.2516</td>
<td>High 0.2516</td>
<td>Average 0.1009</td>
<td>Very high 0.3806</td>
<td>High 0.2516</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>High 0.2516</td>
<td>Very high 0.3806</td>
<td>Average 0.1009</td>
<td>High 0.2516</td>
<td>High 0.2516</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>Building cooperation</td>
<td>Above average 0.1602</td>
<td>High 0.2516</td>
<td>Above average 0.1602</td>
<td>Very high 0.3806</td>
<td>High 0.2516</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>Change management</td>
<td>Average 0.1009</td>
<td>Above average 0.1602</td>
<td>Low 0.0642</td>
<td>High 0.2516</td>
<td>Above average 0.1602</td>
<td>High 0.2516</td>
</tr>
<tr>
<td>Experience</td>
<td>Above average</td>
<td>Above average</td>
<td>Low 0.0642</td>
<td>Very high 0.3806</td>
<td>Above average</td>
<td>Above average</td>
</tr>
</tbody>
</table>
5. CONCLUSIONS

Nowadays, employee evaluation systems are becoming a very important issue in human resources management. The efficient functioning of such a system in an organization gives it the opportunity to observe, verify and monitor employee performance.

The study conducted for the purpose of this paper aimed to capture the modern methods of assessment in the context of the new alternative method developed by W. Adamus.

The most important advantages resulting from the application of the new multi-criteria employee evaluation method created on the basis of the Analytic Hierarchy Process include:

- this method can be applied in any organization, regardless of its size and nature of their business (service companies, manufacturing companies, administrative institutions, etc.)
- a possibility to select the key evaluation criteria which are fully relevant to a particular job position;
- clear presentation of the priority values of assessment criteria calculated via comparison, which unambiguously indicates those criteria influencing the quality of performance in a given job in an organizational unit or team in the most important way;
- easier analysis of the results;
- the method can be successfully applied in evaluation by supervisors, co-workers or in employee self-assessment - which greatly reduces the problem of subjectivity of the assessment;
- using "Super Decisions" or "Expert Choice" computer software to perform the calculations streamlines the work of the evaluator and reduces the time necessary to carry out the evaluation process.

REFERENCES:


[10] Kodeks Pracy Art. 18 3c §1, §3.
OCENIANIE PRACOWNIKÓW W KONTEKŚCIE NOWEJ METODY OCENY

W pracy podjęte zostały rozważania nad problematyką ocen pracowników. Ma ona na celu ujęcie współczesnych metod oceniania w kontekście nowej, alternatywnej metody opracowanej przez Wiktora Adamusa opierającej się na hierarchicznej analizie problemów decyzyjnych (Analytic Hierarchy Process). W pierwszej części artykułu dokonano syntetycznej prezentacji wybranych, współczesnych metod oceny pracowników ze wskazaniem na ich wady i zalety w praktycznym zastosowaniu w organizacjach. Drugą część stanowi opis wielokryterialnej metody badawczej wraz z możliwościami jej zastosowania. W części trzeciej zaprezentowano wyniki badań przeprowadzonych w małopolskiej firmie z branży IT. W badaniach dokonano oceny pracowników - inżynierów procesu z wybranych dwóch zespołów: zespół ds. planowania produkcji oraz zespół nadzorujący uruchomienie produkcji, przy pomocy wielokryterialnej metody AHP. Oceny dokonano w oparciu o zbudowany model hierarchiczny z uwzględnieniem trzech poziomów. Poziom pierwszy stanowiły kryteria oceniania odpowiednio dobrane z uwzględnieniem specyfiki pracy danego zespołu. Drugi poziom subkryteriów, ukazujący 6-stopniową skalę ocen od bardzo niskiej, po bardzo wysoką. Ostatni poziom modelu zawiera alternatywy, czyli ilość ocenianych pracowników. W konkluzji stwierdzono, że nowa metoda oceniania pracowników jest lepsza od dotychczasowych metod umożliwiając wybór tych kryteriów oceny, które są adekwatne do danego stanowiska pracy. Pozwala ona na łatwe i czytelne opracowanie wyników niezależnie od rodzaju oraz wielkości organizacji, a co za tym idzie ilości pracowników podlegających procesowi oceny.

Słowa kluczowe: ocena pracowników – kryteria oceniania – Analityczny Proces Hierarchiczny.

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