

Studying the Application of Management Information Systems in Evaluating Human Resources Performance

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Keywords	Abstract
Management Information Systems Human Resource Management Employee Performance Evaluation	<p>With the introduction of information technology into the organization and ultimately the use of management information systems, human resource management functions undergo changes. This change can be effective if we first identify the activities that management information systems can perform and provide the context for these activities. Subsequently, human resource management becomes familiar with the new conditions so that it can improve the performance of the organization's human resources by utilizing the capacities that these information systems can create.</p> <p>In this article, management information systems and human resource performance evaluation are introduced, and in the following discussion, the relationship between these two factors is examined and the importance of the role of management information systems and its use to improve the evaluation of human resources performance is emphasized.</p> <p>The research conducted in this direction is descriptive and correlational. The results obtained are the result of library and field studies, and the employees of the Human Resources Department of Khuzestan Steel Company formed the statistical population of the research.</p>

1 Introduction

In the last two decades, industrial societies have been engaged in a new revolution called the "information revolution" and the world is entering a new era called the "information age" and society is also called the "information society". One of the latest technologies in this field is management information systems (MIS), which can be used to provide accurate and necessary management information to facilitate the decision-making process in a timely manner and provide it to managers and help them in planning, controlling and successfully implementing their tasks. Human resource information in every organization is information that is not only needed by human resource managers, but also by other managers, including senior managers of the organization.

According to the books written in the field of human resource management (for example, the book "Basics of Human Resource Management" by Neo in 2007 and another book of the same name by Robbins in 2009), human resources include basic elements such as human resource planning, recruitment, training and development of human resources, employee performance evaluation, personnel compensation, and

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employee departure and transfer from the organization. In general, it is referred to as human resource management performance. These actions (human resource management performance) are not possible without access to accurate information about the human resources employed in the organization. Therefore, this article attempts to examine the relationship between the use of management information systems (as an independent variable) and the evaluation of human resource performance in Khuzestan Steel Company (as a dependent variable).

Therefore, the following hypothesis has been put forward: "There is a significant relationship between the use of management information systems (MIS) and the evaluation of human resource performance." According to the study conducted on the subject of the research, it seems that the relationship between the aforementioned variables in the higher education sector has not been studied much so far. Attention has not been paid to this, and only a few studies have been conducted on the variables in question separately.

Articles in this field have also been seen in foreign sources. For example, in 2004, Alireza Modarreszadeh, in his thesis entitled "Investigating the Effect of Human Resource Management Information Systems on Manager Performance in Kashan Water and Wastewater Company", which was conducted for a master's degree from Kashan University, examined the relationship between information systems and manager performance and noted that there is a significant relationship between information systems and manager performance.

Also, in 2010, in an article titled "The Effects of Information Technology Application on Human Resource Management" conducted at Nanyang Technological University in Singapore, Chi-Sin Lee and Chi-Hun Lee examined the effects of information technology capabilities on the relationship between human resource management and information technology application, and concluded that in organizations that use internal information technology resources, human resource management is well implemented, jobs are clearly defined, and information technology applications are well trained.

Despite the importance of the discussion of management information systems (MIS), unfortunately, in most of our organizations, the importance of information, which is the basis for planning and other human resource management tasks, has been paid less attention, and the information available in the human resource management departments of departments and institutions is often not accurate, up-to-date, complete, and usable, and most of the statistics provided are approximate. Observing such situations in organizations and institutions and the increasing emphasis on the importance of information and information management in today's world on the one hand, and the existence of a very appropriate and up-to-date Management Information System (MIS) in Khuzestan Steel Company on the other hand, strengthened the author's feeling to re-examine the relationship between Management Information Systems (MIS) and human resource performance evaluation.

May other organizations that have not yet taken steps to implement a suitable management information system, by studying and observing the successes of organizations benefiting from management information systems, make the right decision to implement these systems.

2 Introduction to MIS

1.2 Management Information Systems (MIS)

They are information systems that provide managers with the information they need. In this study, MIS refers to management information systems and information systems that support managers' decision-making.



2.2 Human Resource Management

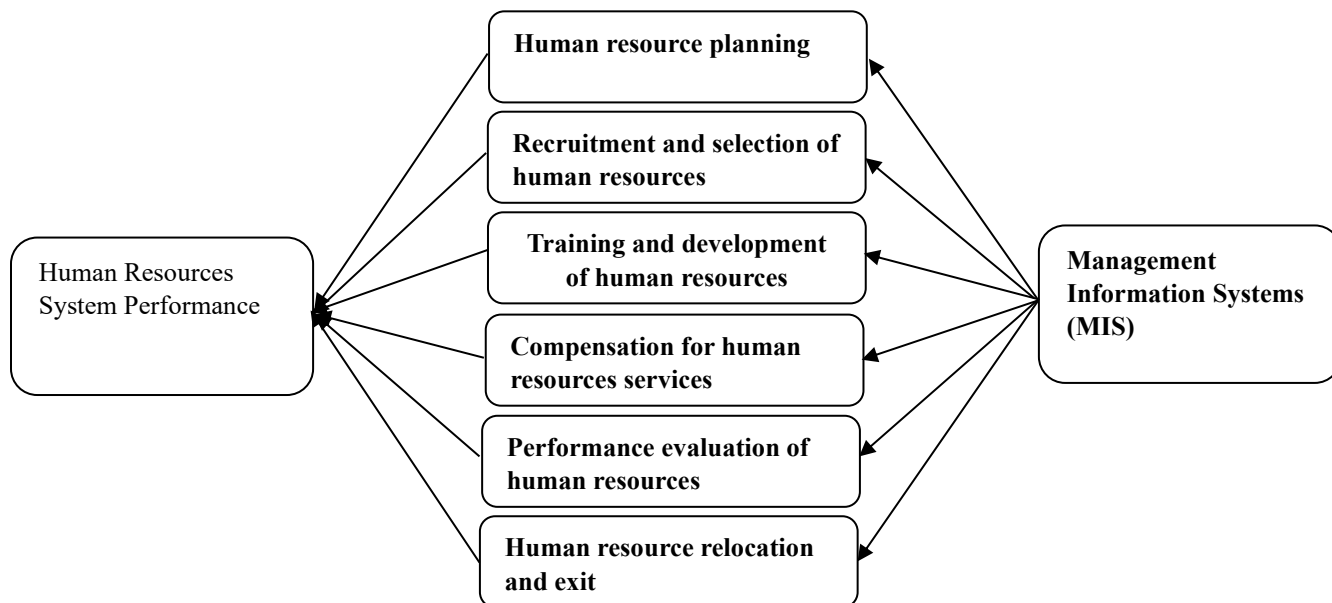
Human Resource Management (HRM) includes activities designed to provide for or work with an organization's human resources. An organization's human resources are one of its most valuable assets. In fact, government reports have shown that 72% of national income is based on the use of employees. In addition to salaries and wages, organizations make investments in their human resources. Recruitment, hiring, and training are more obvious examples of these investments. It includes all departments and units of personnel affairs, payroll, insurance and pensions, attendance and absence.

2.3 Human Resource Management Function

Each of the different schools of management science may consider different issues as human resource management functions, however, some of the common and important types are: human resource planning, recruitment and selection process, human resource socialization, human resource training, performance evaluation, discipline and compensation.

Based on the existing books in the field of human resources, especially the book by Wright (2007) Hollenbeck, & Noe and the book by DeCenzo (2009) & Robbins, we identified the basic functions of human resource management as follows: human resource planning, recruitment and selection of human resources, human resource training, human resource performance evaluation and human resource turnover and exit. Management Information Systems (MIS) as an independent variable had an effect on human resource planning, recruitment, selection and selection of human resources, human resource training, human resource performance evaluation and human resource turnover and exit.

These six factors are the performance indicators of the human resource system. So the performance of the human resource system is affected by the use of management information systems in the organization. We can see the relationship between management information systems and the elements of the human resource system in the figure:



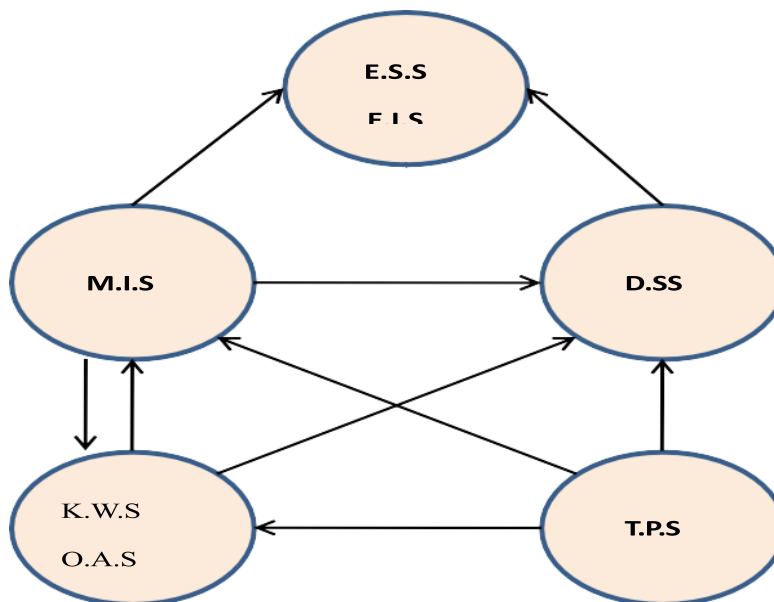
1. Conceptual data model based on the relationship between management information systems (MIS) and human resource system performance



2.4 Human Resource Information Systems

Human Resource Information Systems (HRIS) is a database system that includes all the relationships and dependencies of human resource information and provides facilities for storing and accessing this data. HRIS is practically any information system...), (MIS, DSS, any programming and data retrieval environment (such as Excel and Access) and any database (computer and paper).

The major information systems are: Work Process Systems (TPS), Knowledge Based Work and Automation Systems (KWS, OAS), Management Information Systems and Decision Support Systems (MIS, DSS), Executive Support Systems (ESSs). The relationship between the different information systems is shown in Figure 2:



2- Communication between information systems

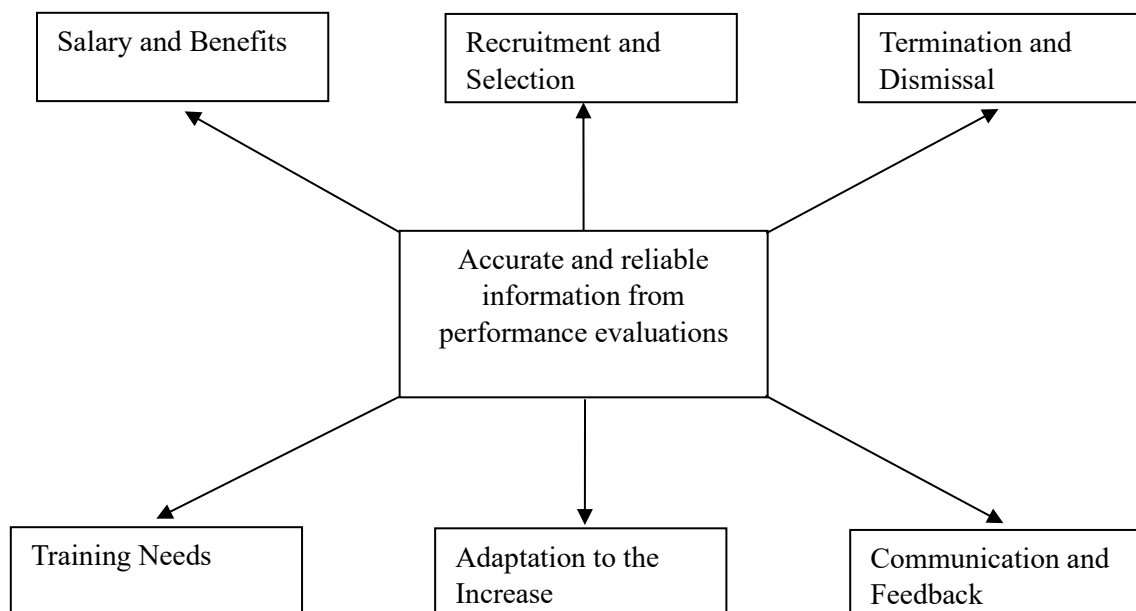
2.5 Employee Performance Appraisal

Performance appraisal is the process of estimating and assessing how an employee is performing and designing a plan to improve it. One of the most common benefits of performance appraisal is making executive decisions regarding promotions, layoffs, terminations, and salary increases based on merit. Performance appraisal also provides the inputs needed to assess individual and organizational training and development needs.

Another important benefit of performance appraisal is encouraging performance improvement. In this context, performance appraisal communicates with employees about how they are performing and makes suggestions for changes in employee behavior, attitudes, skills, and knowledge. Finally, two other important benefits of generating information through performance appraisal are: 1. Input into validation of selected procedures 2. Input into human resource programs.



In Figure 3, we have:



3 - Information and performance evaluation

2.6 Performance Evaluation Criteria

In order to have a correct and effective performance evaluation system, managers and employees must have comprehensive information about their jobs. Therefore, job information must be prepared and made available to the employee. The simplest method for evaluating employee productivity is to calculate the quantitative results of their work using production information. For example, for production line workers, evaluation can be based on the number of units produced.

Many judgmental data may be a more appropriate criterion than objective evaluation. In fact, employees in many jobs cannot be measured by objective evaluation methods and their performance cannot be tangible and measured, or the production or personal information of individuals is not sufficient for evaluation; here, the judgment of managers is the criterion. Therefore, evaluation techniques and methods are used to control the personal tastes of managers and the credibility and validity of evaluation.

2.7 Who evaluates?

In most organizations, evaluation is carried out by the employee's management or direct supervisor. Of course, evaluation may also be carried out by the individual himself or by a committee or by colleagues and subordinates.

2.7.1 Evaluation by supervisor or manager, especially middle supervisors

In most organizations, evaluation is carried out by the employees' supervisors or direct managers, or the evaluation of others may be used in addition to the supervisors' judgment. There are several reasons for evaluating employees by their direct managers, including:

- Supervisors are aware of the job needs of their units and are aware of the fit of each job with the overall structure of the organization.



- They are in constant contact with employees and can identify their strengths and weaknesses.
- Since supervisors usually monitor the rewards and reprimands of employees, it is obvious that employees give the most credit to their evaluations.

2.7.2 Self-assessment

In self-assessment, individuals select characteristics that are important to their performance. This method is useful if the purpose of the assessment is to obtain feedback. Most organizations use this method to balance individual goals with other organizational goals. In the self-assessment method, when the result of the self-assessment is compared with the supervisor's assessment, appropriate feedback is provided to employees.

2.7.3 Peer Evaluation

Although colleagues are less frequently used as evaluators, they may have the most information about the evaluator, because colleagues are familiar with each other's job requirements and, due to the proximity of the work environment or type of work, they are willingly or unwillingly involved in observing the work of their colleagues.

2.7.4 Committee Evaluation

To reduce some of the prejudices and biases that exist in individual evaluation, some organizations have turned to forming evaluation committees. This method uses several evaluators, whose rank is usually one level higher than the employee being evaluated. The advantage of this method is that different people each observe an aspect of the individual's behavior, and as a result, the presence of several people helps to avoid bias.

2.7.5 Evaluation by subordinates

The use of this method within organizations is limited. Many employees, when faced with the evaluation made by their supervisors about themselves, exaggerate their evaluations of their supervisors, whether negative or positive. Many employees consider this type of evaluation as an opportunity to earn points and some also consider it as an opportunity to compensate for past injustices. In general, employees evaluate their supervisors based on their organizational power and authority rather than evaluating their actual performance.

2.8 Human Resource Information Systems

Increasing human resource requirements, government regulations, and the development of microcomputer capabilities all acknowledge the need for an information system in the human resources department. From there, the title of human resource information systems (HRIS) is known. HRIS is a database system that includes all the connections and dependencies of human resource information and provides facilities for storing and accessing this data. Every HRIS system has three functional components:

1. Input,
2. Data maintenance and verification, and
3. Output. The role of each of these components in the overall system is explained below:

- Input function: The input function provides the capabilities needed for human resource data to be entered into the HRIS. When data is entered, it must be validated to ensure its accuracy.



- Data maintenance and verification function: The data maintenance and verification function is responsible for actual modifications to the data stored in various storage devices. When a change occurs in human resource information (such as annual salary increases), this information must be entered into the system.

- Output function: The output function of an HRIS is the most familiar and visible part of it. This is because most HRIS users who are not involved in the consolidation, modification, validation, and updating of human resource data are more likely to interact with the system's information and reports.

3. Studying the relationship between the use of management information systems and human resource performance evaluation

In order to study the relationship between the use of management information systems (MIS) and human resource performance evaluation, in 2013, 134 employees of the Human Resources Department of Khuzestan Steel Company were used as the statistical population of the study, and from them, based on the Morgan table, the number of statistical samples was estimated to be 100.

For this purpose, a hypothesis was formulated that the relationship between the use of management information systems (MIS) as an independent variable and human resource performance evaluation as a dependent variable had formed the hypothesis. In order to test the hypothesis, a questionnaire was designed. This researcher-made questionnaire consists of 36 general questions and 30 specialized questions that measure the relationship between independent and dependent variables.

In order to determine the validity of the questionnaire, the initial design of the questionnaire was examined among experts and professors and its validity was confirmed. Using SPSS software, the Cronbach's alpha coefficient of the questionnaires was calculated and its value was 0.93, which indicates confirmation of reliability. 110 questionnaires were distributed and 85 questionnaires were collected and analyzed. The Chi-square test was used to analyze the collected data. A summary of the statistical results is given below.

3.1 Chi-square table for all research hypotheses:

Respectively, we examine the relationship between management information systems and human resource performance evaluation. In the table, we generally have:

Chi-square table for all research hypotheses

Variable	Chi-Square Statistics (X^2)	Degree of Freedom (df)	Significance Level
Employees Performance Evaluation Process	88/35	4	0/000

We consider the following hypothesis:

H0: There is no significant relationship between the use of management information systems (MIS) and the employee evaluation process.

H1: There is a significant relationship between the use of management information systems (MIS) and the employee evaluation process.

With an error level of 0.05 and a confidence level of 0.95, the calculated chi-square is greater than the chi-square of the table and the significance level is also less than 0.05. So our hypothesis (H1) is accepted. That



is, with a confidence level of 0.95, we can say that there is a significant relationship between the use of management information systems (MIS) and the employee evaluation process.

4. Conclusion

At the beginning of this research, a main question was raised as follows: "Is the use of management information systems (MIS) significantly related to the evaluation of human resource performance of Tashkent Steel Company?" To answer this question, we proposed a main hypothesis as follows: "The use of management information systems (MIS) significantly related to the evaluation of human resource performance of Tashkent Steel Company."

Using the results obtained from the research, we confirmed this hypothesis and the existence of a significant relationship between these two variables. This means that the evaluation of human resource performance of Tashkent Steel Company is not indifferent to the existence of a management information system (MIS) in that company.

This research proved that the human resource performance evaluation index continues to work under the influence of the existence of management information systems, and if such a relationship exists, it is possible to improve the evaluation of human resource performance of Tashkent Steel Company by utilizing management information systems and keeping these systems up to date.

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