The role of E-HRP systems in improving competency management - A study of companies operating in M'sila region -

D. Rabeh Merouani
Digitization laboratory in economics, media institutions and public administrations
University of M'sila
University Pole, Road Bourdj Bou Arreiridj, M'sila 28000, Algeria
rabeh.merouani@univ-msila.dz

Received: 08/10/2024 Accepted: 12/12/2024 Published:20/12/2024

Abstract:

This study aimed to test the relationship between E-HRP systems and competency management in some companies studied in M'sila. The descriptive approach was relied upon to achieve this goal with the help of a questionnaire to explore the opinions of a sample of 54 human resources managers about the role of these automated systems in improving competency management processes in their companies.

The results of the study showed that there are acceptable attempts to activate E-HRP systems in these companies by exploiting the automated capabilities in these systems, benefiting from the quality of the information they provide and there is a lexibility in automated procedures when preparing the employees' budget. It has been proven that activating E-HRP systems has a role to improve the processes of anticipating needs for human competencies, analyzing their jobs, developing them and valuing their skills in these companies studied in M'sila.

Keywords: Information systems, Human resources planning systems, E-HRP, Automation, Competency Management, Companies, M'sila.
Jel Classification Codes: O15, M12, M15, M54.

Corresponding author: Rabeh Merouani, e-mail: **rabeh.merouani@univ-msila.dz.**

1. INTRODUCTION

1.1 Background

In the contemporary business world which is characterized by the development of size, the diversity of commitments and the intensity of competition, companies have begun to move towards containing individuals with high skills and distinguished competencies through their ability to respond to new knowledge and adapt to emerging technologies which make the difference in industrial and business processes with new opportunities. Therefore, it is necessary for companies to control competency management applications. This control may require working according to information systems for managing and planning human resources in an electronic way (E-HRM and E-HRP) where companies can make any decision related to the affairs of skilled employees without any problem, such as decisions of: recruitment, selection, appointment, training, development, promotion, compensation, evaluation, retention, retirement,…etc. In more difficult and innovative working conditions, human resource managers can exploit E-HRP systems to improve talented planning processes, follow up on them and solve their problems related to new executive programs which are considered as positive factors that lead to success of companies towards facing the challenges associated with business sustainability and ensuring a competitive position in the market.

1.2 Research problem

Electronic automation of human resources management information systems provide several benefits which can improve competency management within the framework of the strategic objectives and competitive programs of companies. Hence, this study will attempt to project this proposition onto the reality of a group of active companies in M'sila region through the problem formulated as follows:

- ***Do human resources planning systems (E-HRP) have an influential role in improving competency management applications in the companies studied in M'sila region?***

1.3 Research hypothesis

In order to provide expectations about the initial and probable answer to the problem of this field study, several hypotheses were formulated as follows:

H1: There is a significant activation of electronic automation in human resources planning (E-HRP) systems in the companies studied in M'sila.

H2: There is an actual improvement in the competency management processes of the companies studied in M'sila.

H3: There is a (statistically significant) relationship between the automation of human resources planning and the improvement of competency management in the companies studied in M'sila.

H4: There is a (statistically significant) effect of automating human resources planning systems to improve competency management in the companies studied in M'sila.

1.4 Research importance

The importance of studies devoted to the subject of automation of information systems in companies is increasing over time because of the developments that always occur in information technology, communications, digitization and electronic management. This development may lead to transformations in the concepts, applications and practices involved in planning the path of human resources, and perhaps it will produce new images in increasing efficiency. Even in improving the quality of data about human resources, as well as reducing the costs associated with human resources management and preventing human errors in the company's personnel planning processes. Therefore, controlling the technologies of these systems and adopting their application is an ongoing and uninterrupted call for Algerian companies which are still on a long way to achieve the goals of forming human capital, preserving gray matter (Competencies) and reaching praiseworthy ranks in the world of competition.

In addition, the use of automation in human resources planning systems in Algerian companies will allow them to comply with regulations related to work and employees, this also helps to stop the risks associated with non-compliance with laws, avoid protests from union organizations and reduce cases of dissatisfaction emanating from skilled individuals, as well as reducing the brain drain that reflects negatively on the strategic goals of newly established companies that are at the beginning of their path. In general, the study of electronic human resources planning E-HRP systems is extremely important, as the technical benefits of these automated systems help to understand the applied advantages that can improve the quality of competency management processes in Algerian companies.

1.5 Research objectives

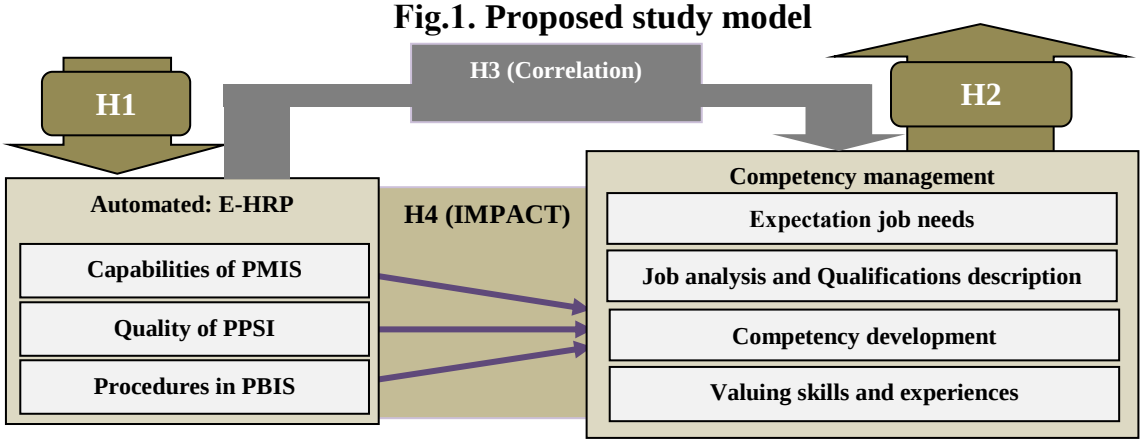
This field study which was carried out with the participation of a group of companies (industrial, commercial and service) operating in M'sila region, sought to achieve a number of objectives. These objectives were mainly:

- Identify the reality of electronic automation of human resources management and planning information systems (E-HRM and E-HRP) in the studied companies in M'sila.
- Revealing the reality of improving competency management processes at the level of the companies studied in M'sila.
- Showing the extent to which automated human resources planning systems (E-HRP) contribute to improve competency management in the studied companies in M'sila.
- Trying to come up with suggestions that may enhance approaches to adopt information systems for HRM that are fully automated in a modern electronic way and that will help the studied companies in M'sila to improve personnel planning processes, regarding to Human Competencies Management (HCM).

1.6 Research model

Based on the theoretical framework of the electronic human resources management literature, and in view of the results of some previous studies, a hypothetical model was designed for this field study which calls for statistical testing of the proposed relationship between E-HRP systems and competency management applications, these processes that are expected to improve at the level of the companies studied In M'sila. Accordingly, this proposed model was expressed in a graphic form which will be presented as follows:

Fig.1. Proposed study model



Source: By the researcher

1.7 Research methodology

1.7.1 Theoretical methodology

The descriptive methodology was used in the theoretical framework, through the scientific references that could be found, to identify some basic concepts and approaches related to the subject of E-HRP systems as automated systems, and also to clarify the processes of managing personnel and human competencies in companies. Some theoretical literature and models of previous studies were reviewed to provide explanations for the relationship between automation and specialized applications in managing highly skilled individuals.

1.7.2 Applied methodology

For the purpose of field diagnosis of the study variables, (E-HRP systems / Competency management), and to test the relationship between them, descriptive statistics techniques and some inferential methods were used through employing the most important statistical tools to measure and analyze data and reveal the correlation model between them. This was done after retrieving the distributed copies of the questionnaire that were relied upon to collect data from the officials employed in the human resources management departments of the group of companies in t M'sila region that participated in the study.

2. THEORETICAL FRAMEWORK

2.1 Electronic human resources planning systems: E-HRP

2.1.1 Human resource management information systems and HRP

Companies are seeking to establish information systems that enable the follow-up and processing of data on procedures in human resources management processes, such as recruitment, appointment, training, promotion, etc., so that these systems constitute a group of human and material elements that interact with each other in an organized manner with the aim of providing the necessary information about working individuals. This information is then used to make decisions about the affairs of these individuals in their career path (Al-Zahrani, 2016, p. 10). Human resources MIS often appear in the form of a set of electronic systems and digital applications specialized in implementing human resources management processes, in order to facilitate planning procedures, to support decision-making, and to operate means of following up on individuals' affairs and monitoring their performance. These systems are based on the use of a lot of information and communications technology, internet applications and platforms, to carry out functional tasks in human resources management and conduct their operations in an electronic manner which is considered as a broader concept of electronic management specialized in managing employees, so that it exploits computerized technology effectively (Berrak & Mecerhed, 2022, p. 277).

When talking about electronic planning of individuals' needs to implement projects, it is necessary to mention the E-HRP system, considering it as an information system based on the electronic processing of employee data in the company. This system is structured in the form of a computer software package that allows administrators to interact with an automated complex of algorithmic functions and digital applications used to manage employee affairs. So, the E-HRP system is a type of technical system developed with human resources applications in mind, it is considered as solution that supports a wide range of human resources management functions. An example of E-HRP is the HCM-Oracle system which includes software with application tools to activate employee management procedures, such as: recruitment, salaries, personalization, setting profiles and monitoring employee performance, this system is operated through a single source of employee data with the possibility of central display in the company (www.oracle.com) .

2.1.2 Capabilities of PMIS that can be automated in E-HRP and E-HRM

HRM and planning systems in companies are structured using the capabilities of PMIS (Personnel Management Information Systems), the automation of which is demonstrated by the software package dedicated to personnel and workforce Management. In the software aspect of automation, E-HRP consists of several algorithms in the form of functions,

arithmetic sequences, and statistical tools dedicated to identifying patterns of relationships and mathematical modeling between skill variables and the costs of managing them. Such as SAP, which allows the integration of predictive analytics in real time, providing predictive information (accurate and flexible) about adapting the company's people needs to the dynamics of the labor market (www.sap.com). Whereas, employee accounting software includes algorithms and applications, such as CentraHub HCM, used to explore employee status, track time and attendance, run absence management, prepare advanced time scheduling, conduct analytics, and accurately monitor labor costs (wages, bonuses, grants, bonuses, etc.) relative to activity (employee productivity), and processing payroll by calculating the value of compensation and tax deductions (www.sap.com).

With regard to communication applications for interacting with employees, there are messaging applications with electronic mechanisms integrated into the company's intranet, to ensure that the HRM department interacts with the various units in an effective and immediate manner, to provide direct guidance and continuous support to employees in work performance and professional improvement (www.arabiaa.me). There are digital applications for internal communication which allow tracking the movement of employees in the factory, receiving their correspondence, controlling their powers, cases of disruption, delegations...etc (www.onepage.sa). As for dealings with external parties, the applications included in digital platforms give HRM departments the electronic ability to communicate with the outside, especially about employee affairs and benefits with external organizations. For example, BAYZAT platform applications enable the HRM Department to do the following: (www.bayzat.com)

- Offering discounts to employees from various retailers, service providers, etc;
- Simplifying access to benefits beyond the workplace, such as: social insurance and taxes;
- Facilitating contracts for health, entertainment, banking and financial services.

It is worth noting that E-HRP requires managers to have training courses that qualify them to use digital application technology, computing, and the intranet, because these training courses will help them to master the processes of planning personnel affairs and saving information related to them, and operating employees must be trained when entering and outputting data (Quorishi, Boumadjane, & Soltani, 2017, p. 152).

2.1.3 Quality of PPSI in E-HRP

The human resources management information systems provide managers with a complete database of individuals employed in the company, to help them make decisions about each of the processes: selection, formation, training, promotion, career planning and analysis of skills and competencies, which means that these systems must produce information with sufficient quality characteristics, including: clarity, accuracy, timeliness, reliability, appropriateness, completeness, brevity, adequacy, format and usefulness (Alam, 2017, p. 1424).

Automation of human resources planning systems enables quality of PPSI (Personnel Planning Systems Information) specifications to be achieved, so that the information is clear in the blueprint for future jobs in the company's activity centers. E-HRP also produces

complete information, i.e. its quantity becomes sufficient, especially for coordinating data on the facts of the need for individuals and on employment plans in job centers.

E-HRP systems help managers to prepare accurate information regarding the company's contracting plans with individual employees, either on the basis of qualifications, experience, or certificates. The qualitative details of the data are important in planning the processes of forming and training workers on the new skills that the company needs in its future programs. On the other hand, E-HRP systems can provide appropriate information about individuals' promotion expectations, whether based on time, achievements, professional development, or otherwise.

2.1.4 Automation of procedures in PBIS

Financial accounting for employees is one of the most important and necessary arrangements in planning and implementing the human resources budget, especially when PBIS (Personnel Budget Information System) prepares a summary budget framework for wages payable in the company. This involves several procedures including: (Bragg, 2004, pp. 2-3)

- Calculating the result of multiplying the number of hours worked by the standard wage rate, and the calculation can be complicated due to overtime wages, time differences and bonuses;
- Activating the powers to make adjustments to salaries to apply legal tax exemptions;
- Estimating the amounts of tax deductions, exemptions, transfers and training grants applied according to the levels of working individuals;
- Estimating voluntary deductions in pension, insurance and union dues payments.

After what was mentioned previously, it can be said that automated procedures in human resources budget systems will be based on the use of digital applications that allow the preparation of an automated framework of information about salary estimates according to monthly attendance. As well as, automatic preparation of the final information about estimates of the amounts of grants and subsidies provided to individuals. Also, automation can be applied to the processes of preparing a statement of information about cost estimates that will arise from assigning external tasks to employees for the benefit of the company. Automatically tracking data for accounting working hours is an important procedure, recorded electronically in the company's work centers, which helps to facilitate the preparation of digital reports when calculating the monetary value of the worker's productivity, whether the calculation is based on the units of goods produced, sales units achieved or completed service transaction units.

2.2 Basic applications for managing competencies in companies

2.2.1 Human competencies from a behavioral, technical and functional perspective

Human competencies express the totality of behaviors that some people control more than others in society, organizations, and companies, the thing that allows them to be in a better professional position. These behaviors are often observable in the reality of daily work, whether through the person's accumulated knowledge, his personal interactions with individuals and events, or his preparations acquired through experience and expertise (Bahri, 2022, p. 261).

From a technical perspective, human competencies refer to the stock of skills, knowledge, experience, and behavioral qualities that an individual worker needs to perform a job competently, as these personal introductions to the individual employee are the reason for achieving effective performance at work, which means that competence is closely related to the characteristics of the person who performs the work. On the other hand, human competence relates to the specifications of the results of work performed efficiently by the skilled person.

In the company, the basic competencies of the individual employees appear to be related to their ability to provide work that reaches the markets with high returns (everything related to: brand development and management, sales, marketing, distribution, logistics services, technical support... etc.) or the competencies are related by superiority to (Quality, time saving, reliability…etc.) or by being relevant to the job (Unique skills), which is ultimately what makes the company distinct from its competitors (Horton, Hondeghem, & Farnham, 2002, pp. 4-5) .

2.2.2 Anticipating needs for jobs and competencies: Expectation job needs

Predictive management of jobs and competencies is an endeavor towards human resources engineering which is based on imagining and monitoring a set of policies and applications aimed at reducing the gap between the company's needs for human resources and what is available for itfrom this type, in a predictive manner, this approach is included among the major future goals in Company activity (Soumia & Dadene, 2016, p. 36). The anticipatory management of the workforce and their future jobs is seen as an essential process in managing the stock of competencies when facing the requirements of strategic choices associated with innovative business operations by the company. Anticipatory management aims to conduct future extrapolation in which it shows the required size (Quantitative and Qualitative) of employees with competencies to implement the new business strategy, identifies the gap between the current supply of competencies incumbent in the company and the future demand for competencies present in the labor market and provides perceptions about competency development plans for new jobs necessary to achieve the company's long-term goals (Pillans, Hirsh, & Foley, 2020, p. 8).

Companies apply anticipatory management because it is an important tool in estimating job requirements related to their future programs, and it helps a lot in determining their needs for human resources, especially highly skilled individuals. Therefore, there is a set of justifications that call for the use of predictive job management and even in allocating human competencies to work positions in the company's structure, including: (Saket & kadri, 2017, p. 8)

- Determining accurately the number of skilled individuals available in the company;
- Identifying current needs for skilled individuals;
- Establishing the criteria, steps, conditions and characteristics required to reallocate current skilled individuals to current jobs, and identifying future needs for new jobs;
- Calculating the results of the comparison between the number of individuals expected to be prepared and the number of jobs required in the future ;

2.2.3 Job analysis and description of competency qualifications

Job analysis means those systematic processes in studying the nature of work, tasks and the individual in the company's departments. So, these processes begin by collecting data and obtaining information about the basic aspects and important technical details of structured jobs, then studying possible changes in the main characteristics of the work and subsequent developments in the methods of its completion. Regarding the results of the job analysis of work, they are used to prepare accurate information about the requirements of work activities and the necessary duties required of employees, explain how to use tools and equipment, clarify the interactions of work elements and the job, and determine knowledge, skills and qualifications that the employee must possess to do the work in a program framework (Lohman, 2021, p. 3). Job analysis and skills description result in the formulation of a guide which shows all aspects (technical, administrative and organizational) of the job title, in the form of a narrative, in which the characteristics and specifications of the incumbent worker are recorded, the characteristics of the tasks and activities to be carried out by him and the professional conditions required by the tasks, in addition to A table showing how to evaluate the value of a job, and establishing a link between this professional value and the corresponding salary and wage (Suthara, Chakravarthib, & Pradhanc, 2014, p. 170).

It is noteworthy that the processes of describing jobs - in job centers that need individuals with high skills help to achieve the following benefits: (Al-Aqili, 2004, p. 185)

- Informing the individual holding the job of everything that is required of him to perform his work and how his competence and skills can be successfully exploited.
- Enables managers to determine how to direct the work of their subordinates and enables skilled employees to achieve the objectives of the tasks required of them.
- It gives human resources management departments the ability to place a competent employee to occupy the appropriate position in the company's organizational structure.

With regard to the areas of benefiting from the results of job analysis, they are embodied in developing those organizational alternatives to work, as well as improving ineffective processes by reengineering the procedures of the job. Therefore, it is possible to benefit from functional analysis in the following operations: (Stoilkovska & Serafimovic, 2017, pp. 216-218)

- Determining how to select skilled individuals and appoint them to fill positions by testing their abilities in group competitions and individual interviews
- Organizing training and activating development procedures, to introduce new personnel into existing operations, and to transfer experienced employees to new responsibilities;
- Establishing objective criteria to evaluate the impact of employing competencies at work;
- Building an appropriate and fair compensation system for talent;
- Conducting career path planning throughout the employees' professional lives, to implement options that better direct them towards specializations compatible with their skills;

2.2.4 Competency development

The development of competency qualifications appears in those efforts and frameworks towards carrying out comprehensive work which includes various measures and procedures, this is to have a positive impact on the conditions (organizational, administrative and technical) that raise the stock of skills, ideas and applied experiences of employees, whether for individuals affiliated with the company or individuals recruited from the labor market.

Also, there are practices towards developing competencies that allow the integration of individuals into the organizational structure and enable them to understand the company's operations, including, for example: hiring, promoting, transferring and training, or changing and rotating positions, or enriching work and organizing work teams...etc (Ellström & Kock, 2008, p. 7).

On the occasion of new field challenges, the executive management takes the initiative to develop competencies within an action plan aimed at changing or improving leadership behaviors, in the medium and long term. This process includes all the necessary activities to select managers and provide them with skills, abilities, attitudes and values that qualify them to carry out their new responsibilities in a better way.

Therefore, developing administrative competencies leads to transforming the company into an advanced future situation that guarantees success and excellence in competitive performance. The administrative development process is being implemented through the efforts of training, formation and scientific preparation programs dedicated to provide updated knowledge and skills, as well as ensuring continuity of qualification and transfer of expertise in senior leadership positions, and using appropriate incentives embodied in applications of empowerment, delegation, transfer, promotion (Guerine, 2014, pp. 24-29).

2.2.5 Valuing skills and experiences of the competencies

Material rewards and incentives may be used as a mechanism to value the professional experience acquired by human competencies. For example, the wages paid can play the role of one of the means of valuing skills. Rewards and compensation include all monetary elements provided to employees throughout the period of their activity with the company, the monetary value of these compensations is agreed upon through dialogue, individual and collective bargaining with employees using all elements included in the worker's income.

Numerical indicators are relied upon to calculate the financial amounts for the value of skilled work, according to the type of employment contract, and therefore compensation must take into account indirect expenses on training experiences and optional incentives linked to outstanding performance that goes beyond normal activity (Varzaru & Varzaru, 2011, pp. 167-168).

On the other hand, some companies resort to valuing competencies (or skills) instead of valuing jobs, so they apply a payment system based on competencies, by setting a wage structure linked to the experience the employee possesses or the skills he exerts to complete tasks and carry out activities in the workplace (Salem, 2021, p. 165).

Incentives can be viewed as a mechanism to value the professional experience gained by competencies, as they link incentives to the extent to which competencies contribute to achieve returns for the benefit of the company.

On this basis, the HR department chooses the most appropriate method to motivate competencies in the company's projects, and this is done taking into account the principle of individual differences between employees, especially when giving them incentives in many forms, including the following: (Alves & Lourenco, 2023, p. 379)

- Monetary incentives: wages, grants, financial rewards and returns.
- Moral incentives: assuming senior positions, independence, training opportunities.
- Field incentives: convenient conditions, insurances, timing and industrial security.

In the context of compensation as a mechanism for valuing the professional experience of competencies, compensation can be applied on the basis of the knowledge provided. In this aspect, the employee is not compensated on the basis of the description or arrangement of his job at the company level only, but is compensated on the knowledge he provides to the company in implementing its production, marketing, commercial and financial programs. For this reason, employees are motivated to update and develop their skills through learning, and this method is often adopted in short-term industries that require new knowledge, such as software industry and artificial intelligence (Merzougui, 2015, p. 62).

2.3 Perceived improvements in competency management resulting from E-HRP

2.3.1 Improved knowledge of needs for competencies after planning

By adopting E-HRP systems, there are several key points linking the applied automation to improve the ability to generate accurate knowledge about the amount of needs for jobs that require specific skills and competencies to implement the company's investment projects. On this occasion, HRM departments are turning to exploit the modern capabilities available in personnel planning software to control job lists, competencies, and workforce. The role of E-HRP software in making employment programming decisions increased, with the presence of applications and mathematical functions that can analyze the company's assets in proportion to its need for individuals with skills, and then appoint them later to operate the investment assets and develop the company's ability to achieve future goals related to the market and competition.

E-HRP software is considered as an important automation resource for the company's Human Resource Management Information Systems, as it is designed in a way that improves the experience of employing skilled individuals and competent employees. In addition, automation can exploit the capabilities of virtual assistance applications and artificial intelligence in implementing those digital processes that calculate the amount of work needs, competencies and jobs, and enables the HRM department to share data and information about the specializations of expertise and skill areas that are necessary for the current work teams and cooperate with them in completing tasks (www.blog.mostaql.com/hr-management-software).

For reference, E-HRM systems are used via the internet, in order to search for nominations of those with new skills, and then sort their offers, in preparation for meeting the need for competencies in vacant positions. This depends on several appropriate criteria that determine the specifications of the high skill required, and this is in view of the creative abilities of these nominated individuals to bring knowledge and share it with the company.

One of the benefits expected when automating requirements planning processes is obtaining accurate knowledge about the company's needs from individuals with new skills, they have the ability to implement the company's business programs in the future, and then begin prospecting for competencies and employing the best of them, in terms of their preparations and abilities to learn and develop to help the company achieve its ambitious goals in the upcoming business events and business competition. Therefore, information technology, software, and the digital networks will help E-HRM build channels for social communication which are operated in the process of searching for the biography of individuals with new skills and competencies, bringing them, contracting with them electronically, and this leads to the allocation of competencies to job positions at the company's production sites (Terfa, 2020, pp. 273-274).

2.3.2 Improving the cycle of attracting and appointing competencies

E-HRM systems provides a set of technical capabilities that help in making decisions to attract talent in an automated, accurate and rapid manner, and then initiating the selection procedures where follow-up algorithms are run and the required skills are analyzed, whether they are offered by employees in the company or by other individuals from outside, and after the completion of follow-up and analysis, some qualitative tests are carried out, for the purpose of sorting, scrutinizing and arranging the available offers. To carry out follow-up and analysis processes in an automated manner, the HRM Department uses the techniques of dashboards and electronic portals by publishing them on social media platforms, in order to track new skills that are likely to be presented by candidates from outside the company to fill the job position. In the presence of technologies belonging to E-HRM information systems which are designed for recruitment purposes, electronic management procedures are used for the files of candidates interested in filling the job, starting with the stage of tracking applicants, then the testing stage, and finally the stage of selecting the successful candidates to whom job contracts will be offered, it will facilitate this automated method interacts independently of time and place to attract individuals with skills and competencies (Holm, 2012, p. 245).

Within the framework of facilitating the processes of testing, selecting and appointing competencies, E-HRM systems contain electronic software and smart applications that regularly supervise the CVs evaluation and qualifications of individuals nominated for the job positions offered, by carrying out searches and verifying the quality of performance required of the candidates using evaluation criteria and numerical percentages. Through these criteria and percentages, the method of success in the test is determined, meaning that the candidate is accepted or rejected for the job position in the company. The automation present in E-HRM systems applications helps in arranging the results of the tests, based on the outputs of the evaluation processes of the tested skills data from the content of the answers to the personal interview questions, and in the recruitment processes, the expert systems software dedicated to recruitment provides support when establishing the employment contract for the successful candidate in the interview, it also proposes written provisions related to bargaining wages, working hours, job conditions, professional holidays, etc (Byun & Suh, 1994, pp. 14-16).

2.3.3 Improving human competency development processes through vigilance

In order to obtain accurate reports on the employee's needs for training, human resources managers resort to the options available in E-HRM systems, by running digital applications concerned with providing information that supports the decisions involved in preparing employee training programs. The role of automation in vigilance systems comes in alerting us to the presence of employees whose knowledge must be developed, so that their skills can be properly exploited in the company's new investments, and from here it is easy to allocate training programs appropriate to these employees. So, through electronic documentation of recorded information about the facts that prove employees' need for training that raises their performance levels, and according to the report data that includes the characteristics and the number of employees potentially trained, the content of the training programs will be formulated, as well as an estimate of the costs and expenses of training...etc. In addition to that, there are other information that reveals an assessment of skills inventory, knowledge and experience of employees which makes it easier to identify the nature of new training activities necessary to improve competencies (Blaghmesse, 2017, p. 60).

From another angle, E-HRP systems provide an automated possibility to exploit employee databases and compare them with recorded information about the skills required in job positions necessary to implement the company's new plans. Thus, the results of the comparison will be used in the processes of planning and training projects consistent with future business strategies. After completing this procedure, the training program is planned, in terms of time, source, and financial allocations, and these training must be appropriate for later promotion and transfer processes. There are other detailed procedures that can be easily implemented using E-HRP systems, especially when registering the skill conditions (Analytical or Synthetic) necessary for new jobs, determining the level of technical knowledge embedded in these jobs, when presenting new expectations about the performance of employees based on the quality of their training, and when measuring learning outcomes. At the end of the training cycle, automation helps in evaluating the effectiveness of training programs, including the learning materials to determine whether the required techniques and knowledge have actually been transferred to the trained employees or not yet, and that the activities of the work teams have responded to the training objectives (Gutterman, 2023, p. 9).

2.3.4 Improving the sustaining of competencies by following up on initiatives and rights

Talent retention initiatives are based on a systematic approach which attracts and empowers and engages creative individuals within an organizational environment that makes them want to continue serving their company until their flexible and creative roles reach their peak. Hence, the company will need to evaluate constantly its employees, and also develop and appreciate them, because there are high costs associated with the loss of those competencies capable of adapting to modern technologies, which means a decrease in human capital that forces the company to face human conditions and prevent it from gaining a competitive advantage or causes an inability to preserve talents in a world full of innovation risks, extreme changes and strong challenges (Mazlan & Jambulingam, 2023, p.

79). It should be noted that success of the reward policy in preserving competencies may be subject to the following conditions: (Allen, 2008, p. 25)

- Customizing compensatory and motivational rewards according to the individual needs;
- Promoting wage fairness;
- Providing more opportunities for training and promotion to highly qualified employees.

As for the procedures that support the processes of maintaining competencies, the HR Department resorts to integrating E-HRP systems to collect information about skilled individuals by following up on bulletins, application forms and E-Databases which store reports on CVs and information about skills and experiences to attract individuals whose competencies are compatible with the company's innovative goals. On another level, regarding the procedures that support the processes of maintaining competencies, E-HRP systems help to provide more conditions of transparency and speed, they reduce the cost of monitoring the performance of competencies and several electronic reports can be obtained to display the results of evaluating employees' achievements.

The E-HRP system has the ability to generate reports that reveal the correlation of the employee's performance with the compensation included in the payroll which helps managers of the HRM Department to analyze the effects of the applied incentive system and the extent of its fairness. In addition, it is possible to collect data about the results of the competencies work, and then write detailed analysis texts on the extent to which these competencies fulfill their obligations and obtain their contracted rights. In the smart part of the E-HRP, some algorithms carry out the tasks of monitoring disciplinary situations electronically, as they can detect various professional violations and unproven obligations at the company's work sites which facilitates understanding the extent of justice achieved among employees in professional aspects, this is considered as a positive factor that supports the procedures for maintaining competencies (Alkerdawy, 2016, pp. 83-84).

3. APPLIED FRAMEWORK

3.1 Study sample and instrument

3.1.1 Description of the population and sample of respondents

From a field perspective, the study population represented the total number of companies active in the business sector in M'sila region, and their number was large. As for the source of opinions and data, the study population was composed of human resources administrators targeted by answering the questionnaire. These executives are the ones who live the reality of exploiting human resources planning systems in their companies located within the geographical scope of the state of M'sila.

The field study was completed with the participation of 17 companies. These companies were selected randomly, and it was verified whether they applied the E-HRM system and its planning branch, E-HRP, via software, digital tools, and networks, whether completely or partially. With regard to select the sample of respondents, this was done by

choosing a simple targeted sample of executives responsible for the human resources management departments in the companies participating in the study.

Accordingly, the sample of respondents to whom the questionnaire was distributed consisted of 56 executives. Of the 56 distributed, 54 valid copies were retrieved for study. Table (1) shows some numbers about the distribution and retrieval of the questionnaire copies among the sample of respondents.

Table 1. Copies of the questionnaire distributed and retrieved

Company Name	Activity	Distributed copies	Retrieved copies
Public Corporation for Urban Transport	Transport	04	04
Algeria Telecom Company	Communication technology	07	07
Mobiblis	Telecommunication	02	02
BNA	Banking services	03	02
SONELGAZ	Electricity and Gaz	02	02
ADE	Water services	03	03
NAFTAL	Distribution of petroleum products	08	08
GHARBI To produce cleaning materials	Hygiene chemistry	04	04
Hodhna Foam Company	Bedding industry	03	02
Commode Industry	Building materials and public works	02	02
Msila Winding Industry	Repair and maintenance of electric motors	03	03
Sidi Issa Mills Industrial Complex	Nutrition industry	02	02
Poultry farming complex	White meat industry	04	04
Mihoubi Company	Building materials industry	02	02
ALGAL+	Aluminum industry	02	02
M'Sila Grain Cooperative	Production of grains and legumes	03	03
Al-Hidab Company	Concrete industry	02	02
Total		**56**	**54**

Source: by the researcher

3.1.2 Study tool

In order to achieve the objectives of the study and to collect data from the field of companies studied, a rigorous scientific questionnaire was relied upon, consisting of several questions that were built based on the deductions contained in the concepts and approaches of the theoretical section of the study, it was also designed using models of some previous studies. The outline of this questionnaire in its final form ended up containing 31 statements which were divided as shown in the following table (2):

Table 2. Technical details about the questionnaire's axes

Axis		Dimensions	Ferry number	Number of items	%
E-HRP	**1**	Capabilities of personnel information systems	1-5	5	16.12
	2	Quality of personnel planning systems information	6-10	5	16.12
	3	Procedures in personnel budget information systems	11-15	5	16.12
Competency management	**4**	Expectation Job Needs	16-19	4	12.90
	5	Job analysis and Qualifications description	20-23	4	12.90
	6	Competency Development	24-27	4	12.90

	7	Valuing skills and experiences	28-31	4	12.90
Total				**31**	**100**

Source: Prepared by the researcher based on the outputs of (SPSS)

3.2. Methods of statistical processing and preparatory tests for study data

3.2.1. Statistical methods and tools used

To discuss the issue of human resources planning systems (E-HRP) and improving competency management from a field perspective in the companies studied in M'sila, and in order to answer the problem posed in the introduction, and to test the validity of the hypotheses, this research relied on the following statistical methods and tools:

- Measuring the reliability and validity of the items using the Cronbach-alpha test.
- Knowing the nature of the distribution of data using the Kolmogorov-Smirnov test, because the sample of respondents is larger than 50 individuals.
- Measures of central tendency, dispersion and confidence: arithmetic mean, standard deviation and degree of significance;
- Analysis of the study's axes using: Fisher (F) and Student (T) tests.
- Pearson test for correlations, probability measures (α), coefficients of determination (R Square) and correlation (R) in multiple regression.

3.2.2 Preparatory tests on the data

3.2.2.1 Testing the reliability of the study tool (Questionnaire)

A study that relies on a questionnaire directed at respondents requires testing the reliability and validity of this questionnaire, using at least the method of estimating the reliability coefficient (Cronbach-alpha). This method seeks to measure the internal variation coefficient between the answers of the sample of respondents and to ascertain the extent of the possibility of obtaining similar results if the research was repeated in similar circumstances using the same questionnaire. By the way, the value obtained for this coefficient is considered statistically acceptable if it reaches 0.65, meaning 65% or more. The following table (3) shows the results obtained by testing the two axes - human resources planning systems (E-HRP) and improving competency management:

Table 3. Cronbach-alpha test on the reliability of the questionnaire items

Axis			**Cronbach's Alpha**		
			Coefficient	**Items**	**Result**
Independent Variable	**1**	Capabilities of personnel information systems	0.79	5	Proven
	2	Quality of personnel planning systems information	0.90	5	Proven
	3	Procedures in personnel budget information systems	0.82	5	Proven
E-HRP			**0.87**	**15**	**Proven**
Dependent Variable	**4**	Expectation Job Needs	0.83	4	Proven
	5	Job analysis and Qualifications description	0.81	4	Proven
	6	Competency Development	0.88	4	Proven
	7	Valuing skills and experiences	0.86	4	Proven
Competency management			**0.91**	**16**	**Proven**

Source: Prepared by the researcher based on the outputs of (SPSS)

Table (3) shows that the values of the Cronbach-alpha coefficient for the dimensions of

the E-HRP axis ranged between 0.79 as a minimum and 0.9 as a maximum, which confirms that the items formulated in this axis have a high degree of reliability. In addition, these items are suitable for use in order to obtain final answers about:

1- Capabilities of personnel information systems, 2- Information quality of personnel planning systems, 3- Procedures in personnel budget information systems.

The same observation is recorded in the values of the Cronbach-alpha coefficient for the dimensions of the competency management axis which ranged between 0.81 as a minimum and 0.91 as a maximum, and shows that all items are characterized by a high degree of reliability, and they are valid for investigating the improvement of operations:

4- Expectation Job Needs, 5- Job analysis and Qualifications description, 6- Competency Development, 7- Valuing skills and experiences.

3.2.2.2 Testing the normal distribution of data collected from the sample

Since the number of respondents (human resources managers of the companies studied in M'sila) was more than 50 individuals, the procedure requires examining the normal distribution of the answer data, with respect to the questionnaire's axes, using the Kolmogorov-Smirnov test. After applying this test by SPSS software, the measurement results appeared as recorded in Table (4).

Table 4. Testing normal distribution on answer data (Kolmogorov-Smirnov test)

Dimensions of the questionnaire axes			Kolmogorov- Smirnov		
			Coefficient	Sig	Distribution
Axis 1	**1**	Capabilities of personnel information systems	0.116	0.080	Normal
	2	Quality of personnel planning systems information	0.118	0.074	Normal
	3	Procedures in personnel budget information systems	0.113	0.083	Normal
E-HRP			**0.086**	**0.200***	**Normal**
Axis 2	**4**	Expectation Job Needs	0.081	0.200*	Normal
	5	Job analysis and Qualifications description	0.114	0.075	Normal
	6	Competency Development	0.115	0.079	Normal
	7	Valuing skills and experiences	0.072	0.200*	Normal
Competency management			**0.069**	**0.200***	**Normal**

Source: Prepared by the researcher based on the outputs of (SPSS)

According to the Kolmogorov-Smirnov test, it is clear that all dimensions of the E-HRP axis showed (Sig) with a value greater than the tabular value: 0.05. Therefore, it can be said that the data of the respondents' opinions on this axis actually follows a normal distribution.

For the competency management axis, it means that the respondents' answer data regarding the dimensions of this axis are all normally distributed, because (Sig) appeared with the value: 0.200, which is greater than the tabular value: 0.05.

4. Analyzing the model's axes and testing hypotheses

4.1 Analysis of answer data: Central tendency, Dispersion and Ranks

4.1.1 Analysis of answer data on the E-HRP axis

Based on the survey on the efforts (Material and Human) made by the studied companies towards implementing E-HRM, the tendency of the respondents' answers regarding the degree of their agreement regarding: real exploitation of automated capabilities, achieving information quality, flexibility of personnel budget management

procedures will be presented.

This review will be summarized in Table (5), by revealing the results of descriptive statistics using arithmetic averages and standard deviations calculated on the answers of respondents in the companies studied in M'sila.

Table 5. Descriptive measurement results on activating E-HRP in the studied companies

Dimensions of the independent variable			Statistics metrics			
			Mean	Standard deviation	Degree	Rank
Axis 1	1	Capabilities of personnel information systems	4.15	0.21	Agree	1
	2	Quality of personnel planning systems information	3.74	0.06	Agree	3
	3	Procedures in personnel budget information systems	3.79	0.14	Agree	2
Activation of E-HRP systems			**3.89**	**0.13**	**Agree**	**1**

Source: Prepared by the researcher based on the outputs of (SPSS)

The arithmetic mean of the answers related to Dimension 1 (capabilities of personnel information systems) equals the value: 4.15, with a standard deviation of: 0.21, which means that there is a homogeneity in the answers of the study sample members, and this average falls within the category that ranges between [3.40-4.19] on the five-point scale, which indicates high agreement among respondents to activate the capabilities of personnel information systems in their companies in M'sila.

As for Dimension 2 which is the Information quality of personnel planning systems, the overall mean was estimated at: 3.74, with a standard deviation of: 0.06, it indicates that there is high agreement among respondents about the quality of information produced by personnel planning information systems.

Regarding the general average, for Dimension 3, on personnel budget information systems procedures, it was estimated at: 3.79, with an acceptable variance (0.14 shows that there is a homogeneity in the answers of the study sample members), and the arithmetic mean confirms the high agreement of the respondents to adopt automation of executive procedures in information systems for managing personnel budgets in companies studied.

4.1.2 Analysis of answer data on the competency management axis

The results of descriptive statistics will be presented for the dimensions of the dependent variable represented by competency management which expresses the extent of improvement in: Expectation Job Needs, Job Analysis and Description, Competency Development, and Valuation of Skills and Experience. This is through the values of the arithmetic mean and standard deviations calculated on the data of the responses of the respondents in the companies studied in M'sila.

Table 6. Descriptive measurement results on improving competency management

Dimensions of the dependent variable			Statistics metrics			
			Mean	Standard deviation	Degree	Rank
Axis 2	4	Expectation Job Needs	3.63	0.12	Agree	4
	5	Job analysis and Qualifications description	3.67	0.07	Agree	3
	6	Competency Development	3.81	0.10	Agree	1
	7	Valuing skills and experiences	3.72	0.16	Agree	2
Improving competency management applications			**3.64**	**0.11**	**Agree**	**2**

Source: Prepared by the researcher based on the outputs of (SPSS)

The arithmetic mean of the answers to Dimension 4 (Expectation Competency Job Needs) was estimated at: 3.63, with a standard deviation of: 0.12, which means that there is homogeneity in the answers of the study sample members, and this average falls within the category that ranges between [3.40-4.19]. On the five-point scale, this indicates high agreement among respondents that there is an improvement in the processes of forecasting job needs for competencies in the companies studied in M'sila.

As for the arithmetic mean of Dimension 5, regarding Job analysis and Qualifications description, it was estimated at: 3.67, with a standard deviation equal to: 0.07, which indicates the high and homogeneous agreement of the respondents that there is an improvement in job analysis and description of competency qualifications in their companies.

Regarding the general average of Dimension 6 related to developing competencies, it was estimated at: 3.81, with a standard deviation of: 0.10, which confirms the high agreement of the respondents about the improvement of the processes of developing competencies in their companies.

It is clear that the general average for Dimension 7, which expresses valuing the acquisition of skill and experience, appeared at a value of: 3.72, with a variance that reached: 0.16, which proves that there is homogeneous agreement expressed by the respondents regarding the improvement of efforts to value competencies in their companies.

4.2 Hypothesis testing

4.2.1 Hypothesis testing: H1

In this field study, hypothesis H1 states that there is a possibility that there is an appropriate activation of automation in the human resources planning E-HRP systems of the companies studied in M'sila. To verify the validity of this hypothesis, we relied on the value of statistical significance in the T- test, which was applied to the database containing the answers of directors of human resources management departments belonging to these companies.

After carrying out statistical processing using the SPSS program, the results were issued as recorded in the following table (7).

Table 7. T- test on E-HRP axis data

Statement of axis dimensions	N	Mean	Std. Deviation	Mean Difference	Partial Default Mean: 15			
					Test Value: 45			
					T	Df	Sig.	Decision
Capabilities of PMIS	54	20.75	3.31	5.75	12.75	53	0.00	Significant at: 0.05
Quality of PPSI	54	18.74	4.11	3.74	3.67	53	0.00	Significant at: 0.05
Procedures in PBIS	54	18.98	3.73	3.98	7.82	53	0.00	Significant at: 0.05
Activation of E-HRP	**54**	**58.48**	**8.93**	**13.48**	**11.08**	**53**	**0.00**	**Significant at: 0.05**

Source: Prepared by the researcher based on the outputs of (SPSS)

From the results presented, and according to the mean of the answers of the sample of respondents on the E-HRP axis, which reached a value of: 58.48, it is clear that it is higher than the Test Value estimated at 45. Accordingly, it can be said in general that the automation of these systems, in the companies studied, has been activated quite well in fact. This was confirmed by the value of the T-test, for one sample, which amounted to: 11.08, which is considered as a positive value in this direction, and statistically significant, at the

significance level (α = 0.05).

Hence, hypothesis H1 is accepted, there is an activation of automated E-HRP systems for the companies studied in M'sila. Whereas, the result confirmation rate is: 95%, with a probability of error of: 5%.

4.2.2 Hypothesis testing: H2

Returning to the formulation of hypothesis H2, the text of which indicated in this field study the possibility of a noticeable improvement in the competency management processes of the companies studied in M'sila. To confirm the validity of this hypothesis, the value of statistical significance was examined, according to the T-test, which was implemented on the opinion data collected about the managers of the human resources management departments in these companies studied.

After applying statistical processing to the database using SPSS techniques, the results appeared in Table (8) as follows:

Table 8. T- test on E-HRP axis data

Statement of axis dimensions	N	Mean	Std. Deviation	Mean Differen	Partial Default Mean: 15 Test Value: 45			
					T	Df	Sig.	Decision
Expectation Job Needs	54	14.53	2.82	2.53	6.59	53	0.00	Significant at: 0.05
Job analysis and Qualifications description	54	14.70	3.21	2.70	6.18	53	0.00	Significant at: 0.05
Competency Development	54	15.25	3.26	3.25	7.32	53	0.00	Significant at: 0.05
Valuing skills and experiences	54	14.92	3.10	2.92	6.93	53	0.00	Significant at: 0.05
Improving competency management applications	**54**	**59.42**	**10.00**	**11.42**	**8.39**	**53**	**0.00**	**Significant at: 0.05**

Source: Prepared by the researcher based on the outputs of (SPSS)

It was found that the mean calculated on the answers to the competency management improvement axis reached the value: 59.42, and it is noted that this value exceeds the Test Value estimated at: 48. Accordingly, it can be said that there is a noticeable improvement in the competency management processes of the companies studied in M'sila. This is confirmed by the T-test value for one sample, which reached: 8.39, which is a positive value and statistically significant at the significant level (α = 0.05).

Based on this numerical evidence, Hypothesis H2 was accepted. The certainty rate for this result is 95%, with a probability of error of 5%.

4.2.3 Hypothesis testing: H3

In Table (9), the values of the overall (Belateral) correlation coefficient, the level of significance and the sample size, which were calculated due to the applications of (Pearson-test), they will be revealed through the possible relationship between the independent variable [E-HRP] and The dependent variable [Improving competency management], in the model proposed for the study on the companies studied in M'sila.

Table 9. Relationship between E-HRP and competency management

		Dependent variable	Competency management applications (Improving)
Independent variable	**E-HRP (Activation)**	(Pearson) Correlation coefficient	0.65**
		Sig. (2-tailed)	0.00
		N	54
Decision		Correlation is significant at: α = 0.01	

**. Correlation is significant at the 0.01 level (2-tailed).

Source: Prepared by the researcher based on the outputs of (SPSS)

Table (9) shows that the Pearson correlation coefficient between E-HRP and competency management reached (0.65**), which is a positive and has a high value. This means that the correlation between them is direct, and the result of this correlation was statistically significant at the level of significance (α = 0.01).

Accordingly, Hypothesis H3 was accepted, which assumed that there is a statistically significant relationship between human resources planning (E-HRP) systems and competency management of the companies studied in M'sila. Whereas, the confirmation rate of this hypothesis reached: 99%, with a probability of error: 1%.

4.2.4 Hypothesis testing: H4

Through this paragraph, the work will be done to summarize the results of the testing procedures for Hypothesis H4, which studies the statistical significance of the possibility of an impact of human resources planning systems (E-HRP) in improving competency management in the companies studied in M'sila. This will be through activating the (T) test and the (F) test. At a significance level of : 0.01.

h_0: The model is not valid for the study: Fc > Ft, when: Sig > 0.01

h_1: Validity of the model for the study: Fc>Ft, at: Sig < 0.01

The results of the statistical processing of multiple regression tests will be presented in Table (10) and the following charts:

Table 10. Multiple regression model tests between E-HRP and Competency management

Dependent variable	Independent variables (Explanatory)	R	R^2	F	F-Sig.	β	T	t-Sig.
Competency management applications (Improving)	(Constant)	0.67	0.45	13.91	0.00	17.88	2.47	0.017
	Capabilities of PMIS					0.74	2.00	0.05
	Quality of PPSI					1.11	3.68	0.001
	Procedures in PBIS					0.27	0.82	0.415

Source: Prepared by the researcher based on the outputs of (SPSS)

From the data in Table (10), it is clear that the measurement results are positive, as the proposed multiple regression model is statistically significant. What proves this is the value of (F) which reached: 13.91, with a calculated significance of: 0.00, which is lower than the condition of significance: 0.01. Therefore, the independent variables in the model (V1: Capabilities of PMIS, V2: Quality of PPSI, V3: Procedures in PBIS) explain about 45% of the variance occurring in the dependent variable (CM: Competence Management), given the coefficient of determination (R^2 = 0.45). The regression equation can be written as follows:

C M = 17.88 + 0.74 Capabilities of PMIS + 1.11 Quality of PPSI + 0.27 Procedures in PBIS - Error (ei).

So, by presenting, analyzing and commenting on the results of the multiple regression model tests, it can be said that the positive effect is indeed proven in this relationship, and therefore Hypothesis H4 is considered correct. Finally, it was confirmed that human resources planning (E-HRP) systems have an actual role in improving the competency management processes mentioned in the theoretical proposal.

5. CONCLUSION

This study discussed the potential relationship model between E-HRP and improved competency management processes in the group of companies studied in M'sila. This was done through investigating the degree of actual exploitation of the capabilities of these systems, the maximum benefit from the quality of their information, and the extent of flexibility in their automated procedures for balancing employees in these companies. In contrast, the extent to which the processes of anticipating needs, analyzing jobs, developing competencies and valuing skills have been improved. Based on the literature reviewed, and by conducting a field study on 17 active companies in the M'sila region, the following results and suggestions were reached:

5.1. Results

After completing measurements, tests and analysis of the respondents' answers in the companies studied in M'sila, the results of the field study appeared as follows:

- Hypothesis H1 is correct. There is an activation of automated human resources management systems of the companies studied in M'sila, including some real attempts to benefit from applications of E-HRP systems.
- Hypothesis H2 is correct. There is a noticeable improvement in the competency management processes of the companies studied in M'sila.
- Hypothesis H3 is correct. There is a statistically significant relationship between E-HRP and competency management of the companies studied in M'sila.
- Hypothesis H4 is correct. As it has already been confirmed that E-HRP have a positive impact on improving competency management processes of the companies studied in M'sila, and this confirmation is proven by statistical significance.

5.2. Proposals

Under the results of the field study, there are some suggestions that can be presented to officials in the companies studied in M'sila, which are as follows:

- Strengthening HRM departments with individuals who are proficient in using artificial intelligence technology, in order to apply automation in an advanced manner.
- Increasing the provision of digital devices, applications and software that meet the company's needs for implementing integrated automation in all departments, such as ERP.
- Preparing digital forms to advertise job vacancies that require talent, using networks.
- Designing electronic platforms dedicated to supervising talent recruitment

competitions and conducting job contracts from inside and outside the company.

- Implementing programs for remote electronic training, in order to increase the experience, competence and knowledge of individuals.

6. Bibliography List

- Alam, J. (2017). HUMAN RESOURCE INFORMATION SYSTEM: A QUALITY CONCEPT. *International Journal of Advanced Research , 5* (9).
- Al-Aqili, M. W. (2004). *Human Resources Management.* Amman, Jordan: Wael Publishing House.
- Alkerdawy, M. M. (2016). The Relationship between Human Resource Management Ambidexterity and Talent Management: The Moderating Role of Electronic Human Resource Management. *International Business Research , 9* (6).
- Allen, D. G. (2008). Retaining Talent: A Guide to Analyzing and Managing Employee Turnover. *In: SHRM FOUNDATION'S EFFECTIVE PRACTICE GUIDELINES SERIES* . 1800 Duke Street, Alexandria, VA 22314, Virginia, USA: SHRM Foundation.
- Alves, I., & Lourenco, S. (2023). An exploratory analysis of incentive packages and managerial performance. *Journal of Management Control , 34* (1).
- Al-Zahrani Riyadh Abdullah Attiya. (2016). *Introduction to Human Resources Information Systems* (ed. 1). Kingdom of Saudi Arabia: King Saud University Publishing House.
- Bahri, A. B. (2022). The impact of human competency management on the quality of health services provided in hospital institutions: A case study of the public hospital institution "Shaabane Hamdoune" in Maghnia. *Journal of Innovation and Marketing , 9* (1).
- Berrak, H., & Mecerhed, b. (2022, 12 30). The reality of used the application of electronic management human resources in institutions- A field study at university of 20 August 1955 skikda, Double-Bli. *Economic Researcher Review , 10* (01).
- Blaghmesse, B. (2017). Human Resources Information System and its Relationship to Human Resource Management Functions. *Journal of Development and Human Resource Management , 3* (9).
- Bragg, S. M. (2004). *Accounting for payroll: a comprehensive guide* (ed. 1). Inc., Hoboken, New Jersey, USA: John Wiley & Sons.
- Byun, D.-H., & Suh, E.-H. (1994). Human resource management expert systems technology. *Expert Systems , 12* (2).
- Ellström, P.-E., & Kock, H. (2008). Competence Development in the Workplace: Concepts, Strategies and Effects, Asia Pacific Education Review. *Asia Pacific Education Review , 9* (1).
- Guerine, A. (2014, 11 08). Administrative development in Algeria: reality and prospects. Setif, Algeria: Faculty of Economic, Commercial and Management Sciences, Setif University 1.
- Gutterman, A. S. (2023, 08 29). *Training and Development.* Consulted in: 12 22, 2023, On: https://www.researchgate.net/publication/373482205_Training_and_Development.
- Holm, A. B. (2012). E-recruitment: Towards an Ubiquitous Recruitment Process and Candidate Relationship Management. *German Journal of Research in Human Resource Management , 26* (3).
- Horton, S., Hondeghem, A., & Farnham, D. (2002). *Competency Management in the Public Sector* (ed. 1). (E. V. Theme, Ed.) Amsterdam, NETHERLANDS: EGPA Monograph, IOS Press.
- Lohman, L. (2021). Strategic Hiring: Using Job Analysis to Effectively Select Online Faculty. *Online Journal of Distance Learning Administration , 23* (3).
- Mazlan, M. R., & Jambulingam, M. (2023). Challenges of Talent Retention: A Review of Literature. *Journal of Business and Management Review , 4* (2).
- Merzougui, A. M. (2015). The trend towards an innovative compensation system. *Business Sciences review , 14* (2).
- Pillans, G., Hirsh, W., & Foley, J. (2020). *STRATEGIC WORKFORCE PLANNING: UNLOCKING FUTURE CAPABILITIES TO DRIVE BUSINESS SUCCESS.* Corporate Research Forum. Southside 105 Victoria Street London SW1E 6QT, United Kingdom: (crf).
- Quorishi, M., Boumadjane, A., & Soltani, M. R. (2017). Electronic Human Resources Management: Concepts, Requirements and Its Role in Developing Management. *Journal of Human Sciences , 17* (1).
- Saket, F. A.-Z., & kadri, N. (2017). Training and recruitment as one of the goals for the expected management of jobs and competencies: case of Algerian Economic Corporation for Water (ADE). *Journal of Organization and Labor , 6* (1).

- Salem, S. (2021). The wage system and its relationship to human resources management. *Journal of Politics and Law , 13* (3).
- Soumia, K., & Dadene, A. G. (2016). The reality of the expected management of jobs and competencies in the Algerian economic establishment: Case study of Algeria Mobilis Telecom. *Algerian Review of Studies in Accounting and Financial , 2* (2).
- Stoilkovska, A., & Serafimovic, G. (2017). JOB ANALYSIS AS AN IMPORTANT HUMAN RESOURCES MANAGEMENT FUNCTION. *Vision Journal , 2* (1).
- Suthara, B., Chakravarthib, T. L., & Pradhanc, S. (2014). Impacts of Job Analysis on Organizational Performance: An Inquiry on Indian Public Sector Enterprises. *Procedia Economics and Finance , 11* (1).
- Terfa, M. (2020). The impact of information and communication technology on human resource functions in the an era of digital transformation: Case study of Algeria Telecom Corporation. *Al-Riyada for Business Economics jornal , 6* (3).
- Varzaru, A., & Varzaru, M. (2011). The Calculation Of The Wage Bill And Personnel Costs: Between Theory Rigors And Practical Requirements. *University of Craiova - Economic Sciences Series , 3* (39).
- www.arabiaa.me. (s.d.). *From electronic management of human resources to developing services and implementing information technology systems*. Consulted in: 11 15, 2023, On ARABIAA NEWS: https://www.arabiaa.me/archives/11253.
- www.bayzat.com. (s.d.). *Saudi companies' guide to regulating employee benefits*. Consulted in: 11 17, 2023, On BAYZAT: https://www.bayzat.com/ar/ksa/blog.
- www.blog.mostaql.com/hr-management-software. (s.d.). *Human Resource Management Software: Everything you need to know*. Consulted in: 06 02, 2023, On mostaql.com: https://blog.mostaql.com/hr-management-software.
- www.onepage.sa. (s.d.). *Enterprise Resource Management Platform®*. Consulted in: 11 17, 2023, On ONE PAGE: https://onepage.sa/?C=onepage.saERPPlatform.
- www.oracle.com. (s.d.). *What is meant by human resources programs?* Consulted in: 11 15, 2023, On Oracle 2023: https://www.oracle.com/ae-ar/human-capital-management/hrms/hr-software.
- www.sap.com. (s.d.). *Manpower Planning*. Consulted in: 11 16, 2023, On SAP 2023: https://www.sap.com/mena-ar/products/hcm/workforce-planning.html.