



Evaluating Workers via Emerging Technologies and its Mechanisms to Enhance Quality of Work Life in the Institution

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Abstract:

Evaluating workers is a key factor in improving work relations, as it is used to measure and manage their performance. Labor laws have emphasized its importance in ensuring stable professional relationships and equal opportunities, while enabling institutions to self-regulate its application. With the advancement of emerging technologies, more accurate and transparent evaluation systems have become possible.

Therefore, this study aimed to examine the impact of emerging technologies on the evaluation of workers and to explore ways to ensure their responsible, ethical, and sustainable use to enhance the Q.W.L, by employing a descriptive approach to these technologies and an analytical approach to labor legislation. The study concluded with several findings, the most prominent being that regulatory mechanisms influence the effectiveness of this process.

Key Words: Worker evaluation; Job performance; institutions; emerging technologies; quality of work life; legal controls; self-regulatory mechanisms; sustainability.

JEL Classification: J24, J54, O33.

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Introduction

Performance evaluation of workers has long been constrained by traditional models, including inaccurate annual performance reviews, and these methods are still used in some institutions. And it has been found that these traditional models were designed more for measuring performance than for managing it.

With the rise of digital technologies, new opportunities have emerged to enhance the accuracy, fairness, and continuity of performance assessment. However, significant gaps remain in understanding how these technologies impact Q.W.

Therefore, This study seeks to examine the role of emerging technologies in worker evaluation, with a focus on their technical, legal, and ethical dimensions. The research addresses a critical gap in the literature by integrating sustainability principles into the design and regulation of technology-driven evaluation systems.



Literature Review

Previous studies unanimously highlight the limitations of traditional performance appraisal systems. Murphy, K. R., & Cleveland, J. N. (1995), in their work "Understanding Performance Appraisal: Social, Organizational, and Goal-Based Perspectives", pointed out that performance evaluations often reflect supervisors' personal impressions rather than the actual job performance of workers. And focus on past performance rather than promoting future development. Despite these well-documented shortcomings, many institutions continue to rely on outdated appraisal practices. This indicates a persistent gap between academic recommendations and organizational implementation.

In response, researchers have explored the integration of emerging technologies into the performance evaluation of workers. Aguinis, H. & Kohler, T. (2019), in their study "Artificial intelligence in human resources management: Challenges and a path forward", examined the potential of AI-based systems to provide continuous and real-time feedback based on objective data.

Similarly, Raghuram, S., Gupta, A., & Beigi, R. (2019), in "Digital Monitoring of Remote Workers: Ethical and Managerial Implications", investigated the use of digital platforms in remote work environments. They highlighted the role of these technologies in tracking workers' productivity and engagement, offering new tools for performance monitoring.

However, current research primarily focuses on technical feasibility and organizational efficiency, without regard to ethical and legal aspects. Few studies critically address risks such as data privacy violations or algorithmic bias in automated evaluations of workers. Moreover, there is a significant absence of research linking technology-driven performance systems to Q.W as a multidimensional concept. This concept should include fairness, workers' well-being, and alignment with sustainable development goals. This gap is also particularly evident in different contexts, where labor laws, Regulatory and cultural frameworks vary significantly across countries. As a result, results achieved in one country may not be applicable in another country.

Therefore, there remains an urgent need for research that integrates technological innovation with legal compliance, ethical principles, and sustainability objectives. From where this study came to bridge that gap by proposing a comprehensive framework for the responsible and ethical use of technology in the performance evaluation of workers.

Research Problem:

Based on the above, the main research problem of this study can be formulated as follows To: ***what extent does the use of emerging technologies in the workers' performance evaluation process impact work quality?***

This central question gives rise to the following sub-questions:

- What are the most important modern technologies that can be used for evaluating workers?;
- What validation methods or technical standards support the reliability of technology-driven performance evaluations?;



- What legal and ethical mechanisms should be considered when using these technologies?.

Importance of the Research:

- The use of modern technologies is a crucial and vital topic for institutions, as these technologies can provide powerful and effective tools to improve and develop the process of evaluating workers.
- This topic can significantly contribute to enhancing work quality, increasing productivity, and achieving job satisfaction.
- Regulating the use of these technologies helps ensure their responsible and ethical application.

Objectives of the Research:

- To highlight the modern technologies used in evaluating workers' performance, along with examples of their application fields.
- To clarify the importance of this approach for sustainable institutions seeking to enhance the quality of the work environment.
- To discuss the challenges related to regulating the use of these technologies and to propose mechanisms for addressing them.

Research Methodology:

This study uses a descriptive approach to explain modern technologies for workers' performance evaluation, and an analytical method to examine labor law texts and other laws related to the subject.

I. Emerging Technologies and Their Use in Workers' Performance Evaluation

Rapid technological developments have increasingly driven the adoption of modern techniques across various fields, including the evaluation of workers. In the past, this process heavily relied on human interaction, which often led to inaccurate and unfair outcomes.

Worker evaluation is a process by which it is determined who will conduct the evaluation, who will be evaluated, what aspects will be assessed and why, at what rate, and how the evaluation will be carried out - all throughout different stages of their professional life, starting from hiring. This can be included within the internal policies of the institution, or within an employment contract or agreement (CDC, 2009, p. 04). To ensure that this process is conducted accurately, it is preferable to use new and advanced technologies, applied fairly and continuously while respecting the principles of sustainability.

1. Concept of Emerging Technologies and Their Importance in Enhancing Work Life Quality

Emerging technologies have become a central factor in redefining and adapting the work environment to meet workers' needs. Therefore, this section addresses what is meant by emerging technologies and their role in improving the quality of work life.



1.1. Definition of Emerging Technology

Linguistically, the term "emerging" refers to the process of coming into existence, gaining importance, visibility, and advancement, as defined by the New Oxford American Dictionary.

Technically, emerging technology refers to technologies whose developments or practical applications or both are largely unrealized, meaning they metaphorically arise from nonexistence or obscurity. These technologies are considered new, even if they represent a natural extension of existing technologies, although they differ from them in technical characteristics.

Emerging technologies demonstrate relatively fast growth rates compared to non-emerging ones and include a wide range of innovations such as educational technologies, information technology, nanotechnology, biotechnology, cognitive sciences, psychological technologies, robotics, and artificial intelligence (Rotolo, Diana, & Ben, 2018, pp. 02-05).

1.2. The Importance of Emerging Technologies in Achieving Quality of Work Life (QWL)

The International Labour Organization (ILO) has recently focused on implementing the new 2030 Agenda for Sustainable Development. Goal 8 calls for sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all, including non-discrimination among workers (ILO, 2015). This contributes to achieving Quality of Work Life (QWL), which can be defined as a sense of well-being at both individual and collective levels. It includes workplace atmosphere, corporate culture, working conditions, a sense of participation, degree of autonomy and accountability, equality, and recognition of the work accomplished.

QWL is achieved by taking actions that reconcile improving working conditions for workers with the overall performance of the institution, especially in the following areas: fairness and justice, work-life balance, and occupational safety and health (GRH, 2019, p. 07).

In addition, it relies on measurement tools for assessing quality of work life, which help identify areas requiring change, improvement, or the implementation of new programs designed to enhance work conditions. These are comprehensive programs aimed at harmonizing work relationships (Brooks & Anderson, 2005, p. 324). For example: there is a performance evaluation system; the fairer this system is, the more job security and stability it provides, thereby increasing workers' satisfaction. Therefore, emerging technologies can contribute to achieving quality of work life due to their objectivity when applied within such systems.

2. Emerging Technologies for Workers' Evaluation

In this section, we will discuss the most prominent models of modern technologies that can be used in the field of workers' performance evaluation. However, before presenting these technologies, we will first address the drawbacks of traditional evaluation methods, which highlight the need to explore alternative approaches that are modern and efficient.



Indeed, fundamental challenges in managing the workforce have revealed the extent of limitations inherent in traditional management methods:

2.1. Common Problems in Traditional Workers' Evaluation

Among the objectives of sustainable development goals related to improving work relationships is the fair and non-discriminatory evaluation of workers. This can be achieved primarily by avoiding errors and common issues found in traditional performance evaluation processes - issues that emerging technologies can detect and prevent. Some of these drawbacks include (Kurian, 2024):

a. Unfair Comparisons: Traditional evaluations often compare newly hired workers' tasks and abilities with those of experienced workers and their skills, without considering individual characteristics. This may lead to negative assessments of a worker due to reduced efficiency caused by circumstances beyond their control.

b. Unjust Equality: This refers to the "one-size-fits-all" approach, where traditional performance evaluation systems apply general criteria that do not take into account individual roles and objectives within the institution.

c. Absence of Reciprocal Evaluation: While institutions evaluate and monitor workers' performance, the reverse -where workers express opinions about their supervisors and management style- is rarely practiced. This culture is largely absent from most workplace relationships. In addition to these structural flaws, there are also widespread problematic practices in the evaluation process, including (Bùi, 2024).

d. Personal Favoritism: When the evaluation process lacks neutrality and is influenced by personal considerations, it leads to the emergence of a group of indifferent or underperforming workers.

e. Lengthy Evaluation Process: Traditional evaluations usually occur once per year, which is often insufficient and unfair.

f. Distortion of the Purpose of Evaluation: In traditional models, evaluators often view performance assessment as a means of accountability rather than as a tool for performance analysis. As a result, they focus more on identifying mistakes rather than recognizing strengths and achievements.

2.2. Models of Emerging Technologies Used in Workers' Evaluation

After defining what emerging technologies are and highlighting the shortcomings of traditional methods of evaluating workers, we now explore some of the technological models that can be used in this field. In addition to traditional evaluation methods there are many different types of worker performance reviews, using a variety of performance management tools such as a 9-box grid. Another type of review employs 360° feedback which is a common feature of continuous performance management (McBayer, 2025). And in emerging technologies, advanced types of evaluation are used. We have selected the most prominent of them as follows:

a. Artificial Intelligence (AI): Integrating artificial intelligence into the evaluation of workers' performance represents a significant advancement toward more dynamic, accurate, and efficient assessment methods. And predictive analytics in



AI helps identify learning gaps early by analyzing ongoing performance data, enabling timely interventions and predicting a worker's readiness for future tasks, along with areas needing training or support. (Vorecol, 2024).

In the recruitment process, which is often exhausting and time-consuming, artificial intelligence helps facilitate and ease the workload. For example, chatbots can assist in answering candidates' questions, pre-screening resumes, and even scheduling interviews, thus freeing up human resources specialists to focus on more strategic tasks (Torfac, 2023). Another example is IBM's "Watson Talent" (2021), an AI tool that streamlined recruitment for companies like Unilever, resulting in a 16% increase in candidate diversity and demonstrating AI's potential to reduce bias and enhance fairness in hiring. (Vorecol, 2024). Also, a study of 250 workers found that AI-powered performance evaluations are viewed as reasonably accurate (mean 3.85/5), fair (3.65/5), and positively perceived (3.92/5). Strong correlations show that fairness ($r=0.78$) and accuracy ($r = 0.65$) significantly shape workers trust and acceptance (Keong, Vui, & Ling, 2025, pp. 1360-1361).

But although artificial intelligence is often seen as objective, it can perpetuate bias in evaluations. It overlooks personal contexts such as health or migration, reinforces bias through feedback loops, equates subjective traits with objectivity, and is often tested on minority groups, leading to unfair outcomes for them. Also, a 2025 Studies (N=995) found that candidates or workers feel less respected when assessed by AI, perceiving it as dehumanizing despite its technical fairness (Penfold, Chun, & Cremer, 2025, pp. 03-07).

b. Machine Learning (ML): Machine learning is defined as "the use of algorithms to analyze and classify data, and extract useful insights through automatic learning without human intervention". Research findings indicate that the integration of machine learning into human resource management is still in its early stages. Notably, machine learning applications have shown particular effectiveness in recruitment and performance management (Pemmaraju, 2024, p. 1573). Also machine learning can analyze massive amounts of data from multiple sources, such as performance records, customer evaluations, workers' online behaviors, and their interactions with work systems.

c. The Internet of Things (IoT): Data is going to assume a major role in order to connect applications with physical world. IoT has been a game-changing element in associating companies and workers lately. It has also been an important part of the remote workplace regardless of whether it is simply by its capacity to collect huge amounts of data (Guan, Mani, & Alim Al Ayub, 2022, p. 03).

for example: Through IoT sensors, organizations can interpret external conditions like the intensity of light, flow, position, and temperature. Likewise, these sensors measure actual physical inputs of data and transform them into information. Wearable sensors can also be used to alert workers when their heart rate is too high or when they are at risk of injury. Additionally, embedded sensors in machines can guide workers on how to properly use equipment. Within the evaluation process, IoT devices can also provide real-time feedback to workers,



offering new data and insights regarding their performance and behavior (Guan, Mani, & Alim Al Ayub, 2022, p. 04).

d. Virtual Reality (VR) and Augmented Reality (AR): This technology relies on simulation methodologies within work environments. In recruitment, the virtual environment evaluates job applicants by simulating the actual workplace using head-mounted displays, measuring their level of interaction, and training them on how to use technical tools and equipment required for the new job. For existing workers, VR/AR helps assess their ability to handle occupational safety concerns - especially in industrial sectors- and evaluate their skills in operating machinery and equipment. This type of assessment often follows training sessions conducted via what is known as training simulation methodology, such as scenarios involving fire outbreak responses.

A prime example is Walmart, which in 2017 launched a VR training program for new workers, focusing on everything from customer service scenarios to handling Black Friday rushes. This innovative approach resulted in a remarkable 10% increase in associate confidence and knowledge retention compared to conventional training methods (Vorecol, 2024).

e. Automation: Automation, or mechanization, refers to the application of machines to perform tasks that were previously carried out by humans. There are numerous functions within an institution that can be automated. Among the most prominent tasks that can benefit from automation are: managing workers' records, work schedules, leave requests, and automated performance management.

Automated performance systems simplify the process of tracking, measuring, and analyzing workers' performance and its alignment with organizational goals without bias. They ensure accurate and error-free decision-making, automate workers' data management, prepare templates, and monitor the acceptance or rejection of applicants, thereby speeding up the hiring process. A strong automation system also eliminates costly paper-based processes by replacing them with mechanical methods that assess workers' performance (Dictionary, HR Automation, 2025).

f. Cloud Computing (CC): According to ISO 25010, the performance of a Cloud Computing system is determined by analysis of the characteristics involved in performing an efficient and reliable service that meets requirements under stated conditions and within the maximum limits of the system parameters. The performance efficiency concept proposed in ISO 25010 has three sub concepts: time behavior; resource utilization; and capacity (Herizi, 2022, p. 472). It's used to evaluate workers by securely and distributively storing performance data; enabling remote access to evaluation systems anytime and from any location; and integrating various applications used within the institution into a unified system. Its benefits include flexibility in performance management, real-time collaboration among distributed teams, and reduced operational costs for information systems. Examples of cloud platforms that support this include Vorecol Performance.



II. Mechanisms for Using Emerging Technologies in Workers' Evaluation

Undoubtedly, emerging technologies are bringing about significant changes in various aspects of life, including employment relationships, as they have the potential to revolutionize how workers' performance is managed and monitored. However, despite the many benefits these changes bring, they also raise important concerns regarding privacy, trust, and ethical use.

Therefore, following a previous section of this research that encouraged institutions to implement modern technologies to evaluate workers throughout their professional lifecycle -starting from recruitment, where such technologies can be used to assess candidates' skills; through training and development; to periodic performance evaluations; and even in selecting workers who may be laid off- this section aims to identify the requirements and mechanisms for implementing this process.

These include: respecting official laws; applying principles of quality of working life; and self-regulation by the institution itself in advanced evaluation processes.

1. Legal Frameworks for Evaluating Workers Using Emerging Technologies

Compliance with legislative texts is essential to ensure smooth operation within the institution and avoid legal risks, while also contributing to the creation of a fair and safe work environment. In the context of evaluating workers, the institution must particularly respect the following legal provisions:

1.1. Implementation of Labor Laws

Labor laws contain provisions related to all matters concerning employment relationships, placing great emphasis on tools for improving and developing workers' skills on one hand, and achieving institutional objectives on the other. These laws usually outline the general framework for conducting evaluations, leaving specific details to be determined by the parties involved through collective agreements and internal regulations.

This includes defining the entities responsible for the evaluation process, the procedures and timing of evaluations, and the areas in which evaluation results will be applied. And it's necessary to take into account the legally established evaluation criteria, which include professional outcomes, professional behavior, skills and competencies, and personal traits. Additionally, labor laws specify penalties for non-compliance with applicable legal texts.

a. Legal Frameworks for Evaluating Workers: According to Algerian Labor Law No. 90-11, there are no explicit provisions regulating the evaluation of workers directly. However, the areas of evaluation can be inferred from several articles (Labor Code No.90/11, 1990):

- ✓ Art 07 "Workers' Duties": This article outlines a set of obligations that workers must fulfill, which can serve as a basis for their evaluation. These include:
 - Assessing job performance in terms of carrying out duties with the best available abilities, diligence, and regularity.
 - Evaluating cooperation with the workplace management through contributions to institutional efforts aimed at improving organization and productivity.



- Measuring compliance with management instructions within the limits of its authority.
- Evaluating adherence to occupational health and safety standards.
- Assessing participation in training and development programs organized by the institution.

Thus, evaluation is based on the extent to which the worker complies with these duties.

- ✓ Art 61 "Promotion": This article states that promotion refers to professional advancement and is granted based on:
 - Availability of vacant positions.
 - The worker's competence and qualifications.
 - The level of performance quality and merit.

This indicates that evaluation has a direct impact on promotion opportunities.

- ✓ Art 68 "Resignation": This article clarifies that a worker may submit a written resignation after a notice period defined in collective agreements. This provision may be used to evaluate the worker's compliance with official procedures when terminating the employment relationship.
- ✓ Art 73 "Dismissal for Serious Misconduct": This article allows for the dismissal of a worker due to serious misconduct, decided based on an assessment of:
 - Professional misconduct, such as unauthorized disclosure of confidential information or engaging with competing companies without management approval.
 - Repeated negligence and failure to comply with lawful orders.
 - Breach of occupational safety regulations.

As stipulated by law and internal regulations. This demonstrates the existence of a system for evaluating behavior and performance, particularly concerning professional errors.

- ✓ Art 106 to 108 "Facilities for Worker Representatives": These articles grant delegates paid time off to carry out their representative duties. This can be considered as support for evaluation activities through the representation of workers in participating bodies.

b. Legal Foundations for Evaluating Workers: Although the law does not specify a detailed system for evaluating workers' performance, it ensures the existence of general principles for fair and objective evaluation through -in compliance with articles 07-17-19-61-73 the following criteria (Labor Code No.90/11, 1990):

- Daily performance, discipline, cooperation, safety, and participation in training.
- Competence, merit, and experience in the context of promotion.
- Professional conduct and the commission of serious misconduct.
- Inclusion of the probationary period in seniority calculations if the worker is confirmed in position.
- An absolute prohibition on discrimination in evaluation (based on gender, age, political affiliation, or any reason unrelated to competence and qualifications).



c. Legal Procedures for Evaluating Workers: Algerian labor law leaves the evaluation process to the employer, who is required to establish an internal regulation -particularly for institutions employing twenty (20) workers or more- that defines: (rules of conduct; evaluation criteria; classification of professional errors and the corresponding disciplinary measures). This internal regulation must be communicated to all workers and kept on file with the Labor Inspectorate. It serves -according to the articles 75 to 79- as the primary reference for evaluating workers within the institution (Labor Code No.90/11, 1990). In addition, the employer may define objective evaluation criteria either based on skills and tangible goals, or on behaviors including customer focus, innovation, and responsibility. The courts are responsible for assessing the legality of these criteria and determining whether the evaluation tools used are lawful (Auzero, 2010, pp. 01-02).

But for example, by referring to French labor law, it provides a more precise legal framework for the evaluation of workers, specifying -in Art L. 1222-3 paragraph3- that “the methods and techniques used must be relevant to the intended purpose”. And he is required to inform and consult the works council based on Art L. 2323-32, paragraph3, of the Labor Code. Subsequently, workers themselves must be informed in advance about the professional evaluation methods and techniques used regarding them (Labor Code No. 2016/1088, 2016). Finally, since the landmark "Groupe Mornay" ruling issued on November 28, 2007, employers are obligated to consult the CHSCT when evaluation techniques are likely to create psychological pressure that may affect working conditions (Auzero, 2010, p. 03).

Moreover, supported systems within the framework of a quality of working life approach necessarily rely on social partners and must always be defined and implemented in close consultation with social dialogue bodies (GRH, 2019, p. 11).

d. Legal Stages of Worker Evaluation: Based on the provisions of Labor Law No. 90/11, we can deduce the legal stages of evaluation as follows:

- Probationary period (3-12 months): During this stage, an initial assessment is conducted to determine how well the worker meets the job requirements.
- Periodic evaluation (annually or every six months): This involves continuous or sequential assessment using clear performance indicators.
- Final evaluation: This is used to decide on promotion, continuation of employment, or termination of the employment relationship.

e. Legal Outcomes of Worker Evaluation: From the provisions of the labor law, we can conclude that the outcomes and reasons for evaluation are categorized as follows:

- Excellent: Promotion, reward, or nomination for advanced training.
- Very Good: Performance monitoring and identification of areas for development.
- Satisfactory: Performance improvement through training.
- Poor: Disciplinary follow-up, and possible dismissal if performance does not improve.

Through the above; the comparison between Algerian and French legal frameworks reveals deep cultural differences in the adoption of technological



performance evaluation. In Algeria, the emphasis on "the cause" (competence) as a justification for assessment often functions not as a neutral criterion, but as a tool for discriminating against vulnerable groups (such as unqualified workers, older employees, or those in remote areas).

In contrast, the French approach centers on "the purpose" of evaluation (such as training, promotion, or discipline) reflecting a culture that values transparency and standardization. so Technology in France is seen as a neutral, objective instrument when aligned with clear professional goals. but in Algeria, algorithmic assessment is often distrusted due to social context in the workplace. Thus, the effectiveness of technological evaluation depends not only on legal rigor but also on cultural perceptions of fairness, institutional trust, and power dynamics.

1.2. Compliance with Personal Data Protection and Privacy Laws

The process of evaluating workers may involve continuous monitoring, for example through the use of cameras in the workplace, which could potentially infringe upon personal freedom. Therefore, such technologies must be authorized, communicated to the workers, and limited to legally permitted purposes (Coppens, 2020, p. 24). A key aspect of workplace data protection is ensuring workers' consent is informed and freely given. While laws typically require transparency regarding data collection, true consent depends on workers fully understanding what data is collected, how it is used, stored, and shared, and having a real option to refuse without fear of retaliation. However, the power imbalance between employers and workers often compromises the validity of consent, particularly when refusal could lead to negative outcomes like denied promotions or job loss.

This has led legislators to intervene in order to protect the worker from violations of their private life during work when the institution uses modern technologies for monitoring or evaluation purposes. Legal frameworks impose restrictions and conditions on the use of such tools, aiming to avoid processing sensitive data such as union activity, political opinions, religion, ethnic origin, and health information. Moreover, the rise of Internet of Things (IoT) devices -such as smart badges, wearable sensors, and connected machinery- enables the collection of vast amounts of granular data, including movement patterns, biometric indicators, and interaction frequencies. While this data may be framed as objective and neutral, it carries a high risk of misuse. For instance, biometric data could be repurposed to assess stress levels or fatigue (such as SWELL and WESAD), potentially leading to discriminatory decisions under the guise of productivity management (Khayyat, et al., 2024, pp. 13-18). Without strict oversight and clear limitations, such technologies may shift from tools of evaluation to mechanisms of constant surveillance, eroding trust and threatening workers' autonomy and dignity.

Therefore, it is necessary that labor laws should allow collective labor agreements to include specific rules regarding the processing of workers' personal data, and the workers themselves must be informed about this (Art: 84-155 of the Regulations Regulation (EU) 2016/679 of the European parliament and of the council of 27 April 2016 on the protection of natural persons with regard to the



processing of personal data and on the free movement of such data) (EU, 2016 , pp. 16-29).

Referring to Algerian labor law, there are no explicit protective provisions in this area. However, laws protecting individuals' personal data, such as Act No. 18/07 relating to the protection of natural persons in the processing of personal data (Code No. 18/07, 2018), must still be respected. In contrast, French labor law in Art L. 1222-2 clearly states that any information requested from a worker, regardless of its form, must have the sole purpose of assessing professional skills (Labor Code No. 2016/1088, 2016). Additionally, the Council of Europe Convention No. 108 of 1981 laid the foundation for all subsequent legislation aimed at protecting privacy in the processing of personal data.

Therefore, beyond legal compliance, there is a pressing need for ethical guidelines and independent oversight mechanisms to ensure that data collected through monitoring technologies is not exploited beyond its original purpose, and that workers' rights to privacy and consent are meaningfully upheld.

1.3. Respect for the Confidentiality of Communications

The Algerian Constitution of 2020 emphasizes the principle of respecting the confidentiality of communications. Article 39 states that the state guarantees the inviolability of human dignity, while Article 47 affirms that every individual has the right to the protection of their private life and honor, as well as the right to confidentiality of all forms of personal correspondence and communication (Constitution No. 20/442, 2020). Furthermore, Article 164 of Act No. 18/04 on postal and electronic communications defines penalties for violating the confidentiality of both conventional and electronic communications (Code No. 18/04, 2018).

Given that workers are not excluded from this right to privacy in their personal communications -even if they are at their workplace or under the authority of the employer, particularly when using electronic devices owned by the institution- accessing a worker's private messages, whether sent or received, without their knowledge or consent constitutes a punishable offense under the law. However, this may be avoided if the institution explicitly prohibits workers from using its equipment for personal correspondence (Cassation, 2007 , pp. 01-03). Nevertheless, violations may be less severe when emerging technologies are used for evaluation, as these technologies are capable of distinguishing between professional and personal communications.

2. Self-Regulatory Mechanisms for Using Emerging Technologies in the Evaluation Process

Self-regulatory mechanisms refer to the tools and methods institutions use to organize their activities and manage resources in order to achieve their objectives. These mechanisms include organizational structures, policies and procedures, processes, technology, and organizational culture all of which work together to define how an institution operates.

Although the use of technology in performance evaluations benefits from algorithmic accuracy, crafting meaningful assessments requires more than precise



calculations. It also demands a delicate balance between the analytical capabilities of technology and indispensable human understanding, achieved through the use of diverse tools (Pemmaraju, 2024, p. 1584).

2.1. Updating Criteria and Policies for Evaluating Workers

Worker evaluation is an ongoing process during employment, based on comparing actual performance to expected standards. According to a survey conducted by Betterworks (A leading provider of intelligent performance management software in California), it is essential to establish and continuously update evaluation criteria in line with new developments and aligned with the principles of sustainability and governance (Gouldsberry, 2024).

Also regular evaluations ensure that workers receive constructive feedback, which becomes instrumental in their professional development. Thus, adopting well-defined criteria facilitates fair evaluations and also fosters a culture of continuous improvement in the workplace. These criteria should encompass various dimensions such as productivity, quality of work, teamwork, and adherence to company values. By defining specific benchmarks, managers can ensure that evaluations remain objective and focused on what truly matters in a worker's role (Williams, 2025).

In parallel, feedback criteria should also be defined, allowing workers to evaluate their own institution through sustainable mechanisms that enable them to express their opinions and criticisms. The approach of work quality provides a complementary tool aimed at expanding the scope of joint assessment of working conditions, particularly in promoting preventive approaches to psychosocial risks (GRH, 2019, p. 13).

According to recent studies from 2024, the most important criteria for evaluating workers can be divided into two categories: those related to individual performance and those concerning the worker's interaction within the professional environment:

a. Individual Evaluation Criteria: These primarily include the following (McBrayer, 2025):

- ✓ **General work quality:** It's the criterion that evaluates daily performance, in addition to other aspects such as teamwork and communication skills.
- ✓ **Goals and achievements:** They are in the form of quantitative elements and are evaluated by comparing them with those that have actually been achieved, while taking into account any impact from external factors.
- ✓ **Productivity level:** It is considered the main criterion in evaluation, as it determines the success or failure of the worker, considering the time required for accomplishment and the quality of performance upon reviewing productivity.
- ✓ **Problem-solving ability:** This criterion focuses on evaluating the extent to which the worker possesses problem-solving skills that enable him to know what he should do in a difficult situation without asking a manager or experienced colleague, while considering the availability of training and resources needed to solve problems.



- ✓ **Job knowledge:** This criterion allows for evaluating the worker's level of experience and understanding of his job responsibilities, such as assessing his technical skills, understanding of procedures, and his ability to apply his skills and knowledge to his work.
- ✓ **Attendance and adherence to schedules:** This criterion evaluates the punctuality of the worker by examining his attendance record, which indicates his ability to manage time effectively or not.
- ✓ **Organizational skills:** It evaluates how effectively the worker manages his time and tasks, through observations regarding the planning skills he possesses, his ability to prioritize, and manage multiple tasks.
- ✓ **Self-evaluation of performance:** It gives the worker the opportunity to evaluate his own performance, helping him understand his strengths and weaknesses, and this takes place before the meeting with management.

b. Interactive Evaluation Criteria (within the professional environment):

Here can be summarized Interactive Evaluation Criteria as follows (Williams, 2025):

- ✓ **Initiative and motivation:** This criterion is evaluated by distinguishing between the effective worker who motivates himself through his ability to carry out his roles and responsibilities, and the worker who needs external motivation, which often costs managers a lot of time in helping him complete his work.
- ✓ **Leadership skills:** The worker's ability in leadership is assessed, whether he holds a leadership position where he has the ability to take responsibility and keep his team on track, or does not hold a leadership position but encourages his team members and assists his colleagues.
- ✓ **Adaptability and flexibility:** Evaluating the ability to respond quickly, as this criterion indicates how successful the worker is in adapting to change and new situations, and this criterion involves analyzing several factors such as his readiness to take on new responsibilities or learn new tasks quickly and efficiently.

2.2. Principles of Quality of Working Life as an Ethical Framework for Digital Evaluation Processes

The success of performance management relies on its ability to inspire growth and development. Evaluations should not be punitive measures, but rather opportunities for dialogue, training, and goal setting. Thus, when data and human understanding work together, they can create a successful and fair performance review process for every worker (Pemmaraju, 2024, p. 1584).

This is emphasized by the principles of sustainable institutional development, particularly in its eighth objective (U.N, 2015), which are better realized through the use of such technologies, as explained below:

a. Promoting the Principle of Transparency: Transparency ensures that workers have a clear understanding of the evaluation process; reduces risks of bias and discrimination in evaluations; builds trust toward the institution by informing workers about how their data and evaluation technologies are used, the purpose behind them, and who is responsible for their implementation; and allows workers



to challenge or object to the evaluation method (Ashworth, Bakus, Dubois, Roperch, & Ruthardt, 2009).

b. Respecting the Principle of Fairness: The evaluator must be impartial in conducting assessments. The use of emerging technologies enhances fairness. For example, machine learning can be more objective than human evaluations because it operates based on predefined rules and criteria, and it can analyze large volumes of data without bias. Artificial intelligence facilitates the accurate and rapid classification of workers into categories -such as those eligible for promotion, compensation, training, or disciplinary action- based on the results and implications of the evaluation.

c. Applying the Principle of Participation: This involves including workers in the formulation, development, and implementation of evaluation tools through open dialogue and feedback. In this way, institutions can design evaluations that meet workers' needs and concerns, fostering a sense of trust and engagement in the process (Pemmaraju, 2024, p. 1584). This can be achieved by:

- ✓ Providing access to evaluation results so workers can understand their performance and identify areas for improvement.
- ✓ Explaining how data is used in decision-making and how it is protected.
- ✓ Allowing opportunities to comment on the evaluation process and express concerns through feedback mechanisms.
- ✓ Periodically reviewing the process to ensure it remains transparent, fair, and effective.

2.3. Establishing a Regulation for Continuous Evaluation Process

The concerned institution may develop a regulation or code to govern the use of modern technologies in evaluating its workers. Thanks to the rapid implementation of human resource technology, worker performance management is moving away from traditional models -such as annual performance reviews- toward a more dynamic and operational approach.

Digital performance management involves taking into account multiple aspects, including:

a. Setting and Monitoring Goals: Human resources departments can now facilitate the definition of both short-term and long-term goals for workers using applications and software programs, allowing the value of these goals to be measured in terms of institutional development. By assigning points to each goal, HR managers gain a quick and easy way to access data on how many objectives were achieved or how much value was added to the institution by the end of the period. These methods also help place a monetary value on workers' achievements in comparison to the standards set by the institution, and clearly identify any gaps between expected and actual performance (Taherdoost, 2023).

b. Evaluating Workers in Special Circumstances: Among the categories of workers with special conditions are those who work remotely for legal reasons, such as women caring for young children or individuals suffering from illnesses or disabilities. Therefore, employers should establish specific rules and procedures



tailored to their evaluation (Khan & Raghuvanshi, 2024, p. 2320), by implementing tailored strategies that prioritize communication, transparency, and accountability.

Similarly, for workers with disabilities, efforts to protect their rights and encourage the development of their capabilities have been reaffirmed within the Sustainable Development Goals, which emphasize the spirit of the Convention on the Rights of Persons with Disabilities and the obligations outlined in it. These underline the right of persons with disabilities to access all levels of education and vocational training (Escwa, 2018). It can also be inferred that they have the right to have their specific circumstances taken into account when undergoing evaluations using modern technologies.

c. Collecting Data on Workers: Evaluating a worker's performance requires a large amount of information, making data collection the foundation of the performance review process. Technology proves to be extremely useful in this regard. For example, modern technologies allow for the storage of information related to worker absences, customer complaints, recorded expressions of gratitude, participation records, and more. These tools help track, collect, and organize data effectively, providing human resources departments with actionable insights without overwhelming them with raw data. Ideally, they can offer a single page containing all the essential data required to evaluate a worker's performance (Taherdoost, 2023).

d. Automating Human Resources: Automation enhances the efficiency of the human resources department by replacing manual HR tasks with automated processes, allowing HR professionals to focus only on complex tasks such as decision-making, planning, and strategy development. Automation simplifies processes, manages workflow, and reduces overall costs, making the institution more efficient and effective in its operations.

There are many HR automation systems available in the market. In order for an institution to select a suitable program that aligns with its HR processes, it must verify certain features that should be present in the software to meet its needs (Dictionary, HR Automation, 2025).

e. Implementing Electronic Performance Evaluation Systems: Thanks to computerized performance evaluation tools, the human resources department now has easy online access to a vast amount of data. Using an online evaluation system, all reviewers can submit their feedback at once, streamlining the entire process. Similarly, the involvement of the reviewed worker is essential to this process. With an online evaluation system, workers can quickly and easily respond to specific questions or provide particular data requested by the HR department within their institution (Taherdoost, 2023).

f. Utilizing Modern Information Systems in the Evaluation Process: To achieve quality of working life, institutions must build and design a strong, efficient, and secure information system that provides the appropriate set of data and information at the right time and in the proper format. Information systems play a crucial role in facilitating and guiding the performance evaluation process accurately and efficiently.



Examples of systems used for evaluating workers include: (SAP SuccessFactors, Oracle HCM Cloud, Workday, BambooHR, and Performance Pro) are considered top HR performance management software solutions. These platforms offer features like performance reviews, goal setting, and analytics to help organizations manage worker performance and talent development.

Through all of the above; the table summarizes an "Integrated system for managing workers performance in the modern Work-Life". This covers Stages for evaluation from information systems all the way to professional development.

Table: «Integrated system for managing workers performance in the modern Work-Life»

N	System Component	Description	Role of Labor Laws and the Institution's Self-Regulation
01	Information Systems	The infrastructure that enables recording, storing, and retrieving marker data	Defines legal conditions for collecting and protecting data (e.g., privacy, confidentiality)
02	Emerging Technologies	Such as Artificial Intelligence, Internet of Things, & Cloud Computing	Regulates the use of technology to ensure fairness and prevent discrimination
03	Data Collection	Collecting multi-source performance data (tasks, working hours, interactions)	Sets limits on collecting unnecessary personal data and ensures lawful monitoring
04	Performance Analysis	Using data analysis and AI techniques to convert raw data into insights	Ensures transparency of algorithms and prevents biased or discriminatory results
05	Performance Evaluation	Preparing a comprehensive evaluation for each marker with objective feedback	Guarantees markers' right to appeal evaluations and receive explanations
06	Administrative Decision-Making	Such as promotion, training, or task redistribution	Protects markers from arbitrary decisions by linking them to legally defined criteria
07	Professional Development	Building individual development plans based on evaluation results	Encourages training and requalification programs in line with marker rights

Source: Created by the author, 2025



Conclusion

Integrating emerging technologies into the evaluation of workers' performance represents a significant shift toward more dynamic, personalized, and efficient methodologies. This transformation contributes to improving the quality of working life and advancing sustainable development within institutions. However, several challenges remain, including: limited access to technology among certain groups; high costs of some technologies; lack of the necessary skills to use these tools; and the absence of appropriate regulations and legislation to ensure responsible and secure usage. Beyond financial and technical barriers, practical challenges such as resistance to change, lack of transparency, inadequate training, and poor integration with workflows hinder the adoption of AI in performance evaluation. Without proper change management, employee trust, and continuous learning, even advanced technologies may be underused or rejected.

Despite these challenges, the potential of emerging technologies to enhance evaluation processes and guide them toward transparency and fairness is substantial. The study has shown that the effectiveness of these technologies depends on their alignment with the principles of quality of working life - such as justice and equality - and that worker satisfaction plays a central role in their successful implementation. It also emphasized the importance of having legal and regulatory frameworks that support their practical application.

Findings:

The study indicated that the future of worker performance evaluation within institutions will be moving toward:

- Continuous evaluation , rather than annual reviews only.
- Accurate real-time tracking of performance, instead of delayed measurements.
- A focus on ongoing metrics and constant performance improvement.

It was also emphasized that performance management systems should be:

- Based on clear and aligned objectives.
- Transparent, objective, and sustainable.
- Adaptable to the changing needs of both institutions and their workforce, especially considering the dominance of the millennial generation in today's labor market.

Recommendations:

- Equip managers with the necessary skills to conduct effective performance reviews and promote a culture of continuous development.
- Develop workers through e-learning platforms by offering customized training programs and tracking their progress.
- Amend labor laws to include provisions for adopting effective mechanisms for evaluating workers and establishing penalties for abuse of these systems.

Future Perspectives:

Institutions are expected to increasingly adopt emerging technologies in human resource management in order to improve efficiency and keep pace with technological advancements. These technologies will also contribute to building digital societies based on best practices across various professional fields.



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