

The role of ergonomics dimensions in improving the level of human resource performance, case study: Naftal district LPG (Bechar)

دور أبعاد الأروغونوميا في تحسين مستوى أداء المورد البشري دراسة حالة: مقاطعة الغاز المميع-

بشار

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Abstract:

The purpose of this paper is to overview to which extent the ergonomics dimensions contribute to : the physical dimension, to work organizational dimension, and to the professional safety and health care in improving human resource performance in Naftal district (Liquefied natural gas, Bechar city), in order to answer the problematic , specific tools have been used “observation and meeting with responsible of the association as well as with the contracting physician , then information and data have been collected in addition to hypothesis test. The results have been revealed are that both the dimensions of organizational work and professional safety have a great impact on human resource improvement.

Keywords: Ergonomics, physical conditions, work organizing, health care and professional safety, human resource performance.

JEL Classification Codes: J28, 015.

ملخص:

تهدف هذه الدراسة إلى معرفة مدى مساهمة أبعاد الأروغونوميا المتمثلة في البعد الفيزيقي وبعد تنظيم العمل وبعد الصحة والسلامة المهنية في تحسين أداء المورد البشري في مؤسسة نפטال مقاطعة الغاز

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المميع-بشار، وللإجابة عن الإشكالية المطروحة تم استعمال أداة المقابلة لمسؤولين في المقاطعة وعينة من العمال وطبيب العمل المتعاقد مع المؤسسة، أسفرت النتائج على أن البعد الذي له الأثر الكبير في تحسين أداء المورد البشري في المؤسسة هو بعد تنظيم العمل وبعد الصحة والسلامة المهنية.

كلمات مفتاحية: أرغونوميا، ظروف فيزيقية، تنظيم العمل، صحة وسلامة مهنية، أداء المورد البشري

تصنيفات JEL : J28, 015

1. INTRODUCTION

Ergonomics normally is a vast domain that allow organizations preserving its human and material properties as well as preserving its work environment ,therefore it helps taking advantages of many sciences such as (mathematical sciences, physical, biological, engineering.....etc.), it helps also providing a safe and productive workplace to the worker's comfort to fulfil productivity objectives and better efficiency.

Organizations are increasingly interested in environmental work in which different tasks are performed through it. It has become a clear indicator of individual's behavioural performance and it clarify their needs, in order to enhance and develop this performance within a work environment that include various factors like: social, organizational and physical, these factors have either a positive or a negative effect on the individuals performance, ergonomics considered as one of the applications that help organizations creating better conditions for workers, and it develop worker's capacities, different ergonomics dimensions have been selected in order to know to which extent these dimensions help in improving human resource performance, these dimensions are : the physical dimension, then the organization of work (social and organizational work environment), and finally the professional safety

Research Problem:

-To what extent do these ergonomics dimensions contribute to human work resource improvement, at Naftal district LPG (Bechar)?

Research hypotheses: to answer the study problematic, the following hypotheses are specified:

Principal hypothesis: ergonomics dimensions contribute to improve human resource performance at Naftal district.

First secondary hypothesis: physical conditions arrangement according to work conditions contributes to improve human resource performance in the district

Second secondary hypothesis: the social and organizational environment of work contributes to improve human resource performance in the district.

Third secondary hypothesis: safety instructions and laws related to workers contribute to improve performance along with occupational medicine in the district.

Study importance: the importance of this study represented as follows:

- Highlighting ergonomics as an important field in achieving comfort and security for individual generally, and workers specifically
- Demonstrating the importance of the human resource through focusing on the development of its skills and abilities and its personal objectives that are compatible with the general targets of the organization.
- Highlighting specific ergonomics dimensions in order to know its importance in enhancing individual performance and increasing his level of satisfaction. Completing other studies that dealt with other perspectives in different organizations.

Research Objectives: the study seeks to identify the theoretical basis for the study variables and find out the extent of their compatibility in achieving organization goals by increasing productivity efficiently as a safe healthy human resource.

Find out to which extent the human resource is related to its environment of work under a specific condition and to achieve best results.

Trying to present a study that serves researchers or those who are interested in the field of human resource management, psychology, and work organization, even institution may benefit from the study outputs.

Study approach: In order to test the hypotheses that try to answer the problem presented above, the analytical descriptive approach has been used, which allows defining the dimensions of ergonomics and the performance of the human resource and showing the nature of the relationship between them, observation and interview tools have been used to gather research hypotheses.

Study limits: in order to achieve the objectives of the study and solve the problematic focus has been accentuated on the following limits:

Objective boundaries: Focus was placed on ergonomics with its selected dimensions (physical dimension, work organization dimension and occupational health and safety dimension) and the human resource performance variable.

Spatial boundaries: a national institution has been selected Naftal district, LPG province.

Time limits: April, from 11th, 2023 to 23rd, 2023.

Literatures Review

a. Rima Lammari study 2021: the entitled study aims to identify the Reality of the Ergonomics application in Algerian Institutions, Between Theoretical Approach and Practical Applications, an Evaluation Study has been done by condor workers (Bordj) to realize workers point of view about the reality of the ergonomics application by the institution and the extent of its reflection on the comfort and safety of workers. The questionnaire was distributed to the intended sample (workers who deal with the machine) in addition to the direct observation of the work field as well as interviewing some employees. The results concluded that Condor applies ergonomics in the workplace at a high level through three indicators: the standard of occupational health and safety, the standard of suitability of working conditions and the standard of design and organization of the workplace.

b. Study by Qadi Satori 2020: The study entitled Traditional practices of human resources management and its role in improving the performance of human resource in the Algerian economic institution, a field study, aimed to know the role of traditional practices of human resources management in the Algerian electricity and gas company (M'sila), where the descriptive approach was used to describe the phenomenon of traditional practices of human resource management (planning, polarization, Training and

development, compensation, work relations, human resource maintenance and performance evaluation) as well as performance and its improvement process. As for the practical side, the questionnaire was used to collect information on a sample of 51 people. The results concluded that the compensation function is the most influential where the other elements were weak.

2. Theoretical framework:

Ergonomics is one of the sciences concerned with improving the work environment for individuals for the purpose of adapting the work position according to the capabilities and skills of the workers and seeking to reduce the level of risk and the number of injuries and reduce the rates of occupational diseases, which helps to improve the performance of the individual in the use of various work supplies, applying health care and professional safety instructions.

2.1 The concept of ergonomics and its types:

a. The concept of ergonomics:

Ergonomics is a field that give importance to the human resource based on the facilities it provides for the purpose of completing tasks safely and comfortably. Below are the definitions of ergonomics stated by previous authors:

OSHA Academy Definition 2017: a method of designing Workstations, Work Practices, tools, techniques, and workflow to assimilate the capacities of the worker (OSHA Academy, 2022, p. 1).

The definition of Jaffar2011: promoting compatibility and relation between humans and systems (devices, work design, and work environment) (Jaffar, A.H, I.F, & N.S, 2011, p. 91).

Definition of MURREL 1949: an attempt to study and analyze work in order to achieve work adjustment (Bekkar, 2017, page 11).

Jalal Muhammad Al-Nuaimi defines it as the field that is concerned with studying the relationship between the individual and his work environment taking into consideration the methods by which the individual can perform the work with high efficiency, while assuring the safety, health, and wellbeing of the worker. (Jalal, 2009, p. 276)

It might be said that ergonomics, or what is also called human engineering, is an applied science that studies the nature of relationship between man and his work environment for the purpose of reducing physical and psychological stress, by matching the capabilities of the individual with the requirements of work.

Also, ergonomics is one of the important functions in modern organizations that rely on the individual member. Therefore, several activities must be carried out; the most important is the existence of a stable and efficient workforce. This may be achieved through several sub-activities, such as: job analysis, human resource planning, research and recruitment, Development and advancement, performance evaluation, compensation, benefits and advantages, labour relations and finally occupational safety (Asfour, 2022, pages 11-12).

Where this definition included the most important points that ergonomics focuses on in the field of human resource management, which we are trying to shed light on this relationship in terms of the performance of the human resource in organizations.

b. Types of ergonomic:

Ergonomics is classified into several types, as follows (Al-Zamili and Mohsen, 2018, pp. 18-19.):

According to intervention area we find three types:

- **Organizational ergonomics:** it co-ordinates the organization of workshop with the movement, and timing of the workers performance.
- **Physical (design) ergonomics:** It is concerned with all interventions at the level of the physical environment of work that characterize by technical specifics. It may include work atmospheres noise, dust, lighting, the arrangement of temporal and spatial workspaces; it is also concerned with the physiological specifics and the physical standards of the worker and his relationship with different activities.
- **Cognitive ergonomics:** It is concerned with various mental processes, perception, memory, logical and evidential intellection, motor responses and the effects of all of this on the interactions between man and the rest of his components.

according to objective: systems ergonomics and error ergonomics,

Other types: design and visualization ergonomics and corrective ergonomics, that depends on the first type by recognizing errors so working to correct these errors and seeking solution for them.

c. Objectives of Ergonomics:

Ergonomics characterized by several objectives, including (Rabee, 2006, pp. 221-222.):

Improving work methods, i.e., changing these methods to harmonize the worker, by analyzing the work into its initial movements to exclude unnecessary movements and measuring the time that each movement takes separately.

Designing or adapting machines, tools, and tools so that they can be used in a way that increases productivity and eliminates exhaustion

Arranging work tools, equipment, and materials so that the worker can find them any time he needs them quickly and easily without wasting time.

To reveal the appropriate physical positions that the worker must take during his work.

Study the appropriate physical conditions for work, such as noise, lighting, temperature, humidity, and the resulting accidents and fatigue.

d. The dimensions of ergonomics:

Represent those dimensions that determine the validity of a job position, and there is a variation according to the interests of researchers. There are design dimensions that focus on the design of machines and equipment, and there are dimensions concerned with human measurements to be compatible with work positions. There are also dimensions that are determined according to the quality of ergonomics, whether cognitive (mental) or designing or physical and other working conditions, in this study the focus is on the following dimensions: the physical dimensions associated with working conditions, organizational dimensions that are concerned with work procedures conditions related the work laws and regulations, then the dimensions of occupational health and safety that provide security for employees reducing the number of occupational accidents and injuries, these dimensions were chosen to adequate the problematic of the study and link it to the level of improving human resource performance.

d.1 Physical dimension:

A set of conditions surrounding the work that have a significant impact on the performance of individuals in their different work positions, whether in the office or at the level of factories and workshops. These conditions are noise, lighting, heat, humidity, ventilation...etc. whereas the increase and the decrease of its elements below the required level reflected the health, security, and comfort of individuals, as it might be said that everything surrounds the individual in his work affects his behaviour and performance, and his tendency towards work and the group he works with and the administration he follows, and the organization to which he belongs (Al-Kalabi, 2016, p. 797). We mention, for example, the following conditions:

1)Lighting: It is the amount of light falling at a certain distance, such as the workplace, and it is a wave that propagates at a high speed of 300,000 km / sec (Ashour, 2016, p. 133). Inappropriate lighting in the workplace has varying dangers that cause eyes collapse, as well as the case in which there is a lack of lighting or intense lighting or it is horizontal directly to the eye, also can causes a bad psychological effect. When organizations work to provide adequate lighting that achieves ease monitoring of business, reducing the rate of accidents, and preserving the health and safety of workers, there are two types of natural lighting that comes from natural light sources, and it is the most suitable for human physiology, but it changes and varies according to time, season, location, distance from the equator and the weather. There are artificial ones that can be controlled using the type and intensity of lighting chosen according to the nature of work, especially night work or closed workplaces that are without natural lighting all the time (Rema, 2021, p. 74).

2)Heat: It is the type of energy that causes Body Temperature , the amount of heat is measured in the calorie unit, Watson defined thermal comfort as a mental comfort with which a person feels satisfied with the surrounding conditions (Rema, 2021, p. 76). So, the inappropriate temperature in a workplace whether it is high or low, it negatively affects the performance of individuals and increases their sense of discomfort. The temperature varies from one place to another, i.e., according to the nature of the work (Al-Yazid, 2023, p. 626).

4)Noise: The mixture of sounds spreads in the work atmosphere, so that it affects the activity of the workers and is gradually reflected in the

power of hearing which leads to partial or complete deafness, it is also the loud unpopular, intolerable, and unwanted sound, and it must not exceed the permissible and internationally applicable limit, and institutions must control it in order to ensure the performance of the required work and the achieve worker safty (Rima, 2021, p. 64)

Moreover, there are ways to avoid the dangers of noise by: (Bekkar, 2017, p. 153) -- **Engineering methods:** Reducing noise and vibration from machines by wrapping them with permeable materials, stability of the building in general and the foundations on which it is based to avoid vibrations, noise reduction in industrial halls by using absorbent materials.

- **Medical methods:** conducting the initial medical examination for workers in workplaces where the noise level exceeds 75 decibels, which is the safe level, conducting periodic examinations every six months or every year in order to determine the health status and strength of hearing among workers, increasing attention to individuals who work in conditions shrouded in noise as it is a necessity to educate workers about the dangers of noise and the available means of protection, and advocating the use of personal protective equipment such as silencers and earplugs.

Noise is one of the difficult and harmful physical conditions, and it has a great impact on the behavior of individuals and their communication during work, which causes many errors and accidents.

4) Ventilation: Ventilation means entering fresh air or expelling stale air from inside the factory. (or the workplace), the aim of providing proper ventilation inside the workplace is to create appropriate conditions and a suitable atmosphere for performing the work with the necessary sufficiency while providing safety for workers inside those places, poor ventilation leads to workers feeling sleepy, lethargy, fatigue and distress, as well as a high temperature that It is difficult for the body to reduce it, which causes death (Al-Aziz and Zamoushi, 2022, p. 457). According to Strands, sufficient air must first be provided for people to breathe and for the nature of work, especially in enclosed spaces, which prompts him to work without stress or fatigue. As for the second matter, a means must be

provided to get rid of the air that may become polluted because of the work operations.

d.2 Organization of work:

It cares about social harmony and the organizational environment, and it also cares about the work environment and human factors, arranging, training and coordinating them, according to good laws and patterns with the interaction of all these factors as well as taking care of organizing the institution and its devices, machines and equipment, in order to facilitate the movement of workers and carry out their assigned work easily, which is reflected positively on The performance and production of the institution (Asfour, 2022, p. 38). The organization of work is also concerned with specialization, inclinations, and ability, so that the work is classified into manual work, artistic work, intellectual work, and administrative work. Among the most important advantages of organizing work: (Asfour, 2022,P38).

- Finding trained workers to carry out the tasks;
- Facilitating the control of workers;
- Achieving meaningful communication between the administrative level and the functional level;
- Achieving easy access to information from official.

The organization of work focuses on a set of points that affect the productivity of the individual, either negatively or positively, represented in simple and clear management system or, complex and vague system, defining responsibilities and powers, clarifying authority, working with a system of shifts and hours, rest times, internal communication, incentive system, Searching for the training needs of the workers.... etc

d.3. Occupational health and safety dimension

Organizations work to achieve occupational health and safety by providing appropriate and safe conditions to perform tasks safely and preserve material property and human resources. They also define strict procedures and clear instructions on how to deal with work requirements such as tools, machines, etc. to avoid injuries and occupational accidents, and focus on the human resource because it is the most important resource

to train, develop his technical and mental skills, and introduce him to the work environment.

Protective equipment also has a great importance by providing work positions and clarifying the methods of use, monitoring, and maintenance. The field of occupational safety is related to the extent to which individuals interact with occupational safety and protection equipment by using them and their compatibility with the physical characteristics of workers and the extent to which they are easy to handle and use, especially in emergency cases.

Providing a safe work environment has become a strategic goal that all organizations seek to achieve because of its repercussions on the safety of workers and the protection of property and employees at the same time, which leads to alleviating the economic and social burdens on the organization, and reduces the psychological and physical effects that workers are exposed to, the same thing. That it is necessary to pay attention to is the issue of occupational safety and health at the state level. This was represented in several forms, the most important of which is the enactment of laws and legislation that are keen to raise the level of safety and security within organizations (Asfour, 20s22, p. 39).

Laws and legislation are among the basics that control the behavior of each of the organizations towards the workers and control the behavior of the workers towards themselves and towards the direction of the organization

Occupational medicine is considered one of the policies that organizations adopt in order to preserve their human resource, starting from appointment, where the doctor proves to the organization the individual's fitness for the job, then followed by periodic medical follow-up, and it has an effective role in the case of injuries or accidents where there is a quick and direct intervention, so a doctor has a major role in educating workers to maintain their safety with the proper safe use of protective equipment.

2.2 The human resource performance improvement:

Human resource performance in the organizations is a mirror reflecting the extent of its success, so it strives to improve this performance to comply with the requirements of the job and the individual's physical and

intellectual capabilities

a. The concept of performance:

A set of definitions of performance have been presented, some of which get to the point. We summarize them as follows:

The effort exerted by an individual or by a group, with or without the help of a machine, to achieve a specific goal during a specific period to provide a service or product or a part of both. This performance can be measured or judged by acceptance or rejection. It is also known as what the workers provide in terms of work outputs and what they can add in their relationships with others, their discipline, and their commitment to regulations and instructions (Zedori and Yordima, 2017, p. 47).

Performance is the extent to which an individual performs the tasks appointed to him within the organization in order to achieve the predetermined goals, through three dimensions the individual's performance can be measured, by the pattern of effort, the quality of effort and the amount of effort (Larj and Muhammad, 2023, p. 786)

b. Performance Dimensions:

There are specific dimensions of performance that help to know it, especially in order to determine the nature of the work and what is required to accomplish it for example:

- Knowledge of job requirements: This represents knowledge of professional skills, technical knowledge, and general background about the job as well as the areas related to the job.
- Quality of work: It includes several aspects such as accuracy, order, mastery, and ingenuity. It is also represented in the ability of organizing and implementing the work.
- Amount of work: It is the volume of work accomplished under normal conditions and the speed of completion.

c. Improvement performance Fields and steps: it works to improve the performance of its workers in different ways and methods according to the needs of its members and the nature of their tasks. A set of procedures have been done to enable the improvement of this performance, then the steps used to make this process successful are as follows (Hammoud, 2018, pp. 336-337):

c.1. Improvement performance approaches: There are a group of approaches that organizations are trying to focus on for the purpose of improvement, as follows:

- 1) Improving the human resource field: Where the focus is on knowing the weaknesses and strengths of the individual for the purpose of strengthening the weak and strengthening the strong, encouraging the positive behavioural side and developing it to be an example for others, the employee's goals are compatible with the goals of the organization, that is the personal interest matches with the public one to ensure the achievement of the general goal of the organization.
- 2) Job improvement field: several procedures such as designing jobs to serve the desires of the employee and facilitating his performance to achieve what he needs the most, defining job tasks where the individual is fully aware of what is required and what he is doing, considering the scientific and physical qualifications of the employee that are compatible with the job also be flexibility is needed to accomplish the tasks.
- 3) the work environment improvement field : by providing successful and influential leadership that supports and directs individuals, introducing the philosophy of empowerment in the organization's approach by granting powers to the qualified individuals and taking all the responsibility to work on training employees according to professional or technical needs, an appropriate organizational work environment must be provided (organizational climate - well working relations - Flexible organizational structure...), not neglecting the physical environment of work conditions that facilitate performance to be at the required level, and all kinds of motivation that pushes the individual to make his best.

c.2 The performance improvement process steps: The performance improvement process steps represented as follows (Louis R Gomez, Robert B, & David L, 2011, p. 240):)

- 1) Exploring the problem of poor performance, trying to identify the weaknesses of the individual that make the performance difficult to accomplish.

- 2) Analysing the causes of this problem: i.e. knowing what are the technical, physical, intellectual, organizational, social, etc. causes of weakness;
- 3) Developing planning and empowering human resources to solve the standpoint of each problem, suggestions should be done to solve the problem, so the individual is enable to choose the most appropriate one;
- 4) Directing communication towards performance and providing feedback to find out the effectiveness of the chosen solution, we must ensure the communication and follow-up the method of implementing the solution and achieving the goal of the improvement process, and exchanging information about this problem increases the strength of the solution.

3. Case study

For answering the problematic and proving the validity of the hypotheses, the National Oil Corporation, LPG district, Bechar, was chosen for the practical study and to find out the implications of the impact of ergonomic dimensions on the performance of the human resource. Open and semi-open spaces have been chosen where gas bottles are filled using special mechanisms like the agents and drivers who transport the bottles in trucks.

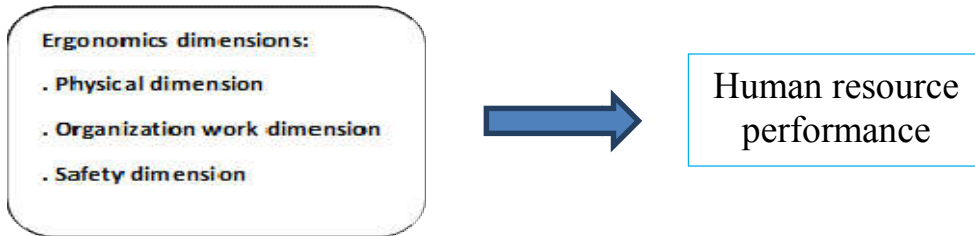
3.1. Study tools:

A set of different tools were used, such as interview and observation:

1. **The interview:** Interviews were conducted with the industrial security official in each of the province and the bottling center, then with the contracting doctor, in order to obtain information related to working conditions and identifying potential risks in the workplace.
2. **Observation:** a field visit was made to the two work sites and the physical work environment and physical work conditions were observed directly in which the workers do their tasks.

3.2 Study form:

Figure 1: Study form



Source: Prepared by the researcher based on previous references

3.3. Study Results:

Since the study tools were numerous, the results are listed according to each tool in order:

a. Interview results:

The results of the interview resulted in a set of questions related to working conditions and the work environment, methods of distributing workers in work positions, and whether the latter is organized according to ergonomic rules to facilitate the performance of workers. Questions related to risks were also asked in terms of whether the worker is informed of all the risks involved his tasks and the provision of all protection requirements of the required sizes and quality, and regarding the policy of training directed to workers in order to improve their skills and performance at work and the Special procedures taken when any accidents occur.

When it comes to employment policy, Naftal Corporation relies on providing job specific instructions and directives, the responsibilities and risks it bears, and the methods that help to perform it without any difficulties. Sensitization courses are also provided by the industrial security official on a regular basis, to emphasize the risks and control the behavior of workers in work positions also the guidance to the proper methods and the use of protective equipment for each work position, and all of this have done in an official manner by signing the document of the minutes of sensitization of workers, to disclaim the responsibility of

management in the case of any accidents or injuries caused by the worker, despite the sensitization and recommendations . As for the work sites represented in the garage in which trucks are repaired and maintained, it lacks suitable working conditions, as it was built in the 1970s and has not been renovated according to the requirements and conditions of the desert region. It is a closed space tainted with dust and pollution with maintenance materials, there is lack of aeration besides, the high temperature, its temperature is made of zinc that may affect the workers' health and the profitability of the work. As for the warehouse, the same conditions are with the heavy dust that appears in the warehouse rooms and the lack of restoration of the walls and the improvement of the workplace, which makes it difficult for the workers to do his best. As for the center, where the workspace is open and the building is carefully studied, despite its age, it meets the safety conditions due to the sensitivity of the work inside it, wherein filling gas bottles of different sizes and working on shipping them in trucks then transporting them to the final customer. The movement of trucks inside the center raises dust, and these are most of the workers' complaints. Concerning the method of work, it is simple, but it requires caution and focus, because the work in filling the bottles is controlled by mechanisms that are run by the workers, these mechanisms work automatically under the supervision of the workers, so they create a noisy atmosphere that eliminate the level of communication between workers influencing hearing degrees, moreover there is a smell of butane gas that workers get used to after a long period of work.

According to the industrial security official, it is not toxic but annoying. Protective supplies are available according to each job position in the required sizes because they are sometimes standard, except for shoes, so the sizes of the man differ, so the exchange takes place between workers according to the size of their legs, although it is the responsibility of administration, but it was noticed that they are not used by workers for various reasons, including indifference, they are not useful like gloves and heavy helmets etc....

Training is one of the intensive policies carried out by the Corporation for the new members or the old ones, according to the approved training

strategy. There are two mechanisms for training. The first is the request of the Central to program workers for training according to work requirements, and it takes place in special training centers belonging to the Corporation distributed in the regions of the country, east, west, and central part. There is an exam at the end of the training to assess the worker knowledge, and there is another exam over long periods of time by his direct supervisor to assess his comprehension so as to know whether the worker's performance has improved, while the second is a proposal from the unit to train the workers according to the training need and task requirements that must be recognized.

In the case of accidents, an emergency session is held to the scene of the accident, in which a committee consisting of the site manager, two representatives of the administration, two representatives of the workers and one representative of safety, recommendations are issued in a record to avoid accidents again. An investigation is being opened to find out the circumstances of the accident, as the accident is divided into three factors: the environment, the individual and the machine, which has the greatest impact on the accident and it is attributed to one or two factors. On that basis a minute is decided, and specifying the causes of the accident, so workers should be aware of these accidents.

As for the centre, the method of dealing with the accident differs, as there is a so-called industrial security cell that works to intervene in the case of accidents and it is always ready for any emergency and it prevents others from interfering without a demand from the cell, the workers are gathered in a special place to be counted and protected, we feel from the industrial security official that Workers are trained in the field to get used to the nature of the movement in exceptional cases and how to react. There is cooperation and interaction between the workers to protect themselves and protect the center, and there is periodic monitoring of extinguishers, water hoses and all protective supplies, also there is cooperation between workers in day of vacation for cleaning the workplace periodically. Regarding the interview with the work doctor, the results were as follows:

- The labor doctor conducts field visits to work sites to inspect working conditions and workers' health twice a year, beside

exceptional examinations for those with chronic diseases;

- There is compatibility between the external medical report and the internal medical report;
 - There are harmful physical conditions such as dust, unpleasant odors of fuel and gas in workshops, noise of machines and bottles, and lighting affects the level of vision. As for the temperature, it has a great impact due to the nature of the region, with the proposal to adjust the working hours in the summer. As for the ventilation, it varies from one location to another. The closed space needs ventilation but the rules are not respected, as for the open space, there is no problem with ventilation.
 - The administration is required to fully fixing the work environment from the floor to the lighting, and the auxiliary tools to perform the tasks, based on the observations provided by the work doctor.
- Most of the frequent accidents are falls, slips, cramps, and back pain due to carrying different heavy materials.

b. Observation results:

After the field visit that took place at the level of the various work sites, whether the garage or the center, a set of observations have been revealed based on responsible and workers questionnaire.

In the garage, there are few workers compared to the work requirements, and the work site has major shortcomings that directly disrupt the worker's performance, such as the physical conditions of ventilation, lighting, and heat, in addition to the dust resulting from the worn-out floor and the character of the area. As for lighting, the place is dark and due to the lack of windows, which reduces the level of ventilation and creates Random windows with some iron surfaces cut out, the same with the storage room, in which there is a private office for the lead warehouse worker, which does not have the minimum working conditions. It is also full of dust, despite the attempt to apply the principles of ergonomics, but in a primitive way that hinders the way of work and the lack of capabilities in simplifying work. There is no supportive organizational climate consequently there is lack of response to the requirements of the workers to improve their practical status, despite the interest in the field of training as workers claimed.

the center, is a clear and open place with a large number of workers compared to the garage, and the work is running, diligently even the movement of workers is controlled and organized, but also they face the problem of the worn out floors and flying dust from it, so most of the workers complain about it, and what is also noticed is the lack of wearing protective clothing, especially hats, masks and gloves, despite their availability, while The majority wears work clothes, and it was also noted that the most difficult work is that the worker who carries and unloads the bottles from the trucks and monitors the bottle closures, as they have a manual feature and muscular risks for the worker and the possibility of falls and fractures.

c. Discuss the results:

The results obtained represent answers to the hypotheses that were set forward previously, and after obtaining information through the interview process by officials and field observation, we recall the hypotheses set forward previously:

The first secondary hypothesis: Creating the physical conditions that suit the working conditions that can contribute to improve the performance of the human resource at Naftal district.

Whenever the conditions are well prepared , the performance of the human resource improves and vice versa, and what is revealed as a result of the interview and observation is that the unsuitable physical conditions have a great impact on the low level of the individual's performance and he is not motivated to develop and give his best, due to the difficult conditions such as the heat that represents the character of the region in addition to the lack of lighting, ventilation and noise Due to the nature of the old and unprepared work sites, work is done in the simplest ways and the lowest performance is achieved, thus we deny the first secondary hypothesis .

The second secondary hypothesis: The organizational and social work environment contributes to the improvement of human resource performance at Naftal district.

The nature of the work and the organizational and social environment represented in the positive relations of superiors and subordinates members among each other , it raises the rate of good performance among workers,

According to the field study, the garage and the center relations differs from each other because of the number of workers and the overlap between them, about the nature of the relationship between superiors and subordinates members, we find in the center that the relation is more overlapping and interactive ,also because of stimulation and sensitization processes, and centrally framed training programs and even those in the form of awareness and guidance courses improve the level of performance and evaluations that are made to see how workers respond to training or sensitization, it makes the worker more responsible and focused while performing tasks, attention to the concerns of workers and their training needs are taken into account to underline Successful training programs ,these programs have a significant impact on improving the performance of the individual and increasing his motivation in order to improve his skills for several purposes, including protecting himself and his colleagues from expected and unexpected risks, therefore we accept the second hypothesis.

The third secondary hypothesis: protection equipment and the implementation of laws and instructions related to the safety of workers with work medicine contribute to the improvement of human resource performance at Naftal district.

Protective equipment and laws have an impact on improving the performance of the individual, as whenever the worker is committed to wear what protects him as there are various protective equipment available beside his commitment to safety laws, we would have a positive impact and a well performance without injuries and health problems with the recommendations of work doctors “how to protect in a work position”.

In the field, there is a huge number of laws and instructions that urge workers to preserve themselves and the property of the establishment, and various signs are provided that remind workers of what to do when entering work positions, and this is on a daily and periodic basis. There are also precautionary legal measures for the establishment in order to disclaim its responsibility in the case of any risks on the part of workers, so prompting the worker to exercise caution and attention when performing the tasks, and the work doctor has a sensitive and important role in sensitization,

awareness, field visits, discovering danger gaps, and working to search for ways to preserve the health of workers, thus we accept the third hypothesis. From what have been mentioned, the main hypothesis can be accepted with the influence of two basic dimensions, namely, work organization dimension and occupational health and safety dimension. The physical dimension is excluded, because it has a negative impact on the individual's performance.

The results showed that the dimension that contributes the most in the improvement of performance of its human resource is the work organization dimension represented in the training programs and the nature of the relationship between the superiors and subordinates members. Good relations have a great impact in providing the best always, while the physical dimension does not contribute at all due to the unfavorable, unstudied, and unmodified working conditions. According to immediate needs, the labor doctor also has an important role in medical follow-up, field visits, and periodic examinations, so he has an impact on protecting workers and making them aware of the importance of the work environment and how to adapt to it. As for protective equipment, it is available, but it is not used continuously by workers, and laws also exist, and the administration is keen to impose them in different ways. Some of them are motivational and others are compulsory to ensure the safety of workers and the property of the institution. This dimension also has an impact on the performance of the human resource and improving it by providing the best in work positions.

4. CONCLUSION

In this paper, the focus was on the ergonomic dimensions represented in the physical dimension, the organization of work dimension and occupational health and safety dimension, as well as the extent of their contribution to improve the performance of the human resource. Naftal district (LPG corporation) has been chosen as a case of study, Where it was noted that there are two main dimensions that have an impact on improving the performance of workers, the first dimension is work organization that represented in the nature of relations with workers and ruled training to improve performance, while the second dimension is the protective

equipment and occupational safety beside the role of the work doctor in the institution, where the institution is keen to apply laws and instructions and make sure to have adherence to them, the work doctor has an effective role in the continuity care and medical follow-up, beside the periodic field visits in order to raise awareness, sensitizing and guidance about how to deal with various working environment conditions.

Recommendations: Some recommendations that allow for further improvement and development of workers within the organization can be included as follows:

- Work to improve the physical conditions and the material work environment, considering the nature of the region;
- Increasing relationship consolidation between superiors and subordinates members, allowing discussion to know work details in different work spaces;
- Developing work mechanisms for the convenience of workers;
- Provide protection supplies that are suitable for the region and work conditions;
- Preparing floors to reduce both dust problems and health issues.

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