

Developing an ISO 45001-based OHSMS for a Bogotá, Colombia real estate and property development company



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ABSTRACT

Today, many organizations are seeking to implement continuous improvement plans not only to achieve greater economic benefits but also to improve the quality of life for their employees. The importance of reducing and preventing workplace accidents, protecting the health and well-being of employees, and preventing work-related illnesses has increased. This article focuses on the development of an Occupational Health and Safety Management System (OHSMS) for an organization in the real estate and property development services sector in Bogotá. The design of the OHSMS is based on the identification of the deficiencies of the current system and the proposal of continuous improvement, according to the ISO 45001: 2018 standard. The design process included three stages of research: 1. initial diagnosis, 2. hazard and risk assessment, and 3. management system performance assessment with appropriate controls and indicators. This article evaluates working conditions in production and in enclosed spaces, such as offices. The integration of these aspects ensures a comprehensive vision of occupational health and safety in real estate and property development companies. The design of the OHSMS is an essential step towards the continuous improvement of working conditions and the well-being of employees. Compliance with the ISO 45001: 2018 standard aims to ensure a safe and healthy working environment for all members of the organization.

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1. Introduction

Work activities have historically been considered a fundamental pillar for transforming society and the organization of the world as it is currently known (Mensah, 2019). These work activities have been attributed significant importance in the quality of life and people's health, understanding that they can have both a positive and negative impact. In this sense, when these productive activities are carried out in unsafe and unhealthy environments, they can cause illnesses and accidents (Micheli et al., 2022).

During the ancient world, the labor system was based on a class model since the activities were carried out mainly by enslaved people or people from the lowest population levels. These activities were carried out in precarious working conditions, hindering their effectiveness (Alarcon et al., 2022).

As an example, the case of the ancient Egyptians is presented, who described the afflictions suffered by the arms of masons and builders of the pyramids, as well as the descriptions of Hippocrates about chronic disorders generated by repetitive movements of the hands (Soler et al., 2020; Bader, 2023). As part of the evolution, diseases and accidents were associated with the new occupations of the time, such as pottery, mining, metallurgy, and glass handling, among others. However, due to the limited available knowledge, they limited themselves in deducing what they could observe since no studies were conducted to determine its causes and future consequences.

During the Industrial Revolution in the mid-19th century, with the industrialization processes, the rate of occupational accidents increased. At that time, accidents were fatal, decreasing company utility, which became a social concern. As a result of these events, the inclusion of new technologies and ways of working began to be considered. At that time, the actions provided to workers to offer them answers regarding their occupational safety were based on industrial hygiene. These actions were intended to find out what environmental factors

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impacted the health of workers and, therefore, could mitigate these risks (Gochfeld, 2005; Wyatt, 2008; Zachmann, 2014).

By the 20th century, the conviction was consolidated that it was feasible to prevent occupational diseases and work accidents (Dwyer, 2013), and this prompted the appearance of the term today known as occupational health in industrialized countries. With this approach, the needs and characteristics of the work environment are considered, and the Permanent Commission on Occupational Health (known today as the International Commission of Occupational Health-ICOH) is created to increase public, scientific, and political awareness about occupational diseases (Soler et al., 2020).

Considering the previously mentioned, it is notable that, at a global level, industries have strengthened a high level of awareness about the importance of providing better working conditions and guaranteeing the safety of workers in each of the activities they must carry out in their workplaces (Tetzlaff et al., 2021). Consequently, this approach has driven improvements in the standards of the occupational health and safety management system (OHSMS). The strategy detailed in ISO 45001 was created so that all countries can quickly adopt this standard because it is considered more efficient than the previous standard called OHSAS 18001, to guarantee locations of safe and profitable work, reducing and eliminating occupational risks or incidents that may affect the health of workers (Toy, 2015; ISO, 2018; Hussain et al., 2022).

In Colombia, during the first quarter of 2022, the Real Estate and Property Development Services sector registered the highest number of work accidents with 20,237 cases (provisional services are in the said sector), followed by the manufacturing industry with 17,753 cases. Regarding occupational diseases, for September 2021 to August 2022, the sector with the highest rate of occupational disease was social and health services (2912.4); in second place is mines and quarries (220.0), and the Real Estate and Property Development Services sector in seventh place with 98.4, this rate is equivalent to one professional ailment for every 100,000 workers. The diagnosis is worrying since the data shows that more than 85% of the diseases are related to muscular and skeletal system problems and acute and chronic diseases, such as respiratory diseases, cancer, and chemical exposure. However, its scale has yet to be determined for muscular and skeletal diseases; carpal tunnel syndrome is the most frequent disease in this group, representing 30% of cases. Likewise, it is essential to mention that occupational diseases and accidents in the Real Estate and Property development services sector have shown a constant annual increase despite efforts to implement preventive controls. These operations that focus on the purchase, sale, and rental of properties need help with worker safety and health. The need to effectively address this upward trend is becoming increasingly pressing. The industry must prioritize

and strengthen its prevention and occupational safety measures to protect workers and reduce the incidence of occupational diseases and accidents.

Implementing the OHSMS not only protects employees' health but also contributes to their well-being and, therefore, benefits society (Karanikas et al., 2020). This impact is reflected not only in the economic sphere but also in the social fabric of the country, which justifies the existence of regulations and standards regarding occupational safety and health (Salguero-Caparrós et al., 2020).

Following the rules set by Colombian laws (managed by the Ministry of Labor and the Ministry of Health and Social Protection) and the International Labor Organization's guidelines, using the OHSMS offers significant benefits. These include better relationships among coworkers, improved worker well-being, and enhanced quality of life. It also helps reduce the number of people missing work due to sickness and/or work-related accidents and decreases the number of deaths, which, in turn, boosts productivity in Colombia. Moreover, it ensures that companies and contractors meet the standards and requirements needed for the effective management of work-related risks (Zhao and Jiang, 2020; Rikhotso et al., 2022). It is essential to highlight that Decree 1072 of 2015, issued by the Ministry of Labor, establishes that the Occupational Health and Safety Management System (OHSMS) is a logical and staged process based on continuous improvement. This process includes policy, organization, planning, application, evaluation, audit, and improvement actions, intending to anticipate, recognize, evaluate, and control risks that may affect safety and health at work.

In this context, companies are interested in reducing the risks associated with their operations. To achieve this purpose, an organization capable of identifying and implementing strategies to enhance efficiency and reduce risk and associated accidents is essential. Therefore, this article aims to show the design of the Occupational Health and Safety Management System (OHSMS) based on the ISO 45001 Standard. This design adapts to the needs of a real estate and property development company located in Bogotá, which currently lacks such a system.

The article is dedicated to delving into the aspects of planning, implementation, and management of this said system to guarantee the safety and health of workers in the context of the real estate industry in Bogotá. Likewise, it ensures compliance with the standards and regulations to establish a safe and healthy work environment. This approach not only contributes to significantly improving the understanding and application of workplace safety principles but also seeks their practical application in the real estate sector of the city of Bogotá.

2. Methods

The work is focused on a company in the Real Estate and Property Development Services sector

located in Bogotá. The methodology used to design the OHSMS was based on the international standard ISO 45001, whose approach is centered on the PDCA

principle (Plan-Do-Check-Act) with a view to continuous improvement (Fig. 1).

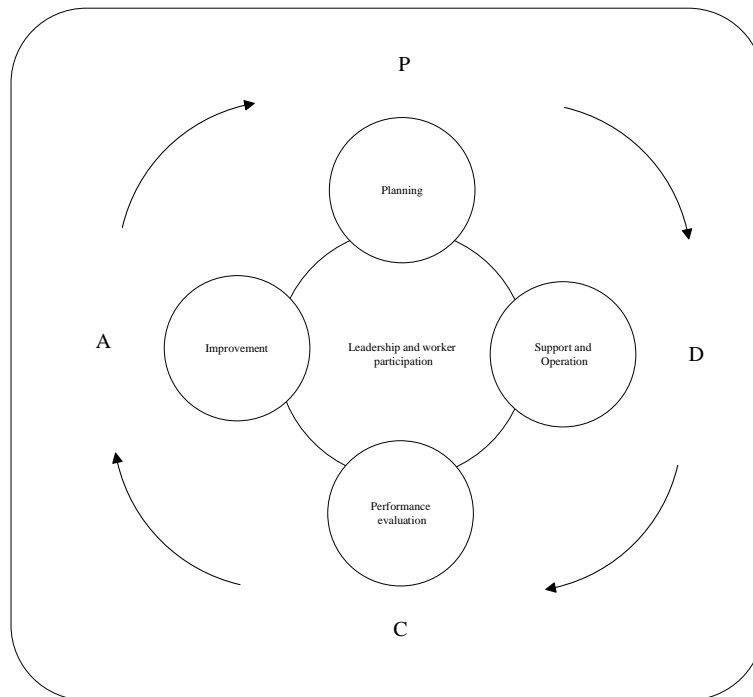


Fig. 1: Relationship of the PHVA and the numerals established by the standard (ISO, 2018)

A systematic process will be considered when developing the system design. Said process comprises three major stages: the context or initial diagnosis, the evaluation of hazards and risks, and the evaluation of the system's performance against the requirements of the previously mentioned standard. For a better illustration of the process that will be carried out, each of these stages is defined below.

Context or initial diagnosis: In this stage, the generalities of the company are described, including information on the number of people involved in working and everything related to it. This diagnosis is an essential step since, from this point on, an in-depth evaluation of the processes that can be improved is begun, and the state of the potential development areas is also quantified.

Hazard and risk assessment: At this stage, a risk assessment matrix is used to detect exposures, their probability of occurrence, and the possible consequences of work-related events. This evaluation will show the significant risks at all levels in the company. Table 1 shows the risks' classification and their respective definition, which were considered during the evaluation process.

In the evaluation through the matrix, the factors of likelihood (L) and severity (S) were considered. Based on the multiplication of these two evaluated parameters ($RL=L \cdot S$), the risk level (RL) was established (Castiblanco et al., 2020). Tables 2 and 3 show the matrix used for the evaluation and the criteria defining the level of risk. It is essential to consider that the ratings assigned in the risk assessment are categorized according to the degree

of likelihood of occurrence in the categories of Low (L), Moderate (M), High (H), and Very High (VH).

Performance evaluation: This stage is crucial for the PDCA cycle since, from it, the needs in terms of Safety and Health at work required by the company are determined. It establishes all the necessary follow-up, measurement, monitoring, analysis, and evaluation processes.

3. Results and discussion

3.1. Context or initial diagnosis

As previously mentioned in the methodology, the diagnosis phase focuses on controlling compliance with the requirements against the ISO 45001 standard, considering what the company currently has. For this, a checklist was established that concentrates its requirements on the PDCA cycle. A checklist was created in alignment with the requirements specified by the standard, and the qualification criteria were given as presented in Table 4.

Based on the verification and scoring carried out with the diagnosis, it was established that the ideal level of compliance with the stipulation of the ISO 45001: 2018 standard is 960 points, which corresponds to 100%. Once the evaluation process supported by the score for each standard requirement has been carried out, it was identified that compliance corresponds to 466 points, representing 49% compared to the ideal score. Fig. 2 shows the percentages of compliance concerning each requirement referenced by the standard.

Table 1: Classification of risks

		Classification						
	Biological	Physical	Chemical	Psychosocial	Biomechanics	Security conditions	Natural phenomena	
Definition		Atmospheric pressure (normal and adjusted)		Attributes of the teamwork environment (dynamics of relationships, connections, quality of interactions, and collaboration)		Confined spaces		
		Extreme temperatures (hot and cold)	Fibers			Electrical (low and high, voltage, static)		
		Ionizing radiation (x, beta, gamma, and alpha rays)	Gases and vapors	Work environment attributes (communication, technology, organizational structure, qualitative and quantitative task requirements)	Effort	Locative (Work surfaces with irregular or slippery texture, variations in height, level of organization and cleanliness, and risk of falling objects.)	Collapse	
	Bacteria Bites Fluids or dropping Fungus Parasites Rickettsias Stings Virus	Lighting (visible light due to excess or deficiency)	Liquids (mists and sprays)	Interface person - task (initiative, autonomy, and recognition, knowledge, skills about the demand of the task)	Manual handling of loads	Aspects related to machinery (machine components, tools, equipment, processed materials, solid or liquid)	Earthquakes	
		Noise (impact, intermittent, continuous)	Metallic, non-metallic fumes	Organizational management (pay, command style, hiring, induction and training, participation, social welfare, performance evaluation)	Posture (maintained, prolonged, forced, antigravitational)	Public order, among others.)	Flood	
		Non-ionizing radiation (laser, ultraviolet, infrared, radiofrequency, microwave)	Organic and inorganic powders	Task conditions (mental load, task content, emotional demands, control systems, the definition of roles, and monotony, among others.)	Repetitive motion	Technological (explosion, leak, spill, fire)	Gale	
		Vibration (whole body, segmental)	Particulate material	Working day (breaks, night work, rotation, overtime, breaks)		Traffic accidents	Precipitation (hail, rain, frost)	
					Work at heights			

Table 2: Risk matrix

Level	Definition	Likelihood (L)				Severity(S)	
		2-4	6-8	10-20	24-40	Level	Definition
24-40	Unsatisfactory exposure leads to continuous exposure situations or deficient levels with frequent exposures. In general, the occurrence of risk is repetitive and recurring	II 200-400	I 600-800	I 1,200-2,000	I 2,400-4,000	100	Death
10-20	Unsatisfactory exposure levels with frequent or occasional occurrences or highly deficient situations with sporadic occurrences. The risk could be realized on several occasions during working life	II - III 240-120	II 360-480	I 600-1,200	I 1,440-2,400	60	Serious and irreversible injuries or illnesses (partial permanent disability or invalidity)
6-8	Unsatisfactory levels of exposure with occasional incidents or situations that could be enhanced imply persistent or recurring exposure. There is a possibility of some damage materializing on certain occasions	II 100-50	II 150-200	II 250-500	I 600-1,000	25.	Illnesses or injuries resulting in temporarily unable to work (TUW)
2-4	Situations can be enhanced through infrequent or occasional exposures or circumstances, and there are no significant deviations in exposure levels. The risk materialization is not anticipated, albeit it is only partially dismissed	III - VI 20-40	II 60-80	II - III 100-200	II 240-400	10	Illnesses or injuries that do not require sick leave

Table 3: Risk level (RL) definition

Risk Level	Value	Definition
VH	600-4000	Urgent situation. Halt operations until the risk is managed. Immediate action is imperative.
H	150-500	Take corrective and control measures immediately
M	40-120	Look for opportunities for improvement, if feasible. It is advisable to support the intervention with justification and evaluation of its profitability
L	20	Maintain existing control measures, considering possible solutions or improvements and performing periodic assessments to ensure the risk remains acceptable

Table 4: Evaluation criteria for diagnosis.

Qualification criteria	Criterion description	Associated score
A	Fully meets the stated criteria. The requirement is established, implemented, and maintained per the ISO 45001 standard. Corresponds to the verify and act phases to improve the system	10
B	Partially meets the stated criteria. The requirement is established and implemented, but it needs to be maintained according to ISO 45001 standard. It corresponds to the doing phase of the system	5
C	Meets the minimum of the stated criteria. The requirement is established, unimplemented, and not maintained according to ISO 45001. It corresponds to the identification and planning phases of the system	3
D	It does not meet the stated criteria. The requirement must still be implemented and maintained according to ISO 45001 N/A	0

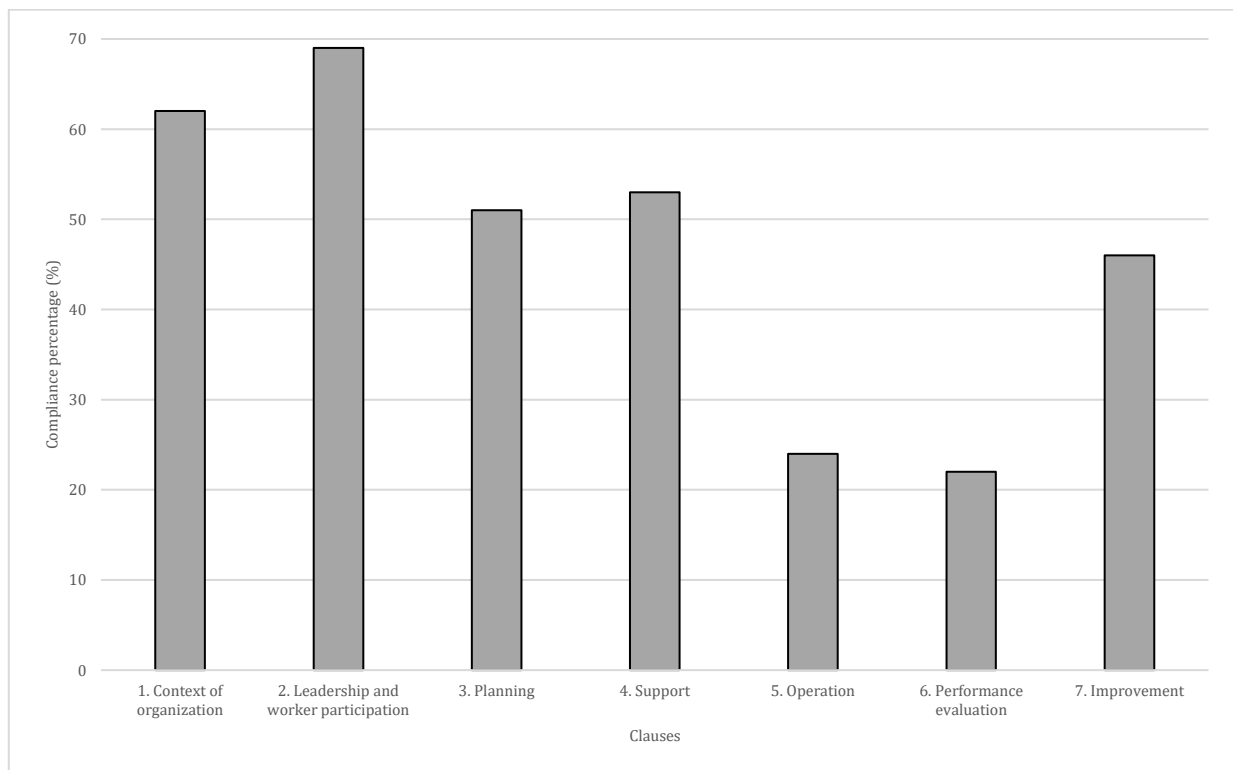


Fig. 2: Compliance with ISO 45001: 2018 criteria

When examining the potential causes of the degree of compliance shown in Fig. 2, the most significant shortcoming is found mainly in the numerals of the standard related to Operation and Performance Evaluation. This is explained by the lack of a standardized process to prevent accidents, which affects workers in administrative offices and contractors who perform tasks outside the facilities (such as repairs and maintenance). These contractors travel to various places where their services are required. It also applies to visitors since the company must guarantee compliance with regulations and ensure the safety of these people.

Due to this lack of an OHSMS, it is challenging to evaluate performance in this aspect correctly. Therefore, it is relevant to establish an OHSMS that is adapted not only to the facilities but also to guarantee the safety of the personnel who must

work outside them. The organization is responsible for guaranteeing the minimum exposure to risks and dangers in all work situations.

In order to advance in the design of the OHSMS, interventions are required to allow continuous improvement. It is essential to encourage the participation of all the organization's workers in the system's construction and implementation processes. The initial diagnosis must be considered, which allows the identification of existing needs and problems. In this way, clear objectives will be established and aligned with the internal objectives of the organization.

Considering the identified causes of non-compliance and the need to strengthen the OHSMS in the organization as a complement and progress towards the solution of the diagnosis results, it is essential to carry out a series of actions. Among

these actions, it is essential to jointly establish a written OHSMS policy between the top management and the workers. Additionally, the policy should be communicated, but only after adopting measures so that everyone (workers and top management) can allocate the time and resources necessary to engage proactively in the planning, implementation, assessment, and response processes. Immediately afterward, the organization process is launched. It is indispensable to be accountable for what is being developed. Additionally, the employer has the responsibility to ensure the well-being and safety of all employees and must, therefore, provide OHS training to each of them. Furthermore, workers must acquire the necessary skills and abilities to identify, control, and, to the extent possible, eliminate occupational risks through the correct implementation of the OHSMS. Subsequently, the planning and application process begins based on the country's regulations and the clauses of the ISO 45001 standard. This process involves an initial evaluation to identify the legal requirements and establish a system that complies with them. Additionally, it focuses on continuously strengthening the system, ensuring it is constantly evolving and improving to stay aligned with changing occupational health and safety standards and needs in the work environment.

On the other hand, the objectives of the system, the prevention and control measures, and the changes that this will bring to the company are formalized. Finally, in the evaluation process, guidelines are established to periodically control the results through their measurement, supervision, and compilation (Xu et al., 2023). An investigation of the causes and origin of the accidents and/or existing risks is carried out so that the committee formulates the pertinent recommendations, and audits are carried out in order to verify that the system has been put into practice and that it is adequate to protect the health and safety of collaborators (ILO, 2023).

3.2. Hazard and risk assessment

According to Colombian Technical Guide CTG 45, an evaluation matrix is a management and control tool used to identify the processes, the type, and the scope of the inherent risk. The precise design of this matrix, which evaluates both the severity and the probability of occurrence, allows for estimating the effectiveness of adequate management to confront these threats. Nevertheless, the evaluation matrix provides each OHSMS participant with a clear view of the necessary interventions to avoid incidents, work accidents, and even occupational diseases. However, it is essential to highlight that risk identification does not automatically guarantee the selection of these interventions. One of the advantages of this matrix is that it does not have to wait for situations of force majeure to take the appropriate measures, and all possible threats within the organization are identified, valued, and

evaluated. In addition, the measures that must be taken for control and prevention are established since they are necessary to reduce or eliminate the identified risks. Likewise, it benefits all organization members (Homann et al., 2022; Wijesinghe et al., 2023).

Initially, the pertinent information was collected with the company's workers to find out the perceptions of each employee about the specific functions of their position and the tasks to be carried out, the risks they believe they face, the actions that could improve the organizational situation and if they experience any difficulties in the performance of their duties.

Then, the risk matrix was prepared and evaluated with the information presented in Table 2 and Table 3. This matrix includes all the tasks carried out by the Real Estate and Property Development Services employees. Also, it allows for determining if the company has specifications to reduce the risk associated with each danger detected with a risk assessment, that is, the occurrence hypothesis and the magnitude of the consequences. In addition, it is determined whether the risk could become acceptable. This study was carried out to implement the precautionary and control measures appropriate to each risk or exposure to minimize the severe consequences for the health of the company's employees. Table 5 presents the matrix that was developed for the company. It is essential to clarify that the evaluation is only presented for risks whose level is greater than or equal to 100.

From the risk levels obtained in the evaluation with the matrix, the respective measures for the corrections and control of the respective risks of the company were presented. It is essential to highlight that interventions focused on contractors have been considered since their commitment is also crucial to guarantee security within the organization.

3.3. Performance evaluation

In this stage, an internal audit procedure has been created to ensure compliance with the system. It emphasizes assessing whether the system is being implemented, maintained, and executed according to the company's set criteria, which is in line with the country's regulations. In addition, the legal requirements matrix was used to support this process.

Within the cycle of this phase, the previously defined procedure for control, monitoring, and operational improvement was also used. An instructive manual was prepared for the investigation of incidents and occupational accidents, which includes an exhaustive description of the events and the losses that they entail in human, material, environmental, or equipment terms, in addition to providing context and observations related to the incident and accident, its causes and prevention measures necessary to establish the required corrections.

Table 5: Evaluation of the risk

Process	Position	Description of functions	Dangers		Possible effects	Controls	Risk assessment		
			Classification	Description			L	S	RL
Administrative	Messengers	Move from one place to another to carry out activities according to the assigned tasks	Security conditions	Traffic accidents due to the use of land and air transportation to travel to different places	Polytrauma, fractures, wounds, fatalities, property damage, damage to third parties	1. Establish a control program for road safety in which all road actors are considered	4	25	100
Administrative	Messengers	Move from one place to another to carry out activities according to the assigned tasks	Security conditions	Traffic accidents due to the use of land and air transportation to travel to different places	Polytrauma, fractures, injuries, fatalities, property damage, damage to third parties, rollovers, collisions	1. Verify the application of the contractor's Strategic Road Safety Plan (SRSP)	8	60	480
Administrative	Messengers	Move from one place to another to carry out activities according to the assigned tasks	Security conditions	Movement from one place to another, stairs, bathrooms, cafeteria, and corridors to develop work	Polytrauma, fractures, wounds, fatalities, property damage, damage to third parties	1. Establish a control program for road safety in which all road actors in commute and on mission are considered	4	25	100
Administrative	IT Advisor	Move from one place to another to carry out activities according to the assigned tasks (IT support)	Security conditions	Traffic accidents due to the use of land transportation to travel to different places	Polytrauma, fractures, injuries, fatalities, property damage, damage to third parties, rollovers, collisions	1. Establish a control program for road safety in which all road actors in commute and on mission are considered	4	25	100
Administrative	IT Advisor	Provide IT support	Security conditions	Direct or indirect electrical contact by contact with electrical installations in the workplace	Electric shock burns	1. Continue with the implementation of the safety inspection program involving the Committee for Health and Safety at work 2. Verify the controls implemented by the contractor to mitigate the electrical risk of its workers.	4	25	100
Operational	General service assistant	Perform cleaning and disinfection in bathrooms and common areas	Chemical	Handling cleaning products (hypochlorite)	Inhalation of acid gases. Skin and eye irritation	1. Continue with the implementation of the safety inspection program involving the Committee for Health and Safety at work 2. Verify the controls implemented by the contractor	4	25	100
Operational	General service assistant	Preparation of hot drinks	Security conditions	Contact with high temperatures when preparing and carrying hot drinks	1 or 2-degree burns	1. Implement anti-fluid endowment with long sleeves 2. Verify the controls implemented by the contractor	4	25	100
Operational	General service assistant	Movement through corridors and common areas delivering hot drinks	Security conditions	Movement from one place to another, stairs, bathrooms, cafeteria, and corridors to develop work	Polytrauma, fractures, wounds, fatalities, property damage, damage to third parties	1. Safety is ensured through training, proper footwear use, and regular supervision during hot beverage delivery activities	4	25	100
Administrative	Contractor	Prepare performance reports and activity reports according to the assigned	Security conditions	Movement from one place to another, stairs, bathrooms, cafeteria, and corridors to develop work	Polytrauma, fractures, wounds, fatalities, property damage, damage to third parties.	1. Implement measures such as safety training, adequate signage to warn of dangers, as well as the use of safety footwear 2. Establish an emergency response protocol to address potential injuries and property damage.	4	25	100
Administrative	OSH Advisor	Prepare management reports and implement occupational health and safety control measures	Biomechanical	Prolonged posture due to maintaining the same position and using a laptop	Tired hands and back.	1. Implementation of regular active breaks to allow changes in posture 2. Promoting ergonomic awareness among employees and encouraging good posture practices. 3. Verify the control activities implemented by the contractor 4. Implement an ergonomic kit for laptop use	6	25	150
All processes	All positions	Development of daily tasks inherent to work in the company (receive visitors)	Security conditions	Public by location in a vulnerable area due to violence, robberies, assaults, attacks, and public disorder, derived from situations of intentional aggression by private interests of people	Incidents of robberies, thefts, attacks. Effects on people's health include increased stress and anxiety, mental health problems such as post-traumatic stress disorder, physical injuries, and emotional trauma.	1. Continue with the training aimed at staff to protect themselves from situations of public risk 2. Emergency and contingency plan	4	25	100
All processes	All positions	Development of daily tasks inherent to work in the company (receive visitors)	Natural phenomena	Earthquake or earthquake due to seismic micro zoning of the company's location	Structural collapse, death, blows, crushing.	1. Continue with the implementation of the controls established to reduce the risk of emergencies 2. Certify the personnel of the emergency brigade in the use of the first aid equipment (FAE) 3. Emergency and contingency plan	2	60	120
All processes	All positions	Development of daily tasks inherent to work in the company (receive visitors)	Security conditions	Technological by fire	2nd and 3rd-degree burns, blows, gas and fume inhalation, death	1. Continue with the implementation of the controls established to reduce the risk of emergencies 2. Certify the personnel of the emergency brigade in the use of the first aid equipment (FAE)	2	60	120

Likewise, the process designed to address incidents and non-conformities was launched, taking corrective measures to eliminate the roots of the deviations and improve the efficiency of the processes through the implementation of improvements. It was agreed to carry out this procedure monthly since action plans derived from various security inspections will be originated to verify compliance and integration of the system in total fulfillment with the requirements established in the standard ISO 45001.

All the above aligns with the PDCA cycle, ensuring that the route traced allows the objectives established within the organization to be achieved and progress towards their achievement to be measured.

3.4. Implementation of the ISO 45001: 2018 standard and factors for continuous improvement

Finally, considering the previous stage, the information obtained is verified, and activities are planned to implement the missing elements and comply with the standard's requirements.

It is essential to recognize that implementing an OHSMS is continuous and dynamic. Over time, changes in the results and initial evaluations may occur, so the process of continuous improvement in the OHSMS seeks to mitigate the risks present in the company increasingly. This process is not the exclusive responsibility of senior managers. Instead, it implies the commitment of each organization member to adopt corrective actions and proposed preventive measures, which will allow a progressive and innovative development of the management system (Hassall and Lant, 2023).

The effectiveness of the management system will decrease over time. Therefore, it is crucial to effectively implement each of the continual improvement requirements established in ISO 45001 to obtain more positive evaluations.

A critical factor in improving the processes established in the Management System is the contribution of ideas by all the participating workers since they have a direct vision of the possible shortcomings and failures in the process. These suggestions must be constantly considered to contribute to the continuous improvement of the system.

Finally, evaluating the performance of the OHSMS is a fundamental step in ensuring compliance with the ISO 45001 standard and ensuring a safe and healthy work environment. Implementing corrective actions, preventive measures, and the active participation of all organization members are crucial to achieve continuous improvement and maintain the system's effectiveness over time.

4. Conclusions

In summary, over time, it has been proven that work activities have a significant impact on people's

quality of life and health. At a global level, in the past, the labor system used to present precarious conditions that negatively affected workers. However, currently, thanks to greater awareness about the importance of Occupational Health and Safety (OSH), strategies have been developed to improve occupational health standards.

Therefore, this article highlights the importance of the Occupational Health and Safety Management System (OHSMS) based on the ISO 45001 Standard, proving to be an essential tool to guarantee safe and healthy working conditions. This system was specifically designed to address the needs of a Real Estate and Property Development company in Bogotá, which was characterized by a lack of an effective system to prevent occupational risks, which could lead to injuries, illnesses, accidents, and even fatal tragedies. Furthermore, despite the difficulties mainly associated with the resistance to change encountered along the way, this approach benefits the organization, including office workers, contractors, and visitors, in terms of efficiency and regulatory compliance. It also contributes to the economic and social development of Bogotá and the country.

In a context where occupational safety and health are crucial, investing in a solid OHSMS based on the ISO 45001 standard is presented as an essential strategy to ensure a safe and healthy work environment. The prevention of occupational risks, the promotion of worker well-being, and compliance with standards and regulations are crucial elements that contribute to the sustainable success of the organization in the real estate industry and society in general.

Compliance with ethical standards

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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