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Contribution to the Implementation of an Integrated Management System in Accordance with ISO 9001: 2015, ISO 14001: 2015 and ISO 45001, 2018 Standards: A Case Study of AMENHYD Company in Algeria

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Abstract:

Purpose: *This article aims at providing the main guidelines for an integrated management system (IMS) implementation, compliant with the international standards ISO 9001: 2015, ISO 14001: 2015 and ISO 45001: 2018 within equipment manufacturing service of an Algerian construction company.*
Design/Methodology/Approach: *This study is based on a qualitative data collection which is obtained due to four essential tools (Document study, Participant observation, Interviews and Focus groups*
Findings: *The diagnosis was focused on the ISO 14001:2015 and ISO 45001:2018 and an action plan was developed to contribute to the implementation of an Integrated Management in compliance with the requirements of ISO 9001: 2015, ISO 14001:2015 and ISO 45001:2018, as well as to proceed with the development and implementation of the foundations of this system (internal and external issues, needs and expectations of interested parties, IMS and its necessary processes, IMS policy as well as the QSE risks analysis).*
Practical implications: *The study had to reveal the achievements and efforts in terms of quality management*
Originality value: *This study is the first of its kind on the AMENHYD company in Algeria.*

Keywords: *IMS, ISO 9001:2015, ISO 14001:2015, ISO 45001:2018, construction, performance.*

JEL Classification: *L20.*

Paper type: *Case study.*

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1. Introduction

In a fierce and competitive market with an ever-growing demand, more and more companies are seeking global performance (Barmaki and Mokhtari, 2018). It has become essential for the organizations in the construction industry to measure their performance effectively for long-term survival in today's competitive business environment (Tripathi and Jha, 2018).

The adoption of management systems dedicated to quality, environment, and safety in companies, has become an important activity for such organizations. They are considered a symbol of success and a prerequisite for the survival and savings (time, cost, resources) (El Aoufir and Moumen, 2017).

Nowadays, a significant number of companies are constantly looking for new solutions in order to keep their market share (Rachidi, Dakkak, and Talbi, 2016) and to improve their business performance through the implementation of an Integrated Management System (IMS) particularly the international standards *ISO 9001: 2015, ISO 14001:2015 and ISO 45001:2018* (Purwanto, Hj. Ahmad, Asbari, Bernato, and Sihite, 2020).

In addition, the integration of Quality, Environment and Safety is an effective organizational approach to streamline work, avoid conflicts and reduce duplication of documents. It can eventually lead to cost savings and efficient use of resources within an organization (PECB, 2013). However, the IMS has the potential to create real benefits through delivering greater organizational and operational efficiency, effectiveness and improved performance (Bhutto and Griffith, 2014).

The triple QSE certification is now a guarantee of quality and confidence for partners and customers of companies that have it (Jadid, 2015). Besides, it has become a proof of competence for the companies boosting their ability to face the international market.

In construction, the client is often taken as the person or organization that procures a project (Majid and Rashvand, 2014). He is the owner of a (construction) project or buyer/seller of products or services (Haddadi, Johansen, and Andersen, 2016). On the other hand, the customer satisfaction can be seen either as a goal or as a measurement tool in the development of construction quality (Karna, Junnonen, and Sorvala, 2009).

Furthermore, the lack of formal management systems is a reality for most construction companies, with the exception of QMS. Despite some improvements in applying certifications, they are facing difficulties in implementing other systems (Abreu, 2008; Maekawa, 2013; Neiva Neto, 2013). However, with the variety of available standards, companies felt the need to integrate the management subsystems for the optimization of resources and skills (Almeida, 2014).

When jointly implementing standards for management systems developed by ISO (such as *ISO 9001:2015, ISO 14001:2015, ISO 45001:2018* and others), the process of creating an integrated management system is greatly facilitated by the fact that all these standards are developed using common approaches (Zaloga, Dyadyura, and Rybalka, 2019). The implementation of an IMS (QSE) began in the manufacturing industry and is currently being researched for its application in the construction industry (Masuin, Latief, and Zagloel, Development of Information System and Knowledge Management in Integrated Management System to Improve Organizations Performance of Construction Company in Construction Management Projects, 2020).

Thus, by implementing a management system standard, organizations can benefit from global management experience and good practice (Zainol, Ahmad, Zahid, and Ab Manaf, 2021). Moreover, The IMS can enable companies to benefit from the creation of synergies that are not only achieved to reduce time and costs associated with their implementation, but also to improve efficiency (Masuin, Latief, and Zagloel, International Conference on Advances in Civil and Environmental Engineering, 2019).

In this sense, the literature has reported scientific articles and academic works (Trierweiller, Bornia, Gisi, Spenassato, Severo-Peixe and Rotta, 2016) which is conducted to find information from various research (Bernardo, Simon b, Tarí c and Molina-Azorín, 2015) by collecting, understanding, analyzing and then concluding on The Integrated Management System (IMS) (Radyawanto and Soediantono, 2022).

Hence, due to literature review, we were able to identify the various theoretical approaches of The Integrated Management System (IMS) and its implementation particularly the ISO *9001:2015* (Quality), *ISO 14001:2015* (Environment) and *ISO 45001:2018* (Safety) as well as a background on the perceived benefits in order to show the impacts of these standards on the performance of construction companies.

By the end of the scientific literature and after the gathering of necessary information from other studies, we have conducted a case study on preparing the implementation of an integrated management system in accordance with *ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018* requirements in a construction company by integrating the basic concepts of these standards.

2. Literature Review

2.1 ISO 9001:2015 Quality Management System

Nowadays, organizations without quality do not survive (Santos, Murmura, and Bravi, 2019). Hence, there are many organizations that integrate QMS with other Management Systems, namely with Environmental Management System (EMS) and

Occupational Health and Safety Management System (OHandSMS) among others (Carvalho, Santos and Gonçalves, 2018; Santos, Rebelo and Santos, 2017; Ribeiro *et al.*, 2017). A quality management system (QMS) defines the organization's structure, processes, procedures, and responsibilities to achieve quality policies and objectives. Successful implementation of a QMS improves service quality, organization performance, and customer satisfaction (Elsokhn, 2022).

The *ISO 9001:2015* is an internationally recognized standard for quality management systems, which provides the necessary resources to help an organization to improve its performance, based on the principle of plan-do-check-act, in order to obtain continuous improvement (Betlloch-Mas, Ramón-Sapena, Pascual-Ramírez, and Abellán-García, 2019).

It is reviewed every five years to ensure these standards remain up-to-date and in accordance with market needs (Fahmi, Mustofa, Rochmad, Wahyuni, and Irwansyah, 2021). Also, Betegon *et al.* (2021) define *ISO 9001* as "the international standard that provides a process-oriented approach to implementing a QMS in an organization" (Betegon *et al,* 2021).

Thus, until today, *ISO 9001* has undergone four successive revisions; in 1994, in 2000, in 2008 and the last revision in 2015 (Pyzdek and Keller, 2013; Demkiv, 2018).

Successful QMS implementation would boost continuous improvement and unleash potential advantages as improving the quality performance, overall business outcomes, and competitiveness of construction companies (Willar, Trigunarsyah, and Coffey, 2016). Several successful practices that showed potential in the manufacturing sector are Total Quality Management (TQM), *ISO 9001,* Six Sigma, Lean and Business Process Reengineering (BPR) and others (Garza-Reyes, Rocha-Lona, and Kumar, 2015). Unlike the construction sector, which struggled to apply QMS to the industry (Sullivan, 2011).

Consequently, towards an effective implementation process, Ahmed *et al.* (2017) attempted to develop a framework that integrates internal and external factors affecting QMS implementation in the construction industry.

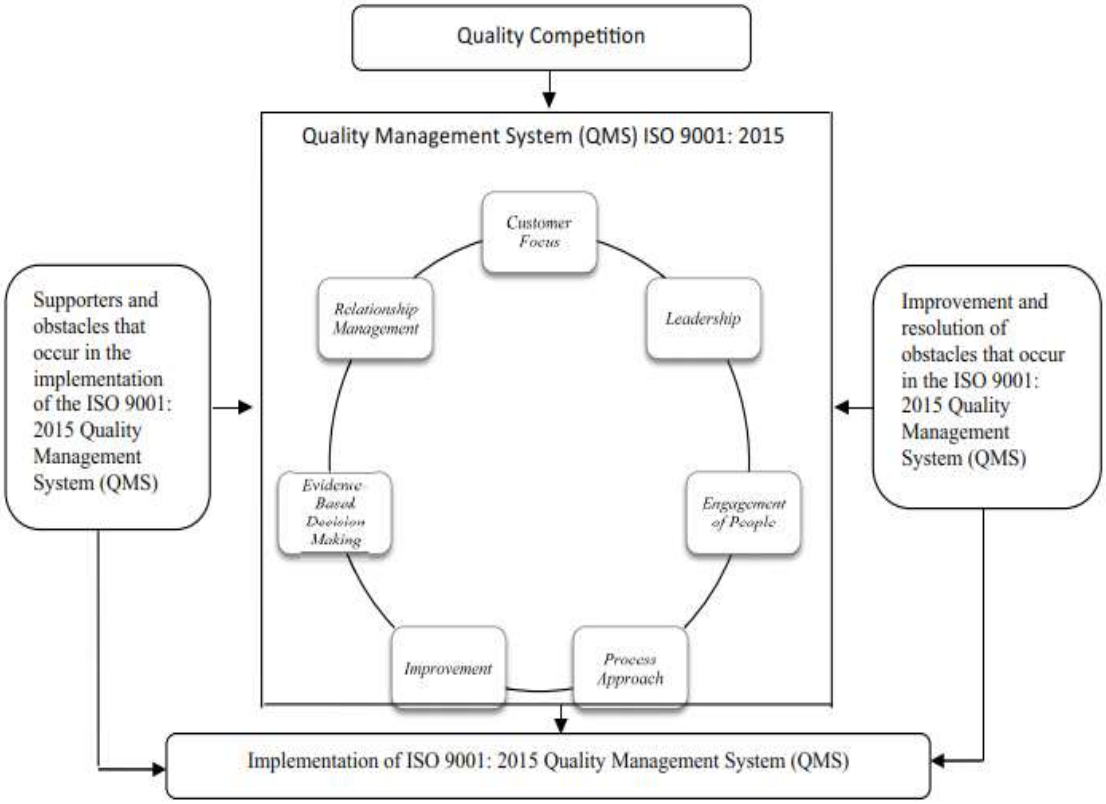
Besides, Wibisono *et al.* (2017) noted that the *ISO9001:2015* has a risk-based approach. Therefore, organizations can formulate an implementation strategy. Mangula *et al.* (2013) also has the same view of his study, which concluded that the adoption of ISO *9001: 2015* showed a considerable increase in performance in terms of quality and quantity of products.

The aim is to make organizations more flexible so as to increase their responsiveness to changing internal and external environments. Thus, organizations that comply with the standard, have the assurance of providing products and services that will

meet the needs and expectations of their customers, as well as the relevant legal and regulatory requirements (Betegon *et al.*, 2021).

The implementation of *ISO 9001: 2015* QMS is based on 7 quality management principles (Figure 1), namely customer focus, leadership, engagement of people, process approach, and improvement.

Figure 1. *The quality management system process ISO 9001:2015.*



Source: *Istriani and Rahardja, 2019.*

2.2 ISO 14001:2015 Environmental Management System

Construction is an important industry that contributes to the economic growth of developed and developing countries; however, the damage caused to the environment due to construction activities is indisputable (Bashir, Ojiako, Haridy, Shamsuzzaman, and Musa, 2021).

Accordingly, the International Organization for Standardization (ISO) has developed a series of voluntary standards and guidelines in the field of environmental management. The most important standard is *ISO 14001* which was introduced in

1996, the standard was modified again in 2004 (de Vries, Bayramoglu, and der Wiele, 2012).

On September 15, 2015, the International Organization for Standardization (ISO) released the *ISO 14001: 2015* standard, which had revised previous versions of the system (ISO, 2015). It contains general guidelines, making it easier for any type and magnitude of organizations to run EMS (Anandagiri, Nowo, and Syahnoedi, 2021). The popularity of *ISO 14001* as an international standard for effective environmental management extends to the construction industry (Chiarini 2019; Johnstone 2020; Mosgaard and Kristensen 2020; To and Lam 2021).

ISO 14001 (Environmental Management System) is a company management system that aims at ensuring that the processes used and the products produced have fulfilled commitments to the environment, especially in the effort to fulfill environmental regulations, pollution prevention and commitment to continuous improvement (Fahmi, Mustofa, Rochmad, Wahyuni, and Irwansyah, 2021). Also, Anandagiri *et al.* (2021) define *ISO 14001:2015* as "a standard that aims to be a frame of reference for organizations to protect the environment and respond to change by balancing sustainability pillars, namely environmental, social, and economical" (Anandagiri, Nowo, and Syahnoedi, 2021).

In addition, the successful adoption and implementation of *ISO14001:2015* as an operational standard as well as evaluation standard at every level of organizations (Campos *et al.,* 2015) because it involves the review of internal management processes, to keep under control the environmental impact of its operations (Mafira, Mecca, and Muluk, 2020). Moreover, *the ISO 14001* standard covers the responsibilities of the project managers for the employees, the public, and the environment (Orcos, Pérez-Aradros, and Blind, 2018).

It is quite challenging to implement the *ISO 14001* standard in construction firms that are predominantly oriented around particular projects, as environmentally sustainable practices are often not given the due consideration in the company's project planning culture (Banihashemi *et al.* 2017; Carvalho and Rabechini 2017; Silvius 2017). By contrast, some studies have reported that adopting the *ISO 14001* standard helped firms to increase their environmentally sustainable practices.

According to Psomas *et al.* (2011) "The *ISO 14001* requirements and the company's issues with environmental performance are among the two common reasons for the implementation of this environmental management standard" (Psomas, Fotopoulos, and Kafetzopoulos, 2011). Besides, To *et al.* (2014) detected that the top motivating factors for adoption of the Environmental Management Standard are to promote environmental awareness of environmental regulations among employees, increase compliance to environmental regulatory, and improving efficiency (To *et al.* 2014).

ISO 14001 Environmental Management System (EMS) is one of the most popular management systems in use. There are 307,059 organizations in 181 countries that have held *ISO 14001* certification (ISO, 2020) due to its several benefits. Firstly, it can reduce operational costs (Heras-Saizarbitoria, Arana, and Boiral 2016; Boiral *et al.*, 2018; Wu *et al.*, 2020; Brahmana and Kontesa 2021), protect the environment, and improve the firm's image and credit rating (Li *et al.*, 2018). Secondly, it has the potential to reduce risk and regulatory violations due to a better risk understanding approach (Vermeulen, 2018) and finally, it minimizes potential conflicts between workers and employers in the provision of a decent healthy work environment (Fahmi, Mustofa, Rochmad, Wahyuni, and Irwansyah, 2021).

Thus, the standard does not require organizations to achieve a specific level of environmental performance, but it describes a system to help them achieve their own goals. The literature observes that adopting the *ISO 14001* standard allows organizations to achieve their objectives, while simultaneously responding to the needs of both stakeholders and legal requirements (Phan and Baird 2015; Waxin, Knuteson, and Bartholomew 2019; Bravi *et al.*. 2020).

2.3 ISO 45001: 2018 Safety Management System

Over the past years, construction became a heavy work which involves many elements, not only humans as workers but also other supporting elements. From the use of heavy equipment to the involvement of large amounts of material (Asih and Latief, 2021). According to the International Labour Organization, more than 7.600 people die due to accidents or occupational diseases every single day (Purwanto, Abidin, and Suhendra, 2020).

Therefore, all construction companies must implement a Workforce Safety and Health System which is an important aspect in a project which means to protect workers from the risk of accidents (Asih and Latief, 2021).

Initially, *ISO 45001: 2018* was published on March 12, 2018 and this standard is a guideline in the implementation of an occupational health and safety management system by providing a series of powerful and effective processes to improve OHS performance in the workplace (ISO, 2018). According to Uzun *et al.* (2018), *ISO 45001* describes a more advanced management system than OHSAS 18001 does, with more clearly defined terms, definitions and scope. The process starts with leadership and commitment, followed by planning involving context analysis, operational planning, risk assessment, and control (Purwanto, Hj. Ahmad, Asbari, Bernato, and Sihite, The Effect of Implementation Integrated Management System ISO 9001, ISO 14001, ISO 22000 and ISO 45001 on Indonesian Food Industries Performance, 2020).

Furthermore, *ISO 45001: 2018* is intended to be applicable to every organization regardless of size, type and nature in order to help organizations manage *ISO 45001*

risks and proactively improve *ISO 45001* performance (Syahrullah and Febriani, 2019). Also, to provide support for all organizations in their effort to provide healthy and safe workplaces, to preserve the wellbeing of their workers and to prevent work accidents and ill-health (ISO/DIS 45001, 2018). One of the greatest particularities is that its structure is based on the so-called high-level structure defined in Annex SL, which guarantees its compatibility with other management systems, such as ISO 9001 and ISO 14001 (Neag *et al.*, 2020).

However, The *ISO 45001* adoption is much easier if the organization has an existing ISO Management System (as *ISO 9001* or *ISO 14001*), because some common processes will be in place (Draghici, Ivascu, and Neag, 2020). The main advantage of the Annex SL – the new ISO high level structure (HLS) is that it can be easily integrated into management system standards, such as quality, environment and social responsibility (Bejinariu *et al.*, 2017; Darabont *et al.*, 2017; Ivascu and Cioca, 2014; Mihai-Adrian *et al.*, 2017; Moraru *et al.*, 2014). The structure of *ISO 45001* is presented in Table 1.

Table 1. *Structure of ISO 45001*

No.	*Chapter*
1	Scope
2	Normative references
3	Terms and definitions
4	Context of the organization
5	Leadership and worker participation
6	Planning
7	Support
8	Operation
9	Performance evaluation
10	Improvement

Source: *Environmental Engineering and Management Journal, 2018.*

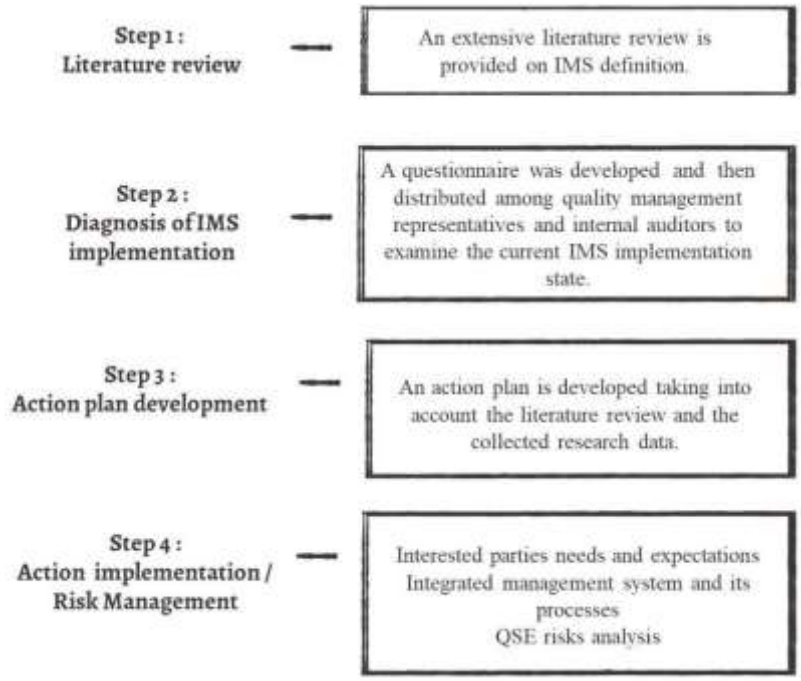
3. Research Methodology and Data

This study uses *qualitative research* method which can be defined as "*the study of the nature of phenomena*" (Busetto, Wick, and Gumbinger, 2020) with the purpose of getting an overview of the implementation of the integrated management system (IMS) in accordance with the *ISO 9001:2015, ISO 14001: 2015* and *ISO 45001: 2018* within the company of AMENHYD Spa. Our study is based on a qualitative data collection which is obtained by four essential tools (Table 2).

3.1 Research Methods

In order to achieve the research objectives, the IMS implementation approach used in this work is described as follows in Figure 2.

Figure 2. *The IMS implementation approach*



Source: *Elaborated by our care.*

3.2 Data Collection

The most commonly used data collection methods are document study, participant observations, semi-structured interviews and focus group discussions (Korstjens and Moser, 2017) which were collected at different stages of the IMS implementation process.

Table 2. *Essential tools for the research*

Adopted data collection tools	***Definition***
Document study	Document study refers to the review by the researcher of written materials. These can include personal and non-personal documents such as archives, annual reports, guidelines, policy documents, diaries or letters.
Participant observation	Observations are particularly useful to gain insights into a certain setting and actual behavior as opposed to reported behavior or opinions. Qualitative observations can be either participant or non-participant in nature.
Semi-structured interviews	Hijmans and Kuyper describe qualitative interviews as "*an exchange with an informal character, a conversation with a goal*". Interviews are used to gain insights into a person's subjective experiences, opinions and motivations as

	opposed to facts or behaviors.
Focus groups	Focus groups are group interviews to explore participants' expertise and experiences, including explorations of how and why people behave in certain ways.

Source: *Elaborated by our care.*

4. Analysis of Findings

4.1 Diagnosis of the Current State

In this section, we first tried to obtain a clearer perception on the general functioning of the various activities within the host organization by reviewing its organizational manual which can be defined as "*A compact book that details the organization's structure, duties and responsibilities of each position and department, as well as the procedures and methods used in the organization"* (Emmanuel, 2022). In order to get to know the system that prevails in this latter, we have conducted an initial diagnosis of the existing QMS documentary system (Table 3) which is considered as background and a basic support for the other implemented management systems, (Moumen and Knouch, 2018).

Table 3. *The Existing documents of Amenhyd according to ISO 9001:2015 requirements*

ISO 9001:2015—Quality Management Systems—Requirements	*QMS Amenhyd*
4. Context of the Organization	
4.1 Understanding the organization and its context 4.2 Understanding the needs and expectations of stakeholders	Document of organizational analysis context
4.3 Determining the scope of the quality management system	Document of the scope of QMS
4.4 Quality management system and its processes	Document of quality manual
5. Leadership	
5.1 Leadership and commitment 5.2 Policy	Document of quality policy
5.3 Organizational roles, responsibilities and authorities	Processes - procedures and operating modes
6. Planning	
6.1 Actions to address risks and opportunities	Document of Risks and Opportunities Analysis. Document of quality target
6.2 Quality objectives and planning to achieve them	Document of Objectives and Planning
6.3 Planning of changes	Process review Management review
7. Support	
7.1 Resources 7.1.1 General 7.1.2 Human Resources 7.1.3 Infrastructure 7.1.4 Environment for process implementation	Quality Pyramid Organizational knowledge document

7.1.5 Environment for monitoring and measurement
7.1.6 Organizational knowledge
7.2 Competence
7.3 Awareness
7.4 Communication
7.5 Documented information

Procedure of document control
Procedure of recording control

Source: *Elaborated by our care.*

In order to establish an action plan of the IMS and its implementation, we carried out a gap analysis to evaluate the current company state and assess the readiness of Amenhyd's company in facing its IMS certification. Therefore, the gap analysis will be efficient in seeing which aspects or areas that need to be improved (Sadi, Ristono, and Saputra, 2020).

According to Purwanggono and Utami Handayani (2018), the first step of this tool is to develop a gap analysis checklist for the purpose of identifying gaps between written procedures and processes performed. This latter is based on the requirements of ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 which includes common questions.

The checklist evaluation is done based on the results of interviews and questionnaires carried out by the respondents who had enough competence (Quality Management Representative and internal auditors of Equipment Manufacturing service). The clauses assessed are the followings: Clause 04 Organizational Context, 05 Leadership, 06 Planning and Clause 7 Support. Thus, the assessments made under the conditions of a rating scale and a color code we described in Table 4 and Table 5.

Table 4. *The Assessment Level*

Level	Rate	Rating	Description	Color
01	25%	Non- compliant	The requirement is not carried out	
02	50%	Informal	Requirement has been carried out informally	
03	75%	Acceptable	Requirement is executed but not consistent	
04	100%	Compliant	Requirement is well executed	

Source: *Elaborated by our care.*

Table 5. *Color code of ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018 Clauses*

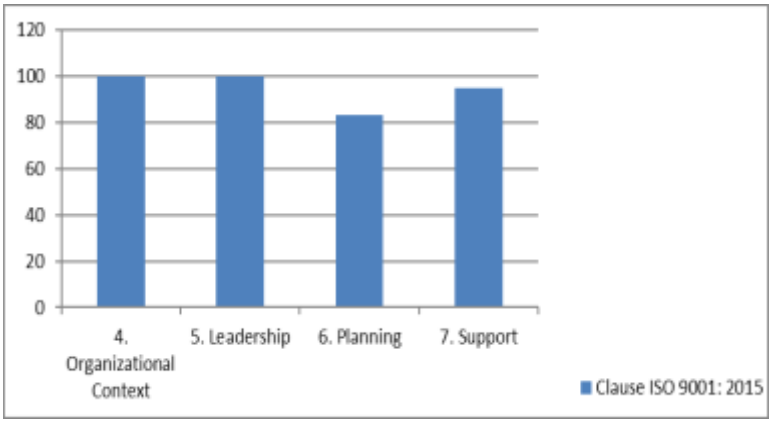
Standards	Color
ISO 9001:2015	
ISO 14001:2015	
ISO 45001:2018	

Source: *Elaborated by our care.*

4.2 Checklist Result Analysis

The gap analysis was focused on both ISO 14001:2015 and ISO 45001:2018 requirements as the quality management system has already been reviewed and the results we have obtained were satisfying in terms of compliance with the requirement of the ISO 9001:2015 as shown in Figure 3. The total percentage for each variable from the results of the checklist is: Organizational Context (100%), Leadership (100%), Planning (83%) and Support (95%).

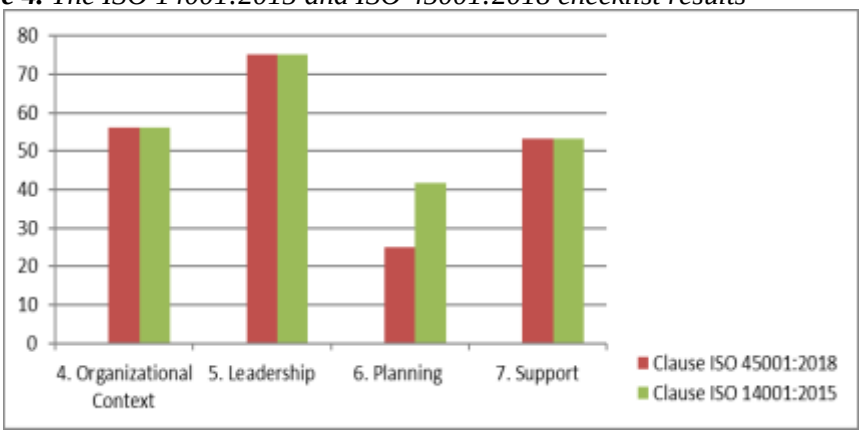
Figure 3. *The ISO 9001:2015 checklist results*



Source: *Elaborated by our care.*

The calculation results of the score percentage using Checklist based on ISO: 14001 2015 and ISO 45001:2018 requirements have shown to what extent the company is ready to implement the integrated management system. Therefore, the results we have obtained were nearly the same in terms of Environment, Health and Safety within the equipment manufacturing service as shown in Figure 4.

Figure 4. *The ISO 14001:2015 and ISO 45001:2018 checklist results*



Source: *Elaborated by our care.*

a. Analysis of the Organizational Context Clause:

After the gap analysis is conducted in the company based on ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018, a percentage value of 70% is obtained for the Organizational Context Clause, which indicates that the company is ready to implement an IMS in terms of Organizational Context. Table 6 presents the gap analysis results performed of this latter.

Table 6. *Percentage Gap Analysis Result of Organizational Context*

Sub-Claus	Description	ISO 9001:2015	ISO 14001:2015	ISO 45001:2018
4.1	Understanding the organization and its context.	100	100	100
4.2	Understanding the needs and expectations of workers and other stakeholders.	100	25	25
4.3	Determining the scope of the Management System	100	50	50
4.4	The Management System and its processes	100	50	50
Total Percentage		**70%**		

Source: *Elaborated by our care.*

b. Analysis of the Leadership Clause:

After the gap analysis is conducted in the company based on ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018, a percentage value of 83% is obtained for the Leadership Clause which shows that the company is ready to implement an IMS in terms of leadership and it ensures the availability of the necessary resources of its implementation through QHSE policy. Table 7 presents the gap analysis results.

Table 7. *Percentage Gap Analysis Result of Leadership*

Sub-Clause	Description	ISO 9001:2015	ISO 14001:2015	ISO 45001:2018
5.1	Leadership and Commitment	100	75	75
5.2	Policy	100	75	75
5.3	Roles of companies, responsibility and authority	100	75	75
5.4	Consultation and participation of workers	100	75	75
Total Percentage		**83%**		

Source: *Elaborated by our care.*

c. Analysis of the Planning Clause:

After the gap analysis is conducted in the company based on ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018, a percentage value of 50% is obtained for the Planning Clause, which shows that the documents related to risks and opportunities

of this latter has not been clearly defined by the company for most processes in terms of Environment, Health and Safety. Table 8 presents the gap analysis results.

Table 8. *Percentage Gap Analysis Result of Planning*

Sub-Claus	Description	ISO 9001:2015	ISO 14001:2015	ISO 45001:2018
6.1	Actions to deal with risks and opportunities	100	25	25
6.1.2	Environmental aspects		50	
6.1.2	Hazards identification and risks/opportunities assessment			25
6.2	Objectives and planning of actions to be achieved	50	50	25
6.3	Planning of Changes	100		
Total Percentage		**50%**		

Source: *Elaborated by our care.*

d. Analysis of the Support Clause:

After the gap analysis is conducted in the company based on ISO 9001:2015, ISO 14001:2015 and ISO 45001:2018, a percentage value of 67% is obtained for the Support Clause, which means that the company has not consistently run the working procedures. The constraint faced in Clause 7.5 is the non-existent Data and documents in terms of Environment, Health and Safety for the equipment manufacturing service.

Besides that, QHSE policy and QHSE objectives are not well understood by the workers because of the lack of raising awareness trainers within this servicea as shown below (Table 9):

Table 9. *Percentage Gap Analysis Result of Support*

Sub-Clause	Description	ISO 9001:2015	ISO 14001:2015	ISO 45001:2018
7.1	Resources	75	66	66
7.2	Competence	100	100	100
7.3	Awareness	100	25	25
7.4	Communication	100	50	50
7.5	Documented Information	100	25	25
Total Percentage		**67%**		

Source: *Elaborated by our care.*

5. Conclusion

This study focusses more on the qualitative side of the matter, which makes the final data rather questionable. On the other hand, the results stated in this study reflect more the declarative aspects, and it would be advisable to deepen the inquiries in order to get closer to reality. Based on the results of the previous section there are

still some clauses of ISO 14001:2015 and ISO 45001:2018 that have low percentage values in light of preparation for the implementation of an integrated management system, thus, improvements are needed.

The commitment and direct participation of the quality management representatives (QMR), as well as the internal auditors are the key factors for a successful implementation of the IMS, in addition to the good preparation and goal setting. Hence, it needs recommendations from clauses that have low percentage values, namely:

The Clause 4: Organizational Context. Based on the obtained value of only 56,25% for both ISO 14001:2015 and ISO 45001:2018. There are surely suggestions of improvement for the Amenhyd's company, among which we could cite:

(1) Updating the list of stakeholders which meets the Environment, Health and Safety dimensions;
(2) Creating documents related to the scope of Integrated Management System;
(3) ensuring all processes on the Integrated Management System are in accordance with the needs of ISO 14001:2015 and ISO 45001:2018.

The Clause 5: Leadership. Based on the obtained value of 75% for both of ISO 14001:2015 and ISO 45001:2018. There is need for improvement for Amenhyd's company in order to increase the value percentage in the Clause 5.3 Roles of companies, responsibility and authority. The proposed improvement includes:

(1) Forming a small team in preparation for the next certification of ISO 14001:2015 and ISO 45001:2018.

The Clause 6: Planning. Based on the obtained value of 41,6% for ISO 14001:2015 and 25 % for ISO 45001:2018. There is need for improvement for Amenhyd's company in order to increase the value percentage in the Clause 6. The proposed improvements include:

(1) Defining Risks and Opportunities for all processes and most specifically the equipment manufacturing service in terms of Environment, Health and Safety.
(2) Creating documents related to Risks and Opportunities in order to know what is considered and what has been done. Besides, this document will also facilitate the audit missions.

The Clause 7: Support. Based on the obtained value of 53,2% for both of ISO 14001:2015 and ISO 45001:2018. There is need for suggestions of improvement for the Amenhyd's company, among which we could cite:

(1) Updating the company knowledge, in terms of written knowledge such as results of discussions with their clients and the company employers should also

contribute to the knowledge base. This information should be archived by the company in order to make it easily accessible for everyone (Clause 7.6.1);

(2) Adding trainers committee to the organization structure to raise awareness of the QHSE policy and its objectives in terms of environment, health and safety requirements and setting rules to always use self- protective equipment within the construction sites (Clause 7.3).

(3) Corresponding documents and records currently used by the company to be the documented information in accordance with the needs of ISO 14001:2015 and ISO 45001:2018 (Clause 7.5).

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