

Study of the factors influencing the implementation and deployment of an occupational health and safety management system within Moroccan companies

Khadija Mannane¹, Mariam Benhadou²,  Abdellah Haddout³, Khadija Kacemi⁴

^{1,2,3,4}Industrial Management and Plastics Forming Technology Team, Laboratory of Advanced Research in Industrial and Logistic Engineering, ENSEM, Hassan II University, Casablanca, Morocco; Khadija.mannane@gmail.com (K.M.) mariambenhadou@yahoo.fr (M.B.) haddout.abdellah@gmail.com (A.H.) khadija.kacemi@gmail.com (K.K.).

Abstract: Faced with the critical situation of occupational health and safety (OHS) in the industrial sector, Moroccan companies are increasingly aware of the need to adopt proactive and preventive risk management strategies. The implementation of an OHS management system appears to be a relevant response to this challenge, helping to foster a culture of safety within the workplace. This study aims to explore the motivations behind the adoption of OHS management systems, identify the main obstacles to their implementation, and propose potential solutions to facilitate their integration. The research is based on a questionnaire distributed to a representative sample of 200 Moroccan companies of varying sizes (large, medium, and small), with a response rate of 75%. The analysis of the data revealed that accident prevention and regulatory compliance are the key drivers for adopting an OHS management system. However, several barriers to implementation were also identified, including difficulties in applying legal and regulatory requirements and challenges related to the development of the necessary documentation. To address these issues, we propose a structured methodological approach aimed at supporting the straightforward and effective deployment of OHS management systems, particularly within small and medium-sized enterprises (SMEs) in Morocco.

Keywords: Occupational health and safety (OHS), OHS communication, OHS culture, OHS management system, Regulation.

1. Introduction

According to the French National Institute for Research and Safety (INRS), the Occupational Health and Safety Management System (OHSMS) is a framework that can be considered a comprehensive and structured approach to managing occupational risks. It enables companies to coordinate and control all policies, resources, measures, and tools implemented to manage occupational health and safety. It is defined as a set of interdependent elements intended to establish occupational health and safety policies and objectives and to achieve them [1].

The OHSMS provides an organizational approach to achieving goals that generally include reducing workplace accidents and occupational illnesses, while fostering continuous improvement [2, 3].

The globalization of economies and markets has increasingly driven companies to prioritize workplace safety as part of their competitive strategy. ISO 45001 certification serves as concrete evidence of an organization's commitment to improving employee health and safety.

Based on a survey conducted among a sample of Moroccan companies, 58% reported having adopted ISO 45001 certification (formerly OHSAS 18001) [4].

One of the key prerequisites for implementing an OHSMS is the leadership commitment, which involves providing adequate material and human resources, and setting regulatory compliance as a primary objective.

Implementing a health and safety management system is part of a change management process. It is a comprehensive project with multiple benefits: enhancing the company's brand image by satisfying stakeholders, reducing direct and indirect costs, improving resource management, and—most importantly—controlling risks and identifying opportunities for continuous performance improvement [5].

Several previous studies conducted around the world have addressed the same topic—occupational health and safety (OHS)—and more specifically, the obstacles that hinder the deployment of this approach, which, before being a regulatory or normative requirement, is fundamentally a basic human right. Moreover, it is also a key factor in ensuring efficiency and performance for both employees and employers.

The core principle of this process is the adoption of corrective actions and preventive measures by involving all members of the organization, from top management to frontline workers [6].

A study conducted in Romania [7] presented a diagnostic of the feasibility of implementing the ISO 45001 standard. This was done through a survey consisting of 13 questions about the impact of ISO 45001 on company activities and the possibility of adopting the new standard.

The survey results were as follows: nearly half of the participants were not familiar with the ISO 45001 standard. Most senior executives believed that the risk-based approach was widely implemented within their companies, in contrast to other managers who did not share the same opinion. Regarding OHS aspects, executives believed they were implemented, while quality and safety managers felt they were less consistently applied. Finally, nearly half of the respondents confirmed that ISO 45001 could be adopted by their companies.

This study confirms that ISO 45001 is a robust and wise standard, offering a new framework for OHS management based on the PDCA (Plan-Do-Check-Act) cycle, with a focus on continuous improvement [8].

The Occupational Health and Safety Management System (OHSMS) helps reduce the frequency and severity of workplace accidents and, consequently, lowers insurance premiums. It also helps minimize and control occupational diseases. ISO 45001 facilitates compliance with regulatory requirements and boosts employee motivation by creating a safer work environment.

Thanks to the monitoring indicators provided by an OHS management system, companies can evaluate the performance and effectiveness of their OHSMS. Every system requires a measurement mechanism for effective management. As the saying goes, “You can't manage what you can't measure” [9]. Indeed, OHS indicators provide essential feedback on the effectiveness of the system [10].

Although some researchers [11] have concluded that ISO 45001 provides a more institutional framework for certified organizations compared to non-certified ones, it does not necessarily guarantee superior OHS performance.

Given the alarming state of occupational health and safety (OHS) in the industrial sector, Moroccan companies—along with their ecosystems including social partners, the government, insurers, and associations such as the General Confederation of Moroccan Enterprises (CGEM)—have become aware of the importance of implementing proactive risk anticipation and prevention measures. The deployment of an OHS management system will help address this situation and promote a safety culture in the workplace.

2. Methodology

2.1. Analysis of the Current Situation

The objective of our research is to assess the level of adoption of an Occupational Health and Safety Management System (OHSMS) by companies based in Morocco, and to analyze the key factors that influence the deployment of such a system. This study is based on a deductive approach using a

questionnaire as the primary tool for conducting the survey. Questionnaire-based studies are generally considered an effective strategy for collecting empirical data, particularly when the aim is to answer "What?" and "How?" questions. In our survey, questions regarding the success and failure factors in the implementation of an OHSMS, as well as the requirements of the international ISO 45001 standard, were used as a framework for designing the questionnaire

2.2. Field Survey

The first section of our questionnaire aims to assess the level of integration of Occupational Health and Safety Management Systems (OHSMS) within companies based in Morocco by asking questions related to the reasons for adopting such a system. The identified reasons are as follows:

- Improving the company's image in society;
- Complying with regulations;
- Enhancing employee well-being in the workplace;
- Improving relations with authorities;
- Meeting customer demands;
- Facing competition;
- Reducing costs;
- Preventing accidents and incidents;
- Integrating OHS into the company's strategy;
- Increasing employee motivation;
- Avoiding legal sanctions;
- Improving quality and productivity.

The second section seeks to identify the obstacles hindering the adoption of this approach. The identified obstacles are as follows:

- High cost of certification;
- Limited human and material resources;
- Uncertainty about the benefits of deploying the OHS management system;
- Lack of management commitment;
- Need for additional training;
- Lack of employee involvement;
- Difficulty complying with regulations;
- Resistance to change;
- Challenges in deployment methodology.

For these first two sections, the focus is essentially on answering the question "What?"

The third and final section aims to highlight the difficulties encountered by companies during the implementation of this system. This section addresses the question "How?", with the objective of identifying possible solutions to facilitate the deployment of such management systems and consequently encourage companies to implement them. The identified difficulties are as follows:

- OHS policy;
- Hazard identification, risk assessment, and determination of control measures;
- Legal requirements;
- Management objectives and programs;
- Resources;
- Competence, training, and awareness;
- Communication, participation, and consultation;
- Documentation;
- Operational control;
- Evaluation and treatment of compliance;

- Management review.

2.3. Framework of the Approach and Sampling

The questionnaire was constructed based on the factors listed above. It includes a 5-point Likert scale rating system:

- 1 = Strongly disagree,
- 2 = Disagree somewhat,
- 3 = Neutral,
- 4 = Agree somewhat,
- 5 = Strongly agree.

The questionnaire was administered online to companies via Google Forms.

The sample for our study consists of 200 companies based in Morocco (large, medium, and small enterprises), mostly located along the Casablanca-Rabat axis to ensure that the companies operate within the same ecosystem and thus face similar constraints. More specifically, the focus was on structured small and medium-sized enterprises (SMEs) with at least five years of activity and capable of providing accurate and reliable data.

The survey was conducted by sharing the Google Forms questionnaire with companies through social media platforms. Direct contacts were also used to collect responses

3. Results and Discussion

As previously mentioned, the study sample consists of 200 companies, including 66 Large Enterprises (LE) with more than 200 employees and 134 Small and Medium Enterprises (SMEs) with fewer than 200 employees. The response rate to the questionnaire was 75%.

The response distribution by company category is as follows: 85% for Large Enterprises and 70% for SMEs.

The distribution of responding companies by sector is as follows: 16% in the aerospace sector, 13% in the agri-food sector, construction and plastics, 11% in the chemical sector, and 10% in the mechanical sector (see Figure 6).

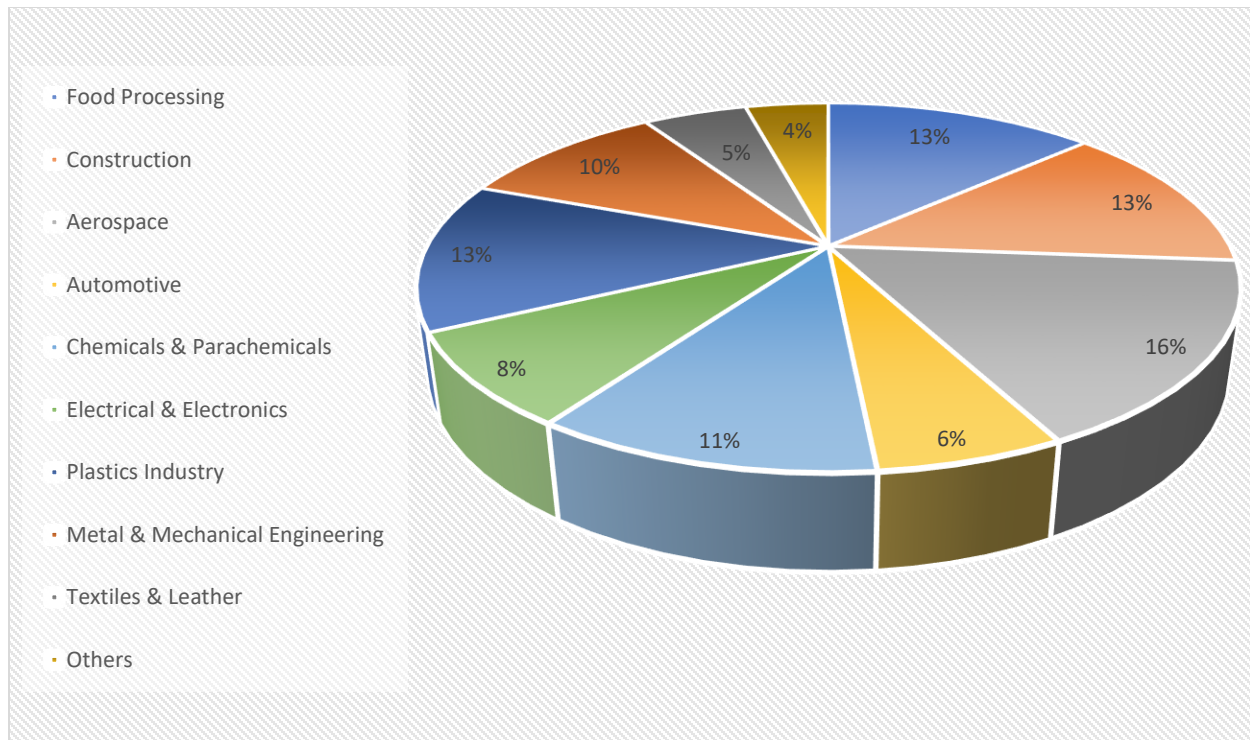


Figure 1.
Distribution of Responding Companies by Industry Sector.

Among the companies that responded to the questionnaire, 47% have implemented at least one management system such as quality management, occupational health and safety, environmental management, HACCP, or others. The distribution by category is as follows: 85% for Large Enterprises (LE) and 30% for Small and Medium Enterprises (SMEs).

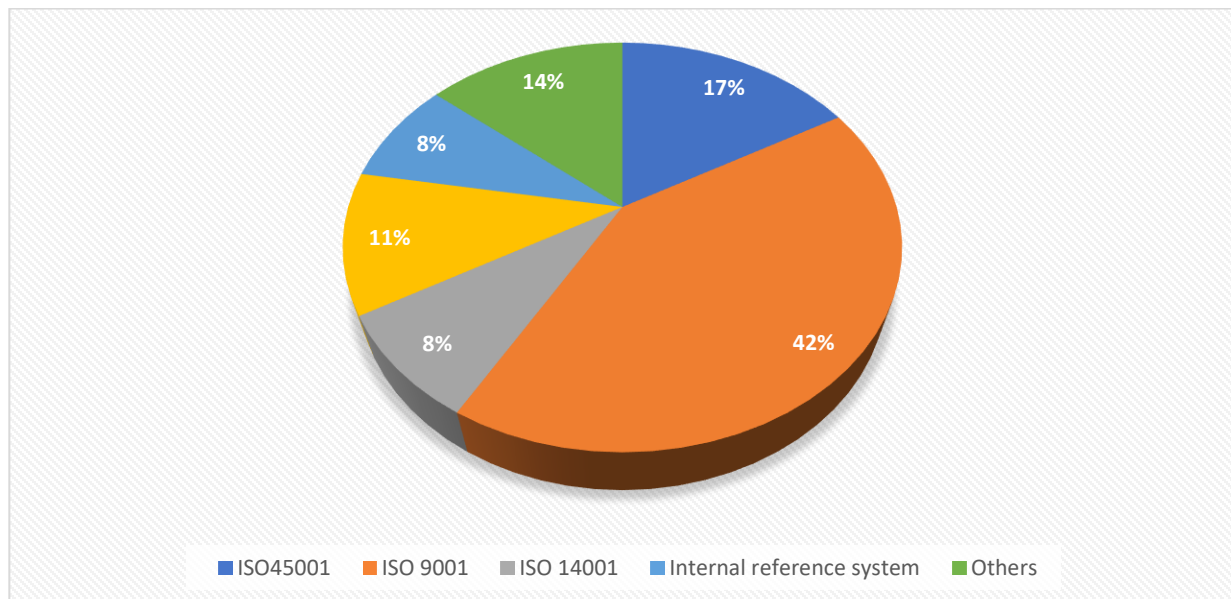


Figure 2.
Distribution of Certified Small and Medium Enterprises (SMEs) by Type of Certification.

As shown in Figure 7, among the 30% of certified SMEs, only 6% have adopted an Occupational Health and Safety Management System, whereas for Large Enterprises, this percentage reaches 30%, as illustrated in Figure 8.

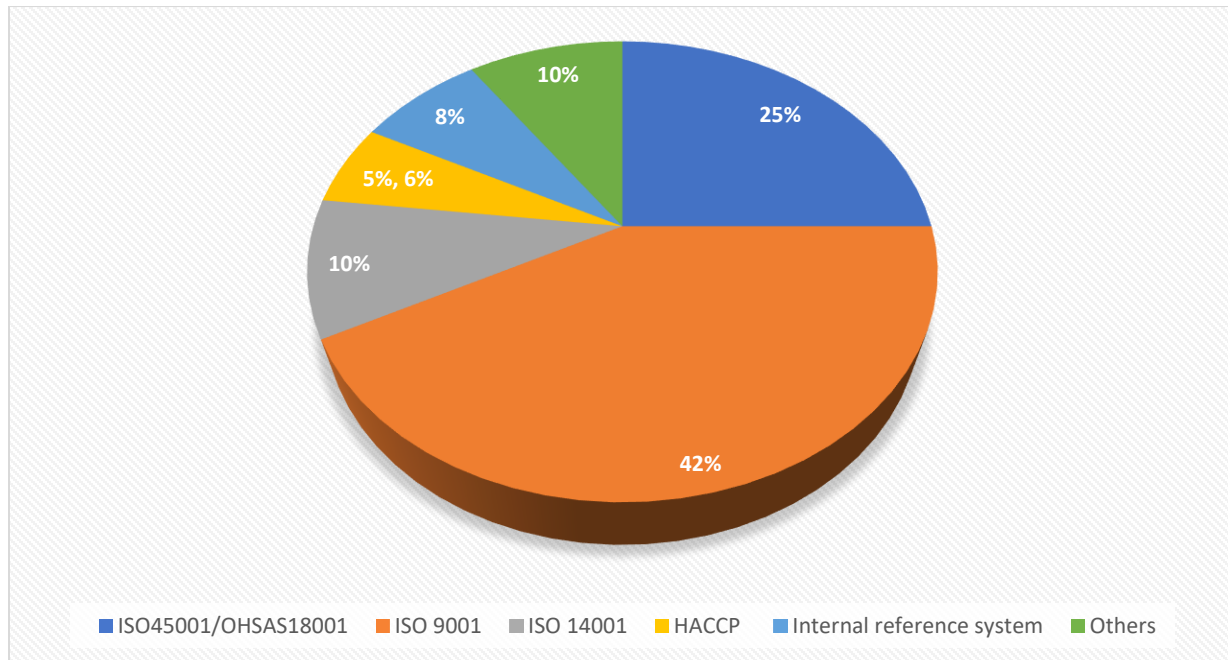


Figure 3.
Distribution of Certified Large Enterprises (LE) by Type of Certification.

The analysis of the results from this study on certified companies reveals several important findings:

- Companies tend to prioritize the adoption of quality management systems over Occupational Health and Safety Management Systems (OHSMS). According to the data collected in this study, 43% of SMEs are ISO 9001 certified compared to 42% of large enterprises (LE), while only 16% of SMEs and 25% of LEs are ISO 45001 certified.
- Companies operating in high-risk sectors—such as construction, mechanical engineering, plastics, and chemicals—remain a small minority when it comes to adopting an OHSMS. Among SMEs, they account for only 13% in total, including 6% ISO 45001, 4% HACCP, and 3% using internal standards, as shown in Figure 7. In comparison, Figure 8 shows that 35% of large enterprises have adopted an OHSMS: 23% ISO 45001, 7% HACCP, and 9% internal standards.
- SMEs that have adopted an OHSMS are mainly subsidiaries of multinational corporations or large national groups
- Companies that have adopted an internal OHS framework based on international principles and standards are mainly subsidiaries of multinational corporations.

The various questions included in our survey are grouped under the following three main axes:

- Reasons for adopting an Occupational Health and Safety Management System (OHSMS);
- Constraints related to the adoption of an OHSMS;
- Difficulties in deploying an OHSMS.

These themes can be further classified into four main categories:

- Financial,
- Human resources,

- Regulatory, and
- Documentation or system-related factors

Axis 1 Reasons for Adopting an Occupational Health and Safety Management System (OHSMS)

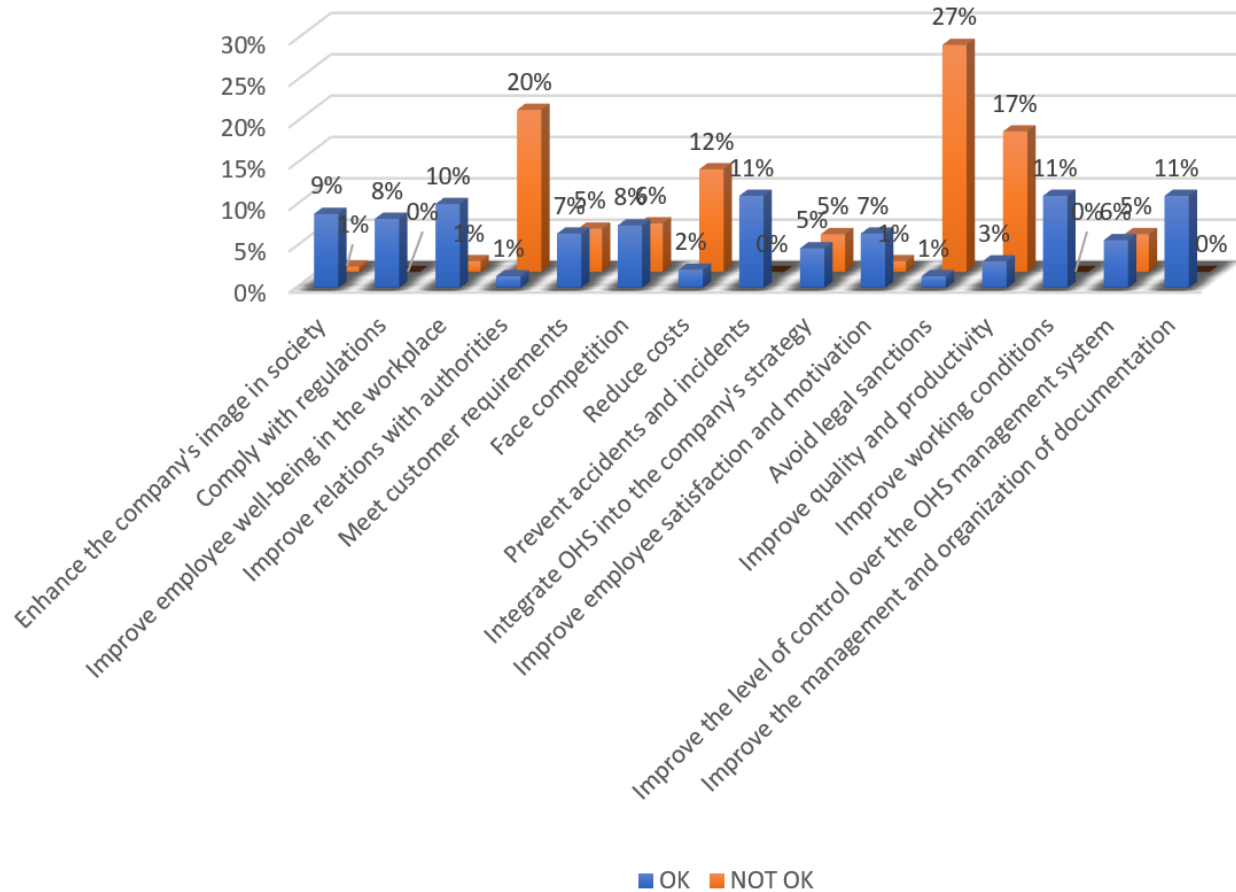


Figure 4.
Responses from Large Enterprises Regarding Axis 1.

The responses to the questions related to the reasons for adopting an Occupational Health and Safety Management System (OHSMS) for Large Enterprises and SMEs are shown in Figure 9 above and Figure 10 below, respectively.

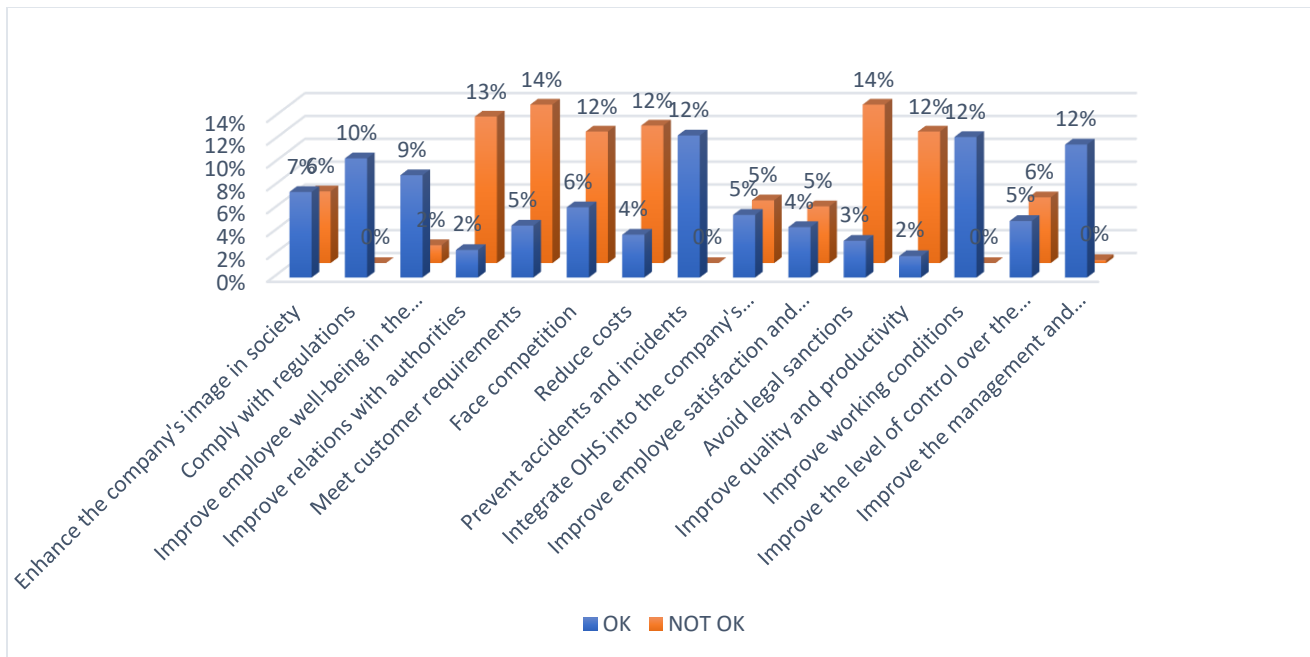


Figure 5.
Responses from SMEs Regarding Axis 1.

The summary based on the four criteria is presented in Figure

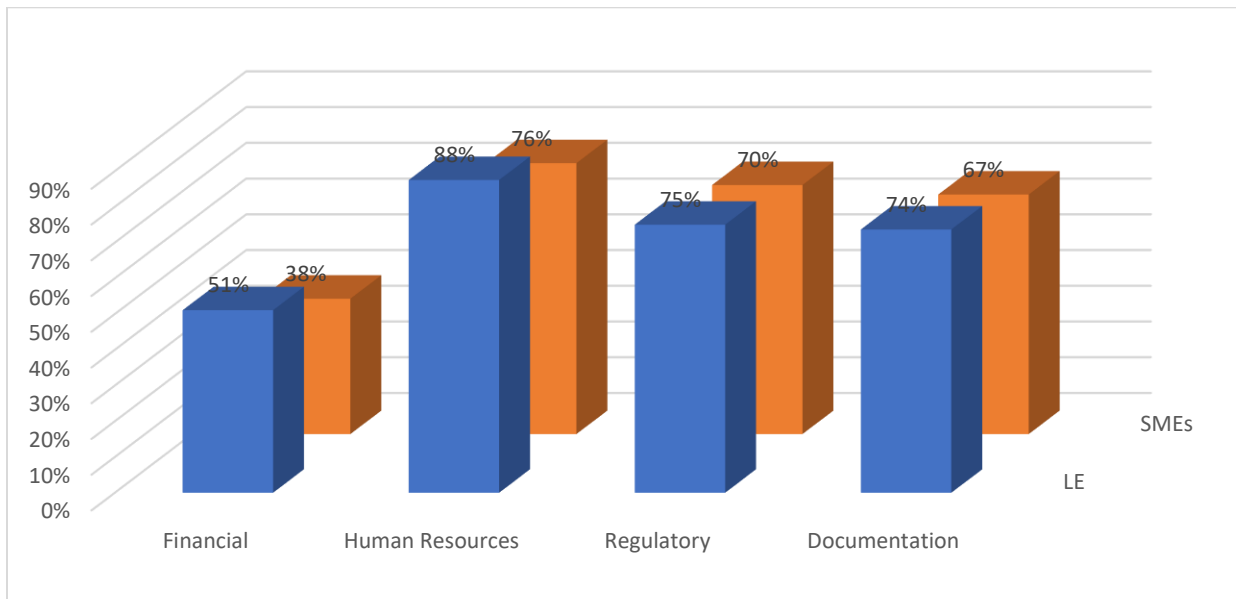


Figure 6.
Summary Based on the Four Criteria – Axis 1.

The responses obtained show that the primary reasons driving companies to adopt an Occupational Health and Safety Management System (OHSMS) are mainly human-related factors, representing 88% for large enterprises (LEs) and 76% for SMEs. This includes, in particular, accident prevention.

Next, managerial and regulatory factors are also significant, accounting for 74% and 75% respectively for LEs, and 67% and 70% for SMEs.

Finally, financial factors are cited less frequently, mentioned by 51% of LEs and only 38% of SMEs

Axis 2: Constraints Related to the Adoption of an Occupational Health and Safety Management System (OHSMS)

The responses to the questions related to the constraints of adopting an Occupational Health and Safety Management System (OHSMS) for Large Enterprises and SMEs are presented in Figures 12 and 13, respectively, while the summary based on the four criteria is shown in Figure 14.

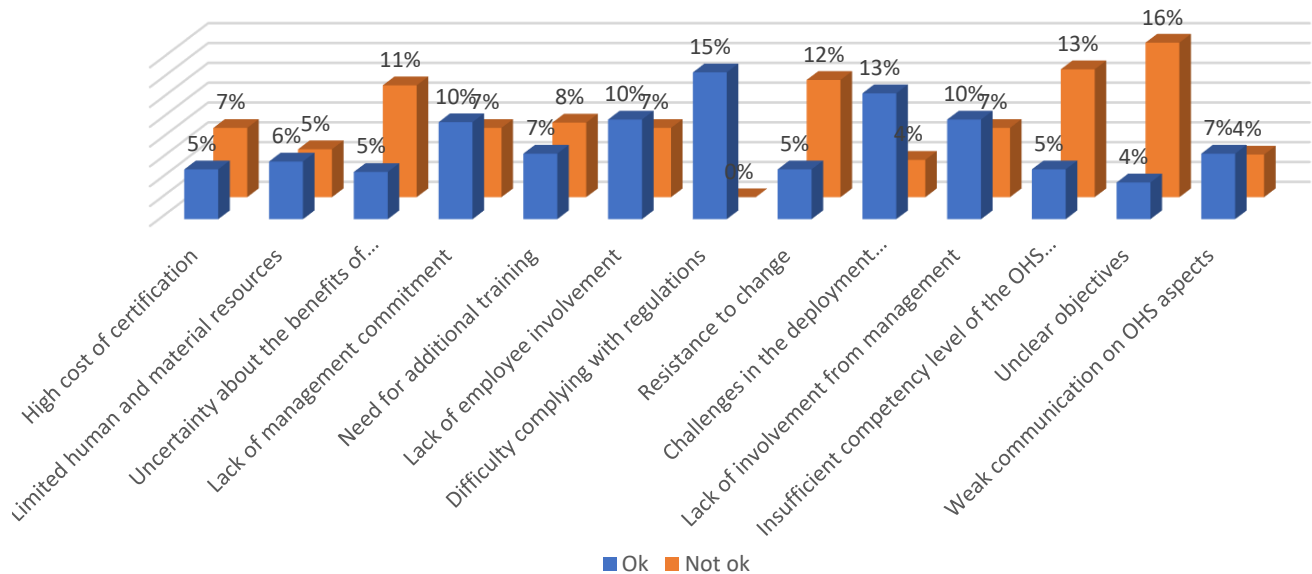


Figure 7.
Responses from Large Enterprises Regarding Axis 2.

The responses to the questions related to the constraints in adopting an Occupational Health and Safety Management System (OHSMS) for Large Enterprises and SMEs are presented in Figure 7 above and Figure 8 below, respectively.

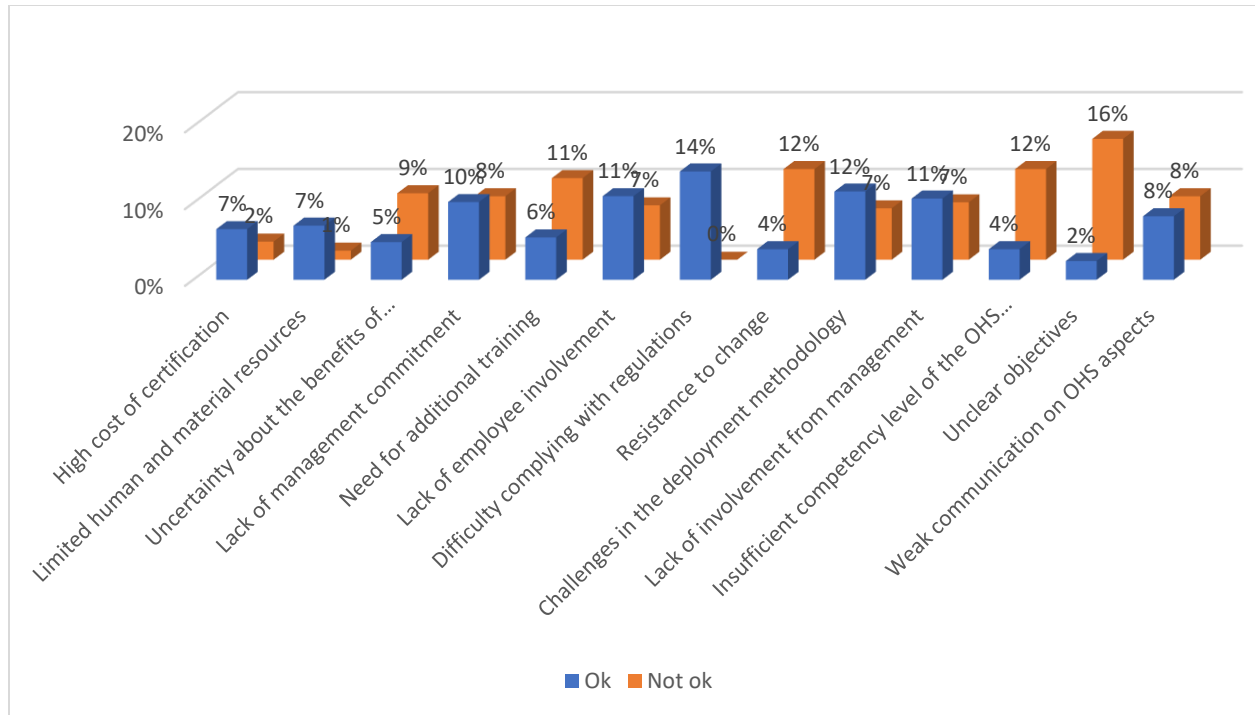


Figure 8.
Responses from SMEs Regarding Axis 2.

The summary based on the four criteria is presented in Figure 9.

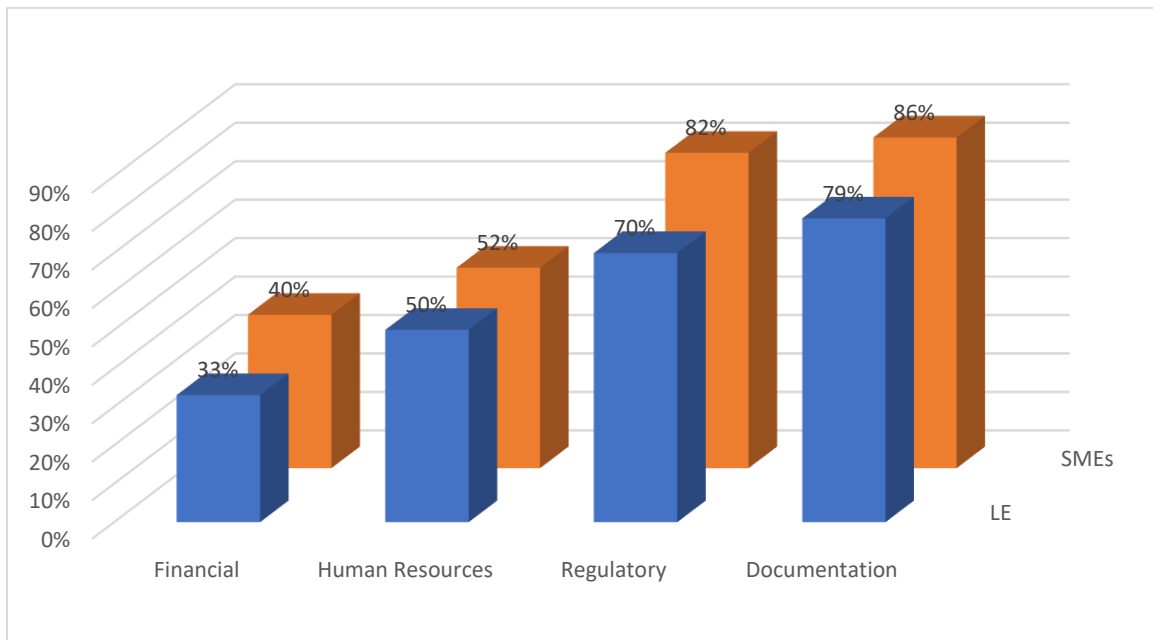


Figure 9.
Summary Based on the Four Criteria – Axis 2.

The responses obtained show that the main constraints hindering companies from adopting an Occupational Health and Safety Management System (OHSMS) are primarily related to regulatory and documentation aspects. Following this is the human factor, which includes management commitment and employee involvement. The responses to these issues represent 70%, 79%, and 50% for large enterprises (LEs), and 82%, 86%, and 52% for SMEs, respectively

Axis 3: Challenges in Deploying an Occupational Health and Safety Management System (OHSMS)

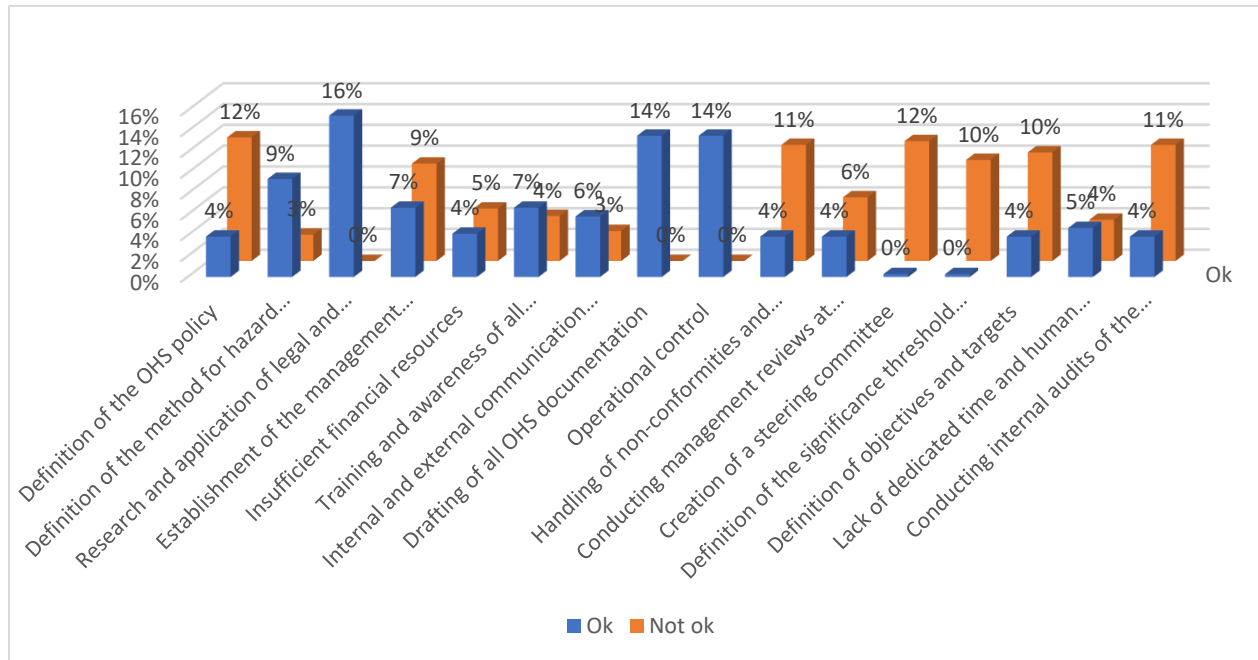


Figure 1.
Responses from Large Enterprises Regarding Axis 3.

The responses to the questions related to the challenges in deploying an Occupational Health and Safety Management System (OHSMS) for Large Enterprises and SMEs are presented in Figure 10 above and Figure 11 below, respectively.

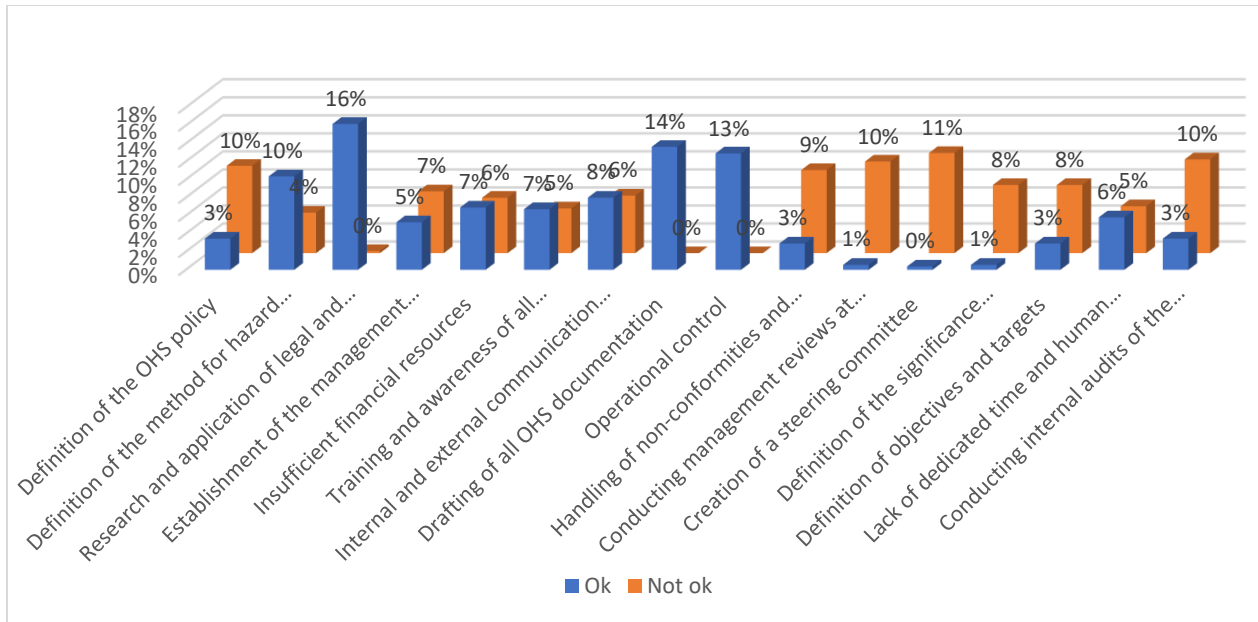


Figure 11.
Responses from SMEs Regarding Axis 3.

The summary based on the four criteria is presented in Figure 12.

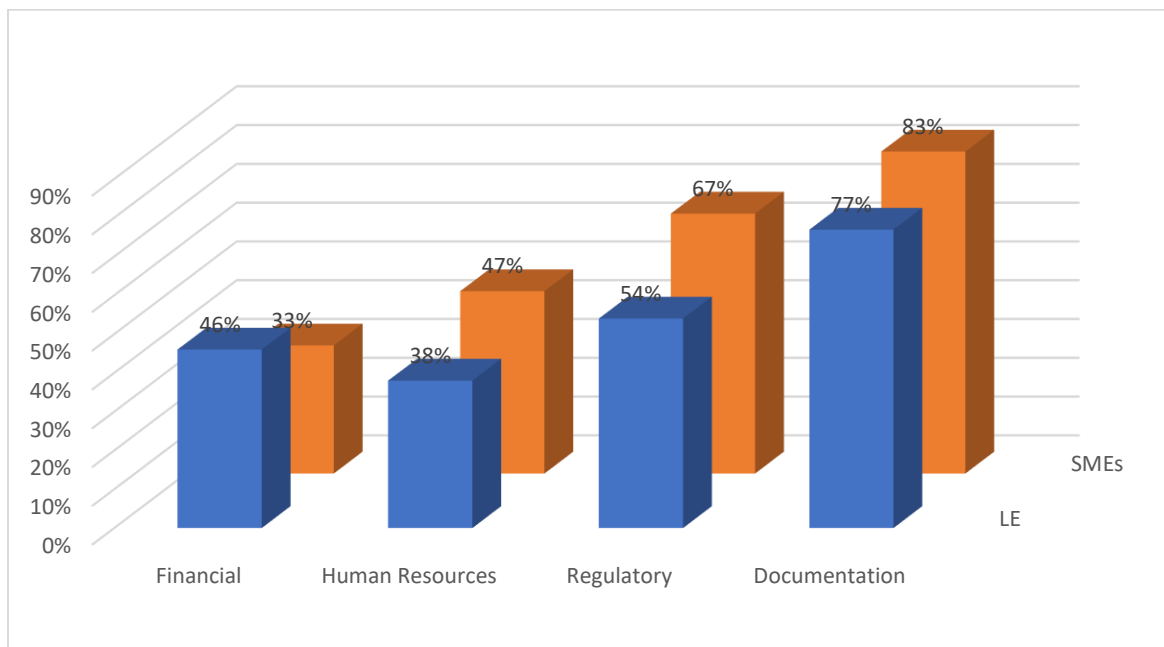


Figure 12.
Synthèse selon les quatre critères par rapport à l'axe n°3.

The responses obtained show that the main difficulties companies face in adopting an Occupational Health and Safety Management System (OHSMS) are primarily related to documentation and regulatory aspects, namely operational control and compliance with legal requirements. Following these

is the human factor, which includes management commitment. The responses to these issues represent 77%, 54%, and 38% for large enterprises (LEs), and 83%, 67%, and 47% for SMEs, respectively.

4. Summary of Results

La mise en place d'un système de management SST basé sur la norme internationale ISO 45001 au sein des entreprises marocaines révèle plusieurs contrastes selon la taille de l'entreprise, que ce soit Grandes Entreprises (GE) ou Petites et Moyennes Entreprises (PME). Nous présentons ici les résultats selon les quatre critères précédemment identifiés : financier, réglementaire, humain et documentaire.

4.1. Critère Financier

Les entreprises ayant adopté un système de management Qualité sont environ deux fois plus nombreuses que celles ayant mis en place un système de management SST dans le cas des GE, et trois fois plus dans celui des PME. Cela s'explique par la priorité donnée par les dirigeants marocains aux aspects commerciaux et financiers, légitimes puisque la pérennité d'une entreprise dépend de sa capacité à créer de la richesse. La qualité a un impact direct sur ces enjeux. Cette tendance n'est pas propre au Maroc : des études européennes, notamment françaises, montrent que les préoccupations commerciales (61%) et financières (54%) prédominent chez les chefs d'entreprises, devant la sécurité au travail (31%) (INRS).

Cependant, les GE et PME prennent de plus en plus conscience que la démarche SST peut devenir un levier de compétitivité, notamment par :

- La satisfaction des exigences clients en matière de SST pour conquérir ou conserver des marchés ;
- La prévention des perturbations internes et la rétention du personnel clé ;
- La motivation et l'engagement du personnel ;
- L'évaluation de la disponibilité et du coût des assurances ;
- Le maintien et le renforcement de la confiance des investisseurs ;
- L'obtention d'un engagement positif des partenaires.

4.2. Critère Humain

Le facteur humain constitue à la fois une motivation majeure pour adopter une démarche SST, avec la prévention des accidents comme priorité unanimement reconnue, mais aussi une source de contraintes et de difficultés lors du déploiement du système. Toute amélioration repose avant tout sur l'humain, notamment via le leadership, la communication et le changement culturel.

Les meilleurs dirigeants pratiquent un leadership situationnel adapté au contexte [12]. En SST, la clé du succès est un leadership qui communique clairement sa vision [13] et implique l'ensemble des collaborateurs dans la définition des mesures de prévention adaptées à leurs fonctions, favorisant ainsi une véritable culture SST [14]. La direction doit montrer son engagement et les managers être à l'écoute et reconnaître l'expertise des travailleurs.

4.3. Critère Réglementaire

Les PME marocaines, qui constituent plus de 90% du tissu industriel national, rencontrent des difficultés majeures pour identifier les textes réglementaires applicables, évaluer leur conformité, et assurer une veille réglementaire. Ces difficultés résultent à la fois d'une compréhension complexe des textes et d'un contrôle étatique limité. En effet, le nombre d'inspecteurs SST est insuffisant, avec une couverture de seulement 25%, ce qui complique la mise en application effective de la réglementation, pourtant un levier clé pour le succès d'une démarche SST.

Des initiatives innovantes existent toutefois, telles que le partenariat entre le Groupement Interprofessionnel de Prévention et de Sécurité Industrielle, l'Association des Industriels d'Ain Sebaa-Hay Mohammadi, et al. [15] et le Croissant-Rouge marocain, qui a permis la création d'un service

interentreprises de SST. Ce centre met à disposition des entreprises un ingénieur HSE, un médecin du travail et un infirmier, marquant une nouvelle gouvernance fondée sur la mutualisation des moyens au bénéfice du développement durable des PME. L'objectif est de renforcer la culture de gestion des risques et de sécurité dans l'économie nationale.

4.4. Critère Documentaire

Le taux d'adoption d'un système de management SST reste relativement faible, estimé à 40% (Ministère du Travail). Notre étude a révélé que la documentation exigée par la norme ISO 45001 constitue un frein important au déploiement. Par ailleurs, certaines PME, souvent filiales de multinationales, ont adopté des référentiels internes basés sur les principes de l'OIT.

Das certains pays européens, notamment en France, plusieurs référentiels spécifiques par activité ou regroupements professionnels ont été développés (par exemple, le MASE – Manuel d'Amélioration Sécurité des Entreprises). Les entreprises ne sont pas contraintes d'adopter un référentiel unique : elles peuvent combiner les exigences de plusieurs référentiels afin de répondre au mieux à leurs priorités SST

5. Conclusion

We conducted a study based on a questionnaire addressed to a sample of 200 large, medium, and small companies based in Morocco, with the aim of highlighting the main factors impacting the various Moroccan companies. The main factors are financial aspects, difficulties in applying regulatory and legal requirements, and the development of system-related documentation.

Therefore, SMEs should adopt a gradual approach, starting with a simple and customized framework that enables them to initiate a continuous improvement process.

adoption of an occupational health and safety management system (OHSMS) and proposing possible solutions to facilitate its implementation. The response rate to our survey was 75%. The analysis of the results allowed us to identify all the impact factors influencing the implementation of an OHSMS in

Transparency:

The authors confirm that the manuscript is an honest, accurate, and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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