From Environmental Commitment to Environmental Performance Management: The Case of ISO 14001-Certified Moroccan Companies

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Abstract **– In a world where industrial development has grown rapidly, creating major environmental challenges, sustainable development has become a key priority for businesses. In this context, ISO 14001-certified Moroccan industrial companies are committed to environmental sustainability, which has a direct impact on their environmental performance management. National and international requirements, along with stakeholders' expectations, are the main reasons for considering the environmental aspect in the company's management to ensure environmental sustainability. Thus, this study aims to understand how businesses' commitment to the environment contributes to the management of environmental performance. To do so, a qualitative approach was conducted, focusing on ISO 14001-certified industrial multinationals committed to environmental sustainability. The main results show that the commitment of Moroccan industrial businesses to sustainability goes beyond a mere statement of intent. It is reflected in the setting of an environmental strategy and concrete actions that integrate the companies into an environmental management system, having a significant impact on their competitiveness and performance.**

Keywords **– Sustainable development, industrial company, environmental commitment, environmental performance, sustainability, certification, ISO.**

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1. Introduction

In a world where industrial development has grown rapidly, creating major environmental challenges, sustainable development has become a key priority for businesses. National and international requirements, along with stakeholders' demands, compel businesses to balance economic growth and environmental protection to ensure sustainability in their different aspects. In particular, the industrial sector should transition to a more sustainable business model, as it is both a driving force for economic development and a major contributor to environmental impacts through waste production, natural resource consumption, and pollutant emissions. In this sense, the ISO 14001 certification is an important framework for structuring and improving the environmental management of industrial companies. Meeting the requirements of the standard allows companies not only to better manage their ecological impact, but also gain external recognition as organizations that comply with international environmental management standards.

In Morocco, for example, national programs such as the National Sustainable Development Strategy have been developed to integrate sustainability into the country's priorities. Like companies elsewhere, Moroccan industrial companies may adopt a sustainable approach and environmental practices for various reasons: complying with regulatory requirements [1], [2], [3], stakeholders' demands [4], [5], [6], gaining external recognition as responsible businesses [3], [4], [5], or the need to improve environmental performance to meet internal objectives [1], [3], [4], [5], [7]. Integrating these practices can help companies stand out from competitors and incorporate environmental objectives into their strategies to better monitor performance.

In this context, the Moroccan industrial sector must comply with international standards to compete with competitors elsewhere. It is thus critical to understand how industrial companies in Morocco are committed to an environmental approach and what effect this commitment has on their performance.

This study aims to understand how businesses' commitment to the environment contributes to the management of environmental performance.

The remainder of this paper is structured as follows: the second section provides the theoretical and conceptual framework, the third section outlines the research methodology adopted, the fourth section presents the research results and discussion, while the final section concludes with the most important conclusions of this work, it also discusses its limitations and outlines future areas for research.

2. Theoretical and Conceptual Framework

This section outlines the theoretical and conceptual framework of the study. It introduces the key notions that provide the basis for understand how businesses' commitment to the environment contributes to the management of environmental performance.

2.1. Sustainable Development

Sustainable development is a relatively recent concept [8]; it was first proposed in 1980 by the International Union for Conservation of Nature (IUCN) in its report on a global strategy for nature conservation [9]. Sustainable development was defined formally in 1987 with the publication of the Brundtland Report, which defines it as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” [10].

Sustainable development started out as a political project but has also become a managerial concern within businesses.

In response to ecological risks and to pressures from public opinion, some firms have integrated sustainable development into their strategies through the organization of their activities around its three pillars: economic, social, and environmental [11]. In order to do so, firms have adopted practices of sustainable development through the communication by companies of their sustainability strategies, the implementation of specific tools, and the creation of voluntary and regulatory standards for extra-financial reporting [9].

In September 2000, 189 states adopted the Millennium Declaration at the United Nations General Assembly [12].

The declaration set eight millennium development goals (MDGs) [13] with specific targets for achievement by 2015 [12].

The MDGs focused on combating poverty, hunger, disease, illiteracy, child mortality, environmental degradation, gender discrimination, and on ensuring a global partnership for development [14]. While some MDGs were partly met, global poverty reduction was driven largely by economic developments in China and India [15], rather than by uniform progress across regions, especially in Africa, where results were less favourable [16].

The MDGs came under extensive criticism, because of being too narrowly focused on poverty reduction and to ignore the environmental and social dimensions of sustainable development.

In September 2015, a list of 17 new Sustainable Development Goals (SDGs) was established [16] to fully integrate the environmental dimension of sustainable development and place significant emphasis on climate issues [13]. This new program is set to be achieved by 2030 [16] and aims to address poverty, hunger, disease, illiteracy, discrimination against women, inequalities between countries, environmental degradation, as well as the promotion of peace, justice, decent work for all, and a global partnership for sustainable development.

2.2. Environmental Sustainability

As previously mentioned, sustainable development is based on three pillars: economic, social, and environmental. Although these pillars are closely interconnected, this document will focus solely on the environmental aspect of sustainable development: environmental sustainability.

According to [17], environmental sustainability is defined as the "maintenance of natural capital", following the "output/input" rule, which involves limiting waste emissions within the environment's capacity to absorb them, harvesting renewable resources without exceeding their regeneration capacity, and depleting non-renewable resources only at a rate that allows for the development of renewable substitutes [18].

The survival and longevity of a company are its top priorities. In addition to investing in financial resources, any company that seeks to grow, prosper, and sustain itself, even in times of crisis, must also invest in human and natural resources [11]. To achieve this, businesses have voluntarily incorporated the concept of social and environmental responsibility into their strategies [11] to ensure long-term sustainability.

2.3. Sustainable Management Practices

Sustainable management can be defined as "the formulation, implementation, and evaluation of decisions and actions related to environmental and socio-economic sustainability" [19]. The definition reveals the classic management model known as PODC, which stands for planning, organizing, directing, and controlling.

The ISO 14001 standard provides a framework for an environmental management system (EMS) based on Deming's Wheel, also known as the PDCA cycle: plan, do, check, act [20]. Initially, a company establishes its environmental policy, which reflects top management's commitment [21] to pollution prevention, continuous improvement, compliance with regulations, etc. [22].

In addition to the policy definition phase, the PDCA model consists of the following steps:

Planning Phase (Plan): This phase includes developing plans, objectives, targets, and programs based on an assessment of the organization's key environmental aspects [22]. The defined objectives must be quantifiable and aimed at reducing significant environmental impacts [21] identified during the preliminary environmental assessment. The identification of these environmental aspects is conducted through environmental analyses [4]. Additionally, environmental programs are used to determine the actions needed to achieve the objectives [4].

Implementation and Execution Phase (Do): The purpose of this phase is to effectively implement the environmental management system (EMS), enabling the company to achieve its set objectives [4]. This phase involves: Allocating financial, technological, and human resources [4]. Providing employee training and awareness programs. Defining environmental roles and responsibilities within the organization, along with the organizational structure. Establishing internal communication procedures with staff and external communication channels with stakeholders. Developing an EMS manual that includes the policy, objectives, and environmental programs [21], [22].

Monitoring and Control Phase (Check): Its objective is to measure environmental performance and compare the results obtained with the determined objectives and targets. Any potential non-conformities will then be subject to corrective actions [22]. The monitoring of results is carried out using environmental indicators compiled in the form of a green dashboard [4]. Environmental audits are also a means of control to ensure the compliance of the environmental management system with the requirements of the ISO 14001 standard and to verify that it has been correctly implemented and maintained [4].

Review and Adjustment Phase (Act): Managers must plan for environmental audits [22] to ensure the evaluation and continuous improvement of the environmental management system [4]. The primary objective of this phase is the continuous improvement of the organization's performance. At this stage, the obtained results are documented, and the team then decides whether to adopt or reject the proposed changes [23]. During the Act phase, another plan to seek an even more effective method must be pursued [23].

2.4. ISO 14001: Several Reasons for Adoption in Literature

In the literature, the adoption of environmental practices within the framework of ISO 14001 certification is attributed to several reasons. Regulatory pressures [1], [2], [3], and stakeholder pressures are the main motivations for integrating environmental concerns into business management [4], [5], [6]. In some cases, the integration of the ISO 14001 standard is not motivated by a response to institutional pressures but rather by a desire to improve environmental performance [1], [3], [4], [5], [7], raise awareness of environmental issues, and enhance the company's green image among the media and society [3], [4], [5].

The study conducted by [24] showed that considering the three pillars of sustainable development in business management has, on the one hand, a significant impact on their overall performance and, on the other hand, leads companies to rethink their existing managerial practices for performance management. Most studies have confirmed that the notion of environmental performance varies from one company to another [25]. For some, being efficient means complying with the ISO 14001 standard and legal environmental requirements, while for others, environmental performance is reflected in achieving their environmental objectives or reducing their negative externalities. Although environmental performance criteria may differ from one company to another, their impact on financial performance remains significant [26], [27].

2.5. Environmental Performance Management

The management of environmental performance is the objective of management control but not a direct responsibility of the management controller. According to [4], 31 semi-structured interviews with 30 participants were conducted in a multi-site study. All participants were QHSE (quality, hygiene, safety, environment) managers, sustainable development managers, or site directors, and none were management controllers.

The same findings were also observed in the exploratory study conducted by [28] as part of his doctoral thesis. This confirms the idea that "the role of the management controller remains very limited in this field, if not nonexistent" [2]. As [29] indicates that the demand for environmental management control tools comes from other actors, such as Social and Environmental Responsibility managers or Sustainable Development managers, rather than from the management controller, who is neither the initiator nor the requester [29]. Indeed, the management controller does not directly intervene in the environmental field [2]. This is also noted by Bouquin, as cited in [4], who states that "the management control process is the responsibility of managers". Managers play an active role in the planning phase by defining policies, setting objectives and targets, allocating resources, and ensuring the achievement of their objectives [4].

3. Research Methodology

This study adopts a qualitative exploratory approach to analyze sustainable management practices within Moroccan industrial companies. To achieve this, semi-structured interviews were used, a technique that allows both the collection of information and an understanding of the participant's experience and worldview from a comprehensive perspective [30]. The interviews were conducted using a structured guide, developed around open-ended questions. This method provides an opportunity to understand how businesses' commitment to the environment contributes to the management of environmental performance.

The study involved interviews with six Moroccan employees (Table 1) working in multinational companies located in different regions across Morocco (Table 2). The appointments were scheduled in advance via phone, specifying the purpose of this research and estimating the interview's duration to accommodate each participant's availability.

The interviews were conducted face-to-face using conversational techniques, with an average duration of 30 minutes. The discussions were structured around key research themes as follows:

Axis1: General description of the company's activities and participants.

Axis2: The company's commitment to environmental sustainability.

Axis3: Environmental policy and strategies.

Axis4: Managerial practices related to the environment.

Axis5: Environmental performance management and impact on competitiveness and financial performance.

The selection of the six axes is based on an integrated approach to sustainable management. Axis1 will not be analyzed using the software chosen for the study, as its objective is solely to provide a general description of the company's activities as well as the participants who will respond to us. Axis2 explores the company's overall commitment to sustainability, highlighting the reasons and motivations behind integrating ecological practices. Axis3, which focuses on environmental policy and strategies, examines how the company structures its commitment through strategic orientations. This axis is essential for understanding the company's decision-making framework and its approach to environmental challenges. Axis4 focuses on managerial practices related to the environment, illustrating the daily implementation of strategies. Finally, axis5 analyzes environmental performance by measuring the results of implemented actions and their optimization. Together, these axes provide a comprehensive view of the company's environmental approach.

The companies selected for this study are ISO 14001-certified industrial multinationals with operational sites in Morocco. The choice of this companies is primarily based on their commitment to adhering to strict environmental standards. Furthermore, the industrial sector has a significant impact on pollution and environmental degradation, making it an important area of study.

The data collected during the interviews were transcribed in writing following the verbatim method. This transcription was carried out manually, ensuring that every word spoken by the interviewees was carefully noted. Additionally, all notes taken during the interviews were preserved and translated, as all the interviews were conducted in French, the language in which the interlocutors felt most comfortable.

The analysis of the collected data was carried out using NVivo 10, a software that enables in-depth management and analysis of qualitative data. It was begun with a word frequency analysis to identify the most recurring terms and concepts in the participants' responses. This step was followed by a text search query, allowing to strengthen the research even more. This analytical approach provides a detailed overview of the transition from environmental commitment to managing environmental performance within Moroccan industrial companies certified to ISO 14001.

Table 1. Overview of study participants (n=6)

Position held	Level of Education	Seniority
Environmental Health Safety (EHS) Engineer	Master's degree	2 years
Environmental Health Safety (EHS) Manager	Master's degree	4 years
Accountant	Master's degree	1 year
Senior Industrial Management Controller	Master's degree	6 years
Management Controller	Master's degree	10 years
Environmental Manager	Master's degree	16 years

Table 2. Companies' characteristics (n=4)

Company	Industry Sector	Number of interviewees asked	Regions
A	Rail transport	2 interviewees	Fez-Meknes
B	Cement and derivatives	1 interviewee	Fez-Meknes
C	Building materials	1 interviewee	Casablanca-Settat
D	Automotive industry	2 interviewees	Rabat-Salé-Kenitra

4. Findings and Discussions

Each axis has been assigned a code, which will then be examined individually, and illustrated with excerpts from statements to reinforce the findings.

4.1. Axis2: The Company's Commitment to Environmental Sustainability

Figure 1 emphasizes the importance of the words "environmental" and "certification" followed by the words "waste", "demands", "stakeholder", "regulatory", "requirements", "management", "practices" and "treatment".

Figure 1. Word cloud related to Axis2

Figure 1 and Figure 2 confirm that the integration of a standard such as ISO14001 certification into corporate management stems from multiple reasons, including institutional pressures (regulatory requirement) [1], [2], [3], and stakeholders' demands [4], [5], [6]. Below are some excerpts from the interviewees' statements that support the findings (Table 3).

Table 3. Excerpts from interviewees' testimonies

EHS Engineer	*"It is stakeholder demands that compel the parent company to obtain ISO 14001 certification, and as you know, we are a subsidiary of a multinational company, so top management also pushes our site to obtain this certification…"*
Accountant	*"The reasons for adopting the certification are to meet regulatory requirements and stakeholder demands…"*
Senior Industrial Management Controller	*"Moving towards an environmentally respectful approach was not a choice but an obligation… Therefore, stakeholder demands and the regulatory requirements of Moroccan law require us to comply with multiple standards to be able to continue our activity, respect the community, and honor our commitment to the environment…"*

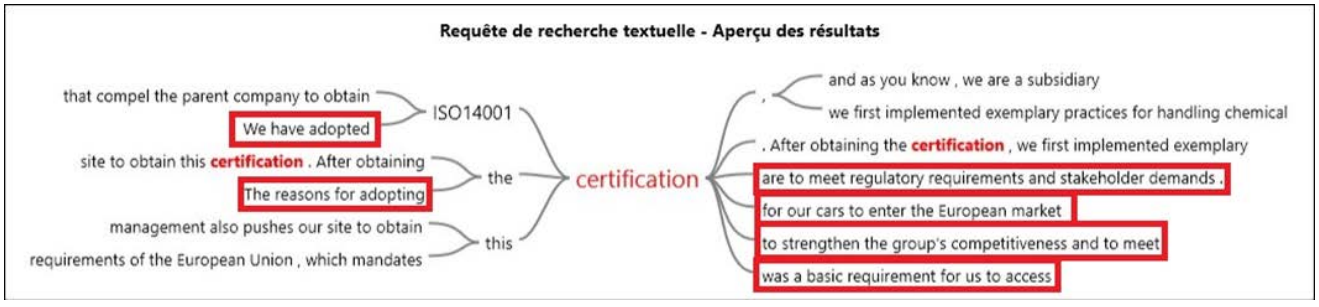

Figure 2. NVivo text search query of the cord "certification"

However, these external pressures are not the only reasons for adopting certification. Other factors come into play, such as the need for companies to access foreign markets, strengthen their competitiveness, and enhance their green image as environmentally responsible and sustainability-driven businesses [3], [4], [5]. Below are excerpts from the interviewees' statements that support the findings (Table 4).

Table 4. Excerpts from interviewees' testimonies

Senior Industrial Management Controller	*"… We aim to be recognized as a model of responsibility and sustainable development, as well as a civic-minded player within the national economy…"*
Management Controller	*"We have adopted the ISO 14001 certification to strengthen the group's competitiveness and to meet the requirements of the European Union, which mandates this certification for our cars to enter the European market…"*
Environmental Manager	*"The ISO 14001 certification was a basic requirement for us to access export markets…"*

The presence of the words "waste", "treatment", and "practices" in the word cloud demonstrates the sample's commitment to environmental responsibility through proactive waste and chemical management. This highlights the importance of strict compliance with environmental standards and reducing ecological impact. These actions not only enhance the company's image but also align with stakeholders' expectations for sustainable management. Below are some excerpts from the interviewees' statements that support the findings (Table 5).

Table 5. Excerpts from interviewees' testimonies

EHS Engineer	*"After obtaining the certification, we first implemented exemplary practices for handling chemical products and hazardous waste…"*
Accountant	*"There have been changes in production! The company has implemented a circular that the entire production team must follow to improve waste management…"*
Management Controller	*"Of course, there have been changes in our environmental practices. Now, we have a service provider that handles our waste treatment to ensure we know exactly where it goes once it leaves the factory. Chemical products also have a very specific treatment process…"*

4.2. Axis3: Environmental Policy and Strategies

Figure 3 emphasizes the importance of the words "environmental" and "policy", followed by the words "strategies", "objectives", and "PDCA".

Figure 3. Word cloud related to Axis3

The approach adopted by the studied companies is based on the PDCA (plan-do-check-act) model, combining a strategic vision with concrete actions to achieve their environmental objectives.

Figure 3 and Figure 4 indicate that setting an environmental policy serves as a guiding framework, illustrating a strong commitment from top management from the early planning stages, as emphasized by [21]. The company's specific initiatives reflect an active commitment to upholding these principles, highlighting a culture of continuous improvement and a constant search for solutions to minimize environmental impact.

This approach reinforces the idea that environmental policy should not be limited to a mere statement of intent but must be translated into concrete actions aligned with the commitments made.

Figure 4. NVivo text search query of the word "environmental policy"

The allocation of financial, technological, and human resources, as mentioned by [4], along with the company's investment in green technologies and sustainable practices, demonstrates a proactive willingness to address environmental challenges. Below are some excerpts from the interviewees' testimonies that confirm the findings (Table 6).

Table 6. Excerpts from interviewees' testimonies

EHS Manager	*"We follow the PDCA model for environmental management in our company. The first thing we do is establish our environmental policy. This is our way of clearly stating what we want to achieve for the environment. Then, we develop our strategies and objectives to ensure we stay on the right path and measure our progress…"*
EHS Engineer	*"Our environmental Policy includes strong commitments. We have several strategies to implement our policy, we constantly seek ways to generate renewable energy on-site and have invested in waste sorting with a company specializing in water and waste management, the installation of photovoltaic panels, and the use of eco-packs to reduce cardboard and wood. We have also set up a composting system for biodegradable materials in our garden…"*
Environmental Manager	*"We follow the PDCA approach. We establish the environmental Policy along with the strategies for its implementation and specific environmental objectives. The strategy implemented includes the annual development of an Environmental Program, where we outline the priority actions to be taken to improve environmental performance, as well as the allocation of the necessary means and resources…"*

4.3. Axis4: Managerial Practices Related to the Environment

Figure 5 emphasizes the importance of the word "environmental" followed by the words "employees", "information", "manager", "role", "objectives", "indicators", "training" and "meetings".

Figure 5. Word cloud related to Axis4

Figure 5 and Figure 6 indicate that the manager has an important role in the company's environmental management. Strategically, defining the environmental policy with clear objectives and implementing actions that materialize the company's commitment to the environment.

Figure 6. NVivo text search query of the word "manager"

The word "indicators" highlights the central role of managers in determining and monitoring environmental indicators to trigger corrective actions, which aligns with the findings of studies conducted by [4] and [28]. Indeed, managing environmental performance is the responsibility of the manager rather than the management controller. The manager holds both strategic and operational responsibility for the company's environmental management. This responsibility emphasizes that the success of environmental policy heavily depends on the commitment and leadership provided by top executives. Below are some excerpts from the interviewees' testimonies that support the findings (Table 7).

Table 7. Excerpts from interviewees' testimonies

EHS Manager	*"As a manager, it is my responsibility to set the environmental policy, strategies, objectives, and annual indicators, as well as to compare the results achieved with the set targets and adjust the company's actions to better reach our goals. My role is truly fundamental in the process..."*
Senior Industrial Management Controller	*"The manager plays a very important role in the company. Without him, we wouldn't be able to move forward effectively in environmental management. He leads and raises awareness among all employees, sets environmental objectives, and ensures their implementation. He makes sure that daily practices comply with regulatory requirements and respect the community..."*
Environmental Manager	*"The manager plays an important role; it's the top management who validates the environmental policy..."*

The word cloud and the statements from our participants mention the manager's role in raising employee awareness about environmental respect and their commitment to it.

Indeed, the company's commitment to raising awareness and training employees in environmental practices is an important step in the implementation (DO) phase of the PDCA approach. The effort to involve personnel, along with training sessions covering best practices in energy management, waste sorting, and chemical handling, demonstrates a strong commitment to enhancing environmental competence and awareness within teams. Regular meetings also play a vital role in monitoring the progress of the company's environmental management. Organizing meetings at different frequencies reflects a well-coordinated approach to environmental management. Below are some excerpts from the interviewees' testimonies that support the findings (Table 8).

Table 8. Excerpts from interviewees' testimonies

Accountant	*"The involvement of employees is ensured through the distribution of circulars to all staff, as well as through annual training sessions and training programs for each new hire..."*
Senior Industrial Management Controller	*"…There are daily meetings, workshops, and training sessions organized by the manager. This ensures regular monitoring and the implementation of corrective actions whenever discrepancies arise..."*
Environmental Manager	*"We involve employees through specific training sessions, awareness workshops, and on-site audits..."*

Figure 5 and Figure 7 show that the consideration of information is not limited to financial data but also extends to extra-financial data in order to guide corrective actions and assess environmental results. Aligning the frequency of monitoring environmental information with that of financial information demonstrates a complete integration of environmental management into the company's decision-making processes. This approach not only enables informed decision-making but also allows for the rapid activation of corrective actions when necessary, illustrating the company's commitment to continuous improvement and the effective management of its environmental impacts.

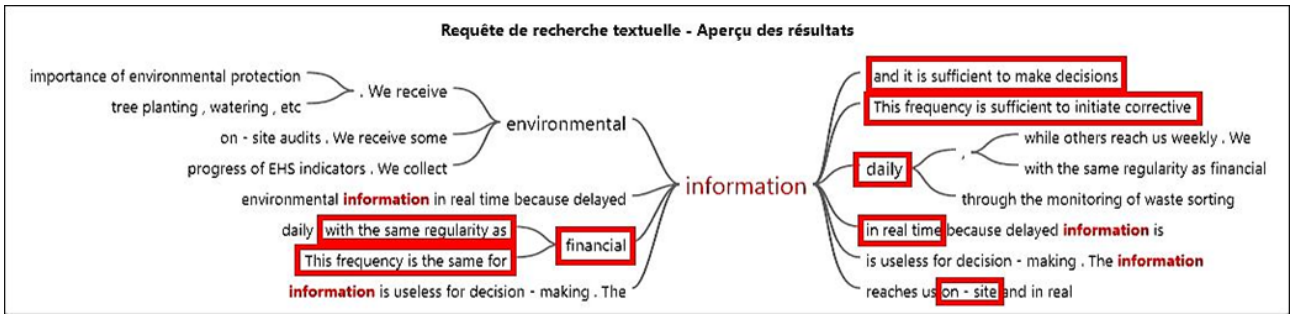

Figure 7. NVivo text search query of the word "information"

Below, extracts from the interviewees' testimonials confirm the findings (Table 9).

Table 9. Excerpts from interviewees' testimonies

EHS Engineer	*"We collect environmental information daily through the monitoring of waste sorting for each project, as well as through the tracking of environmental indicators, and monthly through the final sorting of waste. This frequency is the same for financial information, and it is sufficient to make decisions and initiate corrective actions regarding environmental matters..."*
Senior Industrial Management Controller	*"We receive environmental information in real time because delayed information is useless for decision-making. The information reaches us on-site and in real time, which helps us make the right decisions at the right moment..."*
Management Controller	*"We receive environmental information daily, with the same regularity as financial information. This frequency is sufficient to initiate corrective actions and make decisions quickly..."*

4.4. Axis5: Environmental Performance Management and Impact on Competitiveness and Financial Performance

Figure 8 highlights the importance of the words "environmental" and "performance" followed by the words "financial", "indicators", "certification", "competitors", "impact", "customers", "competitiveness", "sustainable" and "audits".

Figure 8. Word cloud related to Axis5

Figure 8 and Figure 9 indicate that environmental performance is assessed through predefined indicators, ensuring rigorous and consistent monitoring of progress, as well as through regular environmental audits, which provide an objective and independent evaluation of results. These audits not only enhance the credibility of collected data but also ensure that the company's practices remain aligned with standards and best practices in environmental management. This dual evaluation system—internal through indicators and external through audits—ensures effective and transparent environmental performance management. Moreover, the participants confirmed [25] perspective, stating that the concept of environmental performance does not hold the same meaning for all companies.

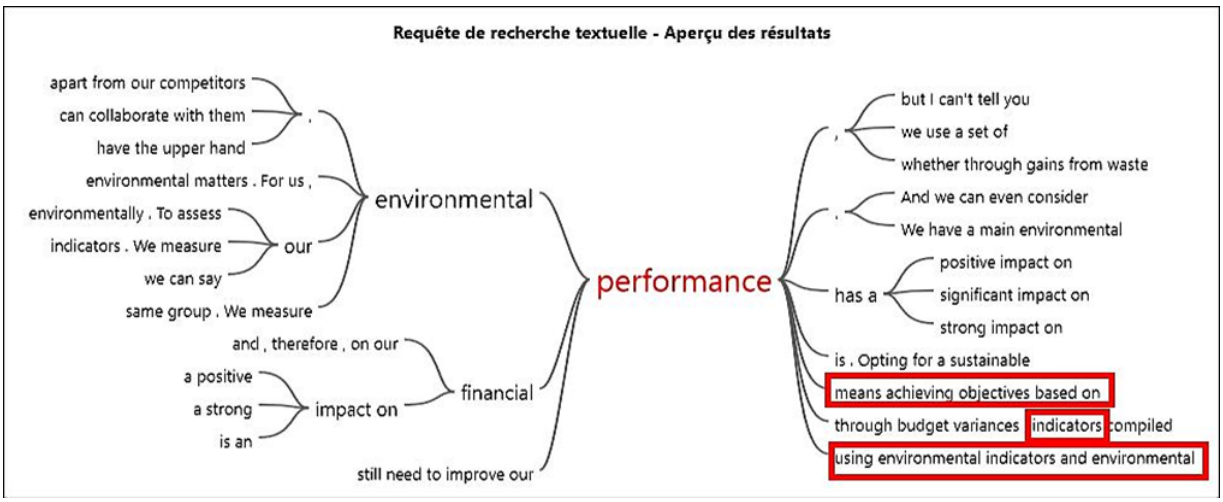

Figure 9. NVivo text search query of the word "performance"

Below are excerpts from the interviewees that support the findings (Table 10).

Table 10. Excerpts from interviewees' testimonies

EHS Engineer	*"For us, environmental performance means achieving objectives based on the set indicators..."*
Accountant	*"The better the financial results, the more contracts the company wins relative to its competitors, the stronger we can say our environmental performance is..."*
Management Controller	*"We can say that we are performing well environmentally if the audit results show that we are compliant with ISO 14001. If there are non-conformities, it is a sign that we still need to improve our performance. And we can even consider ourselves as performing well or not, depending on our plant's position compared to other plants in the same group..."*

Adopting a sustainable approach and responsible practices enables the company to gain sustainable competitive advantage, allowing it to access many international markets, particularly in sectors where environmental criteria are increasingly critical for meeting customer expectations, complying with regulatory requirements, and addressing stakeholders' demands (Figure 10). By differentiating itself from competitors through the adoption of environmental management practices, the company strengthens its credibility and reputation while ensuring compliance with international market demands, securing a long-term competitive advantage.

Adopting sustainable practices serves as a strategic lever to remain competitive in an economic landscape where sustainability has become an essential criterion. Below are some excerpts from the interviewees that support the findings (Table 11).

Table 11. Excerpts from interviewees' testimonies

EHS Engineer	*"As for our sustainable competitive advantage, taking a sustainable path enhances our competitiveness and allows us to enter the international market, setting us apart from our competitors..."*
Accountant	*"Opting for a sustainable model enhances our competitiveness over our competitors. It has also opened doors for us on an international scale. Essentially, this approach allows us to enter the international market, which is important because there are requirements and conditions set by suppliers and clients who want to ensure the company can collaborate with them..."*
Management Controller	*"Having ISO 14001 certification and following a sustainable approach boost our competitiveness over our competitors. Without this certification, it would be impossible to enter the European market. Even in Morocco, clients are increasingly prioritizing the environmental aspect. So, if we compare ourselves to a non-certified company, our company will always have the upper hand..."*

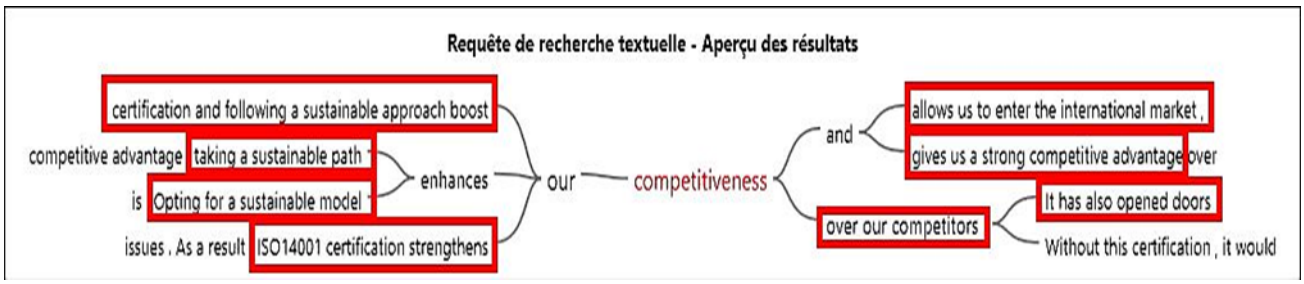

Figure 10. NVivo text search query of the word "competitiveness"

Figure 8 and Figure 11 indicate that environmental performance has a significant impact on financial performance. This aligns with the work of [26] as well as [27], who confirm that environmental performance indeed has a substantial effect on financial performance.

Even though the initial investments made by companies may be considerable, generated are substantial long-term gains, proving that ecological initiatives can be beneficial both for the environment and for the company.

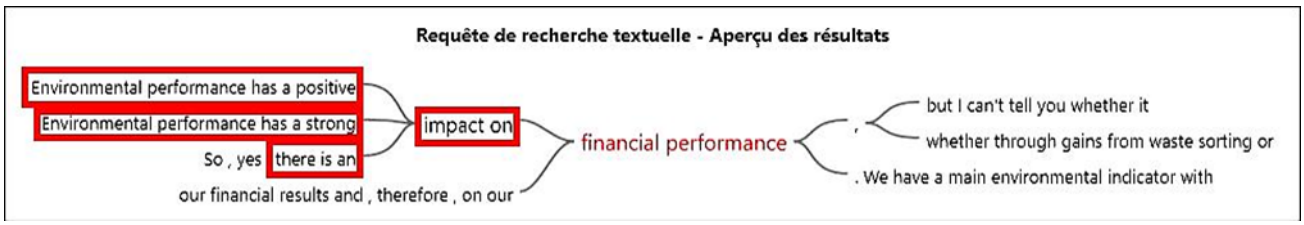

Figure 11. NVivo text search query of the word "financial performance"

Below are some excerpts from the interviewees that support the findings (Table 12).

Table 12. Excerpts from interviewees' testimonies

EHS Engineer	*"Environmental performance has a positive impact on financial performance, particularly through financial returns related to waste sorting, reduced energy consumption, and gains from photovoltaic energy production, which can represent between 5% and 10% of our energy production…"*
Accountant	*"Environmental performance has a significant impact on our financial results and, therefore, on our financial performance, whether through gains from waste sorting or the trust of customers, who ensure our ecological commitment…"*

5. Conclusion

At the end of this research, it could be concluded that commitment to environmental sustainability has a profound impact on managerial practices in Morocco's industrial sector, as well as on competitiveness and performance. Awareness of the effects of industrial activities on the environment and society has led companies to shift from a traditional, finance-centered approach to a more comprehensive one, incorporating extra-financial dimensions, particularly environmental considerations.

Adopting ISO 14001 certification demonstrates a serious commitment to environmental responsibility. However, the motivations for pursuing this path vary significantly from one company to another, ranging from regulatory pressures to improving environmental performance and brand image.

To be genuinely environmentally friendly, a company must establish a clear environmental policy with specific strategies, objectives, and measurable targets. This policy should aim to ensure compliance with standards and long-term sustainability while minimizing ecological impact. The continuous improvement of its practices enables the company to stand out from competitors and gain access to international markets.

It is also important to highlight that environmental performance has a direct and significant influence on a company's financial performance. Furthermore, strong environmental performance often enhances a company's reputation and enables it to generate long-term financial benefits.

However, it is not possible to generalize the findings of this research to all Moroccan industrial companies, even those that are certified, as this study focused on a specific sample. This raises questions about the reliability of these results for a broader sample of companies. To address this, a quantitative analysis would be necessary to obtain a comprehensive overview. This research helps understanding the process from environmental commitment to environmental performance management.

However, there is a lack of clarity regarding how specific environmental management control practices contribute to improving environmental performance. Therefore, further research is needed to specifically explore these practices, which will enhance the understanding of their role in managing environmental performance.

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