Stakeholders’ perception model on environmental management system in Indonesia

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Abstract. The Environmental Management System (EMS) has an essential role in promoting inclusive and sustainable industrialization to support climate change. However, it is considered to be less desirable by industries in Indonesia. Meanwhile, the Ministry of Environment and Forestry has issued the Company Performance Rating Program in Environmental Management (PROPER) as a driving force for industries in Indonesia. The EMS ISO 14001 is an obligation in the PROPER assessment. This study aims to design a stakeholder perception model related to the ISO 14001 implementation. The method employed in the research is in-depth interviews with expert stakeholders. The result is a qualitative model of stakeholder perception, which shows that there is a relationship between motivations, costs, and benefits in the application of EMS. The perception of industries revealed that the cost of EMS implementation is greater than the gained benefits in the short term, yet more benefits are favored in the long-term. Therefore, government involvement is necessary to increase the motivation of industries in both the short-term and long-term. This study also revealed the key aspects to optimize EMS implementation in Indonesia.

1. Introduction

Environmental damages may arise as a result of natural phenomena, such as mountain eruptions, earthquakes, or human activities. The growing human population and their actions have eventually generated harms on earth through the abundance of waste and emissions, global warming, hazardous and toxic substances, and loss of biodiversity [1][2][3]. In 1996, The International Organization for Standardization (ISO) published an Environmental Management Systems (EMS) standards known as ISO 14001. It is famous as an integrated tool for its flexibility and yet effectively solve environmental issues within organizations to support Sustainable Development Goals [3][4][5][6]. More than 300,000 organizations worldwide have volunteered to implement ISO 14001 [7].

In order to accelerate the environmental protection efforts in Indonesia, the Ministry of Environment and Forestry (KLHK) issued the Company Performance Rating Program in Environmental Management (abbreviated as PROPER) as a driving force for industries in Indonesia. Unlike the voluntary implementation of ISO 14001, PROPER is mandatory for many industrial sectors [8]. However, many organizations encountered problems with ISO 14001 implementation, which is mostly related to cost and complicated process [9]. The number of ISO 14001 certification was less than 10% of the total large-medium industries in Indonesia [10]. Meanwhile, the motivations to implement ISO 14001 are varied [11][12]. Many studies found the effect of ISO 14001 on improved company performance. In environmental performance, ISO 14001 was revealed to improve 3R (Reduce, Reuse, Recycle) efforts,
conserving energy and water, reducing waste and emissions, and reducing environmental risks [6][13][14][15][16].

In financial performance, there were debates about the impact of ISO 14001 to date. Several researchers found positive effects of ISO 14001 on share value, customer satisfaction, market reactions, and Tobin's q ratio [17][18]. Meanwhile, other researchers found no effect of ISO 14001 based on Earning Per Share, Return on Assets, sales, cost, and equity [9][19][20][21][22][23]. Surprisingly, there is also a finding which exposes an adverse effect of ISO 14001 on stock prices [24]. This study aims to design a stakeholder perception model related to the ISO 14001 implementation. Since the perceptions of ISO 14001 may vary due to different cultures and economic regimes of other countries, the result may only apply to the Indonesia region.

2. Method

Methods used were an exploratory qualitative method through in-depth interviews with the select expert stakeholders. Because we were interested in understanding barriers and benefits of ISO 14001, the questionnaire structured with the main focus on the factors listed in Table 1. After conducting in-depth interviews, we were constructing a qualitative model based on the transcribed verbatim of in-depth interviews.

| No | Factors in the ISO 14001 Implementation | Descriptions |
|----|----------------------------------------|--------------|
| 1  | Motivation                             | The purposes of ISO 14001 implementation |
| 2  | Cost/Investment                        | Investments/costs sacrificed by companies for ISO 14001 implementation |
| 3  | Effect on Environmental Performance    | The effect of ISO 14001 on environmental performance (PROPER) |
| 4  | Effect on Financial Performance        | The effect of ISO 14001 on financial performance |
| 5  | Effect on Social Performance           | The effect of ISO 14001 on social performance |
| 6  | Key Aspects                            | Identification of key aspects of ISO 14001 implementation |
| 7  | Constraints                            | Identification of constraints on ISO 14001 implementation |
| 8  | Benefits                               | The benefits gained by companies ISO 14001 according to the sustainability aspect |

The expert stakeholders selected in this study including the Head of Sub Directorate of Specific Waste and Recycling at the Ministry of Environment and Forestry (Code: HRK), Senior Lecturer in Environment Management Systems (Code USH), Former Executive Vice President for SHE (Safety, Health, and Environment) and Government Affairs at PT. Freeport Indonesia (Code: RSL), and Former President Director at PT. Timah Tbk (Code WHU).

3. Results and discussion

The ISO 14001 certification requires costs that vary upon the owned facilities. Several researchers revealed that companies with specific characteristics tend to pursue ISO 14001 certification. Older, wealthier, stock exchange-listed and high productivity companies are most likely to pursue ISO 14001 certification [12][21][25]. According to our in-depth interviews, the company's characteristics may create disparities in the cost and benefit structure of environmental investments. The characteristics are;
size, age, profitability, type of product, type of shareholder (foreign/local), and market share (local/international). Furthermore, the characteristics can also create variations in the readiness to obtain ISO 14001 certification. For example, older companies are generally in stable conditions and have a more professional and experienced management system. Thus, they are more prepared for ISO 14001. The qualitative model of stakeholder perceptions on ISO 14001 implementation presented in Figure 1.

3.1. Stakeholder perception model on ISO 14001 implementation

In Figure 1, the actors contribution to ISO 14001 implementation are; (1) public, (2) government, and (3) private sector. The public is a community and its non-government organizations. The government has missions in regulating, developing, supervising, evaluating, and enforcing relevant policies as social and environmental responsibilities for industries. The private sector, including company owners, have a role as an economic driver and volunteers in environmental management initiatives. Expert stakeholders advised that companies should implement ISO 14001, for it will be easier to achieve environmental performance, support PROPER rating, and raise reputation. Below are the expert stakeholders’ statements on ISO 14001 implementation:

"...It (ISO 14001) should be a voluntary mandate for industries. PROPER encourages companies to implement ISO 14001. Even without PROPER, ISO 14001 should be implemented as it is profitable for the long run." (HRK)

"...Environmental factor could be the last thing a company thinks about. So, if a company has handled it well, I am almost sure that financial and other issues have been handled well too." (RSL)
3.2. Company's motivation behind Its decision on ISO 14001 certification

According to the expert stakeholders' opinions, the company's motivation for ISO 14001 EMS certification varies. It could be from consumers' demand or business competition where rival companies have obtained ISO 14001 EMS certification, or to improve performance. Below are the expert stakeholders' statements on the company's motivations:

"For the competition, increasing performance, and reducing the impact on the environment... some have high awareness. Like oil companies, there has never been a requirement for ISO 14001, but they are implementing it, and being certified means high awareness." (USH)

"There are two things: (1) internally for discipline, and (2) externally to avoid legal battles with NGOs, communities, and so on, such as safety issues, pollution problems that cause people to complain. If it can be handled properly through EMS ISO 14001, there will be no complaints from the public… Public complaints can cause losses to the company." (RSL).

3.3. ISO 14001 certification and the company's characteristics

Since it has been recognized by the previous researcher that there could be a reciprocal causality effect, where companies that already have high profits and assets tend to pursue ISO 14001 EMS certification (Heras et al., 2011). Our expert stakeholder's opinions reveal the acceptance of such effect or categorized as the company's characteristic, thus it corresponds with the previous study by Heras et al., 2011. Below are the statements of expert stakeholders on characteristics of ISO 14001 certified companies:

"… Wealthy companies are more capable of implementing ISO 14001 because it is costly; it requires high investment. Thus, most of the middle and small companies are not interested." (HRK).

"...When a company has abundant money, it then looks at environmental aspects, which, of course, will also improve its reputation." (WHU)

"Investment in ISO 14001 is huge, but the value depends on the size and type of the company. Suppose the size is like PT. Freeport Indonesia, then it can cost millions of dollars for the documentation, application, labor, and so on." (RSL)

3.4. The synergism of ISO 14001 and company performance rating program in environmental management (PROPER)

According to the expert stakeholders' opinions, the company's motivation for ISO 14001 EMS certification

3.5. Stakeholder perception model on ISO 14001 implementation

The PROPER is an instrument of environmental compliance with rewards for the participating companies. It follows the government's key performance indicators (quality standards) and is developed to synergize with other compliance instruments such as ISO 14001. Below are the expert stakeholders' statements on the synergy of ISO 14001 and PROPER:

"...PROPER becomes legitimate for sales if the company does export and import... ISO 14001 helps companies improve environmental performance which has an impact on PROPER ratings..." (HRK)

"The implementation of EMS helps in PROPER assessment, the considered efforts such as the use of renewable natural resources, energy and resource efficiency, minimization of waste and processes, and so on…" (USH)

"...Companies that implement ISO 14001 automatically do what PROPER asks. Likewise, companies that have followed PROPER and ISO 14001 found that the indicators and requirements are not much different. As for commitment, ISO 14001 and PROPER are both for the long term." (RSL)
The PROPER and ISO 14001 support the practices of clean production and continuous environmental guidance and supervision. The company with an excellent PROPER rating gets several benefits, including improved performance and reputation, ease of processing loans at banks, ease of licensing in waste management, and reduced taxes on imported goods for environmental equipment and technology, as disclosed by our expert stakeholders:

"... The incentives are not big yet; it should be ease of licensing in waste treatment, then tax reduction for environmental equipment or environmental technology." (HRK)

"... Even though the EMS certification has only a small value in the PROPER assessment, by applying the EMS, of course, other things besides the EMS itself, which also included in the PROPER assessment, can be achieved." (USH).

Our finding supports Angelia D and Suryaningsih [26]. The relationship between ISO 14001 and PROPER is that ISO 14001 has become a systematic instrument to help companies achieve environmental compliance.

3.6. ISO 14001 contribution to company's performance
Apart from the debated quantitative results, especially on the effect of ISO 14001 towards company performance. Our expert stakeholders agreed that implementing ISO 14001 will help the companies to improve their performance, both environmental and financial performance. Below are the expert stakeholders' statements on ISO 14001’s contribution to company performance:

"If ISO and PROPER run well, it can improve financial performance. In the people aspect, the impact is a safe environment and public health. If the environmental performance is good, it will be easier for companies to do exports." (HRK)

"... reducing waste. As for the stock exchange-listed company – of course, the trust of investors, competitors, and tenders." (USH)

"EMS could not be one on one to explain the company's financial benefits. In terms of environmental performance, indeed, if the EMS is implemented properly and seriously, it will improve environmental performance." (RSL)

"... From an environmental perspective, if there is no pollution, no spills, no accidents, then no money will be spent on environmental costs." (HRK).

"The community is not affected excessively; the negative impacts are reduced, such as waste. For employees, in ISO 14001, employees must be directly involved and have a role to increase discipline. Also, training such as for the internal auditor team can improve employee expertise." (USH)

3.7. Aspects and constraints to be considered in the implementation of ISO 14001
Based on in-depth interviews, decision making and constraints related to EMS ISO 14001 certification rely on the company's leadership and managerial factors, which are influenced by (1) the company's ability to pay considerable fees for certification and investment in environmental management technology, (2) willingness of the company's managerial in managing the environment, (3) company ownership structure (foreign, local, government, or jointly owned). Below are the expert stakeholders' statements for aspects and constraints on ISO 14001 implementation:

"Willingness and commitment from the company's leaders." (USH)

Cost and discipline. Sometimes, some companies are rich but not disciplined. Discipline is not only a matter of willingness or unwillingness, but the problem is within the system, enforcement, habit, culture, behavior, and so on." (RSL)

"...Company ownership, whether it is foreign-owned or local, also makes an impact." (HRK)

Commitment, discipline, and cost. Because this is for the long term." (WHU)

In principle, ISO 14001 and PROPER are instruments with the polluter pays principle. Key factors in implementing ISO 14001 include:
"The leaders of the company must be truly committed and have the willingness and ability to provide human resources, finances, facilities, and infrastructure, as well as the system..." (USH)
"Discipline, budget, managerial." (RSL)
"The company’s commitment to continuously improve..." (WHU)

4. Conclusions
The qualitative model in this study can be used to encourage the optimization of the ISO 14001 implementation and provide recommendations to various institutions for the long-term benefits. Our finding indicates that there is a demand for the strategies related to environmental management initiatives for the sake of economic stability. Therefore, the application of EMS is vital in production activities and within an organization. However, we also found that cost is the biggest barrier in the application of ISO 14001. Apart from that, the government has to intensify the socialization, which involve all stakeholders in environmental monitoring, thus, encourage industry players to make systematic and continuous environmental management efforts. Diversifying the incentives on environmental initiative may also encourage the organization towards ISO 14001 implementation. The limitation of our result is that it may only apply to the Indonesia region since the perceptions of ISO 14001 may vary due to different cultures and economic regimes of other countries.

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