The Importance of Addressing Emerging Risks in Environmentally Sensitive Industries: A Malaysian Case

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Abstract: The aim of this study is to examine the types of emerging risks that are increasingly getting priority in the environmentally sensitive sectors of Malaysian public listed companies. Data were gathered through an online survey. The results of this study strongly suggest that natural catastrophe, natural resource depletion, extreme weather events, greenhouse gas emissions and biodiversity loss are perceived as the most significant emerging risks. This study adds to the body of knowledge on enterprise risk management (ERM) to integrate emerging risks in order to provide a useful insight in understanding the importance of addressing emerging risks.

Key words: Emerging Risk · Sustainability Risk Management · Enterprise Risk Management · Public Listed Companies

INTRODUCTION

The rapid development of new technologies, processes and products in the industrial sector has led to the rise of emerging risks [1]. The issue of emerging risks has grown in importance in the light of recent crises and catastrophic events such as the September 11 attacks on the World Trade Center, Haiti earthquake, Icelandic volcano and BP Deepwater Horizon. International Risk Governance Council [2] indicated that “Emerging risks may be issues that are perceived as potentially significant, at least by some stakeholders or decision-makers, but their probabilities and consequences are not widely understood or appreciated. The dynamic element of emerging risks is critical, as adaptive systems respond (or learn to respond) to perturbations. Some emerging risks lessen over time while others become worse than anticipated” (p.9). Spedding and Rose [3] suggested that companies must regularly conduct a critical appraisal on their risk management procedures for a better risk assessment in order to stay competitive.

Enterprise risk management (ERM) approach has gained prominence over the past decades as a holistic approach to manage and address risks confronted by a company through all angles [4]. A lot of companies have adopted ERM program to assist them in identifying those risks that affect the company’s objectives [5]. Although ERM is acknowledged as a holistic approach, it still lacks implementation in various industries. It is increasingly clear that ERM practices have certain boundaries in managing emerging risks [6, 7].

In fact, much of the emerging risk that arises from sustainability issues [8] are beyond companies’ control because they are unknown and high impact risks which contributes to high losses [9, 10].

Aon’s Global Enterprise Risk Management Survey [11] reported almost half respondents do not have specific methods in detecting emerging risks in their ERM program. Most of the risk managers depend on the internal data, external information and their knowledge in assessing the emerging risks that affect their daily business operations. This creates difficulties in identifying emerging risks since they find it hard to identify the interconnectedness between risks, thus brings complexity to examine the source of emerging risks [7, 12]. Due to this, emerging risks tend to be ignored by companies and this ignorance turns to ‘predictable surprises’ which significantly impact the companies [13]. The current risk management practices are inadequate for businesses to adapt with the emerging risks. Therefore, ERM practices should be improved to integrate the emerging risks [7, 14].
Management needs to have a quick response in identifying emerging risks that are affecting the company’s goal. The proactive actions taken by the management to strengthen risk management by integrating emerging risks will help to improve the risks oversight hence protecting the company’s value [15]. Thus, a number of studies indicated that there is a significant need for ERM to improve [16, 17, 18] by expanding the concept of adapting the emergence of new risks [19].

Further, Ahn [20] identified that previous work did not specifically address the integration between sustainability and ERM. However, a number of authors suggested that the integration of sustainability and ERM process is recognised as emerging ‘best practice’ [5, 8, 21, 22]. Hence, it is essential for ERM to integrate with corporate sustainability to critically examine the implications of emerging risks. Sustainability risk management (SRM) is an extension of the ERM concept which aims to maximize economic, environmental and social performance for the long-term corporate survival.

SRM refers to an integrated risk management approach that manages emerging risks and non-quantifiable risks arising from sustainability issues. SRM emphasizes on the risks arising from internal and external events, as well as extreme events in mitigating possible disruptions to the company. Given the rise of emerging risks, SRM program is crucial in adapting a complex risk landscape. Thus, the purpose of this study is to examine the types of emerging risks that become increasingly importance in the environmentally sensitive industries of Malaysian public listed companies.

**Literature Review:** Sustainability risk management (SRM) was first introduced by Dan R. Anderson [23], the author who recently published the book ‘Corporate Survival: The Critical Importance of Sustainability Risk Management’. Anderson’s conception of SRM is “sustainability risk management deals with risks emanating from the environmental and corporate social responsibility areas”.

Recent increases in environmental and social risk costs have led to greater pressure on the company’s bottom line. Environmental and social risks have been recognised as significant emerging risks for the past few years. Companies are now in pressure to address financial performance in addition to environmental and social performance. In particular, the understanding of risk managers on the emerging risks are inadequate and perhaps the assessment of emerging risks is still at the beginning stage to be developed by the company [2]. The ignorance towards the emerging risks would bring harm to the company as the impacts of these risks are significant. This is evidenced by Pricewaterhouse Coopers [19] that states “.... large organisations may now have blind spots from which high-impact risks could emerge to damage or potentially destroy their business” (p.3). In regard to all mentioned before, risk managers should have greater knowledge on the nature of emerging risks to critically examine them and to ensure corporate’s survival.

Emerging risk is defined by the International Risk Governance Council [2] as “a risk that is new or a familiar risk in new or unfamiliar conditions” (p.6). Based on the definition, emerging risk is recognised as unknown and known risks that bring greater impacts to businesses. This demonstrates that emerging risks have inherent characteristics that need to be fully comprehended by the risk managers in identifying and analysing those risks. International Risk Governance Council [2] identified four characteristics of emerging risks which need to be observed. First, emerging risks dealing with the scientific unknown and resulted risks are difficult to be anticipated. Second, high uncertainty is due to deficiency of information on the emerging risks that can be identified by the risk managers and thus, caused difficulties in risk assessments. Emerging risks are difficult to be quantified due to lack of historical data and interrogation of risk transfer.

Besides that, the nature of emerging risks was not well understood and often being overlooked by the risk managers. A recent study by Coleman [24] showed that the unknown risks cannot be anticipated by employing quantitative risk models as limited knowledge and tools in identifying future risks that never occurred. Hence, the suitable preventive measure that could be adopted in anticipating the implications of emerging risks is by employing the precautionary principle in business strategies [9]. The precautionary principle is defined by Raffensperger and Tickner [25] as “...when an activity raises threat of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships have not been fully established scientifically” (p. 353).

The application of the precautionary principle is emphasized in the sustainable development concept [26]. Som, Hilty and Kohler [27] stated that precautionary principle and sustainability share the principle of inter-
generational of justice, which considers the needs of the future generations. Moreover, the precautionary principle is considered as an important principle in risk management [28]. The element of the precautionary principle is crucial in business strategies [23] to critically examine the implications of emerging risks to foster a strong risk culture in the companies.

MATERIALS AND METHODS

This study was conducted using survey approach. This approach was employed to generalise or produce claims regarding the research population [29]. The public listed companies (PLCs) were selected as the population of the study because normally, ERM is adopted by the larger organisations, such as the PLCs and multinational companies [30]. Furthermore, the PLCs would have to exercise the best practice of corporate governance under the Malaysian Code of Corporate Governance and Bursa Malaysia Listing Requirements where risk management is part of it.

Environmental sensitive industries which comprise of all companies in manufacturing, construction, oil and gas and plantation sectors had been chosen with the total population of 150 companies. These industries were chosen due to the greater environmental impacts of their business operations towards ecosystem and community [31, 32]. The respondents of the survey were individuals responsible for companies’ risk management activities, namely chief financial officer, chief internal audit, risk managers and internal audit managers. The sampling procedure was carried out by employing a stratified sampling technique. Analysis such as frequencies, cross-tab and chi-square test were employed in this study. From the total of 105 online surveys sent, a total of 53 PLCs responded to the survey, giving a response rate of 50.5 percent.

RESULTS

The study represented 53 responses from four sectors that are listed as environmentally sensitive industries in Malaysia. From 53 companies that responded, 39.6 percent were from manufacturing, 34 percent from construction, 18.9 percent from oil and gas and the rest were primarily plantation sector. A total of 39.6 percent of manufacturing sector responses came from 8 diverse industries, namely conglomerate (11.3%), steel (7.5%) and metal (7.5%). This was followed by 3.8 percent from aluminium, chemicals and pharmaceutical industry respectively and 1.9 percent from cement and timber industry. A total of 7.5 percent from plantation sector responses came from two different industries, which were palm oil (5.6%) and rubber (1.9%). Table 1 summarises the profile of companies that responded.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Frequency</th>
<th>Percentage</th>
<th>Total Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Conglomerate</td>
<td>6</td>
<td>11.3</td>
<td>39.6</td>
</tr>
<tr>
<td>-Steel</td>
<td>4</td>
<td>7.5</td>
<td></td>
</tr>
<tr>
<td>-Metal</td>
<td>4</td>
<td>7.5</td>
<td></td>
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<tr>
<td>-Aluminium</td>
<td>2</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>-Chemicals</td>
<td>2</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>-Pharmaceuticals</td>
<td>2</td>
<td>3.8</td>
<td></td>
</tr>
<tr>
<td>-Cement</td>
<td>1</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>-Timber</td>
<td>1</td>
<td>1.9</td>
<td></td>
</tr>
<tr>
<td>Construction</td>
<td>18</td>
<td>34.0</td>
<td>34.0</td>
</tr>
<tr>
<td>Oil and Gas</td>
<td>10</td>
<td>18.9</td>
<td>18.9</td>
</tr>
<tr>
<td>Plantation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-Palm-oil</td>
<td>3</td>
<td>5.6</td>
<td>7.5</td>
</tr>
<tr>
<td>-Rubber</td>
<td>1</td>
<td>9.6</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
<td>100</td>
<td>100</td>
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Figure 1 details the type of emerging risk that posed the greatest impact to the environmentally sensitive industries. It is found that natural resource depletion (58.5%) had been considered as the main concern of emerging risks. This is followed by extreme weather events (52.8%), greenhouse gas emission (45.3%), climate change (37.7%), water crises (32.1%), natural catastrophe (30.2%), biodiversity loss (20.8%), pandemics (7.5%) and food security (1.9%).

Subsequently, the result in Table 2 further explains the type of emerging risk in proportion to the type of sector. Extreme weather event was the main concern of emerging risks in the plantation (100%) and followed by construction (66.7%) sectors, implying that the weather condition is significantly influenced on the business operations of these sectors. Whilst, natural resources depletion was the top emerging risks in oil and gas (80%) and followed by manufacturing (66.7%) sectors, indicating that their business operations were heavily depended on the natural resources. This is also supported by the result of the Chi-square test, where there was an association between natural resources depletion, extreme weather events and type of sector at the 5 percent significance level. In addition, the result also found that there was an association between natural catastrophe and type of sector at the 5 percent significance level. Furthermore, there was an association between greenhouse gas emissions and biodiversity loss and the type of sector at the 10 percent significance level.
DISCUSSION

The overall result revealed that natural catastrophe, natural resource depletion, extreme weather events, greenhouse gas emissions, and biodiversity loss were considered as the top emerging risks that significantly affect the environmental sensitive industries. Climate change and resources volatility have been ignored for the past few years [12] as companies in general focus less on the low probability events due to the lack of clarification in regard to the implications of emerging risks [19]. A better risk assessment is recognised as an important tool in managing those risks arising from extreme events such as climate change and extreme weather events [33]. Previously, the occurrence of extreme events brought to the identification of emerging risks did not evolve [7, 34]. In this case, companies must also consider events that are unlikely to occur because these pose significant risks to the companies in the long-term [35].

Together, the results provided by the present research give important insights into the significance of addressing emerging risks arising from the environmental and social issues. This study identified that social and environmental risks are among the significant emerging risks experienced by companies. The board of directors and management should then monitor any associated emerging risks that pose greater implications to the long-term corporate survival.

CONCLUSION

The research shows that the knowledge of emerging risks is increasing among the senior management. Thus, the risk managers need to improve their risk identification process to integrate emerging risks. The study revealed that natural catastrophe, natural resource depletion, extreme weather events, greenhouse gas emissions, and biodiversity loss are the significant of emerging risks faced by environmentally sensitive sectors. There is a clear need for companies to respond effectively to emerging risks to ensure long-term corporate survival.

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