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Improving Band Ratings in Carbon Disclosure Project Reports

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Abstract: In 2014, only 48% of S&P companies scored high-performance band B ratings and above in their Carbon Disclosure Project (CDP) reports to attract the interest of institutional investors holding U.S. $92 trillion plus assets under management. This multiple case study explored the business leaders' strategic decisions to improve the performance band ratings in the companies' CDP reports. The conceptual framework for this research was stakeholder theory, which suggests that businesses should incorporate the interest of institutional investors to minimize the climate-related risks that could affect their investment decisions. The target population was business leaders from S&P 500 companies in the eastern United States who have experience in making strategic decisions to improve performance band ratings in the CDP reports. Data collection included semistructured face-to-face interviews with 4 business leaders and an exploration of company archival documents related to carbon management. Using Yin's data analysis method 5 themes emerged: governance, risk management, target and initiatives, measurement and verification, and transparency and disclosure. These themes highlighted companies' governing strategies for better carbon management, which are essential in achieving better performance band ratings in the CDP reports to attract the interest of intuitional investors. Better carbon management by S&P 500 companies will facilitate a positive social change by reducing greenhouse gas emissions that are detrimental to human health and well-being of its stakeholders.

I. BACKGROUND OF STUDY

More than 4,500 companies participate in the Carbon Disclosure Project to attract the interest of institutional investors (Carbon Disclosure Project, 2014). Matsumura, Prakash, and Vera-Munoz (2014) found that the median market value of S&P 500 companies that provided carbon emissions information was around US $2.3 billion higher than the median value of comparable companies that did not disclose carbon emissions. However, Matisoff, Noona, and O' Brien (2013) documented a decline in the quality of responses in the CDP questionnaires among U.S. companies.

Over seven hundred institutional investors with U.S. $92 trillion plus in assets under management use the information in the Carbon Disclosure Project (CDP) to make investment decisions (Ben-Amar, Chang, & McIlkenny, 2015). In 2014, less than 50% of Standard & Poor's (S&P) 500 companies received a performance band of B or better in their CDP report (Carbon Disclosure Project, 2014). The CDP assigns performance band (from A to E) based on company's action in measuring, verifying, and managing its carbon footprints, with A indicating the best performance and E indicating the worst (Carbon Disclosure Project, 2014). Institutional investors use the information in CDP reports to understand the emissions related risks embedded within their investment portfolios (Soyka, 2014). Low environmental performance could result in a large sell-off of the company's share by institutional investors (block holders), which would affect profitability by driving down the stock price and company value (Busch, Bauer, & Orlitzky, 2016

II. PURPOSE

The purpose of this qualitative multiple case study research was to explore the strategic decisions of business leaders to improve the performance band in the CDP report. The target population consisted of S&P 500 companies based in the eastern United States. The participants selected for the interview were business leaders from four S&P 500 companies who have experience in making strategic decisions to improve CDP performance band ratings. This study's implication for social change stem from its design to help companies to implement policies on climate change mitigation to improve their performance band in the CDP, which could benefit the environment and the society. The climate change mitigation may help reduce carbon emissions in the environment resulting in better human health and wellbeing.

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A. *Research Question and Interview Questions*

The underlying research question was: What strategic decisions do business leaders use to improve the performance band in the CDP report?

The table below represents the interview questions that guided the interview process

Interview Questions
What strategic decisions do business leaders use to improve performance band in the CDP report?
What are the common challenges your organization faces while implementing strategic decisions to improve performance band in the CDP report?
What are your measures of success in managing carbon emissions?
What are the challenges your organization faces while answering the CDP questionnaires?
How do you know that your company is successful in managing carbon mitigation, adaptation, and transparency?
What more can you add to the study that I have not covered?

III. RESEARCH METHODOLOGY/DESIGN

A qualitative approach was appropriate for this study because this method allowed the researcher to interview individuals who have experience and were knowledgeable about the research phenomenon. Scholars maintained that a qualitative study is ideal for the in-depth study of subjective experience and knowledge of the individuals (Marshall & Rossman, 2014). Tufford and Newman (2012) noted that a qualitative method is the best approach to understanding the phenomena through human meaning construction. The qualitative method provides flexibility to interpret information to find answers to the central research question (Yin, 2014).

The exploratory case study design aligned with the nature of the inquiry and the boundaries associated with company selection. A case study was appropriate when the focus of the study was on select events and a current phenomenon often where there is a little preliminary research (Yin, 2014). The purpose of this case study research was to explore strategic decisions to improve performance band in the CDP report. This study explored a distinct phenomenon that has no single set of outcomes and therefore the exploratory multiple case study was an ideal option. A multiple case study was appropriate because it matched the study requirement. A multiple case study improves internal validity by accessing rich data from multiple subjects (Curzi & Rosana, 2012)

IV. CONCEPTUAL FRAMEWORK

The conceptual framework for this qualitative case study was stakeholder theory developed by Edward Freeman in 1984 freeman In 1984, Freeman identified organizational stakeholders and their interests (Freeman, 2010). Freeman's (2010) expanded version of stakeholder theory includes two key constructs: (a) stakeholder constitutes any group that influences or is affected by the business success and (b) business must consider all stakeholder interests in their Corporate Social Responsibility (CSR) decisions and practices. The aim of this qualitative multiple case study was to 6 explore strategic decisions of business leaders to improve performance band in the CDP report. The use of stakeholder theory provided a deeper grasp of companies' carbon disclosure strategies by viewing companies' carbon policies in the context of stakeholders. As applied to this study, stakeholder theory suggested that business leaders should incorporate the interest of stakeholders such as institutional investors in their strategic decisions by providing quality and transparent information in the CDP. Furthermore, the stakeholder theory supported the notion that the transparency and disclosure quality of the CDP report can help institutional investors make informed investment decisions as such decisions may help companies raise capital and increase profitability.

V. LITERATURE REVIEW

A. *Greenhouse Gas Effects*

Climate change remains a global challenge despite the United Nations Framework Convention on Climate Change (UNFCCC) went into effect in 1992 (Okereke, Wittneben, & Bowen, 2012). For example, the International Energy Agency (IEA) announced that the carbon emissions in 2010 reached its highest in the history (Okereke et al., 2012). This is important because the greenhouse gas (GHG) effect results when GHGs such as carbon dioxide in the atmosphere trap heat energy from the sun (Kumazawa & Callaghan, 2012). Current GHG concentrations in the atmosphere are already melting polar ice at an alarming rate (Shepherd et al., 2012), thereby raising the sea level faster than previously predicted (Rahmstorf, Foster, & Cazenave, 2012). The United States is the biggest polluter with second highest annual carbon dioxide emissions in the world (Brooks, Oxley, Vedlitz, Zahran, & Lindsey,

2014). The rise of GHG in our environment have raised concerns among regulators. In the United States, the federal government announced a new policy to reduce GHG emissions (Winters, 2014). The EU will require about 6000 businesses to disclose specific environmental criteria to investors, and in China, over 20,000 companies report GHG emissions to the government (Carbon Disclosure Project, 2014). Pattberg (2012) noted that climate change is a risk to a business and requires increased attention from business leaders. Boiral, Henri, and Talbot (2012) stated that business involvement in carbon management is a key to a climate change solution.

B. Voluntary and Mandatory Reporting

There is different institutional logic for businesses to engage in carbon disclosures (Knox-Hayes, & Levy, 2011). According to civil regulation logic, in general companies disclose carbon emissions voluntarily to inform stakeholders about their carbon emissions (Fisk, 2013). On the other hand, the regulatory logic suggests that business leaders report greenhouse gas emissions as a part of complying with regulatory agency mandates (Fisk, 2013). The focus of this study was on voluntary reporting of carbon emissions. Companies voluntarily participate in carbon disclosure if they have good news to decimate such as trading of excess carbon units or reduction of energy consumption (Knox-Hayes & Levy, 2011). Carbon trading is an exchange of carbon units for limiting harmful emissions between states, companies, or nations (Matsumura et al., 2014). Through carbon training, businesses that exceed their allowable carbon emissions units can trade their carbon units in the same manner as securities in the carbon market. Companies that sell carbon units have incentives to transmit this information to let stakeholders know about their carbon management (Matsumura et al., 2014). Decreased energy consumption in business operation, using alternative energy, and investing in technology to reduce energy consumption in heating and cooling of facilities and supply chain also make companies more likely to voluntarily disclose their carbon emissions.

C. Corporate Environmental Performance and Financial Performance

The corporate environmental performance implies to green management policies to protect the environment (Sariannidis et al., 2013). Ethical investors consider not only wealth creation but also environmental values in their investments (Sariannidis et al., 2013). There are various benefits to companies from a positive environmental 18 performance. The positive environmental performance establishes a business reputation as a responsible company (Hahn, Reimsbach, & Schiemann, 2015) and helps to build a long lasting image with stakeholders (Sullivan & Gouldson, 2012). Furthermore, there is a positive relationship between companies' environmental performance and stock performance (Hahn et al., 2015). Environmental performance may improve a company's position with its partners, customers, and may help attract shareholders (Mishra & Modi, 2016). Environmental performance may help businesses to hedge against negative reactions when things go wrong (Flammer, 2013). In other words, environmental-CSR minimizes the damages resulting from irresponsible corporate behaviors.

D. Stakeholder Theory

The conceptual framework for this study is a stakeholder theory. For the last 30 years, scholars have proposed that inclusion of stakeholder theory in business decision-making is key to addressing global sustainability concerns (Harrison & Wicks, 2013). The business sustainability is about remaining profitable while addressing social and environmental concerns. Edward Freeman developed the stakeholder theory in 1984 (Freeman, 2010). According to Freeman (2010) stakeholder includes all individuals or groups of people affected by the organization. Later, Freeman (2010) elaborated, tuned, and formalized the stakeholders' theory. Freeman (2010) stated that companies must consider the interest of all stakeholders to remain sustainable. Freeman (2010) added that companies' ethical and moral responsibilities towards stakeholders are equally important as maximizing profits. Harrison and Wicks (2013) supported the notion by stating that business leaders must meet the interest of all stakeholders in their strategic decision-making. 21 There are different types of stakeholders such as regulatory stakeholders, internal stakeholders, external stakeholders, and secondary stakeholders. Regulatory stakeholders are industry or trade associations and public authorities. Failure to address the needs of regulatory stakeholders could result in fines and sanctions. The internal stakeholders are labor unions, employees, shareholders, and institutional investors. The external stakeholders constitute consumers, buyers, suppliers, banks, and other lenders. Both internal and external stakeholders are actively involved in business operation driving profitability. Lastly, the secondary stakeholders are environmental groups, organizations, community/neighborhood organizations, and groups. Harrison and Wicks (2013) noted that the stakeholder theory is a key to organizational success. Henisz, Dorobantu, and Narty (2014) confirmed that by engaging stakeholders in strategic decision making could result in a positive financial market valuation of business. Stakeholders regularly add pressure to organizations to address their interest (Salama, Dixon, & Habbash, 2012).

Stakeholders pressure guide companies' environmental strategies and behaviors (Surroca, Tribo, & Zahra, 2013). However, business leaders find challenges in addressing all stakeholders demand. Some critics stated that in stakeholder theory, management focus more on investors and neglected other important contributors such as employees, society, customers, and suppliers (Armstrong, 2012). Failure to address the interest of these stakeholders could have dire consequences for business sustainability (Freeman, 2010). Moriarty (2014) stated to balance the interest of stakeholders accordingly based on their contribution to the organization. 22 Institutional investors are important stakeholders to a company. Evidence of an active and significant involvement of institutional investors' interest in organizational decision-making would support Freeman's stakeholder theory. Institutional investors have a stake in the companies' governance since they hold equity in the companies. Institutional investors expect companies to disclose nonfinancial information along with financial reporting to identify the risk and opportunities in their investments (Lydenberg, 2013). Therefore, business leaders have a fiduciary responsibility towards its institutional investors to maximize the return on their investment and to provide nonfinancial information about their environmental activities through the CDP. As stated by the Freeman, the stakeholder theory plays an important role while companies are developing carbon reduction strategies. Stakeholder theory suggests businesses to consider the interest of institutional investors who rely on company's carbon mitigation and disclosure to make their investment decisions. Companies realize that institutional investors can present both opportunities and threats to companies (Crilly & Sloan, 2012). Opportunities include raising capital through institutional investing. The threat could be institutional investors walking away from such investment.

E. Carbon Disclosure Project

The CDP is a UK-based nonprofit organization that has become an institution of governance for raising awareness about the climate change, measurement, and reporting of carbon emissions. The CDP purpose is to generate a legitimate principal for external accountability (Andrew & Cortese, 2012). The CDP core strategy is to recruit institutional investors to add pressure on companies to provide environmental information using the disclosure protocol (Matsumura et al., 2014). The CDP holds the largest repository of carbon-related data and operates in over 60 countries globally (Wegener, Elayan, Felton, & Li, 2013). By 2014, over 700 institutional investors with U.S. $92 trillion plus assets under management used the CDP information to make their investment decisions (Ben-Amar et al., 2015). The CDP participation grew tremendously in the last decade. In 2014, over 4500 companies participated in the CDP (Carbon Disclosure Project, 2014). On an annual basis, the CDP sends requests to companies to answer carbon related questions. In 2012, the CDP sent out invitations to over 10,000 companies (Topping, 2012). Companies answer questions relating to their action on climate change mitigation, transparency, and adaptation (Carbon Disclosure Project, 2014). The carbon emission questions correspond to companies' direct and indirect emissions. The direct emissions come from GHG sources owned by the companies such as companies' vehicles and equipment. In contrast, the indirect emissions come from the GHC sources controlled by other entities such as purchased electricity, heating, and cooling system. Based on the quality of response, the CDP assigns each company a performance band (from A to E). A performance band of B 25 and above signals that a company has a good carbon management system that measures, verifies, and manages carbon footprints. Furthermore, a high-performance band indicates that companies are setting and meeting emissions targets. The CDP participation benefits both companies and investors. The CDP represents institutional investors holding U.S. $92 Trillion plus assets (Ben-Amar et al., 2015). The CDP provides opportunities to companies to raise capital through institutional investing. According to the Carbon Disclosure Project (2014), the companies with a higher CDP ratings had high return on investment (ROA). Conversely, the investors get the benefit of getting a glimpse at companies' carbon emission practices and initiatives and then be able to make an informed investment decision (Andrew & Cortese, 2012).

F. Types of Emission in the CDP

There are three types of greenhouse gas emissions in the CDP, and those are Scope 1, Scope 2, and Scope 3 emissions. Scope 1 emissions are direct emissions that come from the sources owned and controlled by companies (Matisoff et al., 2013). Scope 2 emissions from electricity consumed by the corporation and Scope 3 are indirect emissions that come from external sources as a result of companies' actions (Bo, Lee, & Psaros, 2013). For example, greenhouse emissions from the factories owned and operated by corporations are direct emissions, whereas emissions resulting from the consumption of electricity and heat are indirect emissions. Scope 3 emissions come from companies' value chain (Carbon Disclosure Project, 2013). There are 15 categories of Scope 3 emissions (Carbon Disclosure Project, 2013). Huang, Weber, and Matthews (2009) stated Scope 3 emissions account for 75% of the industry sector's carbon footprint. However, 26 according to Downie and Stubbs (2012), companies are disclosing less Scope 3 emissions.

Matisoff et al. (2013) supported the notion by stating that companies fail to improve the quality and transparency of Scope 3 emissions over time. In 2012, less than 50 S&P 500 companies reported 14 out 15 categories of Scope 3 emissions (Carbon Disclosure Project, 2013). In 2013, more than 70% of S&P 500 companies did not provide transparency on all categories of Scope 3 emissions (Carbon Disclosure Project, 2013).

G. Carbon Strategies

Albertini (2014) stated that different companies are at different stages when it comes to carbon mitigation and disclosure. Some companies have not developed 27 environmental policies and often fail to address regulatory requirements and social pressure (Albertini, 2014). Others pursue environmental policies at a minimum level to avoid regulatory fines and lawsuits (Albertini, 2014). Meanwhile, some go beyond regulatory requirements in mitigating greenhouse gas emissions (Albertini, 2014). Finally, some companies are environmental leaders who excel in reducing and disclosing of greenhouse gasses (Albertini, 2014). These companies have high-performance band and carbon disclosure rating in the Carbon Disclosure Project. Business involvement in carbon mitigation and the disclosure is a key to climate change solution (Tang & Luo, 2014). Lee (2012) stated carbon strategies to tackle the climate change and those are (a) emissions reductions, (b) process and product improvement, and (c) external relationship development. Emission reduction, and process and product improvement require companies to implement internal carbon policies and invest in green technologies. External relationship development is about collaborating with third parties such as the CDP to disclose companies' carbon related information. The CDP participation will help businesses identify carbon-related risk and opportunities. Delmas, Etzion, and Nairn-Birch (2013) mentioned waste management strategy to tackle climate change. The waste management plan includes a recycling program, less dependent on fossil fuel, renewable energy, and investment in technologies and equipment to reduce waste. There is a benefit to a company from waste management. Besides, helping the environment, waste control results in a reduction in noncompliance fines from regulators (Delmas et al., 2013). Downie and Stubbs (2012) mentioned that 28 solid knowledge of environmental challenge and sound strategy formulation would assist companies' to manage carbon and waste reduction.

H. Factors Influencing Managers' Decisions to Disclose Carbon Emissions

Various factors influence managers' sensemaking when it comes to disclosing carbon emissions in the CDP. Many companies participate in the CDP to inform stakeholders about environmental activities. However, some companies refuse to take part in the CDP, and if they do decide to participate, they keep their responses private to avoid financial market scrutiny (Matsumura et al., 2014). Matisoff et al. (2013) found that the number of companies responding to the CDP doubled, but the share of responses that were public fell from about 63% to 43% during the same period. If companies have a choice whether or not to answer the question regarding the quality of responses, they will likely avoid the quality of the information (Matisoff et al., 2013). A low-performance band indicates that companies are either not providing quality responses to the CDP questionnaires or not meeting emissions standards set by the CDP. Matsumura et al. (2014) identified three reasons for low-performance band ratings in the CDP: 1. Companies have low-carbon emissions and cost of measuring and disclosing exceed the benefits of doing so. 2. Companies with emissions do not yet have an internal system to measure and disclose. 3. Companies have a high degree of emission, and they are reluctant to disclose bad news due to proprietary costs. The proprietary information will keep companies vulnerable by exposing information such as environmentally related capital 29 expenditures, investments, corporate commitment, and environmental liabilities (Cormier et al., 2005). The amount of carbon emissions has an association with companies' value. According to Chapple et al. (2013), there is a significant negative correlation between carbon emissions and the company value. Matsumura et al. suggested that companies should disclose carbon emissions only when the benefits of doing so outweigh the costs. Luo et al. (2012) stated that it is important to understand the factors that influence the manager's decisions to participate in the CDP to create a low-carbon economy and society. Furthermore, an understanding of these factors may help managers to develop strategies to address and manage climate change.

VI. INSTITUTIONAL INVESTORS

Institutional investors integrate company's environmental performance in their overall investment decision-making process; and based on their environmental performance, institutional investors may exclude companies (Busch et al., 2016). The institutional investor investment approach differs from traditional investors. Traditional investors buy and hold company stock, whereas institutional investor not only buys and hold but also monitor companies in which they invest (Eaton, Nofsinger, Varma, 2014). Institutional investors act in the interest of their beneficiaries who invest in their funds. Therefore, they add pressure to businesses to address environmental issues (Lewis, Walls, & Dowell, 2014).

Pressure to improve performance band in the CDP can lead to overall improved carbon management, (Matisoff, 2013). According to Huang, Wang, and Zhang, (2014) institutional investors like investing in companies that show good governance to reduce their monitoring cost. Companies with good governance provide complete transparency in their environmental, social and governance (ESG) data to help institutional investors identify the risk and opportunities in their investments Institutional investors are sophisticated and informed investors (Huang et al., 2014). Different types of institutional investors demand a different set of ESG data from companies to make their investment decisions. Therefore, it is important that companies identify the type of institutional investors and the type of data they are interested in so that they can effectively target their communications. Lydenberg (2013) identified different groups of institutional investors and they are (a) standard or norm driven, (b) rating driven, (c) stock valuation driven, and (d) impact driven. 34 Institutional investors that invest in an FTSE4Good global index are standard or norm driven (Lydenberg, 2013). According to Lydenberg, standard or norm driven investors seek ESG data to help them understand whether companies meet or exceed certain standards such as environmental sustainability, human rights, and climate change. Institutional investors that invest in businesses that participate in the CDP are rating or score driven investors. These investors identify companies to invest based on the Carbon Disclosure Project rating on disclosure transparency. Institutional investors that invest in businesses that follow the UN Principles for Responsible Investing are stock valuation driven investors (Lydenberg, 2013). Lydenberg noted that these institutional investors assume that ESG data not yet recognized are indicators of potential risk and opportunities and can be valuable in stock picking. Finally, impact driven investors seek data in companies that follow the principles embodied by the United Nations Millennium Development Goals (Lydenberg, 2013). These institutional investors are interested in ESG data of companies that have a positive impact on the environment and society through their products and services (Lydenberg, 2013).

VII. SUMMARY FINDINGS

The participants in this study were business leaders who have knowledge on their business's carbon reduction strategies. In this study, four participants answered six interview questions during semistructured interviews. The interview questions and the secondary data source resulted in five themes that helped to understand strategic decisions business leaders use to do well in the CDP report. The findings of this study align with previous findings in the literature as well as the conceptual framework.

1) Theme 1: Governance

The participants mentioned various governing strategies to do well in the CDP report. The four subthemes that emerged from data analysis were: company culture, training, incentives and rewards, and outside engagement. Companies receive high-performance band in the CDP when they have sound carbon adaptation, mitigation, and disclosure culture in place. All participating companies have company-wide training program. This training was carried out through memos, online portal, role-play, staff meetings, and by participating in companywide projects. All participants indicated that their companies provide incentives at both the individual level and department level for attainment of environment target, in keeping with Mosley and Patrick's (2011) note that a reward system motivates people to fulfill organizational goals. A performance ratings in the CDP signals how companies engage with policy makers and NGOs. All participants indicated that they engage with policy makers on issues that are most significant to their line of business. All participants stated out that their outside engagement activities were consistent with their overall climate change strategy.

2) Theme 2: Risk Management

All participants in our study mentioned that poor carbon management results in regulatory, financial, and reputation risk. All participants stated that the carbon management is part of their business strategy to minimize the risk, as suggested by Hoffman and Woody (2013). Waste control results in cost management and reduction in non-compliance fines from regulators (Delmas et al., 2013). All participants noted that their company uses boundaries such as financial control or operational control of greenhouse gas inventory. All participants stated that their business engages within the value chain to reduce GHG emissions. One of the CDP requirements is to keep emissions to acceptable levels. Benchmarking company's emissions data with others within the industry is a useful means of operationalization and implementation of the carbon management strategy (Schaltegger & Csutora, 2012). The industry-level benchmarking allow firms to manage environmental performance by comparing against other similar companies (Acquaye, Genovese, Barrett, & Lenny Koh, 2014). Benchmarking shows to the CDP and other stakeholders that company is taking steps in mitigating its carbon emissions. All participants stated that their company periodically compares their GHG emissions data with industry standards. All participants mentioned that they compare their energy consumption and purchase data with previous years as a part of a carbon management strategy.

3) Theme 3: Targets and Initiatives

Setting targets is the first step in carbon management. The CDP ask set of questions on emission targets and the initiates taken to meet such targets.

All participants stated that they have absolute and intensity target within the value chain. Absolute emissions target refers to the total quantity of GHG emitted. Intensity target compares emissions to some measure of output or input. Hahn et al. (2015) indicated that setting target is an important step towards carbon management and stated the ecological impact of both absolute and intensity of carbon emissions. Companies with the high-performance ratings are setting and meeting carbon reduction targets and implementing programs to reduce emissions in their operation. All participants stated that they have both direct and indirect emission targets (Scope1, Scope 2, and Scope 3). Target identified were the carbon reduction target, waste reduction target, water uses target, and energy consumption target. All participants mentioned that both direct and indirect targets are consistent with their overall green strategy. All participants stated that they utilize current technology in carbon management to assure performances. In conclusion, when asked about strategies in setting targets, all participants mentioned to make sure targets align with company's overall climate strategy.

4) Theme 4: Measure and Verify Direct and Indirect Emissions

Measurement and verification of carbon emissions have two subthemes: (a) measuring emissions across the value chain, and (b) then verifying the carbon footprints with the third party. The CDP asks information from companies on how they measure and verify carbon emissions as part of a carbon management strategy. The information provided impact Company's overall performance rating. P3 emphasized the importance of 68 tracking emissions by stating that it helps to measure progress, make corrections, and to promote accountability.

P4 added, "Measuring environmental performance and comparing with our financial performance help us to understand how successful we are in our climate change strategy." Many companies are not disclosing Scope 3 emissions in the CDP report, and it indicates that they do not measure it (Downie & Stubbs, 2012). Scope 3 emissions spread out across the value chain as opposed to Scope 1 and Scope 2, which come from companies' operation. The interview revealed that participating companies reported some Scope 3 emissions in their CDP report. However, all participants mentioned that their company captures and measure most of Scope 1 and Scope 2 emissions.

All participants classified Scope1 and Scope 2 emissions by business division, facility, GHG type, and activities. All participants indicated that their company follows the Greenhouse Gas Protocol guidelines to measure Scope 1, Scope 2 and Scope 3 emissions. When asked about the quality of data, all participants stated that they use the third party verification process. All participants stated that their verifications are accordance with recognized CDP standards. In conclusion, measurement and verification are the second most important step after setting up the carbon-related target. Answers to the CDP questionnaires in measurement and verification process shed light on company's carbon management strategy. Sound measurement and verification process is an important step towards good performance rating in the CDP report.

5) Theme 5: Transparency and Disclosure

Transparency and disclosure were the fifth major theme of this study. Transparency in disclosure means displaying all carbon related activities. Disclosure and transparency in carbon emissions are an important step towards achieving high-performance brand. Due to the threat from climate change, the investment community is demanding companies to provide their exposure to climate change and the cost of carbon emissions. The CDP is adding pressure on companies to provide accurate data with complete transparency. In this study, all participants confirmed that they provide comprehensive information on Scope 1 and Scope 2 and some information on Scope 3. Each of the participants agreed that capital markets reacted favorably to their company's carbon disclosure. This aligned with Hahn et al.'s (2015) statement that this has an overall positive effect on stock performance, and with Albertini's (2013) finding that there is a positive correlation between environmental disclosure and financial performance. Not all businesses have answers to the CDP questions, and the CDP is interested to know why. Carbon adaptation, mitigation, and transparency is a process that develops over time. It is perfectly alright not to have answers as long as the company can explain its position honestly. Also, it is important that a business makes the CDP report public instead of making it private. It sends a message that there is nothing to hide. In conclusion, the study findings showed that measurement and verification is an important step towards carbon management. However, it is the transparency and quality of disclosure in the CDP that attracts institutions investors. Complete transparency and quality disclosure are key to getting a good performance band rating in the CDP.

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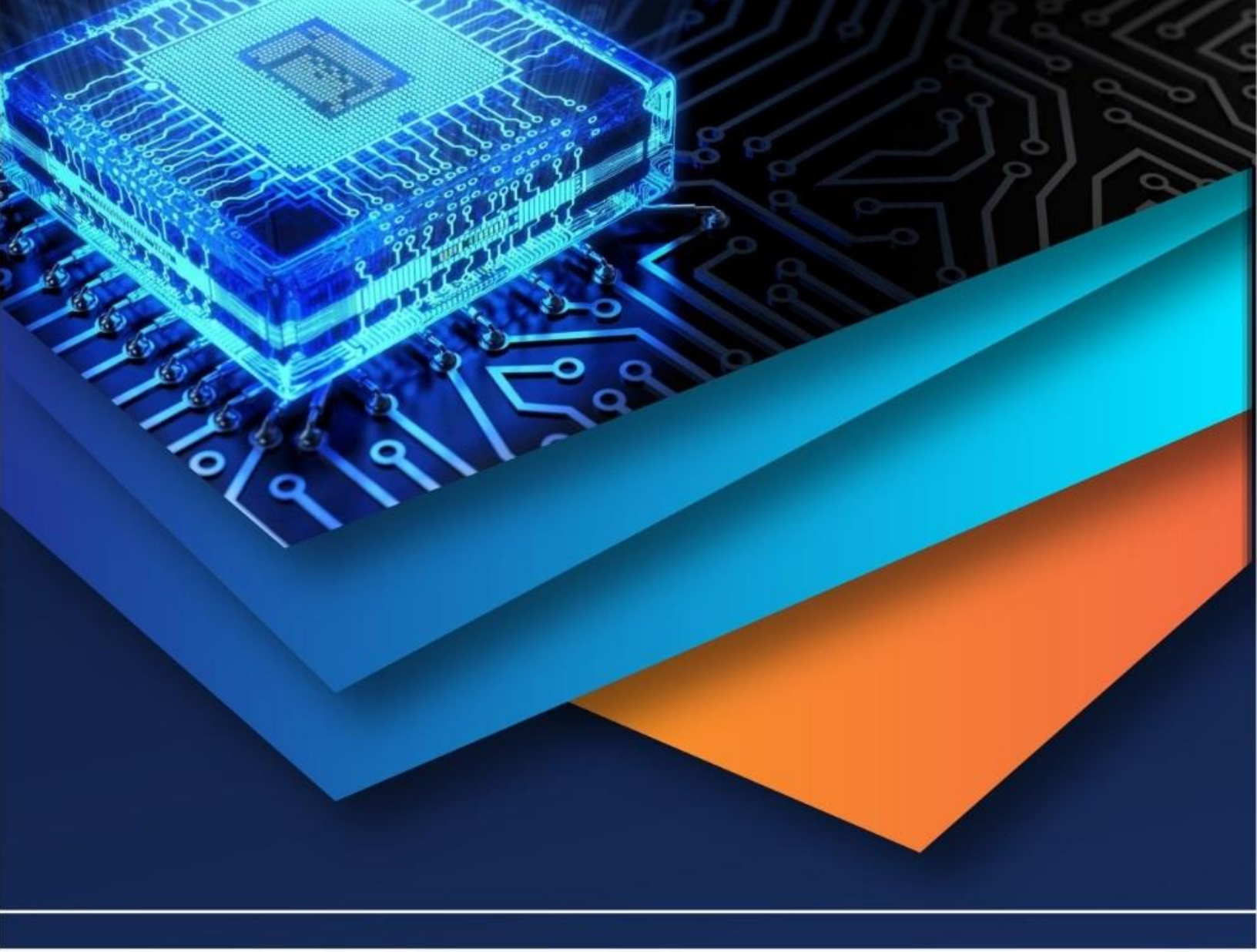
A. Applications to Professional Practice

Institutional investors holding a large share of company's stock have incentives to reduce risk (Cotter & Najah, 2012). They incorporate climate risks and opportunities into their investment decision by adding or removing company stocks from their portfolio of funds (Harmes, 2011). Therefore, proper carbon management is critical in attracting institutional funding (Harmes, 2011). The study identified five major themes that could help companies in carbon management. The identified themes were: (a) governance, (b) risk management, (c) target and initiatives, (d) measurement and verification, and (e) transparency and disclosure. Better carbon management through identified themes would not only help businesses to improve performance band in the CDP but also help businesses in four other ways. First, identified themes result in overall improved carbon management, leading to reduced costs and energy consumption (Matisoff, 2013). Second, the improved carbon management might assist companies to tackle regulatory challenges. On June 2014, the EPA submitted a proposal with a requirement for companies to reduce carbon emissions by 30% within the next 15 years (Winters, 2014). Third, better environmental performance could improve company image (Sullivan & Gouldson, 2012). The reputable company image could help businesses to raise capital by attracting institutional investors (Eccles et al., 2011; Harmes, 2011). Fourth, this study might act as a precursor for future research in strategy formulation to tackle climate change.

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