GREEN INTELLECTUAL CAPITAL AND SUSTAINABILITY PERFORMANCE COMPANIES IN INDONESIA

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Abstract
This study examines the effect of green intellectual capital on the sustainability performance of Indonesian companies. Green Intellectual Capital according to Chen (2008) is an intangible asset of a company, including knowledge, ability, experience and innovation in the field of environmental protection. According to Chen (2008), green intellectual capital has three components, namely green human capital, green structural capital, and green relationship capital. All three are important factors to bring the company to a competitive advantage.The research was conducted by accessing financial reports from the Indonesia stock exchange website (www.idx.co.id). In this study, the method for analysis was carried out in two ways, namely descriptive analysis and inferential analysis. Descriptive analysis describes each of the variables studied, while inferential analysis shows the relationship between each variable obtained through data processing. The method of estimating the results of the study uses a complete panel data regression analysis (balanced panel data) with the StataSE 14 device to answer the research questions.From the results of the study, it is known that green human capital has a significant positive effect on sustainability performance, while green structural capital has a significant positive effect on sustainability performance, and green relational capital has a significant positive effect on sustainability performance. Companies in Indonesia are more concerned about green intellectual capital. which consists of Green human capital, Green structural capital and Green relatinal capital as indicators of sustainability performance

Keywords : greenintellectualcapital,sustainability performance, companies, Indonesia

1. Introduction

In the context of Indonesia, there are not many companies that go public in Indonesia that report sustainability reports. OJK data states that in 2016 only 49 companies made sustainability reports and until 2018 there were 57 companies. And it can be concluded that the number of companies reporting sustainability reports still tends to be small but the percentage level of companies reporting sustainability reports continues to increase every year. According to zçelİk, (2014) companies that present sustainability reports show the company's progress towards sustainable development that measures and discloses responsibilities covering social, environmental and economic dimensions.

Disclosure of sustainability reporting shows the company's transparency in achieving sustainable performance. The results of the Globescan survey (2020) show an increase in public trust related to sustainable performance transparency. Of the 27 countries surveyed, Indonesia has a level of public trust related to the disclosure of information on sustainability reports of 81%, meaning that the public considers that sustainability disclosure is important because it provides comprehensive information related to the economy, social and environment. However, the high public trust related to the disclosure of sustainability reports is not matched by the number of companies communicating their sustainability performance through sustainability reports(Permana et al., 2021).

In this era of globalization, companies should not only prepare financial statements that contain only the company's financial information. Companies that have carried out activities related to social and environmental activities will usually disclose sustainability in the form of sustainability reports or CSR activity reports. This information is considered as a form of corporate responsibility to stakeholders and other parties (Manisa and Defung, 2017). This can increase awareness that the company's performance is not only measured from the financial side, but the company must grow sustainably by paying attention to non-financial performance as well (Sergius and Nasser, 2016; Mirathi et al., 2021).

In an effort to achieve sustainability in business, of course, companies must pay attention to the resources and assets they have. The resources and assets referred to here are all tangible and intangible parts owned by the company to support all its business processes in facing a competitive advantage. Intellectual capital is intended as a concept related to the modern economy which has value contained in the monitoring and identification of intangible assets in a company that can affect the company's performance in its management (Todericiu and Stanit, 2015). In this case, the company's management must be able to contribute, to deal with problems that will arise from the management of intellectual capital related to awareness and commitment to the environment. At this time several companies have realized the importance of paying attention to the environment in each of their business processes, so that a green concept appears that can be incorporated into the management of intellectual capital, so that companies can implement green intellectual capital in their business strategies.

Intellectual capital is very important for companies in today's conditions where companies face intense competition. Company management can no longer rely on physical resources, but must utilize the intellectual capital it has. Intellectual capital will create added value for the company and have a competitive advantage, because intellectual capital is not necessarily owned by the company's competitors. Intellectual capital makes the company able to carry out the company's operational activities effectively and efficiently, it is said to be effective and efficient because intellectual capital can increase labor productivity. Previous research argues that intellectual capital has a good impact on financial performance, growth, and firm value. In addition, intellectual capital is an intangible asset that is difficult for competitors to imitate, in contrast to other tangible assets that competitors can imitate. Intellectual capital is included in strategic assets that can increase competitive advantage and profitability in creating corporate value.

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In the last decade, ecological issues have become a concern of many people, for example related to the need to reduce pollution and reduce carbon dioxide (CO2). Companies are required to be more proactive in responding to environmental issues and take a voluntary approach to environmental protection. For an approach to the community, it is better for companies to apply green intellectual capital, not just ordinary intellectual capital. Environmentally friendly production and implementing regular environmental audits are examples of the application of green intellectual capital. Green intellectual capital has an important role in companies that focus on sustainability, intellectual capital can help companies to transfer knowledge, technology and initiatives to achieve the company's sustainability goals. Green intellectual capital according to Chen (2008) is an intangible asset of a company, including knowledge, ability, experience and innovation in the field of environmental protection. With green intellectual capital, companies comply more with environmental regulations made by the government and continue to increase environmental awareness, as well as create value for the company. Under the Law of the Republic of Indonesia Number 32 of 2009 concerning the protection and management of the environment, the government's very strict environmental policy changes the mindset of consumers towards environmental awareness, including choosing environmentally friendly products. This also has an impact on the pattern of global industry competition that thinks about product innovation that is environmentally friendly.

According to Chen (2008), green intellectual capital has three components, namely green human capital, green structural capital, and green relationship capital. All three are important factors to bring the company to a competitive advantage. The first component, namely green human capital, has an important role for the sustainability of the company. Human resources (HR) or competent employees are clearly needed for the sustainability of a business. When environmental issues are considered as threats, here competent human resources can turn them into opportunities, coupled with the support from management to make environmental strategies. According to Wirtenberg, Harmon, and Fairfield (2007), competent human resources can be obtained through leadership development, training, and workforce involvement.

The second component is green structural capital which consists of commitments, knowledge management systems, information technology systems, databases, management systems, organizational culture, patents, copyrights and trademarks (Huang and Kung, 2011). Green structural capital if managed properly can reduce unnecessary energy consumption and help to increase productivity.

The third component is green relationship capital, according to Huang and Kung (2011), green relationship capital has information about the market and relationships with customers, suppliers, government. Green relationship capital refers to customers, suppliers and business partners related to environmental management and green innovation. The study was conducted with secondary data obtained from the financial data of service companies listed on the IDX in 2014-2018 accessed on the Indonesia Stock Exchange website (www.idx.co.id). The 2014-2018 period was taken because it is a period close to the research year.

This study examines the effect of green intellectual capital on the financial performance of Indonesian manufacturing companies. Green intellectual capital has an important role in companies that focus on sustainability, sustainability performance is measured using economic performance, social performance, and environmental performance. Green Intellectual capital is measured using green human capital, green structural capital, and green relationship capital.

2. Literature review

2.1. Stakeholder Theory

Stakeholder theory considers the position of stakeholders more than shareholders. Stakeholder theory holds that all stakeholders have the right to be provided with information about how an organization's activities affect them (for example pollution, sponsorship, safeguard initiatives, etc.), even when they choose not to use the information and even when they cannot directly play a significant role. constructive in organizational survival (Ulum, 2007).

Stakeholder theory can be tested in various ways by using content analysis of the company's financial statements. According to Guthrie et al. (2006), financial reports are the most efficient way for organizations to communicate with stakeholder groups who are considered to have an interest in controlling certain strategic aspects of the organization.

The main aim of stakeholder theory is to help corporate managers understand their stakeholder environment and manage more effectively the existing relationships in their corporate environment. However, the broader aim of stakeholder theory is to assist corporate managers in increasing the value of the impact of their activities, and minimizing losses to stakeholders. In fact, the core of the whole stakeholder theory lies in what will happen when corporations and stakeholders exercise their relationship. When the manager is able to manage the organization optimally, especially in the effort to create value for the company, it means that the manager has fulfilled this aspect of the theory. Value creation can be done by utilizing all the potential of the company, both employees (human capital), physical assets (physical capital), and structural capital. If all of that potential can be managed and utilized properly, it can create value added for the company (in this case called VAIC™) which can then encourage the company's financial performance for the benefit of stakeholders.

2.2. Resources BasedTheory

Resources-based theory (RBT) is a theory developed to analyze the competitive advantage of a company that focuses on the advantages of knowledge (knowledge/learning economy) or an economy that relies on intangible assets. The company will achieve excellence if the company has good resources as described by this theory (Firmansyah, 2017). This theory also discusses how companies can compete with other companies by managing their resources according to the level of ability of each company.

In the era of global competition, companies must compete to create something unique and needed by the community. Capital to achieve the company's goals is not only measured from the financial side, but from the side where the company has intellectual capital that can think and develop the company in a better direction. That way, companies can improve their performance by utilizing existing resources and capital(Qosasi et al., 2019).

In the context of explaining this research, Resources Based Theory can explain that companies that can manage intellectual capital optimally in this case are all the resources owned by the company, both employees (human capital), physical assets (physical capital) and structural capital. If all intellectual resources owned by the company can be managed and utilized properly, it will create added value for the company so that it can affect the company's financial performance, company growth, and market value.

2.3. Suistainability Performance.

Performance according to Wickramasinghe & Alawattage (2007) can be defined as the level of achievement of company goals. The company's performance is the accumulation of the results of the activities carried out by the company and is measured based on the implementation of the strategy. Performance results that are considered good will become a standard for measuring performance in the future. Anthony & Govindarajan (2011) state that if the indicators that are used as performance measures increase, it can be said that the strategy has been implemented properly and is an achievement achieved in one period.

Novas & Alves (2017) performance measurement using financial indicators has advantages such as objectivity and universality. However Kaplan & Norton (1992) revealed that performance measurement should include a variety of measures to reflect different dimensions, and the critical success factors are not only obtained in monetary terms.

Deficiencies in traditional (financial) performance measurement have led to the development of performance measurement frameworks and techniques in recent years. Kumar (2013) in his research states that changes in the business environment result in companies having to adapt to these conditions, so that organizational and management adjustments are needed to be able to achieve high performance standards, are relevant and reflect the company's strategy. CIMA (2008) states that performance measurement has evolved from purely financial performance such as profit, cash flow on capital to a greater emphasis on non-financial and multi-dimensional which aims to understand and manage performance in order to achieve goals.

The company is currently measuring its performance in terms of sustainability. Chen (2015) stated that sustainability is a broad topic from various perspectives. According to Sebhatu (2009) sustainability is complex which covers a wide range of topics from habitat conservation to energy consumption as well as stakeholder satisfaction and financial results sustainability as well as integrating environmental and social issues in corporate strategy. Sustainability is a company strategy for long-term goals to improve the company's performance and competitiveness (Kocmanová & Dočekalová, 2011; Permana, et al., 2020).

Sustainability is currently one of the most important problems in the world because of pressure from environmental issues regarding global climate change, natural pollution, and scarce resources, so the concept of sustainability is not only about good intentions but also a need for everyone (Samosir et al. al, 2020). The concept of sustainability in the company is closely related to CSR and the triple bottom line, namely by paying attention to sustainable aspects of social, economic, and environmental sustainability (Lancy & et al, 2010; Junior, 2017; Rashid et al, 2017).

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2.4. Green*Intellectual Capital*

Intellectual capital is defined as the total reserves of knowledge, information, technology, intellectual property rights, experiences, organizational learning and competencies, team communication systems, customer relationships and brands that create value for the company (Stewart, 1997). Intangible assets and intellectual capital are the keys to company knowledge in gaining competitive advantage (Segelod, 1998). Klein and Prusak (1994) define intellectual capital as useful information in a formalized package, obtained and generated to obtain higher added value for the company. Hall (1992) makes a distinction between intellectual as an asset and intellectual capital as a skill. The definition of green intellectual capital proposed by Chen (2008) incorporates environmental concepts into intellectual capital to compensate for the previous inadequacy of environmental problems. Green intellectual capital reflects the company's intangible assets including knowledge, wisdom, experience, and innovation in the area of environmental protection (Chen, 2008). Green intellectual capital enables companies to comply with stringent international environmental regulations and meet the increasing environmental awareness by consumers and create value for the company.

There are two types of intellectual capital research, namely intellectual capital management and intellectual capital measurement. Research on intellectual capital management focuses on how to manage intangible assets, knowledge reserves, and the ability of a company to create value or competitive advantage. Meanwhile, research for intellectual capital measurement focuses on how to collect, compile, analyze and evaluate non-financial information to measure intangible assets that are not visible in financial statements (Roos and Roos, 1997). However, disclosure of intellectual capital can be considered as additional information in the financial statements of a company. Therefore, the concept of intellectual capital can bring a revolution in the traditional accounting system (Edvinsson and Malone, 1997).

Chen (2008), Huang and Kung (2011), Chang and Chen (2012) define green intellectual capital as the total reserve of all intangible assets, knowledge, capabilities and relationships related to environmental protection and green innovation both at the individual and organizational levels in a company. company. The green intellectual classification consists of green human capital, green structural capital and green relationship capital (Chen, 2008).

Human capital is defined as the ultimate presentation of the knowledge, expertise, innovation and ability of employees to achieve goals (Dzikowksi, 2000). Human capital is inherent in employees not in the organization, so it can be lost when employees leave the company (Miller and Wurzburg, 1995). According to Chen (2008) green human capital is defined as the final presentation of employee knowledge, skills, abilities, experience, behavior, wisdom, creativity and commitment to environmental protection or green innovation. Structural capital is inherent in the organization and cannot be lost if employees leave the company. Structural capital is defined as the reserve of patents, trademarks, hardware, software, databases, organizational culture and organizational capabilities within an organization.

Green structural capital according to Chen (2008) is a reserve of organizational ability, organizational commitment, knowledge management system, managerial philosophy, organizational culture, corporate image, patents, copyrights and trademarks for environmental protection or green innovation in the company. Relational capital is the presentation of the relationship between the company and its main stakeholders such as customers, suppliers and partners (Johnson, 1999; Chen et al., 2006). Green relationship capital is defined as a reserve of the company's interactive relationships with customers, suppliers, network members, and partners for environmental management and green innovation.

Hypothesis

The hypotheses of this study are as follows:

H1: Green Human Capital has a positive effect on sustainability performance

H2: Green Structural Capital has a positive effect on sustainability performance

H3 ; Green Relational Capital has a positive effect on sustainability performance.

3. Data and Methodology

The population is the winner of the sustainability award as many as 43 companies, then the research sample is 18 companies. 18 companies were used because those with complete data became balanced panels.The processing method of the research model was carried out to see the interaction between each independent variable and the dependent variable. The equation model in this study sets Sustainability Performance as the dependent variable (Y). While the independent variable is green intellectual capital.In this study, the method for analysis was carried out in two ways, namely descriptive analysis and inferential analysis. Descriptive analysis describes each of the variables studied, while inferential analysis shows the relationship between each variable obtained through data processing. The estimation method of research results uses complete panel data regression analysis (balanced panel data)

4. Result and Analyze

Overall the estimation model of this study is significant with prob. F (stat) is 0.000 which means that this model is valid and all independent variables are jointly able to influence the dependent variable. This model is good and provides information on changes in sustainability performance that can be predicted through the variables studied. The hypothesis that is proven in this research is that firstly, green human capital has a positive effect on sustainability performance, second, green structural capital has a positive effect on sustainability performance, and thirdly, green relational capital has a positive effect on sustainability performance.

The stakeholder theory in this study is proven and further strengthened by the results of existing research, because Green human capital, Green structural capital and Green relational capital are good signals to see the positive potential for sustainability performance. When the manager is able to manage the organization optimally, especially in the effort to create value for the company, it means that the manager has fulfilled this aspect of the theory. Value creation can be done by utilizing all the potential of the company, both employees (human capital), physical assets (physical capital), and structural capital. If all of that potential can be managed and utilized properly, it can create value added for the company (in this case called VAIC™) which can then encourage the company's sustainability performance for the benefit of stakeholders.

Resource based theory is also proven and strengthened in this study. a company that can manage intellectual capital optimally in this case all the resources owned by the company, both employees (human capital), physical assets (physical capital) and structural capital. If all intellectual resources owned by the company can be managed and utilized properly, it will create added value for the company so that it can affect the company's financial performance, company growth, and market value.

The results of proving the first hypothesis, namely the influence of Green human capital on sustainability performance in this study proved to have a positive effect. This means that Green human capital moves in the direction of sustainability performance. Increasingly green human capital in management reports is a good signal and will have a positive impact on sustainability performance. Human capital is defined as the ultimate presentation of the knowledge, expertise, innovation and ability of employees to achieve goals (Dzikowksi, 2000). Human capital is inherent in employees not in the organization, so it can be lost when employees leave the company (Miller and Wurzburg, 1995). According to Chen (2008) green human capital is defined as the final presentation of employee knowledge, skills, abilities, experience, behavior, wisdom, creativity and commitment to environmental protection or green innovation in the company.

The results of proving the second hypothesis, namely the effect of Green structural capital on sustainability performance in this study, proved to have a positive effect. These results provide the conclusion that the hypothesis is accepted. Green structural capital has a positive impact on sustainability performance. Structural capital is inherent in the organization and cannot be lost if employees leave the company. Structural capital is defined as the reserve of patents, trademarks, hardware, software, databases, organizational culture and organizational capabilities within an organization. Green structural capital according to Chen (2008) is a reserve of organizational ability, organizational commitment, knowledge management system, managerial philosophy, organizational culture, corporate image, patents, copyrights and trademarks for environmental protection or green innovation in the company.

The results of the proof of the third hypothesis about the effect of Green relational capital on sustainability performance in this study proved to have a positive effect. This means that the research results are proven and acceptable. Green relational capital and financing for the purpose of developing human resources have a positive impact on the sustainability performance movement.

Relational capital is the presentation of the relationship between the company and its main stakeholders such as customers, suppliers and partners (Johnson, 1999; Chen et al., 2006). Green relationship capital is defined as a reserve of the company's interactive relationships with customers, suppliers, network members, and partners for environmental management and green innovation.

5. Conclusion

Based on the conclusions, the following suggestions are presented for theoretical and practical purposes that are useful for decision making and scientific development.Managers can increase Green human capital, Green structural capital, and Green relational capital as a means to inform the achievements that have been achieved by the company. The impact of this increase is proven to encourage the sustainability of the company's performance, which in turn increases the prosperity of shareholders.

Investors can see that Green human capital, Green structural capital and Green relatinal capital are indicators of sustainability performance. Investors can look at the three intellectual capitals in the issuer's quarterly reports and semi-annual reports to see if the sustainability performance will be good at the end of the year.

The regulator, in this case is the Accounting Standards Board at the Indonesian Institute of Accountants, is expected to be able to quickly accommodate the information needs of Green human capital, Green structural capital, Green relatinal capital and sustainability performance through new accounting standards. This research is expected to become an embryo for further research by adding the variables studied and adding research samples

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