



Manufacturing companies and financial performance :what is the role of intellectual capital, environmental performance and environmental cost?

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ABSTRACT

This study aims to determine the effect of Intellectual Capital, environmental performance and environmental cost on financial performance in the manufacturing sector. Green accounting is measured by environmental cost and environmental performance which are independent variables in this study. While the company's performance is measured by financial performance as a proxy for ROA. This research was conducted on manufacturing companies that are PROPER participants and listed on the Indonesia Stock Exchange (IDX) for the period 2017 - 2019. This study uses multiple regression analysis with SPSS version 23 program. The sample in this study used purposive sampling method to obtain 36 samples of sector companies. manufacture. The results of this study indicate that Intellectual Capital has an effect on financial performance. Meanwhile, environmental performance and environmental cost have no effect on financial performance. Simultaneously Intellectual Capital, environmental performance and environmental cost affect financial performance.

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INTRODUCTION

As a country that has a very high diversity of living things, Indonesia is also inseparable from various social and environmental problems. This has become a challenge that must be faced by the company in order to survive in running operations (Marfai, 2019). The findings of pollution have an impact on companies starting to realize that the issue of environmental pollution is a serious issue for sustainable development to take place. There is damage to the environment as a result of the company's activities as a result of the company paying less attention to environmental management (Setyaningsih&Asyik, 2016).

Companies in managing natural resources often cause environmental pollution impacts. These negative impacts require companies to be committed to the social and environmental

environment (Ningsih&Rachmawati, 2017). So the company does not only focus on the financial aspect (profit), but must also focus on social and environmental aspects. The company is obliged to fulfill the welfare of the community and contribute to preserving the environment, in addition to obtaining maximum profit. One of the company's performance measurements can be done by looking at the company's financial performance.

Financial performance describes how the company has carried out its business activities for a certain period and what has been achieved from these business activities, which then the achievement of the company's business activities is described as profit achievement (Meiyana and Aisyah, 2019). Financial performance is an analysis carried out to show the extent to which a company has been running in accordance with financial implementation regulations correctly and well.

The global era requires companies to compete to create something unique and needed by society. In order to achieve this goal, companies no longer only have to measure the financial side, but also from the side where the company has intellectual capital that can provide ideas and develop the company in a better direction. Through the resources and capital owned by the company efficiently, the company can improve its financial performance (Chandra and Augustine, 2019). One of the factors that affect the company's financial performance is intellectual capital. Intellectual capital becomes a valuable resource and the company's ability to act based on knowledge. Intellectual Capital or capital capital is an intangible asset of a company which is a combination of human, process and customer factors related to knowledge and technology and can provide value added for the company in the form of a company's competitive advantage.

Another factor that affects financial performance is environmental performance. Environmental performance is the company's performance to create a good environment or green environmental system. The company provides responsibility and care and attention from the company to the environment. Environmental performance affects and is influenced by the company and is able to provide an advantage for the company in the competition so that it can attract the interest of stakeholders and shareholders who are able to increase the value of the company itself (Meiyana&Aisyah, 2018).

Environmental costs also affect the company's financial performance. According to Buana&Nuzula (2017) environmental costs are costs used to prevent, overcome, and reduce environmental impacts resulting from restoration, repair, or restoration. Disclosure of environmental costs in financial statements can be used as a tool for decision making both internal and external parties and attract investors to invest (Suaidah, 2018). This proves that the company is responsible for environmental aspects, but with the disclosure of environmental costs, it causes greater expenditure so that it can reduce profits and have an impact on decreasing company performance (Dewata, et al., 2018). According to Hapsoro, et al., (2020) companies that care about the environment will try to prevent environmental damage in order to maintain a balance between environmental care and the company's ability to generate profits.

Based on the above phenomena, the authors are interested in researching with the title "Manufacturing Companies and Financial Performance: What is the role of intellectual capital, environmental performance and environmental costs?"

RESEARCH METHOD

Intellectual Capital

Intellectual Capital is an intangible asset and is a combination of human, process and customer factors that provide a competitive advantage for the company. According to Nahapiet and Goshal in Wijayani (2017), Intellectual Capital refers to the knowledge and abilities possessed by social collectivities such as an organization, intellectual community, or professional practice. Intellectual Capital (IC) represents a resource that is valuable and capable of acting on knowledge. Intellectual Capital is recognized as one of the most important intangible assets in the information

and knowledge era (Wijayani, 2017). In general, Intellectual Capital can be defined as the sum of what is produced by the three main elements of the organization (Human Capital, Structural Capital, Customer Capital) related to knowledge and technology that can provide added value to the company in the form of an organization's competitive advantage (Sawarjuwono and Kadir in Wijayani, 2007). 2017).

So, intellectual capital is knowledge, but not all knowledge includes intellectual capital. Intellectual capital is a part of knowledge that can benefit the company. The benefit here means that the knowledge is able to contribute something or make a contribution that can provide added value and different uses for the company (Wijayani, 2017). Based on the results of these studies, the research hypotheses can be formulated as follows: H1 :Intellectual Capital has a positive effect on Financial Performance.

Environmental Cost

Environmental costs or environmental costs are costs allocated for efforts to prevent, mitigate, and reduce environmental impacts such as restoration, repair, and restoration of the environment as a result of disasters and other activities that have an impact on the environment (Buana&Nuzula, 2017). Environmental costs are costs incurred due to poor environmental quality or the possibility of environmental degradation. In a sense, this environmental cost could be a preventive measure. Indrayati (2017) states that the environmental costs in the grouping are divided into 4 types, namely: a. Environmental Prevention Costs, which are costs created as a precaution against environmental degradation or environmental damage. b. Detection Costs, which are costs for activities carried out to determine whether products, processes and other activities in the company have met applicable environmental standards or not. The environmental standards and procedures followed by the company are explained in three ways, namely the applicable Government Regulation, voluntary ISO 14001 and the company's environmental policy developed by the management. c. Environmental Internal Failure Costs, which are costs for activities carried out because waste and waste are produced, but are not disposed of to the outside environment. d. Environmental External Failure Costs, which are costs for activities carried out after the release of waste. External failure costs are divided into two, namely external failure costs that are realized by the company and those that are not.

The implementation of environmental cost budgets such as costs incurred for prevention, detection costs, internal and external failure costs will have an impact on the commodities being produced and marketed, such as a positive image to consumers who want to buy the products offered. As consumers definitely want to buy the best, quality, environmentally friendly and affordable products. This will have an impact on increasing profitability in an industry (Rohelmy in Ermaya, et al. 2020). Research by Okafor (2018) concludes that Environmental Cost has a positive effect on Financial Performance. Similar results were also revealed in a study conducted by Nababan and Hasyir (2019) that Environmental Cost has a significant effect on Financial Performance. The results of the study Derila, et al. (2020) also supports that Environmental Cost has a positive effect on Financial Performance. Based on the explanation above, the writer takes the following hypothesis: H2 : Environmental Cost has a positive effect on Financial Performance

Environmental performance

Environmental performance is a measurable result of the environmental management system, which is related to the control of aspects in preserving the environment. According to Sulistiawati and Dirgantari (2016) environmental performance is the result of measuring environmental management systems related to the control of environmental aspects. Environmental performance measurement in Indonesia can use the Company Performance Rating Program (PROPER). This measurement has been carried out by several researchers including Nababan&Hasyir (2019), Sulistiawati&Dirgantari (2016), Septiadi (2016), Bahri&Cahyani (2016),

Alexopoulos et al., (2018), Tzouvanas et. al (2019), Lucato et al., (2017), Sparta & Ayu (2016), and Meiyana & Aisyah (2019). According to Bahri & Cahyani (2016) PROPER has five types of color ratings, namely gold, green, blue, red and black.

Table 1. PROPER Peringkat Rating Criteria

Indicator Color	Score	Description
Gold	5	Very Good
Green	4	Very Good
Blue	3	Good
Red	2	Bad
Black	1	Very Bad

Based on the results of these studies, the research hypotheses can be formulated as follows: H3 : Environmental performance has a positive effect on Financial Performance.

Financial Performance

According to Suratno in Tahu (2019), financial performance is an achievement of the performance that has been carried out by the company and implemented in the form of financial reports that can be used as a benchmark to determine the level of success of the company in a certain period. The company's financial statements that are published periodically can be used as a benchmark to determine the company's financial performance. This is because the financial statements report the activities or performance that the company has carried out in a period. Measurement of a company's financial performance can be done by comparing the numbers in one component with other components in the financial statements (Ermaya, 2020). Assessment of financial performance in companies can be done using financial ratio analysis.

According to Muslich in Sa'diyah and Suharsono (2017) mentions that financial ratio analysis is the main tool in financial analysis, because this analysis can be used to answer various questions about the company's financial condition. Return on Assets (ROA) is the most commonly used profitability ratio to measure a company's financial performance. ROA is often used as a measure because it refers to the assets owned. The use of ROA as a proxy for the calculation of financial performance because this ratio serves to measure the ability of a company to generate profits by using total assets. A positive ROA indicates that the total assets used for the company's operations are able to provide benefits for the company. Likewise, if the ROA is negative, it can indicate that the total assets used are not profitable. Therefore, the more positive the return on assets, the better financial performance accompanied by an increase in the company's stock price (Manurung and Rachmat, 2019). Based on the results of these studies, the research hypotheses can be formulated as follows: H4 : Intellectual Capital, Environmental performance and Environmental cost simultaneously have a positive effect on Financial Performance.

Conceptual Framework

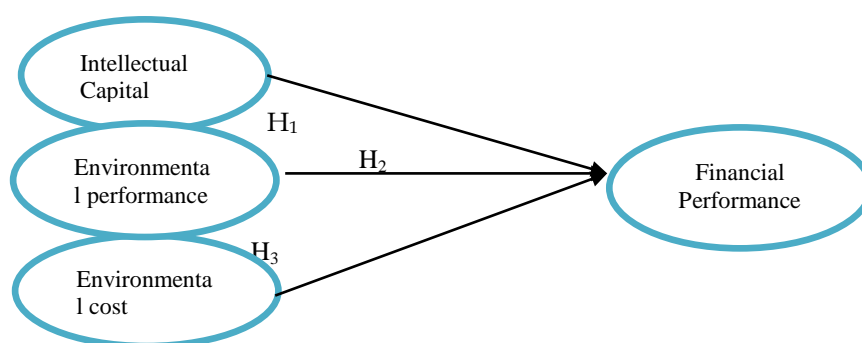


Figure 1. Conceptual Framework

Sugiyono (2019:65) in Bambang et al (2022) states that causal associative is a research problem formulation that asks the relationship between two or more variables. A cause-and-effect relationship is a cause-and-effect relationship. In this study there are independent variables (influenced) and bound (influenced). This study aims to examine the effect of Intellectual Capital, environmental performance and environmental cost on financial performance in the manufacturing sector. This study uses quantitative methods as an approach to analyzing research problems. The population in this study are manufacturing companies listed on the Indonesia Stock Exchange on the official website www.idx.co.id during the 2017-2019 period. The sample in this study were 36 manufacturing companies listed on the Indonesia Stock Exchange (IDX). The dependent variable in this study is financial performance which is measured using return on assets as a proxy and the independent variables include Intellectual Capital, environmental performance and environmental cost. Data analysis using multiple linear regression with SPSS version 23 program

RESULT AND DISCUSSION

Result

Normality test

One of the normality tests can use the Kolmogorov-Smirnov statistical method. If the resulting significance value is greater than 0.05, it can be concluded that the residuals in the regression model to be formed are normally distributed. The test results can be seen in Table 4 below:

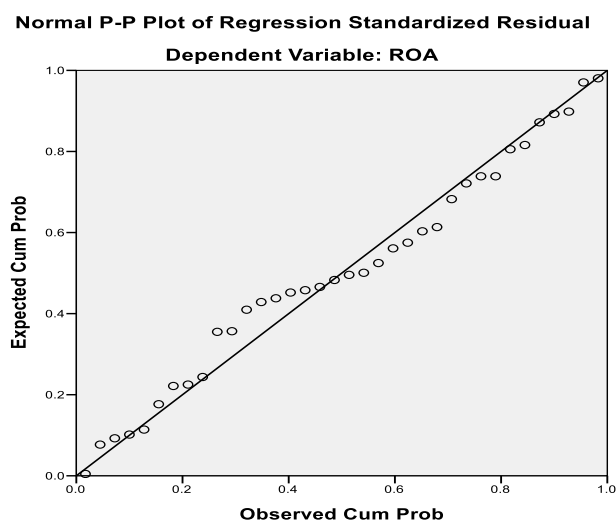


Figure 2. Normality Test

Multicollinearity Test

Multicollinearity is a condition where there is a very strong relationship between some or all of the independent variables included in the regression model. This multicollinearity problem can be detected from the tolerance value and VIF (variance inflation factor). If the tolerance value obtained is greater than 0.10 and the VIF value is less than 10, it can be concluded that the regression model to be formed is free from multicollinearity problems. The test results using the SPSS 23.0 program are presented in Table 1 below:

Table 5 Multicollinearity Assumption Test Results

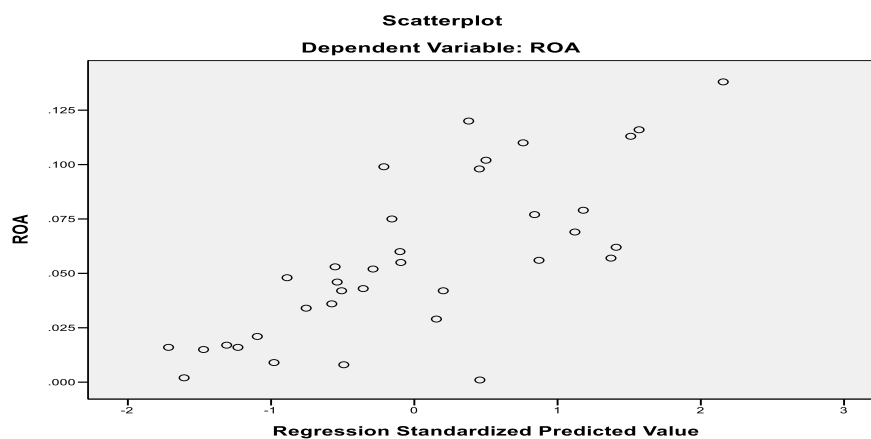
Table 2. Values of Variance Inflation Factor

Model		Collinearity Statistics	
		Tolerance	VIF
1	IC	0,841	1.189
2	EP	0,956	1.047
2	EC	0,871	1.148

From the results presented in the table above, it can be concluded that in the regression model that was formed there was no multicollinearity problem, because all independent variables involved in the model had a tolerance value greater than 0.10 and a VIF value less than 10, so the assumption to be free from the problem of multicollinearity has been met.

Heteroscedasticity Test

Heteroscedasticity test is used to test the homogeneity of variance (δ_{ei}) of the residue in the regression model, where a good regression model requires that it be free from heteroscedasticity problems. One way to detect heteroscedasticity problems can be seen in the scatterplot graph. If the points are randomly distributed and do not form a pattern, it can be concluded that the regression model is free from heteroscedasticity problems. The test results can be seen in the picture

**Figure 3.** Heteroscedasticity Test

In the graphic above, it can be seen that the points spread randomly and do not form a pattern, this result shows that the regression model to be formed is free from heteroscedasticity problems.

Multiple Linear Regression Analysis

The regression equation to be formed is as follows:

$$ROA = a + \beta_1 IC + \beta_2 EP + \beta_3 EC$$

Where:

ROA (Y) = Return on Assets

a = Constant

β_i = Regression Coefficient

IC = Intellectual Capital

EP = Environmental Performance

EC = Environmental Cost

The results of the calculation of multiple linear regression analysis using the SPSS 23.0 program are presented in the following table:

Table 2. Results of Multiple Linear Regression Analysis

	Unstandardized		Standardized	t	Sig.
	Coefficients		Coefficients		
	β	Std.Error	Beta		
Constans	-.019	.035		<u>-.544</u>	<u>.590</u>
IC	3.647E-5	0.000	.673	<u>5.234</u>	<u>0.000</u>
EP	-3.169E-6	0.000	-.044	-3.366	<u>0.717</u>
EC	-6.786E-E	0.000	-.138	-1.090	<u>0.284</u>

The regression equation that explains the effect of environmental cost, PROPER ranking and firm size on return on assets is as follows:

$$\text{ROA} = -0.019 + 0.000036\text{IC} - 0.000003 \text{EP} - 0.000068 \text{EC}$$

From the regression equation above, information is obtained if the IC has a positive regression coefficient which indicates that the higher the IC, the higher the ROA value will be. Meanwhile, if EP and EC have a regression coefficient that is negative which indicates that the smaller the EP and EC, it will have an impact on increasing the ROA value.

F Test (Simultaneous)

The statistical test used to test this simultaneous hypothesis is the F test. The Ftable value used as a critical value in this simultaneous hypothesis test is 13,281 so that it falls in the rejection area of Ho, then with a confidence level of 95% it can be decided to reject Ho and accept H1 which means Intellectual capital, environmental performance, and environmental cost simultaneously have a significant effect on the company's return on assets.

Discussion

The Influence of Intellectual Capital on Financial Performance (ROA)

Based on Table 2, the results of this study indicate that Intellectual Capital has a t value of 5.234 with a significance level of 0.000. This shows that the significance level is below 0.05, thus H1 is accepted, which means that Intellectual Capital has a positive effect on Financial Performance with ROA proxy.

This research is consistent with research conducted by Sulistiani (2017), Ozkan&Cakan (2017), Sagara (2018), Tarigan, Stephanie Listijabudhi, &ElsyeHatane (2019), Octavio &Soesetio (2019), (Windu&Murwaningsari (2019), Masoomzadeh, Wan, & Zakaria, (2020) and Hermawan, et al (2021) who concluded that Intellectual Capital has a positive effect on Financial Performance. Intellectual Capital or capital capital is an intangible asset of a company which is a combination of human factors, processes and customers related to knowledge and technology and can provide added value for the company in the form of a company's competitive advantage Resource-based theory explains that the company will get good financial performance, if the company can utilize its intellectual capital resources efficiently.

The results of this study prove that the companies that are used as research samples are able to process their resources efficiently so as to produce competitive advantages and improve Financial Performance which can be seen from the company's profits, meaning that the higher the Intellectual Capital that the company has, the higher the profits earned by the company. With this, Intellectual Capital is proven to have a positive influence on Financial Performance by proxying Return on Assets (ROA). However, the results of this study are not consistent with the research conducted by Halim and Wijaya (2020) which concluded that Intellectual Capital has a negative effect on Financial Performance (ROA).

Effect of Environmental Performance on Financial Performance

Based on Table 2, the results of this study indicate that environmental performance has a t value of -0.366 with a significance level of 0.717. This shows that the significance level is greater than 0.05, thus H1 is rejected, which means that environmental performance has no effect on Financial Performance with ROA proxy.

This result is certainly contrary to the legitimacy theory which states that companies with good environmental performance will affect the surrounding community and investors, which in turn will affect their financial performance. Good environmental performance will certainly give a positive image to the community and stakeholders which will have an impact on increasing the company's income in the long term. However, this study is consistent with the results of research conducted by Tiarasandy (2018) and Putra (2017). According to Putra (2017), Indonesia is a developing country where the people have not considered the existence of environmentally friendly products to be important.

In addition, environmentally friendly products are usually more expensive so consumers are reluctant to buy them. Awareness of environmental conservation is still low. From the company's perspective, the allocation of funds for environmental conservation will increase costs for the company, thereby reducing the company's profit. Then, the reduction in company profits will affect decision making by investors. Therefore, good environmental performance has not been able to significantly improve financial performance. This study contradicts research conducted by Sulistiawati&Dirgantari (2016), Septiadi (2016), Bahri&Cahyani (2016), Alexopoulos, et. al (2018), Khairiyani (2019), Tzouvanas et. al (2019), Nababan&Hasyir (2019), which states that environmental performance has a positive effect on financial performance. However, this is not in line with research conducted by Lucato et al., (2017), Sparta & Ayu (2016), and Meiyana&Aisyah (2019) which state that environmental performance has a negative effect on financial performance.

Effect of Environmental Cost on Financial Performance

Based on Table 2, the results of this study indicate that the environmental cost has a t value of -1.090 with a significance level of 0.284. This shows that the significance level is greater than 0.05, thus H1 is rejected, which means that environmental costs have no effect on Financial Performance with ROA proxy. The results of this study are not in line with research conducted by Sulistiawati&Dirgantari (2016), Septiadi (2016), Bahri&Cahyani (2016), Onyyichi (2017), Buana&Nuzula (2017), Onyyichi (2017), Alexopoulos, et. al (2018), Alexopoulos, et. al (2018), Ningsih and Nuzula (2019), Nababan&Hasyir (2019), Tzouvanas et. al (2019) and Derila (2020) who conclude that Environmental Cost has a positive effect on Financial Performance. According to Nwaimo (2020), the environment is very important for the production, distribution and consumption of goods and services as well as incidental waste management. According to Nwaimo (2020), the environment is very important for the production, distribution and consumption of goods and services as well as incidental waste management. Production inputs such as raw materials deplete the available natural resources and generate waste which is then returned to the environment.

According to Stakeholder Theory which states that companies must consider the interests of all parties affected by their actions, Environmental Costs or environmental costs should ideally be incurred by companies as prevention costs, detection costs and also handling costs (internal and external failures) for the possibility or occurrence of environmental degradation that has occurred. Due to the company's operational activities, with the preservation of the environment, the company's operational activities will not be disturbed. This Environmental Cost can be considered as a form of corporate social responsibility towards parties affected by the environmental damage that the company causes as a result of their operational activities. Environmental Cost Budgeting is also carried out in order to maintain the legitimacy of stakeholders and include them in the policy framework and decision making so that they can support the achievement of company goals, the company's good name and going concern guarantees.

However, the results of this study are in line with research conducted by Sparta & Ayu (2016), Lucato et al., (2017), Amani (2018) and Meiyana&Aisyah (2019), which state that Environmental Cost has no effect on Financial Performance. Amani (2018) explains that environmental costs are still considered a company burden so that it will affect the profits that the company will get

CONCLUSION

Based on the results of the analysis and discussion that has been carried out in the previous chapter, the researchers obtained the following conclusions: Intellectual Capital has a positive effect on financial performance (ROA) in manufacturing sector companies for the period 2017 - 2019, Environmental performance and Environmental cost have no effect on financial performance (ROA) in manufacturing sector companies for the period 2017 - 2019. 2019, and Intellectual Capital, Environmental performance and Environmental cost simultaneously have a positive effect on financial performance (ROA) in manufacturing sector companies for the period 2017 - 2019. The theoretical implication of this study is to show that intellectual capital has an effect on the company's financial performance, while environmental performance and environmental cost have no effect on financial performance but simultaneously intellectual capital, environmental performance and environmental cost have a positive effect on financial performance (ROA) in manufacturing sector companies.

While the managerial implications of this research can be addressed to companies that are expected to be able to manage intellectual capital comprehensively so that they are able to contribute to improving the company's financial performance, companies are expected to have the right strategy to allocate environmental costs as a form of responsibility for the environment and focus on preventive measures in order to minimize environmental costs. costs incurred and beneficial in the long term and companies are expected to publish environmentally related costs clearly in the financial statements. These costs can provide an illustration to investors that the company has implemented environmental controls so that it will increase the company's positive image and investor confidence.

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