

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

Bakri Bakri¹, Mahfiza Mahfiza²

^{1,2}IAIN Sultan Amai Gorontalo

ABSTRACT: The purpose of this study was to determine the effect of environmental management accounting implementation on value chain, good corporate governance on value chain, value chain on financial performance, environmental management accounting implementation on financial performance, good corporate governance on financial performance, environmental management accounting implementation on financial performance moderated by value chain and good corporate governance on financial performance moderated by value chain.

The method used in this research is quantitative, where data and analysis are based on numbers which are then calculated statistically. The population in this study is a BUMN company incorporated as a Limited Liability Company (PT). The population of SOEs incorporated as Limited Liability Companies (PT) in the Sulawesi region amounted to 83 companies. The sampling technique used is random sampling by taking samples with members of the population randomly without regard to the strata in the population. The influence between variables is formulated in this study using the SEM model, the inferential statistical method used in the analysis of this research data is the Partial Least Square (PLS) program, which is a powerful statistical tool that does not assume the data must be with a certain scale measurement or not based on various assumptions.

The results prove that the application of the principles of Good Corporate Governance affects the Value Chain but with a small amount. The application of Environmental Management Accounting affects the Value Chain by a significant amount, the application of the principles of Good Corporate Governance affects Financial Performance but by a small amount. The application of Environmental Management Accounting has an effect on Financial Performance but with a small amount. The application of Value Chain has an effect on Financial Performance but with a small amount.

A. BACKGROUND

Value Chain describes the set of value chain function relationships desired by an entity to supply products and services to consumers. The value chain starts with the provision of basic raw materials from suppliers, moving them to a set of value-added activities including the production and marketing parts of the product or service to the distribution of goods and services to end users. Michael Porter (1980, 1985) developed the value chain concept as a tool to help companies analyze their cost structure and identify competitive strategies (Hoque, 2004).

The emphasis of Value Chain is not only on costs incurred in manufacturing companies, but on the entire business sector. Value Chain also provides a useful perspective to understand the cost classification of non-manufacturing companies. Supply processes and manufacturing activities represent the 'upstream' segment of the value chain, while marketing and distribution activities are categorized as the 'downstream' segment of the value chain. Value chains are used for various purposes, namely to understand the behavior of the costs and the sources of differentiation (Shank and Govindarajan, 1993). Cinquini and Tenucci (2010) investigated the practical use of various types of strategic management accounting variations, including value chains. Value chain applications are used with varying degrees of popularity in their use. Bardy (2006) identified new challenges for management accountants to the use of value chains. The challenge is the connection of the organization's value chain activities and customers/suppliers into the domain of management accountants.

Environmental management accounting presents information in the decision making of an entity/company and becomes external reporting. (Hansen mowen in Norsita, 2021). Some of the implied information that can be provided, such as better waste regulation and recycling processes, effective use of energy and materials or opportunities to reprocess materials. From an environmental perspective, this information can also be used in the development of more efficient processes leading to innovation. Adams (2002), in his research revealed that companies that prepare environmental information can develop a better internal control system and thus become a tool for better decision making. Research by Perez et al. (2018); Henri and Journeault (2010); Burhany (2011) consistently

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

found that there is a link or positive effect of actualization of environmental management accounting with environmental performance. The conclusion of the research results (Burhany, 2011) which examines the implications of environmental management accounting in mining companies has a positive effect on the achievement of the company's financial performance.

Some environmental cases that surfaced in several countries in the world including Indonesia, Lapindo mud pollution in East Java, Newmont Mine Waste in Nusa Tenggara, smoke pollution in Sumatra and Kalimantan and Montara oil spill in the Timor Sea in 2009. Data from the Ministry of Environment released the results of the Company Performance Assessment Program in Environmental Management (PROPER) in the 2012-2013 period, the assessment results are Gold Rating totaling 12 companies (0.67 percent), Green Rating totaling 113 companies (6.31 percent), Blue Rating totaling 1039 companies (57.98 percent), Red Rating totaling 611 companies (34.1 percent), and Black Rating totaling 17 companies (0.95 percent). From this data it can be concluded that almost 35.5% of companies are included in the red and black rankings (Karliansyah, 2013).

Some research that is consistent with the results of these studies was also conducted by (Alkaraan et al., 2022) (Gereffi et al., 2005; Jagdev & Thoben, 2001), Gellynck and Molnar (2009) and Albers, Gehring and Heuermann (2003) in (Rafael V.B Junqueira, 2010) argue that further empirical analysis is still needed on this matter. The application of governance plays a very important role in providing value added to this entity. The high and low implementation of the value chain can be seen from the level of efficiency of the management that is happening in each part of the company, especially those that provide timely information flow (Lee, Padmanabhan, & Whang, 2007; Schneeweiss, Zimmer, & Zimmermann, 2014).

Kaplan and Norton (2000) developed a performance measurement concept based on organizational and individual performance assessment. The concept developed is the Total Performance Scorecard. Total Performance Scorecard is defined as a systematic process of continuous, incremental, and routine improvement, development and learning, which focuses on continuous improvement of personal and organizational performance". The Total Performance Scorecard concept tries to combine the measurement of organizational performance (Organization Balance Scorecard) and individual performance (personal scorecard) as a unit that can increase the existence of human capital potential.

The results of research conducted by Hubert K. Rampersad in 2005 concluded "The formulation of PBSC, each employee's personal mission and vision is intended to improve his learning ability and thus enable organizational learning to the pattern of collective change, organizational change". Personal Balanced Scorecard (PBSC) or personal scorecard can be used as a personal performance measurement tool. PBSC is an approach that looks at the context outside of work (non-work) and work performance (work performance) which is based on individual measurement (self-examination).

Rampersad developed a non-work based personal performance measurement model. The Personal Scorecard focuses on the personal mission, vision, key roles, critical success factors, objectives, performance measures, targets, and improvement actions of the employee. The Total Performance Scorecard frame provides a solution for utilizing personal's capabilities so that it becomes a productive means for achieving goals. This research was conducted by comparing the existence of personal performance measurement (personal scorecard) and organizational performance measurement can improve performance management, competence management, and change management into one overall framework (Serban and Dumitrascu, 2013).

B. THEORY REVIEW

1. Agency Theory

Agency theory deals with contractual arrangements between employees of an entity or organization. The prevalent form generally used focuses on individuals (managers) with principals (superiors) and agents or subordinates. And seen from the perspective of behavior and structure (Jensen & Mecklin, 76), principals delegate decision-making responsibilities to agents, both principals and agents are assumed to be rational economic people who are motivated only by self-interest but sometimes disagree with respect to beliefs about information. (Ghozali, 2020)

2. Legitimacy Theory

The initial concept of legitimacy theory was first introduced by Shocker and Sethi (1974) in Patten (1992) and Preston and Post (1975), cited in (Patten 1992). Legitimacy theory is the basis for the implementation of corporate social responsibility (CSR), which was first developed by Freeman & Reed (1984) and continued by Lindblom (1993, cited by Buhr 2002) who first applied the concept of legitimacy theory and environmental reporting. The meaning of *legitimacy theory* reveals that in providing assurance and maintaining the alignment (legitimacy) of stakeholders between internal and external, an entity must provide assurance of conformity between the existence and mission of an entity to stakeholder expectations (Deegan & Tobin, 2012). Legitimacy theory explains that organizations will continuously run in accordance with the norms and values accepted by the community around the company in an effort to gain legitimacy. This is related to the social contract between the company and elements in society. The performance of an organization is not solely measured by the profit generated by the company, but is measured by other performance associated with all interested elements. To obtain legitimacy, an entity has an incentive to carry out social activities that are the expectations of the community around an entity's operational activities.

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

3. Stakeholder's Theory

Stakeholder's Theory was first introduced by (Freeman, 1994) and suggested that managers apply context based on stakeholder concepts throughout the 80s. *Stakeholder's Theory* is a new narrative to understand and fix three interconnected business problems, the problem of how value is created, and traded, and helps managers think about management so that it can cross disciplines and ultimately lead us to how revisions think about capitalism. (Ghozali, 2020). Seeing from this perspective, the belief related to the success of the company really only depends on the full welfare of shareholders (stockholders) is outdated, because the presence of a corporate entity initially consists of a contract between that entity and many other parties (Jensen and Meckling, 1976).

4. Environmental Management Accounting

Environmental Management Accounting as a discipline in accounting that functions to provide information to related parties regarding how the environment can be managed and its effects on production costs. The main function of Environmental Management Accounting is to provide information to managers and stakeholders in making decisions related to the environment. The function of Environmental Management Accounting is still considered voluntary disclosure that has the aim of improving business performance (Atkinson et. al, 2007; Hansen and Mowen, 2007, Hongren et al., 2008). Environmental Management Accounting serves to support an entity in helping to prepare *social responsibility* and has a major function in identifying the environmental and economic meaning and function of an entity's activities (Burrill et al., 2002; Schaltegger et al., 2008). Environmental Management Accounting is a part of environmental accounting that is solely aimed at collecting and presenting information about material and energy flows and their costs in detail in making internal policies by company management. (Xiaomei, 2004; Bosshard, 2003).

5. Good Corporate Governance

Improving the performance of an entity is done by implementing *Good Corporate Governance* (GCG) in managing the activities of an entity. *The Indonesian Institute for Corporate Governance* (IICG, 2012) defines *Good Corporate Governance* as a structure, system and process utilized by the organs of an entity in an effort to contribute to the added value of an entity or company continuously for a long time while still considering the needs of other *stakeholders* based on applicable norms, ethics, culture and rules. Good governance will regulate the authority of duties, rights and obligations of those with an interest in the survival of the entity, namely shareholders, the board of management, managers and all members of non-shareholder stakeholders. Corporate governance also presents the provisions and procedures that must be considered by the board of directors and directors in making decisions, the company is guided by how to set business goals (corporate objectives) and strategies to achieve these goals.

6. Value Chain

Value Chain describes the *linked set of value-creating functions* required by a company to provide products and services to consumers. The *value chain* starts with the provision of *basic raw materials* from suppliers, moving them to a set of *value-added activities* including the production and marketing parts of the product or service to the distribution of goods and services to end users. Michael Porter (1980, 1985) developed the value chain concept as a tool to help companies analyze their cost structure and identify *competitive strategies* (Hoque, 2004).

7. Financial Performance

Financial performance indicators are commonly used in assessing the success of a company. According to Wild et. al. (2007), these indicators can be done by conducting business analysis with the financial report function in analyzing the ratios and financial position of a company to assess financial position and ratios, and to assess financial performance in the future (to come). Ratios that can be used as performance standards, among others, still use contemporary financial performance indicators such as *economic value added* (EVA) and *market value added* and ratio analysis in the form of ratios such as *return on investment* (ROI), *return on assets* (ROA) and *return on equity* (ROE) are still relevant to use because they are simpler, more comprehensive, and can be used by all entities (Wheelen and Hunger, 2002: 247). These ratios with the aim of creating better managers so that it is more helpful to point out things that require further research in developing the company's strategy in the future (Gill and Chatton, 2003: 28).

C. RESEARCH METHODS

The approach used in this research is quantitative, where data and analysis are based on numbers which are then calculated statistically, so that the meaning and conclusions of the results are also based on the results of statistical analysis (Moleong, 2008). (Moleong, 2008) When viewed from the research objectives, the research method can be classified as applied research. This research aims to apply, test, and evaluate the ability of a theory to explain and solve practical problems. (Sugiyono, 2014; 4).

This research is classified as cross-sectional studies. Because research data is collected only once, the possibility of data collection can be daily, weekly or monthly with the intention of answering research questions (Sekaran and Bougie, 2013; 106). The level of researcher involvement is minimal so that this research can be classified as ex post facto design research and this research is also a field study research referring to the conclusion of Sekaran and Bougie (2013) that ex post facto design research is classified as field

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

studies, if it meets the conditions: where various factors are examined in natural settings in which daily activities go on as normal with minimal researcher interference (Sekaran and Bougie, 2013; 102). Variable operationalization is done by understanding the behavior of dimensions, aspects or properties denoted by concepts (Sekaran and Bougie, 2013; 200). Variable operationalization is the process of operationalizing concepts or variables so that these variables can be measured based on the dimensions possessed by the concept. This concept is then translated in the form of elements that can be measured.

2, Research Population

The population in this study is a BUMN company that is incorporated as a Limited Liability Company (PT). From the list of BUMN names obtained from the official BUMN website, there are 105 BUMN companies incorporated as limited liability companies in 2022 and 14 BUMN Tbk companies. The target population is SOEs incorporated as Limited Liability Companies (PT) in the Sulawesi region totaling 83 companies.

3. Research Sample and Sampling Technique

The sampling technique used is cluster sampling, however, given the heterogeneous category of companies. In determining the overall minimum sample used is simple random sampling. Randomsampling is a way of sampling with members of the population carried out randomly without regard to the strata in the population Sugiyono (2011: 122).

4. Statistical Analysis

The influence between variables is formulated in this study using the SEM model, so it requires an analytical tool that is able to explain the relationship, so the inferential statistical method used in the analysis of this research data is the Partial Least Square program. The reason the author uses Partial Least Square (PLS), because PLS is a powerful statistical tool that does not assume data must be measured on a certain scale or not based on various assumptions. PLS is able to analyze data with a small or large sample size and a large number of question indicators, PLS is also able to test constructs with formative indicator models and reflexive indicators.

D. RESULTS AND DISCUSSION

Outer Model Evaluation

The relationship between constructs can be said to be significant if it has a *t-statistics* value greater than 1.96. In the following table, we can see the results of estimating the relationship between constructs by presenting the *path coefficient* value and *t-statistics*. Based on the value of the *path coefficients* shown in table 4.48 below, the estimation of the relationship between constructs will then be explained which provides an overview of the effect between exogenous variables on endogenous variables whether they have a significant or insignificant effect.

Path Coefficients Value

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (O/STERR)
AML (X3) -> KKP (Z)	-0,092	-0,099	0,227	0,227	0,405
AML (X3) -> VC (Y)	0,593	0,583	0,132	0,132	4,494
GCG(X1) -> KKP(Z)	0,147	0,201	0,341	0,341	0,432
GCG(X1) -> VC(Y)	0,189	0,196	0,214	0,214	0,879
PS (X2) -> KKP (Z)	-0,048	-0,051	0,165	0,165	0,288
PS(X2) -> VC(Y)	0,175	0,175	0,151	0,151	1,155
VC(Y) -> KKP(Z)	-0,001	-0,023	0,256	0,256	0,003

Direct and Indirect Effects

Environmental Management Accounting and GCG on Value Chain

Exogenous Variables	Path Coefficient	Direct Effect (%)	Influence on Endogenous Variable VC (Y) Through (%)			Indirect Effect (%)	Total Influence (%)
			GCG(X1)	PS(X2)	AML(X3)		

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

GCG(X1)	0,189	3,6	-	2,0	4,4	6,4	9,9
AML (X3)	0,593	35,1	4,4	1,8	-	6,2	41,3
Total							58,2

Direct and Indirect Effects of Environmental Management Accounting and GCG on Financial Performance

Exogenous Variables	Path Coefficient	Direct Effect (%)	Effect on Endogenous Variable KKP (Z) Through (%):				Indirect Effect (%)	Total Influence (%)
			GCG(X1)	PS(X2)	AML (X3)	VC (Y)		
GCG(X1)	0,147	2,2	-	-0,4	-0,5	-0,01	-1,0	1,2
AML (X3)	-0,092	0,8	-0,5	0,1	-	0,004	-0,4	0,4
VC (Y)	-0,001	0,00005	-0,01	0,001	0,004	-	0,0004	0,0004
Total								1,5

1. The Effect of Environmental Management Accounting on Value Chain

The results of hypothesis testing show that there is an effect of the application of Environmental Management Accounting variables on Value Chain consisting of a direct effect of 35.1% and an indirect effect of 6.2%, resulting in a total effect of 41.3%, which means that 41.3% of changes that occur in the Value Chain variable are explained or caused by the application of Environmental Management Accounting in state-owned companies. These results confirm the study results of Adams and Zutshi (2004) which concluded that organizations that produce social and environmental information are able to develop better internal control systems resulting in better decision-making processes. New information encourages the development of new products, more advanced process technology, and improved cost structures (Ferreira et al., 2010). In other words, the use of Environmental Management Accounting is related to both product and process innovation, and consequently can improve the competitive position of an organization (Ferreira et al., 2010).

Environmental management accounting (AML) can help organizations to deal with social responsibility and plays an important role in identifying the environmental and economic benefits of an organization's activities (Burrill et al., 2002). Previous studies have defined AML as a technique for generating, analyzing, and using financial and non-financial information, to improve the environmental and economic performance of an enterprise, and contribute to the sustainability of business processes (Bennet et al., 2003; Deegan, 2003). Innovation in general is an important aspect of many businesses that can play a role in realizing competitive advantages. Value chain implementation is capable of realizing competitive advantages (Porter 1985a,b). Efficiency arising from the implementation of Environmental Management Accounting can have a positive impact on state-owned companies.

Evidence shows that companies that emphasize business models based on innovation have experienced higher operating and sales growth rates (Ferrari and Parker, 2006; Klomp and Van Leuwen, 2001). Ferrari and Parker (2006) found that for manufacturing organizations, process innovation plays an important role in improving competitive advantage as a key factor in obtaining long-term revenue growth. Innovation can be conceptualized in several ways, namely by considering product innovation and process innovation (Ferreira et al., 2010).

Implementation of environmental management accounting can increase innovation and processes within the company so as to support the application of the value chain for performance improvement (Ramdhani, 2011). Conditions in several state-owned companies that have implemented environmental management accounting well provide benefits in the form of cost efficiency, improving the image of environmentally sound companies and encouraging the achievement of value chain optimization.

Innovation in general is an important aspect of many businesses that can serve to realize competitive advantages (Porter 1985a,b). Evidence shows that firms that emphasize business models based on innovation have experienced higher operating and sales growth rates (Ferrari and Parker, 2006; Klomp and Van Leuwen, 2001).

Ferrari and Parker (2006) found that for manufacturing organizations, process innovation plays an important role in improving competitive advantage as a key factor in obtaining long-term revenue growth. Innovation can be conceptualized in several ways, namely by considering product innovation and process innovation (Ferreira et al., 2010). Implementation of environmental

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

management accounting can increase innovation and processes in the company so that it supports the implementation of the value chain for performance improvement (Ramdhani, 2011).

2. The Effect of Good Corporate Governance on Value Chain

The results of hypothesis testing show that there is an effect of the application of the principles of Good Corporate Governance (GCG) on Value Chain (VC) of 9.9%. consisting of a direct effect of 3.6% and an indirect effect of 6.4%, resulting in a total effect of 9.9%, which means that 9.9% of changes that occur in the Value Chain variable are explained or caused by the application of the principles of Good Corporate Governance.

GCG implementation in state-owned companies affects Value Chains by 9.9%, which is classified as a low category. The results of this study are not in line with the research results of Frederick and Gereffi (2009) whose research findings concluded that the application of corporate governance to the company's value chain can improve coordination of the chain of activities and be able to put pressure on suppliers to provide lower costs, increase quality, and be able to adopt specific equipment and business processes. The results of research (Gosh and Fedorowichz, 2008) concluded that good corporate governance is able to support the creation of coordination between parts (structures) in the organization that support the existence of organizations in competitive businesses. Lazonick and O'Sullivan's (2000) research results emphasize the critical issue for companies to be able to exist in global competition must be able to adapt to the organization and governance structures. The form of governance is becoming increasingly important due to increasingly complex business models.

Research conducted by (Lee, Padmanabhan, & Whang, 1997; Schneeweiss, Zimmer, & Zimmermann, 2004) looking at the coordination efficiency of a firm's activities concluded that coordination is necessary to ensure the availability of adequate amounts of materials. Timely information can support successful coordination in managing company resources.

The results of this study confirm the results of research on the impact of Good Corporate Governance on the value chain of companies conducted by (Gellynck & Molnar, 2009), Raynaud, Sauvee and Valcheschini, 2005; Fischer, 2007) and (Rafael V.B Junqueira, 2010) that GCG is only one of the key success factors of implementing innovation in the value chain. Value Chain Governance has an impact on improving quality control, reducing opportunistic behavior of agents and improving company performance. The results of this study are confirmed by (Fischer et.al, 2007), GCG is able to increase interdependence between functions within the company and provide an additional dimension of the risk of business failure if the achievement of performance is only carried out by part of the company's functions.

The performance of the value chain application depends on how much efficiency from the coordination carried out by each part of the company that can ensure the flow of information in a timely manner Frederick and Gereffi (2009). The form of governance is becoming increasingly important due to increasingly complex business models. The results of the analysis of the influence between good corporate governance on the value chain show that there is no significant effect, namely with a total effect of 9.9%, consisting of a direct effect of 3.6% and an indirect effect of 6.4%. These findings illustrate that the application of GCG principles only has a 9.9% impact on the successful implementation of the Value Chain in state-owned companies.

The implementation of GCG principles that have been required in state-owned companies through the Regulation of the Minister of State-Owned Enterprises Number: PER-01 / MBU / 2011 dated August 1, 2011 concerning the Implementation of Good Corporate Governance in State-Owned Enterprises which was last amended by PER-09 / MBU / 2012 dated July 6, 2012 has not been able to guarantee the successful implementation of the Value Chain. Statistical data from the Ministry of SOEs monitored at www.bumn.go.id shows the number of loss-making SOEs in 2013 decreased compared to the previous year. While the total loss increased rapidly from the previous year which only amounted to 3.34 trillion to 17.4 trillion rupiah in 2013. The total loss of state-owned companies that jumped dramatically is an empirical fact that the conditions in this state-owned company have not been able to optimize the implementation of GCG.

Other empirical evidence of the increasing number of losses experienced by state-owned companies is caused by various things, the causes can be external and internal to the company. External causes are due to a shortage of raw material supply, dependence on supporting materials (oil and gas), industrial competition, loss of market, exchange rate losses and so on, resulting in a lack of liquidity. Internal causes of the company are assets owned in the form of old machines, maintenance that is not carried out continuously, limited human resources (HR), low productivity, lack of capital and so on. In addition to this, the losses experienced can also be caused by mismanagement or the BUMN is not managed properly, so that originally planned to make a profit, it turns out that in its implementation it suffered losses.

Corporate governance can be defined as a dynamic featured of value chain that connects company characteristics in the form of a value chain. The results of research by Frederick and Gereffi (2009) concluded that the application of corporate governance to the company's value chain can improve coordination of the chain of activities and be able to put pressure on suppliers to provide lower costs, increase quality, and be able to adopt specific equipment and business processes. Lazonick and O'Sullivan (2000) emphasize the critical issue for companies to exist in the global competitive must be able to adapt to the organization and governance structures. The form of governance is becoming increasingly important due to increasingly complex business models. Empirical studies on the

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

impact of Good Corporate Governance on the company's value chain were conducted by (Gellynck & Molnar, 2009), Raynaud, Sauvee and Valcheschini, 2005; Fischer, 2007) which concluded that GCG is one of the key success factors of implementing innovation in the value chain.

3. Effect of Value Chain Implementation on Financial Performance

The results of the analysis of the effect between the value chain on financial performance show that there is no significant effect with a total effect of 0.0004%, consisting of a direct effect of 0.00005% and an indirect effect of 0.0004%.

The achievement of financial performance influenced by the value chain in state-owned companies shows insignificant results. This fact is empirical evidence of conditions in state-owned companies that have not been able to develop Porter's Framework to explain why the value chain can be an important managerial tool. (Partridge and Perren, 1994; Shank and Govindarajan, 1992; 1993, Hoque, 2004; 109). Value chain is believed to be able to provide a set of useful perspectives for companies to achieve the company's competitive position (Booth, 1997). Booth's opinion states that there are two benefits that can be the goal in implementing the value chain, namely how to receive diverse products (product differentiation) and create cost leadership. Companies that implement the value chain have an impact on company profits in two ways (Gadies and Gilbert, 1998). First, activity efficiency will have an impact on the firm's cost structure. Second, with a mix of activities that apply the value chain will provide a high level of satisfaction for consumers (Arrto, 1994, Shields and Young, 1991; Susman, 1989).

Conditions in state-owned companies consisting of multi-cluster companies should be able to provide the ability to synergize with each other. The various types of businesses owned by state-owned companies should be able to create a healthy business climate. The facts show that state-owned companies have not been able to improve themselves internally. Harmonization between primary activity and supporting activity is not optimal. Internal improvement is needed to create efficiency and effectiveness in business processes. These problems are a long list for the Ministry of SOEs and the Ministry of Finance to be able to foster the existence of SOEs so that in addition to being operators who run government business, they can also function as drivers of the national economy. The value chain is a facilitator for a set of perspectives that are useful for companies to achieve companies that can compete (Booth, 1997). Booth suggests that there are two uses so that the purpose of implementing the value chain is how to receive diverse products (product differentiation) and create cost leadership. The application of the value chain for companies has an impact on company profits in two ways (Gadies and Gilbert, 1998). First, efficiency and activity will affect the firm's cost structure. Furthermore, the combination of activities that apply the value chain will increase the level of satisfaction for users (Arrto, 1994, Shields and Young, 1991; Susman, 1989).

4. The Effect of Environmental Management Accounting on Financial Performance

The results of testing the sixth hypothesis which shows the magnitude of the influence of the Environmental Management Accounting variable on Financial Performance as shown in table 4.58 consist of a direct effect of 0.8% and an indirect effect of -0.4% and so as to produce a total effect of 0.4% which means that 0.4% of changes that occur in the Financial Performance variable are explained or caused by the application of Environmental Management Accounting in state-owned companies. The low effect of Environmental Management Accounting (AML) implementation shows empirical evidence that AML has not been consistently applied in the business decision making of SOEs. Some research results state that environmental performance is related or has a positive effect on financial performance. (De Beer and Friend (2006), Earnhart and Lizal (2006); Wiwik Utami (2007); Burnet and Hansen (2008); Henri and Journeault (2010); and Moneva and Ortas (2010), Burhany (2011).

Bosshard (2003) citing Environmental Protection Agency/EPA (1998) stated that an important function of AML is to bring environmental costs to the attention of managers so that it can lead managers in determining the right way to reduce or eliminate costs that must be incurred (if environmental aspects are ignored) and at the same time can also reduce environmental damage or in other words improve the environmental performance of the company. However, traditional management accounting systems more often generalize indirect costs including environmental costs into overhead costs, making them hidden and managers have difficulty tracking and controlling these costs (Dascalu et al., 2010).

It is suspected that most state-owned companies still apply a traditional management accounting system that more often generalizes indirect costs, including environmental costs, into overhead costs, making them hidden and making it difficult for managers to track and control these costs, which is the main factor that causes the insignificant influence of AML in achieving financial performance. Another contributing factor is the ownership of state-owned companies whose shares are majority owned by the government, which makes the concern in implementing AML optimally not yet apparent. As a state-owned company, managers feel immune to the law if they face public demands related to waste and environmental pollution.

5. The Effect of Good Corporate Governance on Financial Performance

The results of testing the fourth hypothesis show that there is an effect of the application of Good Corporate Governance on Financial Performance as shown in Table 4.54 consisting of a direct effect of 2.2% and an indirect effect of -1.0% and resulting in a total

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

effect of 1.2% which means that 1.2% of changes that occur in the Financial Performance variable. explained or caused by the application of Good Corporate Governance in state-owned companies.

The results of hypothesis testing on the effect of GCG on Financial Performance with the achievement of 1.2% of Financial Performance influenced by GCG are empirical evidence of the failure to implement GCG principles that have been required in state-owned companies through the Regulation of the Minister of State-Owned Enterprises Number: PER-01 / MBU / 2011 dated August 1, 2011 concerning the Implementation of Good Corporate Governance in State-Owned Enterprises which has been last amended by PER-09 / MBU / 2012 dated July 6, 2012. In conclusion, not all SOEs have implemented GCG, and those that have implemented it are not necessarily implementing GCG as they should.

Nyoman Tjager, et al. (2004: 198-199), governance problems in SOEs are often identified with "poor financial performance, low competitiveness, lack of professionalism, and low responsiveness to changes in the business environment". This contradicts the master plan for the development of SOEs in 2010-2014 to make SOEs as business entities that are resilient in global competition and able to meet the expectations of stakeholders.

SOE is a corporation that is an implementation of agency theory. The essence of the agency relationship is the separation between ownership (on the principal/investor side) and control (on the agent/manager side). Investors have the expectation that managers will generate returns on the money they invest. A good contract between investors and managers is a contract that is able to explain the specifications of what the manager must do in managing the funds of investors, and specifications about the distribution of returns between managers and investors. The corporate form of BUMN legally consists of: Company, Public Company, and Public Company.

SOEs are one of the business actors that have dominated our economy since the nationalization of Dutch-owned companies by the government. This dominance seems to apply only to the number and fields of business entered, and not in its role and function as a driving force of the economy. According to the theory of property rights, in which the state as the owner of SOEs does not yet have a clear definition so that SOEs seem to have no owner at all, SOEs in many cases operate inefficiently.

The presentation of the results of this research confirms several studies that have proven and supported this conclusion, such as the study of Hanke (1987), in Mardjana (1995). Similarly, the monopoly theory states that SOEs in many cases often receive monopoly privilege which results in inefficiency. By falling into this trap of inefficiency, it is clear that not only weak competitiveness is inherent in SOEs, but also the low performance achieved (Azhar Maksum, 2005).

The results of this study confirm the findings of previous researchers who stated that effective corporate governance is expected to improve company performance. The benefits of implementing corporate governance can be seen from the company's share price that investors are willing to pay. GCG can provide high protection for investors (Denis, 2010) and can increase dividend payments (Choy, Gul, and Yao, 2011). The implementation of GCG will have an impact on high protection of investors, thereby reducing information asymmetry to a lower level (La Porta et al., 2002; Gul and Qiu, 2012). GCG implementation is also considered to reduce the risk of company business failure (Fischer et al., 2007). Research by Black et al. (2003) proves that the Corporate Governance index is one of the factors that can explain the company's market value.

Several state-owned companies that have implemented effective corporate governance have proven to be able to provide improved financial performance. This fact is found in BUMN companies that have been privatized. State-owned banking companies and PT Semen Indonesia by carrying out the effective implementation of corporate governance have proven to be able to improve their financial performance rapidly. The opposite is found in BUMN companies that have not been able to implement effective corporate governance and still experience significant financial losses.

E. CONCLUSION

Based on the previous description, conclusions can be drawn:

- a. The application of the principles of Good Corporate Governance affects the Value Chain but by a small amount.
- b. The application of Environmental Management Accounting affects the Value Chain by a significant amount.
- c. The application of the principles of Good Corporate Governance affects Financial Performance but by a small amount.
- d. The implementation of Environmental Management Accounting has an impact on Financial Performance but by a small amount.
- e. The application of Value Chain has an impact on Financial Performance but with a small amount.

REFERENCES

- 1) Alkaraan, F., Albitar, K., Hussainey, K., & Venkatesh, V. (2022). Corporate transformation toward Industry 4.0 and financial performance: The influence of environmental, social, and governance (ESG). *Technological Forecasting and Social Change*, 175, 121423. <https://doi.org/10.1016/j.techfore.2021.121423>
- 2) Ghozali, I. (2020). *25 Grand Theory Teori Besar Ilmu Manajemen, Akuntansi dan Bisnis (Untuk Landasan Teori Skripsi, Tesis dan Disertasi)*. Yoga Pratama.

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

- 3) Norsita, M. (2021). ANALISIS PENERAPAN BIAYA LINGKUNGAN PENGELOLAAN LIMBAH CAIR RUMAH SAKIT. *Jurnal Ilmiah Akuntansi Manajemen*, 4(1), 54–64. <https://doi.org/10.35326/jiam.v4i1.1016>
- 4) Adams, C. 2002. Internal organisational factors influencing corporate social and ethical reporting: beyond current theorising. *Accounting, Auditing & Accountability Journal* 15(2): 223-50
- 5) Adams, C. and Zutshi, A. (2004), “Corporate Social Responsibility: Why Business Should Act Responsibly and be Accountable”, *Australian Accounting Review*, Vol. 14 No. 3, pp. 31-40.
- 6) Artto, K. A. 1994. Life Cycle Cost Concepts and Methodologies. *Journal of Cost Management* (Fall): 28-32
- 7) Atkinson, A. A., Banker, R. D., Kaplan, R. S., & Young, S. M. (2007). *Management accounting*. Englewood Cliffs, NJ: Prentice-Hall.
- 8) Bardi, R. (2006). Management Control in a Business Network: New Challenges for Accounting. *Qualitative Research in Accounting & Management*, Vol. 3 No. 2, pp.161-181, <http://dx.doi.org/10.1108/11766090610670686>.
- 9) Booth, R. 1997. Appreciating the Value before Counting the Cost *Management Accounting*. Volume75, Issue 1 (January): 54-56
- 10) Buhr, N. (2002). A Structuration view on the initiation of environmental reports. *Critical perspective on accounting*. 13, 17-38.
- 11) Burritt, R.L., Hahn, T. and Schaltegger, S. (2002), “Towards a Comprehensive Framework for Environmental Management Accounting - Links Between Business Actors and Environmental Management Accounting Tools”, *Australian Accounting Review*, Vol. 12 No. 2, pp. 39-50.
- 12) Burritt, R.L. 2002. “Stopping Australia Killing the Environment: Getting the Reporting Edge”. *Australian CPA* 73 (3): 70-72.
- 13) Burritt, R.L., dan Saka, C. (2006), “Environmental Management Accounting and Application and Eco-efficiency: Case Study from Japan,” *Journal of Cleaner Production*, Vol. 14, pp. 1262-75.
- 14) Cinquini, L., and Tenucci, A. (2010). Strategic Management accounting and Business Strategy : A Loose Coupling?. *Journal of Accounting and Organizational Change*. Vol. 6, No.2, pp.228-259.
- 15) Deegan, C. and Rankin, M. 1997. “The materiality of environmental information to users of annual reports”. *Accounting, Auditing & Accountability Journal* 10 (4): 562-583.
- 16) Ferreira, A., Moulang, M., and Hendro, B. (2010), Environmental Management Accounting and Innovation: an Exploratory Analysis, *Accounting, Auditing, and Accountability Journal*, Vol.23 No.7, pp. 920-948.
- 17) Ferrari, A. and Parker, B. (2006), “Digging for innovation”, *Supply Chain Management Review*, pp. 48-53.
- 18) Freeman, R.E & Reed, D.L. 1983. Stockholder and Stakeholder : a new perspective on corporate governance, *California Management Review*. Vol. XXV, No. 3, Spring: pp. 88-106.
- 19) Gadiesh, O., dan J. L., Gilbert. 1998. How to Map your Industry’s Profit Pool. *Harvard Business Review*. Volume 76, Issue 3 (May/June): 149-162.
- 20) Gellynck, X., & Molnar, A. (2009). Chain Governance Structures: The European Traditional Food Sector. *British Food Journal*, 111 (8), 762-775.
- 21) Gill, James O. and Chatton, Moira. 2003. *Memahami Laporan Keuangan: Memanfaatkan Informasi Keuangan untuk Mengendalikan Bisnis Anda, Seri Panduan Praktis No.30*. Terjemahan Oleh Dwi Prabaningtyas. Jakarta: Penerbit PPM.
- 22) Gray, R. and Bebbington J. 2001. *Accounting for the Environment*. Second Edition. Sage Publication.
- 23) Ghozali, I. (2020). *25 Grand Theory Teori Besar Ilmu Manajemen, Akuntansi dan Bisnis (Untuk Landasan Teori Skripsi, Tesis dan Disertasi)*. Yoga Pratama.
- 24) Henri, J. F dan M. Journeault. 2010. Eco-control: The influence of management control systems on environmental and economic performance. *Accounting, Organizations and Society* 35: 63–80.
- 25) Hoque, Zahirul. 2003. *Strategic Management Accounting: Concepts, Processes, and Issues*, 2nd edition, Spiro Press, London.
- 26) Jensen, M.C. and Meckling, W.H. 1976. “Theory of the Firm: Managerial Behaviour, Agency Costs and Ownership Structure”. *Journal of Financial Economics* 19: 127-68.
- 27) Kaplan, R.S. & D.P. Norton, “*Having Trouble with Your Strategy? Then Map It*” Harvard Business School Press, Boston, 2000
- 28) Karliansyah, 2013. Melalui : (<http://nasional.kontan.co.id/news/ada-11-bumn-berpredikat-perusahaan-hitam>).
- 29) Lazonick, W., O’Sullivan, M. 2000. Maximizing Shareholder Value: A New Ideology for Corporate Governance. *Economy and Society*, 29 (1), 13-35.
- 30) Lee, H. L., Padmanabhan, V., & Whang, S. 1997. The Bullwhip Effect in Supply Chain, *Sloan management Review*, 38(3), 93-102

Implementation of Environmental Management Accounting and Good Corporate Governance on Value Chain and its Implications on Financial Performance

- 31) Perez, E. A., C. C. Ruiz, dan F. C. Fenech. 2007. Environmental management systems as an embedding mechanism: a research note. *Accounting, Auditing & Accountability Journal* 20(3): 403-422.
- 32) Porter, M.E. (1980), *Competitive Advantage: Techniques for Analysing Industries and Competitors*, New York: Free Press.
- 33) Porter, M.E., (1985), *Competitive Strategy: Creating and sustaining Superior Performance.* , New York: Free Press.
- 34) Preston, L. E. Dan Post, J.E. (1975). *Private Management and Public Policy*, Englewood Cliffs, N. J: Prentice-Hall, Inc.
- 35) Ramdhani, B. Muchlish, M.Bastian, E.2011. Inovasi Produk dan Proses; Implikasi Akuntansi Manajemen Lingkungan (Studi pada Manajer Perusahaan Manufaktur di Banten), Makalah, *Simposium Nasional Akuntansi XIV*, IAI, Universitas Syiah Kuala, Banda Aceh.
- 36) Schneeweiss, C., Zimmer, K., & Zimmermann, M (2004).The Design of Contracts to Coordinate Operational Interdependencies Within The Supply Chain , *International Journal of Production Economics*, 92 (1), 43-59.
- 37) Sekaran, U & Bougie, R. 2013. *Research Method for Business: A Skill Building Approach*, Sixth Edition. United Kingdom: Jhon Wiley & Sons Ltd.
- 38) Shank, J. K., & Govindarajan, V. (1992a). Strategic cost management: The value chain perspective. *Journal of Management Accounting Research*, Vol. 4, pp.179-197.
- 39) Shank, J. K., & Govindarajan, V. (1993). *Strategic Cost Management : the New Tool for Competitive Advantage*. New York : The Fee Press.
- 40) Shocker, A.D., & Sethi, S.P. (1974). *An Approach to Incorporating Social Preferences in developing Corporate Action Strategies*, In S. P Sethi (Eds.), *The Unstable Ground: Corporate Social Policy in Dynamic Society* (pp. 67-80). Los Angeles, CA: Melville.
- 41) Shields, M.D., dan S. M. Young. 1991. Managing Product Life Cycle Costs: An Organizational Model. *Journal of Cost Management* (Fall): 39-52.
- 42) Sugiyono, 2013. *Metodologi Penelitian Bisnis*. Bandung. Alfabeta.
- 43) _____2014. *Metode Penelitian Kuantitatif Kualitatif dan R & D*. Bandung. Alfabeta.
- 44) Ten, E.E. 2007. "Applying stakeholder theory to analyze corporate environmental performance, Evidence from Australian listed companies". *Asian Review of Accounting* 15 (2): 164-184.
- 45) Webster, J. F. E.(1992). The Changing Role of Marketing in The Corporation. *Journal of Marketing.*, 56, 316-325.
- 46) Williamson. O.E., (1991). Comparative Economic Organization: The Analysis of Discrete Structural Alternatives. *Administrative Science Quaterly*, 36 (2), 269-296.
- 47) Xiaomei, Li. 2004. "Theory and practice of environmental management accounting experience of implementation in China". *International Journal of Technology Management and Sustainable Development* 3 (1): 47-57.