

THE IMPACT OF FUNCTIONAL AND INSTITUTIONAL IMPERATIVES ON CARBON MANAGEMENT ACCOUNTING THROUGH MEDIATION OF ENVIRONMENTAL MANAGEMENT ACCOUNTING IN WASTE MANAGEMENT

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Abstract

This study aims to examine the influence of functional imperatives and institutional imperatives on Carbon Management Accounting, the effects of functional imperatives and institutional imperatives on Environmental Management Accounting, and the effects of Environmental Management Accounting on Carbon Management Accounting. The methodology of research design used quantitative with testing hypothesis. The data used is primary data with use questionnaire through google forms and interviews to strengthen research results. With obtained using purposive sampling sample as many as 445 respondents with details of 348 are from non-government and 97 are government. Analysis tools used is the Structural Equation Model -Partial Least Square (SEM-PLS) for The 3 SEM-PLS models are the overall models, the non- government model and the government model. The results showed that the overall model, Functional Imperatives and Institutional Imperatives proved to have a positive effect on Carbon Management Accounting and Environmental Management Accounting. Environmental Management Accounting as mediated had a positive effect on Carbon Management Accounting. The conclusion is waste bank management proven to be effective in running a business that supports the triple bottom line. The novelty of this research produce a better fit model by expanding the dimensions of Carbon Management Accounting to 5 dimensions as shown by the coefficient of determination value which is greater in the new model compared to the old model. The implications of this research are important to be used for government to develop policies to identify and measure the resulting carbon emissions, especially in the management of waste materials to achieve greenhouse gas reduction targets.

Keywords: Carbon Management Accounting, Environmental Management Accounting, Functional Imperatives and Imperatives institutional

1. INTRODUCTION

Accountancy management carbon is one aspect related accounting with environmental capital in management rubbish [2]. Application accountancy management carbon in management rubbish used for measure and manage performance carbon and this thing closely relation with behavior of a dart organization. Behavior in the organization is seen from imperatives both in terms of function and institution. Studies on carbon management accounting in an organization are still very few, especially with regard to monitoring systems, decision making, reporting and disclosure, and the role of the accounting profession [2]. The study of carbon in waste management is one of the most effective elements in climate change as a result of increasing industrial units and environmental pollution with the aim of knowing the impact of carbon emissions on the environment. Several studies related to carbon have been carried out such as studies on carbon performance [3], [4], studies about emission carbon [5], studies on carbon

disclosure [6], and studies on carbon taxes [7]. So far studies about accountancy more carbon _ accelerated in relation with disclosure about carbon [1], [6], [8]. [9] in this research examined the issue of leadership practices in implementing carbon management accounting. The research results show that well-managed information and the ability to integrate information can improve carbon performance. Another study found the findings of organizational management from carbon accounting to be relevant when connected with decision making, performance management, and reporting [10].

The phenomena of high population growth and increased energy consumption is one of the factors that trigger global warming. The resulting impact is high levels of atmospheric pollution which can increase smog, damage plants, cause climate change and ultimately endanger human health and threaten the sustainability of society in the future [11]. Garbage is one of the factors that can trigger carbon emissions and ultimately cause global warming. In relation to the waste problem, Indonesia is the second largest waste producing country in the world.

There is a gap in the previous research. This research seeks to develop and resolve these gaps by exploring the factors that influence these relationships. Local governments tend to prioritize efficiency issues compared to the social problems they cause. This implies that the implementation of environmental management accounting in local government is seen more as an adaptive activity to overcome challenges and achieve efficiency, rather than as an institutional imperative to achieve social acceptance. Even though if you look at the goal of sustainability, then social influence should be very large in the application of environmental management accounting [9].

This research is different from previous studies, by developing carbon management accounting measurements from Nartey [30]. Nartey's research developed 12 indicators for measuring carbon management accounting. In this study, the indicators for measuring carbon management accounting have not been grouped so that they do not provide comprehensive information. The benefits of grouping measurements into dimensions are to give meaning and to make it easier to identify and analyze the variables in question.

The Novelty of this study is reduce 4 measurements, product cycle cost assessment, inventory analysis, product impact analysis, and product development analysis from Nartey [30] and adds measurements related to waste reduction. The 8 new measurements are identifications of costs for limiting waste generation activities, identifications of costs for waste recycling activities, identification of costs for waste recovery activities, utilization of electronic attendance, e-cloud based file storage, reducing printed documents, energy saving culture, and energy saving behavior. The reduction in measurements from Nartey was carried out because it is not appropriate in the context of waste management in local government. This refers to Presidential Decree No. 81 of 2012 for the waste management budget and Presidential Decree No. 27 of 2020 regarding waste management.

From explanation above, the purpose of this research was conducted with objective for test and analyze influence from imperative institutional functional and imperative Institutional on Carbon Management Accounting (CMA) and Environmental Management Accounting

(EMA), influence from EMA to CMA as well analyze influence No direct from imperative Functional and Imperative institutional against CMA with EMA as variable mediation.

2. LITERATURE REVIEWS

This study based on Contingency theory by developing a theory which states that an organization and organizational sub-units can adapt to meet the demands of their immediate environment. To understand the development of EMA in organizations, Qian & Burritt [9] [18] [25] suggest the use of a contingency lens as organizational structural arrangements and management procedures can be subject to the context in which it operates.

2.1. Carbon Management Accounting (CMA)

Accountancy management carbon (CMA) is part from accountancy possible sustainability useful For help company in make optimal decision either in period short and term long related with about emission carbon in the world [12]. CMA is also a tool that can used taker decision in utilise related information _ with carbon related with decision moment this and that will stem [13], [9] and [14] state that CMA is recognition For do evaluation both non- monetary and monetary and monitoring on cycles carbon ecosystem [10] and [14]. [15] Defines CMA as a measurement and reporting process related emitters (carbon) produced by a company.

2.2. Environmental Management Accounting (EMA)

[13] EMA includes both monetary and non-monetary approaches to internal accounting reflecting a more comprehensive definition [13]. EMAs are something the latest innovations in management accounting with a primary focus leading to greater adoption of environmental management and use of environmental management accounting systems. [16] stated that EMA is an important factor for organizations whose goal is to minimize costs including environmental costs and reduce the impact on the environment from the activities carried out by the organization. Bennett et al., (2003) and Degan (2003) define EMA as a tool for analyzing and using both financial and non-financial information with the aim of improving environmental performance, organizational economic performance to produce a sustainable business. EMA as environmental management including organizational economic performance through the development and implementation of accounting systems and practices that suit the needs of the company.

2.3. Functional Imperatives and Institutional Imperatives

The functional imperative is a condition where the organization has a goal to always be able to maintain or achieve its performance goals, by achieving efficiency in its immediate technical/operational environment, for example, strategic choices, technology, scale, resources. Studies related to functional imperatives associated with environmental management accounting, look at it from three perspectives, namely environmental uncertainty, strategic proactiveness, and operational complexity [9]

The institutional imperative is a situation where an organization in an institutional system is limited and judged by the norms, values, and criteria in this social system, organizations tend

to build stories about what the organization must achieve and what it doesn't. If social systems emerge out of a widespread sense of environmental protection, environmental agendas and environmental management accounting approaches are likely to be pressured into adoption. This view stems from the new institutional sociology that emphasizes the role of social structures and forces in transforming and greening organizations. While compliance with rules and values can be taken for granted, leading to isomorphism, more attention is paid to the independent development of organizations and diverse reactions to institutional pressures [9], [17].

Based on from explanation on framework conceptual used in study This can seen in Figure 1 where imperative functional and institutional will seen influence against EMA and CMA as well influence of functional and institutional imperatives against CMA with mediated by the EMAs. Study This enter characteristics from respondent i.e. Gender, level education and competence s as moderating variable influence from imperative functional against the EMA as well influence from competence and seniority as moderating variable influence of functional imperatives and imperatives institutional against CMA.

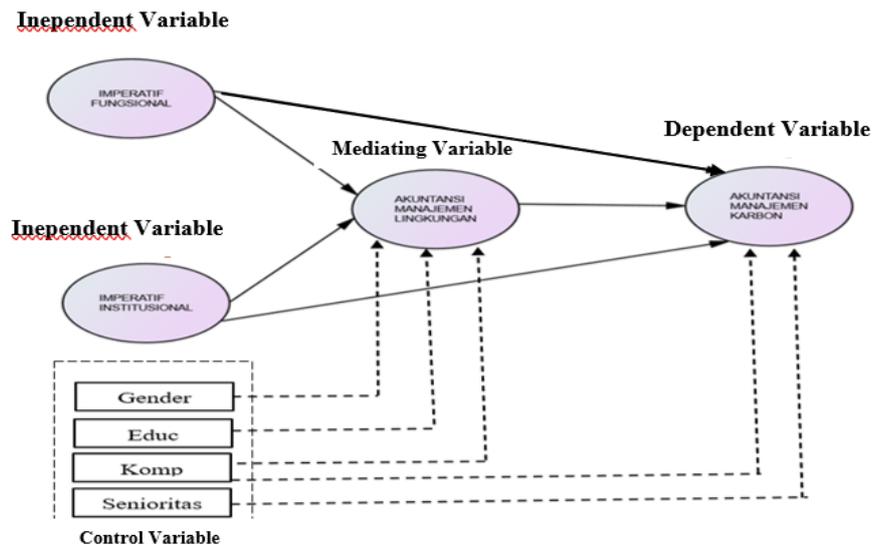


Figure 1: Skeleton Conceptual Study

2. 4 Development hypothesis

2.4.1 Influence imperative functional Against CMA

Problems management resource capable and capable human beings, supported completeness facilities and infrastructure, capabilities finance area and support inhabitant how about society anticipate condition changing environment accountancy management carbon in management rubbish give opportunity for government area for manage rubbish with more definite indicator. All directions and policies in anticipation condition environment can directed towards the goal end management rubbish through draft accountancy management carbon government action area in management rubbish with draft accountancy management carbon is form accountability

to the public. Study [18] state that there is accountability organization in do control change climate . Government area own accountability for do control climate through series policies and regulations for development management environment [9], There are two motivations main driving force development management environment in government area that is structure social and contextual organization. Development management environment including in business for do management carbon.

Contextual organization and can called as imperative functional in management environment included in it is uncertainty environment , proactive strategy government area and operations management [19]. Uncertainty environment is situation that is not unexpected and not can predicted around him. Uncertainty can cause doubt, indecisiveness, and also confusion cause inability for interpret or clarify information ambiguous about environment, which will hinder the capture process decision organization. Problems management rubbish own condition uncertainty high environment.

Problems waste in Indonesia already become hard enough for solved it caused by more increasing residents in Indonesia who do not followed with public services related management less waste. Government area need do effort strategic in handling rubbish especially arising waste one efforts made is in the process of use material will generated minimal waste maybe, with level least danger maybe. Effort the is step proactive strategy for push arising waste. The steps taken by the government area is series action for increase satisfaction coercive institution pressure on them as reward on demands and expectations they aligned with their goals and strategies. Proactive strategic steps taken in management waste in the end influence accountancy management carbon. The more strategic Steps undertaken, then the more good accountancy management carbon made government area. Government role as provider service in management rubbish related with management waste. Service government in management rubbish the as form effort facilitate, develop, and implement reduction, handling, and utilization waste operational management rubbish This integral, integrated in a manner chain and sequentially, namely: storage / container, collection, transfer, transportation until with disposal / treatment. Based on theory contingencies, complexity operational going on in management rubbish can influence accountancy management carbon.

Influence imperative functional to accountancy management carbon can explained with theory contingency. government action in management environment in matter This accountancy management carbon depending on factors uncertainty environment, a proactive strategy undertaken by the government area and operations in management [20] stated that there is interaction on action government area with activity management environment. Government area do communication with public related policies and issues environment. Because it, then the more good imperative functional so accountancy management carbon too ok. From the explanation above, the research hypothesis can be drawn as follows:

H₁: Affective functional imperative Influential positive to carbon management accounting

2.4.2 Influence of Institutional Imperatives on CMA

Local governments are now required to manage waste properly and correctly. This is regulated in Law no. 18 of 2008, regional governments are required in Waste Management to have the intent and purpose of improving public health and environmental quality and making waste an alternative energy source. The main policy in Law Number 18 of 2008 concerning Waste Management regulates the implementation of waste management in an integrated and comprehensive manner, fulfilling community rights and obligations, as well as the duties and powers of the Government and regional governments to carry out public services. Implementation duties and powers government area become form accountability to public. Related with management environment in bali This waste and its impact become accountability government area For manage environment. [18]stated the need for organizational accountability for climate change control. Local government accountability for managing the environment is ultimately also related to climate change control.

[9]stated that there are two main motivations that drive the development of environmental management in local government, namely the social structure and organizational context. The development of environmental management is included in efforts to manage carbon. Social structure includes regulations, societal expectations, and institutional pressures. For environmental management or climate control to be effective, local governments need to interact with the community. [20]states that there is a need for interaction on what the local government is doing for environmental management activities with the community. The local government communicates with the community regarding environmental policies and issues. When the local government implements clear and straightforward regulations in waste management and communicates with the community, the implementation of environmental control, including climate control, will be better. In climate control, it is included in the study of carbon management accounting. Rules or regulations aimed at maintaining environmental quality ultimately encourage carbon management accounting to be implemented more easily.

Waste management in Indonesia is a big problem and continues to increase along with the increasing population which has an impact on increasing the amount of waste production. This problem is caused, among other things, because the law made by the government is less strict so that people do not comply or do not carry it out as it should, as stipulated in the law. Local governments are now required to manage waste properly and correctly. This is regulated in Law no. 18 of 2008, regional governments are required in Waste Management to have the intent and purpose of improving public health and environmental quality and making waste an alternative energy source. Government can milk as a stimulus and builder of society for manage rubbish with ok.

Community expectations for waste management can be a stimulant so that carbon management accounting can work. The desire to realize people's expectations so that waste management problems become better, ultimately encourages carbon management accounting to be more effective. Institutional imperatives can be carried out in the best way by using logic to maintain or gain legitimacy through a determined strategy. Legitimacy is a general conception denoting appropriate actions taken by business units in proportion to some social system based on norms,

values and beliefs. Ways of thinking, logic, and knowledge can influence carbon management accounting. The influence of institutional imperatives on carbon management accounting can be further explained by contingency theory. The application of carbon management accounting is getting better when regulations, community expectations, and pressure from institutions arise for the implementation of carbon management. From the explanation above, the research hypothesis can be drawn as follows:

H 2: Imperative institutional influential positive to accountancy management carbon

2.4.3 Relationship between functional imperatives and environmental management accounting

The broader level of accounting information and timely management information is considered more useful and applicable when organizations face uncertain environments. If managers perceive the organizational environment as highly uncertain, they are more likely to recognize the importance of external, non-financial (i.e. physical), ex-ante (i.e. future-oriented) accounting information than information that is purely financial and ex-post (i.e. historical) in nature. Environmental management accounting incorporates non-financial, ex-ante, externally oriented information relating to the environmental impact of an organization [21]. Decision makers tend to use environmental accounting information as a reaction to ensure service efficiency and targeted performance results. Efforts to commit to good governance and demonstrate strategic leadership in designing sustainable communities encourage local governments to use environmental management accounting to identify the full environmental impact of their local services. The conclusion is that a proactive local government is likely to be better prepared to increase its leadership in providing environmental services and environmental management accounting information is likely to be seen as applicable and useful to support its environmental leadership.

Local governments have to carry out complex procedures and operations for waste and landfill management, environmental managers are more willing to actively seek new environmental solutions in which environmental management accounting has a role to play. [9] revealed that the complex waste operation and service design provides strong incentives for local governments to seek internal and external environmental management accounting information and use this information to monitor services to ensure efficiency and effectiveness. In this case, EMA can be seen to be directly related to the level of complexity of these operational demands. From the explanation above, the research hypothesis can be drawn as follows:

H3: Imperative functional influential positive to Environment Management Accounting

2.4.4 The relationship between institutional imperatives and environmental management accounting

Institutional theory is seen as very relevant for use in studying the factors that influence a system in an organization. Changes in the organizational institutional environment can be caused by homogeneity which ultimately creates stimuli or obstacles to new organizational

practices, including in terms of accounting practices, besides that institutional theory is very suitable to explain the influence of institutional factors on accounting, environmental management [22]. Public sector organizations, such as local governments, differ significantly from private companies in terms of objectives, performance perceptions, and management context. They are more likely to make changes and innovations required or encouraged by government regulations and policies, and resist those that are prohibited. In recent years, there has been a rapid development of environmental protection laws and policies that encourage the collection and management of environmental information. Although no direct regulatory requirements have been specified for environmental management accounting, it can be argued that regulations and policy guidelines on environmental protection can provide incentives for local governments to introduce suitable accounting platforms to identify and collect environmental information.

Increasing public demand for green activities is driving local governments to take environmental impacts into account when preparing environmental expenditure plans. Public pressure is considered a more influential factor in local recycling policy making. Increasing the value local communities place on better environmental management practices formed a significant driver for the city councils investigated to seek sustainable recycling and waste reduction. Conversely, in the absence of a wider environmental movement in society, environmental issues tend to be confined to the micro level with environmental management accounting neglected or marginalized. When social behavior is collectively internalized, individuals in organizations in the field tend to comply so as not to stand out as different. The allocation of environmental costs is influenced by the area of the organization creating the concept of capturing environmental costs in a management mindset. Environmental managers in local councils were unclear about the benefits of life cycle methods for waste management, but they used these methods because they wanted to be seen as part of a group of leading competitors, and to be seen as doing good. From this description a hypothesis can be drawn: From the description above, the research hypothesis can be drawn as follows:

H4: Environmental management accounting is influenced by institutional imperatives

2.4.5 Environmental management accounting influences carbon management accounting

Creation system management environment is activity voluntary and initiatives undertaken by the entity company. Although involve initiative voluntary, application system sort of That give means For savings costs and upgrades profitability through process, product, and service improvement company [23]. Environment Management Accounting facilitate subtraction waste If no eradicate it fully, minimize level use energy and reduce impact negative from operation company to environment. [24] Explains implementation of management systems environment as a process systematic establish, implement, and audit goals, policies, and responsibilities answer environment. Company with Environment Management Accounting tend offer information more detailed and credible GHG emissions compared to with companies that don't own system the because it, existence and application Environment Management Accounting help organization in facilitate reduction strategy management house gas emissions

glass, and that companies pursuing a reduction strategy house gas emissions glass possibility will influence accountancy management carbon. From the description the can hypothesized:

H 5: Accounting management environment effect on accounting management carbon
2.4.6 Influence No Direct (Mediation Effect) Accounting Management The environment in relationships between imperative Functional and Imperative institutional to Carbon Management Accounting

[25] Stated when something variable hypothesized affect Z and variable Z hypothesized affect Y then variable Z can tested is is mediating variable influence from X to Y. Deep this research exists stated hypothesis that functional imperative and institutional imperative affects EMA and EMA affects CMA. Based on procedure test put forward by Baron and Kenny then the proposed hypothesis in this research are:

H 6: Environmental management accounting mediates the influence of the Functional Imperative on carbon management accounting

H 7 Environmental management accounting mediates the influence of the Institutional Imperative on carbon management accounting

3. METHODS

Type research used _ is study quantitative with testing purposive hypothesis _ test influence Good direct nor no direct of functional imperatives and institutional imperatives against CMA with EMA mediation as well type control variable gender, grade education, competency and seniority. Amount sample used _ as many as 455 respondents with composition of 97 respondents originate from government and 348 from non - government origin from stakeholders managing waste banks in 114 cities island java.

Instrument study done with use distributed questionnaires with using google forms like shown with variable imperative functional 3 dimension and 15 items, imperative institutional 3 dimensions and 16 item, Environment Management Accounting 3 dimensions and 42 items and Carbon Management Accounting 5 dimensions and 16 items. They are showing whole measuring indicator every dimension from variable proved valid (measuring what will measured) where whole indication produce outer loading value > 0.5 and every dimensions produce AVE value > 0.6 and consistent (reliable) with composite reliability value > 0.7 for whole dimensions. Test results this show whole indicator will used in testing hypothesis research.

Analysis tools used is SEM-PLS that aims for test influence from variable independent to variable latent (unobserved) dependent. The SEM-PLS model used consists of the 3 models namely the CMA model for overall, the CMA model for Government and CMA models for non- government in matter This waste management.

4. RESULTS AND DISCUSSIONS

4.1. Statistics Descriptive

Calculation results statistics descriptive variable study can seen in table 1. Perception respondent For the CMA variable shows respondent give positive response like can seen from the average value of 5.066. The standard deviation value of 1.835 indicates that the variation in respondents' answers is in the range of answer choices between 3 to 7. Based on responses according to stakeholders, perceptions from non-government produce a better response than the government, each with an average answer value of 5.049 for non-government and 4,531 for the government.

Respondents gave good responses to environmental management accounting variables as shown by the average value of respondents' answers of 4,828. The standard deviation value of 1.742 indicates that the majority of respondents' answers are in the answer choices between 3 to 6. If viewed from the response according to stakeholders,

Table 1: Statistics Descriptive Variable Study

Variables and Dimensions		N	Means	std. Deviation	Minimum	Maximum
Carbon Management Accounting	Non-Government	348	5.049	1.883	1.00	6.95
	Government	97	4.531	1.161	1.80	7.00
	Total	445	4.936	1.763	1.00	7.00
Environment Management Accounting	Non-Government	348	5.066	1.835	1.49	6.76
	Government	97	3.975	0.969	1.67	6.56
	Total	445	4.828	1.742	1.49	6.76
imperative functional	Non-Government	348	5.659	2.036	1.17	6.61
	Government	97	4.480	1.111	1.11	6.39
	Total	445	5.402	1.935	1.11	6.61
imperative institutional	Non-Government	348	5.061	1.818	1.07	6.82
	Government	97	4.271	0.995	2.07	6.57
	Total	445	4.889	1.704	1.07	6.82

Source: processed data

Response from non- government more tall compared to with response government like can seen from the average value of the answers 5.066 for non - government and 3.975 for non-government.

Response respondent for variable imperative functional produce positive response _ like showed with the average value of the answers respondent of 5.402. With mark standard deviation of 1.935 indicates variation answer respondent for variable imperative functional is in the range answer between 4 to 7. Based on response from stakeholders, responses from non-government more big compared to with government like can seen from the average value of 5.659 for non- government and 4.480 for government.

Perception respondent to variable imperative institutional produce sufficient response good like showed with the average value of answers 4.889. Default value deviation of 1.704 indicates variation answer respondent for variable imperative institutional are in the options answer between 3 to 6. Non-government respondents give more catch Good compared to with government like showed with the average value of the answers of 5.061 for non- government and 4.271 for government,

4.2 Model fit testing

The results of testing the fit model can be seen in table 2. For whole stakeholders obtained the adjusted R squared value is 0.950 for the EMA model and 0.844 for the CMA model. For the non-government model, an adjusted R square value of 0.975 was obtained for the EMA model and 0.907 for the CMA model. For government models presented the adjusted R squared value is 0.722 for the EMA model and 0.381 for the CMA model. this result show that in the overall and non- government models, variations from variable independent capable explain variation from variable dependent i.e. EMA and CMA very well and the rest is variation from variable other independent influencing EMA and CMA but No entered in models. Conclusion for the overall model and the non- government model have good goodness of fit. On the Government model obtained the R square value is 0.414 for the EMA model and 0.381 for the CMA model which means ability variation from variable independent explained variable dependent namely EMA of 41.4% and 38.1% for the CMA model meanwhile the rest is variation from variable other independent influencing EMA and CMA but No entered in models. This result show that on the government model Still there is variable other independent influencers big affects the EMA and CMA that does not entered in models.

Table 2: Coefficient Determination

Stakeholders	Model	R Square	R Square Adjusted
Overalls	EMAs	0.951	0.950
	CMA	0.846	0.844
Non Government	EMAs	0.975	0.975
	CMA	0.908	0.907
Government	EMAs	0.722	0.414
	CMA	0.704	0.381

Source: processed data

4.3 Testing hypothesis Theory

Processing results for testing influence direct can see in table 3. For hypothesis 1 is obtained results functional imperative findings proven influential positive significant to CMA in the overall model and the non- government model like showed with mark coefficient estimate positive with p-value < 0.05, meanwhile for government models No proven Because produce p-value > 0.05 though obtained coefficient influence positive test results hypothesis H2 shows institutional imperative proven influential positive significant against CMA in the overall model and the government model Because produce mark coefficient estimate positive and the p- value <0.05 while in the non- government model No proven like showed with p-value > 0.05 . Test results hypothesis H3 shows proven imperative functional influential significant positive

to EMA both in the overall model, the non- government model and the government model Because produce mark coefficient estimate positive and p-value < 0.05 for the overall model and the government model temporary for the non- government model p-value < 0.1. Test results hypothesis H4 shows imperative institutional proven influential positive significant against EMA on the overall model and the Non-Governmental model because produce mark coefficient estimate positive and p-value < 0.05 while on the government model No proven like showed with mark coefficient negative estimate.

Table 3: Testing hypothesis Direct

hypothesis	Overalls		Non Government		Government	
	coefficient	p-values	coefficient	p-values	coefficient	p-values
Imperative functional influential positive to Accountancy Management carbon.	0.411	0.000**	0.398	0.0005**	0.369	0.102
imperative institutional influential positive to Accountancy Management carbon	0.374	0.001**	0.123	0.240	0.311	0.022**
imperative functional influential positive to Environment Management Accounting	0.352	0.0005**	0.171	0.072*	0.613	0.000**
imperative institutional influential positive to Environment Management Accounting	0.247	0.003**	0.446	0.000**	-0.068	0.231
Environmental management accounting influences carbon management accounting	0.156	0.065*	0.435	0.005**	0.008	0.476

* $\alpha = 10\%$ ** $\alpha = 5\%$

Source: processed data

Testing hypothesis 5 resulted in the finding that EMA proved to have a positive effect on the overall model and the Non-Governmental model as indicated by the estimated coefficient value being positive and the p-value < 0.05 whereas in the government model it was not proven.

The results of testing the indirect effect hypothesis show that EMA is not proven to mediate the influence of functional imperatives on CMA in both the overall model, the Non-Government model and the Government model because all p-values of the t statistics for the three models are < 0.05 even though they have a positive estimation coefficient value . Testing the indirect effect of institutional imperatives on CMA with EMA mediation shows that the overlall model and the Non-Governmental model produce proven findings of EMA as mediation as indicated by a positive estimation coefficient with a p-value of t statistic < 0.1 for the overall model and < 0.05 for non-government model.

Table 4: Testing hypothesis No Direct

hypothesis	Overalls		Non Government		Government	
	coefficient	p-values	coefficient	p-values	coefficient	p-values
The Functional Imperative has a positive effect on carbon Management Accounting mediated by Environmental Management Accounting.	0.055	0.104	0.074	0.145	0.059	0.477
Institutional Imperatives have a positive effect on Carbon Management Accounting with mediation by Environmental Management Accounting	0.039	0.092*	0.194	0.010**	-0.001	0.486

* $\alpha = 10\%$ ** $\alpha = 5\%$

Source: processed data

4.3 Sensitivity Test

The findings for the sensitivity analysis can be seen in table 5. The findings can be explained as follows (1) In terms of model fit, namely by using the coefficient of determination, the research model by developing the dimensions of Carbon Management Accounting from 2 dimensions to 5 dimensions produces a better fit model as shown by the greater coefficient of determination value in the new model compared to the old model . This can be seen from the Adjusted R square value of 0.844 in the new model while in the old model it is 0.819. This shows that adding 5 dimensions of measurement to the Carbon Management Accounting variable produces a better fit model. This means that incorporating the 5 dimensions of Carbon Management Accounting results in a better fit model. (2) The results of testing the hypothesis of the effect of the Functional Imperative on Carbon Management Accounting in the new and old research models both produce conclusions that prove there is a significant positive effect. If seen from the estimated coefficients for the effect of Functional Imperatures on Carbon Management Accounting in the new model, the coefficient of influence is greater than the coefficient of influence in the old model, namely each of 0.411 in the new model and 0.402 in the old model. (3) The results of testing the hypothesis of the effect of the Functional Imperative on Carbon Management Accounting also yielded a conclusion that there was a significant positive effect on both the new model and the old model. When viewed from the magnitude of the influence, it shows that the new model produces a coefficient of influence that is greater than that of the old model, as shown by the value of the coefficient of influence, respectively 0.374 in the new model and 0.333 in the old model. These findings indicate that the inclusion of 5 dimensions of Carbon Management Accounting improves the quality of the resulting model

Table 5: Sensitivity Test

hypothesis		New Model			Last Model		
		coefficient	T _{statistic}	P-value	coefficient	T _{statistic}	P-value
H ₁	Functional Imperative has a positive effect on Carbon Management Accounting.	0.411	4.049	0.000**	0.402	3.435	0.0003
H ₂	Institutional Imperatives have a positive effect on Carbon Management Accounting	0.374	3.500	0.001**	0.333	2.802	0.0026
H ₃	Functional Imperative has a positive effect on Environmental Management Accounting	0.352	3.327	0.0005**	0.352	3.536	0.0002
H ₄	Institutional Imperatives have a positive effect on Environmental Management Accounting	0.247	2.751	0.003**	0.247	2.908	0.0019
H ₅	Environmental management accounting influences carbon management accounting	0.156	1.543	0.065*	0.188	1.728	0.0423
Adjusted R Square Carbon Management Accounting Model		0,844			0.819		

*=alpha 10% **=alpha 5%

Source: processed data

4.4 Discussion

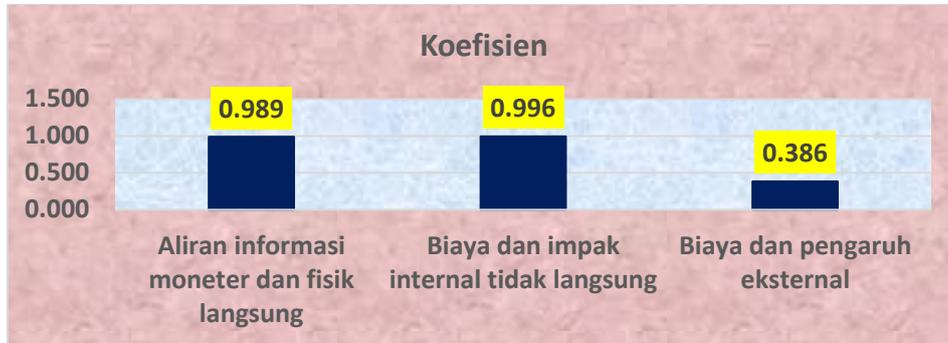
The findings of hypothesis H1 show that the Functional Imperative has a positive effect on Carbon Management Accounting. This shows that the waste management organization has been able to maintain and optimize the objectives of its performance through achieving efficiency in managing the waste bank in stimulating its activities to recognize, evaluate both monetary and non-monetary amounts and monitor gas emissions in the carbon cycle [20]. This condition is understandable considering that the waste bank person are stakeholders who really understand and are focused on carrying out work taking into account environmental condition to maintain the ecosystem so that the triple bottom line principle of people, planet and profit can go hand in hand. Findings hypothesis H2 results imperative institutional proven influential positive to Carbon Management Accounting. This condition shows exists level high awareness for do adjustment with rule or existing value for development waste bank organization. Another factor is readiness of the actors in the garbage bank inside face pressure regulations, expectations public as well as pressure cognitive be an imperative stimulus institutional

influential significant to Carbon Management Accounting [9][20]. These results are supported by evidence empirical related with connection between Empire institutional with Carbon Management Accounting that has pattern positive relationship. Readiness from garbage banker _ showed with results findings Where third dimensions from imperative institutional proven influential significant in give contribution to formation variable imperative Institutional. Processing results show influence positive from Imperative institutional is contribution from third dimensions significant, each dimension Pressure Regulation give the biggest contribution, dimensions of Community Hope and last is dimensions Pressure cognitive. The findings of hypothesis 3 show that Functional Imperatives have a positive effect on Environmental Management Accounting. This condition indicates that the optimal achievement of managing a waste bank in stimulating its activities to recognize and evaluate both monetary and non-monetary amounts has proven to have increased environmental performance which is proxied through Environmental Management Accounting [26]. The results of empirical evidence support the positive influence of Functional Imperatives on Environmental Management Accounting as shown in Figure 3 where there is a pattern of positive relationship between the Functional Imperative variables and Environmental Management Accounting.

Hypothesis 4 produces a proven conclusion that there is a significant positive influence from the Institutional Imperative on Environmental Management Accounting. This condition indicates that there is a high level of awareness to make adjustments to existing rules or values and the freedom given for the development of a waste bank organization, the readiness of waste bank actors in facing regulatory pressures, community expectations and cognitive pressure becomes an influential institutional imperative stimulus. Significant to Environmental Management Accounting [27][28]. These results are supported by empirical evidence regarding responses from respondents regarding the relationship between Institutional Imperatives and Environmental Management Accounting has a positive relationship pattern. The findings of hypothesis 5 show that environmental management accounting has a positive effect on carbon management accounting. This condition shows the behavior of stakeholders in waste bank management in using financial and financial information related to effective management in evaluating and monitoring and polluting the impact of emissions that occur on the ecosystem carbon cycle [26][29]. This condition is supported by respondents' responses related to the relationship between Environmental Management Accounting and Carbon Management Accounting which has a positive relationship pattern even with a fairly large distribution. The results of empirical data are also supported by statistical tests where a significant positive effect occurs at the error 10%.

Based on the dimensions forming Environmental Management Accounting, it shows that the dimensions of Cost of direct internal impacts make the greatest contribution to the formation of Environmental Management Accounting with a coefficient value of 0.996, followed by the Indirect Monetary and Physical Information Flow dimension with a coefficient 0.989 and the lowest is the contribution of the External costs and influences with a contribution coefficient value of 0.386 [30]. For more details, see Figure 2

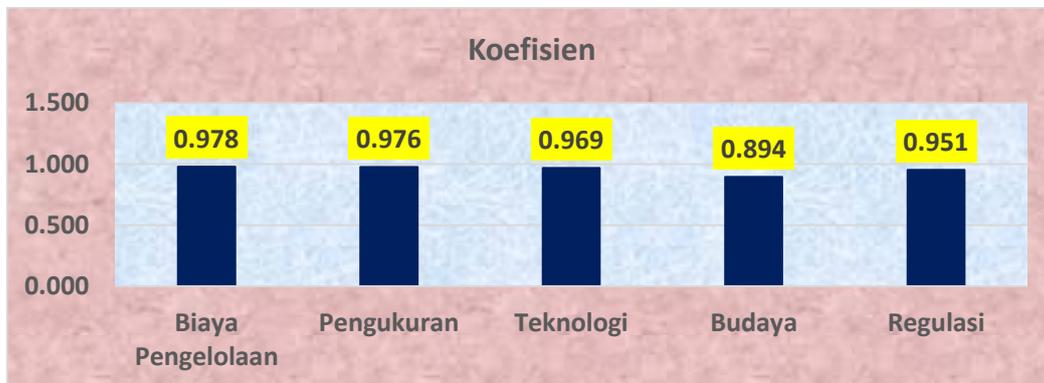
Figure 2: Contribution Dimensions Shapers Environment Management Accounting



Source: processed data

For variable Carbon Management Accounting which consists of 5 dimensions show fifth dimensions give great contribution. Where contribution highest in formation Carbon Management Accounting is Cost Management with mark coefficient of 0.978, followed dimensions Measurement with mark contribution of 0.976, followed dimensions Technology by 0.969, then dimensions Regulation as big as 0.951 and the lowest is dimensions Culture with mark contribution of 0.894 [29]. For more detailed information can see in figure 3

Figure 3: contribution Dimensions Shapers Carbon Management Accounting



Source: processed data

Test results for control variable shows No found exists significant influence from level education, kind sex to Accountant Management Environment but influence Competence proven effect on Management Accountancy Environment while on the Accounting model Carbon Management doesn't found significant influence good at competence nor seniority. This condition shows that measured competence with use ever hold position certain inside _ waste bank organization the more increase ability from internal stakeholders matter optimal waste bank management through a learning by doing process and this will stimulate happening enhancement Environment Management Accounting

5. CONCLUSION

The research findings provide the following evidence, functional imperatives are proven to have a significant positive effect in encouraging the improvement of Carbon Management Accounting [20]. Second, institutional imperatives are proven to have a significant positive effect on the improvement of Carbon Management Accounting. Third, functional imperatives are proven to have a positive effect on improving the Accounting Management Environment [26]. Fourth, institutional imperatives are proven to have a significant positive influence in improving Environmental Management Accounting [27], [28]. Fifth, Environmental Management Accounting has proven to have a significant positive effect on the improvement of Environmental Management Accounting [26], [29].

Third dimensions from imperative functional proven give significant contribution in form an Imperative variable functional with order contribution of the biggest Complexity Operational, Uncertainty Environmental and Proactive Strategy [9]. Third dimensions from imperative institutional proven give significant contribution to formation variable imperative institutional with order contribution of the biggest Pressure Regulation , Community Expectations and Pressure Cognitive [9]. Third forming dimensions variable Environment Management Accounting proven give significant contribution information variable Environment Management Accounting with order contribution of the biggest is Cost and impact internal No direct, Stream Information monetary and physical direct as well as Cost and influence external, Fifth dimensions from Accountancy Proven Carbon Management give significant contribution information variable Carbon Management Accounting with order contribution biggest is Cost Management, dimensions Measurements, dimensions Technology, dimensions Regulations and dimensions Culture [29].

Accounting Models Management Environment and Accounting Models Carbon Management is better on the non-government model compared to with the government model because different roles in matter same bank enforcement that is for non- government as executor while the government model is more transparent in matter supervision and regulator.

Factor demographics or profile influential respondents only on influence competency to Environment Management Accounting temporary for other variables such as type gender, grade education and seniority No effect.

This research has Lots limitations and the future must corrected for the sake of perfecting the Management model Carbon Accounting to produce more models that can be obtained implemented with good inside waste management. A number of existing limitations _ in this research is Respondent from non- government No restricted only level Director but also executor from waste management with The goal is that the resulting model is better as well as avoid anomaly height mark coefficient determinant (R Square) as consequence answer from relative respondents homogeneous, do exploratory model modification with enter variables characteristics respondents who did not only function as variable control but make it as variable moderation , Total sample from government need reproduced especially For executor so that it can produce a more explanatory model actual conditions (conditions actual)

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