THE EFFECT OF GREEN LEADERSHIP AND GREEN INNOVATION ON GREEN PERFORMANCE WITH GREEN SELF-EFICACY AS A MEDIATING VARIABLE"AT THE ENVIRONMENTAL SERVICE OF BENER MERIAH DISTRICT"

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Abstract

This study aims to analyze the influence of Green Leadership and Green Innovation on employee Green Performance with Self-Efficacy as a mediating variable at the Environmental Service of Bener Meriah Regency, the dependent variables of this study are Green Leadership and Green Innovation for the independent variable is Green Performance, for the intervening variable is Green Self Efficacy. The population in this study were 180 employees at the Bener Meriah Regency Environmental Service. The sampling technique used the census technique and obtained a sample of 180 respondents who were employees at the Bener Meriah Regency Environmental Service. The research method used was the quantitative method, for the data analysis method using Structural Equation Modeling. The results of this study indicate that Green Leadership and Green Innovation have a significant effect on Green Self Efficacy, furthermore Green Leadership and Green Innovation and Green Self Efficacy have a significant effect on Green Performance of employees of the Bener Meriah Regency Environmental Service. This study shows that Green Self Efficacy is the most dominant variable that influences the Green Performance of employees of the Bener Meriah Regency Environmental Service. In this study, Green Leadership and Green Innovation have a significant effect on employee Green Performance through Green Self Efficacy as an intervening variable, it can be concluded that Green Self Efficacy functions as a partial mediation between exogenous and endogenous variables.

Keywords: *Green Leadership, Green Innovation, Green Self Efficacy and Green Performance.*

A. INTRODUCTION

In recent decades, the negative impact of human activities on ecosystems has increased, and environmental issues have increasingly received global attention. Green performance is a key metric for assessing the extent to which an institution is able to manage and reduce the environmental impact of its activities. According to YS Chen (2008), green performance is a measure of an organization's performance in reducing energy consumption, carbon emissions, and production waste. This measurement reflects not only environmental responsibility but also the institution's operational efficiency and can improve the institution's reputation and long-term sustainability. Green performance is important to examine in government institutions because the government plays a crucial role in implementing policies and activities that support environmental sustainability. According to Porter & Linde (1995), the successful implementation of green policies depends not only on regulations but also on the agency's commitment to consistently applying these standards. This not only contributes to compliance but also demonstrates the government's commitment to environmental sustainability.

Green performance in government institutions encompasses objectives consistent with sustainable development goals, particularly those related to climate change and sustainable environmental management. Government authorities must ensure that policies and operational measures align with these goals, thereby accelerating achievement at the national and global levels. In this regard, the government is expected to set an example for society and other sectors by participating in achieving sustainability goals (Khan et al., 2023). Furthermore, green performance must be supported by innovations undertaken to support environmentally friendly goals. This needs to be done by agencies to keep up with developments and challenges of the times, so that the

environment is continuously protected. Green innovation plays a crucial role in improving the environmental performance of organizations, especially those that play a major role in environmental management, such as the Environmental Agency. Green innovation or green innovation involves the development of products, processes, technologies, and policies aimed at reducing negative impacts on the environment. (Y. Chen et al., 2006) For government agencies, this environmentally friendly innovation includes the efficient use of resources, the use of environmentally friendly technologies, and improved waste management, which ultimately improve environmental performance.

The Environmental Service is an agency that focuses on environmental sustainability. The law governing the environment (UU) is Law Number 32 of 2009 concerning Environmental Protection and Environmental Protection (UU PPLH). The PPLH Law regulates efforts to maintain environmental functions systematically and integratedly. These efforts include planning, utilization, control, maintenance, monitoring, and law enforcement. This is also supported by PerMen LHK No. P.16 / MENLHK / SETJEN / KUM.1 / 4/2019 concerning Guidelines for the Preparation of Environmental Documents, this Decree provides guidelines for economic actors and the government in preparing environmental documents. UKL-UPL aims to minimize the negative impact of its activities on the environment.

In this case, the researcher wants to look further into the Bener Meriah Regency Environmental Service related to green performance in the agency. Specifically, in this case the researcher wants to see from the side of green leadership and green innovation that exist in the agency with self-efficacy owned by employees as a mediator. Based on the background above, the researcher wants to study related to "The Influence of Green Leadership and Green Innovation on Green Performance with Green Self-Eficacy as a mediating variable in the Bener Meriah Regency Environmental Service". Based on the phenomena and problems above, several problems can be formulated as follows.

B.   OBJECTIVES AND BENEFITS OF STUDY
BerdBased on the existing problems and phenomena, the objectives of this research are as follows:
1.   How does Green Leadership influence Green Performance at the Bener Meriah Regency Environmental Service?
2.   How does Green Innovation affect Green Performance at the Bener Meriah Regency Environmental Service?
3.   How does Green Self-Efficacy affect Green Performance at the Bener Meriah Regency Environmental Service?
4.   How does Green Leadership influence Green Self-Efficacy in the Bener Meriah Regency Environmental Service?
5.   How does Green Innovation affect Green Self-Efficacy in the Bener Meriah Regency Environmental Service?
6.   Does Green Self-Eficacy mediate the influence of Green Leadership on Green Performance in the Environmental Service of Bener Meriah Regency?
7.   Does Green Self-Eficacy mediate the influence of green innovation on Green Performance at the Environmental Service of Bener Meriah Regency?

C. LITERATURE REVIEW
Theory of Green Performance
Green Performance or environmentally friendly performance is an indicator to see the extent to which the performance system implemented in an agency supports environmentally friendly issues. This performance assessment also looks at the extent to which employees understand and maintain environmentally friendly practices in their daily work. According to Melnyk et al., (2003), green performance is linked to the implementation of an environmental management system that aims to reduce negative impacts on the environment. They emphasize that an effective EMS (Environmental Management Sustainability) can improve an agency's environmental performance by encouraging environmentally friendly operational efficiency. According to Zhu & Sarkis, (2004), green performance is an agency's performance achieved through environmentally friendly supply chain management practices. According to them, green performance can be measured by the agency's success in reducing pollution, energy efficiency, and recycling rates.

Theories about Green Leadership
Green leadership, or environmentally friendly leadership, is the spirit possessed by leaders and employees within an agency in supporting environmentally friendly programs. A foundation of environmentally friendly leadership will ultimately foster policies and personalities that support environmental sustainability. This is especially important for government agencies like the Department of the Environment. This will ensure that not only

the agency itself will have an environmental brand, but both leaders and employees will also possess a strong green leadership spirit. According to (YS Chen & Chang, 2013), green leadership is a leadership style that incorporates environmentally friendly principles into all decisions and actions of an organization. Leaders encourage environmentally friendly behavior among their team members and strive to ensure that organizational activities support sustainability. Green leaders play a crucial role in creating environmental awareness and culture and encouraging innovation to achieve environmentally friendly performance.

Theory of Green Innovation

Green innovation is innovation or renewable energy planned and implemented by an agency to support sustainability and environmental friendliness. This innovation can arise from ideas initiated by employees and leaders within the agency. Green innovation is defined as product and process innovation that focuses on reducing environmental impacts. This innovation includes product changes, process changes, and the use of environmentally friendly technologies to improve resource efficiency. (Y. Chen et al., 2016) From a competitive advantage perspective, green innovation is an organization's ability to incorporate environmental considerations into product and process development. This approach often reduces costs and improves performance simultaneously. (Porter & Linde, 1995)).

Theory of Green Self-Efficacy

Self-efficacy refers to an individual's belief in their ability to organize and carry out specific actions to achieve goals. In an environmental context, eco-friendly self-efficacy refers to an individual's belief in their ability to engage in activities that support environmental sustainability. This concept is crucial because it can influence an individual's behavior in engaging in environmentally friendly actions.

According to Bandura (1997), self-efficacy describes an individual's belief in their ability to achieve certain outcomes. In an environmental context, green self-efficacy reflects an individual's belief in their ability to take positive action for the environment. The primary theory underlying the concept of green self-efficacy is social cognitive theory by Bandura (1997), which emphasizes the importance of an individual's belief in their ability to achieve certain goals. In an environmental context, this theory states that individuals who believe in their ability to contribute to environmental protection are more likely to engage in pro-environmental behavior..

Conceptual Framework

A framework is the basis for research, synthesized from facts, observations, and research studies. It contains theories, propositions, or concepts that will serve as the basis for the research.The relationship between the variables used in this study can be seen in Figure 1.1 below:
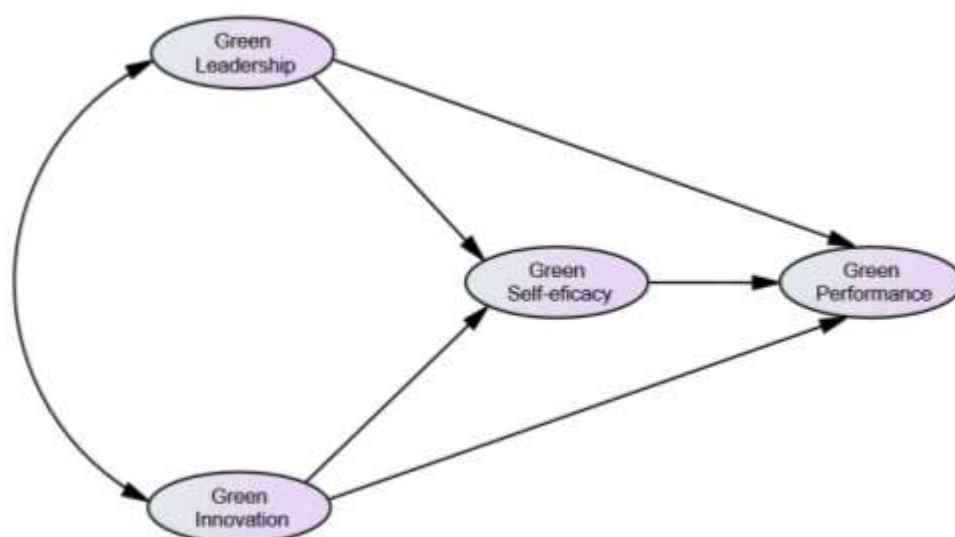

Figure 1. Conceptual Framework

Based on the conceptual framework that has been explained and compiled above, several previous studies that are related to this research will be presented as follows:

1. The relationship between green leadership and green self-efficacy

The results of the analysis prove that Green Leadership has an effect on Green Self-efficacy. Ahuja et al., (2023), Faraz et al., (2021), and (Zhang et al., 2020) in their research showed that Green Leadership has an effect on Green Self-efficacy, the results of this study support the results of research put forward by AL-Swidi Abdul Khalid, et. all (2021), Faraz, Naved Ahmad, et.al (2021), in their research Green leadership is a leadership style that encourages environmentally friendly practices, inspires organizational members to adopt sustainable values and carry out actions that support environmental conservation. Meanwhile, green self-efficacy is an individual's belief in their ability to contribute to environmentally friendly actions effectively..

2. The relationship between green leadership and green self-efficacy

The results of the analysis prove that the results of their research show that Green Innovation has an effect on Green Self-efficacy (Alshebami, 2023) and (Zhang et al., 2020) in their research show the results below Green Innovation has an effect on Green Self-efficacy, Green innovation is the process of developing products, services, or processes that are environmentally friendly and sustainable, aiming to reduce negative impacts on the environment. Meanwhile, the results of the green self-efficacy study are individuals' beliefs in their ability to take action and make environmentally friendly decisions, here are some of the effects of green innovation on green self-efficacy, the results of the study show that increasing self-confidence through successful innovation success in developing or implementing environmentally friendly innovations can increase individuals' confidence in their ability to contribute to sustainability in Isrososiawan, Safroni (2020).

3. The relationship between green leadership and green performance

The results of the analysis prove that the results in their research show that Green leadership has an effect on Green Performance. Alshebami, (2023) and Zhang et al., (2020) in their research show the results below that Green Innovation has an effect on Green Performance, the results of previous research that Green leadership is a leadership style that emphasizes the importance of sustainability and environmental protection in decision making, policies, and operational actions of the company, meanwhile, green performance refers to the ability of an organization or individual to achieve environmentally friendly results, such as energy efficiency, waste reduction, and sustainable use of resources..

4. The relationship between green innovation and green performance

The results of the analysis prove that the results in their research show that Green Innovation has an effect on Green Performance Wang et al., (021), Shahzad et al., (2020), and ND Pratiwi et al., (2023) in their research show the results below Green Innovation has an effect on Green Performance, some of the studies above show that Green innovation is the development and application of new environmentally friendly products, processes, or technologies to reduce negative impacts on the environment. Green performance, on the other hand, refers to the achievement of sustainability performance, including energy efficiency, waste reduction, and carbon emission reduction. Here are some of the effects of green innovation on green performance: Increasing energy efficiency and green innovation resources can help companies improve the efficiency of energy and raw material use.

5. The relationship between green self-efficacy and green performance

The results of the analysis prove that the results in their research show that Green Self-efficacy has an effect on Green Performance (Nisar et al., 2024) and Saleem et al., (2024), Wang et al., (2021), Shahzad et al., (2020), and ND Pratiwi et al., (2023) in their research show the results below Green Self-efficacy has an effect on Green Performance, the results of this study support the results of research put forward by Nasir (2020), Luthans (2018) and Shahzad et al., (2020), Green self-efficacy is an individual's belief in their ability to take environmentally friendly actions and contribute to sustainability, meanwhile, green performance refers to the results or achievements of an organization or individual in terms of reducing negative impacts on the environment through energy efficiency, waste reduction, and other sustainable actions, here are some of the effects of green self-efficacy on green performance: Increasing proactive initiatives individuals with high levels of green self-efficacy tend to be more proactive in seeking solutions and taking environmentally friendly actions. This can directly contribute to improved green performance, such as waste reduction or energy efficiency.

Hypothesiss Research

Based on the conceptual framework, a hypothesis is an idea for gathering facts. It is a tentative question or the most likely assumption that still needs to be verified. Based on the above framework and research conducted by several previous researchers, the following hypothesis can be formulated:

H1 = It is suspected that there is a positive and significant influence of green leadership on the green self-efficacy of employees of the Bener Meriah Regency Environmental Service.

H2 = It is suspected that there is a positive and significant influence of green innovation on the green self-efficacy of employees of the Bener Meriah Regency Environmental Service.

H3 = It is suspected that there is a positive and significant influence of green leadership on the green performance of employees of the Bener Meriah Regency Environmental Service.

H4 = It is suspected that there is a positive and significant influence of green innovation on the green performance of employees of the Bener Meriah Regency Environmental Service.

H5 = It is suspected that there is a positive and significant influence of green self-efficacy on the green performance of employees of the Bener Meriah Regency Environmental Service.

H6 = It is suspected that green self-efficacy mediates the influence of green leadership on the green performance of employees of the Bener Meriah Regency Environmental Service.

H7 = It is suspected that green self-efficacy mediates the influence of green innovation on the green performance of employees of the Bener Meriah Regency Environmental Service.

D. Research methods.

Research Location

This research was conducted at the Bener Meriah Regency Environmental Service. The object of this research was a problem that served as the topic for a thesis.

PoResearch Design and Sample

Population

According to Ferdinand (2014) "Population is a generalized area consisting of objects/subjects that have certain qualities and characteristics determined by the researcher to be studied and then drawn conclusions. So the population in this study is all 198 Bener Meriah Regency Environmental Service Employees according to Table 1 below.

Table 1. Population Size

No.	Status	Amount
1	ASN	26
2	Non ASN	172
	Total	198

Source: Bener Meriah Environmental Service, 2024

Sample

The sampling technique is carried out using the saturated sample method or census sample technique, this sampling technique is carried out if the population has limited members/elements and all elements of the population will be used as research samples, so the sample is 198 (24 indicators x 8) according to Hair, at.all (2018) the sample size can be estimated with 5-10 parameters, the sample that is the respondent is in accordance with the requirements of the SEM model (Ferdinand, 2014) which is 1-200 samples so in this study the sample was taken from only 198 respondents at the Bener Meriah Regency Environmental Service Employees.

Data collection technique

In this study, the questionnaire was created with structured statements/questions and provided answers in the form of a scale with answers that are adjusted to the statements/questions so that it makes it easier for respondents to answer and avoid bias, the measurement used is a Likert scale where each statement has an answer interval, namely 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree) and 5 (strongly agree). Specifically, the measurement technique as presented, the following operational definition is as in Table 3 below.

Table 3. Definition of Variables and Indicators

No	Variables	Variable Definition	Indicator	Measuring Scale
1	*Green Leadership* (GL)	Environmentally friendly leadership styles and behaviors of leaders in institutions in supporting environmentally friendly programs.Bener Meriah Regency Environmental Service.	1. *Vision and action* 2. *Employee empowerment* 3. *Stakeholder engagement* 4. *Transparency* 5. *Strategic direction* 6. *Green learning* (Chen & Chang, (2013) and Benn et al., (2014)	Likert (1-5)
2	*Green Innovation*(GI)	Innovation and renewable concepts planned and implemented by agencies to support sustainability and environmental friendliness.Bener Meriah Regency Environmental Service.	1. Cost efficiency 2. Technology integration 3. Generating programs 4. Environmentally friendly 5. Production process 6. Technology advancement (Dangelico & Devashish, (2010) and Porter & Linde, (1995)	Likert (1-5)
3.	*Green Self-Efficacy* (GSE)	Keawhere self-efficacy describes an individual's belief in his or her ability to achieve certain results at the Bener Meriah Regency Environmental Service.	1. Confidence 2. Solving problem 3. Sustainability process 4. Self-perception 5. Motivational skills 6. Environmentally friendly (Scherbaum et al., (2006) and Bandura, (1997))	Likert (1-5)
4	*Green Performance*(GP)	Environmentally friendly employee performance aims to measure individual contributions in promoting environmental sustainability in the workplace.Bener Meriah Regency Environmental Service.	1. Environmental Awareness 2. Environmental training 3. Environmentally friendly program 4. Use of resources 5. Environmental projects 6. Environmental policy (Jabbour & Santos, (2008) and Daily & Huang, (2001)	Likert (1-5)

Data Analysis Techniques

Inferential statistics is a method related to sample analysis to draw conclusions about population characteristics. After collecting data and information in the field, the author used the Structural Equation Model (SEM) method to model and test hypotheses. SEM or structural equation modeling is a collection of statistical techniques that allow for the simultaneous testing of a series of relatively complex relationships (Ghozali, 2018). What is meant by complex is simultaneous models formed through more than one dependent variable at the same time acting as an independent variable for other hierarchical relationships. In this study, two types of analysis techniques were used, namely:

1. Confirmatory analysis*(confirmatory factor analysis)*in SEM which is used to confirm the most dominant factors in a group of variables.
2. *Regression Weight*in SEM which is used to examine how much influence there is between variables.

E. RESULTS AND DISCUSSION

Result Analysis

The analysis of the confirmatory factor or CFA of the exogenous construct consists of two latent variables: organizational culture, work engagement, and transactional leadership, where four indicators form the organizational culture variable, work engagement is formed with four indicators, and transactional leadership is developed with five indicators. In contrast, five indicators include the endogenous construct of the organization commitment variable. In comparison, apparatus performance is formed by five indicators. A CFA test is performed for each latent variable to see the indicators that make up the latent construct, which can be described below. Based on the results of data analysis that has been collected on 180 respondents, a structural study (SEM) will be presented as follows :
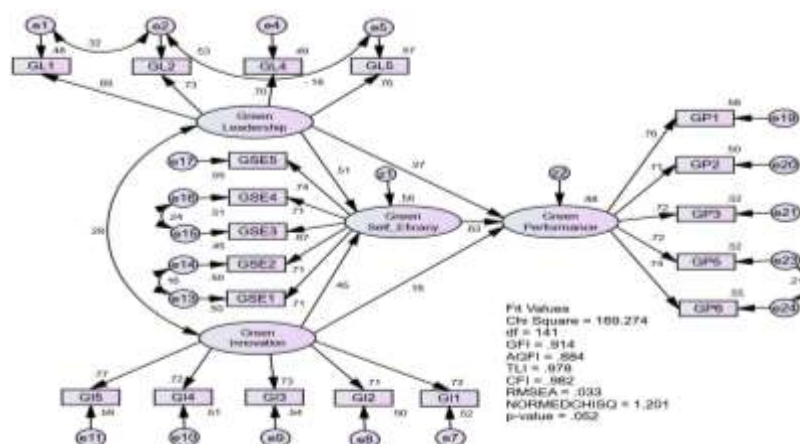

Figure 1. Structural Model After Modification
Source: Amos Output, 2025

The results of the structural model for the endogenous contract of Figure 1 above used to test the unidimensionality show the value of the model results following the goodness of fit criteria so that the model can be accepted.

Table 3. Results of the Full Model Fit Test

Goodness of Fit Index	Cut-off Value	Analysis Results	Model Evaluation
X2-Chi-Square	Expected Small	169,274	Good
Probability	≥ 0.05	0.052	Good
GFI	≥ 0.90	0.914	Good
AGFI	≥ 0.90	0.884	Marginal
CFI	≥ 0.95	0.982	Good
TLI	≥ 0.95	0.978	Good
CMIN/DF	≤ 2	1.201	Good
RMSEA	≤ 0.08	0.033	Good

Model suitability test Based on Table 3, the results of the Amos analysis can be explained that the model is fit, so it can be explained that all exogenous variables have a significant effect on the endogenous variables and the model is fit, so this structural model can be used to test the research hypothesis that has been formulated in the previous chapter.

F. DISCUSSION

The direct effect analysis aims to see how strong the influence of a latent variable is on other latent variables, either directly (direct effect) or indirectly (indirect effect) and also the total effect can be stated in Table 4 below:

Table 4. The Influence of Exogenous Variables on Endogenous Variables

Endogenous Variables		Exogenous Variables	Std.Est .	Est	SE	CR	P
Green Self Efficacy	<--	Green Leadership	.505	.532	.098	5.402	***
Green Self Efficacy	<--	Green_Innovation	.447	.440	.085	5.177	***
Green Performance	<--	Green Self Efficacy	.633	.638	.125	5,088	***
Green Performance	<--	Green Leadership	.267	.283	.095	2,970	.003
Green Performance	<--	Green_Innovation	.178	.177	.076	2,318	.020

Source: Processed Primary Data (2025)

1. The direct influence of green leadership on green self-efficacy is with an estimate value of 0.505 (50.5%) and a significant value of 0.000 which is smaller than 0.05, which means there is a significant influence and**accept the first hypothesis (H1)**that state*green leadership* has a positive and significant effect on*green self-efficacy* employeeBener Meriah Regency Environmental Service.
2. The direct influence of green innovation on green self-efficacy is with an estimate value of 0.447 (44.7%) and a significant value of 0.000 which is smaller than 0.05, which means there is a significant influence and**accept the first hypothesis (H2)**that stategreen innovationhas a positive and significant effect on employee green self-efficacyBener Meriah Regency Environmental Service.
3. The direct influence of green leadership on green performance is with an estimate value of 0.267 (61.7%) and a significant value of 0.003 which is smaller than 0.05, which means there is a significant influence and**accept the first hypothesis (H3)**that state*green leadership* has a positive and significant effect ongreen employee performance Bener Meriah Regency Environmental Service.
4. The direct influence of green innovation on green performance is with an estimate value of 0.178 (17.8%) and a significant value of 0.020 which is greater than 0.05, which means there is a significant influence and**accept the first hypothesis (H4)**which states that green innovation influences employee green performanceBener Meriah Regency Environmental Service.
5. The direct influence of green self-efficacy on green performance is with an estimate value of 0.633 (63.3%) and a significance value of 0.000 which is smaller than 0.05, which means there is an influence so that**accept the first hypothesis (H5)**which states that green self-efficacy has a positive and significant influence on employee green performance.Bener Meriah Regency Environmental Service.

INDIRECT EFFECT

Based on the results of the calculation of the probability value for path c' using the Sobel Test as in Figure 2, the significance value for all paths (A and B) is significant while path C is also significant so that this model meets the job satisfaction requirements as follows.
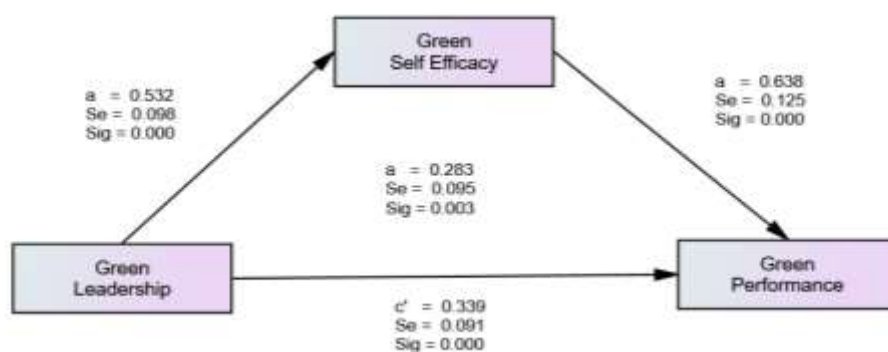

Figure 2.Mediation Effect Test Results
Green leadership – Green Self Efficacy – Green Performance

The results of the analysis in Figure 2. above can be explained that the coefficient of path A, path B is significant and path C is significant, while path C' is also significant, because the probability of path C is significant, so it can be concluded that green self-efficacy meets the requirements and functions as a partial mediating variable. The following analysis of the indirect influence of organizational culture on employee performance through organizational commitment is carried out using the Sobel Test calculation. An Interactive calculation tool for Mediation tests can be seen in Figure 3. Below.
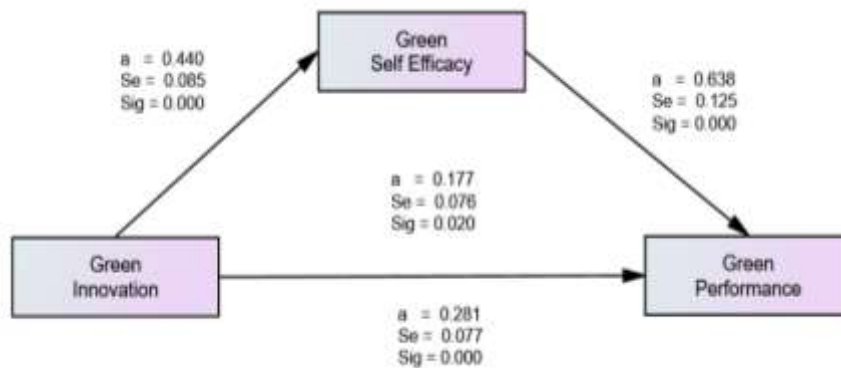

Figure 3. Mediation Effect Test Results
Green Innovation – Green Self Efficacy – Green Performance

Based on the analysis in Figure 3 above, it can be explained that the coefficient of path A, path B is significant and path C is significant, while path C' is also significant. Because the probability of path C' is significant, it can be concluded that there is a relationship between organizational culture and employee performance mediated by green self-efficacy through partial mediation. In other words, the organizational culture variable (independent variable) is able to significantly influence employee performance (dependent variable) through the mediator variable, namely organizational commitment, so that the seventh hypothesis (H7) is accepted.

G. CONCLUSION

Based on the research results and discussion of the researchers above, we can draw conclusions from the research results as described in the previous chapter, so we can present several conclusions as follows:
1. It was concluded that green leadership had a positive and significant effect on the green self-efficacy of employees at the Bener Meriah Regency Environmental Service.
2. It was concluded that green innovation had a positive and significant effect on the green self-efficacy of employees at the Bener Meriah Regency Environmental Service.
3. It was concluded that green leadership had a positive and significant effect on the green performance of employees at the Bener Meriah Regency Environmental Service.
4. It was concluded that green innovation had a positive and significant effect on the green performance of employees at the Bener Meriah Regency Environmental Service.
5. It was concluded that green self-efficacy had a positive and significant effect on the green performance of employees at the Bener Meriah Regency Environmental Service.
6. Green self-efficacy partially mediates the relationship between green leadership and the green leadership of employees of the Bener Meriah Regency Environmental Service.
7. Green self-efficacy partially mediates the relationship between green innovation and green performance of employees of the Bener Meriah Regency Environmental Service.

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