



## The Influence of Ecological Leadership and Organizational Culture on Pro Environmental Behaviors: The Mediating Employee Environmental Empowerment

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### Abstract

The aim of this study was to analyze the extent to which a company implement environment-based sustainable improvement. In modern era, many companies put emphasis on improving economic sector while ignoring environmental sustainability. The faster the industrial growth in Indonesia is, the more waste it generates. Thus, in order to increase pro-environmental behavior at PT Telekomunikasi Indonesia Regional Division IV Central Java and Yogyakarta, it is necessary to have leaders who adopt ecological leadership and organizational culture models. Therefore, the specific aim of the study was to determine the role of employee environmental empowerment in this company. The results showed that ecological leadership and organizational culture had a positive and significant effect on employee environmental empowerment and pro-environmental behavior. Employee environmental empowerment had a positive and significant effect on pro-environmental behavior. Meanwhile, as the total effect on ecological leadership had the highest effect value, the ecological leadership was the main key of this company. This suggests that the function of the ecological leadership has to be maintained and its quality has to be improved so that employees have a role model who is able to motivate and generate a spirit of caring for the environmental issues in the company.

### INTRODUCTION

The relatively highly industrial growth in Indonesia has made a positive contribution to Indonesian economy. The contribution of the sectors of Agriculture, Forestry, and Fisheries is approximately 13.96%, Trade 12.98%, and Construction 10.26% to the Gross Domestic Product (Kementerian Perindustrian, 2017). Yet, at the same time, the quality of natural resources has decreased, leading to environmental degradation (Fitria & Nadiroh, 2019). One positive solution in answering the environmental problems is to implement Environmental Management System (EMS) with the basic principles and guidelines of ISO 14001 ([Http://standardisasi.menlhk.go.id/](http://standardisasi.menlhk.go.id/), n.d.), even though the implementation of the ISO 14001 in Indonesia is still very few. One

of the causes of climate change in company operations is human activities (Ridwan, 2016); therefore, employee behavior determines the success of companies in implementing environmental care programs (Daily et al., 2009).

Consequently, according to Pless et al. (2011), to implement environmental care behavior employees need a figure who is able to be an example, in this case, the leader of the company. This approach to develop employees having an environmental care behavior can be started by forming a close relationship between the leaders and the employees so that the implementation of environmental values can be internalized properly. Another factor playing an important role is organizational culture. A good organizational culture might change employees' behavior being practiced from their previous companies into

more positive behavior so that the quality employees can be produced (Porter et al., 2016). Once the organizational culture is successful in encouraging green behavior, the overall performance of the environment-based organization will increase (Lasrado & Zakaria, 2019).

In relation to the role of the leader of a company, responsible leadership is described as having strong response to various needs and challenges (Maak & Pless, 2006).

According to Han et al. (2019), responsible leadership has a significant effect on organizational citizenship behavior for the environment through examples of exemplary and moral behavior and inspires employees to imitate these behaviors while avoiding the ones that can impair the company's image. On the other hand, Wesselink et al. (2017) argue that leadership support does not have a positive impact on actual pro-environmental behavior because when the company has implemented leadership support, there is no evidence of positive change of employees implementing environmental care behavior. The reason is that employees do not need leadership support, but company's leaders who can be the role models for them.

When a company cares about the environment, the organizational culture must also support it. Lasrado and Zakaria (2019) who conducted a research in two different countries, the United Kingdom and the United Arab Emirates, identify that organizational culture affects activities of the company in these two countries. However, different finding shows that in the United Kingdom, organizational culture can be achieved by emphasizing green values such as incorporating green practices in budgets and through colleagues. In the United Arab Emirates, conversely, as most organizations are multicultural based and lack of cultural homogeneity needed to facilitate green behavior, employees get difficulties to adopt new green culture; in fact, employees are less concerned about green behavior change. Lasrado and Zakaria (2019) also conducted research in the United Arab Emirates. In the United Arab Emirates, most of the organizations are multicultural and lack the cultural homogeneity necessary to facilitate green behavior, making it difficult for employees to adopt the new green culture. Researchers also found that employees were less concerned about green behavior change.

Consequently, organizations have to encourage their employee through environmental preservation efforts to create employee behavior with environmental awareness (Matthews et al., 2003; Rali & Ahmed, 2010). Employee environmental empowerment is an organizational need

that is useful to meet customer demands regarding environmental responsibility by applying it as needed (Matthews et al., 2003; Mougbo, 2013; Renwick et al., 2013). Within employee environmental empowerment, companies can form several divisions to focus on environmental problems, such as greening operations, greening human resources, greening accounting and finance, greening retailing, greening marketing and greening employees (Renwick et al., 2013).

Given the explanation, due to the lack of Indonesian companies implemented EMS with ISO 14001 certification, this research was conducted at PT Telekomunikasi Indonesia Tbk. Regional Division IV Central Java and DIY. Although not yet certified with ISO 14001, PT Telkom is aware of and concern about the dangers of global warming and climate change with the theme "Save Planet, No Plastic".

In this research, this study proposed employee environmental empowerment as an intervening variable to fill in the gap from the previous research results. Employee environmental empowerment is considered a potential mediator as it influences employees motivation to implement green practices (Tariq et al., 2016) The benefits that companies might get when implementing employee environmental empowerment were that companies could easily achieve green goals, as the company had encouraged, empowered, and motivated employees. In addition, the goal of the employee environmental empowerment is to meet customers demand regarding environmental responsibility by implementing appropriate applications so as to create competitive advantages (Andersson et al., 2013; Renwick et al., 2013)

In addition, to increase pro-environmental behavior at PT Telekomunikasi Indonesia Regional Division IV Central Java and Yogyakarta, it was necessary to have leaders who adopt ecological leadership and organizational culture models. Therefore, the aim of the study was to determine the role of employee environmental empowerment in this company.

Considering that the number of companies implementing ISO 1400 was relatively small, including PT Telekomunikasi Indonesia, this study selected this company as the subject of this research, as its operations had direct implications to the environment, such as electricity consumption, use of fuel either private or official vehicles, use of paper, and several other activities. Although PT Telekomunikasi Indonesia, Regional Division of Central Java and Yogyakarta have not had ISO 14000 yet, this company do realize the dangers of global warming and climate change by promoting the theme "Save Planet, No Plastic".

Thus, cultural education has been implemented, such as saving energy, tree planting movements, bicycle user communities, and many more.

### Hypotheses Development

#### Ecological Leadership

Organizations planning to be successful in global competition, in addition to thinking about company profits, must pay attention to environmental responsibility (Miska et al., 2014), known as eco-leadership. Eco-leadership is the act of a leader who is not only an authority holder, but a person who is able to form a harmonious work engagement focusing on environmental sustainability between the leader and his employees. Ecological leadership applies several approaches, such as exploring talents, creativity, and energy of employees so that they can create new leaders (Wielkiewicz & Stelzner, 2005; Western, 2013).

According to Harms and Leise (2011), organizations implementing ecological leadership gain advantage by maximizing their potential resources, especially human resources, both when facing problems or opportunities. The human resource potentials are in the form of knowledge, skills, and experiences. Previously, Wielkiewicz and Stelzner (2005) explained that the ecological leadership process seeks to find individuals who have characteristic and ability to solve problems and achieve company goals. Having the talented individual, leadership process shapes the employee's character to have a leadership spirit. The manifestation of leadership spirit is more essential than the presence of a leader, as the leadership process covers all relevant parties within the company, such as stakeholders and employees.

#### Organizational culture

Environmental-based organizational culture is the most important determinant by the definition of this strategy, by which the definition depends on the history of the company (Küçüköğlü & Pınar, 2015). Thus, the notion of the environment-based organizational culture is the element to improve company performance and strategy to create a competitive advantage. The competitive advantage can be obtained in several ways; increasing environmental-based adaptability, procedure guidance, solutions to overcome problems, and facilities to achieve goals. However, in some circumstances, organizational culture is likely difficult to be implemented as problems in organizations are complex, but if it is applied, organizational culture can increase company competitiveness (Martins & Martins, 2002). In addition, according to Harris and Crane (2002),

environmental organizational culture is a context regarding environmental management and protection by integrating behavior, common sense, a set of values, and environment-based norms.

#### Employee Environmental Empowerment

The term "green management" has grown into a concept that needs to be understood by public, besides studying science and technology (Dutta, 2012). Globally, green management has become the main orientation of organizations focusing on the future (Jackson et al., 2014). Many theories support that in order to pursue green functions, employees must be empowered, courageous, and environmentally conscious (Matthews et al., 2003; R Ali & Ahmad, 2009). Consequently, in one side, contemporary employees must have responsibility for green management, and in the other side, organizations must be concern more about this, especially the well-known ones to the community (Jackson et al., 2011, 2014). Once employee empowerment is carried out to fulfill green functions, this can be called employee environmental empowerment.

In other word, employee environmental empowerment will be achieved if employees are empowered to do green tasks in an organization that is supervised by human resource managers. As a result, by combining the idea of green resources with employee environmental empowerment, green goals will be achieved, as employees have a vital role in the organization as the "brain function" (Dutta, 2012). Employee environmental empowerment is considered a potential mediator because it has an influence on employee motivation to pursue green practices (Tariq et al., 2016).

#### Pro-Environmental Behavior (PEB)

Environmental sustainability is an important component for companies to survive in the 21st century (Starik & Marcus, 2000). The way that can be done to increase the awareness of environmental care is by adopting green practices done by companies so that the improved environmental care performance can be achieved (Paille et al., 2014; Zibarras & Coan, 2015). Environmental care or pro-environmental behavior is an action taken by a person to reduce negative impact of human activities on the environment and/or create a person's behavior to be concern on the environment (Jensen, 2002; Kollmuss & Agyeman, 2002). An employee is a person who should be implemented green organizational policy; therefore, the employee is obliged to behave in a caring manner in order to be in line with the green goals of the organization (Ramus & Steger, 2000 ; Daily et al., 2009; Ones & Dilchert, 2012).

There are several tasks requiring employees to behave green; for examples, ensuring toxic waste is not mixed with water sources or that hazardous materials are disposed of in accordance with organizational policies and government regulations. This behavior should be performed daily as part of employee formal work (Paillé & Boiral, 2013). Other examples of the implementation of pro-environmental behavior are activities in public spaces (actively involved in environmental organizations), non-public space activities (creating petitions about environmental issues), privacy spaces (saving energy and water, buying recycling products.), and behavior in organizations (creating environmentally friendly product designs) (Homburg & Stolberg, 2006). Thus, the proposed hypothesis explain as follows:

#### **The influence of ecological leadership on pro-environmental behavior**

Environmental-based leadership in a company is very important, such as the finding of Ramus and Steger (2000), that supervisor supporting innovation, rewarding, promotion, management objectives, and responsibility significantly increases employee desire to have green initiatives and shape environmentally friendly employee behavior. Similarly, Paillé and Boiral (2013) proposed that in order to shape employees to behave in an environmentally friendly manner, leaders must demonstrate these behaviors and increase employee understanding of green policies so that employees can emulate these behaviors and help them promote green behavior.

Furthermore, according to Han et al. (2019), responsible leaders have a significant effect on organization citizenship for the environment (OCBE) because when leaders and employees interact, employees will directly imitate the leader's behavior so that employee attitudes and behavior will be in accordance with what they have seen and studied. This study also reveal that leaders who are responsible for the environment can increase green behavior in employees through a sense of responsibility. Based on the description, the following hypothesis is formulated

H1: Ecological leadership has a positive effect on pro-environmental behavior.

#### **The influence of organizational culture on pro-environmental behavior**

Organizational culture plays a role in shaping employee behavior caring about the environment. Organizational culture has been identified as an important factor in fostering energy-saving behavior (Wu et al., 2018). A very strong organizational culture can bring positive employee

behavior (Porter et al., 2016). In fact, companies' lacking of environmental care practices cause employees' environmental care behavior weak (Gond et al., 2018). In their qualitative research, Collier and Esteban (2007) stated that the key to implementing environmental initiatives and sustainability is by applying ethics, values, and an open attitude regarding environmental science.

Several studies revealed that organizational culture has a positive effect on employee behavior as stated by Lasrado and Zakaria (2019) that in the United Kingdom, organizational culture can be achieved easily through emphasizing green values on employees, incorporating the application of green practices in budgeting, and colleagues' positive work. By placing oneself in this environment, it can influence the idea of green behavior so that it can form employees who adopt a green culture. Similar research disclosed by Zientara and Zamojska (2018) showed that green organizations have a significant influence on employee behavior that cares about the environment. This shows that this climate can create a normative context so that it has an impact on work behavior and creates a normative context.

The learning environment allows the exchange of various information and builds awareness (Cruz & Pedrozo, 2009). Likewise, the corporate culture must be open to change in order to increase competition (such as sustainability initiatives). These initiatives can provide new opportunities or change roles. As environmental issues can be proactive or reactive, culture has an important role for environmental sustainability strategies (Rouse & Daellenbach, 1999). Based on the description, the following hypothesis is formulated:

H2: Organizational learning has a positive effect on pro-environmental behavior.

#### **The effect of ecological leadership on employee environmental empowerment**

Many studies had been made regarding the relationship of this variable, yet the results was still bias. For example, Koberg et al. (1999) suggested for the future research that the relationship between leadership and empowerment shall be clarified. Other researchers also identified that empowerment can be influenced by supervisors (Lee & Koh, 2001), leadership affects empowerment, as leaders who have high standards of moral behavior can influence employee behavior since employees have an exemplary figure (Menon, 2001). In addition to being role models, leaders can inspire employees with a strong vision for the future and encourage employees to produce

broad thinking in the context of environmental empowerment (Meyerson & Kline, 2008).

Similarly, Ramus and Steger (2000) proved that supervisors' role has a positive effect on employee empowerment, especially in improving employee performance and motivation. By empowering employees effectively and efficiently, companies can increase their competitive advantage, disseminate information, and earn rewards and recognition. This are needed to be done so that the implementation of the environment in the company can run well. Correspondingly, Ramus (2001) revealed that leadership supporting environmental care has a positive influence on environmental practices among employees. Leadership providing support for employees to be empowered creates employees having creativity related to environmental empowerment. Given the explanation, the following hypothesis is formulated:

H3: Ecological leadership has a positive effect on employee environmental empowerment.

#### **The influence of organizational culture on employee environmental empowerment**

Organizational culture also plays a role in environment-based employee empowerment. Organizational support is related to organizations' concern in providing welfare for their employees (Rhoades et al., 2001). Recent literatures discussing environmental management showed that the involvement and empowerment of employees is important in environmental improvement (Daily & Huang, 2001; Ramus & Killmer, 2007). Meanwhile, according to Scanlon Plan written by Massoud et al. (2015), the implementation of a good organizational identity can improve the application of environmental management in companies, and organizational culture is the basic element that functions to improve company performance (Fernández et al., 2003). Thus, by adopting the green organizational culture, a company can enhance its reputation, for the impact on employees is to retain and empower the best employees (Manning, 2004).

Moreover, Ramus (1997) stated that the influence of organizational culture such as changing environmental-based organizational management and aspiring new ideas can support employees to pursue environmental targets. Besides, it can increase creativity so that employees who are empowered will be more active and full of initiative in carrying out their duties. Based on the description above, the following hypothesis is formulated

H4: Organizational culture has a positive effect on employee environmental empowerment.

#### **Effect of employee environmental empowerment on pro-environmental behavior**

Providing opportunities to express opinions, make decisions, and solve problems together is a form of empowerment efforts for employees (Ali & Ahmad, 2009). When they are involved in an environment-based empowerment process, it is referred to as "green employee empowerment". Having this, the idea of greening towards empowerment is increasingly important since employees play an important role in the organization. (Dutta, 2012) divided the division of the green human resource (GHR) component into two important aspects; environmental protection (pollution control) and protection of the organization's knowledge assets (such as human or employee aspects). Meanwhile, according to Zhang et al. (2019), the practice of GHR management consisting of employee life cycles, rewards, education and training, employee empowerment, and employee involvement significantly affects in role and extra role green employee behavior. In this case, empowerment allows employees to improve environmental behavior directly. Based on the description, the following hypothesis is formulated:

H5: Employee environmental empowerment has a positive effect on pro-environmental behavior.

## **METHODS**

### **Population and Sample**

The population of this study was permanent employees of PT. Telekomunikasi Indonesia, Regional Division IV, Central Java and DIY. Population is a generalization area consisting of objects/subjects that have a predetermined quality and characteristics, which are then applied by researchers to study and draw conclusions (Sugiyono, 2010). The population was 170 permanent employees. Sample is part of the number and the characteristics of the population (Sugiyono, 2010). This study selected 135 permanent employees as the sample, the number of which had been agreed upon the researchers and the company.

### **Measures**

The variables were measured by Likert scale covering seven points, namely (1) "strongly disagree" to (7) "strongly agree"

Ecological leadership is measured by seven indicators: leaders showing, supporting, preparing supporting facilities, accommodating and assessing employee aspirations, taking concrete steps, creating a work environment as a place to learn, and supervisory for environmental care activities (Blok et al., 2015). The indicator with the highest value on the Ecological Leadership variable according to the Confirmatory Factor Analysis Table Full Model was the leader takes concrete steps towards the aspirations of his/her employees regarding the green policy proposed by each department or group.

Organizational culture consisted of ten indicators measured by company awareness of global warming, educating employees, using tumbler, minimizing paper use, saving energy, cycling employees, smoking employees, smoking areas, and forming handicraft communities (Referense from PT Telekomunikasi Indonesia Regional IV Semarang and DIY). The indicator with the highest value on the Organizational Culture variable according to the Confirmatory Factor Analysis Table Full Model was employees using tumbler, drinking cups, and other eating and drinking utensils as a step to reduce plastic waste.

Employee environmental empowerment terdiri dari tiga indikator is measured by forming green teams, encouraging employees in the environmental conservation process, encouraging employees to submit suggestions (Yusliza et al., 2017). The indicator with the highest value on the Employee Environmental Empowerment variab-

le according to the Confirmatory Factor Analysis Table Full Model was the formation of green teams in companies to overcome environmental problems and empower employees

Pro-environmental behavior had six indicators is measured by employees caring about environmental problems, worsening environmental conditions, awareness to improve environmental quality, environmental friendly programs by companies, concerns about environmental conditions, and the need for protection of the environment (Robertson & Barling, 2013).

The indicator with the highest value on the Pro-environmental behavior variable according to the Confirmatory Factor Analysis Table Full Model was employees understand that environmental conditions are currently decreasing because the earth is experiencing quite extreme climate changes.

### RESULT AND DISCUSSION

SEM (Structural Equation Modeling) was used to do data processing using Structural Equation Analysis as shown in Figure 1.

For the goodness of fit model, explain in Table 1. Table 1 shows that there are five criteria that have good analysis results (TLI, CFI, IFI, CMIN / DF, RMSEA) and four criteria that have sub-standard model tests with marginal results (chi-square, probability, GFI, AGFI). Thus, the model was categorized as good, as the goodness of fit that met the criteria was more than those did not.

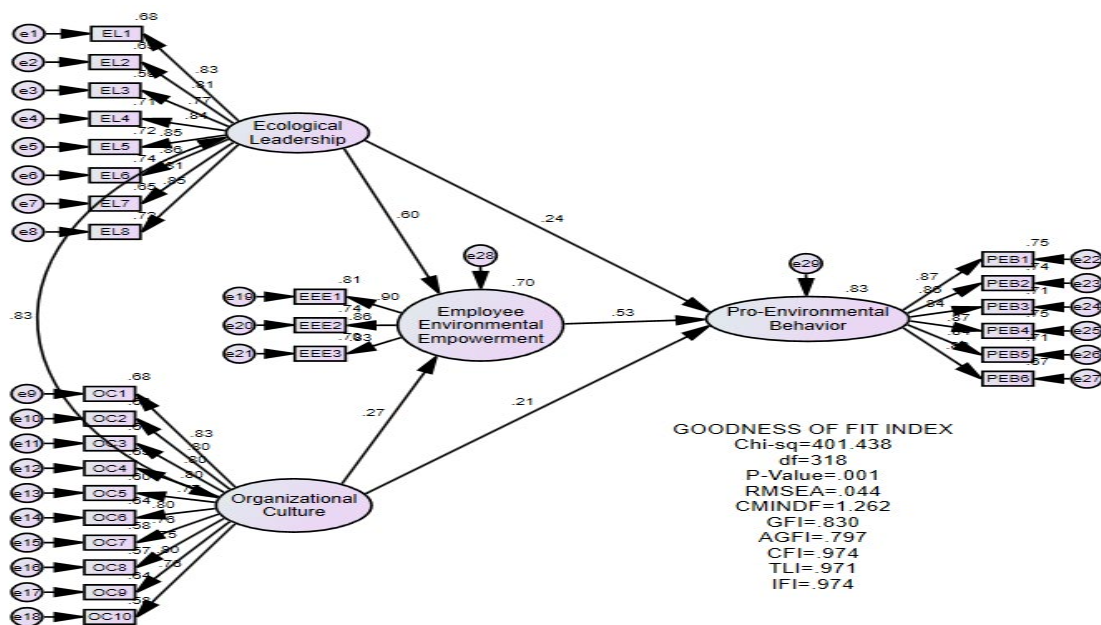


Figure 1. Confirmatory Factor Analysis Full Model

**Table 1.** Goodness of Fit CFA Full Model

Goodness of Fit Index	Cut of Value	Result	Conclusion
Chi Square	$\leq 360.59$	401.44	Marginal
Probability	$\geq 0.05$	0.00	Marginal
GFI	$\geq 0.90$	0.83	Marginal
AGFI	$\geq 0.90$	0.80	Marginal
TLI	$\geq 0.90$	0.97	Fit
CFI	$\geq 0.90$	0.97	Fit
IFI	$\geq 0.90$	0.97	Fit
CMIN/DF	$\leq 2.00$	1.26	Fit
RMSEA	$\leq 0.08$	0.04	Fit

**Table 2.** Regression Results

No	Variable	Direct Effect	Indirect Effect	Total Effect
1	Ecological leadership on employee environmental empowerment	0.60	0.00	0.60
2	Organizational culture on employee environmental empowerment	0.27	0.00	0.27
3	Ecological leadership on pro-environmental	0.24	0.32	0.56
4	Organizational culture on pro-environmental behavior	0.21	0.14	0.35
5	Employee environmental empowerment on pro-environmental behavior	0.53	0.00	0.53

**Table 3.** Regression Weight

			Estimate	S.E.	C.R.	P	Label
P_E_B	<---	E_L	0.25	0.12	2.13	0.03	par_27
P_E_B	<---	O_C	0.23	0.11	2.15	0.03	par_26
E_E_E	<---	E_L	0.63	0.13	4.89	***	par_24
E_E_E	<---	O_C	0.30	0.13	2.25	0.03	par_25
P_E_B	<---	E_E_E	0.52	0.10	5.10	***	par_28

**Table 4.** Sobel test of the effect of Ecological Leadership on Pro-Environmental Behavior mediated by Employee Environmental Empowerment

	Input		Test Statistic	Std. Error	P-value
A	0.63	Sobel test	3.53	0.09	0.00
B	0.52	Aroian test	3.50	0.09	0.00
S <sub>a</sub>	0.13	Goodman test	3.57	0.09	0.00
S <sub>b</sub>	0.10				

**Table 5.** Sobel Test the influence of Organizational Culture on Pro-Environmental Behavior mediated by Employee Environmental Empowerment

	Input		Test Statistic	Std. Error	P-value
a	0.30	Sobel test	2.06	0.08	0.04
b	0.52	Aroian test	2.03	0.08	0.04
S <sub>a</sub>	0.13	Goodman test	2.10	0.07	0.04
S <sub>b</sub>	0.10				

**Table 6.** Hypothesis Test Results

No	Hypotheses	CR	PV	Note
1	Ecological leadership has a positive effect on pro environmental behavior	2.13	0.03	Significance
2	Organizational culture has a positive influence on pro environmental behavior	2.15	0.03	Significance
3	Ecological leadership has a positive influence on employee environmental empowerment	4.89	***	Significance
4	Organizational culture has a positive influence on employee environmental empowerment	2.25	0.02	Significance
5	Employee environmental empowerment has a positive effect on pro environmental behavior	5.10	***	Significance

Table 1 shows that although there are some sub-standard model with marginal results (chi-square, probability, GFI, AGFI), five criteria have good analysis results (TLI, CFI, IFI, CMIN / DF, RMSEA). Therefore, the model is still good, as the goodness of fit which meets the

criteria is still higher than those that do not

Table 2 shows direct effect and indirect effect and total effect calculation. The analysis for direct effect, indirect effect and total effect is written below:



### Direct effect

The effect of the variable of ecological leadership on employee environmental empowerment had a direct effect of 0.60. The effect of organizational culture variable on employee environmental empowerment variable had also a direct effect with a value of 0.27. Furthermore, the relationship between organizational learning variables and pro-environmental behavior variable was 0.21, and the relationship between the employee environmental empowerment variable and organizational learning variable had a direct effect value of 0.27.

### Indirect Effect

In the test of the first variable, the indirect effect of ecological leadership on employee environmental empowerment was 0.00. The indirect effect of ecological leadership variable on organizational learning variable had the same value of 0.000. In contrast, the indirect effect of ecological leadership variable on pro-environmental behavior variable had a value of 0.31. Different values were also found on the value of the indirect effect of organizational culture variables on pro-environmental behavior variables at 0.14. Having the same value as the previous variable, the employee environmental empowerment variable had an indirect effect on pro-environmental behavior by 0.00.

### Total Effect

In the first hypothesis, the total effect of ecological leadership variable on employee environmental empowerment variable had a value 0.60. The second hypothesis, the total effect of organizational culture variable on employee environmental empowerment variable, had a value of 0.27. The total effect of ecological leadership variable on pro-environmental variable had a value of 0.56. Furthermore, the total effect of the organizational culture variable on pro-environmental behavior variable had a value of 0.35. Finally, the total effect of the employee environmental empowerment variable on pro-environmental behavior variable had a value of 0.53.

Based on table 3, the results of the hypothesis of this study could be concluded as follows: H1: Ecological leadership has a positive influence on pro-environmental behavior.

At a significance level of  $\alpha = 0.05$ , the P value of 0.03 was smaller than the significance 0.05. Therefore, the first hypothesis, the influence of ecological leadership has a positive effect on pro-environmental behavior, was accepted

H2: Organizational culture has a positive influence on pro environmental behavior.

At a significance level of  $\alpha = 0.05$ , the P value of 0.03 was smaller than the significance 0.05. Therefore, the second hypothesis, organizational culture has a positive effect on pro-environmental behavior, was accepted.

H3: Ecological leadership has a positive influence on employee environmental empowerment.

At a significance level of  $\alpha = 0.05$ , the P value obtained was significance \*\*\*, meaning that the value was smaller than significance 0.05. Therefore, the third hypothesis, ecological leadership has a positive effect on employee environmental empowerment, was accepted.

H4: Organizational culture has a positive effect on employee environmental empowerment.

At a significance level of  $\alpha = 0.05$ , the P value of 0,025 was smaller than the significance 0.05. Therefore, the fourth hypothesis, organizational culture has a positive effect on employee environmental empowerment, was accepted.

H5: Employee environmental empowerment has a positive effect on pro environmental behavior.

At a significance level of  $\alpha = 0.05$ , the P value obtained was significance \*\*\*, meaning that the value was smaller than significance 0.05. Therefore, the fifth hypothesis, employee environmental empowerment has a positive effect on pro environmental behavior, was accepted.

Data on table 5 was the data processed through website <http://quantpsy.org/sobel/sobel.htm>, then inputted into the calculation tool for the single text. The data processed in the previous table could be seen in the Regression Weight table in the Estimate and Standard Error sections. Letter A in the input section meant that this figure was obtained from the Estimate on the relationship between ecological leadership and employee environmental empowerment with a value of 0.63. Meanwhile, letter B in Input meant that this figure was obtained from the Estimate on the relationship between employee environmental empowerment on pro-environmental behavior with a value of 0.52. Sa on Input meant that this figure was obtained from the Standard Error on the relationship between ecological leadership and employee environmental empowerment with a value of 0.13. The value of Sb Input was obtained from the Standard Error of employee environmental empowerment on pro-environmental behavior with a value of 0.10.

It could be concluded that the variable with the strongest influence both directly and total effect was ecological leadership on employee environmental behavior with a value of 0.60.

Hypothesis testing analysis in Table 3 shows the result of hypothesis. Hypothesis testing analysis was done by referring to the results of the Critical Ratio (CR) by analyzing the P value which determines whether the relationship between variables produce a significant relationship or not. The criteria for the relationship between variables in order to be accepted have a significance value of less than  $\alpha = 10\%$ . Table 3 shows that the variables having a significant value \*\*\* are ecological leadership on employee environmental empowerment and employee environmental empowerment on pro-environmental behavior with CR of 4.892 and 5.10, respectively. Other variables that its P value is close to the significance of less than  $\alpha = 10\%$  are organizational culture on employee environmental empowerment (P value = 0.03).

The variables that meet the criteria with a significance of less than  $\alpha = 10\%$  are organizational culture on pro-environmental behavior and employee environmental empowerment on pro-environmental behavior, each of which has P value of 0.03 and 0.03 with CR values of 2.15 and 2.127, respectively. As these variables had a relationship between the independent and dependent variables and had significant results, they met the requirements to be the intervening variables.

Table 4 shows the result of data processing through the website <http://quantpsy.org/sobel/sobel.htm> for Sobel test. The figures process could be found in Regression Weight table in the Estimate and Standard Error sections. Letter A in the input section meant that the figure was obtained from the Estimate on the relationship between ecological leadership and employee environmental empowerment with a value of 0.63. Letter B in the input section meant that the figure was obtained from the Estimate of the relationship between employee environmental empowerment on pro-environmental behavior with a value of 0.52. In Table 4 at  $S_a$  column input meant that the figure was obtained from the Standard Error of the relationship between ecological leadership and employee environmental empowerment with a value of 0.13. The value of  $S_b$  input obtained from the Standard Error of employee environmental empowerment on pro-environmental behavior was 0.10.

The analysis suggested that ecological leadership influenced pro-environmental behavior that was mediated by employee environmental

empowerment, as the t value was 3.53, where T count value was greater than 1.96 (T Table) and the P value of 0.00 was less than 0.05. Therefore, the Sobel test was significant.

Table 5 shows the result of data processing through the website <http://quantpsy.org/sobel/sobel.htm>. The figures process could be found in Regression Weight table in the Estimate and Standard Error sections. Letter A in the input section meant that the figure was obtained from the relationship between organizational culture and employee environmental empowerment with a value of 0.30. Letter B in the input section meant that the figure was obtained from the Estimate of the relationship between employee environmental empowerment and pro-environmental behavior with a value of 0.52.  $S_a$  in input meant that the figure was obtained from the Standard Error of the relationship between organizational culture and employee environmental empowerment with a value of 0.13. The value of  $S_b$  input obtained from the Standard Error of employee environmental empowerment on pro-environmental behavior was 0.10.

The analysis suggested that organizational culture influenced pro-environmental behavior that was mediated by employee environmental empowerment, as the Sobel test value was 2.06, which was greater than 1.96, and the P value of 0.04 was less than 0.05.

In this study, all hypotheses had positive results. Respondents in this study were RAM Unit (Regional Access Management). RAM unit had one task, namely managing the fiber-based communication system. Working in fiber-based communication required a lot of energy such as using computers, installing fiber optic cables/ feeder cables. These activities consumed a great deal of electrical energy which might damage the environment. However, the most dominant behavior being applied by RAM Unit related to this research was organizational culture on employee environmental empowerment: minimizing the use of paper because the recap of data carried out by RAM Unit used a special web, performing energy saving movements by turning off electronic devices after used to work such as computers, air conditioners, electricity and several other tools, The following is a further explanation

H1: Ecological leadership has a positive influence on pro environmental behavior.

By referring to table 6, the P value of hypothesis 1 is 0.033, which is  $< 0.05$ ; thus, ecological leadership has a positive effect on pro-environmental behavior

H2: Organizational culture has a positive influence on pro environmental behavior.

By referring to table 6, the P value of hypothesis 2 is 0.03, which is  $< 0.05$ ; thus, organizational culture has a positive effect on pro-environmental behavior.

H3: Ecological leadership has a positive influence on employee environmental empowerment.

By referring to table 6, the P value of hypothesis 3 is significance \*\*\*, which is  $< 0.05$ ; thus, ecological leadership has a positive effect on employee environmental empowerment.

H4: Organizational culture has a positive influence on employee environmental empowerment.

By referring to table 6, the P value of hypothesis 4 is 0.03, which is  $< 0.05$ ; thus, organizational culture has a positive effect on employee environmental empowerment.

H5: Employee environmental empowerment has a positive effect on pro environmental behavior.

By referring to table 6, the P value of hypothesis 5 is significance \*\*\*, which is  $< 0.05$ ; thus, employee environmental empowerment has a positive effect on pro environmental behavior

## CONCLUSION AND RECOMMENDATION

The results show that ecological leadership has a positive and significant effect on employee environmental empowerment. Company leaders have fulfilled several indicators such as leaders as support systems, open leaders in accommodating information and aspirations, and employees studying environmental caring behavior properly so that employees can be empowered by the company by creating green teams in the corporate environment, creative and initiative in voicing their opinions on issues environment. This has also been practiced in the company. As the theory put forward by Han et al (2019), responsible leadership can provide a moral example and inspire employees to imitate the behavior of their leaders. Responsible leadership reflects requirements regarding corporate social responsibility. Therefore, in directing tasks related to corporate environmental responsibility, by demonstrating environmental friendliness, the leadership exerts a subtle effect on employee attitudes and behaviors. It encourages employees to engage in environmental protection through interacting with

them, thus influencing employee motivation.

The results of this study indicate that organizational culture has a positive and significant effect on employee environmental empowerment. Indicators that have been fulfilled in organizational culture related to empowerment are educating employees about the impact of environmental damage, using tumblr cutlery as an effort to reduce plastic waste, minimize paper use and switch to digital such as email, the energy saving movement, cycling on Fridays to reduce air pollution, the availability of smoking rooms for smokers, and companies creating handicraft communities with natural ingredients. This has also been practiced in the company. For theoretical implications, organizational culture is currently considered a critical factor in achieving success in any business activities, including the implementation of the idea of sustainability (Piwowar-Sulej, 2020)

The results of this study indicate that ecological leadership has a positive and significant effect on pro-environmental behavior. The more the leaders are able to apply ecological leadership in the corporate environment, the more the awareness of environmental problems and improve environmental quality will be. This has become a habit at the company. As for the theoretical implications, responsible leaders can influence organizational citizenship for the environment because when leaders and employees interact, employees can easily communicate well and even imitate the behavior of leaders so that the attitudes and behavior of these employees will match what they see and learn. In addition, leaders who are responsible for the environment can improve employee behavior in protecting the environment through a sense of responsibility. (Han et al., 2019)

The results of this study indicate that organizational culture has a positive and significant effect on pro-environmental behavior. Implementing the culture of caring for the environment in the company can increase employee awareness of the environmental issues that are currently in progress. This research is in accordance with the theory and strengthens research from Zientara & Zamojska (2018), who states that a green organizational climate has a significant influence on the behavior of employees who care about the environment. This shows that this climate can create a normative context that has an impact on work behavior

The results of this research reveal that employee environmental empowerment has a positive and significant effect on pro-environmental behavior. This shows that the better the company

empowers its employees, they can increase their sensitivity to environmental problems, and the more intense the employee's pro-environmental behavior will be.

The results of this research also show that employee environmental empowerment can be a mediating or intervening variable between ecological leadership, organizational culture, and pro-environmental behavior. This can be proven through the Sobel Test that has been done previously. Employee environmental empowerment is considered a potential mediator because it has an influence on employee motivation to pursue green practices (Tariq et al., 2016).

Through the results of previously processed data, the effect employee environmental empowerment on pro-environmental behavior has the highest value, as the Regression Weight table in the Sobel Test and Hypothesis Test with a CR value of 5.099 and a perfect significance of \*\*\*. This shows that effect of employee environmental empowerment on pro-environmental behavior is the main key that needs to be maintained and improved in term of the quality of its application in this company.

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