

# **The Influence of Environmental Accounting Understanding, Pro Environmental Behavior, and Go-green Based Application Usage on Environmental Awareness of Accounting Students**

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## **Abstract**

This study aimed to analyze the influence of environmental accounting understanding, pro-environmental behavior, and go-green-based application usage on environmental awareness among accounting students. This study uses data collection methods through surveys by distributing questionnaires. The population in this research is aimed at accounting students at a well-known private university in Jakarta who are currently actively studying. This study used a simple random sampling method and obtained a sample of 117 respondents. Data processing in this study used SPSS 26. The study results show that understanding of environmental accounting, pro-environmental behavior, and the use of go-green-based applications showed significant results in environmental awareness among accounting students.

## **Keywords**

Sustainable, environmental accounting, pro environmental behavior, go-green based application and environmental awareness.

## **1. Introduction**

Environment is one of the important aspects of our lives where the existence of an environment can have various impacts both socially and economically. Recently, rapid developments in various sectors of life, especially in the economic and social sectors have had many impacts on the environmental situation. However, the current environmental situation is becoming an issue of discussion in various circles. The number of activities carried out by humans has given many side effects to environmental conditions. According to Sudarmo et al. (2020) sourced from data from the DKI Jakarta Government stated that the amount of plastic waste contained in Bantar Gebang waste processing has reached 39 million tons in 2019 where 34% percent of the waste is dominated by plastic waste.

In tackling the problems related to environmental pollution described above, various companies in Indonesia have begun to think about the various impacts generated by the company's operational activities that can affect environmental conditions. As a step for the company to build and reduce environmental impact, the company implements CSR (Corporate Social Responsibility) as a form of corporate responsibility in tackling the environment current condition. One method of realizing the implementation of CSR is through the application of Environmental Accounting in the Company's Financial Statements. Implementation of Environmental Accounting in real work requires self-awareness from each individual, known as environmental awareness. In general, students who take accounting classes and study environmental accounting show an increase in knowledge of students' environmental awareness which can have a significant influence on the environmental awareness behavior of today's young generation (Hauptman et al. 2016).

Pro-environmental behavior becomes one of the determining factors of a person who will affect the awareness of the surrounding environment. Pro-environmental behavior is a behavior that is consciously carried out by individuals to reduce the negative impact of human activities that cause environmental damage and improve the quality of the environment, such as reducing electricity and energy waste, using environmentally friendly products, and recycling plastic waste that can be used again (Sawitri et al. 2015). Based on research by Sugiarto and Gabriella (2020), shows that in general students already have responsibility and awareness of the importance of being environmentally friendly but the data results show that the level of adoption and direct participation in environmentally friendly activities in students shows low response.

Adoption and implementation are important elements in preserving the environment. Various applications and online sites have been developed to help people who care about the state of the surrounding environment, namely the presence of various applications and websites that carry the Go-Green concept. The existence of the Go-Green Application which emphasizes the concept of Reuse, Reduce, and Recycle can help the community to increase environmental awareness and make decisions related to the environment. In the research of Huseyin et al. (2008), the implementation of online learning or known as mobile learning with the integration of the internet, data services, and the Multimedia Messaging System has encouraged increased environmental awareness among students.

Based on the discussions above, researchers aim to investigate the influence of environmental accounting understanding, pro-environmental behavior, and go-green-based application usage on environmental awareness of accounting students.

### **1.1 Objectives**

Based on the problems above, the aim of the researcher in conducting this research is to determine the effect of understanding environmental accounting science, pro-environmental behavior formed in accounting students and the use of go-green-based mobile applications that are formed in daily life affecting environmental awareness. Understanding environmental accounting well, and forming pro-environmental behavior patterns through the use of go-green-based applications, it will increase the environmental awareness of accounting students which is believed to bring changes to the development of environmental accounting for companies in the future.

## **2. Literature Review**

The definition of sustainable development according to Brundtland Commissions (1987) in Borowy (2013) is a sustainable development strategy that must meet the needs of stakeholders today without affecting the needs of stakeholders in the future. According to Brundtland's statement, there are 2 concerns that the world must pay attention to at this time, development and the environment. Based on the current perspective of sustainability, there are three dimensions to be considered: Social, Economic, and Environmental). Sustainable development has three main analogies that underlie economic, social, and environmental in the form of a triple bottom line analogy (Elkington 1997).

Theory of Planned Behavior is a theory developed by Ajzen in 1991 from the previous theory, namely the theory of reasoned action which has the understanding that individuals will adopt a behavior if the individual concerned has a positive attitude towards the behavior and gets approval from other individuals who share the same view of the behavior. The Theory of Planned Behavior shows that the behavior carried out by the individual is influenced by various internal and external factors.

### **2.1 Environmental Awareness**

Environmental awareness is a form of concern for the environment by sharing knowledge and awareness related to the environment (Zsóka, et al 2013). According to Milfont et al. (2006), environmental problems have become the main topic of discussion in the world where pollution caused by humans has occurred. Environmental damage has occurred in various forms such as the greenhouse effect, landslides caused by deforestation, plastic waste that cannot be processed is buried in Final Disposal Sites (TPA), and various other environmental problems. Environmental awareness is influenced by various factors such as ignorance, poverty, humanity, and lifestyle. Besides being influenced by various factors, environmental awareness is divided into three main dimensions, namely general belief, personal attitudes, and information.

### **2.2 Influence of Environmental Accounting Understanding on Environmental Awareness**

According to Chastain (1973), Gambling (1974), and Ullman (1976), along with Dierkes and Preston (1977) in the research of Jones (2010) stated that there are problems that need to be considered with the limitation of the traditional management paradigm that links accounting, organizations, and communities where concerns based on 1990 have developed into environmental problems. In tackling this problem, environmental accounting can help companies improve their environmental performance by emphasizing the function of accounting as a provider of information. Environmental accounting today has differences compared to conventional accounting methods. The use of conventional accounting is considered unable to understand the functions and needs of humans in overcoming the impacts that cause environmental damage (Jones, 2010). In various studies according to Deegan and Gordon (1996); Deegan and Rankin (1996); Guthrie and Parker (1990) in the journal Das and Pattanayak (2008) explained that the presence of environmental accounting is crucial and can assist companies in providing information for stakeholders in the company's financial statements that present environmental accounting.

Understanding environmental accounting and company activities that have an impact on the environment is an important issue for each individual in the company to know the importance of protecting the environment at this time where this is related to the environmental awareness of each individual which is generally formed by various factors including the environment and education. has been carried out by the individual. Mahmudi (2010) stated that accounting understanding is the ability of an individual to a knowledge related to accounting and the extent to which the individual can understand the accounting transaction process.

Various environmental accounting studies have begun to be applied in college learning which is expected to have an understanding of environmental accounting will encourage students to understand and implement environmental accounting in real terms when carrying out work as an accountant in a company in the future and bring changes to the importance of environmental awareness. This explains the importance of understanding the effect of understanding environmental accounting on environmental awareness which is in line with research according to Niankara, I., and Zoungrana, D. T. (2018) which explains that students' interest and understanding in the environmental field, especially in the issue of environmental pollution and gas emissions can affect environmental awareness. on students.

Studies related to the importance of learning about environmental issues for humans in (Grinnell and Hunt 2000) in (Yakhou and Dorweiler 2004) (Almeida, et al. 2013) explain that there is an effect of understanding environmental accounting on environmental awareness for students. Based on this explanation, it explains that:

H1: Environmental Accounting Understanding affects environmental awareness.

### **2.3 Influence of Pro Environmental Behavior on Environmental Awareness**

Environmental behavior is interpreted as the behavior of an individual who is aware of the current environmental situation by taking an action to suppress negative behaviors that damaged the environment by other individuals (Kollmus et al. 2008). Environmental issues have influenced how individuals use natural resources and have awareness of sustainable development (Park et al. 2007; Ringov and Zollo 2007 in Chwialkowska and Glowik. 2020).

Surya and Apriliany (2016) stated that Pro-Environmental behavior is generally influenced by the ethics and education that the individual has had regarding their views on environmental awareness. When environmental's education is adopted by an individual, it will increase the individual's pro-environmental behavior. According to Lindenberg and Steg (2007) in their research, it shows that pro-environmental behavior has a strong relationship with individual attitudes where individuals who have knowledge or expertise in the field of the environment and demonstrate their expertise towards other individuals will encourage people around them to do good deeds. same. This is in line with the Theory of Planned Behavior which explains that the behavior of an individual is influenced by various factors.

In research according to (Bamberg 2003; Kagawa 2007; Boyes et al. 2008 and Michalos et al. 2009 in Zsóka. et al. 2013, Liu et al. 2020) shows that pro-environmental behavior has a significant influence on environmental awareness. Based on this explanation. It explains that:

H2: Pro-Environmental Behavior affects environmental awareness.

### **2.4 Influence of Go-green Based Applications Usage on Environmental Awareness**

According to Budiman (2017), technological development has changed various perspectives and human perceptions of their activities. According to a study by Haraty and Bitar (2019), based on statistical data released by Gartner Inc. in 2013 showed that as many as 2.4 billion computing devices had been produced and experienced an increase in 2017

of 2.9 billion. This indicates that there is increasing use of technology today. However, the use of these technologies must be accompanied by the awareness of the current state of the environment.

According to Huseyin et al. (2010) in his research entitled 'Using mobile learning to increase environmental awareness' shows the impact of the mobile learning system on the environmental awareness of students on the research subject campus. The research shows that the level of participation in environmental awareness with the intermediary of mobile learning has increased well where students are quite familiar with the issue of environmental pollution that is happening and students are able to elaborate on the use of mobile learning in increasing environmental awareness.

In a study according to (Chang, et al. 2011, Fernández-López et al. 2013, Khan, et al. 2015) shows that the adoption of technology in the form of applications related to environmental conservation has a significant impact on environmental awareness of students.

H3: Go-green-Based Applications usage affects environmental awareness.

The variables and hypotheses presented above are represented in the following Figure 1:

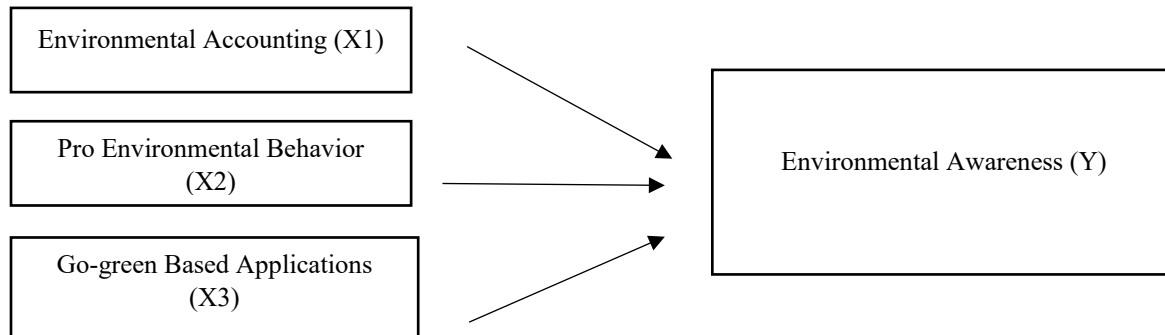


Figure 1. Variables Relationship

### 3. Methods and Data Collection

The research methodology used in this research is a quantitative approach. A quantitative approach is a research method that uses measurable data as a variable to describe a case or object in the research concerned. The data collection technique used in this study was the primary data collection technique, namely the questionnaire method. The questionnaires were distributed to students majoring in accounting who are currently running lectures. The survey was conducted by distributing questionnaires to 117 respondents. The questionnaire that was distributed used an assessment with a Likert scale on a scale of 1-5 with the lowest score being 'strongly disagree' to the highest score of 'strongly agree'. The research question items consist of 28 question items based on 4 operational variables, namely, environmental accounting, pro-environmental behavior, go-green-based applications and environmental awareness. The independent variables used in this study are environmental accounting (X1), pro-environmental behavior (X2), and go-green-based applications (X3). The fixed variable used in this study is the environmental awareness variable (Y).

#### 3.1 Sample

The sampling method in this study used a random sampling method. Random sampling method is a sampling technique that will be carried out randomly where each member of the population has the same opportunity to become the research sample. Respondents from this study must meet the criteria, namely studying at one of the private universities in Jakarta concerned is currently undergoing lectures and is a student majoring in accounting who is a second-semester student to a final student. The following are data from respondents (Table 1).

Table 1. Sample

Category	Criteria	Frequency	Percentage
Gender	Male	39	33.30%
	Female	78	66.70%

	<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Mean</b>	<b>Std. Deviation</b>
EnvironmentalAccounting	117	25	35	32.39	2.508
ProEnvironmental	117	17	30	24.95	3.079
GoGreenBased	117	24	40	35.33	3.857
EnvironmentalAwareness	117	27	35	33.16	2.315
Valid N (listwise)	117				

	Total	117	100%
Age	< 18	1	0.90%
	18-22	113	96.60%
	>22	3	2.60%
	Total	117	100%
Status	Active	117	100%
	Non-Active	0	0%
	Total	117	100%
Batch	2022	92	78.60%
	2023	19	16.20%
	2024	6	5.10%
	2025	0	0%
	Total	117	100%
Major	Accounting	80	68.40%
	Accounting Technology	36	30.80%
	Finance	1	0.90%
	Total	117	100%

## **4. Results and Discussion**

### **4.1 Descriptive Analysis**

In filling out this questionnaire, respondents were asked to fill out an assessment of their views related to understanding environmental accounting, pro-environmental behavior, the use of go-green applications and environmental awareness using a Likert scale showing a value of 1 to 5, where 1 indicates strongly disagree., 2 indicates disagree, 3 indicates undecided, 4 indicates agree, and 5 indicates strongly agree. Each variable consists of several different questions. In the environmental accounting understanding variable, there are 7 questions, the Pro-Environmental behavior variable has 6 questions, the go-green application usage variable has 8 questions, and the environmental awareness variable has 7 questions so that a total of 28 questions in the questionnaire are concerned.

The results show that the environmental accounting variable has an average value of 32.39, the pro-environmental behavior variable has an average value of 24.95, the go-green application variable has an average value of 35.33, and the environmental awareness variable has an average value of 33.16. The standard deviation value for each variable has a value above 0 which indicates that the distribution of data distribution has various results.

### **4.2 Validity Test**

Validity test was carried out with the corrected item-total correlation validity test (Heale and Twycross 2015). The level of validity uses a comparison between the calculated r value and the Table r value. Calculation of the level of validity is based on the formula of degree of freedom (df) = n-k (Table 2).

Table 2. Validity Test

		<b>Corrected Item-Total Correlation</b>	<b>R Tabel</b>	<b>Validity</b>
Environmental Accounting (X1)	X1.1	0.622	0.1801	Valid
	X1.2	0.564	0.1801	Valid
	X1.3	0.533	0.1801	Valid
	X1.4	0.656	0.1801	Valid
	X1.5	0.419	0.1801	Valid
	X1.6	0.489	0.1801	Valid
	X1.7	0.624	0.1801	Valid
Pro Environmental Behavior (X2)	X2.1	0.53	0.1801	Valid
	X2.2	0.421	0.1801	Valid
	X2.3	0.487	0.1801	Valid
	X2.4	0.601	0.1801	Valid
	X2.5	0.468	0.1801	Valid
	X2.6	0.51	0.1801	Valid
Go-green Based Application Usage (X3)	X3.1	0.721	0.1801	Valid
	X3.2	0.7	0.1801	Valid
	X3.3	0.622	0.1801	Valid
	X3.4	0.615	0.1801	Valid
	X3.5	0.387	0.1801	Valid
	X3.6	0.709	0.1801	Valid
	X3.7	0.691	0.1801	Valid
	X3.8	0.651	0.1801	Valid
Environmental Awareness (Y)	Y1.1	0.492	0.1801	Valid
	Y1.2	0.629	0.1801	Valid
	Y1.3	0.597	0.1801	Valid
	Y1.4	0.631	0.1801	Valid
	Y1.5	0.556	0.1801	Valid
	Y1.6	0.703	0.1801	Valid
	Y1.7	0.694	0.1801	Valid

Based on the Table above, it can be explained that all question items have a corrected item-total correlation that is greater than the r-Table so that it can be stated that all question items on all variables can be declared valid.

### 4.3 Reliability Test

Reliability tests were conducted to find out the results of questions that were already valid, whether the measurement results were consistent if measurements were made in the same group with the same measurement tool (Table 3). The

reliability test was carried out by testing based on the Cronbach's Alpha coefficient. Testing an instrument is said to be variable if the coefficient value of Cronbach's Alpha > 0.6 (Table 3).

Table 3. Reliability Test

Variabel	Reliability	Description
	Cronbach Alpha	
X1	0,817	Reliable
X2	0,748	Reliable
X3	0,858	Reliable
Y1	0,850	Reliable

Based on the Table above, each variable shows Cronbach Alpha > 0.60, indicating that all variables are acceptable or reliable.

#### 4.4 Normality Test

The normality test aims to determine whether the dependent variable and the independent variable contained in the regression model have a normal distribution or not. Data testing can be done by research methods based on the One Sample Kolmogorov-Smirnov Test which shows if the significant value is > 0.05, it can be concluded that the data is normally distributed (Table 4).

Table 4. Normality Test

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual
N		117
Normal Parameters <sup>a,b</sup>	Mean	0
	Std. Deviation	1.56291785
Most Extreme Differences	Absolute	
	Positive	0.04
	Negative	-0.045
Test Statistic		0.045
Asymp. Sig. (2-tailed)		0.200 <sup>e,d</sup>

a. Test distribution is Normal.

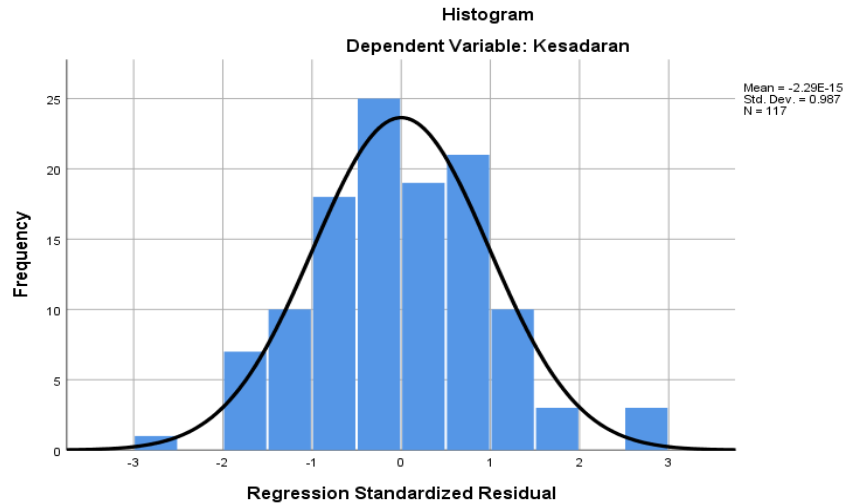


Figure 2. Normality Graphical Result

The results of the normality test of environmental accounting, pro-environmental behavior, and go-green applications on environmental awareness showed a significance value of  $0.20 > 0.05$ . This shows that  $H_0$  is accepted, and the data is normally distributed so that it meets the requirements of the normality assumption (Figure 2).

#### 4.5 Multicollinearity Test

The multicollinearity test aims to determine whether there is a correlation between independent variables in a regression model. Data testing is based on the results of the tolerance value and Variance Inflation factor (VIF) (Table 5).

Table 5. Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
(Constant)		
Environmental Accounting	0.589	1.699
ProEnvironmental Behavior	0.705	1.418
GoGreenApp Usage	0.528	1.895

##### a. Dependent Variabel: Environmental Awareness

The results show that the three independent variables namely environmental accounting, pro-environmental behavior and the application of going green on the dependent variable environmental awareness show a tolerance value of more than 0.10 and a VIF value of less than 10 so  $H_0$  is accepted, and it can be concluded that this regression model does not show multicollinearity.

#### 4.6 Determination of Coefficient

The coefficient of determination ( $R^2$ ) is needed to find out how well a regression line fits the actual data. The coefficient of determination is measured based on the percentage of the total variation of the dependent variable Y which is explained by the independent variable in the regression line (Table 6).

Table 6. R Square and R Square Adjusted



**Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.738 <sup>a</sup>	0.544	0.532	1.58353

- a. Predictors: (Constant), Environmental Accounting, ProEnvironmental, GoGreenApp
- b. Dependent Variable: Environmental Awareness

The Table shows that the Adjusted R Square value is 0.532 or 53.2% which explains the ability of the independent variables (environmental accounting, Pro-Environmental behavior, and go-green applications) and the rest is a variation of other independent variables that affect the dependent variable but are not included. in models.

**4.7 Discussions**

Testing on the effect of the statistical variable on the t-test was partially carried out using the t-test. The t-test is a statistical test tool that is used to find out the truth of a hypothesis. The t-test test uses a 95% confidence level or a 5% alpha (Table 7).

Table 7. Hypothesis Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.044	1.947		5.673	0
	Environmental Accounting	0.448	0.076	0.486	5.868	0
	ProEnvironmental Behavior	0.127	0.057	0.168	2.228	0.028
	GoGreenApp Usage	0.126	0.052	0.209	2.393	0.018

Based on the Table 7, it can be seen that the t-count value of all variables > t-Table 1.98045 and the sign value. 0.00 < 0.005 so it can be concluded that environmental accounting, pro-environmental behavior, and go-green applications have significant effects on environmental awareness.

Based on the Table 7, it can be seen that the t-count value of environmental accounting variable is 5.868 > t-Table is 1.98045 with a sign value. 0.00 < 0.005. This shows that environmental accounting variable have a significant effect on environmental awareness. This shows that the research results are in line with the grand theory that supports the results of this hypothesis, namely ‘The Sustainability Business Theory’. The Sustainability Business Theory states that companies need to pay attention to other aspects besides paying attention to company profits, namely environmental and social. Thus, an understanding of environmental accounting science that is understood by accounting students will encourage environmental awareness of the students concerned and will bring changes in the future for the company's future in carrying out the company's mission to reduce negative impacts on the environment. The results of this study are in line with research according to (Grinnell and Hunt 2000) in (Yakhou and Dorweiler 2004, Almeida et al. 2013, Niankara and Zoungrana. 2018) which explains that there is an influence of environmental accounting understanding on environmental awareness for students. **With this, the results show that H1 is accepted.** The hypothesis is accepted meaning that students are able to understand the importance and application of environmental accounting for companies which increases students’ environmental awareness.

Based on the Table above, it can be seen that the t-count value for pro-environmental behavior variable is  $2.228 > t$ -Table is 1.98045 with a sign value.  $0.0028 < 0.005$ . This shows that the pro-environmental behavior variable has a significant effect on environmental awareness. The results of the study are in accordance with the 'Planned Behavior' theory which shows that there are various factors (knowledge, attitudes, subjective norms) that can shape Pro-Environmental behavior where the adopted behavior will increase one's awareness of an issue so that it can have a significant impact on one's awareness to aware of and understand the importance of environmental conservation today. The results of this study are in line with research according to (Niankara and Zoungana. 2018, Bamberg 2003; Kagawa 2007; Boyes et al. 2008 and Michalos et al. 2009 in Zsóka. A et al. 2013, Liu et al. 2020, Dono et al. 2010) showed that pro-environmental behavior had a significant influence on environmental awareness. With this, the results show that H2 is accepted. The hypothesis is accepted shows that students have understood and implemented pro-environmental behavior where the formation of these behaviors will increase students' environmental awareness.

Based on the Table above, it can be seen that the t-count value for GoGreenApp Usage variable is  $2.393 > t$ -Table is 1.98045 with a sign value.  $0.0018 < 0.005$ . This shows GoGreenApp Usage have a significant effect on environmental awareness. The results of this study are in accordance with the grand theory in this study, namely 'The Planned Behavior' which explains that with the various factors that shape a person's behavior, one of which is an interest in using a mobile application, it will encourage the individual to use a go-green-based mobile application that will provide significant effect on environmental awareness of the individual. The results of this study are in line with research according to (Chang et al. 2011, Fernández-López et al. 2013, Khan et al. 2015) showing that the adoption of technology in the form of applications related to environmental conservation has a significant impact on environmental awareness of students. With this, the results show that H3 is accepted. The hypothesis is accepted shows that knowing and using go-green-based mobile applications can help increase students' environmental awareness.

## **5. Conclusion**

Based on the results of the research above, it can be concluded that environmental accounting, pro-understanding, environmental behavior, and go-green-based applications usage show significant results on environmental awareness among accounting students. Conclusions are presented as follows:

1. Based on the conclusions above, it can be explained that with environmental accounting understanding and the importance for companies to protect the surrounding environment by managing waste and applying environmental management accounting, it can help accounting students understand the importance of implementing environmental accounting for companies to meet the company's business sustainability.
2. Pro-environmental behavior is measured by various indicators and factors that shape pro-environmental behavior so that it can be explained that individuals who have adopted pro-environmental behavior will help increase awareness of the environment both for themselves and for the common good.
3. In carrying out environmental conservation, knowledge and real adoption are needed in realizing these activities. The presence of go-green-based applications can help everyone increase environmental awareness by using applications that help recycle plastic waste and reduce the use of paper waste to reduce the accumulation of plastic waste and minimize excessive deforestation.

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