



**Does environmental awareness improve business performance in property management?**

**David Kiki Baringin Maruli Tua Samosir**

<sup>1</sup>Buddhi Dharma University, Indonesia

**Autors' email:**

dauidkikisamosir@gmail.com\*

\*)Corresponding Author

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**Abstract**

This research aims to assess the influence of Environmental Awareness on the Business Performance of property management in Indonesia. The data being used is primary data. The methodology used is the mixed method, where the quantitative approach is more dominant because the prioritized primary data is the questionnaire rather than interviews. The hypothetical test result indicates that Environmental Awareness significantly influences Business Performance, meaning that Environmental Awareness can increase the achievement of Business Performance. The invention from this study shows that property management should pay attention to profit and the planet, and the community surrounding the firm, showing that it is time for property management to run sustainably to increase competitiveness and develop more. Property management needs to implement Environmental Awareness to improve Business Performance.

**Abstrak**

Penelitian ini bertujuan untuk menelaah pengaruh kesadaran lingkungan terhadap kinerja bisnis perusahaan manajemen properti di Indonesia. Metodologi yang digunakan adalah metode campuran, dimana pendekatan kuantitatif lebih dominan karena data primer yang diprioritaskan adalah kuesioner daripada wawancara. Hasil pengujian hipotesis menunjukkan bahwa kesadaran lingkungan berpengaruh signifikan terhadap kinerja bisnis. Artinya, kesadaran lingkungan dapat meningkatkan pencapaian kinerja bisnis. Temuan ini menunjukkan bahwa manajemen properti harus memperhatikan profit dan planet, serta komunitas di sekitar perusahaan. Sudah saatnya manajemen properti berjalan secara berkelanjutan untuk meningkatkan daya saing dan lebih berkembang. Manajemen properti perlu menerapkan peduli lingkungan untuk meningkatkan kinerja bisnis.

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## Introduction

The impact of global warming is continuously becoming greater, both in daily life and in economic activities. Human lifestyle and business activities still neglect the surrounding environment and even tend to damage the environment instead. Global warming is causing a noticeable increase in daily average temperatures, which is very much felt on land. Based on the results of the international deliberation for the Paris Agreement, the increase in temperature is limited to below 20 C (two degrees Celsius) or a maximum of 1.50 C (one and a half degrees Celsius) (UNEP 2019).

Indonesia is the 6th most polluted country in the world, measured by population-level or clean air quality required by humans in Particulate Matter units, namely dust or steam that settles in the atmosphere for a long period with a minimum limit of 2.5 PM. Meanwhile, Indonesia is at 51.7 PM (IQAir 2019). Climate change resulted in high rainfall in early 2020, which caused flooding in various regions in Indonesia. The loss to economic value due to flooding in 2020 was greater than in 2007, reaching up to Rp 10 Trillion more (Ginting 2020). Therefore, shelter space for flood victims needs to be prepared to maintain the health of the citizens.

Rising temperatures impacts climate change and health. Viruses and bacteria breed more easily in the rainy season, including COVID-19, which has become rampant recently (Tosepu et al., 2020). Climate change creates the need for more healthy spaces, such as office buildings, residential and apartment buildings, and shopping centers, among others, to maximize productivity and the body's immune system (Ajayi et al., 2016).

According to data from the Global Status Report for Building and Construction, buildings and construction have an impact on greenhouse gas emissions of up to 40%, so it is highly necessary to pay attention to energy savings on buildings from the beginning of construction planning until completion (IEA & UNEP, 2019). The explanation above shows how crucial this research is. Property management should pay attention to the environment. Therefore, it is necessary to increase knowledge of Environmental Awareness (Wilkinson et al., 2012).

Aside from paying attention to environmental sustainability, the property management of buildings must also pay attention to the company's performance and Business Performance. Therefore, implementing Environmental Awareness cannot solely be for environmental sustainability, such as reducing CO2 emissions, but needs to impact the company's economic value (Ghaffarianhoseini et al. 2013). Companies that run sustainably have an advantage, particularly in terms of brand image and company image (Rattalino 2019). However, caring for the environment does not only apply to property management, as the residents of the buildings would indirectly care about the condition of the building as well (Deuble and de Dear 2012).

The background of this study is to assess the effect of Environmental Awareness on Business Performance. Based on the research issues above, the research question being raised for development is: does Environmental Awareness Impact Business Performance? The purpose of this study is to assess the influence of Environmental Awareness on Business Performance. This research is beneficial for property management to understand Environmental Awareness so that the efficiency of electricity use, clean water use, and other resources can be implemented, affecting the company's performance and profit.

## Literature Review

Although regulations from the central and regional governments regarding environmental concerns already exist, there have been no sanctions or legal

enforcement. So, the theory underlying this research is Organisational behavior, in which leadership style, motivation, and communication style affect the company's performance (Robbins & Judge, 2013). Environmental Awareness implementation goes well in an organization if it starts from top management (top-down) and not from the bottom up (bottom-up). Therefore, the commitment of top management and company owners is highly influential for the smooth implementation of Environmental Awareness.

### **Triple Bottom Line**

Elkington (1998) argued that capitalism is the prevailing social paradigm, and thus, businesses must achieve sustainability. One assumption regarding failure is contrary to their long-term wishes. Another assumption is that the company's wealth and strength will open production machinery to automation and innovation necessary to achieve sustainability. The Triple Bottom Line concept is People, Planet, and Profit (3P). Successful companies not only focus on profit but must pay attention to the balance between environmental sustainability, the surrounding community, and the company's profits.

In this research, people are defined as property management, prioritizing the concept of empowering the community, may that be employees, consumers, or even the general public, and turning them into economic entities that are oriented towards educating and advocating for humans to be the main factor driving the perpetuation of growth and continuity of a humane company. If a high-quality product educates the public at an affordable price, the loyalty of consumers toward the brand and the company will be cultivated. On the other hand, educated employees build a qualified workforce that can produce high-quality products while being cost-efficient. In addition, the planet is defined as the building, while profit is defined as a Business Performance.

### **Environmental Awareness**

The 33rd President of the United States, Harry S Truman, was very concerned about environmental sustainability and required American citizens to make reductions in gas emissions and greenhouse gas effect as soon as possible with the goal of preserving American lives and continually increasing the economic and industrial growth (Nordhaus 2007).

Environmental awareness can be defined as an attitude of proactively caring and acting and siding with environmental sustainability. Environmental Awareness is a part of sustainable development, particularly conserving the environment through product development from the planning stage to the production stage. This study applies Environmental Awareness from the building planning and development stages until the building operates. Environmental Awareness is not only for the sustainability of property management but also for climate change mitigation, and it is even a consideration of the community and of companies to have competitiveness (Chang and Chen 2012).

The level of understanding of Environmental Awareness is closely related to implementing sustainable development in property management, which benefits stakeholders and improves the company's performance (Sim and Putuhena 2015). Knowledge of the environment is assumed to have a significant influence on Environmental Awareness, human lifestyle, and consumer behavior, meaning educational institutions need to contribute to the understanding and knowledge of the environment so that the community's concern and level of understanding of the environment can be improved (Zsoka et al ., 2013).

Environmentally-friendly business strategies have become increasingly popular with companies over the past few decades (Wilkinson et al., 2012). This is because socio-

psychological factors influence Environmental Awareness, the level of awareness and behavior, which all change for the better (Mei et al., 2016).

The importance of educating people about the environment has become progressively more popular, to the point where it is not just educational institutions being at the center of attention. However, now, workspaces and office buildings have also come under the scrutiny of employees. Besides being a source of team member pride, a building or a healthy workplace is something that employees and stakeholders long for. Some research suggests that employees will be more satisfied with a good workplace design and are more likely to perform better (Aminrad et al., 2013).

As more and more companies adopt an environmentally conscious mindset, the more it will be evident that caring for the environment impacts the quality of the environment. People at a higher economic level generally care more about the environment than people at a middle or lower economic level (Chen et al., 2019). Environmentally caring attitudes are increasing, and more and more companies are labeling their products or services as environmentally friendly.

Based on research from Deloitte, in 2009, the Grocery Manufacturers Association observed a considerable increase in demand for environmentally friendly or green products. The public's responsibility for environmentally friendly products and services and green products and service becomes increasingly important to retailers so that their availability keeps growing (Tully and Winer 2014). Some Environmental Awareness indicators used in this study are motivation, knowledge, and skills (Harju & Autti, 2013).

The conceptual design of this research is described in Figure 1 below:

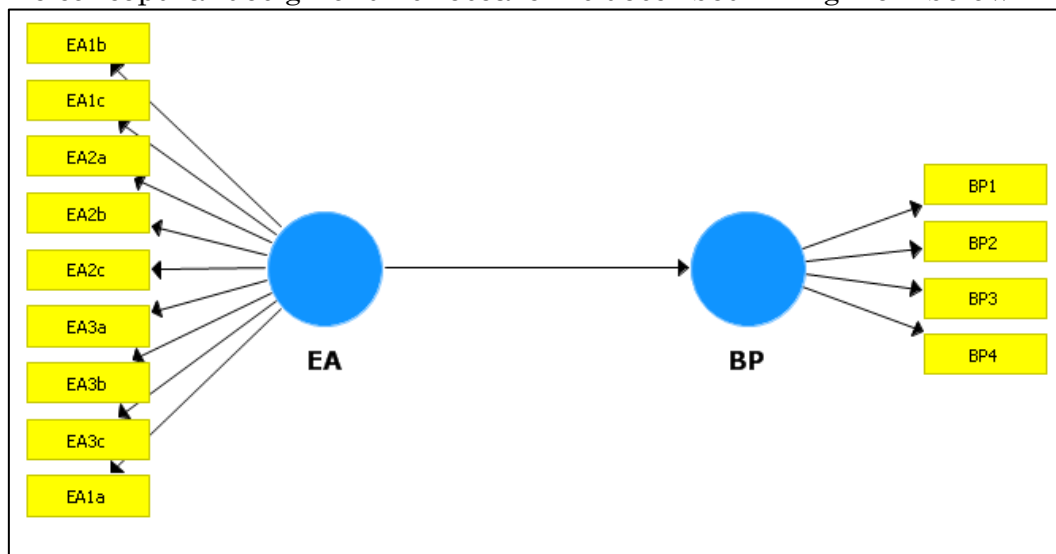


Figure 1. Conceptual Design

Environmental awareness will generate new competitive resources for companies. Awareness of environmental sustainability is a proactive behavior, whether from the occupants of the building or property management and results in a positive image and reputation for the company within the community. Moreover, the company's Business Performance will improve, such as a significant increase in the company's share price (Flammer 2013). Environmental awareness has a positive influence on competitive advantage and financial achievement. Management of companies that implement environmentally-friendly activities will garner attention from customers and even trust because customers feel that the company cares about their health

(Chaudhry et al ., 2016).

Environmental awareness impacts the company's competitiveness because the company has indirectly implemented green intellectual capital in business management, namely green human capital, green structural capital, and green relation capital. Based on the company's social values and the attitude of caring for the environment, they indirectly started to have Environmental Awareness values (Huang and Kung 2011). Initiatives have been carried out to save electricity use and reduce the usage of clean water and using used and recycled materials. It could be better if completed by Life Cycle Assessment (LCA) (Suryawan et al., 2021). management is done not only for energy efficiency but to give confidence to hotel visitors regarding the level of service. It will increase hotel guest visits (Wan et al., 2017).

Environmental costs related to environmental concerns are the balance of the ecosystem and the calculation of carbon emissions, making it necessary to supervise environmental costs and measure the balance between carbon emissions and the environment (carbon eco-efficiency) as well as the measurement between environmental costs and achieved goals (eco-effectiveness) (Yook et al ., 2017), It would be better if environmental conditions could be measured, for example by using the environmental condition index (ECI) (Azura et al., 2021). Based on the arguments above, the hypotheses of this research are:

**H<sub>1</sub>: Environmental awareness affects business performance**

## **Method**

This study is a causality study, with the nature of the research being hypothesis testing because this study describes the cause, the cause-and-effect relationship, or more problems (Sekaran and Bougie 2011). This research approach is mixed-method, which combines two kinds of research at once (qualitative methods and quantitative methods) so that the power of research is greater as the understanding of research problems and issues. The data obtained are more comprehensive, valid, reliable and objective (Creswell, 2018). The mixed method mentioned is more dominant in the quantitative approach because the prioritized data is the questionnaire rather than the interview (Creswell, 2018). The quantitative approach is the measurement of quantitative data and objective statistics through scientific calculations derived from a sample of people or residents who are asked to answer several questions about the survey to determine the frequency and percentage of their responses. The quantitative approach in this study will be pre-determined, statistical data analysis and interpretation of statistical data (Sekaran and Bougie 2011).

Researchers using quantitative approaches will test a theory by detailing a specific hypothesis, then collect data to support or refute those hypotheses. The approach that will be done in this study is a quantitative analysis approach based on statistical information. A research approach that answers research problems requires careful measurement of the variables of the objects studied to produce generalized conclusions regardless of the context of time, place, and situation. Quantitative research is defined as a research method based on the philosophy of positivism. This method is used to research a specific population or sample, data collection using research instruments, and data analysis are quantitative statistics to test the hypothesis that has been established. This study uses a quantitative approach based on the background and formulation of the problems mentioned (Sugiyono 2012).

## **Population, Sample, and Data Collection Methods**

The population used in this research is Property Management. The types of buildings referred to in this study are apartments, malls, office buildings, hospitals, campuses, schools, hotels, modern markets, and government offices located in Indonesia. Sample selection criteria are decision-makers in property management, namely Property Manager, Finance Manager,



Building Manager, Engineering Manager and Facility Manager with a minimum level of education at bachelor's degree level and at least 5 years of working experience, and based on those criteria the answers of respondents are expected to be consistent and reliable. The sampling method using purposive sampling relies on specified criteria (Creswell, 2018).

The reason for selecting this method is that it represents the sample and is chosen rely on criteria and characteristics that match the specified sample. Property Management referred to in this study are buildings with equal areas so that the data obtained can be compared and there is no survival bias and can be used in the next research stage.

Data collection is obtained through questionnaires and interviews. The target of the questionnaire collection is 100 questionnaires. The questionnaire data was collected through the collection of prospective respondents from the Association of Indonesian Shopping Centre Managers (APPBI), Building Owners and Managers Association (BOMA), and property management buildings. During the questionnaire preparation, several things must be considered: knowledge, behavior, character, and time required by respondents to complete the questionnaire (Taylor & Powell, 1998).

Questionnaires are prepared by involving informants and experts in their fields, such as property managers, building managers, sustainable development managers, and sustainable development directors. Interviews are conducted since the preliminary survey in consultation with experts in the field, including creating research questionnaires and sharing references relevant to this research. Based on the research model developed, it is expected to explain further the causality relationship between the variables analyzed and, at the same time, make useful research implications for the development of science and as a method and technique for problem-solving in the field.

#### **Dependent Variable: Business Performance**

The dependent variable of this study is Business Performance or corporate performance, which describes the achievement or level of achievement of the company's goals through optimizing existing resources while running the company's operational activities (Atkinson et al., 1997). However, as the business continues to grow sustainably, profit will not be the only main concern of the company, but the planet and people are no less important to the company, so the measurement used for Business Performance in this study is the Balance Score Card for Sustainability (BSCS), namely financial perspective, customer perspective, internal business process perspective, learning and growth perspective, social perspective and environmental perspective. So the company can achieve total economic value by conducting synergy between ecosystems, resources, and corporate strategies (Matthew et al., 2019).

According to Betianu et al. (2014), sustainable business management requires consideration of all business components in a company, from economic activities and activities that impact the environment to social activities. A balanced scorecard is a successful support tool in implementing corporate strategy. It helps the interrelationship between the company's operational and non-financial activities, thus impacting the success of the company in the economic aspect. Butler et al. (2011) say good practices for the environment and society may negatively impact the company's profitability. However, a balanced scorecard can help provide a clearer picture of the relationship between sustainable practices, corporate strategy, and corporate profitability. The measurement of dependent variables in the performance business in this research is:

1. A product's energy efficiency is using cheaper electrical energy without compromising the quality of service and level of comfort to building users.
2. Disposal Cost is to reduce costs that occur in the company (internal failure) by recycling scrap.
3. Use of Environmentally raw materials, in other words, using environmentally friendly materials from the planning and designing stage, the construction stage and even

until the building is operational.

4. Use of green vendors, meaning working with vendors who implement Environmental Awareness to achieve sustainable property management.

Table 1. Dependent Variable Dimensions, Indicators and Measurement Business Performance

Dimensions	Code	Indicators	Measurement
Energy Efficiency of Product	BP1	The cost of using Electricity and Clean Water in the buildings is more efficient after implementing Environmental Awareness.	Interval
Disposal Cost	BP2	The company uses used materials and recycled scrap.	Interval
Value added by using Environmentally raw material	BP3	The company obtains added value from the use of environmentally friendly materials.	Interval
Value added by using green vendors	BP4	The company obtains added value from vendors or partners implementing green vendors.	Interval

Source: (Butler, Henderson, and Raiborn 2011)

#### Independent Variable: Environmental Awareness

Environmental Awareness is an ecosystem strategy and green management implementation which aims to create attention toward stakeholders (Uddin et al. 2015). Concern and knowledge of the climate significantly affect the habit of caring for the environment. People are more concerned about the environment and tend to shy away and refuse because they know (Masud et al., 2015). Environmental awareness can be said as having an awareness and understanding of the surrounding environment, in which people who live and work tend to support the development and behavior of the community. Environmentally friendly behavior includes motivation, knowledge and skills (Harju & Autti, 2013).

Table 2. Independent Variable Dimensions, Indicators and Measurement

Dimensions	Code	Indicator	Measurement
Motivation	EA1	Contribute to the company's image.	Interval
	EA1	Property management and building users are proud that the managed building is environmentally friendly.	
	EA1	Reward employees who save energy	
Knowledge	EA2	Conducting Environmental Awareness training for sustainable property management.	Interval
	EA2	Disseminating information about Environmental Awareness to engage building users to conduct environmentally friendly habits.	
	EA2	Working with companies that implement Environmental Awareness	
Skill	EA3	Recognizing the importance of abiding by environmentally friendly building rules.	Interval
	EA3	Commit to enforcing environmentally friendly	

EA3 building rules.  
Suggest to property management to get an environmentally friendly building certification.

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Source: (Harju & Attuti, 2013)

The data that has been collected is analyzed using a statistical analysis tool called regression analysis with the following equation model:

$$BP = \beta_0 + \beta_1EA + \varepsilon$$

Where: BP is Business Performance, EA is Environmental Awareness, and  $\varepsilon$  is an error.

This study tests the hypothesis using Structural Equation Modelling or SEM because this study uses many sub-variables on independent variables.

Information:

Environmental Awareness Indicators (EA) are as follows:

- a) EA 01 = Motivation
- b) EA 02 = Knowledge
- c) EA 03 = skill

Business Performance (BP) indicators are as follows:

- a) BP 01 = Energy efficiency of product
- b) BP 02 = Disposal cost
- c) BP 03 = value added by using environmental raw material
- d) BP 04 = value added by using green vendor

The method of analysis used in this study is regression. Regression analysis is an analytical tool to determine the influence of free variables on non-free variables expressed in the regression coefficient. A free variable is a variable whose value can be determined, and its nature explains a non-free variable whose value depends on a free variable. This study uses regression analysis with a single equation model, a regression analysis used to answer research hypotheses. Before the hypothesis test, a data feasibility test is conducted by a validity test with a confirmatory factor analysis method. Furthermore, a data reliability test tests composite reliability and cross-loadings (Hair, 2013).

Furthermore, the hypothesis test was conducted using the inner weight output of the Partial Least Square. A minimum sample size of  $\geq 100$  is enough to recommend PLS to give valid results (Hair et al., 2013). After completing the data analysis, an interview was conducted by meeting respondents deemed necessary and communicating by phone to better understand insignificant results.

## Results

The survey data were collected from February 2019 to January 2020. The questionnaire data obtained from respondents is processed through several stages: reliability, validity, and hypothesis testing using the SmartPLS software. The study used primary data obtained from questionnaires sent to respondents. The survey was conducted on the property management of existing buildings in Indonesia and the building as its analysis unit. In addition to using questionnaires, researchers also conducted interviews with several informants to confirm and validate the results to make them more comparative.

Using purposive sampling is a method based on certain criteria (Tongco 2007). The criteria of respondents in this study are property manager, building manager, facility manager, and the person authorized as decision-maker in the company. To obtain respondents, researchers received questionnaire submissions by email and WhatsApp delivered directly (by



hand) and registered to become a member of the Professional Building Manager and Owner Associations (BOMA).

Some types of buildings included in this study are shopping centers (malls), office buildings, hospitals, schools, campuses, hotels, modern markets, and government offices. Researchers obtained 126 questionnaires from 150 questionnaires sent out, or as many as 84% of questionnaires were returned and processable. There were 24 questionnaires, as many as 16%, that did not return and could not be processed. Some questionnaires did not return because the person considered competent to fill out the questionnaire did not exist, and other questionnaires could not be processed because the answers to the questions were incomplete. One hundred twenty-six responses were considered eligible because The lowest number of samples in this study was a multiple of 5 of the number of indicators:  $5 \times 13 = 65$  (Hair et al., 2013).

Researchers must ensure that the respondents in this study do not include survival bias so that the study results are realistic and do not deviate (Li and Xu 2002). Some things that can be considered to ensure that the results of this study do not deviate are: the comparison of the number of questionnaires sent and returned is  $126/150 = 84\%$ ; respondents are property managers of tall buildings that are considered equivalent to each other; the building studied has good corporate management; respondents in this study are decision-makers in companies or property management (property manager, finance manager, building manager, and facility manager); respondents in this study have a minimum position of manager; respondents have a minimum level of bachelor's degree in their education; researchers follow up and confirm respondents by email, phone, and WhatsApp, so the researchers are confident that respondents understand the questions in the questionnaire, and that the respondents filled out the questionnaire by themselves. Based on these explanations, the researchers concluded that respondents in this study were not included in the survival bias (Sekaran and Bougie 2011).

After passing the screening stage, the researchers conducted a main test by sending a questionnaire. Furthermore, the researchers analyzed questionnaires to filter the data that can be processed, whether the filling is complete and whether the answers are reasonable. Researchers reconfirmed questionnaires whose answers were incomplete and unnatural to respondents. Researchers ended up using as many as 126 responses, and for data processing, researchers used SmartPLS software. Key analysis requirements are tested to ensure that the instruments used are eligible for measurement (valid and reliable). Testing with PLS begins with testing the measurement model (outer model) to test the construct's validity and the instrument's reliability.

Validity tests were conducted to measure the ability of research instruments to measure what should be measured (Cooper and Schindler 2011). The construction validity test in the PLS reflective indicator model is run using the Convergent Validity test, Discriminant Validity and Average Variance Extracted or AVE. Reliability tests are run to measure the consistency of measuring instruments in measuring concepts or could be used to measure the consistency of respondents in answering instruments. The instrument categorized be reliable if the respondent is consistent or stable over time when answering instruments. The composite reliability method and Cronbach's Alpha were used for the Reliability test (Hair et al., 2013).

Testing of measurement models or outer models is conducted to test the construct's validity and the instrument's reliability. Validity tests determine the research instrument's ability to measure what should be measured (Chinn 1998). Reliability tests are conducted to test the consistency and stability of measuring instruments in measuring a concept or construct. Measurement model testing (outer model) is conducted through several stages: Convergent Validity, Discriminant Validity, and Reliability testing.

The validity value of convergent or convergent validity is the value of the loading factor and Average Variance Extracted (AVE) on latent variables with their indicators. Convergent

validity is assessed based on the correlation between item or compound scores with construct scores calculated by PLS. Reflective size is considered high if it correlates greater than 0.7 with the construct you want to measure (Chinn 1998). Figure 2 explains the loading factor, that each indicator is calculated using SmartPLS software by using standard or default of SmartPLS software, should be greater than 0.70.

The rule of thumb used to assess convergent validity in this study was that the loading factor should be  $> 0.7$ . Calculating the loading factor to the data obtained in this study (126 respondents), processed using SmartPLS software following the research path described in Figure 2, shows that all indicators of value are above 0.7.

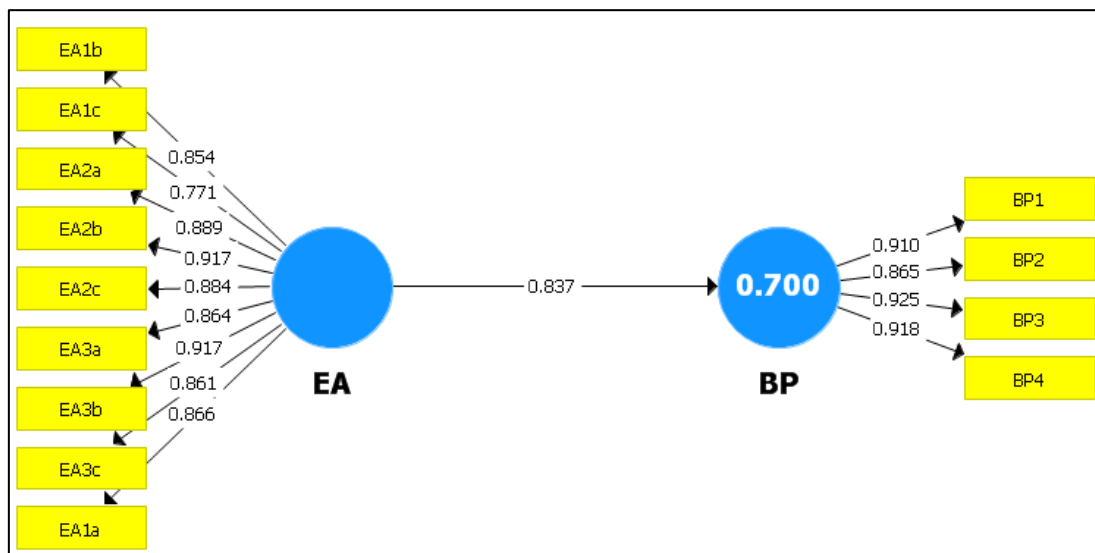


Figure 2. Test Outer Loading

Figure 2 shows that the loading factor value is above the recommended value of 0.7. It means that the indicators used in this study are valid or have met the Convergent Validity. Other than Discriminant Validity, researchers also used another method to test validity: comparing the square root value of each construct's Average Variance Extracted (AVE) with the correlation between the construct and other constructs in the model. If the square root value of each construct's AVE is greater than the correlation value between the construct and other constructs in the model, then it is said to have a good Discriminant Validity value (Ghozali 2016).

Recommended AVE value should be more than 0.50 (Fornell & Larcker, 1981). The rule of thumb used to assess this study's Average Variance Extracted (AVE) is that the loading factor should be greater than 0.5. In Table 3, the Average Variance Extracted (AVE) results explain that all the AVE values are already greater than 0.5, so it is feasible to do data processing at a later stage.

Table 3. Average Variance Extracted (AVE)

Variable	Average Variance Extracted (AVE)
BP	0.819
EA	0.757

Because there is no problem with Convergent Validity, the researchers continued the test to the next stage, namely the Discriminant Validity.

The parameters used in the Discriminant Validity test are cross-loading AVE square root and correlation between latent constructs. The cross-loading parameter is an indicator in a latent variable and differs from the indicator in other variables, indicated by a higher loading score in its construct. The Average Variance Extracted or AVE square root parameter is AVE's square root value, and the correlation parameter between latent constructs is the correlation coefficient between variables. The rule of thumb used to assess the validity of discriminants in this study is: that cross-loading should be  $> 0.7$  and the square root of AVE be more than the correlation between latent constructs.

In Table 4, all indicators on each variable are already above 0.7, and the largest loading for each variable is on its formation statement.

Table 4. *Cross Loading*

INDICATOR	BP	EA
BP1	0.910	0.747
BP2	0.865	0.717
BP3	0.925	0.781
BP4	0.918	0.781
EA1b	0.718	0.854
EA1c	0.714	0.771
EA2a	0.702	0.889
EA2b	0.744	0.917
EA2c	0.687	0.884
EA3a	0.736	0.864
EA3b	0.747	0.917
EA3c	0.795	0.861
EA1a	0.695	0.866

In Table 4, it appears that the largest loading for each variable is in its formation statement, so it can be said that the entire variable is valid because the calculated value is more than 0.7. The next test stage of the validity test is to compare the SQUARE ROOT of each CONSTRUCT WITH the correlation between constructs with other constructs. The good Discriminant Validity shown from the square root of the AVE for each construct is greater than the correlation between constructs (Fornell and Larcker 1981a)

Table 5. Square Root AVE

Variable	Average Variance Extracted (AVE)	Square Root AVE
BP	0.819	0.905
EA	0.757	0.870

Table 5 describes the AVE square root values obtained from the Extracted Variance (AVE) column, where the AVE square root value for every construct is bigger than the coefficient among variables or Discriminant Validity, as seen in Table 6.

Table 6. *Discriminant Validity*

VARIABLE	BP	EA
BP	0.905	
EA	0.837	0.870

Table 5's BP column can describe the larger AVE square root value with the coefficient of the constructed variable, EA. Researchers can conclude that AVE's square root gets the

Discriminant Validity criteria.

The parameters used in the reliability test are Cronbach's Alpha and Composite Reliability. The rule of thumb used to rate Cronbach's Alpha is more than 0.7 and to rate Composite Reliability is greater than 0.7. Table 7 describes the results of Cronbach's Alpha and Composite Reliability tests, showing values greater than 0.7, so it can be concluded that the construct has proper reliability:

Table 7. *Composite Reliability Dan Cronbach's Alpha*

Variable	Cronbach's Alpha	Composite Reliability
BP	0.926	0.947
EA	0.960	0.966

### ***Structural Model Testing (Inner Model)***

Structural models are evaluated using R-Square and Q2 predictive relevance. Rule of thumb R-Square value is the coefficient of determination on endogenous constructs. R Square values of 0.67 (strong), 0.33 (moderate) and 0.19 (weak) and Q2 predictive relevance should be greater than zero and can be said to have predictive relevance and vice versa if less than zero indicates that the model lacks predictive relevance (Chinn 1998). Thus, table 8 below describes the values R Square and Adjusted R Square Adjusted :

Table 8. *Adjusted R Square*

Variable	R Square	R Square Adjusted
BP	0.700	0.698

Each equation's Adjusted R Square Adjusted value is already above 10 percent (0.1). The R Square value of 0.7 means that the independent Environmental Awareness (EA) variable can explain the change in Business Performance by 70 percent. Other variables outside the model explain the rest. Researchers used Goodness of Fit (GoF) as a reasonable index measure. Evaluation of the Goodness of Fit model is measured using R2-dependent latent variables with the same interpretation as regression. Goodness of Fit (GoF) is relatively small if the value = 0.10, classified as medium if the value = 0.25, and classified as large if the value = 0.36. *GoF* = 0.795 large because it is greater than 0.36. The evaluation result of the Goodness of Fit model is relatively large because the value of GoF is greater than 0.36.

### **Hypothesis Testing**

The t-statistic value generated from the SmartPLS software output is compared to the t-table value to test the hypothesis. The SmartPLS software output estimates latent variables, which are the linear aggregate of the indicator. Test criteria with a significance level of (a) 5% for a 1-way test (positive or negative influence) are determined from the results of the t statistics :

Table 9. *Hypothesis Test*

Hypothesis	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ( O/STDEV )	P Values	Conclusion
Environmental Awareness Affect Business Performance	0.837	0.840	0.042	20.046	0.000	Positive Effect

Hypothetical test results showed that Environmental Awareness (EA) had a significant effect on Business Performance (BP) with a coefficient of 0.370 with a  $|t \text{ stat}| = 2,465 > t \text{ table} = 1,657$  and p-value of  $0.014 < \alpha = 0.05$ . This study shows that Environmental Awareness (EA) can improve Business Performance (BP).

### **Environmental Awareness and Achievement of Business Performance**

The study's results that became a sample in this study showed that Environmental Awareness positively affects Business Performance. The company's performance is not only influenced by price, product, place, and promotion but also influenced by environmental awareness. The better the attitude of care from respondents to the use of environmentally friendly energy, the greater the impact on Business Performance, motivation, and good understanding, especially if it can be measured in the key performance indicator, then it is expected to have a direct impact on Business Performance indicators.

This result is in line with Wan et al. (2017), who state that concern for the environment mitigates risks to possible costs that will arise and maintains efficiency and gives confidence that service to consumers will improve. There would be an influence on the addition of corporate profits. Yook et al. (2017) also provide a statement that supports this research: managers who are concerned about the environment to prioritize service to customers with natural comfort will get customer attention, increasing customer confidence and improving Business Performance.

### **Conclusion**

This study concluded that Environmental Awareness (EA) has an addition to the ability to achieve Business performance (BP). An important gain from this research is that property management can improve Business Performance by applying Environmental Awareness through motivation, knowledge, and skill of Environmental Awareness. From a theoretical perspective, this research supports the theory of organizational behavior, more specifically, that companies could run more effectively and influence performance improvement by applying science or something new that is useful.

This research showed that businesses should pay attention to profit and aspects of the environment (planet) and the community around the company (people). Therefore, it is time for property management companies to run sustainably to increase development with competitiveness or a green competitive advantage. The results of this study provide some practical implications: property management needs to pay attention to Environmental Awareness to Improve Business Performance. Property management works closely with Environmental Awareness experts to conduct affordable training and an assessment of Environmental Awareness on property management. The results of this study provide several regulatory implications to the Indonesian Institute of Accountants and the Government, particularly: Law enforcement needs to be implemented so that the progress of Environmental Awareness and implementation can be carried out, including recording of Environmental Awareness implementation in financial statements.

Some of the limitations of this study are: The topic of this study is still relatively new, the respondents had to be given information and share knowledge to fully understand the questions in the questionnaire, and the answers filled out are aimed at the target. Not all respondents (Property Managers, Building Managers, and Facility Managers) understand



Environmental Awareness as expected because this is not yet required.

Some of the recommendations that can be proposed for subsequent research are: Adding healthy habit variables as the independent variables to help the government solve the COVID-19 pandemic problem, adding the variables: carbon emission, carbon neutrality, and climate change (zero carbon building for 2030), as Indonesia is a country with a high level of uncertainty avoidance. The next research needs to discuss is the green culture, and further research should be conducted using secondary data from several other countries

## References

- Ajayi, S. O., Oyedele, L. O., Jaiyeoba, B., Kadiri, K., & David, S. A. (2016). Are sustainable buildings healthy? An investigation of lifecycle relationship between building sustainability and its environmental health impacts. *World Journal of Science, Technology and Sustainable Development*, 13(3), 190–204. <https://doi.org/10.1108/wjtsd-01-2016-0015>
- Aminrad, Z., Sayed Zakariya, S. Z. B., Samad Hadi, A., & Sakari, M. (2013). Relationship between awareness, knowledge and attitudes towards environmental education among secondary school students in Malaysia. *World Applied Sciences Journal*. <https://doi.org/10.5829/idosi.wasj.2013.22.09.275>
- Atkinson, A., Waterhouse, J., & Wells, R. (1997). A Stakeholder Approach to Strategic Performance Measurement. *Sloan Management Review*.
- Azura, F., Dom, N. C., & Camalxaman, S. N. (2021). Environmental Assessment and Infestation Level of the Dengue Vectors At Residential Area in Puncak Alam, Selangor. *Journal of Sustainability Science and Management*, 16(1), 120–128. <https://doi.org/10.46754/jssm.2021.01.011>
- Betianu, P., Universitatea, L., Ioan, A., & Briciu, S. (2014). Balanced Scorecard – Sustainable Development Tool. *ResearchGate*, August, 20–27.
- Butler, J. B., Henderson, S. C., & Raiborn, C. (2011). Sustainability and the Balanced Scorecard: Integrating Green Practices That Are Good For The Environemt And Society May Appear To Have , But Use Of The Balanced Score - Practices , Corporate Strategies , And Profitability Ways That Sustainable. *Management Accounting Quarterly*, 12(2), 1–10.
- Chang, C. H., & Chen, Y. S. (2012). The determinants of green intellectual capital. *Management Decision*, 50(1), 74–94. <https://doi.org/10.1108/00251741211194886>
- Chaudhry, N. I., Bilal, A., Awan, M. ., & Bashir, A. (2016). The Role of Environmental Consciousness, Green intellectual Capital Management and Competitive Advantage On Financial Performance of the Firms: An evidence from Manufacturing sector of Pakistan. *Journal of Quality and Technology Management*, 12,(2), 51–70.
- Chen, X., Huang, B., & Lin, C. Te. (2019). Environmental awareness and environmental Kuznets curve. *Economic Modelling*. <https://doi.org/10.1016/j.econmod.2019.02.003>
- Chinn, W. W. (1998). The Partial Least Squares Approach to Structural Equation Modelling. *Modern Methods for Business Research*.
- Cooper, D. R., & Schindler, P. S. (2011). *Business Research Methods Eleventh Edition*. In McGraw Hill.
- Creswell, J. W. (2018). *Research Design Qualitative, Quantitative and Mixed Methode Approaches (5th ed.)*. SAGE Publication.
- Deuble, M. P., & de Dear, R. J. (2012). Green occupants for green buildings: The missing link? *Building and Environment*. <https://doi.org/10.1016/j.buildenv.2012.02.029>
- Elkington, J. (1998). Accounting for the Triple Bottom Line. In *Measuring Business Excellence*. <https://doi.org/10.1108/eb025539>
- Flammer, C. (2013). Corporate social responsibility and shareholder reaction: The environmental awareness of investors. *Academy of Management Journal*. <https://doi.org/10.5465/amj.2011.0744>

- Fornell, C., & Larcker, D. F. (1981a). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*. <https://doi.org/10.2307/3151312>
- Fornell, C., & Larcker, D. F. (1981b). Structural Equation Models with Unobservable Variables and Measurement Error: Algebra and Statistics. *Journal of Marketing Research*. <https://doi.org/10.2307/3150980>
- Ghaffarianhoseini, A., Dahlan, N. D., Berardi, U., Ghaffarianhoseini, A., Makaremi, N., & Ghaffarianhoseini, M. (2013). Sustainable energy performances of green buildings: A review of current theories, implementations and challenges. In *Renewable and Sustainable Energy Reviews*. <https://doi.org/10.1016/j.rser.2013.01.010>
- Ghozali, I. (2016). Aplikasi Analisis Multivariate dengan Program IBM SPSS 21 :Update PLS Regresi. Semarang. <https://doi.org/10.2307/1579941>
- Ginting, A. M. (2020). Risiko Banjir Di Dki Jakarta Dan Sekitarnya Tahun 2020. *Info Singkat*, 12(mm), 1–6.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2013). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. Thousand Oaks. In Sage (second).
- Huang, C. L., & Kung, F. H. (2011). Environmental consciousness and intellectual capital management: Evidence from Taiwan's manufacturing industry. *Management Decision*, 49(9), 1405–1425. <https://doi.org/10.1108/00251741111173916>
- IEA and UNEP. (2019). 2019 Global Status Report for Buildings and Construction. In UN Environment programme (Vol. 224).
- IQAir. (2019). World Air Quality Report. 2019 World Air Quality Report, 1–22.
- Li, H., & Xu, Y. (2002). Survival bias and the equity premium puzzle. *Journal of Finance*. <https://doi.org/10.1111/0022-1082.00486>
- Masud, M. M., Akhtar, R., Afroz, R., Al-Amin, A. Q., & Kari, F. B. (2015). Pro-environmental behavior and public understanding of climate change. *Mitigation and Adaptation Strategies for Global Change*. <https://doi.org/10.1007/s11027-013-9509-4>
- Matthew, N. K., Shuib, A., Ramachandran, S., & Afandi, S. H. M. (2019). Total economic value of ecosystem services in Malaysia: A review. *Journal of Sustainability Science and Management*, 14(5), 148–163.
- Mei, N. S., Wai, C. W., & Ahamad, R. (2016). Environmental Awareness and Behaviour Index for Malaysia. *Procedia - Social and Behavioral Sciences*. <https://doi.org/10.1016/j.sbspro.2016.05.223>
- Nordhaus, W. D. (2007). A Review of the Stern Review in Climate Change. *Journal of Economic Literature*, XLV(September), 686–702.
- Open Access Research Article Measuring Environmental Awareness in Nineteen States in India Abstract : (2013). 3(5), 544–554.
- Rattalino, F. (2019). Sustainability and Competitive Advantage. In *Social Entrepreneurship*. <https://doi.org/10.4018/978-1-5225-8182-6.ch080>
- Robbins, Stephen., Judge, T. (2013). *Organizational Behavior* (15th ed.). Prentice Hall.
- Sekaran, U., & Bougie, R. (2011). *Research Methods for Business: A Skill-Building Approach*, 6th Edition (Fourth). John Wiley & Sons.
- Sim, Y. L., & Putuhena, F. J. (2015). Green building technology initiatives to achieve construction quality and environmental sustainability in the construction industry in malaysia. *Management of Environmental Quality: An International Journal*. <https://doi.org/10.1108/MEQ-08-2013-0093>
- Sugiyono. (2012). *Metode Penelitian Kuantitatif, Kualitatif, dan Tindakan*.
- Suryawan, I. W. K., Rahman, A., Septiariva, I. Y., Suhardono, S., & Wijaya, I. M. W. (2021). Life Cycle Assessment of Solid Waste Generation During and Before Pandemic of Covid-19 in Bali Province. *Journal of Sustainability Science and Management*, 16(1), 11–21.

<https://doi.org/10.46754/jssm.2021.01.002>

- Taylor-powell, E. (1998). Questionnaire Design : Asking questions with a purpose. University of Wisconsin-Extension, May, 1–20. [https://doi.org/10.1016/0191-8869\(83\)90107-1](https://doi.org/10.1016/0191-8869(83)90107-1)
- Tongco, M. D. C. (2007). Purposive sampling as a tool for informant selection. *Ethnobotany Research and Applications*. <https://doi.org/10.17348/era.5.0.147-158>
- Tosepu, R., Gunawan, J., Effendy, D. S., Ahmad, L. O. A. I., Lestari, H., Bahar, H., & Asfian, P. (2020). Correlation between weather and Covid-19 pandemic in Jakarta, Indonesia. *Science of the Total Environment*, 725. <https://doi.org/10.1016/j.scitotenv.2020.138436>
- Tully, S. M., & Winer, R. S. (2014). The role of the beneficiary in willingness to pay for socially responsible products: A meta-analysis. *Journal of Retailing*. <https://doi.org/10.1016/j.jretai.2014.03.004>
- Uddin, M., Hindu, R. C., Alsaqour, R., Shah, A., Abubakar, A., & Saba, T. (2015). Knowledge management framework using green IT to implement sustainable entrepreneur ecosystem. *Applied Mathematics and Information Sciences*, 9(5), 2703–2714. <https://doi.org/10.12785/amis/090556>
- UNEP. (2019). Emissions Gap Report 2019. In Emissions Gap Report 2019.
- Wan, Y. K. P., Chan, S. H. J., & Huang, H. L. W. (2017). Environmental awareness, initiatives and performance in the hotel industry of Macau. *Tourism Review*. <https://doi.org/10.1108/TR-06-2016-0016>
- Wilkinson, S., Rashid, M., Spreckelmeyer, K., & Angrisano, N. J. (2012). Green buildings, environmental awareness, and organizational image. *Journal of Corporate Real Estate*, 14(1), 21–49. <https://doi.org/10.1108/14630011211231428>
- Yook, K. H., Song, H., Patten, D. M., & Kim, I. W. (2017). The disclosure of environmental conservation costs and its relation to eco-efficiency: Evidence from Japan. *Sustainability Accounting, Management and Policy Journal*, 8(1), 20–42. <https://doi.org/10.1108/SAMPJ-07-2016-0039>
- Zsóka, Á., Szerényi, Z. M., Széchy, A., & Kocsis, T. (2013). Greening due to environmental education? Environmental knowledge, attitudes, consumer behavior and everyday pro-environmental activities of Hungarian high school and university students. *Journal of Cleaner Production*. <https://doi.org/10.1016/j.jclepro.2012.11.030>