

The Role of Institutional Support in Influencing Environmental Attitudes Through Environmental Awareness in the Palm Oil Processing Industry in West Sumatra

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Abstract

Despite its strategic role in the Indonesian economy, the palm oil processing industry also has the potential to create significant environmental problems and is facing increasing pressure to adopt environmental practices due to sustainability concerns and regulatory demands. In this context, institutional support is considered crucial in shaping pro-environmental behaviour. However, empirical studies explaining how institutional support shapes environmental awareness and attitudes are still limited, particularly in the palm oil industry in developing regions. Furthermore, institutional support in developing countries, including Indonesia, remains diverse and has not yet fully supported sustainable practices at the organizational level. Therefore, this study aims to explore the potential impact of institutional support on shaping environmental attitudes through environmental awareness, thus providing managerial implications for palm oil industry managers in West Sumatra, Indonesia. This study uses organizational level analysis, with data obtained from managers as a representation of the organization collected through a survey of 112 managers working in palm oil processing companies in West Sumatra using purposive sampling and analysed using variance-based structural equation modelling. The results of the study indicate that institutional support has a significant positive effect on environmental awareness ($\beta = 0.666$, $t = 13.079$, $p < 0.000$) and environmental attitudes ($\beta = 0.573$, $t = 10.475$, $p < 0.000$). Environmental awareness also has a significant positive effect on environmental attitudes ($\beta = 0.716$, $t = 8.184$, $p < 0.000$), and environmental awareness partially mediates the relationship between institutional support and environmental attitudes ($\beta = 0.532$, $t = 9.512$, $p < 0.00$). Based on these findings, it is important to strengthen environmental governance through regulations as a reflection of institutional support. Therefore, policymakers and industry stakeholders are encouraged to strengthen institutional systems to accelerate the process of change towards environmentally friendly practices.

Keywords

Institutional Support, Environmental Awareness, Environmental Attitudes, Variance-Based Structural Equation Modelling, Palm Oil Industry Managers

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1. INTRODUCTION

In the last decade, there has been significant development in the palm oil industry, which is reflected in its contribution to the national economy, supporting job creation, regional development, and export performance (Wardhani and Rahadian, 2021; Yuslimi et al., 2023). This condition makes palm oil a superior plantation commodity and a strategic sector in Indonesia (Purnomo et al., 2020; Syahza and Asmit, 2020). On the other hand, this development has the potential to cause various serious environmental problems. Several empirical studies explain the impacts caused by oil

palm plantations such as deforestation, loss of biodiversity, greenhouse gas emissions, high water consumption, and ecological degradation (Meijaard et al., 2020; Teng et al., 2020; Ayompe et al., 2021). Furthermore, expansion into the palm oil industry has resulted in the conversion of land from forest areas to palm oil plantations (Rustiadi et al., 2023). This change causes a reduction in the land's ability to absorb and retain water, thereby increasing the risk of flooding because the characteristics of the vegetation and root systems of oil palm plantations are different from those of natural forest ecosystems (Abubakar et al., 2021).

A study by [Nurnasfi et al. \(2025\)](#) explains the significant decline in secondary forest area in the Protected Forest Management Unit (PFMU) area in West Pasaman, West Sumatra, which was influenced by the conversion of forest functions to oil palm plantations. Thus, there was a sharp increase in oil palm plantations from 1,091 hectares in 1990 to 17,202 hectares in 2023, and it continues to increase every year. Therefore, changes in land cover from forest areas to oil palm plantation areas are a serious concern because they reduce the water absorption function, thereby creating a risk of flooding as occurred in the West Sumatra region in the last few months of 2025. In addition to contributing to the economy, the palm oil industry is also required to demonstrate its commitment to implementing environmentally responsible business practices to minimize the ecological impacts caused by land use changes. This demand is increasing along with the development of sustainability issues and Environmental, Social, and Governance (ESG) pressures, which in recent years have influenced the operational practices of the palm oil industry ([Chong and Loh, 2023](#)).

The implementation of environmentally friendly practices and sustainable environmental governance can be realized with institutional pressure from the government, environmental organizations, global markets, and sustainability certification bodies. All of this can be done with the existence of institutional facilities and support through regulations, policies, and various supporting facilities so that companies are able to implement environmentally friendly business practices. So institutional support is an important mechanism in encouraging organizations to implement environmentally friendly practices. This is in line with institutional theory, where organizational behaviour can be formed due to the existence of regulatory systems, social norms, and external pressures that encourage organizations to gain acceptance from their surrounding environment and adapt their strategic decisions to the demands of the institutional environment ([Scott, 2017](#)). Recent studies have shown that institutional pressures create demands for companies to adopt environmentally friendly business practices and ESG-oriented governance, the implementation of which is supported by institutional support ([Zhang et al., 2024](#); [Ahmad et al., 2026](#); [He et al., 2024](#)). In simple terms, the pressure to implement environmentally friendly practices comes from various parties such as the government, society, investors, and others which is a form of institutional pressure. To meet these demands, organizations need institutional support to be able to implement environmentally friendly business practices, this is in line with institutional theory.

The function of institutional support is not only as a regulatory instrument but also as information, legitimacy, and resources for organizations in carrying out environmental practices through government policies, environmental incentives, training, certification, and technical assistance so that organizations obtain clear direction to carry them

out ([Yi, 2021](#)). Clear direction from institutional support can increase organizational awareness of the importance of environmental sustainability, thus making organizations more proactive in adopting environmentally friendly business practices ([Yang et al., 2021](#)). The stronger institutional support felt by the organization will increase the organization's tendency to adopt a positive attitude towards being environmentally friendly ([Shah and Asghar, 2024](#)). This influence is further strengthened by environmental awareness which acts as an important catalyst in shaping environmental attitudes and organizational decisions to support sustainability ([Sehar et al., 2025](#); [Hachana et al., 2025](#)).

This research is focused on the organizational level, If at the highest level, namely at the organizational level, a level of awareness of the importance of environmental sustainability has been formed, which is reflected in strategic direction, organizational culture, and managerial decisions, then environmentally friendly values, policies, and practices will be easier to pass down and implement at the lower level, namely the operational level in all parts of the organization. An organization is an abstract entity, so the response to the external environment is carried out by the managerial side as the organizational actor and main decision maker. So, management is a representation of the organization because they have an important role in formulating and implementing decisions regarding environmental friendliness ([Candrianto et al., 2023](#); [Tan and Zhu, 2022](#)). However, some of the previous studies have placed more emphasis on environmentally friendly behavior at the employee level and technical implementation at the operational level compared to perspectives at the organizational level and managerial decision making ([Zaid and Yaqub, 2024](#); [Zacher et al., 2023](#); [Khan et al., 2024](#); [Li et al., 2023a](#); [Safari et al., 2018](#); [Hajar and Xia, 2026](#); [Yu and Li, 2025](#); [Rafiq et al., 2026](#); [Tian et al., 2020](#)). Therefore, this study contributes by expanding the study of environmental friendliness at the organizational level presented by the managerial side. Focusing on the organizational level is more appropriate to institutional support being used as an independent variable related to external pressure, regulation, and legitimacy received by the organization. Institutional support is more accurately understood as a strategic decision by management as a representative of the organization rather than simply through employee behavior. Thus, this research provides a comprehensive understanding of how organizations respond to institutional support as a form of institutional pressure in forming environmentally friendly awareness and attitudes.

Previous empirical studies have focused on green innovation, sustainability performance, ESG disclosure, or pro-environmental behavior in general ([Candrianto et al., 2023](#); [Asad et al., 2024](#); [Awwad et al., 2026](#)), while research on environmental awareness and attitudes is still limited. Therefore, this study expands previous research by focusing on environmental awareness and attitudes as important factors underlying the formation of environmental practice

behavior in organizations. Organizations will not be able to implement real actions such as green innovation, improving sustainability performance, or environmentally friendly business practices before forming environmentally friendly awareness and attitudes because environmentally friendly awareness and attitudes are the initial foundation of environmentally friendly practices. This is in line with the social psychological view that individual awareness is seen as a cognitive aspect related to knowledge and understanding, which then forms attitudes that show affective aspects related to assessments and tendencies, which ultimately influence behavior or actions (Ajzen, 1991; Kollmuss and Agyeman, 2002; Bamberg and Möser, 2007). In other words, environmental awareness and attitudes form the initial foundation before an organization implements concrete actions related to environmental practices. The stronger these two aspects are, the easier it is for an organization to implement environmental practices.

Fikru (2016) and Kalyar et al. (2020) stated that in developing countries, institutional support remains heterogeneous, as reflected in the quality of institutions, regulatory capabilities, and policies across countries and sectors, which still differ or are not yet uniform. This condition gives rise to inconsistencies in institutional support that can influence sustainability practices so that their effectiveness in driving change in organizations varies depending on the context of each country. Therefore, this study fills this gap by enriching the institutional literature in the context of developing countries such as Indonesia, especially West Sumatra, by showing how the heterogeneity of institutional support can still influence environmental awareness and attitudes at the organizational level. This study then expands on the institutional theory perspective, noting that although institutional support is not homogeneous, it can result in environmentally friendly practices at various organizational levels. Furthermore, this study also emphasizes the managerial role as an organizational representative in interpreting institutional support, even when it is inconsistent. Based on the description above, this research provides contributions in three ways, namely contributions at the analysis level, contributions to the mechanism of behavior formation namely environmental awareness and attitudes, and finally contributions to the context that focuses on developing countries especially West Sumatra, Indonesia, which has inconsistent institutional support, thus providing an expansion of the institutional theory perspective.

2. EXPERIMENTAL SECTION

2.1 Theoretical Background and Hypothesis Development

2.1.1 Institutional Theory

Institutional theory explains that the operations of an organization are influenced by the external environment, especially the institutional environment, which consists of formal rules, social norms, and values that apply in society,

which put pressure on the organization. For this reason, the organization must be able to adapt itself in order to gain legitimacy, namely, recognition and acceptance of the existence and activities of the organization in the eyes of society and stakeholders (Scott, 2017; Kalyar et al., 2020; Shah and Asghar, 2024; Yang et al., 2021; Yi, 2021). In the view of this theory, organizational orientation is not only related to achieving economic efficiency but is also related to efforts to obtain and maintain social legitimacy, the aim being that apart from being able to adapt, the organization can also maintain its survival and continue in its institutional environment (Kalyar et al., 2020; Zhang et al., 2024). To gain legitimacy, organizations must be able to adapt to the institutional environment that originates from the external environment. The institutional environment produces institutional pressures that include coercive, normative, and mimetic pressures (Scott, 2017; Candrianto et al., 2026). A study by Candrianto et al. (2026) explains that coercive pressure comes from the coercion of formal rules that are regulative in nature, so they contain an element of obligation and if not carried out, sanctions will be imposed. These pressures include government regulations such as AMDAL, environmental policies and laws, and compliance with sustainability certifications such as the Indonesian Sustainable Palm Oil (ISPO), which is mandatory for the palm oil industry in Indonesia. ISPO is an example of a regulation that regulates and binds palm oil industry activities to comply with applicable provisions. Then, normative pressure comes from values, ethics, professional standards that contain elements of what should be done to form standards about what is right, proper, and appropriate to do in business practices. This pressure reflects the moral and professional expectations in the business world that come from stakeholders such as environmental organizations, sustainability certification bodies such as the Roundtable on Sustainable Palm Oil (RSPO) which functions as an ethical standard in palm oil business practices in Indonesia. Mimetic pressure stems from the tendency of organizations to imitate the practices of other successful organizations, especially in uncertain conditions, to stay safe and reduce risk. This pressure is evident when companies emulate global standards, follow ESG trends, and emulate companies that have successfully implemented sustainability strategies.

Organizations experience change because of institutional pressure, however this change will not be effective if we only look at it from the external side. Therefore, it is important to consider internal factors, namely the organization's capacity to respond to these pressures and institutional support facilities that facilitate this adaptation process (Yang et al., 2021). Study Yi (2021) explains that the function of institutional support according to the institutional theory perspective is how to facilitate organizations in internalizing institutional pressures into real actions through information, provision of resources, and additional legitimacy. In simple terms, institutional pressure drives organizations to change

and how the change process is carried out will be facilitated by institutional support from the government, certification bodies and organizational networks (Yi, 2021; He et al., 2024; Zhang et al., 2024). Thus, the external environment not only creates institutional pressures that encourage organizations to change but also provides facilities that support the process of organizational adaptation to these pressures through institutional support.

2.1.2 Institutional Support and Environmental Attitudes

Institutional support is all forms of facilities provided by the institutional environment to help organizations respond to external pressures so they can implement change effectively (Yang et al., 2021). Government, institutions, and organizational networks are actors that provide information, resources, and implementation guidance as a form of institutional support for organizations (Yi, 2021; He et al., 2024; Zhang et al., 2024). The information sources from these actors will create a learning and education process through environmental training, socialization of sustainability standards, knowledge sharing, and implementation guidance for environmentally friendly practices provided by the government, RSPO/ISPO, training, organizational networks, and ESG guidelines. This process will increase environmental knowledge, thereby encouraging the internalization of sustainability values into the organization, thereby strengthening the formation of environmental attitudes (Li et al., 2023b; Sitingjak et al., 2022). One of the sources of this information is regulations in the form of environmental taxes, subsidies and environmental policies which can influence the values, beliefs and attitudes of managers in running a business (Roxas and Coetzer, 2012). If this regulation is viewed by managers as a threat or an opportunity, then managers will adjust their attitudes towards the environment (Zhang et al., 2026). Institutional support emerges as a response to institutional pressure which is in line with the institutional theory view in explaining the formation of environmental attitudes which occurs through the understanding, assessment and internalization process of environmental demands carried out by managers in making business decisions (Shah and Asghar, 2024). Thus, the stronger the institutional structure felt by the organization, the more positive the environmental attitudes formed within the organization will be. Based on the description above, the hypothesis of this research is:

H₁: Institutional support has a positive and significant effect on environmental attitudes.

2.1.3 Institutional Support and Environmental Awareness

Institutions are concerned with the rules, norms, and values that govern behavior and interactions in society and organizations (Scott, 2017). Referring to this view, institutions play an important role in forming environmental awareness

because environmental awareness is influenced by the rules and norms that apply in the institutional environment (Yang et al., 2021). Therefore, institutional strengthening is an important part in encouraging the formation of organizations that are more environmentally aware (Hachana et al., 2025). Study Shah and Asghar (2024) explains that institutional influence at the managerial level occurs when managers receive various information, sustainability standards, and directions from the government, certification bodies, and organizational networks as part of the institutional environment. This is in line with the institutional theory view which explains that the institutional environment influences the way organizations respond to environmental demands which in practice are carried out by managers as organizational decision makers. This support helps managers understand environmental issues, assess sustainability risks and opportunities and raise awareness of the importance of environmental practices (Zhao et al., 2024). Thus, environmental awareness is formed within organizations due to the facilities and support provided by various institutions. Therefore, the hypothesis in this study is:

H₂: Institutional support has a positive and significant effect on environmental awareness.

2.1.4 Environmental Awareness and Environmental Attitudes

Environmental awareness refers to the extent to which an organization understands the impact of its business activities on the environment and is concerned about the importance of implementing environmentally friendly business practices (Tan and Zhu, 2022; Hachana et al., 2025). From an institutional theory perspective, environmental awareness is a result of institutional pressures, while environmental attitudes are an evaluative response to these pressures. This means that the higher the level of environmental awareness, the more positive the attitude toward environmentally friendly practices (Yang et al., 2021; Candrianto et al., 2023). In line with Liem and Hien (2024), environmental awareness is stronger and it is easier to present an environmentally friendly attitude. With the demands from institutions, it will change the management mindset so that managers will better understand the importance of sustainability and the impacts of business activities (Ahmad et al., 2026). This understanding then encourages the formation of awareness and positive attitudes towards the environment (Fikru, 2016). Therefore, the hypothesis in this study is:

H₃: Environmental awareness has a positive and significant effect on environmental attitudes.

2.1.5 The Mediating Role of Environmental Awareness

The institutional environment plays a role in shaping environmental awareness, this influence can be realized with institutional support (Yang et al., 2021). This increased awareness then influences the way people view and assess en-

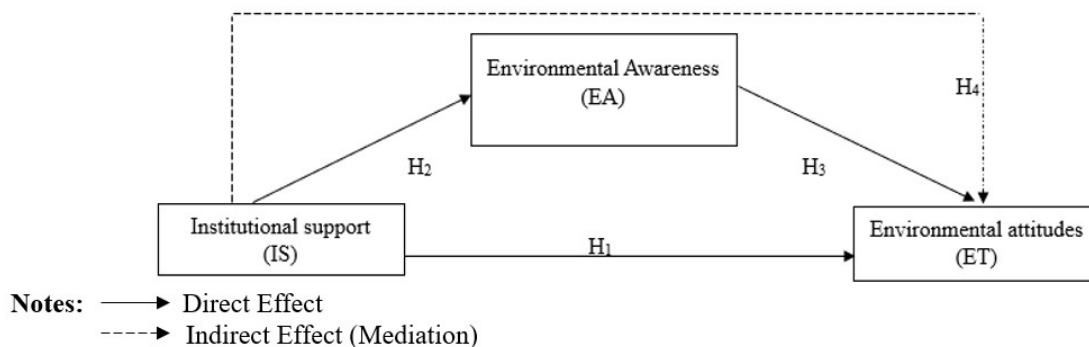


Figure 1. Conceptual Framework Linking Hydrogeological Conditions, Mine Drainage Design, Groundwater Response, and Environmental Impact Pathways

environmentally friendly business practices, which is ultimately demonstrated by a positive attitude towards the environment (Candrianto et al., 2023). Thus, it can be said that environmental awareness is a mediator in the relationship between institutional support and environmental attitudes. Previous studies have acknowledged that the government has an important role in creating a sustainable environment through various regulations and sustainable development strategies (Zhang et al., 2024). In the management's view, this regulation will increase managers' concern and awareness of environmental issues, which will then encourage the formation of positive attitudes towards the environment. Support and pressure from the institutional environment do not directly shape environmental attitudes but first increase awareness of environmental issues which are then internalized into perspectives and evaluations of sustainable practices which are then reflected in positive attitudes towards the environment (Zhang et al., 2026). Furthermore, Shah and Asghar (2024) explain the same thing, stating that this is in line with the institutional theory perspective that organizational activities are influenced by the institutional environment, and organizations respond to this with support from various institutions through knowledge, thereby increasing organizational awareness of environmental issues, which then encourages the formation of positive attitudes towards the environment. Therefore, the hypothesis in this study is:

H₄: There is a relationship between institutional support and environmental attitudes mediated by environmental awareness. (See Figure 1).

2.2 Methods

2.2.1 Data Collection

This study uses an online survey through the distribution of questionnaires distributed through several digital communication platforms, professional networks, professional associations, and relevant discussion forums such as Facebook, WhatsApp, Telegram, and LinkedIn to obtain data on the perceptions of palm oil managers in West Sumatra,

Indonesia. In this study, the use of an online questionnaire was appropriate because the target group was managers who generally have busy work schedules and high levels of mobility, making it difficult to meet in person. Furthermore, it was more flexible, practical, efficient, and timely in completing the questionnaire without disrupting their work activities. It was easy to access, reduced administrative constraints, and saved time in data collection. This is in line with previous studies that online surveys are effective for use with professional respondents because they provide convenience, speed and efficiency in data collection (Evans and Mathur, 2018; Wu et al., 2022).

Palm oil managers in West Sumatra, Indonesia, as respondents in this study, were approached through professional networks and official forums because they had limited direct access to these managers. This approach was carried out by utilizing industry associations that have networks and communities such as Indonesian Palm Oil Association and the Indonesian Oil Palm Farmers Association to facilitate the distribution of questionnaires that are in accordance with the research criteria. In addition, the survey involved government agencies such as the Plantation Service and the Environmental Service in West Sumatra, as well as professional platforms like LinkedIn. Furthermore, to broaden the respondent reach, the study asked initial respondents to recommend other managers who were relevant to the study.

The questionnaire was distributed in March 2024 and remained accessible for three months to allow sufficient time for participation. Before managers completed the questionnaire, they were informed about the research objectives, data confidentiality assurance, and the voluntary nature of participation, as well as a screening statement to ensure compliance with the study criteria.

2.2.2 Sampling Method and Sample Size

The sampling technique used was purposive sampling with a non-probability sampling approach, where the respondents were determined based on certain criteria in accordance with the research focus, namely (1) Respondents who work in

Table 1. Research Variables, Items, and Sources

Variables	Total Items	Items	Sources
Institutional support	7 items	1. Our company receives support and technological information from the central and regional governments 2. Our company obtains funding sources from central and regional governments 3. Our company obtains beneficial policies and projects from central and local governments 4. Our company receives direct financial support from the central and local governments in the form of taxes and subsidies 5. Our company receives the technical support needed to carry out business activities from the central and regional governments 6. Our company has obtained licenses from the central and regional governments for import permits for technology, manufacturing, and other equipment 7. Our company receives easy administrative services from the central and regional governments to support business activities	(Shu et al., 2019 ; Yi, 2021)
Environmental Awareness	8 Items	1. Company managers aware of the concept of environmentally friendly industries 2. Company managers aware of the importance of energy conservation 3. Company managers aware of the importance of creating a healthy work environment 4. Company managers aware about the company's environment 5. Company managers aware of the concept of sustainable development 6. Company managers aware of environmental regulations related to business activities 7. Company Managers aware of the importance of maintaining the company's environmental reputation 8. Company managers aware of the environmental impact of company activities	(Qu et al., 2015 ; Cao and Chen, 2019)
Environmental attitudes	8 Items	1. Company managers view working for an environmentally friendly company as positive 2. Company managers have a favorable view of companies that practice environmentally friendly behavior 3. Company managers are concerned about the environmental consequences of their company's behavior. 4. Company managers have positive feelings about environmentally friendly behavior 5. Company managers believe that engaging in environmental activities can help preserve the environment for future generations 6. Company managers understand the importance of promoting an environmentally friendly lifestyle 7. Company managers understand the need for greater efforts in environmental protection 8. Company managers understand the importance of increasing environmental awareness	(Safari et al., 2018 ; Adrita and Mohiuddin, 2020)

Table 2. Respondent Profile

Respondent Profile	Frequency	Percentage
Gender		
Male	79	81
Female	19	19
Age		
36–40 years	19	19
41–45 years	36	37
46–50 years	25	25
≥ 50 years	18	18
Education		
Bachelor's Degree (S1)	37	38
Master's Degree (S2)	56	57
Doctoral Degree (S3)	5	5
Position		
Production Manager	12	12
Operational Manager	3	3
Marketing Manager	7	7
Human Resource Manager	24	25
Finance Manager	23	24
Communication and Legal Manager	10	10
Maintenance Manager	19	19
Work Experience		
≤ 5 years	10	10
6–10 years	6	6
11–15 years	82	84

palm oil processing companies in West Sumatra, Indonesia; (2) Respondents who hold managerial positions; (3) Respondents who have worked for at least one year as a manager in the company; (4) Have received environmental awards or been involved in environmental management programs. These criteria are established to ensure that respondents have appropriate experience and understanding of company operations and environmental practices to be able to provide relevant responses based on the research model. This aligns with Obilor (2023) who stated that purposive sampling is a non-probability sampling technique where the sample is deliberately selected based on specific characteristics relevant to the research objectives. This approach is considered appropriate because managers understand organizational policies and environmental practices. Furthermore, managers play a role in translating institutional support into the company's operational implementation. However, the use of non-probability sampling has limitations in the form of potential selection bias and limited generalizability. To minimize this, strict inclusion criteria, as previously described, were applied, consisting of four criteria. This ensured that only managerial-level respondents with significant relevance and experience in environmental and organizational practices were included in this study.

Considering that the population size in this study is not known with certainty, to determine the sample size, a

minimum sample was used using the G*Power software described by Memon et al. (2020). The operational calculation assumes that the effect size (f^2) in this study is 0.15, the significance level (α) is 0.05, and the statistical power is 0.80 obtained from $1-\beta$ and two predictor variables, namely institutional support and environmental awareness, so that a minimum sample size of 68 respondents is obtained. Therefore, this study distributed 112 questionnaires to anticipate no answers and incomplete data so that the number of respondents obtained still exceeded the specified minimum sample size. Of these, 98 questionnaires were completed and returned, while 10 questionnaires were unanswered, and 4 respondents did not answer the questionnaires completely. Based on this, the data available for analysis were the 98 questionnaires that were completed and returned, representing a response rate of 87%, thus meeting the minimum sample size requirement.

2.2.3 Variable Measurement

This research questionnaire is divided into 3 parts, the first part is an introduction that provides information about the purpose of the research, guarantee of data confidentiality, and voluntary participation, the second part is a screening statement to ensure that respondents meet the research criteria and the last part is a measure of the variables of institutional support, environmental awareness and attitudes

Table 3. Reliability of Indicators and Constructs as well as Convergent Validity

Variable	Items	Outer Loading	Cronbach's alpha	Composite Reliability (CR)	AVE
Institutional support (IS)	IS3	0.796	0.816	0.878	0.642
	IS4	0.795			
	IS5	0.828			
	IS6	0.786			
Environmental Awareness (EA)	EA3	0.795	0.844	0.895	0.680
	EA4	0.867			
	EA5	0.868			
	EA6	0.764			
Environmental attitudes (ET)	ET2	0.946	0.941	0.956	0.844
	ET3	0.926			
	ET6	0.902			
	ET7	0.901			

Table 4. HTMT Based Discriminant Validity Evaluation

Variable	EA	ET	IS
EA			
ET	0.089		
IS	0.774	0.110	

where the measure is measured on a 5-point Likert scale (1 meaning strongly disagree to 5 meaning strongly agree). The measurement items were derived from previously validated scales and adapted to suit the specific context of this study as shown in Table 1.

All variables were measured using several reflective indicators, meaning they represent the manifestations or consequences of a variable. These indicators were carefully selected and modified from previous literature to ensure theoretical relevance and measurement validity. This research was adapted from previous research, so the forward-backward translation method was used to ensure that the concept and meaning of each item remained accurate and appropriate. The questionnaire was translated into Indonesian by two translators fluent in both Indonesian and English. The wording of each indicator was then adjusted to ensure clarity, accuracy, and appropriateness to the Indonesian cultural context, as well as to convey it in an easily understood form. The resulting translation was then discussed with professors and doctoral students to reach a final agreement. Once agreed upon, the questionnaire was ready for distribution.

2.2.4 Statistical Analysis

The research hypothesis testing uses the variance-based Structural Equation Modeling (SEM) technique with the Partial Least Squares (PLS) method processed using Smart-PLS 3.0 software. SEM-PLS was chosen because it can solve complex models with many indicators and variables (constructs), involves mediation relationships between variables, works well on non-normal data and medium sample

sizes and focuses on predicting relationships rather than simply confirming existing models compared to other methods such as covariance-based SEM which is relevant to confirmatory testing with large samples and data must be normally distributed (Hair et al., 2021). Therefore, PLS-SEM is a relevant method in this research because it can be used on relatively small sample sizes and is in accordance with the proposed research model.

3. RESULT AND DISCUSSION

3.1 Respondent Profile

The respondent profile can be seen in Table 2. Male managers predominate at 81%, while the remainder are female managers. This dominance is influenced by the characteristics of the palm oil industry, which demands field work, high mobility, and technical supervision, which traditionally involve more men. Furthermore, the gender-based division of labor in the plantation sector still places men in strategic positions and decision-making (Mehraban et al., 2022). Most respondents are between the ages of 41 and 45, representing 37%, indicating that the majority are mature enough to hold managerial positions. Most respondents have 11 to 15 years of service, indicating considerable experience in the palm oil industry. In terms of job title, the most dominant position is HR manager, representing 25% of the total respondents. Furthermore, some respondents have completed master's degrees, representing 57%, indicating that the majority have adequate educational backgrounds to hold managerial positions.

3.2 Common Method Bias (CMB)

According to Podsakoff et al. (2003), common techniques bias frequently arises in survey-based research. This is due to the simultaneous collecting of varied data from the same respondents. One technique frequently used to identify typical methodology bias in survey-based research is Harman's single factor test. The significance of using this test to make sure that common procedures bias does not predominate in

Table 5. Model Fit Assessment (SRMR and NFI)

Index	Value	Cutoff -Value	Decision
SRMR	0.078	< 0.08 (good fit) or < 0.10 (acceptable fit)	Acceptable
NFI	0.803	≥ 0.90 (good fit) or value close to 0.80 (acceptable fit in complex PLS-SEM models)	Acceptable

Table 6. Multicollinearity (Variance Inflation Factor -VIF)

Variables	Inner VIF Value
Institutional support → Environmental awareness	1.000
Institutional support → Environmental attitudes	1.799
Environmental Awareness → Environmental attitudes	1.799

the research data was highlighted by Podsakoff et al. (2003). When a single factor in the research data accounts for more than 50% of the overall variance, this is known as common methods bias (Podsakoff et al., 2003). This suggests that the data collection method has a greater influence on the data variance than the construct (variable) or the relationship between the research variables. According to the results of the Harman's Single Factor Test analysis using SPSS, 40.311% of the variation can be explained, suggesting that common procedures bias has no effect on the research data.

3.3 Results of SEM-PLS Evaluation

3.3.1 Measurement Model

The evaluation of the measurement model consists of assessing reliability, convergent validity and discriminant validity, which are shown in Tables 4 and 5. Reliability assessment is evaluated using reliability indicators and internal consistency reliability. Reliability indicators are assessed using outer loadings. Generally, the loading value used to reflect the extent to which an indicator consistently measures a variable is 0.70 or higher, as recommended. If the loading value is greater than 0.70, the indicator can explain at least 50% of the construct's variance, thus indicating adequate reliability (Hair et al., 2021) compared to using a threshold of 0.50 or 0.60. The lower the loading value, the less the indicator's ability to explain construct variance and the greater the potential for measurement error. Therefore, this study uses a threshold of 0.7 to evaluate the validity of the indicator to maintain the quality of the measurement model, although a value of 0.6 can still be maintained under certain conditions.

If the outer loading value is less than the specified threshold of 0.70, then the indicator is removed from the model through an iterative process. The iterative process is carried out three times to obtain valid indicators. In the first iterative process, several indicators are removed from the model. The IS construct, which initially consisted of seven indicators, showed that indicators IS1, IS2, and IS7 did not meet the validity criteria. Furthermore, the EA and ET constructs, which each consisted of eight indicators, also had several invalid indicators, namely EA1, EA7, EA8, ET1,

ET4, ET5, and ET8. Thus, of the total of 23 indicators across all variables, there were 10 indicators declared invalid in the first stage. Next, the second iterative process was carried out again and there was still one invalid indicator, namely EA2, and elimination was carried out again. After the indicator was removed, the third iterative process was carried out and only then did all valid indicators produce values above the threshold of 0.70 as shown in Table 4.

The next reliability assessment is internal consistency reliability, which indicates the extent to which indicators within a construct can consistently measure that construct. Thus, internal consistency reliability is at the construct level, unlike indicator reliability, which is at the indicator level. At the construct level, internal consistency reliability is evaluated using Cronbach's alpha and composite reliability (CR), with a value of 0.70 or higher indicating acceptable reliability (Hair et al., 2021). Based on Table 4, all constructs in this study exceeded the specified threshold, thus indicating adequate internal consistency reliability.

Convergent validity is the next step in evaluating a measurement model after a reliability assessment. Convergent validity is used to determine whether the indicators within a construct truly measure the same thing. Convergent validity is identified by the AVE (Average Variance Extracted). If the AVE value is ≥ 0.50, it is considered satisfactory (Hair et al., 2021). The smartpls results show that the AVE value of all variables exceeds 0.50, meaning that convergent validity has been achieved in this study (see Table 3).

Discriminant validity looks at how different constructs are from one another. This study used the Heterotrait-Monotrait ratio (HTMT) to evaluate discriminant validity (see Table 4). Hair et al. (2021) state that HTMT values less than 0.85 signify sufficient discriminant validity, whereas values greater than 0.90 can suggest possible problems. The findings confirmed that the constructs are sufficiently different because all the constructs had HTMT values < 0.85 and satisfied the other necessary requirements.

3.3.2 Model Fit Assessment

The standardized root mean square residual (SRMR) and normed fit index (NFI), which are frequently suggested

Table 7. Outcomes of the Path Coefficient

Relationships	Original Sample	Sample Means	STDEV	t	p value	LLCI	ULCI	Decision
IS → ET	0.040	0.025	0.185	0.215	0.830	-0.312	0.348	Unacceptable
IS → EA	0.666	0.675	0.050	13.231	0.000	0.573	0.769	Acceptable
EA → ET	-0.114	-0.105	0.183	0.620	0.535	-0.401	0.281	Unacceptable
Mediation								
IS → EA → ET	-0.076	-0.071	0.126	0.604	0.546	-0.279	0.183	Unacceptable

metrics in PLS-SEM analysis, were used to assess the overall model fit (Shmueli et al., 2019). A satisfactory model fit is indicated by values below 0.08, and values below 0.10 are deemed acceptable for evaluating SRMR. SRMR evaluates the difference between the observed correlation matrix and the model-implied correlation matrix (Hair et al., 2021). In the meantime, NFI assesses how well the suggested model fits the null model; values nearer 1 indicate a better model fit. The SRMR value, as shown in Table 5, was 0.078, below the suggested cutoff of 0.08, suggesting a reasonable model fit. Additionally, the suggested model shows an appropriate degree of overall fit in the context of PLS-SEM analysis, as indicated by the NFI value of 0.803. These findings suggest that the model is suitable for structural model assessment.

3.3.3 Structural Model

The existence or absence of multicollinearity issues between constructs in the structural model was assessed using the Variance Inflation Factor (VIF) values. To prevent bias or distortion in the path coefficient estimations, this test was carried out to make sure the predictor constructs were not significantly associated. As indicated in Table 6, the analysis's findings revealed that every VIF value was below the suggested threshold of 5 (Hair et al., 2021). Therefore, it can be said that there was no multicollinearity issues with the structural model used in this investigation. Additionally, because moderating variables and interaction terms were absent from the research model, the VIF test in this study only examined the primary constructs.

Next, the hypotheses were tested using path coefficient analysis. This work used the bias-corrected and accelerated (BCa) bootstrap resampling approach with 10,000 samples and the one-tailed t-statistic in SmartPLS to determine statistical significance (Hair et al., 2021). The BCa bootstrap method offers more reliable and precise confidence interval estimates than the regular bootstrap strategy, especially for mediation analysis and non-normal data distributions. Furthermore, this approach makes it possible to estimate lower-level confidence intervals (LLCI) and upper-level confidence intervals (ULCI), which offers a more thorough evaluation of the structural relationships' importance. The path coefficients, significance levels, LLCI, and ULCI values are shown in Table 7.

The coefficient of determination (R^2), which shows the percentage of variance in endogenous variables explained

by exogenous variables, was used to evaluate the model's appropriateness. R^2 scores are categorized as high (0.67), moderate (0.33), and weak (0.19) (Hair et al., 2021). The model's moderate predictive value was demonstrated by the fact that institutional support accounted for 44.4% of the variance in environmental awareness. However, just 0.8% of the variance in environmental attitude was explained by institutional support and environmental awareness combined, indicating a weak predictive value. These findings suggest that environmental attitude might also be impacted by characteristics not included in this investigation.

The strength of the association between constructs was evaluated using effect size (f^2), with values of 0.02, 0.15, and 0.35 denoting small, medium, and large effects, respectively (Hair et al., 2021). When a specific exogenous construct is eliminated from the model, the coefficient of determination (R^2) changes, indicating the construct's distinct contribution to the endogenous variables. This is how the f^2 value is determined. A higher significant influence on the variance explained by the structural model is shown by a larger f^2 value. According to the study's findings, institutional support has a significant impact on environmental awareness ($f^2 = 0.799$). This suggests that institutional support is a highly reliable predictor of environmental consciousness, and its removal will significantly lower the R^2 value on environmental awareness. The impact of environmental awareness on environmental attitudes, on the other hand, is negligible ($f^2 = 0.007$), suggesting a very tiny contribution to the variance of environmental attitude. In a similar vein, institutional support has a very minor effect on environmental attitude ($f^2 = 0.001$), suggesting that its unique contribution to environmental attitudes is essentially nonexistent. These results imply that environmental attitudes are probably impacted by variables not included in this study.

Using the bootstrapping process in SmartPLS, the indirect impact of institutional support on environmental attitudes through environmental awareness was investigated for the mediation analysis. The indirect effect was not statistically significant, according to the data ($\beta = -0.076$, $t = 0.604$, $p = 0.546$). The mediating role of environmental awareness was not validated because the indirect effect was negligible. Since VAF is typically only interpreted when the indirect effect is statistically significant, the Variance Accounted For (VAF) analysis was not further assessed (Hair et al., 2021). These results suggest that the relationship

between institutional support and environmental views is not mediated by environmental awareness.

Lastly, the model's predictive capacity was assessed using the Stone-Geisser Q^2 criterion for predictive relevance. A Q^2 value larger than zero in PLS-SEM denotes predictive significance, but values of 0.02, 0.15, and 0.35 denote small, medium, and large predictive relevance, respectively (Hair et al., 2021). The blindfolding method utilized in this investigation has an omission distance of five. The number of observations cannot be precisely divided using an omission distance of 7, hence utilizing a value of 7 does not satisfy the requirements of the blindfolding operation in SmartPLS. For this reason, an omission distance of 5 was used. According to the findings, environmental awareness had a Q^2 value of 0.284, which indicated moderate predictive importance. This suggests that the model's ability to predict environmental awareness is reasonably excellent. On the other hand, the model had no predictive validity in explaining environmental attitude, as indicated by the Q^2 value for environmental attitudes, which was -0.006, below zero. This result suggests that factors other than the variables examined in this study probably have an impact on environmental attitude.

4. CONCLUSIONS

Institutional support has a positive and significant effect on environmentally friendly attitudes. It is shown that institutional support has an average score of 4.05, with a respondent achievement level of 80.92%, which falls into the very good category, although the effect size ($f^2 = 0.001$) is classified as weak. Institutional support also has a positive and significant effect on environmental awareness. Environmental awareness shows an average score of 4.21, with a respondent achievement level of 84.23%, categorized as very good, and an effect size ($f^2 = 0.799$) classified as strong. Furthermore, environmental awareness has a positive and significant effect on environmentally friendly attitudes. Environmentally friendly attitudes have an average score of 3.73, with a respondent achievement level of 74.66%, which falls into the good category, with an effect size ($f^2 = 0.007$) classified as weak. Institutional support also has a positive and significant indirect effect on environmentally friendly attitudes through environmental awareness. In addition, institutional support, environmental awareness, and environmentally friendly attitudes all have composite reliability values above 0.7, indicating satisfactory reliability. Institutional support explains 44.4% of environmental awareness, suggesting a moderate effect. Similarly, environmentally friendly attitudes have an R^2 value of 54.6%, indicating that institutional support and environmental awareness moderately influence environmentally friendly attitudes.

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