

# The Effect of Green Transformational Leadership on Green Employee Performance through Green Work Engagement

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## Abstract

## Original Research Article

This study aims to determine and analyze the effect of green transformational leadership on green employee performance mediated by green work engagement in heavy equipment companies in Indonesia. The method used in this research is descriptive quantitative method. The population in this study is all employees who work in heavy equipment companies in Indonesia. With the structural equation modeling (SEM) analysis model, 110 samples were taken. The analysis technique in this study is Partial Least Square (PLS) using the Smart PLS 3.0 program to test the hypothesis. The results showed that there was a positive and significant effect of green transformational leadership on green work engagement and green employee performance. There is an effect of green work engagement on green employee performance. Green work engagement can mediate the effect between green transformational leadership and green employee performance in heavy equipment companies in Indonesia. Green work engagement is a very important thing to improve in order for the green employee performance to be able to improve through the implementation of green transformational leadership.

**Keywords:** green transformational leadership, green work engagement, green employee performance.

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## BACKGROUND

Human concern for the surrounding environment began to increase along with the increasing development of human civilization. The issue of environmental pollution, such as the occurrence of global warming has become an impetus for humans to be more aware of the need to protect the environment from environmental pollution. According to Kompasiana media, Global Warming (Pemanasan Global) is an increase in the average temperature in the atmosphere, sea, and earth's surface. Presently, global warming is a hot topic of discussion among the public or the mass media. This discussion concerns the positive and negative sides of global warming (Agustin *et al*, 2022).

Global warming that occurs due to climate change, according to media news, Kumparan states that climate change cannot be stopped regardless of the presence or absence of humans. Humans themselves are a factor that accelerates climate change. This can be seen from the activities of large industries such as coal processing. The process of burning coal as a power plant has a large enough emission of carbon dioxide to support global warming (Prameswary *et al*, 2022).

Similarly, companies producing heavy equipment such as PT Komatsu Indonesia, PT Sumitomo Indonesia, PT Hitachi Construction Machinery and PT United Tractors Pandu Engineering must pay attention to their production processes in order to reduce environmental pollution. The products produced by the company must be environmentally friendly, both concerning cost savings, the fuel use or energy used and so on.

Companies that produce heavy equipment must really pay attention to environmental pollution, because in addition to regulations regarding the waste produced by the industry, it is also about the company's responsibility to the surrounding environment. Company management in producing environmentally friendly products can inform all organizational members within the company to support environmentally friendly programs implemented by the company.

Company performance is reflected in employee performance, the high and low employee performance will affect the company's performance in general. Qualified employees are a valuable asset for the company and need to be developed, maintained and

kept so that they can work comfortably and have high morale so that employee performance and company performance can increase. Qualified employees are needed by the company, for that the human resource management must be really selective in choosing employees according to the employees abilities and the needs of the company. Improvements through human resources are indispensable in restoring the company's performance. Human resources are complex, unlike other factors of production, human resources require good management, fostered and developed according to their talents and potential.

Green employee performance that supports a company's environmentally friendly program can be influenced by several factors, such as training, transformational leadership, motivation, organizational communication, organizational commitment, work engagement, organizational culture and so on that support environmentally friendly programs. However, in this study, the performance of employees who support environmental friendliness can be influenced by work engagement, transformational leadership, motivation and organizational culture that support environmental friendliness.

Job engagement is defined as a positive, satisfying, work-related state of mind characterized by morale, dedication, and absorption (Schaufeli *et al*, 2010: 74). Engagement can be seen as the degree to which employees are connected to their work cognitively, emotionally and physically. Based on this, Green work engagement can be defined as the energy that employees give in their tasks related to environmentally friendly work, the willingness to exert effort at environmentally friendly levels and the level of absorption in environmentally friendly work (Aboramadan, 2020).

Employees who have a high level of green work engagement will support the smooth running of environmentally friendly programs and will work optimally according to the company's goals in implementing environmentally friendly programs so that this can ultimately affect employee performance to increase. It can be concluded that green work engagement can affect green employee engagement.

This case in accordance with research conducted by (Aboramadan, 2020), (Sungmala *et al*, 2021), (Amjed *et al*, 2021) which states that green work engagement has a significant effect on green employee performance.

*Green work engagement* and green employee performance in this research can be influenced by green transformational leadership. Green transformational leadership or transformational leadership that supports environmentally friendly programs is leadership behavior that inspires and motivates employees to help

them achieve environmental goals and leadership behavior that exceeds expectations regarding environmental performance (Chen, 2011). Another opinion states that green transformational leadership is the behavior of leaders who motivate followers to achieve environmental goals and inspire followers to perform environmental performance beyond the expected level (Chen *et al*, 2013).

According to (Robertson *et al*, 2013) quoted by (Lestari *et al*, 2019). If a transformational leader has pro- environmental values, it will encourage his subordinates to behave in a pro-environmental way like himself. For example, the leader can motivate subordinates to do more useful things for the organizational environment, think about sustainable organizational development, and solve environmental problems innovatively (Han *et al*, 2018 in Lestari & Lenny (2019).

Green transformational leadership who is able to apply good leadership behavior and can direct and guide subordinates in supporting environmentally friendly programs that are the company's goals. The role of green transformational leadership in influencing employees is very large in influencing company goals. Leaders become role models for subordinates to carry out work that supports environmentally friendly programs so that this can make employees work more enthusiastically and in the end can increase green work engagement and employee performance. It can be concluded that green transformational leadership has an effect on green work engagement and employee performance.

This thing in accordance with research conducted by (Tosun *et al*, 2022), (Huang *et al*, 2021), (Sun *et al*, 2021) which states that green transformational leadership has a significant effect on green work engagement and green employee performance.

## LITERATUR REVIEW

### Green Employee Performance

Performance is the achievement of certain tasks as measured by predetermined standards of accuracy, completeness, cost, and speed. In the work environment, performance is considered as the fulfillment of obligations that frees the perpetrator from all obligations (Daniel, 2019). Sinambela (2016:480) defines employee performance as the ability of employees to perform a skill in their work. Employee performance is important and very necessary because with performance, the extent to which the employee's ability to carry out tasks can be known. Mangkunegara (2017: 93) explains that performance is the result of work achieved by an employee in carrying out his duties in quality and quantity in accordance with the responsibilities assigned.

According to Colquitt *et al.*, (2011:35) performance is the series value of worker behaviors that contribute, both positively and negatively, to the completion of organizational goals. Another opinion states that performance is the result of work related to organizational goals such as quality, efficiency and other performance of effectiveness (Gibson *et al.*, 2012:374).

The process by which individual performance is measured and evaluated is referred to as performance appraisal. With performance appraisal, questions such as how workers perform over a certain time period will be answered (Bacal, 2012:85). Performance appraisal is defined by Wibowo (2016: 188) as a process of assessing the work level or tasks that have been carried out by employees during a certain period of time. While Hasibuan (2016: 86) explains performance appraisal as an activity carried out by a manager in evaluating or assessing employee behavior and work performance which is used as the basis for determining further policies.

Performance appraisal usually focuses on the work quality and quantity that employees produce. Mainer in As'ad (2013: 65) states that performance appraisal includes several things such as the quality and quantity of results, the time used, the position he holds, his absence and safety in carrying out his duties. Green employee performance can be defined as employee performance that supports the company's environmentally friendly program.

### Green Work Engagement

Engagement is defined as a positive, meaningful, and motivational attitude, which is characterized by vigor, dedication, and absorption (Schaufeli *et al.*, 2017). Vigor is characterized by high levels of energy, resilience, willingness to strive, and not giving up in the face of challenges. Dedication is characterized by feeling valued, enthusiastic, inspiring, valuable and challenging. Absorption is characterized by full concentration on a task (Schaufeli *et al.*, 2017). Engagement is a positive attitude in which a person goes above and beyond the call of duty, so as to increase the level of ownership, and to advance the business interests of the organization as a whole (Dajani, 2015).

Engagement can be seen as the degree to which employees are connected to their work cognitively, emotionally and physically. Based on this, Green work engagement (GWE) can be defined as the energy given by employees in their tasks related to environmentally friendly work, willingness to exert efforts at environmentally friendly levels and absorption rates in environmentally friendly work (Aboramadan, 2020).

According to (Shuck *et al.*, 2013) stated that employees who have a high level of involvement, express these features and in performing tasks have a lot of mental and physical involvement and have high appreciation in work and tasks and make emotional connections with their work. Involvement in applied meaning as psychological characteristics such as: Cognition and emotion and behavior, including cases of applied motivation Concepts such as job satisfaction and organizational commitment are separate from it.

In relation to company performance, the stronger the engagement that is built between employees and the company, the higher the company's performance will be. This is in accordance with Schiemann's statement (2011: 42), that the engagement concept is associated with a wide variety of business consequences, such as being more persistent in trying, faster performance, higher quality, and decreased turnover. Companies should work to develop a two-way relationship between the company and its employees. This business awareness makes employees give their best performance for the company for the company progress.

### Green Transformational Leadership

Northouse (2016:176) states that transformational leadership is a process in which people engage with others, and create relationships that increase motivation and morality in leaders and followers. This type of leader is concerned with followers' needs and motives, and tries to help followers reach their full potential.

Transformational leadership is more like visionary leadership, where leaders motivate their employees to exceed certain expectations (Simard *et al.*, 2015). According to (Tajasom *et al.*, 2015) transformational leaders help their followers to achieve organizational goals and missions by working with them and through them. They encourage their followers by influencing their beliefs, values, attitudes and behavior. Transformational leaders motivate their followers in ways that go beyond rewards and exchanges. Transformational leadership theory provides evidence that when a leader uses a transformational leadership style, this theory results in the emotional attachment of followers or employees to the leader. The quality of transformational leaders can be judged from the impact the leader has on followers. Employees develop trust and respect for transformational leaders and they are willing to exhibit extraordinary behavior to meet their leader's expectations (Asrar-ul-H *et al.*, 2015).

Green transformational leadership that supports green programs is leadership behavior that inspires and motivates employees to help them achieve environmental goals and leadership behavior that exceeds expectations regarding environmental

performance (Chen, 2011). Other opinion states that green transformational leadership is the leaders behavior who motivate followers to achieve environmental goals and inspire followers to perform environmental performance beyond the expected level (Chen *et al*, 2013). Likewise, there is research that states that Transformational Green Leadership has a positive impact and has a significant effect on Sustainable Company Performance at PT KMS (Dymas W *et al*, 2021)

Green transformational leadership pays attention to the specific needs of individual subordinates, guides and supports them, and instills a sense of belonging (Mittal and Dhar, 2015). Intellectual stimulation can help followers' cognitive abilities, and make it easier for them to generate problems, conduct research, and think of solutions, making followers more creative (Mansoor *et al*, 2021). Transformational

leadership focuses on increasing employees' awareness of progressive ideals, such as independence, fairness, honesty, and humanity, while encouraging subordinates to put the needs of the organization above their own (Aboramadan *et al*, 2021). Transformational leaders have four distinct behavioral components: inspirational motivation, charismatic personality, individual attention, and cognitive stimulation, which affect their chances of empowering followers (Elrehail *et al*, 2018). When a leader inspires with a desired vision and high expectations, individuals will become more motivated to help realize the goals and vision of the organization. This, in turn, helps people to be more committed to the company's mission and goals and makes them more willing to provide ideas and suggestions (Mansoor *et al*, 2021).

### Framework

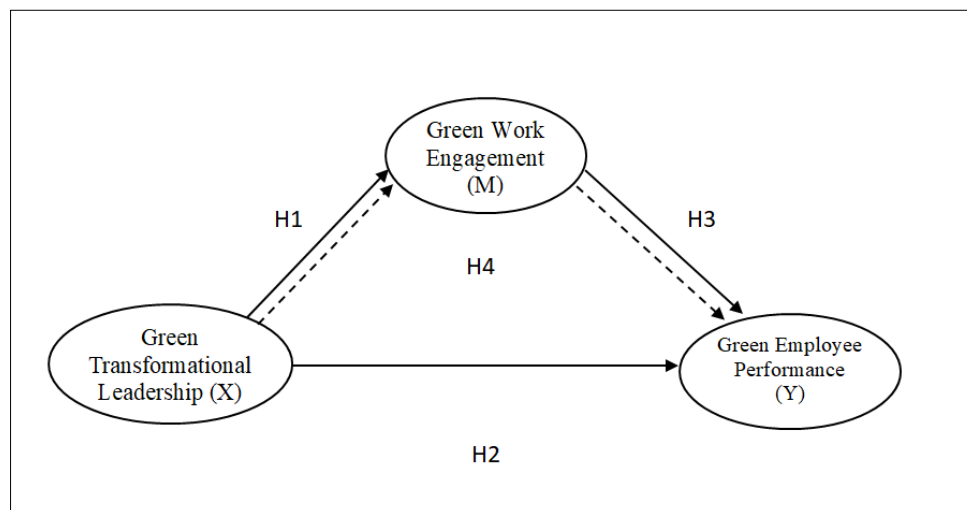


Figure 1: Conceptual Framework

### Research Hypothesis

A hypothesis is a provisional assumption that still requires further research to prove it. The research hypotheses proposed are:

**H1** There is a positive and significant effect of green transformational leadership on green work engagement in heavy equipment companies in Indonesia.

**H2** There is an effect of green transformational leadership on green employee performance in heavy equipment companies in Indonesia.

**H3** There is an effect of green work engagement on green employee performance in heavy equipment companies in Indonesia.

**H4** Green work engagement can mediate the influence between green transformational leadership and green employee performance in heavy equipment companies in Indonesia.

### RESEARCH METHOD

The research method used is descriptive quantitative method. Descriptive method is used to

study the who, what, when and how aspects of a topic. A simple descriptive involves a univariate question or hypothesis regarding, or stating something about, the magnitude, shape, distribution, or existence of a variable. Cooper and Schindler (2015) explain that quantitative research tries to make accurate measurements of something. The population in this study is all employees who work in heavy equipment companies in Indonesia. With the structural equation modeling (SEM) analysis model, 110 samples were taken. The data collection technique was carried out by means of a questionnaire. Questionnaires were distributed to employees of heavy equipment companies in Indonesia. The analysis technique in this study is Partial Least Square (PLS) using the smart PLS 3.0 program to test the hypothesis.

### RESULT AND DISCUSSION

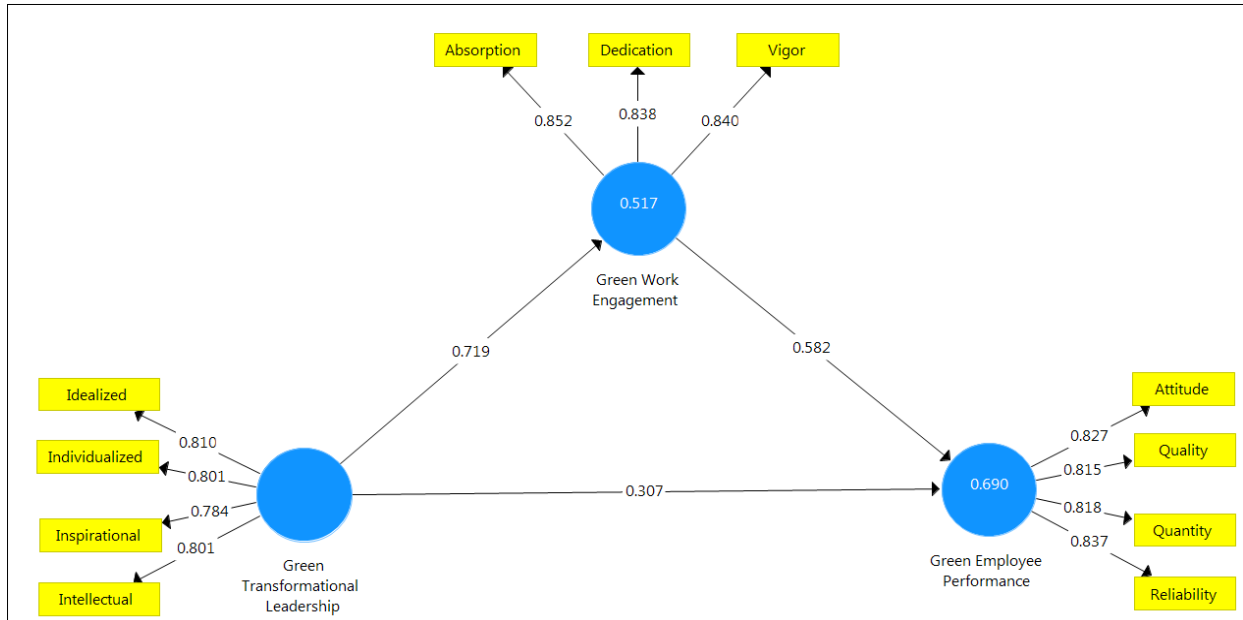
#### Evaluation of Outer Model

The evaluation of the outer model includes testing of construct validity (convergent validity and

discriminant validity) and testing of construct reliability. Validity test is conducted to measure what should be measured and to know the instrument's ability. While the reliability test is used to measure the consistency of the measuring instrument in measuring a concept.

**Convergent Validity**

Convergent validity testing is carried out by using the value of the outer loading or loading factor. Indicators that meet convergent validity or are stated to be in the good category must have an outer loading value of > 0.7.



**Figure 2: Outer Model**

The next table are *outer loading* values at each variable indicator:

**Table 2: Outer Loading**

Variables	Dimension	Outer Loading	Reliability
Green Transformational Leadership (X)	Idealized Influence	0.810	Reliable
	Inspirational Motivation	0.784	Reliable
	Intellectual Stimulation	0.801	Reliable
	Individualized Consideration	0.801	Reliable
Green Work Engagement (M)	Vigor	0.840	Reliable
	Dedication	0.838	Reliable
	Absorption	0.852	Reliable
Green Employee Performance (Y)	Work Quality	0.815	Reliable
	Work Quantity	0.818	Reliable
	Reliability	0.837	Reliable
	Attitude	0.827	Reliable

Source: Results of Program Smart PLS 3.0, 2022

It can be seen in Table 2 that each indicator of the research variable has an outer loading value of > 0.6. These results prove that the outer loading value meets the convergent validity requirements, where the outer loading value is between 0.5 - 0.6, as stated by Chin in Imam Ghozali (2015:39). It can be concluded that each dimension is declared feasible or valid for research use and for further analysis.

The schematic display of the outer model in Figure 2 shows that the path coefficient value on the dominant path coefficient is found in the green transformation leadership variable on green work

engagement of 0.719. Additionally, the second path coefficient is shown in the green work engagement variable on green employee performance of 0.582. While the smallest value is found in the green transformational leadership variable on green employee engagement of 0.307.

**Discriminant Validity**

Discriminant validity testing is carried out using the average variant extracted (AVE) value, which must be > 0.5 for each variable as a good model requirement. The results of the discriminant validity test can be seen below:

**Table 3: Average Variant Extracted (AVE)**

Variables	AVE	Validity
Green Transformational Leadership	0.638	Valid
Green Work Engagement	0.711	Valid
Green Employee Performance	0.679	Valid

Source: Result of Program Smart PLS 3.0, 2022

Table 3 shows the AVE value of the green transformational leadership, green work engagement and green employee performance variables > 0.5. So it can be stated that each variable has met the requirements as good discriminant validity.

**Composite Reliability**

Composite Reliability is used to test the reliability value of each indicator on a variable. A variable can be declared eligible if it has a composite reliability of > 0.6. The table below is the composite reliability value of each research variable:

**Table 4: Composite Reliability**

Variables	Composite Reliability	Reliability
Green Transformational Leadership	0.876	Reliable
Green Work Engagement	0.880	Reliable
Green Employee Performance	0.894	Reliable

Source: Result of Program Smart PLS 3.0, 2022

Table 4 shows that all composite reliability values of research variables are ≥ 0, 7. This means that all variables are reliable with a high level because they have fulfilled composite reliability.

**Cronbach Alpha**

Cronbach alpha was used to strengthen the previous reliability test. Variables that meet and meet the requirements of Cronbach alpha must have a Cronbach alpha value > 0.75 the table below is a description of the Cronbach alpha value of each variable:

**Table 5: Cronbach Alpha**

Variables	Cronbach Alpha	Reliability
Green Transformational Leadership	0.869	Reliable
Green Work Engagement	0.793	Reliable
Green Employee Performance	0.859	Reliable

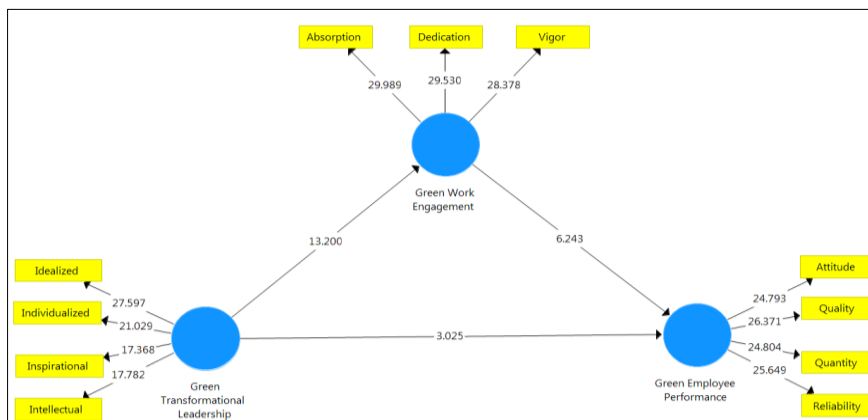
Source: Result of Program Smart PLS 3.0, 2022

Table 5 shows that the Cronbach alpha value of each research variable is ≥ 0, 7. In other words, each research variable has met the requirements of the Cronbach alpha value, meaning that all variables have a high level of reliability.

**Evaluation of Inner Model**

Testing the Inner Model (structural model) which includes r-square output, parameter coefficients

and t-statistics is used to test the hypothesis. Acceptance or rejection of a hypothesis can be seen in the significance value between constructs, t-statistics, and p-values. The value of the proof can be seen in the bootstrapping results. T-statistic > 1.96 with a significance level of p-value 0.05 (5%) and a positive beta coefficient is the Rule of Thumb used in this study. The results of the boot strapping research model are described through the inner model below:



**Figure 3: Inner Model**

### Path Coefficient Test

Path coefficient testing is used to show how strong the effect or influence of the independent variable on the dependent variable. While the coefficient determination (R-Square) is used to measure how much the endogenous variable is influenced by other variables.

Figure 3. Above shows a schematic of the inner model which explains that the largest t-statistic value is shown in green transformational leadership on green work engagement of 13,200. Additionally, the second biggest effect is on green work engagement on green employee performance of 6,243. While the smallest effect is found in the variable green transformational leadership on green employee performance of 3.025.

The results of the description above indicate that the independent variable in this research model has

a path coefficient value with a positive number on green work engagement. This means that the greater the path coefficient value is a positive number, the greater the path coefficient value in one of the independent variables on the green work engagement variable, the stronger the effect between the independent variables on the green work engagement variable.

The independent variable on green employee performance in this model also has a path coefficient value with a positive number. This means that the greater the path coefficient value on one of the independent variables on the green employee performance variable, the stronger the effect between the independent variables on the green employee performance variable.

### Goodness of Fit

**Table 6: Values of R-Square**

Variables	Values of R Square
Green work engagement	0, 517
Green employee performance	0,690

*Source: Result of Program Smart PLS 3.0, 2022*

Table 6 above shows that the R-Square value for the green work engagement variable is 0.517. This value explains that green work engagement can be explained by the green transformational leadership variable by 51.7%, while the remaining 48.3% can be influenced by other variables not examined. Then the green employee performance variable has an R-Square value of 0.590. This value explains that green employee

performance can be explained by the variables of green transformational leadership and green work engagement by 69% while the remaining 31% can be influenced by other variables not examined, such as motivation, discipline, career development, organizational culture and others.

### Hypothesis Test

**Table 7: Direct Effect**

Hypothesis	Effect	Original Sample	T-Statistic	P-Values	Results
H1	Green transformational leadership => Green work engagement	0,719	13,200	0,000	Accepted
H2	Green transformational leadership => Green employee performance	0,307	3,025	0,003	Accepted
H3	Green work engagement => Green employee performance	0,582	6,243	0,000	Accepted

*Source: Results of Program Smart PLS 3.0, 2022*

**Table 8: Indirect Effect**

Hypothesis	Effect	Original Sample	T-Statistics	P-Values	Results
H4	Green transformational leadership => Green employee performance through Green work engagement	0,419	5,336	0,000	Accepted

*Source: Results of Program Smart PLS 3.0, 2022*

From the results of the hypothesis in tables 7 and 8 above, it can be described as follows:

**1) H1:** There is a positive and significant effect of green transformational leadership on green work engagement in heavy equipment companies in Indonesia. The results of the analysis show that testing the direct influence between green transformational leadership on green work engagement with the original sample value of 0.719, T statistic 13.200 and P value 0.000, where the T statistic value > 1.96 and P Value < 0.05, this shows

that there is a direct positive and significant effect. The positive results here mean, the stronger the green transformational leadership is implemented, the higher the green work engagement in heavy equipment companies in Indonesia. These results are in line with transformational leadership theory which provides evidence that when a leader uses a transformational leadership style, this theory results in the emotional attachment of followers or employees to the leader. The quality of transformational leaders can be judged from

the impact the leader has on followers. Thus the first hypothesis can be proven.

**2) H2:** There is an effect of green transformational leadership on green employee's performance in heavy equipment companies in Indonesia. The results of the analysis show that testing the direct influence between green transformational leadership on green employee performance with the original sample value of 0.307, T statistic of 3.025 and P value of 0.003, where the T statistic is  $> 1.96$  and P Value  $< 0.05$ , this shows that there is a direct and positive effect. The positive sign here means that the stronger the green transformational leadership is implemented, the higher the green employee performance that can be achieved in Indonesian heavy equipment companies. Mangkunegara (2017: 93) explains that performance is the result of work achieved by an employee in carrying out his duties in quality and quantity in accordance with the responsibilities assigned. Thus the second hypothesis can be accepted

**3) H3:** Terdapat pengaruh green work engagement terhadap green employee performance pada perusahaan alat berat di Indonesia. Hasil analisis menunjukkan bahwa pengujian pengaruh langsung antara green work engagement terhadap green employee performance dengan nilai original sampel 0,582, T statistic 6,243 dan P value 0,000, dimana nilai T statistic  $> 1,96$  dan P Value  $< 0,05$  maka, ini memperlihatkan bahwa terdapat pengaruh langsung yang positif dan signifikan. Tanda positif di sini artinya, semakin kuat work engagement karyawan maka akan makin tinggi green employee performance. Engagement diartikan sebagai suatu sikap yang positif, penuh makna, dan motivasi, yang dikarakteristikkan dengan vigor, dedication, dan absorption (Schaufeli *et al*, 2017). Semakin kuat karakter ini akan semakin mendukung kinerja karyawan di perusahaan alat berat Indonesia

**4) H4:** Green work engagement can mediate the effect between green transformational leadership and green employee performance in heavy equipment companies in Indonesia. The results of the analysis show that testing the effect of green transformational leadership on green employee performance through green engagement mediation with the original sample value of 0.419, T statistic of 5.366 and P value of 0.000, where the T statistic is  $> 1.96$  and P Value  $< 0.05$ . Shows that there is a positive and significant direct effect. The positive sign here means, the stronger green transformational through work engagement will be the higher the green employee performance of employees at heavy equipment companies in Indonesia. Thus the fourth hypothesis can be accepted

## DISCUSSION OF RESEARCH RESULTS

### Effect of Green Transformational Leadership on Green Work Engagement

The results of the analysis showed that the t-value was  $13.200 > 1.96$ . In other words, green transformational leadership has a positive and significant effect on green work engagement. This

means that if there is an increase in green transformational leadership, then green work engagement will increase. The path coefficient is 0.719, meaning that green transformational leadership contributes 71.9% to green work engagement, and the remaining 28.1% are other factors not examined.

Green transformational leadership is leadership behavior that inspires and motivates employees to help them achieve environmental goals and leadership behavior that exceeds expectations regarding environmental performance (Chen, 2011). Another opinion states that green transformational leadership is the behavior of leaders who motivate followers to achieve environmental goals and inspire followers to perform environmental performance beyond the expected level (Chen *et al*, 2013).

Green transformational leadership who is able to apply good leadership behavior and can direct and guide subordinates in supporting environmentally friendly programs that are the company's goals? The role of green transformational leadership in influencing employees is very large in influencing company goals. Leaders become role models for subordinates to carry out work that supports environmentally friendly programs so that this can make employees work more enthusiastically and in the end can increase green work engagement. It can be concluded that green transformational leadership has an effect on green work engagement.

This is in accordance with research conducted by (Tosun *et al*, 2022), (Huang *et al*, 2021) who state that green transformational leadership has a significant effect on green work engagement.

### Effect of Green Transformational Leadership on Green Employee Performance

The results of the analysis showed that the t-value was  $3.025 > 1.96$ . In other words, green transformational leadership has a positive and significant effect on green employee performance. This means that if the green transformational leadership increases, the green employee performance will increase. The path coefficient is 0.307, meaning that green transformational leadership contributes 30.7% to green employee performance, and the remaining 69.3% are other factors not examined.

Green transformational leadership that is able to apply good leadership behavior and can direct and guide subordinates in supporting environmentally friendly programs that are the company's goals can influence employees in achieving company goals. Leaders become role models for subordinates to carry out work that supports environmentally friendly programs so that this can make employees work more enthusiastically and in the end can improve green employee performance. It can be concluded that green



transformational leadership has an effect on green employee performance.

This is in accordance with research conducted by (Tosun *et al*, 2022), (Sun *et al*, 2021) which states that green transformational leadership has a significant effect on green employee performance.

### Effect of Green Work Engagement on Green Employee Performance

The results of the analysis showed that the t-value was  $6.243 > 1.96$ . In other words, green work engagement has a positive and significant effect on green employee performance. This means that if the green work engagement increases, the green employee performance will increase. The path coefficient is 0.582, meaning that green work engagement contributes 58.2% to green employee performance, and the remaining 41.8% is other factors that were not examined.

Green work engagement is defined as a positive, satisfying, work-related state of mind characterized by passion, dedication, and absorption (Schaufeli *et al*, 2010: 74). Engagement can be seen as the degree to which employees are connected to their work cognitively, emotionally and physically. Based on this, Green work engagement can be defined as the energy that employees give in their tasks related to environmentally friendly work, the willingness to exert effort at environmentally friendly levels and the level of absorption in environmentally friendly work (Aboramadan, 2020).

Employees who have a high level of green work engagement will support the smooth running of environmentally friendly programs and will work optimally according to the company's goals in implementing environmentally friendly programs so that this can ultimately affect employee performance to increase. It can be concluded that green work engagement can affect employee performance.

This is in accordance with research conducted by (Aboramadan, 2020), (Sungmala *et al*, 2021), (Amjed *et al*, 2021) which states that green work engagement has a significant effect on green employee performance.

## CONCLUSION AND SUGGESTION

### Conclusion

Based on the findings from the research results and the explanations in the previous Chapters, several conclusions can be drawn as follows:

1. There is a positive and significant effect of green transformational leadership on green work engagement in heavy equipment companies in Indonesia.
2. There is an effect of green transformational leadership on green employee performance in heavy equipment companies in Indonesia.

3. There is an effect of green work engagement on green employee performance in heavy equipment companies in Indonesia.
4. Green work engagement can mediate the effect between green transformational leadership and green employee performance in heavy equipment companies in Indonesia.

### Suggestion

Based on the conclusions of the research results can be put forward some suggestions that are expected to be useful as follows:

1. Green transformational leadership has been shown to have a significant positive effect on green work engagement. For this reason, it is recommended that green transformational leadership be further enhanced by encouraging employees to be more concerned and more environmentally friendly in accordance with company goals.
2. Green transformational leadership has been shown to have a significant positive effect on green employee performance. For this reason, it is recommended that green transformational leadership be further enhanced by further encouraging employees to work in accordance with the company's goals in environmentally friendly programs.
3. Green work engagement has been proven to have a positive and significant impact on green employee performance. For this reason, it is suggested that the company's management should improve green work engagement by providing employees with a better understanding of environmental friendliness in the company.
4. Other researchers who will conduct research with similar themes and models are expected to add other factors that can be variables affecting green work engagement and green employee performance and can use other research objects that are not only limited to heavy equipment companies.

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