



## RESEARCH ARTICLE

## THE INFLUENCE OF GREEN TRANSFORMATIONAL LEADERSHIP ON GREEN EMPLOYEE PERFORMANCE: A QUANTITATIVE STUDY OF GOVERNMENT CIVIL SERVANTS OF MEMPAWAH DISTRICT, WEST KALIMANTAN PROVINCE, INDONESIA.

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## ABSTRACT

This quantitative study investigates the influence of Green Transformational Leadership (GTL) on Green Employee Performance (GEP) among civil servants in Mempawah District. Amidst growing concerns for sustainable practices in the public sector, this research aims to explore the potential of GTL as a catalyst for enhancing environmental behavior and performance among employees. A total of 406 civil servants from various departments will participate in a structured survey, which includes measures for GTL and GEP adapted from validated scales. The study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) for data analysis to understand the relationship and impact of GTL on GEP while controlling for demographic variables. This research is crucial in providing insights into how transformational leadership with a green focus can effectively contribute to environmental objectives within the public sector. The findings are expected to offer valuable implications for policy makers, organizational leaders, and sustainability advocates in shaping strategies that foster an environmentally responsible workforce.

## KEYWORDS

Public Sector Sustainability, Environmental Behavior, Civil Servants, Quantitative Study, Structural Equation Modeling.

## 1. INTRODUCTION

The exploration of green transformational leadership's influence on green employee performance within the government sector of Mempawah District, West Kalimantan Province, Indonesia, provides a significant insight into the integration of environmental stewardship and organizational behavior. Green transformational leadership, a concept where leaders not only inspire and motivate their teams towards high performance but also instill a commitment to environmental sustainability, is particularly pertinent in the context of government civil servants. These individuals are often at the forefront of policy implementation and community engagement, placing them in a unique position to influence societal attitudes towards environmental issues.

The importance of green practices within government operations cannot be overstated. As regulators and role models, government agencies and their employees have a profound impact on environmental policies and community practices. In regions like West Kalimantan, where environmental concerns are paramount due to the rich natural resources and biodiverse ecosystems, the role of government bodies in promoting and implementing green practices is even more critical. The leadership style adopted by these bodies can significantly influence how effectively green policies are implemented and how well civil servants incorporate sustainability into their daily activities.

Understanding the dynamics between green transformational leadership and employee performance in the public sector is essential. It involves examining how leaders can effectively motivate their teams to not only achieve their regular work goals but also go above and beyond in their commitment to environmental sustainability. This includes adopting

practices that reduce waste, conserve resources, and promote a greater awareness of environmental impacts among the broader community. Furthermore, the context of Mempawah District, with its unique environmental and cultural setting, provides a rich backdrop for this study. The district's reliance on natural resources for economic and social activities makes the role of government civil servants in promoting sustainable practices even more vital. The way these individuals are led and motivated can have far-reaching implications for the region's environmental health and sustainability.

In this vein, the quantitative study aims to dissect the specific elements of green transformational leadership that are most effective in enhancing green employee performance. It seeks to understand the relationship between a leader's approach to environmental stewardship and the subsequent actions and attitudes of their employees. Are there particular strategies or behaviors that are more effective in fostering a culture of sustainability within government offices? Moreover, the study looks to identify the barriers and facilitators to implementing green transformational leadership in the public sector. Understanding these factors is crucial for developing targeted interventions that can enhance the effectiveness of green leadership styles and, consequently, improve environmental outcomes.

The potential outcomes of this study are significant. By pinpointing the elements of green transformational leadership that most strongly influence green employee performance, policymakers and government leaders can tailor their approaches to maximize their positive environmental impact. This could lead to more effective environmental policies, a more motivated and environmentally conscious workforce, and, ultimately, a more sustainable future for Mempawah District and beyond.

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As this study progresses, it will contribute to the growing body of knowledge on sustainable leadership and its practical implications for public administration. It aims not only to inform but also to inspire other regions and sectors to adopt and refine green transformational leadership practices, adapting them to their unique contexts and challenges. In conclusion, this research holds the promise of offering valuable insights into the synergistic relationship between leadership style and environmental stewardship within the public sector. By focusing on the specific context of government civil servants in Mempawah District, West Kalimantan Province, Indonesia, it seeks to uncover strategies that can lead to more sustainable environmental practices and a healthier planet.

## 2. LITERATURE REVIEW

Study conducted investigates the influence of green human resource management (HRM), employee green commitment, and job satisfaction on fostering green creativity within Indonesian companies dedicated to environmental sustainability. Utilizing a questionnaire distributed among employees from these green-committed firms, the researchers gathered 200 responses and analyzed the data using Partial Least Square—Structural Equation Modeling (PLS-SEM) by (Sugiarto and Huruta, 2023). The findings reveal that green HRM, alongside employees' commitment to green practices and their job satisfaction, impacts green creativity both directly and indirectly, with the latter two serving as mediating factors. The results provide valuable insights for enhancing green creativity initiatives in Indonesia, highlighting the crucial roles of employee commitment to green objectives and their satisfaction in the workplace.

Study conducted explores the impact of green leadership (GL) on employees' pro-environmental behavior (PEB) within the hospitality sector, utilizing person-organisation fit and norm activation theory as the basis by (Asante, 2023). The research delves into how value congruence (VC) and moral consciousness (MC) serve as mediators to explain the variable effects of GL on PEB. Employing methods like partial least square-structural equation modeling and fuzzy-set qualitative comparative analysis (fsQCA), the study analyzes data from Ghanaian hotel managers and employees. Findings highlight MC's significant role in influencing employee behavior and affirm its importance in promoting PEB in the hospitality industry. The research also indicates that while MC is a key mediator in the GL-PEB relationship, using fsQCA reveals that both VC and MC are critical for understanding the full extent of GL's influence on PEB. The study concludes by discussing the implications of these findings for both theory and practical application in green leadership strategies.

In their research, investigate the influence of green transformational leadership (GTL), green human resource management (HRM), and green innovation on the sustainable performance of Chinese manufacturing firms. (Zhao and Huang, 2022). The study is driven by the increasing global demand for sustainable business practices following recent economic upheavals, with green strategies identified as a key solution. The researchers also explore how perceived organizational support moderates the relationship between GTL, green HRM, green innovation, and sustainable business performance. Data was gathered through questionnaires and analyzed using the smart-PLS method. Findings demonstrate that GTL, green HRM, and green innovation positively and directly affect the sustainable performance of these organizations, and that organizational support plays a significant moderating role in these relationships. This study offers valuable insights for policymakers in crafting green regulations and serves as a guide for future research in this field.

Have conducted a study to analyze the relationship between green transformational leadership (GTL) and environmental performance (EP) in small and medium enterprises (Sun et al., 2022). The research also considers how green human resource management (GHRM) and green innovation (GI) mediate this relationship, as well as the moderating effect of environmental values (EV) on the GTL-EP link. Utilizing a survey questionnaire, data from 110 respondents was collected and analyzed through structural equation modeling. The results demonstrate a significant positive influence of GTL on EP and confirm that GHRM and GI effectively mediate the GTL-EP relationship. Additionally, the study reveals that EV significantly moderates the connection between GTL and EP, providing crucial insights and recommendations for stakeholders.

That have conducted a study to explore the impact of managers' green knowledge and green transformational leadership on their firms' environmental performance, with a specific focus on the mediation role of green creativity (Riva et al., 2021). Despite the broad discussion on green hotel management and sustainability, there has been little focus on how managers contribute to solving environmental issues. This research aims to fill that gap by analyzing the perceptions of 363 employees across

various managerial levels in the hotel industry, using Partial Last Square Structural Equation Modeling. The findings indicate that both managers' green knowledge and green transformational leadership positively influence green creativity and, in turn, the firm's environmental performance. Green creativity also significantly mediates the relationship between both green knowledge and green transformational leadership and environmental performance. The study underscores the importance of managers' environmental awareness and suggests that green initiatives are crucial for stakeholders in the hotel industry. It concludes with further recommendations for research and practical applications in the sector.

To focuses on the mediating impact of green human resource management (HRM) in the relationship between ethical leadership and employees' environmentally conscious behavior, as well as the moderating role of individual green values (Islam et al., 2021). Data for the study was gathered from 589 MBA executive students with at least one year of work experience, collected at two different points using a questionnaire-based survey. The application of structural equation modeling revealed that ethical leadership directly influences employees' environmental citizenship behavior and indirectly affects it through green HRM. Additionally, the study found that individual green values enhance the link between green HRM and employees' pro-environmental behavior. Contributing to social learning and supply value-fit theory, the research offers significant implications for managing human resources and promoting sustainable environmental practices.

According, investigates the perceptions of managers at Cihan Group on how effective leadership can enhance organizational performance, with a specific focus on the mediating role of Green Supply Chain Management (GSCM) practices (Ahmad and Karadas, 2021). Utilizing a survey that encompasses aspects of effective leadership, GSCM, and organizational performance, the data was analyzed using partial least squares—structural equation modeling (PLS-SEM). The research confirms significant positive links between the dimensions of effective leadership (leading organization, leading people, and leading self) and GSCM practices, which in turn positively influence organizational performance. It was found that GSCM practices fully mediate the relationship between leading organization, leading people, and organizational performance, while partially mediating the relationship between leading self and organizational performance. This study contributes to existing literature by demonstrating that effective leadership indirectly boosts organizational performance through GSCM practices, which also enhance social and environmental performance.

Hence, research delves into the influence of environmental leadership on firm performance, particularly within the agricultural products sector in China. The study aims to expand understanding of the internal mechanisms and conditional factors that connect environmental leadership to a firm's environmental and financial performance (Su et al., 2020). Through a survey of 353 agricultural product corporations, the research demonstrates that environmental leadership positively correlates with both environmental and financial performance aspects of firms. It also identifies green innovation practices, including strategies and actions, as a mediating factor between environmental leadership and firm performance, and highlights the positive moderating role of environmental knowledge learning on the relationship between environmental leadership and green innovation practices. This study enriches environmental management literature by positioning leadership style as a key variable in assessing the impact of environmental leadership on firm performance in China, and underscores the significant moderating influence of environmental knowledge learning. The findings carry important implications for both management practices and policy-making in the realm of environmental leadership and performance.

Herewith, explores how green transformational leadership influences green creativity within the context of tourist hotels in Uttarakhand, India. Using a survey questionnaire, data was gathered from both managers and employees, totaling 500 participants from various (hotelsMittal and Dhar, 2016). The study confirms that green transformational leadership significantly enhances green organizational identity, which, in turn, fosters green creativity in the organization. Additionally, it was discovered that the commitment of resources serves as a crucial mediator in the relationship between green organizational identity and green creativity. The findings suggest that for hotels to effectively promote green creativity among employees, an increase in resource commitment is necessary. The study concludes with practical implications for industry practitioners, emphasizing the importance of green transformational leadership and resource allocation in nurturing an environmentally innovative and creative culture within the hospitality industry.

### 3. RESEARCH METHOD

The study aims to quantitatively assess the impact of Green Transformational Leadership (GTL) on Green Employee Performance (GEP) among civil servants in Mempawah District using a survey methodology. A total of 406 civil servants will be selected through stratified random sampling to ensure diverse representation across various departments. Data will be collected via a structured online survey featuring demographic questions and scales for GTL and GEP, adapted from validated instruments. The independent variable is GTL, and the dependent variable is GEP, with control variables including demographic factors. Analysis will be conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM) to explore the relationship between GTL and GEP. Ethical considerations will ensure anonymity, confidentiality, and voluntary participation. This approach aims to elucidate the role of green leadership in fostering environmentally responsible behaviors among government employees in Mempawah District.

### 4. DISCUSSION

In the forthcoming discussion, we will delve into various facets of our research, focusing on how Green Transformational Leadership (GTL) influences Green Employee Performance (GEP) among civil servants in Mempawah District. A critical aspect of our exploration will involve dissecting the demographic characteristics of our respondents, specifically their gender and age, and understanding how these variables might interact with or influence the primary constructs of our study. The distribution of these demographics is crucial as they can provide deeper insights into the diversity of the workforce and potential nuances in how different groups perceive and respond to GTL.

We will also scrutinize the model fit and quality indices, which serve as the backbone of our study's validity and reliability. These indices provide a comprehensive overview of how well our model captures the relationship between GTL and GEP. We will discuss the Average Path Coefficient (APC), Average R-squared (ARS), and other relevant statistics, deciphering what they collectively reveal about the strength and significance of the modeled relationships. Additionally, our discussion will extend to the general model elements, including the algorithms used for outer and inner model analysis, the resampling method, and the moderating effects calculation option. Understanding these elements is pivotal in appreciating the robustness of our methodological approach and the resulting findings.

We'll further analyze the Indicator Loading and Cross Loading Table, which sheds light on how well each item on our survey measures the intended latent variable and the degree of their inter-correlations. This analysis is crucial for confirming the validity of our constructs and ensuring that our measurements are accurate and reliable. The discussion will also cover the Correlation among latent variables with square root and AVEs Table and the Latent Variable Coefficients Table. These tables provide insight into the relationships between our constructs and the reliability and validity of our measures, respectively. Understanding these relationships and the internal consistency of our scales is fundamental to interpreting our results correctly.

Finally, we will interpret the Research Model Image Result, which visually represents the findings of our study. This image encapsulates the essence of our research, illustrating the impact of GTL on GEP and providing a graphical representation of the statistical relationships we have uncovered. Throughout this discussion, we aim to provide a comprehensive and critical analysis of all these aspects, offering a nuanced understanding of our study's implications and the potential pathways for future research in this vital area of public sector sustainability.

	Frequency	Percent
Male	219	54
Female	187	46
Total	406	100

Table represents the gender distribution of a sample of 406 individuals. There are 219 males, comprising 54% of the total, and 187 females, making up 46% of the sample. In total, the 406 individuals account for 100% of the respondents in the data set. This indicates a relatively balanced gender representation with a slight majority of males in the sample.

	Frequency	Percent
25 - 29	4	1
30 - 34	18	4.4
35 - 39	37	9.1
40 - 44	67	16.5
45 - 49	84	20.7
50 - 54	104	25.6
55 - 60	92	22.7
Total	406	100

The age distribution of the 406 respondents is categorized into seven different groups. A small portion, 1% (4 individuals), falls within the 25-29 years range. Those aged 30-34 years make up 4.4% with 18 individuals. The 35-39 years age group is slightly larger, comprising 9.1% or 37 individuals. A more significant portion of the respondents, 16.5%, is in the 40-44 years bracket, totaling 67 individuals. The 45-49 years category is even larger, with 84 individuals making up 20.7% of the total. The largest single group is those aged 50-54 years, with 104 individuals representing 25.6%. Lastly, the 55-60 years age group includes 92 individuals, accounting for 22.7% of the total. Overall, these figures sum up to 100% of the respondent population, highlighting a diverse age range with a greater concentration in the older age brackets.

Average path coefficient (APC)=0.785, P<0.001
Average R-squared (ARS)=0.617, P<0.001
Average adjusted R-squared (AARS)=0.616, P<0.001
Average block VIF (AVIF) not available
Average full collinearity VIF (AFVIF)=2.478, acceptable if <= 5, ideally <= 3.3
Tenenhaus GoF (GoF)=0.614, small >= 0.1, medium >= 0.25, large >= 0.36
Sympson's paradox ratio (SPR)=1.000, acceptable if >= 0.7, ideally = 1
R-squared contribution ratio (RSCR)=1.000, acceptable if >= 0.9, ideally = 1
Statistical suppression ratio (SSR)=1.000, acceptable if >= 0.7
Nonlinear bivariate causality direction ratio (NLBCDR)=1.000, acceptable if >= 0.7

The provided model fit and quality indices suggest a robust and well-fitting model. The Average Path Coefficient (APC) of 0.785 with a significance level less than 0.001 indicates a strong and significant average effect size for the paths within the model. The Average R-squared (ARS) and Average Adjusted R-squared (AARS) values are 0.617 and 0.616, respectively, both with P-values less than 0.001, demonstrating a substantial proportion of variance explained by the model for the dependent variables. The Average Full Collinearity VIF (AFVIF) of 2.478 is well below the acceptable threshold of 5, indicating no concerning multicollinearity issues. The Tenenhaus GoF (GoF) of 0.614 is considered large, suggesting good overall model fit. Furthermore, indices like the Sympon's Paradox Ratio (SPR), R-squared Contribution Ratio (RSCR), Statistical Suppression Ratio (SSR), and Nonlinear Bivariate Causality Direction Ratio (NLBCDR) all have values of 1.000, which are ideal and indicate no issues with the model's predictive capabilities and the directionality of relationships. In summary, these indices collectively affirm the model's validity and reliability in explaining the phenomena it's intended to measure.

Outer model analysis algorithm: PLS Regression
Default inner model analysis algorithm: Warp3
Multiple inner model analysis algorithms used? No
Resampling method used in the analysis: Stable3
Number of data resamples used: 100
Moderating effects calculation option: Two Stages
Missing data imputation algorithm: Arithmetic Mean Imputation

**Table 4: General model elements**

Number of cases (rows) in model data: 406
Number of latent variables in model: 2
Number of indicators used in model: 20
Number of iterations to obtain estimates: 4

The model described utilizes PLS Regression for the outer model analysis and Warp3 as the default algorithm for inner model analysis, without incorporating multiple inner model analysis algorithms. The analysis

employs the Stable3 resampling method, utilizing 100 data resamples to ensure stability and reliability of results. Moderating effects within the model are calculated using a Two Stages option, providing a detailed examination of interactions. For handling missing data, an Arithmetic Mean Imputation algorithm is applied, ensuring that the model retains its integrity without losing valuable information. The model is based on data from 406 cases (rows), incorporating two latent variables that are crucial for the model's structure and aims. A total of 20 indicators are used to measure these variables, reflecting a comprehensive approach to capturing the nuances of the model. Finally, the model's estimates are obtained after a concise four iterations, indicating a model that converges quickly and efficiently to provide reliable results.

**Table 5 : Indicator Loading dan Cross Loading**

	GTL	GE	GS	GEP	TYPE	SE	P VALUE
GTL1	<b>-0.73</b>	-0.211	0.112	0.114	Reflective	0.045	<0.001
GTL2	<b>-0.738</b>	0.291	-0.37	0.25	Reflective	0.045	<0.001
GTL3	<b>-0.735</b>	-0.316	0.386	-0.25	Reflective	0.045	<0.001
GTL4	<b>-0.817</b>	-0.211	0.264	-0.202	Reflective	0.044	<0.001
GTL5	<b>-0.795</b>	0.297	-0.202	0.091	Reflective	0.045	<0.001
GTL6	<b>-0.825</b>	-0.083	0.069	-0.089	Reflective	0.044	<0.001
GTL7	<b>-0.753</b>	0.001	-0.341	0.278	Reflective	0.045	<0.001
GTL8	<b>-0.783</b>	0.128	-0.101	-0.017	Reflective	0.045	<0.001
GTL9	<b>-0.783</b>	0.04	0.12	-0.1	Reflective	0.045	<0.001
GTL10	<b>-0.781</b>	0.056	0.049	-0.046	Reflective	0.045	<0.001
GEP1	0.065	-0.202	0.272	<b>-0.793</b>	Reflective	0.045	<0.001
GEP2	0.055	0.173	-0.274	<b>-0.817</b>	Reflective	0.044	<0.001
GEP3	-0.065	0.202	-0.398	<b>-0.798</b>	Reflective	0.045	<0.001
GEP4	0.064	-0.185	0.353	<b>-0.823</b>	Reflective	0.044	<0.001
GEP5	-0.078	-0.046	-0.182	<b>-0.843</b>	Reflective	0.044	<0.001
GEP6	-0.023	-0.139	-0.148	<b>-0.787</b>	Reflective	0.045	<0.001
GEP7	-0.1	0.44	-0.16	<b>-0.805</b>	Reflective	0.045	<0.001
GEP8	0.068	-0.272	0.915	<b>-0.702</b>	Reflective	0.045	<0.001
GEP9	-0.136	0.303	-0.601	<b>-0.732</b>	Reflective	0.045	<0.001
GEP10	0.154	-0.292	0.298	<b>-0.78</b>	Reflective	0.045	<0.001

The table presents the indicator loading and cross-loading for a set of variables related to green transformational leadership (GTL) and green employee performance (GEP) among others. Each row represents a different indicator (GTL1-GTL10 and GEP1-GEP10) with their respective loadings on the GTL and GEP variables, as well as additional variables represented by GE and GS. For the GTL indicators (GTL1 to GTL10), all show significant negative loadings on the GTL variable, ranging from -0.73 to -0.825, indicating a strong reflective relationship. These indicators also show various degrees of cross-loading with other variables (GE, GS, GEP), but the primary loadings on GTL are consistently strong and significant with P values less than 0.001, confirming their relevance for the GTL construct.

Similarly, the GEP indicators (GEP1 to GEP10) have significant negative loadings on the GEP variable, ranging from -0.702 to -0.843, which also demonstrates a strong reflective relationship. These indicators too show cross-loading with other variables, with GEP8 notably having a high loading of 0.915 on GS. Like GTL indicators, GEP indicators have P values less than 0.001, indicating significant relationships. All indicators are reflective, as denoted in the table, and the standard error (SE) for each is quite low (0.044 or 0.045), suggesting precision in the estimates. The table provides a detailed insight into the relationships between various constructs within the model, primarily focusing on green transformational leadership and green employee performance.

**Table 6 : Correlation among latent variable with square root and AVEs Table**

	GTL	GEP
GTL	(0.7750)	0.7720
GEP	0.7720	(0.7890)

The table shows the correlation among latent variables, specifically Green Transformational Leadership (GTL) and Green Employee Performance

(GEP), along with the square roots of the Average Variance Extracted (AVEs) for each. The diagonal elements (in parentheses) represent the square roots of the AVEs for the respective constructs. For GTL, the square root of the AVE is 0.7750, and for GEP, it's 0.7890. These values on the diagonal are expected to be larger than the off-diagonal elements in the corresponding rows and columns for satisfactory discriminant validity, indicating that each construct shares more variance with its indicators than with other constructs. The table also shows the correlation between GTL and GEP as 0.7720. This indicates a strong positive relationship between Green Transformational Leadership and Green Employee Performance. In summary, the table provides a concise view of how closely related the constructs are and confirms the distinctiveness of each construct based on the AVEs.

**Table 7: Latent Variable Coefficients**

	GTL	GEP
R-Squared		0.617
Adj. R-Squared		0.616
Composite Reliab.	0.937	0.943
Cronbach's Alpha	0.926	0.932
Avg. var. extrac	0.6	0.622
Full Collin. VIF	2.478	2.478
Q-Squared		0.617

The Latent Variable Coefficients Table presents a range of statistical measures for the constructs of Green Transformational Leadership (GTL) and Green Employee Performance (GEP). The R-Squared value for GEP is 0.617, indicating that 61.7% of the variance in Green Employee Performance is explained by the model. The Adjusted R-Squared is very similar at 0.616, suggesting a good fit of the model to the data after

adjusting for the number of predictors. The Composite Reliability for GTL and GEP is notably high, with values of 0.937 and 0.943 respectively, indicating excellent internal consistency. Similarly, Cronbach's Alpha for both constructs is also high (0.926 for GTL and 0.932 for GEP), further confirming reliability. The Average Variance Extracted (AVE) for GTL is 0.6 and for GEP is 0.622, both above the commonly accepted threshold of 0.5, suggesting a satisfactory level of convergent validity. This means that a

#### 4.1 Research Model Image Result



The image depicts a path diagram for a structural equation model (SEM), illustrating the relationship between Green Transformational Leadership (GTL) and Green Employee Performance (GEP). The path coefficient ( $\beta$ ) from GTL to GEP is 0.79, indicating a strong positive relationship between these two constructs. This relationship is statistically significant with a p-value less than 0.01. Additionally, the model explains a substantial amount of variance in Green Employee Performance, with an R-squared ( $R^2$ ) value of 0.62. This suggests that Green Transformational Leadership is a good predictor of Green Employee Performance within the model's context.

The image presented illustrates a structural equation model that quantifies the impact of Green Transformational Leadership (GTL) on Green Employee Performance (GEP). The path coefficient of 0.79 indicates a robust positive association between GTL and GEP, suggesting that an increase in GTL is associated with a corresponding increase in GEP. This strong relationship is statistically significant, with a p-value less than 0.01, affirming that the likelihood of this relationship occurring by chance is very small. Furthermore, the R-squared value of 0.62 denotes that 62% of the variability in Green Employee Performance can be explained by Green Transformational Leadership, highlighting GTL as a significant determinant of GEP. This model offers valuable insights into the dynamics of organizational leadership and its influence on employees' environmental performance, emphasizing the importance of transformational leadership in fostering a workforce that is both efficient and environmentally conscious.

Given these insights, organizations are provided with a compelling case for cultivating green leadership qualities as a strategy to achieve better environmental outcomes. Investment in leadership development programs that emphasize sustainability, the integration of green objectives into organizational culture, and the alignment of reward systems to recognize green initiatives are practical steps that could be taken. Such proactive measures would likely lead to a more environmentally responsible workforce, contributing to the overall sustainable performance of the organization. This model not only reinforces the value of green leadership but also serves as a call to action for organizations to prioritize environmental considerations in their leadership practices and development programs.

The structural equation model, which reveals a strong positive impact of Green Transformational Leadership (GTL) on Green Employee Performance (GEP), can be directly linked to the context of the government civil servants in the Mempawah District of West Kalimantan Province, Indonesia. In this specific setting, the quantitative study would likely investigate how GTL within the government sector influences the environmental performance of its civil servants. Given the path coefficient of 0.79, the implication is that if leaders in the Mempawah District government embody green transformational qualities, there would likely be a significant enhancement in the environmentally responsible behaviors of the civil servants.

The statistical significance of this relationship, indicated by a p-value less than 0.01, would provide strong empirical support for policy measures or leadership development initiatives aimed at promoting sustainability within the district's civil service. With the model explaining 62% of the variance in GEP, the district's leadership has a quantifiable benchmark to gauge the potential effectiveness of implementing GTL practices. In the context of Mempawah District, where environmental concerns may be particularly pressing due to the region's natural resources and biodiverse ecosystems, the findings suggest a clear pathway for improving green performance: invest in transformational leadership that prioritizes environmental goals. This could lead to more effective environmental policies, a more engaged and environmentally conscious workforce, and ultimately, a more sustainable district that could serve as a model for other regions in Indonesia and beyond.

substantial amount of the variance captured by each construct is due to its indicators. The Full Collinearity VIF (Variance Inflation Factor) for both constructs is 2.478, well below the threshold of 5, indicating no multicollinearity concerns. Lastly, the Q-Squared value for GEP is 0.617, implying that the model has predictive relevance for the Green Employee Performance construct. Collectively, these statistics provide a robust picture of the model's reliability, validity, and predictive power.

## 5. CONCLUSION

The investigation into the effects of Green Transformational Leadership (GTL) on Green Employee Performance (GEP) offers vital insights, particularly relevant to the government sector in Mempawah District, West Kalimantan Province, Indonesia. The structural equation model demonstrates a substantial positive influence of GTL on GEP, with a path coefficient of 0.79, indicating that leadership that actively promotes and embodies environmental sustainability can significantly enhance the pro-environmental behaviors of employees. With the model's R-squared value of 0.62, it becomes evident that GTL is a critical factor in explaining the variance in GEP among civil servants. The statistical significance of this relationship underscores not only the importance but also the potential effectiveness of integrating green principles into the leadership framework of the government sector.

In conclusion, for the Mempawah District, and potentially other regions with similar environmental and organizational dynamics, fostering GTL is likely to be a key strategy in achieving sustainable business performance. The quantitative study reinforces the premise that transformational leaders who prioritize and model green behaviors can drive significant improvements in the environmental performance of their teams and organizations. This insight has profound implications for policy formulation, leadership training, and organizational culture development within the public sector, emphasizing the role of leadership in navigating the challenges of sustainability.

### Study Limitations And Recommendations For Further Research

The study on the influence of Green Transformational Leadership (GTL) on Green Employee Performance (GEP) in Mempawah District's government sector presents limitations such as its narrow geographic scope which may hinder the ability to generalize results, its exclusive focus on the public sector that may not reflect private sector dynamics, reliance on self-reported data that could be subject to bias, and a limited range of variables considered. In terms of future research, expanding the study to encompass a broader geographical area and including diverse organizational settings such as private and non-governmental sectors could enhance the generalizability of findings. Longitudinal research designs would offer insights into the causality and evolution of GTL's impact over time. Moreover, incorporating a wider array of variables and objective performance measures could provide a more comprehensive understanding of the factors influencing GEP. Lastly, qualitative methods could delve into the intricacies of GTL practices, and cross-industry studies might uncover sector-specific insights, enriching the knowledge base and practical implications surrounding green leadership and performance.

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## APPENDIX

### QUESTIONNAIRE

**GREEN TRANSFORMATIONAL LEADERSHIP** (Sachdeva and Singh,

2023; Sun et al., 2022; Zhao and Huang, 2022):

1. I have a strong vision of sustainable practices and the importance of preserving the environment.
2. I regularly communicate about the importance of sustainable practices and environmental actions within the organization.
3. I encourage myself to actively participate in sustainable efforts, such as reducing electricity, water, and paper usage.
4. I motivate myself to achieve sustainable goals within the organization.
5. I understand and integrate environmental issues into organizational decisions and policies.
6. I encourage myself to think creatively and share innovative ideas that support sustainable practices.
7. I provide myself with training and guidance on sustainable practices and environmental actions.
8. I act proactively in reducing environmental impact and supporting sustainable practices.
9. I lead by example with sustainable behavior, such as reducing energy use or supporting recycling.
10. I contribute to creating an organizational culture that supports sustainable practices and maintains a clean working environment.

**GREEN EMPLOYEE PERFORMANCE** (Aftab, Abid, Cucari, and Savastano, 2022; Chen, Tsai, Oen, 2022; Pham, Vo-Thanh, Shahbaz, Duc Huynh, Usman, 2020):

1. I actively contribute to reducing electricity and water usage in the workplace.
2. I have a good understanding of environmental issues and sustainable practices applied in the workplace.
3. I frequently participate in innovative initiatives aimed at reducing environmental impact in the workplace.
4. I always adhere to environmental policies and guidelines established by the organization.
5. My actions in the workplace have had a positive impact on the environment, such as reducing carbon emissions or waste reduction.
6. I am eager to participate in environmental training and education provided by the organization.
7. I feel supported by the organization in carrying out sustainable practices in the workplace.
8. I maintain cleanliness and orderliness in the workplace and dispose of waste properly.
9. I actively participate in recycling practices and proper waste management in the workplace.
10. I reduce paper usage in the workplace by utilizing digital alternatives and printing wisely.

