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FROM GREEN TRANSFORMATIONAL LEADERSHIP TO EMPLOYEE PRODUCTIVITY: THE MEDIATING ROLE OF GREEN CREATIVITY IN MAKASSAR'S CREATIVE INDUSTRIES

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Abstract

Green transformational leadership (GTL) is a leadership approach that integrates environmental sustainability values into an organization's vision, direction, and work behavior. However, the mechanism linking GTL to employee productivity, particularly through environmentally oriented creativity, remains underexplored in regional creative industries. This study analyzes the effect of GTL on employee productivity and examines the mediating role of green creativity in Makassar City's creative industry. A quantitative approach with a causal-associative design was employed. The study collected data through a Likert-scale questionnaire from 105 employees selected through purposive sampling and analyzed them using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that GTL positively affects employee productivity (β = 0.305) and green creativity (β = 0.518), while green creativity positively affects employee productivity (β = 0.461). Green creativity partially mediates the relationship between GTL and employee productivity, with an indirect effect of 0.239, accounting for about 44% of the total effect. These findings indicate that sustainability-oriented leadership enhances productivity both directly and by fostering green creativity. Leaders in the creative industry should therefore embed a clear environmental vision in their leadership practices and give employees room to develop and implement eco-friendly ideas. Future research should employ longitudinal designs and objective productivity measures to clarify how these relationships evolve.

Keywords: *Green Transformational Leadership; Employee Productivity; Green Creativity; Creative Industry; Organizational Sustainability*

1. INTRODUCTION

Sustainable development has changed how organizations define and evaluate business success. Success is no longer measured solely by economic performance but also by resource efficiency, waste management, and the environmental impact of operational activities. These expectations apply not only to large-scale industries but also to creative industries, which rely on ideas, knowledge, skills, and innovation to create value. Despite their strong reliance on creativity, creative industry activities still use raw materials, energy, paper, textiles, electronic equipment, and packaging, all of which can have environmental implications.

Therefore, creative industries need to develop products and services that generate economic value while fostering productive work processes that are aligned with sustainability principles.

In Indonesia, the creative economy plays a strategic role in generating employment and strengthening the national economy. Statistics Indonesia (Badan Pusat Statistik, 2025) reported that the sector employed 27.40 million people in 2025, accounting for 18.70% of the national workforce. This is up from 2024, when employment in the sector reached 26.48 million people (18.30%). At the regional level, South Sulawesi's economy grew by 5.18% year-on-year in the fourth quarter of 2024 (Statistics Indonesia, South Sulawesi Province, 2025). The region's creative industries span several subsectors, including culinary, fashion, crafts, design, digital content, animation, applications and games, and performing arts. Their reliance on individual creativity, workforce skills, and limited resources makes employee productivity critical to maintaining competitiveness. Employees are expected not only to produce high-quality goods and services but also to work efficiently, generate new ideas, and adopt working methods that demonstrate greater environmental responsibility.

Employee productivity plays a crucial role in achieving operational objectives and sustaining organizational competitiveness. Productivity is not measured only by output volume; it also reflects the relationship among work outcomes, individual capabilities, work enthusiasm, self-development, quality, and efficient resource use (Sutrisno, 2016). As demands for operational efficiency and environmental sustainability grow, employees are expected to maximize output while using resources responsibly. Achieving this requires more than technical competence; it also depends on the work environment and leadership practices that shape employee motivation and behavior. Wang et al. (2011) identified a positive relationship between transformational leadership and performance at the individual, team, and organizational levels. Bass and Riggio (2006) explained that transformational leadership comprises four key dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Together, these dimensions reflect a leader's ability to establish a shared vision, inspire employees, encourage innovative thinking, and support individual development.

As environmental sustainability draws increasing attention, the concept of transformational leadership has evolved to include green transformational leadership (GTL). This concept refers to leadership behaviors that encourage employees to achieve environmental goals and exceed established environmental performance expectations (Chen & Chang, 2013). In practice, GTL extends beyond meeting work-related targets by fostering commitment to environmental values and encouraging their integration into everyday work activities. Several studies have demonstrated the relevance of GTL in promoting sustainability-oriented behaviors and performance. Chen et al. (2014) examined the relationship between GTL and green performance through the mediating roles of green

mindfulness and green self-efficacy. Begum et al. (2022) highlighted GTL's role in fostering green innovation through green thinking and engagement in creative processes.

Meanwhile, Mittal & Dhar (2016), Li et al. (2020), and Al-Ghazali et al. (2022) identified associations between GTL and employee green creativity. These findings suggest that environmentally oriented leadership can stimulate innovative ideas and more environmentally responsible work behaviors. Nevertheless, the relationship between GTL and employee productivity, particularly within the creative industries, warrants further investigation.

This study matters because empirical findings on the direct effect of green transformational leadership (GTL) on work-related outcomes remain mixed. Saleem et al. (2024) found that GTL did not have a significant direct effect on environmental performance in pharmaceutical companies. However, its influence emerged indirectly through green empowerment and green self-efficacy. In contrast, Robbi and Anah (2025) reported that GTL had a positive and significant effect on employee performance in catering service companies in the Greater Jakarta area (Jabodetabek). These contrasting findings indicate that the relationship between GTL and work-related outcomes warrants further investigation, particularly by considering organizational characteristics and the underlying mechanisms that connect them. In the creative industries, employee creativity is a relevant mechanism, as value creation depends heavily on idea generation, problem-solving, and developing alternative solutions. Huang et al. (2022) likewise emphasized the importance of creativity and innovation in organizational development. Accordingly, examining creativity's mediating role may help explain the relationship between environmentally oriented leadership and employee productivity.

Green creativity represents a construct that may help explain the relationship between green transformational leadership (GTL) and employee productivity. Chen and Chang (2013) defined green creativity as the ability to develop novel and useful ideas related to environmentally friendly products, services, processes, or practices. This definition is consistent with Amabile's (1996) perspective, which identifies novelty and usefulness as the fundamental elements of creativity. In the workplace, green creativity can be reflected in ideas that conserve raw materials and energy, reduce waste, improve production processes, and develop more environmentally friendly products. Implementing these ideas can enhance productivity by improving quality, reducing resource waste, and increasing operational efficiency. Gong et al. (2009) also found that employee creativity was associated with better performance evaluations and higher sales outcomes among insurance agents. Therefore, the relationship between green creativity and employee productivity warrants empirical investigation to determine the extent to which environmentally oriented ideas are associated with improvements in employee productivity.

Several studies have examined green transformational leadership (GTL) across various organizational contexts, including the manufacturing, electronics, pharmaceutical, and

hospitality industries, as well as small and medium-sized manufacturing enterprises (Chen et al., 2014; Mittal & Dhar, 2016; Sidney et al., 2022; Al-Ghazali et al., 2022; Saleem et al., 2024). These studies provide a foundation for understanding the relationship between GTL and environmental performance, green innovation, and creative behavior. However, these three aspects are conceptually distinct from employee productivity. Environmental performance concerns achieving an organization's environmental objectives; green innovation focuses on developing or implementing improvements that support sustainability; and productivity emphasizes the relationship between work output and the resources used. Accordingly, employee productivity should be examined as a distinct outcome variable. Furthermore, findings from the manufacturing sector and large-scale enterprises may not fully reflect the conditions of creative industries, where value creation relies heavily on knowledge, skills, and individual creative contributions. Therefore, the relationships among GTL, green creativity, and employee productivity warrant empirical investigation in Makassar City's creative industries.

Based on the foregoing discussion, three research gaps support this study. First, a contextual gap highlights the need to examine the relationship between green transformational leadership and employee productivity within creative industries, where value creation relies heavily on individual ideas and skills. Second, a geographical gap concerns the need to extend research on green leadership to creative industries in Makassar City, thereby broadening the empirical evidence to include a region that has received relatively limited research attention. Third, a mechanism gap emphasizes the need to investigate the role of green creativity in explaining the relationship between GTL and employee productivity, considering both the indirect effect through green creativity and the direct effect of leadership. These three research gaps provide the basis for examining the relationships among the constructs within an integrated research model.

This study aims to analyze the effect of GTL on employee productivity, the effect of green creativity on employee productivity, the effect of GTL on green creativity, and the mediating role of green creativity in the relationship between GTL and employee productivity in Makassar City's creative industries. Theoretically, this study is expected to broaden the understanding of green leadership in the creative industries by integrating perspectives on leadership, creativity, and productivity. Practically, the findings are expected to provide valuable insights for creative industry practitioners on implementing leadership practices that support achieving work targets while encouraging employees to generate and implement environmentally friendly ideas.

2. RESEARCH METHOD

Research Design

This study employs a quantitative approach with a causal associative research design. This approach was selected to objectively test theoretical assumptions through numerical

measurements and statistical analysis of relationships among variables (Creswell, 2014). The associative design is used to examine both the direct and indirect effects of green transformational leadership (X) on employee productivity (Y), with green creativity (Z) serving as a mediating variable. The research was conducted in three stages: a preliminary survey, a pilot study, and data analysis.

Population and Sample

The population of this study comprises employees working in creative industry businesses or companies in Makassar City. Since a sampling frame covering all employees in the creative industries across the region is not available, the sample was selected using *purposive sampling* based on three criteria: (1) being employed by a creative industry business in Makassar City, (2) having a minimum of one year of work experience, and (3) having a direct supervisor. As the exact population size is unknown, the minimum required sample size was determined using the Lemeshow formula (Unaradjan, 2019), expressed as; $n = \left(\frac{Z_{a/2}\,\sigma}{e}\right)^2$, $n = \left(\frac{(1{,}96).(0{,}25)}{0{,}05}\right)^2$, $n = 96{,}04$, $n = 96{,}04$ is rounded to 100. Accordingly, the researcher is confident that, at a 95% confidence level, a sample size of 100 respondents is statistically sufficient. A total of 105 employees who met these criteria participated in the study.

Operational Definitions of Variables

This study examines three variables: green transformational leadership (X), green creativity (Z), and employee productivity (Y). Respondents assess are variables based on workplace conditions and behaviors using a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores indicate higher levels of the respective variables being measured (Sugiyono, 2017).

Green transformational leadership (X) refers to leadership behaviors through which leaders direct, motivate, and develop employees to support the achievement of organizational environmental goals (Chen & Chang, 2013). Operationally, this variable is measured based on employees' perceptions of four dimensions proposed by Bass and Riggio (2006): idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. The measurement covers leaders' role modeling and commitment to environmental values, communication of environmental visions and objectives, encouragement of green idea generation, evaluation of resource-intensive work methods, and recognition and guidance of employees' environmentally responsible behaviors.

Green creativity (Z) refers to employees' ability to generate, develop, and implement novel and useful ideas that contribute to environmental improvements through products, services, or work processes (Chen & Chang, 2013). Operationally, this variable is measured using three dimensions: idea generation, idea promotion, and idea realization (Janssen,

2000). The measurement encompasses employees' ability to propose new approaches and creative solutions to environmental problems, communicate their ideas and gain support from others, and plan, refine, and implement green ideas in their work activities.

Employee productivity (Y) refers to employees' ability to achieve optimal work outcomes while considering their capabilities, work enthusiasm, self-development, quality, and resource-use efficiency (Sutrisno, 2016). Operationally, this variable is measured using six dimensions: ability, improvement in work outcomes, work enthusiasm, self-development, quality, and efficiency. The measurement covers skill mastery and professionalism; improvements in work outcomes and achievement of work targets; enthusiasm and efforts to enhance performance; capability development and use of learning opportunities; consistency and conformity of work quality with established standards; and efficient use of time and resources.

Data Analysis Technique

Data analysis was conducted using Partial Least Squares Structural Equation Modeling (PLS-SEM), involving the evaluation of the measurement model (outer model) and the structural model (inner model) (Hair et al., 2020). The evaluation of the outer model included indicator reliability through outer loadings (≥ 0.708), internal consistency reliability (Cronbach's alpha and composite reliability ≥ 0.70), convergent validity (AVE ≥ 0.50), and discriminant validity using the Fornell–Larcker criterion and the heterotrait–monotrait ratio (HTMT) of correlations (HTMT < 0.85) (Henseler et al., 2015).

The inner model evaluation covered collinearity assessment (VIF < 3), the coefficient of determination (R^2), effect size (f^2), and predictive relevance (Q^2_predict) (Shmueli et al., 2019). The indirect effect was considered statistically significant when its confidence interval did not include zero. At the same time, we assessed the magnitude of the mediating effect using the variance accounted for (VAF) approach.

3. RESULTS AND DISCUSSION

3.1. Hasil

Respondent Profile

Primary data were collected through questionnaires administered to 105 respondents working across various creative industry subsectors in Makassar City. The data were used to describe respondents' demographic and employment characteristics in terms of gender, age, educational attainment, creative industry subsector, and length of service. A detailed breakdown of the respondents' characteristics is presented in Table 1.

Table 1. Respondent Profile

Characteristics	Category	Frequency	Percentage (%)
Gender	Male	50	47,6
	Female	55	52,4
Age	< 25 years	37	35,2

Characteristics	Category	Frequency	Percentage (%)
	25-34 years	47	44,8
	35-44 yeasr	15	14,3
	≥ 45 yers	6	5,7
Educational	SMA/SMK sederajat	61	58,1
	Diploma	29	27,6
	Bachelor's degree	15	14,3
Subsector	Culinary	32	30,5
	Fashion	26	24,8
	Crafts	20	19,0
	Digital Content	14	13,3
	Design/Graphic Design	13	12,4
Length of Service	1-2 years	37	35,2
	> 2-5 years	39	37,1
	> 5-10 years	21	20,0
	> 10 years	8	7,6

Source: Proceed Data, 2026

Table 1 shows that most respondents were female (55 individuals, 52.4%), while 50 were male (47.6%). By age, the largest proportion of respondents were 25–34 years old, totaling 47 individuals (44.8%), followed by those under 25, totaling 37 individuals (35.2%). Regarding educational attainment, most respondents were senior high school or vocational high school graduates, totaling 61 individuals (58.1%). Meanwhile, 29 respondents (27.6%) held diploma qualifications, and 15 (14.3%) held bachelor's degrees.

In terms of creative industry subsectors, the largest proportion of respondents came from the culinary sector, comprising 32 individuals (30.5%), followed by fashion with 26 individuals (24.8%), crafts with 20 individuals (19.0%), digital content with 14 individuals (13.3%), and design or graphic design with 13 individuals (12.4%). Regarding length of service, most respondents had worked for more than 2 to 5 years, accounting for 39 individuals (37.1%), followed by those with 1–2 years of service (37 individuals; 35.2%), 5–10 years (21 individuals; 20.0%), and more than 10 years (8 individuals; 7.6%). Overall, these characteristics indicate that the study involved respondents with diverse demographic backgrounds and work experience across various creative industry subsectors in Makassar City.

Measurement Model Evaluation

This study used Partial Least Squares Structural Equation Modeling (PLS-SEM), which evaluates both the measurement model (outer model) and the structural model (inner model) (Hair et al., 2020). The outer model was evaluated to ensure each indicator demonstrated adequate validity and reliability in measuring the research constructs.

Table 2. Construct Validity and Reliability

Indicators	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variance Extracted
X1 – X10	0.724 - 0.839	0.955	0.961	0.711
Z1 - Z8	0.769 - 0.858	0.930	0.936	0.673
Y1 - Y12	0.738 - 0.832	0.964	0.968	0.717

Source: Proceed Data, 2026

Table 2 shows that all indicators have loading factor values exceeding 0.70, ranging from 0.724 to 0.839 for green transformational leadership (X), 0.769 to 0.858 for green creativity (Z), and 0.738 to 0.832 for employee productivity (Y). The Average Variance Extracted (AVE) values for the three constructs are 0.711, 0.673, and 0.717, respectively. All values exceed the minimum threshold of 0.50, indicating that the constructs meet convergent validity criteria.

Regarding reliability, the Cronbach's alpha values are 0.955, 0.930, and 0.964, respectively, while the corresponding composite reliability values are 0.961, 0.936, and 0.968. All values exceed the recommended threshold of 0.70. Therefore, all three constructs demonstrate satisfactory convergent validity and internal consistency reliability.

Furthermore, discriminant validity was assessed using the Fornell–Larcker criterion and the Heterotrait–Monotrait Ratio (HTMT). These assessments ensure that each construct measures a concept empirically distinct from the others.

Table 3. Discriminant Validity of Variables (*Fornell & Larcker Criterion and* HTMT)

F & L Criterion	Green Creativity	Green Transformational Leadership	Productivity
Green Creativity	0.821		
Green Transformational Leadership	0.518	0.843	
Productivity	0.620	0.545	0.847
HTMT	**Green Creativity**	**Green Transformational Leadership**	**Productivity**
Green Creativity			
Green Transformational Leadership	0.529		
Productivity	0.646	0.554	

Source: Primary data, processed (2026).

Table 3 shows that the square roots of the AVE values, based on the Fornell–Larcker criterion, for green creativity (0.821), green transformational leadership (0.843), and employee productivity (0.847) are greater than their respective correlations with the other constructs. Furthermore, the HTMT results indicate that all interconstruct relationships fall within the range of 0.529–0.646, which is below the recommended threshold of 0.85. These findings confirm that all constructs satisfy the criteria for discriminant validity, are empirically distinguishable, and represent their respective concepts without excessive

overlap. Therefore, the measurement model demonstrates adequate discriminant validity and is suitable for proceeding to the structural model (inner model) assessment.

Hypothesis Testing

After all constructs satisfied the validity and reliability criteria, the next step was to assess the structural model (inner model). This assessment was conducted to examine the direct and indirect effects among the study variables.

Table 4. Hypothesis Testing

Variable	Direct		Indirect		Total	
	Path Coefficient	T Statistics	Path Coefficient	T Statistics	Path Coefficient	T Statistics
GTL → P	0.305	3.227**	-	-	0.545	8.279**
GC → P	0.461	4.816**	-	-	0.461	4.816**
GTL → GC	0.518	7.726**	-	-	0.518	7.726**
GTL → GC → P	-	-	0.239	4.202**	0.239	4.202**

Source: Primary data, processed (2026).

As shown in Table 4, green transformational leadership positively and significantly affects employee productivity, with a path coefficient of 0.305 and a t-statistic of 3.227. Similarly, green creativity positively and significantly affects employee productivity, with a path coefficient of 0.461 and a t-statistic of 4.816. In addition, green transformational leadership positively and significantly affects green creativity, with a path coefficient of 0.518 and a t-statistic of 7.726.

Regarding the indirect effect, green creativity was found to mediate the relationship between green transformational leadership and employee productivity, with a path coefficient of 0.239 and a t-statistic of 4.202. All t-statistic values exceed the critical value of 1.96, indicating that all hypothesized relationships are statistically significant at the 5% significance level. These findings demonstrate that green transformational leadership contributes to employee productivity both directly and indirectly through green creativity. Thus, green creativity serves as a mediating variable in the relationship between green transformational leadership and employee productivity in the creative industries of Makassar City.

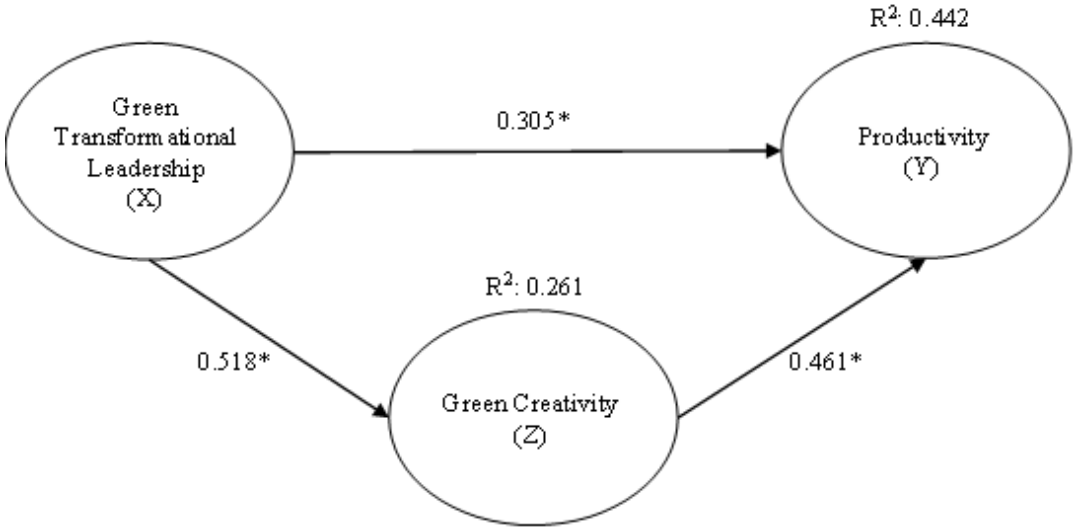

Figure 1. Structural Model Testing of The Conceptual Model

3.2 Discussion

The Effect of Green Transformational Leadership on Employee Productivity

The findings indicate that green transformational leadership (GTL) positively and significantly affects employee productivity. This suggests that the stronger the implementation of environmentally oriented leadership, the greater employees' potential to improve productivity. Leaders who serve as role models, communicate an environmental vision, encourage efficient work practices, and show concern for employees' needs can foster greater motivation and more productive work behaviors.

This relationship can be understood through the four dimensions of transformational leadership: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Riggio, 2006). In the context of GTL, these four dimensions are directed toward supporting the achievement of environmental goals (Chen & Chang, 2013). Furthermore, Social Learning Theory explains that employees learn behaviors by observing and imitating leaders as role models (Bandura, 1977). When leaders demonstrate efficient resource utilization and adopt environmentally friendly work practices, employees are more likely to emulate these behaviors in their own work. Such practices can potentially improve employees' work quality, efficiency, and self-development (Sutrisno, 2016).

These findings are consistent with Wang et al. (2011), who identified a positive relationship between transformational leadership and performance. Robbi and Anah (2025) likewise found a positive effect of GTL on employee performance. Meanwhile, Prijambodo and Rosyid (2025), as well as Suliman et al. (2023), showed that GTL's effects on work outcomes may also operate through other mechanisms, such as green innovation and green work engagement. Thus, GTL can enhance productivity by providing leadership through

role modeling and motivation, while encouraging employees to identify more effective and efficient ways of working.

The Effect of Green Creativity on Employee Productivity

Green creativity positively and significantly affects employee productivity, with a moderate effect size. This finding suggests that employees who can generate, communicate, and implement environmentally friendly ideas tend to be more productive. This relationship can be explained through the three stages of innovative work behavior proposed by Janssen (2000), namely idea generation, idea promotion, and idea realization. Green ideas provide tangible benefits when they are put into practice, for example, by reducing the consumption of raw materials, time, and labor. Such implementation can improve the quality of work outcomes while enhancing resource-use efficiency, both of which are indicators of employee productivity (Sutrisno, 2016).

These findings are consistent with Gong et al. (2009), who demonstrated that employee creativity is associated with performance evaluations and sales outcomes. The present study extends this finding by showing that environmentally oriented creativity is also associated with productivity. Further evidence of the relationship between green creativity and work outcomes comes from Wang et al. (2024), Ding et al. (2023), and Lubis et al. (2025), who identified green creativity's contribution to environmental performance or employees' green performance. Although these studies used different work-outcome indicators, they collectively suggest that green creativity can improve work outcomes. The present study adds to this body of research by demonstrating that the benefits of green creativity are not limited to environmental performance but are also associated with employee productivity more broadly.

From the perspective of the natural-resource-based view, the ability to reduce waste and use resources efficiently constitutes one of the foundations upon which organizations can build competitive advantage (Hart, 1995). In this study, this capability is reflected in employees' creative initiatives to improve work processes. For example, employees may reuse leftover materials, minimize raw material waste, or simplify production stages. These practices help employees complete tasks while using resources more efficiently without compromising output quality. Therefore, green creativity not only strengthens environmental awareness but also generates practical benefits for organizational efficiency and productivity.

In the context of the creative industries in Makassar City, green creativity is particularly relevant to the work in the culinary, fashion, and crafts subsectors, which together accounted for 74.3% of respondents. This indicates that green creativity can be applied to everyday work processes, for example, by reusing materials, reducing production waste, and conserving raw materials. Creativity does not necessarily have to result in entirely new products or methods; it can also involve improving existing work practices. Implementing these ideas can help green creativity boost employee productivity.

The Effect of Green Transformational Leadership on Green Creativity

Green transformational leadership (GTL) positively and significantly affects green creativity. This relationship also represents the strongest path in the research model. This finding indicates that the stronger the implementation of environmentally oriented leadership, the more employees are encouraged to generate and develop environmentally friendly creative ideas. This result is consistent with previous studies showing that GTL influences green creativity through several mechanisms. Chen and Chang (2013) highlighted the importance of green creativity in developing environmentally friendly products. Mittal and Dhar (2016) found that green organizational identity is one mechanism that encourages employee creativity. Meanwhile, Li et al. (2020) emphasized the role of both intrinsic and extrinsic green motivation.

Furthermore, Sidney et al. (2022) identified the contribution of green human resource management practices and employee involvement in creative processes. Al-Ghazali et al. (2022) also demonstrated the importance of green thinking and green organizational identity. Lathabhavan and Kaur (2023) further support this evidence by showing that GTL can enhance employees' green creativity. Collectively, these studies indicate that environmentally oriented leadership can shape employees' identities, motivation, and mindsets in ways that encourage creative ideas.

This relationship can be explained through Amabile's (1996) componential theory of creativity. The theory posits that individual creativity is influenced by expertise, creative-thinking skills, intrinsic motivation, and the work environment. In this context, leaders help create an environment that encourages employees to apply their abilities and knowledge to develop environmentally friendly solutions. A clear environmental vision can motivate employees and give them a sense of purpose, while encouragement to explore alternative problem-solving approaches can strengthen their creative-thinking skills. In addition, leaders' attention and support provide employees with opportunities to express and develop ideas without excessive fear of negative evaluation. Thus, GTL not only fosters environmental awareness but also creates working conditions that support the development of green creativity.

In Makassar City's creative industries, GTL plays an important role because businesses in the culinary, fashion, and crafts subsectors generally require creativity in both product development and work processes. Employees with skills in preparing food products, designing clothing, or producing crafts can be encouraged to develop more environmentally friendly ideas. For example, they may reuse leftover materials or reduce production waste. Close relationships between leaders and employees in businesses with relatively simple organizational structures may also facilitate the communication and testing of new ideas. These conditions enable leadership guidance to be translated into concrete creative actions. This may help explain why GTL's effect on green creativity is the strongest relationship in the research model.

The Effect of Green Transformational Leadership on Employee Productivity through Green Creativity

The findings indicate that green creativity partially mediates the relationship between GTL and employee productivity. Nearly half of the total effect of GTL on employee productivity is transmitted through green creativity. This means that environmentally oriented leadership supports productivity not only through direct guidance and motivation but also by encouraging employees to generate and implement environmentally friendly ideas. This finding reinforces the view that green creativity is a mechanism linking GTL to employee work outcomes. Previous studies have also identified other mechanisms, including green mindfulness and green self-efficacy (Chen et al., 2014), green thinking and involvement in creative processes (Begum et al., 2022), and green empowerment and green self-efficacy (Saleem et al., 2024).

Furthermore, Ding et al. (2023) found that green creativity mediates the relationship between GTL and individual green performance. Similarly, Lathabhavan and Kaur (2023) demonstrated that green creativity partially mediates the relationship between GTL and employees' green behavior. Other mediating mechanisms have also been identified, including green work engagement (Suliman et al., 2023) and green innovation (Prijambodo & Rosyid, 2025). Unlike some of these studies, which focus on environmental performance and green behavior, the present study demonstrates that green creativity also helps explain improvements in employee productivity.

The partial mediating role indicates that GTL influences productivity through two complementary pathways. The direct effect can be explained by Social Learning Theory, which suggests that employees observe and imitate leaders' behaviors in adopting efficient and environmentally friendly work practices (Bandura, 1977). Meanwhile, the indirect effect can be explained through the componential theory of creativity, which emphasizes the roles of expertise, creative-thinking skills, intrinsic motivation, and the work environment in fostering individual creativity (Amabile, 1996). An environmental vision, intellectual stimulation, and leadership support can help employees generate and develop new ideas. These ideas then progress through the stages of generation, promotion, and realization (Janssen, 2000) before being implemented in the workplace and contributing to work quality and efficiency. Thus, these two pathways explain how leadership role modeling and the development of employee creativity jointly support productivity.

In Makassar City's creative industries, these findings highlight the importance of leaders providing employees with opportunities to develop and implement environmentally friendly ideas. Beyond setting an example and providing direction, leaders need to encourage employees to propose improvements to work processes, experiment with alternative uses of materials, and evaluate the outcomes of their implementation. Without support for creativity, the environmental values leaders communicate may remain directives without producing tangible changes in work practices. Therefore, improving productivity requires more than

motivation and leadership role modeling. Employees also need a work environment that encourages them to develop and implement green creativity.

4. CONCLUSION

This study concludes that green transformational leadership (GTL) positively affects employee productivity in Makassar City's creative industries, both directly and indirectly through green creativity. Directly, leaders can enhance employees' work enthusiasm, quality, and efficiency by modeling environmentally responsible behavior, communicating an environmental vision, encouraging creative thinking, and addressing employees' needs. Indirectly, GTL encourages employees to generate, develop, and implement environmentally oriented ideas that contribute to higher productivity. The results indicate that green creativity partially mediates this relationship, accounting for approximately 44% of the total effect of GTL on employee productivity. These findings emphasize that green leadership cannot be realized merely through communicating a vision and providing direction. Leaders must also provide tangible support to enable employees to develop and implement environmentally friendly ideas in their work. Theoretically, Social Learning Theory (Bandura, 1977) and the componential theory of creativity (Amabile, 1996) complement each other in explaining this relationship. Social Learning Theory explains how employees develop behaviors by observing and imitating their leaders. In contrast, the componential theory of creativity highlights the role of motivation and creative-thinking skills in generating green ideas. This study also extends the literature on GTL by positioning employee productivity as an outcome variable in the context of regional creative industries.

Based on these findings, business leaders in the creative industries need to implement green leadership practices consistently and strategically. This can begin with establishing concrete and measurable environmental visions and targets, such as reducing production waste, conserving electricity, and using environmentally friendly packaging. In addition, leaders should give employees the opportunities, time, and resources to propose and test green ideas. These efforts can be facilitated through discussion forums, small-scale trials, or rewards for ideas that demonstrably improve efficiency. Leaders' role modeling in efficient resource use is equally important, as it gives employees practical examples to follow in their daily work. Implementing green leadership is not solely the responsibility of business owners; it also requires support from local governments and creative industry associations, for example, through green leadership training and assistance in adopting environmentally friendly production processes.

Despite providing several important findings, this study has limitations that should be considered. First, its cross-sectional design limits how strongly causal relationships can be established. Second, all variables were measured using employee self-reports and the same data source, potentially introducing common method bias. Although the full collinearity test indicated that this potential bias was not a serious concern (Kock, 2015), employee

perceptions of productivity may not fully reflect objective work outputs. Third, some measurement items were developed by the researchers; therefore, their validity and reliability need to be further examined in different samples and research contexts. Fourth, purposive sampling in the creative industries of a single geographical area, namely Makassar City, limits the generalizability of the findings to other regions.

In light of these limitations, future research should adopt longitudinal designs or collect matched data from supervisors and employees to examine the relationships among the variables more comprehensively. Using data from different sources may also help reduce the potential for common method bias. Furthermore, productivity measurement should not rely solely on employee perceptions. Still, it should also incorporate objective indicators, such as output volume relative to the use of specific materials, time, or other resources. Future studies could compare characteristics across creative industry subsectors and examine other mechanisms that may explain the relationship between GTL and productivity. Moderating variables, such as business size and organizational support for environmental initiatives, could also be examined to identify the conditions under which these relationships are strengthened or weakened. Finally, extending the research to various regions across eastern Indonesia would help assess the consistency of the findings and broaden the applicability of the proposed research model.

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