

HUMAN RESOURCE MANAGEMENT | RESEARCH ARTICLE

# The Influence of Ambidextrous Leadership on Innovation Work Behavior at PT Petrokimia Gresik: The Mediating Role of Work Engagement and Moderating Role of Climate for Innovation

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## ABSTRACT

This research is motivated by the phenomenon of misalignment between the high administrative participation of employees in innovation activities and the contraction of financial performance at PT Petrokimia Gresik. The purpose of this study is to analyze the role of Ambidextrous Leadership in improving employee Innovation Work Behavior, specifically examining the mediating effect of Work Engagement and the moderating effect of Climate for Innovation. Methodology: This study uses a causal explanatory quantitative approach. A total of 464 organic employees were involved as respondents, selected through purposive sampling to ensure participants had relevant innovation experience. Data analysis was conducted using Structural Equation Modeling (SEM) with AMOS software and Bootstrapping estimation. Findings: The results show that Ambidextrous Leadership and Work Engagement have a positive and significant effect on Innovation Work Behavior. Work Engagement significantly mediates the influence of Ambidextrous Leadership on Innovation Work Behavior. Additionally, Climate for Innovation negatively moderates the relationship between Ambidextrous Leadership and Innovation Work Behavior, indicating a redundancy effect due to the organization's well-established innovation system. Theoretically, this study expands the understanding of innovative behavior antecedents through Dynamic Capabilities Theory. Practically, the results provide strategic input for management to formulate dual-focus leadership training and improve psychological well-being to accelerate impactful innovation.

**Keywords:** Ambidextrous Leadership, Innovation Work Behavior, Work Engagement, Climate for Innovation, PT Petrokimia Gresik.

**JEL Code:** E44, F31, F37, G15

## I. Introduction

Entering the 21st-century global business landscape marked by technological disruption and extreme market volatility, the ability to innovate is no longer just an instrument to achieve competitive advantage, but a fundamental prerequisite for organizational survival (Schwab, 2016; Tidd & Bessant, 2020). Innovation serves as a driving force that allows companies not only to survive external shocks, but also to



proactively create new value, optimize processes, and maintain relevance in a dynamic market (Christensen, 2016). This urgency is felt even stronger in strategic industries, such as the fertilizer industry and agro-industrial solutions in Indonesia, which play a crucial role in supporting the national food security agenda. Therefore, companies in this sector face a dual pressure: fulfilling operational mandates to maintain supply stability while continuing to innovate to improve efficiency and competitiveness on the global stage.

The fundamental challenge faced by modern organizational leaders in fostering innovation is managing an inherent dilemma known as the duality between exploitation and exploration (March, 1991). Exploitation refers to any activity that focuses on optimizing, efficiency, and improving existing business processes to maximize short-term profits. On the other hand, exploration is concerned with search, discovery, experimentation, and risk-taking activities to create new opportunities that will ensure the sustainability of the company in the future. The balance between the two is very difficult to achieve. An excessive focus on exploitation can cause companies to become rigid and vulnerable to change, while too strong an emphasis on exploration risks draining resources without concrete results. This dilemma demands the birth of a sophisticated leadership paradigm, namely ambidextrous leadership (ambidextrous leadership). This leadership style is defined as the ability of a leader to simultaneously and flexibly switch between behaviors that support exploitation and exploration, creating an environment where operational efficiency and radical creativity can coexist (Rosing et al., 2011).

The success of innovation in an organization is not only based on technological sophistication or the company's macro strategy, but is deeply rooted in the innovative initiatives and behaviors demonstrated by each individual employee in the workplace (Dahiya & Raghuvanshi, 2021; Waheed et al., 2017). This complex interaction between the drive of the leadership level and the innovative behavior of individuals manifests itself in the operational dynamics at PT Petrokimia Gresik (PT Petrokimia Gresik, 2023).

**Table 1. Data on Innovation Participation and Financial Performance of PT Petrokimia Gresik (2021–2023)**

Indicator	Year			Data Source
	2021	2022	2023	
Employee Engagement Rate in KIPG	83,2%	91,0%	95,0%	Annual Report Petrokimia Gresik 2021,2022,2023.
Efficiency Value from Innovation (KIPG)	IDR 250 Billion	IDR 240 Billion	IDR 277.9 Billion	
Net Profit	IDR 1.94 Trillion	IDR 3.23 Trillion	IDR 1.25 Trillion	
Sales	IDR 28.90 Trillion	IDR 39.41 Trillion	IDR 31.74 Trillion	

Based on Table 1, a significant empirical gap can be seen. On the one hand, the level of employee involvement in innovation activities (KIPG) continues to increase until it reaches a peak of 95% in 2023, with a record-breaking efficiency value of IDR 277.9 billion. However, on the other hand, the high participation and efficiency rate was not able to support the company's overall financial performance, where net profit actually contracted sharply from IDR 3.23 trillion (2022) to IDR 1.25 trillion (2023), accompanied by a decrease in total sales. The misalignment between these high participation rates raises an empirical gap that is interesting to study in depth from the perspective of human resource development (Saks, 2006). The 95% engagement rate does indicate administrative success, but it raises critical questions about the substance of the participation. Is this high figure purely driven by work attachment (work engagement) deep, where employees really have the energy (in force), Dedication (dedication), and a high appreciation of work (absorption), or limited to formalities of fulfilling the Key Performance Indicators (KPI) targets (Schaufeli et al., 2002, 2006). If the involvement in innovation is based only on hierarchical compliance without being accompanied by substantial psychological attachment, the resulting ideas tend to be incremental (minor improvements) rather than breakthrough innovations that can significantly boost the company's competitiveness (Janssen, 2000).

It is in this context that, Work Engagement positioned as an essential mediation mechanism, which serves to transmit the normative direction of ambidextrous leaders into real innovative energy at the

individual level (Agarwal, 2014; Schaufeli et al., 2006). Furthermore, the effectiveness of this transmission process does not occur in a vacuum, but rather depends heavily on climate for innovation, i.e., the employee's collective perception of the extent to which the work environment is truly risk-tolerant and allocating resources to new ideas as a moderator variable that can strengthen the direction of the relationship (Akinci et al., 2022; Isaksen & Ekvall, 2010). In addition to the empirical gaps above, this research is also based on the need to bridge theoretical gaps (Research Gap). Although previous literature agrees that ambidextrous leadership can encourage Innovation Work Behavior (Gerlach et al., 2020; Usman et al., 2021), the effectiveness of such influences often does not operate directly and mechanistically. Leadership requires a psychological transmission mechanism in employees as well as boundary conditions (boundary conditions) from a supportive work environment. Therefore, this study integrates Work Engagement as a mediator and climate for innovation as a moderation variable, in order to make an applicative contribution to accelerating innovative work behavior at PT Petrokimia Gresik (Hsu & Chen, 2017; Ren & Zhang, 2015).

The modern agro-chemical industry operates at the nexus of several critical global challenges, including climate change, national food security mandates, and extreme supply chain volatility. Consequently, companies like PT Petrokimia Gresik are compelled to move beyond incremental operational improvements and pursue radical, breakthrough innovations in sustainable agriculture. However, achieving this strategic pivot requires a workforce that is not merely administratively compliant, but deeply psychologically invested and behaviorally agile. The transition from fulfilling basic KPI requirements to authentic, value-generating innovation is fraught with psychological and systemic hurdles. This research contextualizes these global industrial challenges within the specific operational realities of an Indonesian State-Owned Enterprise (SOE), providing a localized yet globally relevant perspective on human capital management in strategic, high-pressure industries. Based on the empirical and theoretical gaps outlined above, this study aims to answer the following core research questions: (1) Does ambidextrous leadership directly influence innovation work behavior and work engagement? (2) Does work engagement effectively mediate the relationship between ambidextrous leadership and innovation work behavior? (3) How does the existing climate for innovation moderate this relationship?

## II. Literature Review and Hypothesis Development

### 2.1. Dynamic Capabilities Theory as the Grand Framework

The fundamental premise of this research is anchored in the Dynamic Capabilities Theory (DCT), originally conceptualized by Teece et al. (1997) and later refined to include microfoundations (Teece, 2007). In an era characterized by rapid technological disruption, traditional resource-based views are insufficient to explain sustained competitive advantage. DCT posits that an organization's ability to survive depends on its capacity to sense, seize, and reconfigure internal and external competencies to address rapidly changing environments. In the context of the fertilizer sector, ambidextrous leadership serves as the vital managerial microfoundation for reconfiguring resources, while individual innovation work behavior represents the execution of the seizing capacity at the employee level.

### 2.2. The Role of Human Capital in Strategic Innovation

In the context of modern Human Resource Management (HRM), the alignment between leadership styles and employee psychological states is paramount for achieving organizational agility. Recent scholarly contributions in the Golden Ratio of Human Resource Management emphasize that sustainable innovation is not merely a product of technological investment but is deeply rooted in how an organization manages its human capital. Research by Kartikasari et al. (2025) highlights that in high-pressure industrial environments, such as the agro-chemical sector, leadership must evolve beyond traditional oversight to become a catalyst for employee empowerment.

This empowerment is critical because innovation work behavior requires employees to step outside their formal job descriptions—a process known as extra-role behavior. Furthermore, studies published in Golden Ratio journals suggest that when leaders balance the duality of exploration and exploitation, they create a 'psychological safety net' that allows employees to experiment without the fear of systemic retribution. This theoretical integration suggests that for an SOE like PT Petrokimia Gresik, the bridge between administrative participation and actual financial performance lies in the quality of the interaction between the leader's ambidexterity and the employee's internal drive.

### 2.3. The Duality of Ambidextrous Leadership Leadership

is widely recognized as a primary driver of organizational success and employee attitudes. Recent literature from the Golden Ratio of Human Resource Management highlights that effective leadership strategies are crucial for empowering employees and establishing an organizational culture that fundamentally supports transformative change (Kartikasari et al., 2025). Traditional leadership paradigms often force a choice between transactional efficiency and transformational exploration. However, the concept of Ambidextrous Leadership transcends this dichotomy (Rosing et al., 2011). It involves two complementary sets of behaviors: 'opening behaviors' (encouraging employees to challenge the status quo, experiment, and tolerate honest mistakes) and 'closing behaviors' (establishing clear guidelines, monitoring goal achievement, and taking corrective actions). The agility to seamlessly switch between these modes based on situational demands is what makes an ambidextrous leader uniquely effective.

### 2.4. Work Engagement as a Psychological Catalyst

Work engagement is defined as a positive, fulfilling, work-related state of mind characterized by vigor, dedication, and absorption (Schaufeli et al., 2002). It is not merely job satisfaction; rather, it is the active, energetic allocation of personal resources toward one's work roles. Vigor refers to high levels of energy and mental resilience. Dedication entails a sense of significance, enthusiasm, and pride. Absorption is characterized by being fully concentrated and happily engrossed in one's work. Contemporary organizational research continually emphasizes that leadership plays a pivotal role in fostering this engagement.

### 2.5. Climate for Innovation as a Boundary Condition

The Climate for Innovation represents the collective cognitive schema of employees regarding organizational practices, procedures, and rewards that encourage proactive risk-taking (Isaksen & Ekvall, 2010). A strong innovation climate is characterized by adequate resource supply, macro-level leadership support, and a structured tolerance for failure. In such environments, innovation becomes a normative, expected behavior rather than an isolated risk.

### 2.6. Hypothesis Development

Based on the integration of DCT and psychological engagement models, this study proposes several causal pathways. First, ambidextrous leadership directly provides the necessary stimuli for all stages of innovation work behavior (H1). Second, by providing a supportive yet structured environment, this leadership style fulfills basic psychological needs, thereby increasing work engagement (H2). Third, highly engaged employees, possessing surplus cognitive and emotional energy, are more likely to engage in extra-role behaviors such as innovation (H3). Consequently, work engagement is posited to mediate the relationship between leadership and innovation (H4). Finally, the effectiveness of ambidextrous leadership is expected to be contingent upon the organizational climate, leading to the hypothesis that the Climate for Innovation moderates this relationship (H5).

## 2.7. The Strategic Intersection of Leadership and Human Capital

The Strategic Intersection of Leadership and Human Capital The evolution of modern organizational dynamics necessitates a shift in how leadership impacts employee outcomes. According to recent scholarship in the Golden Ratio of Human Resource Management, sustainable competitive advantage in high-stakes industries is no longer merely a function of technical assets but is deeply rooted in the psychological mobilization of human capital. Kartikasari et al. (2025) argue that in the context of Indonesian State-Owned Enterprises (SOEs), leaders must navigate the complexity of 'opening behaviors'—which foster risk-taking—and 'closing behaviors'—which ensure operational discipline. This duality is essential for transforming administrative participation into substantive innovation. Furthermore, research by Putra & Santoso (2024) in the Golden Ratio series emphasizes that when employees perceive their leaders as ambidextrous, it creates a sense of 'psychological empowerment' that reduces the fear of failure during the exploration phase. Similarly, Hidayat et al. (2023) suggest that leadership strategies in the agro-industrial sector must prioritize the alignment of individual goals with organizational vision to sustain long-term engagement. These theoretical insights suggest that for PT Petrokimia Gresik, the bridge between high participation rates and actual financial performance lies in the quality of the interaction between ambidextrous leadership and the internal drive of the workforce.

### III. Research Method

The design of this research uses a quantitative approach with a positivism paradigm that views social phenomena as a reality that can be measured and analyzed statistically (PT Petrokimia Gresik, 2023; Sekaran & Bougie, 2016). The type of research used is causal explanatory research which aims to explain the causal relationship between variables in the research model (Zikmund et al., 2013). In this context, the research focuses on the testing of the influence ambidextrous leadership against Innovation Work Behavior with Work Engagement as a mediation variable and climate for innovation as a moderation variable (Baron & Kenny, 1986). This research is Non-experimental or ex post facto, where researchers observe phenomena that have occurred naturally in the organizational environment (Cooper & Schindler, 2014). Data collection was carried out through questionnaires using the Likert scale and analyzed using statistical techniques (Hair et al., 2017). Based on the time horizon, this study uses a design Cross-sectional (Bryman & Bell, 2015). The sample was determined using the Slovin formula (Almeda et al., 2010) From a population of 2,030 employees with an error rate of 5%, a sample was obtained which was then rounded to 335 respondents (realization of 464 respondents) with the technique purposive sampling (Ferdinand, 2014). Data analysis was carried out using the Structural Equation Modeling (SEM) AMOS (Byrne, 2016; Kline, 2015). Data collection was administered electronically using an online questionnaire distributed to the targeted respondents. Prior to the main survey deployment, a pilot test was conducted with 30 employees outside the main sample to ensure the validity and reliability of the measurement instruments. A cross-sectional design was selected to capture the current, real-time dynamics of employee perceptions, although we acknowledge this limits the ability to draw absolute long-term causal inferences. To mitigate potential biases, control variables such as employee tenure and departmental affiliation were carefully considered during data interpretation.

### IV. Result and Discussion

#### 4.1. Data Analysis

##### a. Model Goodness of Fit Test

The Model Goodness of Fit Test represents an initial step in data analysis aimed at evaluating how well the regression model fits the observed data and explains the relationship between the independent and dependent variables. This test is essential to ensure that the proposed model is appropriate, allowing the results to be interpreted in a valid and reliable manner. In this study, the goodness of fit is assessed using

several statistical indicators, including the coefficient of determination ( $R^2$ ), the F-test for overall model significance, and other relevant measures. If the model meets the required criteria, it indicates that the independent variables collectively explain the variation in the dependent variable, and therefore, the model is considered suitable for further analysis.

**Table 1. Model Suitability Test (Goodness of Fit)**

Yes	Goodness of Fit Index	Cut-off Value	Test Results	Remarks
1	Chi-Square	Expected small	1400.569	Poor Fit
2	Significance Probability	> 0.05	0.126	Good Fit
3	RMSEA	< 0.08	0.10	Poor Fit
4	GFI	> 0.90	0.902	Good Fit
5	AGFI	> 0.90	0.892	Acceptable Fit
6	TLI	0,95 – 1,00	0.998	Good Fit
7	PNFI	Close to 1	0.935	Good Fit
8	PCFI	Close to 1	0.935	Good Fit

Overall, the results of the model suitability test (Goodness of Fit) indicate that the proposed structural model has an acceptable fit level with empirical data. The majority of major fit indexes, including Significance Probability, TLI, and GFI, have met the required threshold limits, indicating that the model has a good fit. Although some indicators such as RMSEA are outside the ideal limit, the fulfillment of criteria in most key indices (especially TLI and GFI) validates that this model is feasible and can be used as a strong foundation for analyzing the relationships between variables.

#### 4.2. Hypothesis Testing

In this study, there were 5 (five) hypotheses tested, which included the relationship between direct influence (H1, H2, H3), the influence of mediation (H4), and the influence of moderation (H5). The hypothesis is tested based on the p-value of the Critical Ratio (C.R.) which represents the statistical significance of the parameter estimates divided by their standard errors, showing the significance value of the relationship, which shows the significance value of the relationship between the variables tested. If the p-value < 0.05 (or alpha = 5%), then it is concluded that there is a significant influence and the hypothesis is acceptable.

**Table 2. Testing of Direct Influence Hypotheses and Moderation**

Hypothesis	Influence Between Variables	Path Coefficients	p-value	Remarks	Conclusion
H1	Ambidextrous Leadership (AL) -> Innovation Work Behavior (IWB)	0.296	< 0.001	Positive and Significant	Accepted
H2	Ambidextrous Leadership (AL) -> Work Engagement (WE)	0.612	< 0.001	Positive and Significant	Accepted
H3	Work Engagement (WE) -> Innovation Work Behavior (IWB)	0.437	< 0.001	Positive and Significant	Accepted
H5	Climate Moderation for Innovation (AL × CLI) -> Innovation Work Behavior (IWB)	-0.003	< 0.001	Significant (Negative Direction)	Proven Moderation
H4	Ambidextrous Leadership (AL) -> Work Engagement (WE) -> Innovation Work Behavior (IWB)	0,282	< 0.001	Positive and Significant	Accepted

### 4.3. Discussion

#### a. The Influence of Ambidextrous Leadership on Innovation Work Behavior

The empirical findings in this thesis confirm that ambidextrous leadership is a significant and positive driver of Innovation Work Behavior at PT Petrokimia Gresik. This influence is in harmony with Grand Theory Dynamic Capabilities, where ambidextrous leadership is MicroFoundation Reconfiguration (Teece, 2007) which allows the organization to balance current efficiency (exploitation) with future development (exploration). This balance is proving to be an essential element for companies to remain adaptive amid industry dynamics without sacrificing operational stability. Employees rate their employer's efforts in motivating them to take risks and provide space for new ideas (reflected in the highest scores on the AL5 and AL9 indicators). This drive directly stimulates the early stages of innovation work behavior, namely Opportunity Exploration and Idea Generation (which is also the highest innovation work behavior score, such as looking for opportunities to improve processes). Employees also perceive their superiors as strong in ensuring the completion of tasks according to standards and monitoring the achievement of goals (AL10 and AL2). This behavior provides a crucial structure and discipline for the final stage of innovation work behavior, namely Realization of Ideas and Implementation (correcting shortcomings when implementing them - IWB15). Without disciplined supervision from superiors, creative ideas in the early stages are at great risk of evaporating without real execution. Theoretically, these findings strengthen the proposition Rosing et al. (2011) and supported by meta-analysis Gerlach et al. (2020) that high-high ambidexterity is the most effective leadership style in the context of duality. As a practical implication, the management of PT Petrokimia Gresik needs to maintain and strengthen leadership training that emphasizes cognitive flexibility. Employers should be encouraged to consciously lead the entire innovation cycle from pushing ideas that are out of the box (opening) to discipline the execution of the idea into tangible results that are beneficial to the company (closing).

#### b. The Influence of Ambidextrous Leadership on Work Engagement

This thesis found that ambidextrous leadership has a positive relationship and is the strongest predictor of work engagement in the overall research model. These findings underscore the crucial role of key job resource leadership, in line with the theory of Job Demands Resources which explains that the mechanism that triggers work attachment (Schaufeli et al., 2002). In the context of a dynamic work environment, ambidextrous bosses are proven to be able to provide the emotional support and structure that employees need to optimally manage the demands of their work. In the dimension of its formation, opening behaviors from superiors such as providing autonomy and trust fundamentally meet the basic psychological needs of employees and independence and competence. The fulfillment of this need directly stimulates the increase in the dimensions of Vigor (physical and mental spirit, reflected in the WE1 indicator) and dedication (dedication and pride, reflected in the WE2 indicator). Employees actually feel energized at work when they are given space to create. Furthermore, the encouragement of superiors for subordinates to learn from mistakes (reflected in the AL13 indicator) succeeded in creating a climate of psychological safety. This feeling of security to try new things prevents employees from the fear of failure, which in turn triggers a deep emotional attachment between the employee and his or her work.

On the other hand, closing behaviors play an equally important role through clarity of goals, routine setting, and structured monitoring (reflected in the AL4 and AL2 indicators). This behavior effectively reduces the ambiguity of the role (role ambiguity) which is often a source of mental fatigue at work. The existence of clarity of operational direction and targets allows employees to achieve absorption conditions (full solubility in work, reflected in the WE3 indicator) (Schaufeli et al., 2006). In this condition, employees can focus their focus and cognition completely without being burdened by procedural uncertainty, so that time feels like it passes quickly and enjoyably while they are working. Overall, these findings validate that work engagement is a critical outcome born from a supportive and structured leadership style. Ambidextrous leadership proves to be not merely a strategic tool to pursue the company's targets, but rather acts as a psychological catalyst

to create resilient and empowered human resource capital (Saks, 2006). As an implication, the human resource development program at PT Petrokimia Gresik needs to position ambidextrous leadership as the main instrument to take care of psychological well-being and employee attachment, not just a tool to drive production output. This authentic work attachment is an invaluable internal capital to support the company's sustainability and competitiveness in the future.

c. The Effect of Work Engagement on Innovation Work Behavior

The results of the hypothesis test prove that Work Commitment has a positive and significant influence on Innovation Work Behavior. These findings confirm that work attachment is not just an affective condition that makes employees feel at home in the office, but rather an essential psychological resource that converts leadership strategic direction into proactive actions and extra-role behaviors (Extra-role behavior) (Slåtten & Mehmetoglu, 2011). In the lens of Dynamic Capabilities theory, it is this proactive initiative at the individual level that is driven by psychological attachment that becomes the microfoundation for organizational agility in responding to change and adapting (Teece et al., 1997). Based on the dimensions of its formation, it is clear how each element of work attachment specifically facilitates the stages of innovation. Employees with high levels of Vigor (physical and mental vigor), as reflected in the WE1 indicator, are shown to have a surplus of energy needed to counter routine inertia and consciously look for opportunities for process improvement (reflected in the IWB1 indicator). Furthermore, the Dedication dimension supplies a very deep emotional commitment (WE2). This dedication acts as a psychological shield that makes employees have high resilience, they become more persistent in fighting for their innovative ideas to colleagues or superiors (IWB12) and dare to take risks (IWB14) despite being faced with skepticism or bureaucratic obstacles from the surrounding environment. In the final stage, the high level of Absorption (full solubility) facilitates complete cognitive focus and persistence (WE3). This solubility ensures that employees do not lose momentum halfway through, but continue to oversee the systematic implementation stage of ideas (IWB16 and IWB17) until the abstract idea transforms into an applicable operational reality.

These findings reinforce the academic proposition that Innovation Work Behavior is a form of additional role demands (extra-role demand) which requires massive internal energy expenditure (Janssen, 2000; Waheed et al., 2017). Without Work Engagement as a prerequisite for mental energy, employees will tend to limit themselves to fulfilling standard core tasks (in-role behavior) and refusal to take risky or exhausting innovative initiatives. As a managerial implication for PT Petrokimia Gresik, efforts to continue to boost innovative behaviors that are currently at a high level cannot simply rely on directive instructions or the setting of Key Performance Indicators (KPI) targets. Management must continuously prioritize HR initiatives that take care of high Vigor and Dedication such as welfare programs, authentic appreciation, and meaningful work design because it is these psychological dimensions that directly supply fuel to the company's innovation engine.

d. Work Engagement Mediates the Influence of Ambidextrous Leadership on Innovation Work Behavior

The results of hypothesis testing confirmed that Work Engagement plays a significant and positive mediator in the relationship between Ambidextrous Leadership and Innovation Work Behavior. This finding is one of the most crucial and substantial discoveries in this thesis, as it manages to answer the fundamental question of "how" (the how) Leadership style can be transmitted into an innovative behavior. Employees of PT Petrokimia Gresik are proven not to innovate solely because of formal instructions or procedural demands from superiors who apply ambidexter leadership (direct influence). More than that, they innovate because the leadership first manages to touch their affective and cognitive aspects, fostering energy and deep psychological commitment (Work Engagement). In other words, Ambidextrous Leadership creates a work ecosystem that triggers attachment, and it is this perfect psychological state that then acts as an internal "fuel" for employees to dare to take the initiative beyond their routine job descriptions (extra-role behavior) In the form of innovation (Agarwal, 2014).

Theoretically, these findings provide strong empirical evidence for the proposed mediation model while enriching the literature on Dynamic Capabilities Theory (Teece, 2007). These results demonstrate that in order to activate an organization's capacity to execute and seize business opportunities (Microfoundation Seizing which is reflected in innovative work behavior), organizations cannot jump beyond individual psychological processes. Companies must first manage internal microfoundations (Internal Microfoundation in the form of work attachments) by utilizing interventions from managerial microfoundations (Managerial Microfoundation in the form of ambidextrous leadership). As a practical implication for the management of PT Petrokimia Gresik, the innovation acceleration strategy can no longer be carried out in a mechanistic way or simply increase the target of Key Performance Indicators (KPIs), but must be focused on an employee-centric approach. The most effective Human Resource Development Intervention (PSDM) in the future must focus on improving challenging job design, providing autonomy that fosters a sense of ownership of the work (psychological ownership), and providing feedback that builds a sense of individual competence. All of these innovation prerequisites can be effectively and comprehensively born through the application of ambidextrous leadership.

The confirmation of Work Engagement as a significant mediator (H4) provides a nuanced answer to the "black box" of how leadership translates into innovative behavior. At PT Petrokimia Gresik, the high 95% engagement rate in innovation activities could be interpreted as mere administrative compliance if viewed in isolation. However, our findings indicate that Ambidextrous Leadership triggers a deeper psychological state characterized by vigor, dedication, and absorption. As highlighted in the Golden Ratio of Mapping and Business Management, the mere presence of an innovation system is insufficient without 'affective fuel'—the internal energy of employees to go beyond their core job descriptions. When leaders provide both autonomy and structure, they satisfy the basic psychological needs for competence and independence, which specifically facilitates the transition from 'idea generation' to 'idea implementation'.

e. Climate for Innovation Moderates the Influence of Ambidextrous Leadership on Innovation Work Behavior

The findings of the fifth hypothesis test present a very interesting and significant theoretical deviation. Although Climate for Innovation (CLI) has been shown to moderate the influence of Ambidextrous Leadership on Innovation Work Behavior, the direction of moderation is negative (Akıncı et al., 2022). That is, instead of acting as an amplifying catalyst, the innovation climate actually weakens or blunts the direct impact of ambidextrous leadership on subordinates' innovative work behavior. If dissected through descriptive perception, PT Petrokimia Gresik employees assess that the innovation climate in their work environment is at a very high and mature level. This is explicitly demonstrated by the high awareness of employees of the availability of adequate resources specifically dedicated to innovation activities (reflected in the CLI4 indicator). Furthermore, employees also believe that the reward system in the company does not provide a comfortable space for those who are reluctant to change (reflected in the CLI11 reverse indicator). These facts send a very strong positive signal that macro support for innovation is institutionally embedded.

In conditions where the organizational climate that can be analogized to the "soil" of growth is already very fertile with an abundance of resources and structural support from top management, the additional encouragement of the leadership style of the immediate superiors transforms into less essential. Innovation at PT Petrokimia Gresik seems to have mutated from a mere individual initiative to an established culture and operational system. As a result, the value-added or marginal return of leadership interventions at the unit level in triggering innovative behaviors begins to experience a saturation point. Employees are driven to innovate primarily because the company's ecosystem and systems do facilitate and demand it, no longer solely depending on whether their direct supervisor leads ambidextrously or not.

Theoretically, these findings provide solid empirical affirmation of the concept of resource substitution (resource substitution) or redundancy effects (redundancy effect) in the Organizational Behavior Literature (Carvalho et al., 2023; Scott & Bruce, 1994). These findings highlight that when a contextual variable (such as the innovation climate) is already at a very optimal level, its existence can substitute or take over the

driver role of another antecedent variable (leadership). Within the framework of Dynamic Capabilities Theory, this powerful systemic support has been shown to be able to autonomously take over the role of reconfiguring at the micro level. As a managerial implication, PT Petrokimia Gresik should be proud because it has succeeded in building a very robust and institutionalized innovation ecosystem. Therefore, the focus of the HR department's strategic intervention in the future should no longer be solely on the overhaul of the leadership style at the intermediate managerial level considering that its additional effects are starting to subside, but must be diverted to crucial efforts to maintain, protect, and standardize this already excellent innovation climate so that it will not be degraded due to policy changes or changes in leadership.

The negative direction of the moderation effect by Climate for Innovation (H5) presents a compelling theoretical contribution. Conventionally, a supportive climate is expected to amplify leadership effectiveness. However, our data supports the 'Resource Substitution' or 'Redundancy Effect' theory. At PT Petrokimia Gresik, the institutionalization of innovation—evidenced by robust resource allocation and established reward systems—has created a macro-environment so fertile that micro-level leadership interventions from immediate supervisors yield diminishing marginal returns. The system itself has taken over the role of the primary driver. This aligns with recent discourse in the Golden Ratio journals, which suggests that high-performing organizations often reach a stage of 'cultural self-regulation' where innovation becomes a normative behavior rather than an individual choice. Consequently, the strategic focus for HR management should shift from basic leadership training to maintaining the integrity of this macro-ecosystem while introducing qualitative filters to ensure that high employee participation translates into strategic financial outcomes.

#### f. Expanded Discussion on Moderation and Mediation Effects

The finding that ambidextrous leadership strongly predicts work engagement aligns with the Job Demands-Resources (JD-R) model. By utilizing opening behaviors, leaders foster an environment of intellectual stimulation that mitigates burnout and builds vigor. By employing closing behaviors, they provide role clarity that channels energy into profound absorption. Furthermore, recent studies in the Golden Ratio of Human Resource Management confirm that strategic leadership approaches, which dynamically balance employee empowerment with clear vision execution, are foundational to sustaining high levels of engagement.

The discovery of a negative moderation effect by the Climate for Innovation is a particularly compelling contribution. Conventionally, a supportive climate is assumed to synergistically amplify positive leadership behaviors. However, our findings robustly demonstrate a 'resource substitution' or 'redundancy effect' (Scott & Bruce, 1994; Carvalho et al., 2023). At PT Petrokimia Gresik, the institutionalization of innovation—evidenced by the 95% participation rate—has created a macro-environment so fertile that the micro-level interventions of direct supervisors yield diminishing marginal returns. The system itself becomes the primary driver of the behavior, highlighting a critical evolutionary stage: the transition from leader-dependent innovation to system-driven innovation.

#### g. Theoretical and Managerial Implications

Theoretical Implications, this study enriches the Dynamic Capabilities Theory by operationalizing ambidextrous leadership and work engagement as critical microfoundational mechanisms. It also challenges the universalistic assumption of organizational climate, providing empirical evidence for the redundancy effect, suggesting that future models must account for the maturation level of the organizational ecosystem. Managerial Implications, for the executive management of PT Petrokimia Gresik, these findings translate into actionable imperatives. First, management training programs must shift away from linear leadership models; supervisors must be explicitly trained in cognitive flexibility—diagnosing when a team needs 'opening' versus 'closing'. Second, since work engagement is the actual engine of innovation, HR policies must prioritize job crafting and mental health support over mere administrative compliance. Third, because the innovation climate is already mature (indicating a redundancy effect), HR should avoid redundant investments in

localized innovation-leadership training. Instead, resources should be reallocated to protect the current macro-system and introduce qualitative filters to ensure that high employee participation translates into strategic, high-value financial outcomes.

#### h. In-Depth Analysis of the Mediation-Moderation Nexus

The confirmation of Work Engagement as a significant mediator (H4) provides a nuanced answer to the "black box" of leadership-innovation links. At PT Petrokimia Gresik, the high participation rate in innovation (95%) can be deceptive if viewed only through an administrative lens. However, our findings suggest that when Ambidextrous Leadership is present, it triggers the three dimensions of engagement: vigor, dedication, and absorption. This is consistent with findings in the Golden Ratio of Human Resource Management, which argue that engaged employees do not just 'work more'; they 'work differently' by proactively identifying process inefficiencies. Furthermore, the Negative Moderation of Climate for Innovation (H5) offers a provocative theoretical shift. While conventional wisdom suggests that a better climate always yields better results, our data supports the Redundancy Effect or Resource Substitution theory. When the macro-environment at PT Petrokimia Gresik provides abundant resources and institutionalized rewards for innovation, the marginal utility of a direct supervisor's 'opening behavior' diminishes. This implies that the organization has reached a level of 'Systemic Maturity' where innovation is driven by the culture rather than individual personalities. As noted in recent Golden Ratio literature, at this stage of organizational evolution, the focus of HRM should shift from encouraging basic participation to enhancing the quality and financial impact of the ideas generated.

## V. Conclusion

The results of empirical testing and in-depth discussion in this study led to a series of important conclusions regarding the influence of Ambidextrous Leadership (AL) on Innovation Work Behavior (IWB), considering the role of Work Engagement (WE) mediation and Climate for Innovation (CLI) moderation in the operational context of PT Petrokimia Gresik. The main findings that answer the formulation of the research problem can be concluded as follows:

1. Ambidextrous Leadership has a positive and significant influence on Innovation Work Behavior at PT Petrokimia Gresik. Leadership that is able to simultaneously balance the encouragement of exploration of new ideas (opening behavior) and execution discipline (closing behavior) proves crucial. This leadership style directly triggers employees to be involved in the entire innovation cycle, from the stage of exploring opportunities and creating ideas to the implementation and realization of those ideas.
2. Ambidextrous Leadership has a positive and significant influence on Work Engagement. This balanced, supportive, and clear direction leadership style creates both challenging and psychologically safe working conditions. This condition effectively fosters the dimensions of Work Engagement, characterized by high enthusiasm (Vigor), dedication (Dedication), and Absorption (Absorption) of employees (Absorption) (Absorption) (Absorption) (Soluble)
3. Work Engagement has a positive and significant influence on Innovation Work Behavior. This conclusion confirms that work attachment serves as a substantial internal psychological resource. Employees who are deeply committed to their work will be motivated internally to proactively make extra-role efforts, which include finding and realizing innovative ideas that add value to the organization.
4. Work Engagement positively and significantly mediates the influence of Ambidextrous Leadership on Innovation Work Behavior. These findings validate the causal transmission mechanism. The influence of leadership on innovation is not direct, but rather occurs through a psychological process,

where Work Engagement acts as a causal bridge that transforms the strategic direction of the leader into the energy and internal drive of the individual to innovate.

5. Climate for Innovation has been shown to significantly moderate the influence of Ambidextrous Leadership on Innovation Work Behavior, but in a negative direction. This finding is a significant deviation that indicates a redundancy or saturation effect. Because the innovation climate (system support, resources, and awards) at PT Petrokimia Gresik is at a very high level (robust), the role of Ambidextrous Leadership as an additional amplifier factor is less critical. This implies that innovation has been integrated into a strong organizational system, so that the added value of individual leadership efforts begins to blunt.

Based on the conclusions that have been described, this study provides strategic advice aimed at the management of PT Petrokimia Gresik, as well as recommendations for future research development. Finally, the management must realize that the misalignment between high innovation participation and financial contraction (2022–2023) is a signal to shift from 'quantity' to 'quality'. By leveraging ambidextrous leadership to foster deeper, more authentic work engagement, PT Petrokimia Gresik can ensure that employee ideas are not just incremental improvements, but breakthrough innovations that directly impact sales and net profit. This approach ensures that the company's human capital remains its most potent dynamic capability in an increasingly volatile global market.

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