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Integration of Transformational Leadership and Knowledge Transfer in Creating Adaptive Performance: Mediation Analysis of Job Crafting and Moderation of Ambidextrous Leadership at Technical Implementation Units of the Ministry of Sea Transportation in East Kalimantan

Yulianti

Doctoral Program in Management Science, Faculty of Economics and Business, Universitas Mulawarman, Samarinda, Indonesia

*Corresponding author: yulihisyam86@gmail.com

Abstract. This study examines the integration of *transformational leadership* and *knowledge transfer* as simultaneous predictors of *adaptive performance*, with *job crafting* as a mediating mechanism and *ambidextrous leadership* as a moderating variable. The research context is the Technical Implementation Units (UPT) of the Ministry of Transportation for maritime affairs in East Kalimantan, Indonesia — organizations characterized by procedural compliance, cross-functional coordination, and operational adaptation demands. Employing a quantitative explanatory design with SEM-PLS analysis, data will be collected from 220 employees selected through purposive sampling across multiple UPT maritime offices. The study proposes nine hypotheses addressing direct effects, mediation paths of *job crafting*, and moderation roles of *ambidextrous leadership*. Theoretically grounded in dynamic capabilities, social exchange theory, and knowledge-based approaches, this study contributes a novel integrated model to the organizational behavior and human resource management literature within Indonesian public sector maritime organizations.

Keywords: Transformational Leadership, Knowledge Transfer, Job Crafting, Adaptive Performance, Ambidextrous Leadership

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1. Introduction

Public sector organizations in the maritime domain face intensifying operational demands, including procedural compliance, cross-functional coordination, and rapid adaptation to regulatory and situational changes. The Technical Implementation Units (*Unit Pelaksana Teknis*, UPT) of the Indonesian Ministry of Transportation for sea transportation in East Kalimantan constitute a strategically important context in which these pressures converge. Within such organizations, the capacity of individual employees to adapt behavior, learn new tasks, solve non-routine problems, and sustain coordination under shifting conditions — collectively referred to as *adaptive performance* — has become a central management concern.

Extant literature identifies *transformational leadership* as a driver of organizational innovation capability and individual agility (Villa et al., 2024; Gloria, 2025), while *knowledge transfer* — underpinned by social exchange theory and knowledge-based approaches — serves as a critical mechanism for work coordination and task execution improvement (Bertello et al., 2023; Kang et al., 2024; Sen, 2024; Cohendet et al., 2024). However, the integrated testing of these two antecedents within a single structural model directed at *adaptive performance* remains underexplored, particularly in public sector maritime organizations.

A key research gap exists in the mechanisms linking these antecedents to *adaptive performance*. *Job crafting* — employees' proactive restructuring of their own work through expanding resources, taking on challenges, and reducing hindering demands — has demonstrated empirical linkages with performance outcomes (Ariani, 2023; Rózsa et al., 2023), yet its role as a dual mediator between transformational leadership, knowledge transfer, and adaptive performance has not been structurally tested. Furthermore, *ambidextrous leadership*, which balances opening behaviors (exploration, learning) with closing behaviors (efficiency, compliance), remains underutilized as a moderator in models targeting adaptive performance in maritime public institutions (Güven, 2024; Yu et al., 2022; Indrianti et al., 2024).

This study addresses these gaps by proposing and testing an integrated model with nine hypotheses, employing SEM-PLS analysis on 220 respondents from UPT maritime offices across East Kalimantan.

2. Literature Review

2.1 Transformational Leadership

Transformational leadership is defined as employees' perception of leader behavior that provides work direction, motivates performance, stimulates analytical thinking, and supports individual development and work improvement

(Villa et al., 2024; Gloria, 2025). Grounded in its linkages to innovation capability development and resilience-agility pathways, transformational leadership creates the motivational and cognitive conditions for proactive employee behavior and adaptive responsiveness. Indicators encompass work direction clarity, inspirational motivation, intellectual stimulation, individualized consideration, and modeling of exemplary work behavior (Ndebu et al., 2023; Hoffmann et al., 2022).

2.2 Knowledge Transfer

Knowledge transfer refers to the process of sharing and receiving task-relevant knowledge among organizational members to support task execution, coordination, and work improvement (Bertello et al., 2023; Kang et al., 2024). Drawing on social exchange theory, knowledge transfer is influenced by reciprocity, trust, and cost-benefit assessments between personnel. The knowledge-based view further positions knowledge as a primary source of organizational value (Sen, 2024; Cohendet et al., 2024). Key dimensions include willingness to share, knowledge channel availability, quality and applicability of shared knowledge, access speed, and feedback loops.

2.3 Job Crafting

Job crafting is conceptualized as employees' proactive behavior in redesigning their work by increasing structural and social job resources, seeking challenging tasks, and reducing hindering job demands (Ariani, 2023; Rózsa et al., 2023). Empirical evidence and systematic reviews confirm its positive relationship with work performance outcomes. Intervention research further highlights the contextual conditions under which job crafting enhances effectiveness (Roczniewska et al., 2023). As a behavioral mechanism, job crafting reflects employees acting as agents of change who proactively adapt their work roles to shifting organizational conditions (Mehboob et al., 2023).

2.4 Adaptive Performance

Adaptive performance is defined as an employee's ability to adjust work behavior, methods, and coordination in response to changing task requirements, priority shifts, or situational demands that require rapid responses (Asghar et al., 2025; Kim & Yoon, 2025). Grounded in dynamic capabilities theory, it encompasses learning of new tasks, non-routine problem solving, adaptive coordination, and resilience under operational pressure. The pathway from leadership and knowledge mechanisms to adaptive performance has been partially evidenced through studies on empowering leadership, knowledge sharing, and employee agility (Kim & Yoon, 2025).

2.5 Ambidextrous Leadership

Ambidextrous leadership refers to leaders' combined use of opening behaviors — which encourage exploration, new ideas, and learning — and closing behaviors — which

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enforce efficiency, compliance, and work order (Güven, 2024). The influence pathway operates through emotional and cognitive channels, affecting how employees respond to work demands. Its relevance to leadership resilience and innovation capacity has been established through systematic reviews and entrepreneurial resilience research (Yu et al., 2022; Indrianti et al., 2024). In this study, *ambidextrous leadership* functions as a moderating variable, expected to strengthen the relationship between transformational leadership and both *job crafting* and *adaptive performance*.

2.6 Hypotheses

Based on the theoretical framework and prior empirical evidence, the following nine hypotheses are proposed:

H1: *Transformational Leadership* has a positive effect on *Job Crafting* at UPT maritime offices in East Kalimantan.

H2: *Knowledge Transfer* has a positive effect on *Job Crafting*.

H3: *Transformational Leadership* has a positive effect on *Adaptive Performance*.

H4: *Knowledge Transfer* has a positive effect on *Adaptive Performance*.

H5: *Job Crafting* has a positive effect on *Adaptive Performance*.

H6: *Job Crafting* mediates the effect of *Transformational Leadership* on *Adaptive Performance*.

H7: *Job Crafting* mediates the effect of *Knowledge Transfer* on *Adaptive Performance*.

H8: *Ambidextrous Leadership* moderates the effect of *Transformational Leadership* on *Job Crafting*.

H9: *Ambidextrous Leadership* moderates the effect of *Transformational Leadership* on *Adaptive Performance*.

3. Research Method

3.1 Research Design

This study employs a quantitative explanatory design with survey methodology. The analytical focus is on testing causal relationships among variables within a structural model that includes both mediation and moderation. The conceptual model positions *Transformational Leadership* (X1) and *Knowledge Transfer* (X2) as independent variables; *Job Crafting* (Y1) as a mediating variable; *Adaptive Performance* (Y2) as the dependent variable; and *Ambidextrous Leadership* (Z) as the moderating variable.

3.2 Research Object, Population, and Sample

The research object consists of Technical Implementation Units (UPT) of the Ministry of Transportation for maritime

affairs in East Kalimantan. These units were selected based on: (a) the presence of structured leadership patterns measurable through employee perception; (b) operational activities requiring knowledge coordination and transfer; and (c) work adaptation demands capturable through adaptive performance and *job crafting* constructs.

The population encompasses all active employees across maritime UPT offices in East Kalimantan. A purposive sampling technique is applied based on three eligibility criteria: (a) active employment status; (b) minimum one year of service to ensure exposure to leadership patterns and knowledge transfer dynamics; and (c) involvement in routine work processes requiring coordination and information exchange. The target sample is 220 respondents.

3.3 Variable Operationalization and Measurement

All constructs are treated as reflective, measured using a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Table 1 summarizes the variable indicators and sources.

Table 1. Variable Operationalization and Measurement Sources

Variable	Dimensions	Indicators (Selected)	Items	Source
Transformational Leadership (X1)	Work direction; Motivation; Intellectual stimulation; Individual development; Role modeling; Work improvement	KT1–KT10 (e.g., Leader clearly explains unit work goals)	10	Villa et al. (2024); Gloria (2025)
Knowledge Transfer (X2)	Sharing willingness; Channel availability; Knowledge quality; Access speed; Application; Feedback & updates	TP1–TP10 (e.g., Employees willingly share work experience when requested)	10	Bertello et al. (2023); Kang et al. (2024)
Job Crafting (Y1)	Structural resources; Social resources; Challenging tasks; Reducing hindrances; Method adjustment; Improvement initiative	JC1–JC10 (e.g., Employees seek ways to improve skills required for tasks)	10	Ariani (2023); Rózsa et al. (2023)
Adaptive Performance (Y2)	Method adjustment; New task learning; Problem solving (non-routine); Priority responsiveness; Adaptive coordination; Work resilience	KA1–KA10 (e.g., Employees adjust work methods when procedures change)	10	Asghar et al. (2025); Kim & Yoon (2025)
Ambidextrous Leadership (Z)	Opening (exploration);	AL1–AL10 (e.g., Leader	10	Güven (2024);

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Variable	Dimensions	Indicators (Selected)	Items	Source
	Opening (learning/ideas); Closing (standards/targets); Closing (execution control); Balance; Flexibility	encourages employees to propose work improvement ideas)		Yu et al. (2022)

3.4 Data Collection

Data will be collected through closed-ended questionnaires delivered digitally to eligible respondents across maritime UPT offices in East Kalimantan. Each questionnaire instrument comprises an identity section and a measurement section organized by construct, using a five-point Likert scale. Access will be coordinated through internal channels following institutional research approval. Response completeness and consistency will be monitored prior to data entry.

3.5 Data Analysis: SEM-PLS

Data analysis employs Structural Equation Modeling–Partial Least Squares (SEM-PLS) using SmartPLS or WarpPLS, following the procedural framework of Solimun et al. (2017). All constructs are treated as reflective. The analysis proceeds through six stages: (1) *Measurement model evaluation*, including outer loadings, Cronbach's alpha, composite reliability, average variance extracted (AVE), and HTMT ratio for discriminant validity; (2) *Structural model specification*, encompassing five direct paths, two mediation paths via *job crafting*, and two moderation paths via *ambidextrous leadership* using product indicator or two-stage interaction construction; (3) *Hypothesis testing* via bootstrapping for path coefficients, mediation effects, and moderation effects; (4) *Explanatory power evaluation* using R^2 , f^2 , and Q^2 ; (5) *Model fit assessment* using SRMR; and (6) *Interpretation and reporting* of findings in relation to the theoretical foundations of dynamic capabilities, social exchange theory, and ambidextrous leadership.

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