



Ambidextrous Leadership, Individual Ambidexterity, and Workforce Agility at Immigration Checkpoints

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Abstract

Background: Public organizations increasingly face simultaneous demands for procedural reliability and rapid adaptation under digital transformation and environmental volatility. At high-dynamism immigration checkpoints, this tension is especially acute because officers must comply with strict border-control procedures while responding to evolving service and security challenges.

Objective: This study examines how ambidextrous leadership drives workforce agility through the mediating mechanism of individual ambidexterity among immigration officers, and whether environmental dynamism moderates this pathway.

Methods: A quantitative cross-sectional survey of 450 officers at TPI Soekarno-Hatta was analyzed using PLS-SEM in SmartPLS 4 with a disjoint two-stage moderated mediation approach and 5,000 bootstrap resamples.

Results: Ambidextrous leadership significantly predicts individual ambidexterity, which significantly predicts workforce agility. Individual ambidexterity partially mediates the leadership-agility relationship, accounting for 48.3% of the total effect. Environmental dynamism does not significantly moderate the individual ambidexterity-agility path. This non-moderation is interpreted cautiously as being consistent with a proposed institutional ambidexterity trap in which formal demands for adaptability coexist with institutional arrangements that constrain exploratory behavior. The single-site, cross-sectional design limits causal inference and generalizability.

Conclusion: The findings support a leadership-individual ambidexterity-workforce agility pathway in frontline public service and identify a testable institutional boundary condition for future multi-site research on bureaucratic ambidexterity.

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INTRODUCTION

Public organizations worldwide are under increasing pressure to combine reliable service delivery with digital transformation, innovation, and rapid adaptation to volatile operating environments (Turner et al., 2022). These pressures are particularly consequential in public organizations that operate under coercive bureaucratic conditions, where hierarchical authority, codified procedures, audit-driven accountability, and low tolerance for behavioral variance prioritize exploitation over exploration. Accordingly, this study does not treat all bureaucracies as uniformly rigid; rather, it focuses on coercive bureaucratic arrangements in which procedural compliance can conflict with the behavioral flexibility required by dynamic environments. This distinction provides the institutional basis for examining the proposed institutional ambidexterity trap in frontline immigration management.

The empirical context is Immigration Office Special I Class TPI Soekarno-Hatta, Indonesia's highest-classified immigration checkpoint. Official Directorate General of Immigration of Indonesia (DGII) immigration statistics and institutional performance records covering 2020–2025 document the extraordinary pace of change: 51.3 million cross-border movements in 2025 (+164% over three years), 4.9 million passports issued in 2024 (+277%), 1.36 million immigration stay permits in 2025 (+430%), and 5,434 immigration administrative enforcement actions (TAK) in 2024. Across 2020–2025, DGII demonstrated institutional capacity for ambidextrous adaptation, as the pandemic period triggered simultaneous service innovations (Paspor Simpatik, M Paspor, electronic VoA, Golden Visa) alongside enforcement intensification (Cekal Online, APOA), with this dual trajectory continuing through autogate deployment and expanded immigration platform.

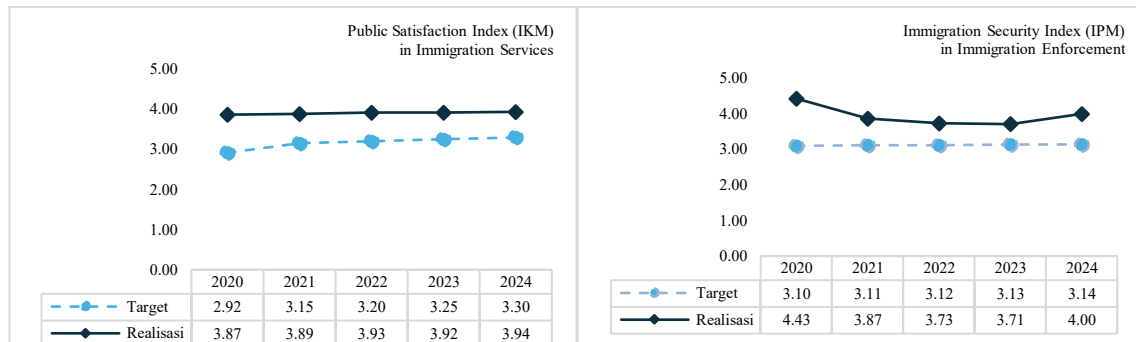


Figure 1. Public Satisfaction Index (IKM) in Immigration Services and

Immigration Security Index (IPM) in Immigration Enforcement

The rising Public Satisfaction Index (IKM) indicates sustained service optimization, whereas the fluctuating Immigration Security Index (IPM) suggests that improvements in service performance have not been uniformly accompanied by strengthened adaptive security performance. At the preliminary stage, this IKM–IPM divergence is treated as a contextual pattern consistent with, rather than proof of, the proposed institutional ambidexterity trap, which is a structural condition in which an organization simultaneously mandates dual behavioral capacity from its members while designing its reward, accountability, and procedural architecture to constrain the exploratory component of that duality.

Unlike structural inertia, which captures generalized organizational resistance to change Hannan & Freeman (1984), or coercive bureaucracy, which describes constraint without a simultaneous demand for exploration Adler & Borys (1996), the institutional ambidexterity trap identifies a specific and theoretically distinct contradiction between institutional demand and institutional architecture, meaning that officers are required to explore, yet every system surrounding them is engineered to punish the variance that exploration requires. This contradiction has a concrete structural foundation at TPI Soekarno Hatta. Law No. 6 of 2011 on Immigration and its ministerial implementing regulations prescribe each step of the border examination procedure in operational detail, specifying service completion timeframes and violation handling protocols. Any deviation from these prescribed steps constitutes an audit finding that negatively affects individual performance evaluations (Scott, 2013).

Simultaneously, DGII circulars require the same officers to intensify detection of novel threat modalities, including new document forgery techniques, evolving irregular migration patterns, and emerging transnational crime networks, all of which demand precisely the exploratory behavioral variance that the audit architecture constrains. This coexistence of a formal exploration mandate and a formal exploitation reward structure is what operationally constitutes the trap, representing a measurable institutional contradiction rather than mere bureaucratic rigidity alone. Service delivery, which maps onto exploitation, benefits from detailed SOPs, standardized training pipelines, and clear audit criteria, and rises steadily as measured by IKM. Security enforcement, which maps onto exploration, requires adaptive threat recognition for which the institutional architecture provides no comparable support structure, and fluctuates as measured by IPM. This documented imbalance raises a central research question regarding

whether leadership level behavioral interventions can partially overcome the structural suppression of ambidexterity in an institution fundamentally designed for procedural compliance.

At the individual level, immigration officers embody this paradox in its sharpest form. Each officer must simultaneously execute exploitative routine tasks like passport verification, visa processing, and document control, while maintaining explorative alertness for novel threats, deceptive documents, and evolving evasion techniques. In terms consistent with Tempelaar & Rosenkranz (2019) conceptualization of individual ambidexterity as simultaneous behavioral engagement in exploration and exploitation within a single work role, these officers are effectively structurally mandated ambidexters. Yet the institutional architecture, characterized by hierarchical accountability chains, codified procedures, echelon-based authority, and audit-driven compliance, systematically suppresses the behavioral variance that exploration requires. This contradiction between mandate and architecture is precisely what distinguishes the institutional ambidexterity trap from prior conceptualizations of bureaucratic constraint.

If bureaucratic structure suppresses ambidexterity, leadership may be the most proximate and tractable organizational lever for partially counteracting this suppression without requiring institutional redesign. Supervisory leaders occupy the critical interface between institutional structure and individual behavior. They enforce compliance, but also frame task demands, allocate attention, and signal whether exploration is safe. Ambidextrous leadership, theorized through opening and closing behavioral framework, equips leaders with precisely this dual repertoire, specifically opening behaviors that create permission for exploration within constrained institutional spaces, and closing behaviors that reinforce the procedural rigor that border management demands. Zain et al. (2025) provide direct empirical evidence that ambidextrous leadership shapes innovative work behavior within Indonesian immigration offices, and Gouda & Tiwari (2024) confirm it as a distinct pathway to talent agility and engagement. Kousina & Voudouris (2023) further demonstrate its effect on innovative work behavior through psychological ownership in government employees.

To operationalize the behavioral outcomes of overcoming this institutional trap, individual level balance must translate into dynamic operational capabilities, highlighting the critical role of workforce agility. Defined by Petermann & Zacher (2022) as a multidimensional behavioral capacity encompassing adaptability, proactive decision making, collaboration, reflection, and continuous learning, workforce agility has emerged as a critical output variable in organizational research on dynamic environments. From a microfoundations perspective, individual dual-capacity competencies aggregate into the organizational responsiveness that defines workforce agility. Alviani et al. (2024) confirm through systematic review that workforce agility research remains largely absent from public service settings, identifying this as a significant empirical gap.

The theoretical pathway from ambidextrous leadership through individual ambidexterity to workforce agility is, in a bureaucratic institution, not self-evidently realizable. Turner et al. (2022) document that Indonesia's public administration reform has been persistently obstructed by hierarchical authority structures, procedural rigidity, and institutional resistance to change, which are forces that suppress the exploratory behavioral variance ambidexterity requires. The IKM and IPM divergence in DGII's own performance record demonstrates this empirically. This study argues that ambidextrous leadership constitutes a behavioral mechanism capable of partially offsetting this structural bias at the supervisory dyad level, without requiring the institutional redesign Turner et al. (2022) identify as persistently stalled. Environmental dynamism is theorized to amplify this activation, and in high dynamism conditions, the theoretical premium on overcoming structural suppression becomes operationally decisive (Hamblin et al., 2024). However, as this study argues, the institutional architecture of coercive bureaucracies may itself decouple this premium from behavioral translation, which is a possibility this study subjects to an empirical test.

This study addresses three intersecting gaps, namely the absence of an empirically tested mediation model linking ambidextrous leadership to workforce agility through individual ambidexterity, the untested moderating role of environmental dynamism in this pathway within public service, and the near complete absence of organizational behavior research situated within Indonesian immigration management. Drawing on 450 officers at TPI Soekarno Hatta and employing a moderated mediation framework estimated through PLS-SEM, this study examines

how ambidextrous leadership shapes individual ambidexterity, whether individual ambidexterity mediates the relationship between leadership and agility, and whether environmental dynamism moderates the pathway from individual ambidexterity to workforce agility.

Theoretically, this study advances two claims. First, it argues that individual ambidexterity is not merely a behavioral outcome of leadership but a partial resolution mechanism for the institutional ambidexterity trap, which represents a condition in which organizations mandate exploration while designing against it. Second, it introduces environmental dynamism as a boundary condition whose moderating influence is suppressed when institutional architecture prescribes behavioral responses in advance, which is a finding interpretable as consistent with the operation of the trap as a coercive institutional mechanism (DiMaggio & Powell, 1983). Practically, the findings carry direct implications for public sector human resource strategy in institutional environments where structural reform is politically constrained. Accordingly, the study aims to test whether ambidextrous leadership strengthens workforce agility through individual ambidexterity and whether environmental dynamism conditions the individual ambidexterity–workforce agility relationship. The findings are intended to contribute theoretically by clarifying a micro-level leadership-to-agility mechanism and a falsifiable institutional boundary condition, and practically by informing leadership development, talent management, and enabling-bureaucracy reforms in high-pressure public service settings.

METHOD

This study employed a quantitative cross-sectional survey design to test a moderated mediation model. A total of 450 operational officers at the Class I Special Immigration Office of TPI Soekarno-Hatta were selected using purposive sampling with the following criteria: active status, having a direct supervisor, and a minimum tenure of one year. This sample size, which exceeds the minimum requirements for PLS-SEM analysis, combined with a single-site design, aims to maximize contextual homogeneity. This ensures that data variance strictly originates from individual-level differences (rather than between-site bias), making the hypothesis testing estimates more precise and reliable.

The survey instrument was adapted into Indonesian through a rigorous four-stage back-translation process, concluding with a pilot test involving 30 officers outside the main sample to ensure the validity and clarity of the questionnaire items. Additionally, to minimize common method bias (CMB), the researchers implemented procedural measures such as separating the questionnaire sections for evaluating leader and subordinate behaviors, guaranteeing full anonymity, and providing instructions that there are no right or wrong answers to prevent consistency bias among respondents.

This study measured four main variables using adapted and validated instruments. Ambidextrous Leadership (AL) was measured using a 13-item scale Zain et al. (2025) rated on a 5-point Likert scale and specified as a second-order reflective construct. Individual Ambidexterity (IA) utilized the instrument by Tempelaar & Rosenkranz (2019), which is also a second-order reflective construct; its scale was reduced to 10 items after eliminating 4 indicators with outer loadings below 0.70 to maintain reliability without compromising the theoretical domain coverage of exploration and exploitation. Workforce Agility (WA) was operationalized as a second-order formative construct using 30 items from Petermann & Zacher (2022), encompassing 10 non-interchangeable behavioral dimensions. Finally, Environmental Dynamism (ED) was measured perceptually at the individual level as a unidimensional first-order reflective construct using 3 items from Jansen et al. (2006), after the other 2 items were discarded due to low loadings and a lack of face validity within the immigration operational context.

Data analysis was conducted using the PLS-SEM approach via the disjoint two-stage approach in SmartPLS 4, which was chosen due to the formative specification of the Workforce Agility (WA) variable, the presence of a higher-order interaction term, and the exploratory nature of the model. Significance testing was performed using the bootstrapping method with 5,000 resamples, and potential common method variance (CMV) proved not to be an issue as all VIF values fell below the 3.3 threshold. Additionally, demographic variables (gender, age, work experience, and education level) were intentionally excluded from the final structural model to preserve the principle of parsimony, given that initial tests confirmed these control variables had

no significant effect on either Individual Ambidexterity (IA) or WA.

RESULTS AND DISCUSSION

Results

Demographic and Statistical Descriptions

This study involved 450 respondents, predominantly male (71.6%, $n = 322$), reflecting the typical gender distribution of Indonesian immigration officers. The sample was primarily characterized by individuals aged 18–35 years (43.6%, $n = 196$), possessing over 10 years of service (42.9%, $n = 193$), and holding graduate-level degrees (72.9%, $n = 328$). As detailed in Table 1, this prevalence of highly educated and experienced officers significantly enhances the study's construct validity, as longer-tenured personnel are better equipped to accurately evaluate supervisory leadership behaviors and their own exploration-exploitation patterns..

Table 1

Demographic Profile of Respondents

Characteristic	n	%
Gender		
Male	322	71.6
Female	128	28.4
Age (Years)		
18–35	196	43.6
36–50	149	33.1
> 50	105	23.3
Work Experience		
1–5 years	126	28.0
6–10 years	131	29.1
≥ 11 years	193	42.9
Education Level		
Diploma	56	12.4
Bachelor's Degree	328	72.9
Postgraduate	66	14.7
Total	450	100

Table 2 presents the descriptive statistics for all 56 indicators measured on a 5-point Likert scale. The item means ranged from 3.673 to 4.527, with standard deviations between 0.538 and 0.805. All absolute skewness values fell below 1.0, confirming that the data approximates a normal distribution suitable for bootstrapping procedures. Notably, Exploitation and Learning items recorded the highest means, reflecting the institution's strong emphasis on procedural proficiency. In contrast, the Iteration dimension yielded the lowest mean, suggesting it remains an underdeveloped area within the highly regulated environment of TPI Soekarno-Hatta.

Table 2

Item-Level Descriptive Statistics

Construct	Dimension	Item	M	SD	Min	Max	Skewness
Ambidextrous Leadership	<i>Open Leadership (OL)</i>	OL1	3.958	0.691	2	5	-0.148
		OL2	3.902	0.712	1	5	-0.265
		OL3	4.013	0.722	2	5	-0.234
		OL4	3.958	0.743	2	5	-0.128
		OL5	3.996	0.713	2	5	-0.142
		OL6	3.782	0.704	1	5	-0.089
		OL7	4.111	0.661	2	5	-0.264
	<i>Close Leadership (CL)</i>	CL1	4.471	0.570	3	5	-0.501
		CL2	4.484	0.555	2	5	-0.527
		CL3	4.413	0.588	2	5	-0.486
		CL4	4.444	0.592	3	5	-0.529
		CL5	4.420	0.573	3	5	-0.360

Individual Ambidexterity	<i>Exploration (XR)</i>	CL6	4.411	0.572	2	5	-0.400
		XR1	4.033	0.668	2	5	-0.218
Workforce Agility	<i>Exploitation (XT)</i>	XR2	3.949	0.728	2	5	-0.200
		XR3	3.813	0.710	2	5	-0.052
		XR5	4.402	0.571	3	5	-0.297
		XR6	4.398	0.585	3	5	-0.367
		XT2	4.418	0.573	3	5	-0.352
		XT3	4.362	0.589	3	5	-0.304
		XT4	4.493	0.563	3	5	-0.537
	<i>Accept Changes (AC)</i>	XT6	4.413	0.569	3	5	-0.313
		XT7	4.527	0.538	3	5	-0.493
		AC1	4.087	0.667	2	5	-0.190
	<i>Decision Making (DM)</i>	AC2	4.024	0.692	2	5	-0.316
		AC3	4.120	0.670	2	5	-0.322
		DM1	3.729	0.805	1	5	-0.165
	<i>Create Transparency (CT)</i>	DM2	3.911	0.707	2	5	-0.214
		DM3	4.071	0.703	2	5	-0.254
		CT1	4.091	0.679	2	5	-0.285
	<i>Collaboration (CO)</i>	CT2	4.102	0.679	2	5	-0.214
		CT3	4.029	0.698	2	5	-0.158
		CO1	3.944	0.706	2	5	-0.189
	<i>Reflection (RF)</i>	CO2	3.907	0.694	2	5	-0.115
CO3		4.280	0.591	3	5	-0.168	
RF1		4.002	0.695	2	5	-0.123	
<i>User Centricity (UC)</i>	RF2	3.871	0.704	2	5	-0.237	
	RF3	3.973	0.703	2	5	-0.234	
	UC1	4.164	0.687	2	5	-0.432	
<i>Iteration (IT)</i>	UC2	3.893	0.692	2	5	-0.140	
	UC3	3.844	0.748	1	5	-0.509	
	IT1	4.060	0.676	2	5	-0.203	
<i>Testing (TT)</i>	IT2	3.920	0.708	2	5	-0.187	
	IT3	3.673	0.748	2	5	-0.125	
	TT1	4.049	0.701	2	5	-0.184	
<i>Self-Organization (SO)</i>	TT2	4.047	0.681	2	5	-0.228	
	TT3	4.102	0.683	2	5	-0.300	
	SO1	4.067	0.684	2	5	-0.253	
<i>Learning (LN)</i>	SO2	4.051	0.664	2	5	-0.148	
	SO3	3.891	0.677	2	5	-0.168	
	LN1	4.489	0.547	3	5	-0.406	
Environmental Dynamism (ED)	-	LN2	4.456	0.566	3	5	-0.418
	-	LN3	4.433	0.567	2	5	-0.435
	-	ED1	4.362	0.604	3	5	-0.371
	-	ED2	4.262	0.635	2	5	-0.337
	-	ED5	4.278	0.644	2	5	-0.434

Note. M = mean; SD = standard deviation. All items scored on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Observed response range across all 56 items: minimum = 1, maximum = 5, confirming no out-of-range responses. Maximum |skewness| = -0.537 (all < 1.0), confirming approximately normal distributions (Hair Jr et al., 2021). XR items retained: XR1, XR2, XR3, XR5, XR6 (XR4 and XR7 eliminated due to outer loadings < 0.70). XT items retained: XT2, XT3, XT4, XT6, XT7 (XT1 and XT5 eliminated). ED items retained: ED1, ED2, ED5 (ED3 and ED4 excluded based on outer loading screening and lower face validity for frontline officer perceptions during back-translation expert review). Lowest item minimum = 1 (OL2, UC3, DM1); highest item maximum = 5 (all items). No floor or ceiling effects at the item level were observed that would compromise variance adequacy.

Assessment of the Measurement Model

Stage 1: First-Order Measurement Model.

Convergent validity was assessed through outer loadings, composite reliability (CR), and average variance extracted (AVE). All 56 indicators across 15 first-order dimensions yielded outer loadings exceeding the recommended threshold of 0.70 Hair Jr et al. (2021), ranging from 0.716 (XR5) to 0.873 (ED5). Cronbach's alpha values ranged from 0.711 to 0.883, CR from 0.838 to 0.909, and AVE from 0.567 to 0.719, with all constructs satisfying their respective thresholds ($\alpha \geq 0.70$; $CR \geq 0.70$; $AVE \geq 0.50$ (Fornell & Larcker, 1981). Table 3 presents the complete Stage 1 results.

Table 3

First-Order Measurement Model Assessment (Stage 1)

Construct	Dimension	n Items	Loading Range	α	pa	CR (pc)	AVE
Ambidextrous Leadership Individual Ambidexterity Workforce Agility	Open Leadership (OL)	7	0.747–0.793	0.883	0.884	0.909	0.589
	Close Leadership (CL)	6	0.758–0.790	0.864	0.864	0.898	0.595
	Exploration (XR)	5	0.716–0.766	0.809	0.810	0.867	0.567
	Exploitation (XT)	5	0.747–0.782	0.831	0.832	0.881	0.597
	Accept Changes (AC)	3	0.815–0.857	0.774	0.777	0.869	0.689
	Decision Making (DM)	3	0.815–0.826	0.758	0.759	0.861	0.674
	Create Transparency (CT)	3	0.826–0.843	0.782	0.782	0.873	0.697
	Collaboration (CO)	3	0.795–0.832	0.737	0.740	0.850	0.655
	Reflection (RF)	3	0.811–0.867	0.805	0.810	0.885	0.719
	User Centricity (UC)	3	0.804–0.833	0.759	0.760	0.862	0.675
	Iteration (IT)	3	0.800–0.821	0.735	0.736	0.850	0.654
	Testing (TT)	3	0.780–0.814	0.711	0.711	0.838	0.634
	Self-Organization (SO)	3	0.798–0.807	0.720	0.720	0.843	0.641
	Learning (LN)	3	0.825–0.833	0.773	0.773	0.869	0.688
	Environmental Dynamism	3	0.776–0.873	0.778	0.802	0.870	0.691

Note. All loadings ≥ 0.70 (Hair Jr et al., 2021). All CR ≥ 0.70 and AVE ≥ 0.50 (Fornell & Larcker, 1981). XR items: XR1, XR2, XR3, XR5, XR6 (XR4 and XR7 eliminated); XT items: XT2, XT3, XT4, XT6, XT7 (XT1 and XT5 eliminated). α = Cronbach's alpha; pa = rho_a; CR = composite reliability (rho_c); AVE = average variance extracted.

Discriminant validity was evaluated using the heterotrait-monotrait ratio of correlations (Henseler et al., 2015). All HTMT values among the 15 first-order dimensions were below the conservative threshold of 0.85, with the highest value observed between SO and RF (HTMT = 0.755), and between XR and XT (HTMT = 0.692). Table 4 reports HTMT values among the four Stage 2 HOC constructs. Notably, HTMT values approaching or exceeding unity were observed between OL and AL (HTMT = 1.024), CL and AL (HTMT = 1.001), XR and IA (HTMT = 1.053), and XT and IA (HTMT = 1.046) in Stage 1. These inflated values are expected and methodologically unproblematic within the disjoint two-stage approach, as Stage 1 estimates HOC constructs alongside their sub-dimensions for LV score extraction purposes (Sarstedt et al., 2019).

Table 4

Discriminant Validity: HTMT Matrix (Stage 2)

Construct	AL	IA	ED	WA
Ambidextrous Leadership (AL)	—			
Individual Ambidexterity (IA)	0.547	—		
Environmental Dynamism (ED)	0.117	0.204	—	
Workforce Agility (WA)	0.344 ^a	0.479 ^a	0.094 ^a	—

Note. All Stage 2 HOC values < 0.85 (Henseler et al., 2015). AL = Ambidextrous Leadership; IA = Individual Ambidexterity; ED = Environmental Dynamism; WA = Workforce Agility. ^a WA is

formally specified as a formative HOC in the structural model, for which HTMT-based discriminant validity testing is not applicable (Hair Jr et al., 2021). The WA row values are Stage 1 bivariate HTMT indices computed by treating WA's latent variable score as a reflective approximation, provided for descriptive comparison purposes only.

Stage 2: Higher-Order HOC Measurement Model.

For AL (reflective HOC), the loadings of OL and CL onto AL were 0.900 and 0.908 (both $p < 0.001$), with $\alpha = 0.776$, $CR = 0.899$, $AVE = 0.817$. For IA (reflective HOC), the loadings of XR and XT onto IA were 0.874 and 0.898 (both $p < 0.001$), with $CR = 0.879$, $AVE = 0.785$. For ED (first-order reflective), outer loadings of ED1, ED2, and ED5 were 0.842, 0.799, and 0.855 (all $p < 0.05$), with $CR = 0.871$, $AVE = 0.693$. WA was specified as a formative HOC consistent with its conceptualization as a gestalt aggregate of ten non-interchangeable behavioral dimensions (Petermann & Zacher, 2022). Table 5 reports all ten WA dimensions.

Table 5

Formative HOC: Workforce Agility Dimensions (Stage 2)

Dimension	Outer Weight	t(w)	p(w)	Outer Loading (λ)	t(λ)	VIF
Reflection (RF)	0.282	2.068	0.039*	0.837	15.407	2.204
User Centricity (UC)	0.273	2.264	0.024*	0.778	12.711	1.733
Create Transparency (CT)	0.183	1.480	0.139	0.776	13.043	2.010
Decision Making (DM)	0.158	1.349	0.178	0.758	12.539	1.936
Accept Changes (AC)	0.055	0.403	0.687	0.713	10.091	2.032
Testing (TT)	0.177	1.423	0.155	0.733	11.095	1.737
Self-Organization (SO)	0.104	0.838	0.402	0.728	11.070	1.964
Learning (LN)	0.035	0.251	0.802	0.707	9.567	1.991
Collaboration (CO)	0.026	0.214	0.830	0.655	8.864	1.789
Iteration (IT)	0.007	0.069	0.945	0.638	9.174	1.737

Note. Outer weights from bootstrapping (5,000 resamples, two-tailed). * $p < 0.05$. Retention criterion: outer weight non-significant ($p > 0.05$) dimensions are retained when outer loading $\geq .50$ (Hair Jr et al., 2021). No negative outer weights were observed in the final model. Eight dimensions with non-significant weights are retained because all outer loadings exceed 0.60 (range: 0.638–0.837), confirming substantive positive relationships with the WA composite. All outer loadings significant at $p < 0.001$. All VIF < 3.3 , confirming absence of pathological collinearity.

Structural Model Assessment

The model demonstrated a good overall fit, with SRMR values (0.037 saturated, 0.042 estimated) well below the 0.08 threshold, which offsets an NFI slightly below the conventional 0.90 mark. Predictive power was also adequate, yielding R^2 values of 0.169 for Individual Ambidexterity (IA) and 0.226 for Workforce Agility (WA). Furthermore, the model exhibited strong out-of-sample predictive relevance; Q^2 predict values were substantially above zero (0.165 for IA, 0.177 for WA), and CVPAT results confirmed that the PLS-SEM model significantly outperformed the naïve benchmark ($p < .001$). The complete structural results are presented in Table 6.

Table 6

Structural Model Results: Direct Effects, Indirect Effect, and Effect Sizes

Hypothesis/ Path	β	M	t	p	BCa 95% CI	f^2	Decision
H1: AL $\rightarrow$ IA	0.411	0.412	10.020	< 0.001	[0.325, 0.485]	0.203	Supported
H2: IA $\rightarrow$ WA	0.382	0.390	8.101	< 0.001	[0.271, 0.461]	0.153	Supported
H3: IA $\times$ ED $\rightarrow$ WA	0.050	0.036	1.030	0.303	[-0.034, 0.150]	0.003	Not Supported
AL $\rightarrow$ WA (direct path)	0.168	0.174	3.168	0.002	[0.051, 0.258]	0.030	Significant

AL → IA → WA (indirect)	0.157	0.161	5.996	< 0.001	[0.106, 0.207]	—	Partial Mediation
ED → WA (control)	-0.012	0.009	0.245	0.806	[-0.181, 0.049]	0.000	Not Significant

Note. β = original sample coefficient; M = bootstrap sample mean; $t = \beta/\text{STDEV}$; CI = BCa bootstrap CI (5,000 resamples, two-tailed, $\alpha = 0.05$). f^2 = Cohen (1992) effect size: 0.02 = small, 0.15 = medium, 0.35 = large. $R^2(\text{IA}) = 0.169$, $R^2_{\text{adj}} = 0.167$; $R^2(\text{WA}) = 0.226$, $R^2_{\text{adj}} = 0.219$. SRMR (saturated) = 0.037; SRMR (estimated) = 0.042.

Hypothesis Testing

H1 is supported ($\beta = 0.411$, $t = 10.020$, $p < 0.001$, BCa 95% CI [0.325, 0.485], $f^2 = 0.203$). The medium-to-large effect size indicates that AL explains a practically meaningful proportion of variance in IA, consistent with ambidextrous leadership theory's prediction that opening and closing behavioral repertoires shape follower dual-capacity (Rosing et al., 2011; Rosing & Zacher, 2017).

H2 is supported ($\beta = 0.382$, $t = 8.101$, $p < 0.001$, BCa 95% CI [0.271, 0.461], $f^2 = 0.153$). The moderate effect size positions individual ambidexterity as a substantively meaningful driver of workforce agility, consistent with the microfoundations prediction that individual dual-capacity competencies constitute the behavioral substrate of workforce-level agility (Felin et al., 2012). Crucially, the direct path AL to WA revealed a significant direct effect ($\beta = 0.168$, $t = 3.168$, $p = 0.002$, BCa 95% CI [0.051, 0.258]), indicating that ambidextrous leadership retains a direct channel to workforce agility beyond what is mediated through individual ambidexterity. The indirect effect of AL on WA through IA was $\beta = 0.157$ ($t = 5.996$, $p < 0.001$, BCa 95% CI [0.106, 0.207]). Calculating the Variance Accounted For ($\text{VAF} = 0.157 / (0.157 + 0.168) = 48.3\%$), which falls in the 20–80% range, partial mediation is confirmed (Zhao et al., 2010). Individual ambidexterity thus partially mediates the AL towards WA pathway, transmitting ambidextrous leadership influence through cultivated dual capacity while a direct leadership channel to agility persists.

H3 is not supported ($\beta = 0.050$, $t = 1.030$, $p = 0.303$, BCa 95% CI [-0.034, 0.150], $f^2 = 0.003$). The direct effect of ED on WA was likewise non-significant ($\beta = -0.012$, $p = 0.806$).

Moderation Probing: Simple Slope Analysis.

Simple slope analysis was conducted to probe the non-significant interaction (Toothaker et al., 1994). As reported in Table 7, the conditional effect of IA on WA was positive and significant at all three levels of ED. The slope difference ($\Delta\beta = 0.432 - 0.332 = 0.100$) was not statistically significant, confirming that the IA and WA relationship does not vary meaningfully as a function of ED. Post-hoc power analysis revealed that statistical power to detect the observed interaction effect ($f^2 = 0.003$) was 35.7% at $N = 450$ ($\alpha = 0.05$), with $N \approx 1,701$ required for 80% power (Faul et al., 2009). Because the sample of 450 respondents reflects the maximum feasible sample achievable within the purposive criteria at a single immigration checkpoint, representing the complete set of eligible operational officers at TPI Soekarno Hatta, this power limitation is a constraint inherent to single site purposive designs in bounded institutional settings rather than a correctable sampling error.

Table 7

Simple Slope Analysis: Conditional Direct Effects of IA on WA at Three Levels of ED

Condition	β	M	t	p	BCa 95% CI
ED + 1 SD (High Dynamism)	0.432	0.426	6.305	< 0.001	[0.298, 0.560]
ED Mean	0.382	0.390	8.101	< 0.001	[0.271, 0.461]
ED - 1 SD (Low Dynamism)	0.332	0.354	4.972	< 0.001	[0.169, 0.440]

Note. BCa 95% CIs based on 5,000 bootstrap resamples, two-tailed. All CIs exclude zero. The difference in slopes between high- and low-ED conditions ($\Delta\beta = 0.100$) is not statistically significant (H3: $p = 0.303$).

Discussion

Ambidextrous Leadership and Individual Ambidexterity (H1)

The significant positive impact of Ambidextrous Leadership (AL) on Individual Ambidexterity (IA) supports Hypothesis 1, aligning with established theories that leaders are crucial in cultivating dual-capacity behaviors in their subordinates. By alternating between "opening" behaviors (encouraging experimentation and initiative) and "closing" behaviors (enforcing standards and precision), supervisors directly transmit dual behavioral templates to their officers. This dynamic is especially vital in hierarchical bureaucracies, as leaders create the supportive yet stretch-oriented conditions necessary for ambidexterity to flourish a conclusion that resonates strongly with broader organizational and public sector research (Mom et al., 2009).

Furthermore, the substantial effect size ($f^2 = 0.203$) highlights ambidextrous leadership as a highly actionable strategy for immigration administrators. Crucially, AL helps overcome the "institutional ambidexterity trap" that typically restricts explorative behavior in rigid environments. Because the supervisory relationship operates through direct behavioral modeling rather than broad environmental channels, leaders successfully establish a localized "permission structure" for exploration. This allows officers to develop adaptive capacities while remaining partially insulated from the broader, more coercive institutional constraints.

Individual Ambidexterity and Workforce Agility (H2)

The significant effect of individual ambidexterity on workforce agility confirms Hypothesis 2 and represents the most robust empirical finding of the study. From the microfoundations perspective Felin et al. (2012), individual ambidexterity constitutes the behavioral substrate from which workforce level agility emerges, meaning that officers who regularly engage in both exploration and exploitation develop, through repeated simultaneous practice, the behavioral dispositions Petermann & Zacher (2022) operationalize as workforce agility. The moderate effect size is consistent with the microfoundational aggregation logic, whereby individual dual capacity is not merely a correlate of workforce agility but its primary behavioral antecedent, explaining a substantively meaningful proportion of variance. Birkinshaw & Gibson (2004) contextual ambidexterity framework provides a complementary mechanism, as officers who dynamically allocate behavioral effort between exploration and exploitation develop the self organizing, reflective, and adaptive dispositions that characterize workforce agility.

The confirmed partial mediation positions individual ambidexterity as the primary but not exclusive mediating mechanism through which ambidextrous leadership propagates into operational responsiveness, confirming the theorized sequential transmission chain from AL to IA to WA. The significant direct path ($\beta = 0.168$, $p = 0.002$) further reveals that ambidextrous leadership retains a direct behavioral influence on workforce agility beyond what it achieves by cultivating individual dual-capacity. This partial mediation pattern is theoretically coherent: in a coercive institutional environment, the supervisory dyad transmits ambidextrous capacity through individual behavioral repertoires (the mediated path), while also directly shaping task framing, attention allocation, and operational permission structures in ways that directly influence agility outcomes (the direct path). Both channels coexist, with individual ambidexterity accounting for the larger share of the total leadership effect on agility.

The R squared values obtained, which are 0.169 for IA and 0.226 for WA, are interpretively meaningful when benchmarked against comparable empirical work. Rosing & Zacher (2017) reported an R^2 value of 0.17 for individual ambidexterity predicting creative performance, while Schnellbacher et al. (2019) documented an R squared value equal to 0.14 for cross level ambidexterity to performance effects. Our R squared value for individual ambidexterity of 0.169 falls precisely within this established empirical range. Critically, PLS-SEM applications in public sector research conventionally yield lower R squared values than private sector counterparts because institutional constraints reduce the proportion of variance attributable to any single predictor, which is a pattern Hamblin et al. (2024) identify as characteristic of public sector ambidexterity research. The R squared values obtained are therefore clear evidence of model contextual appropriateness.

The Non-Moderation of Environmental Dynamism (H3)

The non-significant interaction between individual ambidexterity and environmental dynamism, which yielded a beta coefficient of 0.050, a p value of 0.303, and an f-squared effect

size of 0.003, warrants careful examination at two distinct levels of analysis that should not be conflated.

Restriction of Range

At the measurement level, restriction of range in environmental dynamism scores contributes to the non-significant moderation. Item means were uniformly high, ranging from 4.27 to 4.36, and standard deviations were narrow, ranging from 0.60 to 0.64, with approximately 83.3 percent of respondents scoring greater than or equal to 4.0 on environmental dynamism. When a moderator lacks variance, the interaction term provides no additional explanatory leverage beyond the main effect of individual ambidexterity alone. This homogeneity reflects genuine contextual reality. All officers work at the same high dynamism checkpoint, producing a ceiling effect on environmental dynamism variability within a single-site study. Post-hoc power analysis confirms the related statistical constraint, revealing only 35.7 percent power to detect the observed f-squared of 0.003, with approximately 1,701 respondents required to achieve 80 percent power.

The Institutional Ambidexterity Trap

Theoretically, the non-significant moderation finding aligns with the "institutional ambidexterity trap," where strict legal mandates in coercive bureaucracies effectively decouple adaptive behaviors from environmental changes (Scott, 2013). This creates a significant contradiction in frontline immigration settings: while institutional rhetoric encourages adaptability to counter novel threats, the actual performance reinforcement system continues to reward strict procedural compliance, processing efficiency, and risk avoidance (DiMaggio & Powell, 1983).

Consequently, while officers are highly aware of environmental uncertainty as evidenced by their high environmental dynamism scores they cannot translate this awareness into adaptive action. The institutional trap does not blind officers to their changing environment; rather, it severs the crucial transmission channel between perceiving the need for adaptation and being institutionally authorized to enact it.

Sensing Without Enactment

The findings reveal a phenomenon of "institutionalized sensing and enactment decoupling." Contrary to traditional organizational theories which assume that environmental awareness naturally triggers adaptive action, this coupling breaks down in coercive settings. Despite officers reporting high environmental dynamism and demonstrating individual ambidexterity, this heightened awareness did not amplify adaptive behaviors. Essentially, officers could accurately sense environmental volatility, but they were not free to enact a response.

Viewed through Weick's sensemaking framework, this decoupling occurs because enactment requires organizational authorization. Coercive bureaucracies strictly limit sanctioned behaviors to compliance and procedural exploitation, structurally excluding exploratory actions even when highly necessary. Therefore, the institutional architecture does not blind officers to uncertainty; rather, it restricts their permitted response repertoire. While multiple streams of empirical and structural evidence in the study strongly support this decoupling interpretation, future multi-site research is needed to causally prove the exact impact of institutional rigidity.

Theoretical Contributions

The Sequential Mediation Pathway

This study provides among the first empirical tests of the full sequential mediation chain from ambidextrous leadership to individual ambidexterity to workforce agility in frontline public service, examining a connection that prior research has not directly tested in regulated immigration management contexts, and grounding it in a three-pillar theoretical architecture. Within this framework, ambidextrous leadership theory explains the supervisory behavioral transmission mechanism Rosing et al. (2011), the microfoundations perspective explains the aggregation logic from individual dual capacity to collective agility O'Reilly & Tushman (2013), and coercive institutional theory grounded in Scott (2013) regulative pillar and Adler & Borys (1996) enabling and coercive continuum explains the boundary condition consistent with the

suppression of environmental amplification. This architecture provides a mechanistically complete account of the leadership to agility chain in institutional settings, advancing the individual level empirical agenda identified by Hamblin et al. (2024) for public sector ambidexterity research.

The Institutional Ambidexterity Trap

This study introduces the institutional ambidexterity trap as a theoretically distinct boundary condition grounded in coercive institutional theory. The trap is defined as a structural condition in which an organization simultaneously mandates dual behavioral capacity from its members while designing its reward, accountability, and procedural architecture to constrain the exploratory component of that duality. This construct is explicitly differentiated from structural inertia Hannan & Freeman (1984), which describes generalized resistance to change without a dual mandate, from red tape Bozeman (1993), which identifies rule burden without reference to behavioral duality, and from coercive bureaucracy Adler & Borys (1996), which describes constraint without a simultaneous organizational demand for exploration.

Critically, the trap is also distinct from the mere absence of exploratory support because it involves an active rhetorical and reinforcement contradiction in which adaptability is institutionally proclaimed while procedural conformity, auditability, and risk avoidance remain the dominant behavioral reinforcement mechanisms (DiMaggio & Powell, 1983). The construct generates a set of testable and falsifiable predictions, which outline the following systemic patterns.

- a) Moderation effects of environmental dynamism should be stronger in enabling bureaucracies Adler & Borys (1996) and absent or weak in coercive bureaucracies.
- b) Objective measures of environmental dynamism should show stronger moderation than perceptual measures in settings where behavioral responses are institutionally scripted in advance (Scott, 2013).
- c) Enabling bureaucratic redesigns should strengthen the environmental dynamism to agility pathway by restoring the behavioral degrees of freedom through which environmental signals can be translated into adaptive responses.
- d) Contextual divergence in coercive settings dictates that environmental dynamism scores should remain uniformly elevated, reflecting heightened perceptual awareness of uncertainty, while moderation effects should remain suppressed, reflecting the severing of the transmission channel between perception and exploratory behavioral enactment.

Formative Operationalization of Workforce Agility

This study advances beyond the unidimensional reflective scales prevalent in prior agility research Alavi et al. (2014), affirming that each behavioral dimension contributes unique explanatory content (Diamantopoulos & Winklhofer, 2001). This operationalization is specifically suited to dual pressure institutional environments where no single behavioral dimension is substitutable for another. The finding that two dimensions carry statistically significant outer weights which are Reflection ($\beta_w = 0.282$, $p = 0.039$) and User-Centricity ($\beta_w = 0.273$, $p = 0.024$), further suggests that in procedurally constrained environments, the capacity to step back and evaluate is the scarcest and therefore the most distinctive component of workforce agility.

The Sensing Enactment Decoupling Mechanism

This study introduces the concept of "institutionalized sensing and enactment decoupling" to explain how the institutional ambidexterity trap operates. Contrary to traditional theories which assume that environmental awareness naturally triggers adaptive action, this study reveals that coercive settings sever this link. Officers demonstrated high awareness of environmental turbulence, yet this did not amplify their adaptive behaviors. Grounded in Weick's sensemaking framework, this decoupling occurs because enactment requires organizational authorization; coercive bureaucracies only permit strict procedural compliance, rendering exploratory responses unauthorized. Thus, rather than blinding officers to environmental changes, coercive institutions formalize the gap between perceiving a need for adaptation and being allowed to act on it. Future multi-site studies are required to causally confirm this mechanism.

Practical Implications

Organizations must systematically cultivate ambidextrous leadership by training supervisors to balance "opening" behaviors such as encouraging initiative and psychological safety—with "closing" behaviors that enforce strict procedural standards. Because the institutional trap prevents environmental pressure alone from triggering bottom-up adaptation, workforce agility must be treated as a permanent organizational priority rather than a reactive measure to external turbulence. To support this, talent management systems should be redesigned to reward both procedural mastery and adaptive problem-solving through initiatives like job rotations and cross-functional task forces. Furthermore, transitioning from a coercive to an enabling bureaucracy requires specific structural interventions: performance metrics must incorporate exploratory contributions alongside standard compliance measures, structured exploratory roles must be formalized, and ongoing digitalization efforts (such as the autogate expansion) should be leveraged to establish frameworks for adaptive judgment and psychological safety.

CONCLUSION

This study examines the effect of Ambidextrous Leadership (AL) on Workforce Agility (WA) through the mediation of Individual Ambidexterity (IA) and the moderation of Environmental Dynamism (ED) among 450 officers at the Soekarno-Hatta International Airport (TPI). The results demonstrate that ambidextrous leadership significantly enhances individual dual capacity, which in turn is the strongest driver of officer agility (supporting Hypotheses 1 and 2). Furthermore, IA partially mediates the relationship between AL and WA (VAF = 48.3%), confirming that superior behavior successfully shapes officers' adaptive capacity sequentially, even within a coercive and high-pressure institutional environment.

However, Environmental Dynamism does not moderate the relationship between IA and WA (Hypothesis 3 is rejected); officer agility remains strong regardless of the dynamic nature of the surrounding environment. These findings are consistent with the operation of a proposed institutional ambidexterity trap—a condition in which rigid institutional rules restrict officers' freedom of movement. Officers are acutely aware of environmental change and uncertainty, yet are constrained by strict procedures that prevent them from responding freely (decoupling perception and action). Therefore, this study practically recommends the systematic development of ambidextrous leadership and a bureaucratic redesign that gives officers greater freedom in problem-solving so that work agility can be truly realized optimally.

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AUTHOR CONTRIBUTION STATEMENT

Farid Asyam Nur Alam, Suparto Wijoyo, and Fendy Suhariadi jointly contributed to the conceptualization of the study, development of the theoretical framework, research methodology, interpretation of the findings, and preparation of the manuscript. The authors collectively contributed to the literature review, methodological evaluation, interpretation of the PLS-SEM results, and critical revision of the manuscript for important intellectual content. All authors reviewed and approved the final version of the manuscript and agreed to be accountable for the accuracy, integrity, and scholarly quality of the work.

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