

STRATEGIC IMMUNITY AND ORGANIZATIONAL RESILIENCE: THE SEQUENTIAL MEDIATING ROLES OF STRATEGIC DEXTERITY AND STRATEGIC RENEWAL UNDER ENVIRONMENTAL DYNAMISM

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Abstract

Organizations working in emerging economies like Iraq are facing unprecedented difficulties in the era characterized by technological suddenness, geopolitical uncertainty, strong competition, and economic volatility. Firms need to step beyond resilience and build strategic capabilities to become more proactive in improving long-term adaptability and competitiveness under various conditions. The aim of this study is to analyze the role of Strategic Immunity (SI) on improving Sustainable Organizational Performance (SOP) through Organizational Resilience (OR) and also to detail the sequential mediating role of Strategic Dexterity (SD) and Strategic Renewal (SR) and the moderating role of Environmental Dynamism (ED). A quantitative, explanatory, cross sectional research design was adopted, in which the information collected by the researcher from the study area was structured questionnaires. A quantitative, explanatory, cross sectional research design was used to study, as it was structured questionnaires from which data was collected from five hundred managers from the study organizations of twelve organizations representing six industries. Data were organized and analyzed by the use of matrix operations, reliability test and bootstrapped simulation procedure in Microsoft Excel. All of the twelve hypothesis that were proposed were confirmed. Strategic Immunity significantly enhanced Strategic Dexterity ($\beta = 0.641$, $p = .001$), Strategic Renewal ($\beta = 0.512$, $p = .001$), and Organizational Resilience ($\beta = 0.318$, $p = .001$). The correlations between Strategic Dexterity and Strategic Renewal were mediated (partially explained) separately by Strategic Immunity, while Environmental Dynamism enhanced the mediation effect of Strategic Dexterity and Strategic Renewal on Organizational Resilience. Moreover, Organizational Resilience had a significant positive impact on Sustainable Organizational Performance ($\beta = 0.574$, $p = .001$). The results empirically confirm a sequential framework of Strategic Immunity, Strategic Dexterity, Strategic Renewal and Organizational Resilience. The study contributes to Dynamic Capabilities Theory and the Resource-Based View by theorizing Strategic Immunity as a proactive capability of the organization, and by providing practical insights to managers faced with very turbulent emerging-market settings.

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Introduction

Background and Motivation

Strategic cycles have been narrowed in the global business environment as never before. The organizations that used to enjoy the decade long competitive advantages are now experiencing disruption windows in months. Digitalization, supply chain instability, demographic restructuring, and geopolitical instability are all leading to environmental turbulence which requires the reinvention of the way companies defend, renew, and change their strategic footing [1] [2] [3]. Organizational resilience is the source of this reconceptualization: the ability of an organization to not only endure the worst, but speculate, assimilate, adapt, and grow stronger as a result of disruption [4] [5].

These strains are acute particularly in the Iraqi business environment. As Iraqi institutions grapple with political instability, the need to modernise its infrastructure, a faster pace of digitalisation, and oil-revenue addiction, it is also overriding the need to adapt to the evolving economic environment. Such realities have forced Iraqi organizations to have strategic capabilities that would be beyond the normal planning models. Nevertheless, in spite of this urgency, there is little empirical evidence about the organizational situations in Iraq, and the processes by which the antecedents of strategic capability are transformed into resilience outcomes are not well studied.

This paper fills this gap by placing Strategic Immunity as the organizational ability to have sustained environmental scanning, threat anticipation, active anticipation preparedness as a strategic ability antecedent. We theorize and empirically demonstrate that Strategic Immunity does not work alone to activate organizational resilience, but there is a chain reaction between Strategic Immunity and Strategic Dexterity (flexible resource reallocation and adaptive decision-making) and Strategic Renewal (systematic renovation of strategies, processes, and business models). The Environmental Dynamism is a theorized and tested moderator that enhances these pathways, creating a refined, boundary-conditioned theoretical framework based on the Dynamic Capabilities Theory ([6], 2018), the Resource-Based View [8] and Organizational Resilience Theory [4] [5].

Problem Statement

Despite growing scholarly attention to organizational resilience since the supply chain disruptions of 2020–2023, no coherent account explains how proactive strategic immunity capabilities translate through intermediate strategic mechanisms to resilience outcomes. Prior work has examined resilience as a reactive or absorptive phenomenon [9] [10], but few studies have traced the complete strategic chain from antecedent immunity capabilities through dynamic capability mediators to sustainable performance outcomes. Moreover, the sequential relationship between Strategic Dexterity and Strategic Renewal as ordered mediators—central to this study's contribution—has not been empirically validated in the extant literature.

Research Importance

This research contributes to four scholarly domains: (a) strategic management, by introducing Strategic Immunity as a novel antecedent construct; (b) dynamic capabilities research, by demonstrating the sequential operation of dexterity and renewal capabilities; (c) organizational resilience theory, by providing empirical validation from an emerging-market context; and (d) sustainable organizational development, by clarifying the capability-to-performance pathway [11] [12].

Theoretical Foundation

Resource-Based View

The Resource-Based View (RBV) provides the basis that competitive advantage is sustained through firm-specific resources which are valuable, rare, imperfectly imitable and non-substitutable [8] [13]. Strategic Immunity: having the capability of environmental scanning, threat anticipation processes and organization preparedness mechanisms will qualify as a VRIN resource since it is organizationally inherent, historically determined and causally unclear to that of competitors. The RBV, therefore, offers the conceptual framework through which Strategic Immunity can be understood as a strategic resource, which leads to competitiveness survival [14].

Dynamic Capabilities Theory

Teece (2007, 2018), who refined the Dynamic capabilities theory, expands the RBV to

turbulent surroundings by focusing on senses, seize, and reconfigure capabilities. The role of operations within this study that is operationalized is Strategic Dexterity, which constitutes sensing and seizing features, and Strategic Renewal which constitutes reconfiguration feature. Zollo and Winter (2002) developed the fact that dynamic capability evolution is based on deliberate learning, which is the theoretical basis of the sequential SD/SR relationship. Danneels (2021) also showed how organizational antecedents are organized to influence the development of higher-order competences/ Organizational Resilience Theory

Organizational resilience theory conceptualizes resilience as a multi-dimensional capability comprising anticipatory, absorptive, adaptive, and recovery sub-capacities [4] [17]. Linnenluecke (2017), in an influential literature review, established resilience as a process-based organizational outcome shaped by proactive capability configurations. Wenzel et al. (2020) demonstrated that strategic responses to environmental crisis—including renewal and reconfiguration—are key determinants of organizational survival and performance. These theoretical foundations directly motivate our integrated framework.

Literature Review and Hypothesis Development

Strategic Immunity

Strategic Immunity, as conceptualized in this study, represents an organizational capacity enabling firms to proactively detect, assess, and prepare for environmental threats before they escalate into crises. Drawing on [19] resilience organization framework, Duchek's (2020) capability-based resilience conceptualization, and Conz and Magnani's (2020) dynamic resilience perspective, we define Strategic Immunity across four dimensions: strategic vigilance, environmental scanning, threat anticipation, and organizational preparedness.

[20] demonstrated that integrative environmental scanning frameworks significantly enhance dynamic capabilities, providing empirical support for the SI → SD pathway theorized here. Hillmann and Guenther (2021), reviewing 204 organizational resilience articles, identified anticipatory capabilities as among the most robust antecedents of organizational resilience, directly motivating SI as an antecedent construct. [21] demonstrated that proactive operational management of resilience consistently outperforms reactive approaches in sustaining organizational performance.

Strategic Dexterity

Strategic Dexterity is conceptualized as the organizational capacity for dynamic resource reallocation, strategic flexibility, responsive decision-making, and continuous learning. [22] established strategic agility—the closest prior construct to dexterity—as comprising leadership sensitivity, resource fluidity, and strategic unity. Zahoor et al. (2023) provided recent empirical evidence from emerging economies demonstrating that adaptive capabilities and strategic flexibility significantly predict firm performance, directly supporting the SD → OR hypothesis. Danneels (2021) showed that second-order competences—analogue to strategic dexterity—emerge from antecedent organizational configurations, consistent with SI → SD pathway.

Strategic Renewal

Strategic Renewal, defined as the systematic transformation of organizational business models, processes, and strategies to restore competitive alignment, is grounded in [23] and advanced by [24], who provided a multilevel empirical validation of dynamic managerial capabilities driving strategic renewal. [25] demonstrated that sustainable competitive advantage is built through strategic renewal and resource reconfiguration processes, directly supporting the SR → OR theoretical pathway. [26] found that strategic renewal significantly predicts financial performance, with institutional complexity as a moderator—a finding that parallels our moderation hypothesis with Environmental Dynamism.

Organizational Resilience

The conceptualization of the organizational resilience theory views resilience as a multi-dimensional capability that is made of anticipated, absorbent, adaptive, and recuperative sub-capacities [4] [17]. In an influential literature review, Linnenluecke (2017) defined resilience as a process-based result of an organization with proactive ability setups. Wenzel et al. (2020) established that the strategic responses to environmental crisis such as renewal and reconfiguration are one of the determinants of organizational performance and survival. Our combined framework is directly

inspired by these theoretical underpinnings.

Sustainable Organizational Performance

Sustainable Organizational Performance is operationalized across financial, market, innovation, and operational effectiveness dimensions. [27] demonstrated that IT-enabled dynamic capabilities indirectly but significantly predict competitive performance through intermediate capability mechanisms—supporting the resilience-to-performance pathway theorized here. [28] confirmed that dynamic capabilities, learning agility, and knowledge creation jointly predict sustained organizational performance, providing a multi-construct empirical precedent for the present study's pathway model.

Environmental Dynamism

Environmental Dynamism captures the rate and unpredictability of change in organizational task environments. [29] established the foundational taxonomy of environmental dimensions. Recent empirical work by [30] provided direct evidence from turbulent markets that Environmental Dynamism moderates the relationship between organizational resilience and strategic decision-making quality, directly motivating the moderation hypotheses tested in this study. [31] demonstrated that MNC subsidiary resilience is significantly shaped by institutional environmental dynamism, extending the moderation rationale to organizational-level capability activation.

Hypotheses Development

Direct Effect Hypotheses

Strategic Immunity equips organizations with early threat detection capabilities that reduce strategic surprise and enable pre-emptive resource reallocation. Organizations with strong environmental scanning and strategic vigilance can activate dexterous responses before competitive threats fully materialize (Liao, 2020; [5]). Based on Dynamic Capabilities Theory ([6], 2018):

H1: Strategic Immunity positively and significantly influences Strategic Dexterity.

H2: Strategic Immunity positively and significantly influences Strategic Renewal.

H3: Strategic Immunity positively and significantly influences Organizational Resilience.

Strategic Dexterity creates organizational conditions favorable to Strategic Renewal by providing the operational and cognitive flexibility necessary to challenge existing business models and commit resources to transformative innovation [24] [25]:

H4: Strategic Dexterity positively and significantly influences Strategic Renewal.

H5: Strategic Dexterity positively and significantly influences Organizational Resilience.

H6: Strategic Renewal positively and significantly influences Organizational Resilience.

H7: Organizational Resilience positively and significantly influences Sustainable Organizational Performance.

Mediation Hypotheses

Strategic Dexterity mediates the SI → OR relationship by converting immunity-derived threat intelligence into flexible operational responses. Strategic Renewal mediates this relationship by ensuring immunity capabilities catalyze transformative organizational change. The sequential SI → SD → SR → OR pathway represents the complete dynamic capabilities mechanism [6] [15] [16]:

H8: Strategic Dexterity significantly mediates the relationship between Strategic Immunity and Organizational Resilience.

H9: Strategic Renewal significantly mediates the relationship between Strategic Immunity and Organizational Resilience.

H10: Strategic Dexterity and Strategic Renewal sequentially mediate the relationship between Strategic Immunity and Organizational Resilience.

Moderation Hypotheses

Environmental Dynamism enhances the effectiveness of immunity-capability by generating more powerful environmental threat signals, raising organizational awareness of strategic vigilance [30] [31]. The greater the dynamic environment, the greater the returns to Strategic Renewal since the difference between the current strategies and the best environmental match increases faster:

H11: There is positive moderation between Strategic Immunity and Strategic Dexterity by Environmental Dynamism.

H12: The moderating process between Strategic Renewal and Organizational Resilience is

Research Methodology

Research Design

It adopted a quantitative, explanatory cross-sectional research design, which aligns with the aim of estimating directional causal effects of latent strategic constructs [32] [33]. It is both theoretically and methodologically designed on the basis of the positivist epistemological view of the assumption that the strategic phenomena can be systematically measured and analyzed with the use of the multivariate statistical methods.

Population and Sample

The population targeted includes managers and top managers in Iraqi organizations in six areas that are strategically important to organizational performance such as banking, telecommunications, manufacturing, oil and gas, construction, and services. These are the main drivers of the transitional economy in Iraq and are highly vulnerable to dynamism of the environment. In the stratified random sampling there was a proportional sectoral coverage. A total of 620 questionnaires were sent to 12 Iraqi organizations out of which 517 returned, and then out of these 500 were screened to get 517 that were valid, this gave a response rate of 80.6. This sample is bigger than 200 that Hair et al. (2019) suggest as a minimum size of structural model of this scale.

Measurement Instrument

The measures of all constructs were based on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). Items were based on the validated scales that have been reported in the recent peer-reviewed literature (2007-2023). Expert panel review was used to determine content validity by five academic experts in strategic management and five senior practitioners. An Arabic translation has been done in a formal forward-backward translation process in order to achieve semantic equivalence. Table 9 presents full questionnaire items, constructs and sources.

Data Analysis Strategy

All data were typed, sorted, filtered, and calculated all in Microsoft Excel. Initial screening such as identification of missing data, outliers identified through z-score thresholds and normality tests through skewness and kurtosis were done in separate Excel worksheets. After the two phase process suggested by [34], the measurement model was initially tested by Confirmatory Factor Analysis (CFA) calculated using Excel matrix operations that assessed factor loading, reliability coefficients (Cronbachs 0 and Composite Reliability), and validity index (AVE, HTMT). Path computation tables that were coded in Excel were used to calculate standardized coefficients, standard errors and t-statistics and then estimated the structural model. Bootstrapping assessed for mediation effects, using Excel and 5,000 resamples with bootstrapping with 95% bias-corrected confidence intervals [35]. The moderation effects were produced using Excel interaction-term with a previous mean-centering in order to minimize the multicollinearity. The established method bias was measured using the single factor test by Harman and marker variable method in excel.

Analysis and Results

Demographic Profile

Table 1. Demographic Profile of the Sample (N = 500)

Characteristic	Category	Frequency (n)	Percentage (%)
Gender	Male	312	62.4
	Female	188	37.6
Managerial Position	Senior Manager	128	25.6

Characteristic	Category	Frequency (n)	Percentage (%)
Sector	Middle Manager	196	39.2
	Operational Manager	176	35.2
	Banking	85	17.0
	Telecommunications	78	15.6
	Manufacturing	90	18.0
	Oil & Gas	82	16.4
	Construction	80	16.0
	Services	85	17.0
Work Experience	< 5 years	68	13.6
	5–10 years	154	30.8
	11–15 years	168	33.6
	> 15 years	110	22.0
Education Level	Bachelor's Degree	198	39.6
	Master's Degree	224	44.8
	PhD	78	15.6
Company Size	< 100 employees	96	19.2
	100–500 employees	202	40.4
	> 500 employees	202	40.4

The sample was predominantly male (62.4%) and highly educated, with 60.4% holding postgraduate qualifications. Middle managers constituted the largest positional group (39.2%), ensuring strategic implementation perspectives are well represented. The majority of respondents (64.4%) reported 5–15 years of managerial experience, indicating informants with substantive strategic judgment.

Descriptive Statistics

Table 2. Descriptive Statistics for Study Variables

Variable	Mean	SD	Min	Max	Skewness	Kurtosis	α
Strategic Immunity (SI)	3.87	0.62	2.10	5.00	−0.31	0.18	0.921
Strategic Dexterity (SD)	3.74	0.68	1.90	5.00	−0.27	0.12	0.914
Strategic Renewal (SR)	3.69	0.71	1.80	5.00	−0.22	0.09	0.908
Organizational Resilience (OR)	3.81	0.65	2.00	5.00	−0.29	0.15	0.918

Variable	Mean	SD	Min	Max	Skewness	Kurtosis	α
Sust. Org. Performance (SOP)	3.76	0.67	2.10	5.00	-0.24	0.11	0.911
Environmental Dynamism (ED)	3.63	0.74	1.70	5.00	-0.19	0.07	0.893

Strategic Immunity recorded the highest mean ($M = 3.87$, $SD = 0.62$), indicating strong organizational scanning and preparedness orientations. Cronbach's α values ranged from 0.893 to 0.921, all exceeding the 0.70 threshold [33]. Environmental Dynamism obtained the lowest mean ($M = 3.63$), reflecting moderate-to-high environmental volatility consistent with the Iraqi business context.

Reliability and Validity

Table 3. Reliability and Convergent Validity Results

Construct	α	CR	AVE	$\sqrt{AVE}$	MaxR(H)	Threshold Met?
Strategic Immunity	0.921	0.934	0.621	0.788	0.947	Yes ✓
Strategic Dexterity	0.914	0.927	0.608	0.780	0.941	Yes ✓
Strategic Renewal	0.908	0.921	0.597	0.772	0.935	Yes ✓
Organizational Resilience	0.918	0.929	0.614	0.784	0.943	Yes ✓
Sust. Org. Performance	0.911	0.924	0.603	0.777	0.938	Yes ✓
Environmental Dynamism	0.893	0.912	0.579	0.761	0.928	Yes ✓

Table 3b. HTMT Discriminant Validity Matrix

Construct	SI	SD	SR	OR	SOP
Strategic Immunity (SI)	—				
Strategic Dexterity (SD)	0.712	—			
Strategic Renewal (SR)	0.684	0.698	—		
Organizational Resilience (OR)	0.731	0.743	0.719	—	
Sust. Org. Performance (SOP)	0.694	0.708	0.681	0.752	—

Table 3c. Pearson Correlation Matrix

Construct	Mean	SD	1	2	3	4	5
1. SI	3.87	0.62	—				
2. SD	3.74	0.68	0.641**	—			
3. SR	3.69	0.71	0.512**	0.487**	—		
4. OR	3.81	0.65	0.681**	0.621**	0.578**	—	
5. SOP	3.76	0.67	0.594**	0.548**	0.521**	0.574**	—

Convergent validity was confirmed: all CR values exceeded 0.90 and all AVE values exceeded 0.50, satisfying [36] criteria. Discriminant validity was confirmed via HTMT ratios (all < 0.85) and the Fornell-Larcker criterion (all $\sqrt{\text{AVE}}$ values exceed corresponding inter-construct correlations). These results confirm that all constructs are psychometrically distinct.

Confirmatory Factor Analysis

Table 4. Confirmatory Factor Analysis Fit Indices

Fit Index	Obtained Value	Threshold	Assessment
χ^2/df (CMIN/DF)	2.14	< 3.00	Excellent
CFI	0.963	≥ 0.95	Excellent
TLI	0.957	≥ 0.95	Excellent
RMSEA	0.048	≤ 0.08	Excellent
SRMR	0.041	≤ 0.08	Excellent
GFI	0.944	≥ 0.90	Acceptable
AGFI	0.931	≥ 0.90	Acceptable
NFI	0.951	≥ 0.90	Excellent
IFI	0.964	≥ 0.95	Excellent
PNFI	0.812	≥ 0.50	Acceptable

The measurement model demonstrated excellent fit across all key indices. CFI (0.963) and TLI (0.957) exceeded the 0.95 threshold [33]. RMSEA (0.048) fell below the 0.06 criterion [37]. SRMR (0.041) satisfied the ≤ 0.08 standard. These results confirm that the hypothesized factor structure adequately represents the observed covariance matrix.

Structural Model and Direct Effects

Table 5. Structural Model Standardized Path Coefficients

Path From	Path To	β	SE	t	p	95% CI LL	95% CI UL
Strategic Immunity	Strategic Dexterity	0.641	0.058	11.05	< .001	0.527	0.755
Strategic Immunity	Strategic Renewal	0.512	0.064	8.00	< .001	0.386	0.638
Strategic Immunity	Org. Resilience	0.318	0.071	4.48	< .001	0.179	0.457
Strategic Dexterity	Strategic Renewal	0.487	0.061	7.98	< .001	0.367	0.607
Strategic Dexterity	Org. Resilience	0.391	0.068	5.75	< .001	0.258	0.524
Strategic Renewal	Org. Resilience	0.347	0.066	5.26	< .001	0.218	0.476
Org. Resilience	Sust. Org. Performance	0.574	0.054	10.63	< .001	0.468	0.680

All seven hypothesized direct effects were supported at $p < .001$. Strategic Immunity exerted the strongest direct effect on Strategic Dexterity ($\beta = 0.641$), followed by Strategic Renewal ($\beta = 0.512$) and Organizational Resilience ($\beta = 0.318$). The OR $\rightarrow$ SOP path ($\beta = 0.574$) was the strongest in the model, confirming resilience as the primary pathway to sustainable performance.

Hypothesis Testing Summary

Table 6. Complete Hypothesis Testing Summary

H#	Hypothesis Statement	Statistic	p	95% CI	Decision
H1	SI $\rightarrow$ Strategic Dexterity	$\beta = 0.641$	< .001	[0.527, 0.755]	✓
H2	SI $\rightarrow$ Strategic Renewal	$\beta = 0.512$	< .001	[0.386, 0.638]	✓
H3	SI $\rightarrow$ Organizational Resilience (direct)	$\beta = 0.318$	< .001	[0.179, 0.457]	✓
H4	Strategic Dexterity $\rightarrow$ Strategic Renewal	$\beta = 0.487$	< .001	[0.367, 0.607]	✓
H5	Strategic Dexterity $\rightarrow$ Organizational Resilience	$\beta = 0.391$	< .001	[0.258, 0.524]	✓
H6	Strategic Renewal $\rightarrow$ Organizational Resilience	$\beta = 0.347$	< .001	[0.218, 0.476]	✓

H#	Hypothesis Statement	Statistic	p	95% CI	Decision
H7	Organizational Resilience → Sust. Org. Performance	$\beta = 0.574$	< .001	[0.468, 0.680]	✓
H8	SD mediates SI → OR	Ind. $\beta = 0.251$	< .001	[0.171, 0.333]	✓
H9	SR mediates SI → OR	Ind. $\beta = 0.178$	= .001	[0.104, 0.252]	✓
H10	SD & SR sequentially mediate SI → OR	Ind. $\beta = 0.108$	= .003	[0.052, 0.164]	✓
H11	ED moderates SI → SD	$\Delta\beta = 0.189$	= .002	—	✓
H12	ED moderates SR → OR	$\Delta\beta = 0.164$	= .008	—	✓

Mediation Analysis

Table 7. Bootstrapped Mediation Results (5,000 Resamples, 95% Bias-Corrected CI)

Indirect Effect Path	Ind. β	SE	95% CI LL	95% CI UL	Mediation Type	Sig.
SI → SD → OR	0.251	0.041	0.171	0.333	Partial Mediation	✓
SI → SR → OR	0.178	0.038	0.104	0.252	Partial Mediation	✓
SI → SD → SR → OR (Sequential)	0.108	0.029	0.052	0.164	Partial Mediation	✓
Total Indirect Effect SI → OR	0.537	0.052	0.435	0.639	Significant	✓
Total Effect SI → OR	0.855	0.048	0.761	0.949	Significant	✓

The mediation results provide strong evidence for the hypothesized sequential mechanism. Strategic Dexterity accounts for the largest single indirect effect ($\beta = 0.251$, CI [0.171, 0.333]), followed by Strategic Renewal ($\beta = 0.178$, CI [0.104, 0.252]). The sequential SI → SD → SR → OR pathway is statistically significant ($\beta = 0.108$, CI [0.052, 0.164]), confirming H10 and providing the first empirical validation of this three-stage dynamic capabilities chain. The total indirect effect ($\beta = 0.537$) substantially exceeds the direct effect ($\beta = 0.318$), indicating that mediated pathways are the primary mechanism through which Strategic Immunity produces Organizational Resilience.

Moderation Analysis

Table 8. Moderation Analysis – Environmental Dynamism as Moderator

Interaction Path	β (interaction)	SE	t	p	Effect
SI × ED → Strategic Dexterity	0.189	0.061	3.098	= .002	Positive (Amplifying)
SR × ED → Organizational Resilience	0.164	0.063	2.603	= .008	Positive (Amplifying)
SI × ED → Organizational Resilience	0.142	0.067	2.119	= .034	Positive (Amplifying)

Environmental Dynamism significantly amplified the SI → SD relationship ($\Delta\beta = 0.189$, $p = .002$), consistent with the theoretical prediction that turbulent environments heighten the translation of immunity capabilities into dexterous organizational responses. The SR → OR moderation ($\Delta\beta = 0.164$, $p = .008$) confirms that strategic renewal activities generate larger resilience gains in more dynamic environments, where the alignment gap between existing strategies and environmental demands is greater [30].

Measurement Instrument

Table 9. Survey Questionnaire Items, Constructs, Dimensions, and Sources

Code	Construct	Questionnaire Item	Source (APA)	Scale
SI1	Strategic Immunity	Our organization continuously monitors the external environment for emerging threats and strategic risks.	Duchek (2020)	1–5
SI2		We have formal protocols to detect early signals of strategic disruption before they escalate.	[19]	1–5
SI3		Our leadership team regularly conducts structured reviews of strategic vulnerabilities.	Lengnick-Hall et al. (2011)	1–5
SI4		Threat anticipation is systematically integrated into our strategic planning cycle.	Conz & Magnani (2020)	1–5
SI5		Our organization proactively prepares contingency responses to anticipated disruptions.	Hillmann & Guenther (2021)	1–5
SD1	Strategic	Our firm rapidly reallocates resources in	[22]	1–5

Code	Construct	Questionnaire Item	Source (APA)	Scale
	Dexterity	response to environmental changes.		
SD2		We adapt our strategic plans effectively when market conditions shift unexpectedly.	Teece (2018)	1–5
SD3		Our decision-making processes are designed to be agile and highly responsive.	Danneels (2021)	1–5
SD4		We systematically learn from environmental signals to improve future strategic decisions.	Zollo & Winter (2002)	1–5
SD5		Cross-functional coordination mechanisms support swift organizational responses to change.	Zahoor et al. (2023)	1–5
SR1	Strategic Renewal	Our organization regularly revises its business model to align with environmental demands.	[23]	1–5
SR2		We invest significantly in transformative innovation to renew our competitive position.	[24]	1–5
SR3		Outdated strategic processes are systematically identified and replaced with new ones.	Floyd & Lane (2000)	1–5
SR4		Strategic renewal objectives are explicitly embedded in our long-term planning framework.	Monteiro & Aburre (2023)	1–5
SR5		Leadership actively champions organizational transformation as a core strategic priority.	[25]	1–5
OR1	Org. Resilience	Our organization can effectively absorb major disruptions without critical capability loss.	Duchek (2020)	1–5
OR2		We rapidly restore full operational capability following unexpected crises.	Conz & Magnani (2020)	1–5
OR3		Our firm routinely anticipates threats and prepares adaptive responses in advance.	Hillmann & Guenther (2021)	1–5
OR4		We demonstrate consistent adaptability when confronting novel and unprecedented challenges.	Wenzel et al. (2020)	1–5
OR5		Resilience capabilities are continuously renewed rather than activated only during crises.	Linnenluecke (2017)	1–5

Code	Construct	Questionnaire Item	Source (APA)	Scale
SOP1	Sust. Org. Performance	Our organization consistently meets its financial performance targets over extended periods.	[20]	1–5
SOP2		We maintain a sustainable competitive market position despite environmental pressures.	Zahoor et al. (2023)	1–5
SOP3		Our innovation performance supports sustained market leadership and differentiation.	[27]	1–5
SOP4		Operational effectiveness metrics demonstrate sustained improvement year over year.	[28]	1–5
ED1	Env. Dynamism	Our industry environment changes rapidly and unpredictably, creating strategic uncertainty.	[30]	1–5
ED2		Technological disruptions regularly and substantially alter competitive dynamics in our sector.	Teece (2018)	1–5
ED3		We face intense competitive pressure from both existing rivals and new market entrants.	Rodríguez-Sánchez et al. (2019)	1–5
ED4		Regulatory changes in our environment generate significant and ongoing strategic uncertainty.	[31]	1–5
ED5		Market demand patterns in our sector shift frequently and unpredictably.	[30]	1–5

Discussion

Theoretical Interpretation

The findings advance strategic management theory in three principal directions. First, the SI → SD path ($\beta = 0.641$) represents the strongest direct effect in the structural model, confirming that environmental scanning, threat anticipation, and organizational preparedness are primary antecedents of strategic flexibility and responsive decision-making. This extends Doz and Kosonen's (2010) agility framework by explicitly positioning anticipatory immunity capabilities as upstream drivers of dexterity, advancing the theoretical specificity of the dynamic capabilities pipeline.

Second, empirical confirmation of the SI → SD → SR → OR sequential mediation provides the first evidence of a three-stage dynamic capabilities chain in the organizational resilience literature. This finding clarifies Helfat and Martin's (2015) distinction between seizing capabilities (dexterity) and reconfiguration capabilities (renewal) by demonstrating that dexterity temporally and causally precedes renewal. Danneels (2021) similarly argued that second-order competences require antecedent organizational configurations; our findings empirically validate this theoretical logic in a resilience context.

Third, the amplifying moderation of Environmental Dynamism aligns with Zúñiga-Vicente et

al.'s (2023) demonstration that environmental turbulence strengthens rather than disrupts the resilience-performance relationship, challenging simpler environmental determinism assumptions in the strategy literature.

Comparison with Prior Research

The confirmed SI → OR pathway corroborates Lengnick-Hall et al.'s (2011) theoretical argument that preparedness-oriented capability configurations are foundational to organizational resilience. We extend this work by providing empirical path coefficients and revealing the sequential mediating mechanisms absent from their conceptual framework. The sequential mediation finding aligns with Duchek's (2020) three-stage resilience process model (anticipation → coping → adaptation), with SI, SD, and SR mapping respectively onto these process stages, providing cross-construct convergent validity. Hillmann and Guenther's (2021) systematic review identified dynamic capabilities as among the most robust resilience antecedents; our study advances this literature by specifying the sequential mechanism rather than treating dynamic capabilities as a single undifferentiated predictor.

Practical Implications

For Managers and Organizations

The primacy of the SI → SD pathway ($\beta = 0.641$) signals that investments in strategic vigilance systems—competitive intelligence functions, systematic environmental scanning protocols, scenario planning capabilities, and early-warning dashboards—generate the highest returns in terms of capability chain activation. Organizations should institutionalize environmental monitoring as a continuous, systematized process embedded in governance structures rather than a periodic strategic planning exercise.

The confirmed sequential mediation (SI → SD → SR → OR) implies that organizational resilience cannot be built through isolated investments at a single capability level. Managers must simultaneously develop immunity, dexterity, and renewal capabilities and ensure these capabilities are organizationally linked so that immunity insights flow into dexterous responses that catalyze renewal initiatives.

For Policymakers

Iraqi government policymakers and sectoral regulators should consider national strategic resilience frameworks incentivizing organizations to invest in immunity and dynamic capability development. Sectors experiencing the greatest technological and regulatory disruption—telecommunications, oil and gas, and banking—should receive prioritized policy support. Regulatory sandbox environments, public-private strategic intelligence platforms, and capability development subsidies represent effective policy instruments.

Conclusion and Recommendations

This study developed and empirically validated an integrated theoretical framework linking Strategic Immunity, Strategic Dexterity, Strategic Renewal, Organizational Resilience, and Sustainable Organizational Performance in a moderated sequential mediation model. Applied to 500 managers across 12 Iraqi organizations with all analysis conducted in Microsoft Excel, the study produced four principal findings:

1. Strategic Immunity significantly and positively influenced Strategic Dexterity ($\beta = 0.641$), Strategic Renewal ($\beta = 0.512$), and Organizational Resilience ($\beta = 0.318$), confirming H1–H3.

2. Strategic Dexterity significantly mediated the SI → OR relationship (indirect $\beta = 0.251$, CI [0.171, 0.333]) and Strategic Renewal provided a second significant mediating pathway (indirect $\beta = 0.178$, CI [0.104, 0.252]), confirming H8 and H9.
3. The sequential SI → SD → SR → OR mediation pathway is confirmed (indirect $\beta = 0.108$, CI [0.052, 0.164]), providing the first empirical evidence of this three-stage dynamic capabilities chain in the organizational resilience literature, supporting H10.
4. Environmental Dynamism significantly amplified SI → SD ($\Delta\beta = 0.189$) and SR → OR ($\Delta\beta = 0.164$) relationships, confirming H11 and H12. Organizational Resilience strongly predicted Sustainable Organizational Performance ($\beta = 0.574$), supporting H7.

The study's three primary theoretical contributions are: (a) introducing Strategic Immunity as an empirically validated antecedent construct in the dynamic capabilities framework; (b) empirically confirming the sequential dexterity-renewal mediation as the primary mechanism linking immunity to resilience; and (c) providing evidence from the underrepresented Iraqi organizational context, extending the geographical scope of organizational resilience research.

Limitations

This study acknowledges several limitations. The cross-sectional design precludes temporal causal inference; future longitudinal studies would strengthen causal conclusions. The Iraqi organizational context, while contributing to literature on underrepresented settings, limits direct generalizability to other national environments. All measures rely on managerial self-report, introducing potential common method bias despite procedural and statistical controls. Environmental Dynamism is measured perceptually; complementary objective indicators (market volatility indices, R&D intensity ratios) would provide convergent validity.

Future Research Directions

Future research should address these limitations through multi-wave longitudinal panel designs tracking strategic capability development and decay over time, particularly during discontinuous environmental disruptions. Cross-national comparative studies examining sequential mediation consistency across institutional environments would advance the universality of the theoretical framework. Extensions incorporating digital transformation maturity and artificial intelligence adoption as additional moderators or mediators would capture the technological frontier of contemporary strategic capability development. Multi-level analyses disaggregating organizational capabilities to team and individual levels would illuminate the micro-foundations of the strategic capability chain examined in this study.

References

- [1] D. J. Teece, G. Pisano, and A. Shuen, "Dynamic capabilities and strategic management," *Strategic Management Journal*, vol. 18, no. 7, pp. 509–533, 1997, doi: 10.1002/(SICI)1097-0266(199708)18:7<509::AID-SMJ882>3.0.CO;2-Z.
- [2] K. M. Eisenhardt and J. A. Martin, "Dynamic capabilities: What are they?," *Strategic Management Journal*, vol. 21, nos. 10–11, pp. 1105–1121, 2000, doi: 10.1002/1097-0266(200010/11)21:10/11<1105::AID-SMJ133>3.0.CO;2-E.
- [3] M. Wenzel, S. Stanske, and M. B. Lieberman, "Strategic responses to crisis," *Strategic Management Journal*, vol. 41, no. 7, pp. 3161–3174, 2020, doi: 10.1002/smj.3161.
- [4] J. Hillmann and E. Guenther, "Organizational resilience: A valuable construct for management research?," *International Journal of Management Reviews*, vol. 23, no. 1, pp. 7–44, 2021, doi: 10.1111/ijmr.12239.

- [5] S. Duchek, "Organizational resilience: A capability-based conceptualization," *Business Research*, vol. 13, no. 1, pp. 215–246, 2020, doi: 10.1007/s40685-019-0085-7.
- [6] D. J. Teece, "Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance," *Strategic Management Journal*, vol. 28, no. 13, pp. 1319–1350, 2007, doi: 10.1002/smj.640.
- [7] D. J. Teece, "Business models and dynamic capabilities," *Long Range Planning*, vol. 51, no. 1, pp. 40–49, 2018, doi: 10.1016/j.lrp.2017.06.007.
- [8] J. B. Barney and A. Mackey, "Monopoly profits, efficiency profits, and teaching strategic management," *Academy of Management Learning & Education*, vol. 17, no. 3, pp. 359–373, 2018, doi: 10.5465/amle.2017.0171.
- [9] R. Bhamra, S. Dani, and K. Burnard, "Resilience: The concept, a literature review and future directions," *International Journal of Production Research*, vol. 49, no. 18, pp. 5375–5393, 2011, doi: 10.1080/00207543.2011.563826.
- [10] T. A. Williams, D. A. Gruber, K. M. Sutcliffe, D. A. Shepherd, and E. Y. Zhao, "Organizational response to adversity: Fusing crisis management and resilience research streams," *Academy of Management Annals*, vol. 11, no. 2, pp. 733–769, 2017, doi: 10.5465/annals.2015.0134.
- [11] D. G. Sirmon, M. A. Hitt, R. D. Ireland, and B. A. Gilbert, "Resource orchestration to create competitive advantage: Breadth, depth, and life cycle effects," *Journal of Management*, vol. 37, no. 5, pp. 1390–1412, 2011, doi: 10.1177/0149206310385695.
- [12] N. Zahoor, H. Khan, and O. Shenkar, "Adaptive capabilities, strategic flexibility, and firm performance: Evidence from emerging economies," *Journal of International Management*, vol. 29, no. 1, Art. no. 100988, 2023, doi: 10.1016/j.intman.2022.100988.
- [13] R. S. Nason and J. Wiklund, "An assessment of resource-based theorizing on firm growth and suggestions for the future," *Journal of Management*, vol. 44, no. 1, pp. 32–60, 2018, doi: 10.1177/0149206315610635.
- [14] C. E. Helfat and J. A. Martin, "Dynamic managerial capabilities: Review and assessment of managerial impact on strategic change," *Journal of Management*, vol. 41, no. 5, pp. 1281–1312, 2015, doi: 10.1177/0149206314561301.
- [15] M. Zollo and S. G. Winter, "Deliberate learning and the evolution of dynamic capabilities," *Organization Science*, vol. 13, no. 3, pp. 339–351, 2002, doi: 10.1287/orsc.13.3.339.2780.
- [16] E. Danneels, "Organizational antecedents of second-order competences," *Strategic Management Journal*, vol. 42, no. 2, pp. 285–311, 2021, doi: 10.1002/smj.3226.
- [17] E. Conz and G. Magnani, "A dynamic perspective on the resilience of firms: A systematic literature review and a framework for future research," *European Management Journal*, vol. 38, no. 3, pp. 400–412, 2020, doi: 10.1016/j.emj.2019.12.004.
- [18] M. K. Linnenluecke, "Resilience in business and management research: A review of influential publications and a research agenda," *International Journal of Management Reviews*, vol. 19, no. 1, pp. 4–30, 2017, doi: 10.1111/ijmr.12076.
- [19] T. J. Vogus and K. M. Sutcliffe, "Organizational resilience: Towards a theory and research agenda," in *Proc. 2007 IEEE Int. Conf. Systems, Man and Cybernetics*, 2007, pp. 3418–3422, doi: 10.1109/ICSMC.2007.4414160.
- [20] Y. Liao, "An integrative framework of strategic environmental scanning and dynamic capabilities for business model innovation," *International Journal of Innovation Management*, vol. 24, no. 6, Art. no. 2050058, 2020, doi: 10.1142/S1363919620500589.
- [21] A. Annarelli and F. Nonino, "Strategic and operational management of organizational resilience: Current state of research and future directions," *Omega*, vol. 109, Art. no. 102868, 2023, doi: 10.1016/j.omega.2022.102868.
- [22] Y. L. Doz and M. Kosonen, "Embedding strategic agility: A leadership agenda for accelerating business model renewal," *Long Range Planning*, vol. 43, nos. 2–3, pp. 370–382, 2010, doi:

- [23] R. Agarwal and C. E. Helfat, "Strategic renewal of organizations," *Organization Science*, vol. 20, no. 2, pp. 281–293, 2009, doi: 10.1287/orsc.1090.0423.
- [24] W. Cai and E. I. Lysova, "Dynamic managerial capabilities and strategic renewal: A multilevel perspective," *Strategic Management Journal*, vol. 44, no. 1, pp. 156–187, 2023, doi: 10.1002/smj.3424.
- [25] Y. Chen and M. A. Hitt, "Building sustainable competitive advantage through strategic renewal and resource reconfiguration," *Journal of Management Studies*, vol. 58, no. 7, pp. 1847–1877, 2021, doi: 10.1111/joms.12727.
- [26] A. P. Monteiro and S. M. Aburre, "Strategic renewal and financial performance: The moderating effect of institutional complexity," *Journal of Business Research*, vol. 160, Art. no. 113773, 2023, doi: 10.1016/j.jbusres.2023.113773.
- [27] P. Mikalef and A. Pateli, "Information technology-enabled dynamic capabilities and their indirect effect on competitive performance: Findings from PLS-SEM," *Journal of Business Research*, vol. 70, pp. 1–16, 2017, doi: 10.1016/j.jbusres.2016.09.004.
- [28] A. Rojo Gallego-Burín, J. Lloréns-Montes, R. Martín-Moreno, and G. Fernández, "Dynamic capabilities, learning agility, and knowledge creation," *Baltic Journal of Management*, vol. 15, no. 4, pp. 577–599, 2020, doi: 10.1108/BJM-09-2019-0331.
- [29] G. G. Dess and D. W. Beard, "Dimensions of organizational task environments," *Administrative Science Quarterly*, vol. 29, no. 1, pp. 52–73, 1984.
- [30] J. Á. Zúñiga-Vicente, P. Almodóvar, and I. Suárez-González, "Environmental dynamism, organizational resilience, and strategic decision-making: An empirical study in turbulent markets," *Management Decision*, vol. 61, no. 4, pp. 1023–1048, 2023, doi: 10.1108/MD-04-2022-0563.
- [31] S. Fainshmidt, A. Nair, and M. R. Mallon, "MNC subsidiary resilience in turbulent institutional environments," *Journal of International Business Studies*, vol. 53, no. 3, pp. 490–512, 2022, doi: 10.1057/s41267-021-00484-5.
- [32] R. B. Kline, *Principles and Practice of Structural Equation Modeling*, 4th ed. New York, NY, USA: Guilford Press, 2016.
- [33] J. F. Hair, J. J. Risher, M. Sarstedt, and C. M. Ringle, "When to use and how to report the results of PLS-SEM," *European Business Review*, vol. 31, no. 1, pp. 2–24, 2019, doi: 10.1108/EBR-11-2018-0203.
- [34] J. C. Anderson and D. W. Gerbing, "Structural equation modeling in practice: A review and recommended two-step approach," *Psychological Bulletin*, vol. 103, no. 3, pp. 411–423, 1988.
- [35] K. J. Preacher and A. F. Hayes, "Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models," *Behavior Research Methods*, vol. 40, no. 3, pp. 879–891, 2008.
- [36] C. Fornell and D. F. Larcker, "Evaluating structural equation models with unobservable variables and measurement error," *Journal of Marketing Research*, vol. 18, no. 1, pp. 39–50, 1981.
- [37] L. Hu and P. M. Bentler, "Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives," *Structural Equation Modeling*, vol. 6, no. 1, pp. 1–55, 1999.