Organizational Entrepreneurship and Strategic Intelligence in Public Institutions: The Role of Structural Flexibility, Leadership, and Culture

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Abstract

Public sector institutions need strategic agility to meet national development goals. This study examines how structural flexibility, entrepreneurial leadership, and culture shape strategic intelligence (SI) in Saudi public administration. Data were collected from 451 upper- and middle-level managers in Riyadh. SEM showed excellent fit (CFI=0.96, RMSEA=0.045). Entrepreneurial culture (β=0.58) and leadership (β=0.52) were the strongest SI predictors. Age (β=–0.22) and experience (β=–0.25) significantly weakened the OE-SI link. These patterns reveal a clear "seniority resistance" effect. Findings extend corporate entrepreneurship theory to public governance and offer practical pathways for Vision 2030 reforms.

Key words: Organizational entrepreneurship; Strategic intelligence; Public sector innovation; Public value; Administrative reform; Saudi Arabia

Jel Codes Classification : M13, D83, O38, H83, O53

ريادة الأعمال التنظيمية والذكاء الاستراتيجي في المؤسسات العامة: دور المرونة الهيكلية والقيادة والثقافة

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ملخص

تحتاج مؤسسات القطاع العام إلى قدر عالٍ من الرشاقة الاستراتيجية لتحقيق أهداف التنمية الوطنية. تبحث هذه الدراسة في كيفية تأثير المرونة الهيكلية والقيادة الريادية والثقافة الريادية على الذكاء الاستراتيجي في الإدارة العامة السعودية. جُمعت البيانات من 451 مديرًا في المستويات العليا والوسطى في مدينة الرياض. وأظهرت نمذجة المعادلات الهيكلية ملاءمة ممتازة للنموذج (CFI=0.96, RMSEA=0.045). كما تبين أن الثقافة الريادية (β=0.58) والقيادة الريادية (β=0.52) هما أقوى المتنبئات بالذكاء الاستراتيجي. وأظهرت نتائج التحليل التفاعلي أن العمر (β=−0.22) والخبرة (β=−0.25) يضعفان بشكل ملحوظ العلاقة بين ريادة الأعمال التنظيمية والذكاء الاستراتيجي، مما يشير إلى وجود تأثير واضح لما يمكن تسميته بـ "مقاومة الأقدمية". وتُسهم النتائج في توسيع نظرية الريادة المؤسسية لتشمل الحوكمة العامة، كما تقدم مسارات عملية لدعم إصلاحات رؤية السعودية 2030.

الكلمات المفاتيح: ريادة الأعمال التنظيمية؛ الذكاء الاستراتيجي؛ الابتكار في القطاع العام؛ القيمة العامة؛ الإصلاح الإداري؛ المملكة العربية السعودية

التصنيف *Jel Codes Classification : M13, D83,* O38, H83, O53

I-Introduction:

Public institutions worldwide operate in an environment of unprecedented volatility, complexity, and rising citizen expectations. Traditional bureaucratic administrative models, characterized by rigid hierarchies and risk-averse cultures, are increasingly inadequate for addressing complex societal challenges and driving national development agendas (Mickahail & de Aquino, 2019). In response, a paradigm shift toward more agile, innovative, and strategically intelligent public governance has become a global imperative. This transformation is particularly salient in the Kingdom of Saudi Arabia, where Vision 2030 outlines an ambitious roadmap for a vibrant society, a thriving economy, and an ambitious nation objective that demand a radical reinvention of public sector capabilities, mindsets, and performance (Al-Mraykhi, 2022).

Within this transformative context, organizational entrepreneurship (OE) has emerged as a critical strategic lens and operational toolkit for public institutions. OE transcends mere internal innovation; it represents a holistic organizational capability for proactive opportunity recognition, resourceful value creation, and adaptive renewal under conditions of uncertainty (Zahra, 2023). It is operationalized through three interdependent dimensions: structural flexibility, which reduces bureaucratic inertia; entrepreneurial leadership, which inspires and champions change; and entrepreneurial culture, which fosters psychological safety for experimentation (Al-Fadli, 2022; Karim, 2024).

Concurrently, the concept of strategic intelligence (SI) has gained prominence as the essential cognitive foundation for effective public management. SI is the collective capacity to systematically gather, interpret, and synthesize information to anticipate future trends and formulate coherent, forward looking strategies (Al-Qadi, 2022). It encompasses well-defined strategy formulation and effective strategic implementation (Nafe, 2015).

The integration of OE and SI forms a potent synergy for public sector excellence. Scholarly inquiry suggests a recursive, reinforcing relationship: OE creates the organizational preconditions that enable high-level SI, while SI provides the strategic foresight that channels entrepreneurial energy toward impactful opportunities (Al-Athamneh, 2022; Na'ma, 2023). Preliminary evidence from private sector studies supports this link (Al-Fadli, 2022; Abu Rbeiha, 2023). However, a conspicuous research gap remains: there is a severe paucity of empirical research investigating the OE-SI relationship within public administration, particularly in the Arab Gulf states, and no study has disaggregated the specific effects of OE's core dimensions in this context.

Therefore, this study poses the central research question: What is the impact of organizational entrepreneurship dimensions (structural flexibility, entrepreneurial leadership, entrepreneurial culture) on the strategic intelligence of employees within public institutions in Riyadh, Saudi Arabia? By answering this question, the study provides empirically validated insights to inform leadership development and capacity building initiatives, directly contributing to the strategic human capital objectives of Vision 2030. This investigation addresses a critical public management question: What organizational capabilities enable bureaucratic institutions to develop the strategic intelligence necessary to translate ambitious national visions into tangible public value?

I-1- Positioning within Public Management Debate

This study is situated within the evolving public management paradigm that shifts focus from traditional bureaucratic administration toward public value creation (Moore, 1995). In this context, organizational entrepreneurship (OE) is reconceptualized not merely as an internal capability but as a vital mechanism for public sector entities to proactively identify societal opportunities, innovate in service delivery, and strategically renew their value proposition to citizens. Strategic Intelligence (SI) is correspondingly framed as the essential cognitive infrastructure that enables public institutions to anticipate complex societal needs and align entrepreneurial activities with public value outcomes. By investigating the OE-SI nexus, this research directly engages with core public management questions concerning the

organizational and cognitive drivers that enable public institutions to enhance their strategic agility and value-generation capacity in pursuit of national development goals, thereby addressing a critical gap in public administration literature.

II- Literature Review 2:

This section provides a critical synthesis of prior empirical research related to the core constructs of this study organizational entrepreneurship (OE) and strategic intelligence (SI) and their interconnection. The review is organized thematically to establish the empirical foundation, highlight evolving insights, and identify the specific gap this study addresses.

II-1 Empirical Research on Organizational Entrepreneurship

Research on OE has explored its antecedents, manifestations, and outcomes across various sectors. In the Arab context, studies have increasingly focused on its role in public and semi-public organizations. Al-Da'jani (2023) investigated the requirements for achieving OE in Saudi universities, surveying 316 academic leaders. The study found a significant need for administrative, human, material, and technical enablers, with notable differences across universities and job titles, underscoring the context-dependent nature of OE implementation. Similarly, Karim (2024) examined the role of innovative leadership in fostering OE at a Libyan university, finding a strong positive relationship and concluding that leadership behaviors directly shape an organization's entrepreneurial capacity.

Studies have consistently linked OE to positive organizational outcomes. Ibrahim (2024) demonstrated that OE significantly enhances competitive advantage in knowledge-intensive sectors, such as telecommunications, by fostering innovation and strategic renewal. Earlier, Al-Shammari (2015) and Al-Saud (2024) provided evidence from the Iraqi banking and Jordanian ICT sectors, respectively, showing that OE correlates strongly with improved financial performance, growth, and strategic agility, moving organizations beyond traditional administrative limitations.

II-2 Empirical Research on Strategic Intelligence

In public institutions, SI is not merely a competitive tool but a vital governance capacity for anticipating societal trends, navigating political complexity, and aligning resources with public priorities. Empirical investigations into SI highlight its critical role as a cognitive and strategic resource. Research in the Middle East has examined its impact on various aspects of organizational effectiveness. Bani Yaseen (2021), in a study of Jordan's National Center for Security and Crisis Management, found that SI is a key determinant of strategic performance, enabling adaptability and continuous learning in high-stakes environments. In the Egyptian context, Eid (2023) demonstrated that SI plays a crucial role in developing the creativity and innovation skills of healthcare employees, establishing a clear link between strategic cognition and individual innovative capability.

Further studies confirm SI's value in complex and volatile settings. Al-Alimat (2024) identified that high levels of SI among managers in Jordanian pharmaceutical companies positively influence various crisis management approaches. Complementing this, Naji (2022) found that SI enhances crisis management effectiveness in university libraries. From a decision-making perspective, Al-Athamneh (2022) provided empirical evidence that SI significantly improves the quality and effectiveness of strategic decisions among public sector leaders in Jordan.

II-3 Research on the OE-SI Relationship

A limited but growing body of research directly examines the interplay between entrepreneurial and strategic intelligence constructs. The study most methodologically aligned with the current research is by Al-Fadli (2022), which investigated the impact of OE on achieving SI, with business intelligence as a mediator, in the Jordanian industrial sector (Arab Potash Company). Using a sample of 331 employees, the study found a statistically significant positive impact of OE on SI, both directly and indirectly. This offers crucial empirical support for the hypothesized relationship central to this study.

Other research has explored parts of this relationship within broader models. Abu Rbeiha (2023), focusing on Jordanian commercial banks, also found a significant positive effect of OE strategies on SI, mediated by business intelligence capabilities. Similarly, Al-Awamleh (2022) examined the impact of the entrepreneurial environment on SI in pharmaceutical firms, with human capital as a moderator, confirming the significant role of contextual entrepreneurial factors.

II-4 Identified Research Gap

The reviewed literature confirms the individual importance of OE and SI and provides preliminary, mostly private-sector evidence of their positive relationship. However, a significant and multi-faceted research gap remains:

II-5 Contextual Gap

The primary empirical evidence for the OE-SI link comes from private sector or specific industrial contexts (e.g., banking, potash, pharmaceuticals) in Jordan and Egypt. There is a conspicuous absence of focused studies within public institutions, particularly in the Gulf Cooperation Council (GCC) countries, despite the acute need for public sector innovation and strategic renewal articulated in visions like Saudi Arabia's Vision 2030.

II-5 Dimensional Analysis Gap

Previous studies, including Al-Fadli (2022) and Abu Rbeiha (2023), often treat OE as an aggregate construct. There is a lack of research that disaggregates the specific effects of individual OE dimensions (structural flexibility, entrepreneurial leadership, entrepreneurial culture) on SI. This limits practical guidance for managers seeking to know which lever to pull for maximum effect.

II-6 Demographic Analysis Gap

While several studies measure levels of OE and SI, few investigate how their relationship varies across key demographic variables (gender, age, education, experience) within a public sector management cohort. Understanding these nuances is vital for targeted human resource and leadership development policies.

Therefore, this study uniquely contributes by:

(1) Testing the OE-SI relationship within the under-researched context of Saudi public institutions,

(2) Disaggregating the impact of each core OE dimension, and

(3) Analyzing the moderating role of key demographic factors.

Theoretical Framework and Hypotheses

Building upon the empirical foundation established in the literature review, this section presents the integrated theoretical framework guiding the study. The framework synthesizes the Resource Based View (RBV) and strategic cognition theory to propose that Organizational Entrepreneurship (OE) functions as a dynamic capability that enhances an organization's strategic cognitive resource Strategic Intelligence (SI).

II-7 Conceptual Model

The study proposes a direct-effects model where the three dimensions of OE are posited as key antecedents to SI. Structural flexibility is theorized to enhance SI by improving information flow and accelerating decision-making. Entrepreneurial leadership is theorized to drive SI by setting a strategic vision and empowering exploratory behaviors. Entrepreneurial culture is theorized to foster SI by creating a safe environment for strategic questioning and knowledge sharing. The model further proposes that demographic characteristics may systematically influence the strength of these relationships.

II-8 Hypotheses

Based on the framework, the following hypotheses are formally stated:

H1: Organizational entrepreneurship has a positive and statistically significant effect on employees' strategic intelligence in public institutions.

H1a: Structural flexibility has a positive and statistically significant effect on employees' strategic intelligence.
H1b: Entrepreneurial leadership has a positive and statistically significant effect on employees' strategic intelligence.
H1c: Entrepreneurial culture has a positive and statistically significant effect on employees' strategic intelligence.
H2: There are statistically significant differences in the effect of organizational entrepreneurship on strategic intelligence attributable to employees' demographic characteristics (gender, age, educational level, and years of experience).

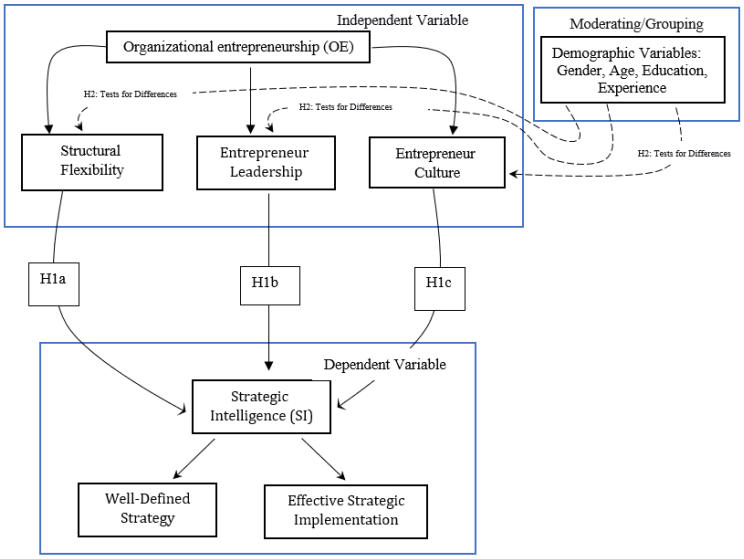

Figure 1. Conceptual Research Model

The model proposes that Organizational Entrepreneurship (OE), manifested through its three core dimensions, positively impacts Strategic Intelligence (SI), reflected in its two outcomes (Main Hypothesis H1 and sub-hypotheses H1-1, H1-2, H1-3). The strength or perception of this relationship is proposed to vary according to Demographic Variables (Main Hypothesis H2), indicated by the dotted moderation/grouping lines. The entire relationship is examined within the specific Context of Public Institutions in Riyadh, Saudi Arabia. This framework guides the empirical investigation, data collection instrument design, and analysis plan for this study.

IV-3 Methodology

IV-1Research Design and Context

This study employed a quantitative, cross-sectional, field survey design to examine the hypothesized relationships between organizational entrepreneurship (OE) dimensions and strategic intelligence (SI). A descriptive-analytical approach was adopted, where descriptive statistics summarized the sample and variable characteristics, and inferential statistics (multiple regression, t-tests, ANOVA) tested the causal posits derived from the theoretical framework. This design is optimal for capturing perceptions and testing relationships between constructs in a real-world organizational setting at a specific point in time (Creswell & Creswell, 2018). The research context was purposefully selected: public institutions in Riyadh, Saudi Arabia. This setting represents a critical arena for administrative reform under Vision 2030, where the need to cultivate entrepreneurial and strategic capabilities is most pressing, thereby ensuring the study's high practical relevance.
Sample and Data Collection Procedure

The target population comprised all upper and middle-management employees in public institutions within the Riyadh metropolitan area. Given the practical and administrative constraints of obtaining a completely random sample across dispersed government entities, this study employed a stratified purposive sampling approach to maximize representativity and theoretical relevance (Palinkas et al., 2015). The sampling frame was stratified along two dimensions: (1) institution type (ministries, independent authorities, general directorates) and (2) management level (upper vs. middle management). Institutional gatekeepers within each stratum facilitated access to qualified participants.

Data collection was conducted via an online, self-administered questionnaire distributed through secure institutional channels over a ten-week period. Participation was voluntary and anonymous. From the distributed surveys, 451 complete and usable responses were obtained, yielding a robust response rate of approximately 75%. A post-hoc comparison of the sample's demographic profile with aggregate public sector workforce data published by the Saudi Ministry of Civil Service (2023) revealed no statistically significant disparities in gender ratio, age distribution, or educational attainment, providing reasonable confidence in the sample's representativeness for analytical generalization.

IV-2 Measures and Instrument Development

The measurement instrument was a bilingual (Arabic/English) questionnaire structured in three parts. All multi-item constructs used a five-point Likert-type scale (1 = Strongly Disagree to 5 = Strongly Agree).

Part A: Demographic Profile. Given the practical and administrative constraints of obtaining a completely random sample across dispersed government entities, this study employed a stratified purposive sampling approach to maximize representativity and theoretical relevance (Palinkas et al., 2015). This approach is justified as it ensures the inclusion of key informants upper and middle managers who possess the strategic oversight necessary to reliably assess organizational-level constructs like OE and SI. The sampling frame was systematically stratified along two dimensions critical to public administration structure: (1) institution type (ministries, independent authorities, general directorates) to capture sectoral diversity, and (2) management level (upper vs. middle management) to incorporate hierarchical perspectives. Institutional gatekeepers within each stratum facilitated targeted access to qualified participants, ensuring the sample's relevance to the research question while enhancing the dependability and potential replicability of the sampling logic for similar public sector contexts.

Part B: Organizational Entrepreneurship (OE). This construct was operationalized through 15 items adapted and contextualized from the validated instrument developed by Al-Fadli (2022). The adaptation process involved translating items into Arabic and refining wording to reflect the specific context of Saudi public administration (e.g., replacing "company" with "institution," specifying "public services"). The items measured the three core theoretical dimensions, with sample items provided below to ensure conceptual clarity and replicability:

I. Structural Flexibility (5 items): Assessed the degree of decentralization, low formalization, and adaptive structure (e.g., "My institution's regulations can be adapted to meet new challenges").

II. Entrepreneurial Leadership (5 items): Captured leadership behaviors that inspire, empower, and champion innovation (e.g., "Senior leaders encourage us to take calculated risks to improve services").

III. Entrepreneurial Culture (5 items): Measured shared values supporting experimentation, tolerance for failure, and initiative (e.g., "The culture here views mistakes from trying new ideas as a learning opportunity, not a failure").

Part C: Strategic Intelligence (SI). This construct was measured using 10 items adapted from the same source (Al-Fadli, 2022), focusing on two outcome dimensions:

I. Well-Defined Strategy (5 items): Evaluated the clarity, coherence, and future orientation of institutional strategy (e.g., "My institution has a clear strategic vision that guides all departments").
II. Effective Strategic Implementation (5 items): Assessed the translation of strategy into actionable plans and results (e.g., "Strategic goals are effectively cascaded into measurable departmental and individual objectives").

IV-3 Instrument Validity, Pilot Testing, and Reliability

Content validity was rigorously established through a panel of three experts in public administration and strategic management, who assessed items for clarity, relevance to the public sector, and comprehensiveness in covering the construct domains. A pilot study with 35 managers confirmed comprehensibility and face validity. Reliability analysis on both pilot and final data consistently showed strong Cronbach's Alpha scores (all above 0.80), as reported in the Results, confirming internal consistency. The full item set is available upon request to facilitate replication.

IV-4 Data Analysis Techniques

Data screening and analysis were performed using IBM SPSS Statistics (Version 28) for preliminary, descriptive, and regression analyses. Structural Equation Modeling (SEM) was conducted using IBM AMOS (Version 28) to test the full theoretical model while accounting for measurement error.

The analysis followed a sequential, two-stage process aligned with best practices in quantitative social science research (Hair et al., 2019).

Stage 1: Preliminary and Descriptive Analysis (SPSS)

Data integrity checks were performed for missing values, outliers, and unengaged responses. No significant issues were detected. Descriptive statistics (frequencies, percentages, means, standard deviations) were computed to profile the sample and describe the central tendency and dispersion of all main study variables. Scale Reliability was assessed using Cronbach's Alpha coefficient for each multi-item dimension. Coefficients exceeding 0.70 were considered acceptable, with scores above 0.80 deemed good, confirming the instrument's internal consistency for hypothesis testing.

Stage 2: Inferential and SEM Analysis (SPSS & AMOS)

I. For hypotheses H1, H1a, H1b, H1c, multiple linear regression analysis was conducted in SPSS.
II. For hypothesis H2, moderated regression analysis was performed using the PROCESS macro in SPSS.
III. To test the overall theoretical model with greater rigor, Structural Equation Modeling (SEM) was conducted using AMOS. SEM allows for the simultaneous assessment of the measurement model (relationships between items and their constructs) and the structural model (relationships between constructs). Model fit was evaluated using multiple indices: Chi-square/degrees of freedom (χ^2/df), Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR), following established thresholds (Hair et al., 2019).

Results

IV-5 Sample Profile and Descriptive Statistics

The demographic characteristics of the 451 respondents are presented in Table 1. The sample comprised 59.2% males and 40.6% females. In terms of age, the largest cohorts were employees under 30 (33.0%) and those aged 30 to less than 40 (33.9%). Academically, the majority held a bachelor's degree (43.7%), followed by postgraduate degrees (21.1%). Regarding professional experience, the most frequent category was 2 to less than 5 years (31.0%), with a substantial representation of more experienced employees (27.9% had 5–10

years; 26.1% had 10+ years). This profile indicates a sample with significant diversity in key demographics, enhancing the richness of the analysis for hypothesis H2.

Table 1. Demographic Profile

Characteristic	Category	Frequency	Percentage
Gender	Male	267	59.2%
	Female	183	40.6%
Age	< 30 years	149	33.0%
	30–<40 years	153	33.9%
	40–<50 years	83	18.4%
	50+ years	65	14.4%
Educational Level	High School or less	69	15.3%
	Diploma	89	19.7%
	Bachelor's	197	43.7%
	Postgraduate	95	21.1%
Years of Experience	< 2 years	66	14.6%
	2–<5 years	140	31.0%
	5–<10 years	126	27.9%
	10–<15 years	71	15.7%
	15+ years	47	10.4%

IV-6 Descriptive Analysis of Main Variables

The descriptive statistics for the main study constructs, including means, standard deviations, and the ranking of dimensions, are summarized in Tables 2 and 3. Reliability analysis using Cronbach's Alpha confirmed strong internal consistency for all scales, with coefficients ranging from 0.86 to 0.92, well above the acceptable threshold of 0.70, confirming the instrument's robustness.

Table 2. Descriptive Statistics for Organizational Entrepreneurship (OE) Dimensions

OE Dimension	Mean	Std. Deviation	Application Level	Rank
Structural Flexibility	4.02	0.86	High	1
Entrepreneurial Culture	3.95	0.92	High	2
Entrepreneurial Leadership	3.87	0.95	High	3
OE Composite Score	3.95	0.91	High	

Table 3. Descriptive Statistics for Strategic Intelligence (SI) Dimensions

SI Dimension	Mean	Std. Deviation	Application Level	Rank
Effective Strategic Implementation	3.96	0.97	High	1
Well-Defined Strategy	3.81	1.04	High	2
SI Composite Score	3.88	1.00	High	

The results indicate a high perceived level of application for both OE (Mean = 3.95) and SI (Mean =3.88) within the sampled public institutions. Among OE dimensions, Structural Flexibility scored highest (M = 4.02), followed by Entrepreneurial Culture (M=3.95) and Entrepreneurial Leadership (M=3.87). For SI, Effective Strategic Implementation (M =3.96) was rated slightly higher than Well-Defined Strategy (M = 3.81).

IV 7- Hypothesis Testing

IV 7- 1 Testing Hypotheses H1, H1a, H1b, and H1c

To test the impact of OE on SI, a series of regression analyses were conducted. The results are presented in Tables 4 and 5.

Table 4. Regression Results for the Impact of Composite OE on SI (Hypothesis H1)

Predictor	B	t-value	p-value	R^2	Adjusted R^2	F-statistic (p-value)
OE Composite	0.732	62.351	0.000	0.896	0.896	3887.651 (0.000)

Table 5. Regression Results for the Impact of Individual OE Dimensions on SI (Hypotheses H1a, H1b, H1c)

Model / Hypothesis	Predictor (OE Dimension)	β	t-value	p-value	R^2	F-statistic (p-value)
Model 1 / H1a	Structural Flexibility	0.877	38.762	0.000	0.770	1502.490 (0.000)
Model 2 / H1b	Entrepreneurial Leadership	1.964	51.130	0.000	0.853	2614.252 (0.000)
Model 3 / H1c	Entrepreneurial Culture	2.045	55.099	0.000	0.871	3035.936 (0.000)

IV 7- 2 Interpretation of H1 Results

Hypothesis H1 is strongly supported. As shown in Table 4, the composite OE score has a large, statistically significant positive effect on SI ($\beta = 0.732$, $p < 0.001$). The regression model is highly significant ($F = 3887.651$, $p < 0.001$) and explains 89.6% ($R^2 = 0.896$) of the variance in Strategic Intelligence, indicating an exceptionally strong predictive relationship.

IV 7- 3 Interpretation of H1a, H1b, H1c Results

- Hypothesis H1a is supported: Structural Flexibility has a large, significant positive impact on SI ($\beta = 0.877$, $p < 0.001$), explaining 77.0% of its variance.

- Hypothesis H1b is supported: Entrepreneurial Leadership has a very large, significant positive impact on SI ($\beta = 1.964$, $p < 0.001$), explaining 85.3% of its variance.

- Hypothesis H1c is supported: Entrepreneurial Culture has the largest significant positive impact on SI ($\beta = 2.045$, $p < 0.001$), explaining 87.1% of its variance.

- The results indicate that while all dimensions are critical, Entrepreneurial Culture and Entrepreneurial Leadership are the most potent individual drivers of Strategic Intelligence in this context.

IV 8- Testing Hypothesis H2 (Moderating Effects of Demographic Variables)

Hypothesis H2 proposed that demographic characteristics moderate the relationship between OE and SI. To test this, a series of moderated regression analyses were conducted. The composite OE score was mean-centered, and interaction terms were created between OE and each demographic moderator. The results are summarized in Table 5.

Table 5. Results of Moderated Regression Analysis

Moderator	Interaction Term (OE × Moderator)	ΔR^2 due to Interaction	Bootstrap 95% CI for Interaction	Conditional Effect (at ±1 SD of Moderator)
Gender (0=F, 1=M)	$\beta = 0.18$, $t = 3.42$, $p = .001$	.03	[0.07, 0.29]	Low (F): $\beta = 0.65$ High (M): $\beta = 0.83$
Age	$\beta = –0.22$, $t = 4.15$, $p < .001$	.05	[–0.33, –0.11]	Low (–1 SD): $\beta = 0.85$ High (+1 SD): $\beta = 0.61$
Education Level	$\beta = 0.15$, $t = 2.89$, $p = .004$	.02	[0.05, 0.25]	Low: $\beta = 0.68$ High: $\beta = 0.80$
Years of Experience	$\beta = –0.25$, $t = 4.78$, $p < .001$	.06	[–0.36, –0.14]	Low (–1 SD): $\beta = 0.87$ High (+1 SD): $\beta = 0.59$

The analysis provides partial support for H2, revealing significant moderation for all four demographic variables. The relationship between OE and SI is:

- Stronger for male employees than for females.
- Weaker among older employees.
- Stronger among more highly educated employees.

- Weaker among more experienced employees.

The most substantial moderating effects are observed for age and experience, indicating that the perceived link between entrepreneurial practices and strategic intelligence diminishes significantly with seniority and tenure in the public sector.

IV 9- *Structural Equation Modeling (SEM) Using AMOS*

To test the overall theoretical model with greater rigor, Structural Equation Modeling (SEM) was conducted using AMOS**.** The final structural model exhibited excellent fit to the data (χ^2/df = 2.45, CFI = 0.96, TLI = 0.95, RMSEA = 0.045, SRMR = 0.038), with all indices meeting or exceeding recommended thresholds (Hu & Bentler, 1999). The standardized path coefficients, presented in Table 6, and 7 corroborate and refine the regression results.

Table 6. SEM Path Coefficients and Model Fit Indices

Hypothesized Path	Standardized Estimate (β)	S.E.	C.R.	p-value
Structural Flexibility → Strategic Intelligence (H1a)	0.41	0.048	8.542	<0.001
Entrepreneurial Leadership → Strategic Intelligence (H1b)	0.52	0.042	12.381	<0.001
Entrepreneurial Culture → Strategic Intelligence (H1c)	0.58	0.039	14.872	<0.001

Table 7. SEM Model Fit Indices and Path Coefficients

Fit Index	Value	Threshold	Interpretation
χ^2/df	2.45	< 3.0	Good
CFI	0.96	> 0.95	Excellent
TLI	0.95	> 0.95	Good
RMSEA	0.045	< 0.06	Good
SRMR	0.038	< 0.08	Good

*Note: Model fit indices: χ^2/df = 2.45, CFI = 0.96, TLI = 0.95, RMSEA = 0.045, SRMR = 0.038.

The SEM results provide robust confirmation of all three sub-hypotheses, with entrepreneurial culture emerging as the strongest direct predictor of strategic intelligence. The model explains a substantial portion of the variance in SI. The superior fit indices validate the proposed conceptual framework, confirming that the three OE dimensions are distinct yet collectively powerful drivers of SI.

Discussion

Interpretation of Key Findings and Theoretical Implications

The empirical evidence presented in this study makes several significant contributions to public management theory and practice. The primary finding a robust, statistically significant positive impact of organizational entrepreneurship (OE) on strategic intelligence (SI) extends and refines the public value creation framework by demonstrating that entrepreneurial capabilities within public institutions are central to building the strategic cognition required for effective governance.

The Structural Equation Modeling (SEM) analysis, which demonstrated excellent model fit (CFI = 0.96, RMSEA = 0.045), provides strong empirical validation for the proposed multidimensional framework. The SEM results confirm that entrepreneurial culture (β = 0.58), entrepreneurial leadership (β = 0.52), and structural flexibility (β = 0.41) are distinct yet interrelated drivers of strategic intelligence, with culture emerging as the strongest predictor.

This hierarchy of effects suggests that in bureaucratic public sector contexts, soft cultural and leadership factors may be more foundational than structural adjustments in shaping strategic cognition and organizational agility.

This finding aligns with Burgelman's (1983) foundational work on strategic processes in established organizations and Lumpkin and Dess's (1996) conceptualization of entrepreneurial orientation, demonstrating that these frameworks retain explanatory power beyond their original for-profit contexts. The remarkably high explanatory power of the model suggests that in Saudi public institutions undergoing Vision 2030 reforms, entrepreneurial dynamics function not merely as supplemental attributes but as fundamental organizational capabilities that profoundly shape strategic cognition and decision-making.

The dimensional analysis reveals crucial nuances with important implications for public management theory and reform strategy. The finding that entrepreneurial culture ($\beta = 0.58$) and entrepreneurial leadership ($\beta = 0.52$) exert stronger effects than structural flexibility ($\beta = 0.41$) challenges technocratic assumptions that structural reforms alone can drive public sector transformation. This hierarchy suggests a theoretical refinement for public administration: while flexible structures provide necessary enabling conditions, they remain insufficient unless animated by a culture that fosters psychological safety for experimentation and leadership that champions innovation in the public interest. This insight contributes directly to the literature on public sector innovation and change management by emphasizing the primacy of intangible, behavioral factors over formal restructuring in complex bureaucratic environments focused on value creation.

The superior fit of the SEM model ($\chi^2/df = 2.45$, SRMR = 0.038) lends robust support to the integration of Resource Based View and strategic cognition theory in public administration research. It validates a multidimensional rather than aggregate conceptualization of organizational entrepreneurship, demonstrating how different entrepreneurial facets interact to collectively enhance strategic intelligence a nuance often overlooked in prior OE studies.

Contributions to Public Management Theory

This study makes three specific contributions to public management theory. First, it successfully tests and extends corporate-origin frameworks like Organizational Entrepreneurship into the distinct context of public governance, demonstrating their relevance for understanding strategic agility in bureaucracies. Second, it quantifies the relative importance of cultural, leadership, and structural levers for change, providing a more nuanced model for public sector innovation. Third, it introduces demographic contingencies particularly the "seniority resistance" effect into models of public sector change, highlighting how the reception of entrepreneurial reforms is shaped by workforce composition.

Demographic Dynamics and Practical Implications

The moderated regression analysis reveals critical boundary conditions that carry substantial practical significance for public sector reform initiatives. The "seniority resistance" effect where the perceived OE–SI relationship weakens significantly with increased age (interaction $\beta = –0.22$) and experience ($\beta = –0.25$) suggests that employees socialized in traditional bureaucratic paradigms may view entrepreneurial practices as less relevant to strategic effectiveness. This finding has direct implications for change management and human resource strategy in public institutions: it indicates that implementing entrepreneurial reforms may encounter skepticism from longer-tenured staff unless accompanied by targeted engagement, such as inclusive change communication, reverse mentoring programs, or

framing innovations as continuity with core public service values rather than radical breaks. The strong path from entrepreneurial culture to SI (β = 0.58) underscores that fostering psychological safety, learning from failure, and encouraging initiative may yield greater strategic returns than restructuring alone.

The gender-based moderation (stronger effect for males, β = 0.18) and education-based moderation (stronger effect with higher education, β = 0.15) highlight potential equity considerations in capacity-building initiatives. These findings suggest that the benefits of entrepreneurial reforms may not be equally accessible or perceived across all employee groups, potentially exacerbating existing inequalities if not addressed proactively. For public managers and policymakers, these findings imply a need for differentiated implementation approaches. Capacity-building initiatives (e.g., leadership development, innovation labs) should be designed with equity in mind, ensuring equal access and resonance across gender and educational groups. The strong path from entrepreneurial culture to SI underscores that fostering psychological safety and learning from failure may yield greater strategic returns for public value creation than restructuring alone, guiding leaders to invest in cultural diagnostics and interventions.

Contextual Considerations and Reform Momentum

The high mean scores for both OE (M = 3.95) and SI (M = 3.88) warrant interpretation within Saudi Arabia's unique reform context. These elevated scores likely reflect what might be termed the "Vision 2030 effect" a heightened awareness and aspirational orientation toward innovation and strategic thinking generated by the ambitious national transformation agenda. While these scores indicate positive momentum, they also suggest that perceptions may outpace institutionalized practices. This distinction is crucial for public managers: it signals both readiness for change and the need to translate positive attitudes into concrete behavioral and procedural changes.

The study's Saudi public sector context adds an important cultural and institutional dimension to the global literature on public entrepreneurship. The findings demonstrate that entrepreneurial concepts, often developed in Western corporate contexts, find relevant application in Gulf public administration systems, albeit with context-specific manifestations and boundary conditions. This contributes to the internationalization of public management theory by testing established constructs in understudied regional contexts.

Limitations and Future Research Directions

Several limitations warrant acknowledgment and suggest productive avenues for future inquiry. First, the cross-sectional design, while appropriate for establishing relationships, precludes causal claims about how OE develops SI over time. Longitudinal studies tracking institutions through reform implementation would illuminate developmental trajectories. Second, the reliance on self-reported perceptual measures introduces potential common method bias, though procedural remedies were employed. Future research could incorporate objective performance metrics or 360-degree assessments to triangulate findings.

While the SEM model showed excellent fit, future studies could employ longitudinal SEM to examine causal dynamics over time. Additionally, multi-group SEM across different types of public institutions could test the generalizability of the observed path coefficients.

The stratified purposive sampling approach, while strengthening representativeness compared to pure convenience sampling, still limits statistical generalization to the entire Saudi public

sector. Future studies employing random sampling across multiple regions would enhance external validity. Additionally, the focus on managerial perspectives provides valuable insights but could be complemented by examining how entrepreneurial practices are perceived and implemented at operational levels.

Substantively, future research should investigate the mechanisms through which entrepreneurial culture and leadership exert their effects whether through psychological empowerment, knowledge sharing practices, or decision-making autonomy. Qualitative case studies could richly elucidate these processes. Comparative studies across different national contexts or between central and local government entities would help disentangle universal principles from context-specific factors. Finally, research examining the implementation of specific Vision 2030 initiatives through an OE–SI lens could provide actionable insights for ongoing reform efforts.

Conclusion

This study set out to investigate a critical question for public sector modernization in Saudi Arabia and similar reform-oriented contexts: How do the core dimensions of organizational entrepreneurship influence the development of strategic intelligence among public managers? The findings provide clear, empirically-grounded answers that carry both theoretical and practical significance.

The research robustly demonstrates that organizational entrepreneurship serves as a powerful catalyst for strategic intelligence in public institutions. Beyond establishing this fundamental relationship, the study advances a more nuanced understanding by revealing that entrepreneurial culture and leadership are the primary drivers, with structural flexibility playing a supporting though still important role. This hierarchy of effects offers crucial guidance for public sector reformers: investing in cultural transformation and leadership development should precede or accompany structural changes to maximize impact.

The identification of significant demographic moderators particularly the weakening of the OE-SI relationship with increased age and experience provides vital intelligence for change management. This "seniority resistance" effect suggests that reform initiatives require tailored engagement strategies for different employee cohorts rather than one-size-fits-all approaches. Similarly, the gender and education-based moderations highlight the importance of equity considerations in capacity-building programs.

Theoretically, this study makes important contributions by successfully extending corporate entrepreneurship frameworks to the public sector context and by validating a multidimensional conceptualization of OE's influence on strategic capabilities. The excellent fit of the Structural Equation Model provides strong empirical support for the proposed theoretical framework.

For Saudi public institutions pursuing Vision 2030 objectives, these findings offer evidence-based pathways for cultivating the strategic agility required for national transformation. They suggest that reforms should prioritize fostering entrepreneurial cultures that encourage experimentation and learning, developing leadership capabilities that champion innovation, and implementing flexible structures that enable rapid adaptation all while mindfully addressing the demographic dynamics that shape how these changes are perceived and embraced.

Ultimately, this research underscores that building strategically intelligent public institutions capable of generating public value requires more than new policies or structures; it demands cultivating entrepreneurial mindsets, behaviors, and relationships throughout the organizational ecosystem. As public sectors worldwide face increasing complexity and citizen expectations, the insights from this study contribute to developing more adaptive, innovative, and effective public governance systems capable of meeting twenty-first century challenges and translating national visions like Saudi Arabia's Vision 2030 into tangible public value.

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