



A capability-based pathway from entrepreneurial leadership to SME performance

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ARTICLE INFO

Article history:

Received Jun 11, 2026

Revised Jun 27, 2026

Accepted Jul 30, 2026

Keywords:

Dynamic Capabilities;
Entrepreneurial Leadership;
Innovation Capability;
Sme Performance;
Strategic Agility.

ABSTRACT

SMEs in emerging regional economies depend heavily on owner-managers, yet prior research does not adequately explain whether entrepreneurial leadership improves performance directly or through distinct organizational capabilities. This study examines the parallel mediating roles of strategic agility and innovation capability in the relationship between entrepreneurial leadership and SME performance. Survey data were obtained from 384 SME owners and managers in Southeast Sulawesi, Indonesia, and analyzed using PLS-SEM in SmartPLS 4. Entrepreneurial leadership had strong positive effects on strategic agility ($\beta = 0.790$, $p < 0.001$) and innovation capability ($\beta = 0.791$, $p < 0.001$), but only a modest direct effect on SME performance ($\beta = 0.083$, $p = 0.035$). Strategic agility ($\beta = 0.227$, $p < 0.001$) and innovation capability ($\beta = 0.683$, $p < 0.001$) both improved performance. The indirect effect through innovation capability ($\beta = 0.540$, $p < 0.001$) was substantially larger than the indirect effect through strategic agility ($\beta = 0.179$, $p < 0.001$). The study contributes by showing that entrepreneurial leadership is primarily performance-relevant when translated into firm-level adaptive and value-creation capabilities. SME support programs should therefore connect leadership development with rapid decision routines, market responsiveness, product and service renewal, and continuous process improvement.

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1. INTRODUCTION

Small and medium-sized enterprises (SMEs) in emerging regional economies increasingly compete under market turbulence, digital disruption, resource scarcity, and rapidly changing customer expectations. These pressures are especially consequential for SMEs because they typically possess fewer financial buffers, less formalized managerial systems, and narrower market access than large firms (Eller, 2020; Khurana et al., 2022; Troise et al., 2022). Nevertheless, SMEs remain central to employment, household income, local innovation, and regional economic resilience (Adam & Alarifi, 2021; Donbesuur et al., 2020; Fan, 2021). Explaining how SMEs transform limited resources into sustained performance is therefore not only an operational concern but also a central theoretical problem in entrepreneurship research.

Entrepreneurial leadership is relevant to this problem because SME owners and managers commonly serve as the principal opportunity recognizers, risk interpreters, resource allocators, and drivers of organizational change. Such leaders can encourage experimentation, creative problem

solving, and opportunity exploitation (Bagheri et al., 2022; Yadav, 2024; Zahoor et al., 2026). However, evidence of a positive leadership-performance association does not by itself explain how leadership intentions become routines that improve sales, profitability, customer value, or market position. Recent research indicates that entrepreneurial leadership may be more consequential for capability formation than for performance directly (Agustin et al., 2026). This distinction creates a mechanism gap: the literature still provides limited comparative evidence regarding which organizational capabilities most effectively transmit entrepreneurial leadership into SME performance.

Prior studies have largely developed along separate streams. One stream links leadership to innovative behavior and business outcomes, whereas another treats strategic agility, innovation capability, digital capability, and resilience as independent antecedents of SME performance (Adomako, 2022; Khurana et al., 2022; Vrontis, 2023). Emerging evidence shows that entrepreneurial leadership can strengthen strategic agility (Agustin et al., 2026), strategic agility can support SME performance (Wilopo et al., 2026), and innovation capability can improve competitiveness and market or financial outcomes (AlTaweel & Al-Hawary, 2021; Machado-Licona et al., 2026; Quintero-Sepulveda, 2025). What remains insufficiently explained is whether strategic agility and innovation capability operate as distinct parallel pathways and whether one pathway is more proximal to measurable business performance. Addressing this question moves beyond merely combining variables because it compares two theoretically different conversion mechanisms.

Strategic agility was selected rather than digital capability because the focal problem is not simply whether SMEs possess or use technology. Strategic agility captures the broader ability to detect environmental shifts, align managerial attention, and redeploy scarce resources rapidly (Doz & Kosonen, 2010; Reed, 2021; Vrontis, 2023). Innovation capability is conceptually different: it concerns the firm's capacity to convert knowledge and opportunities into new or improved products, services, processes, and marketing practices (AlTaweel & Al-Hawary, 2021; Fang, 2022; Machado-Licona et al., 2026; Quintero-Sepulveda, 2025). Accordingly, strategic agility represents an adaptive-response pathway, whereas innovation capability represents a value-creation pathway. Treating the two capabilities as parallel mediators permits a direct comparison without assuming an untested serial sequence between them.

Southeast Sulawesi provides an analytically relevant setting because many SMEs operate through owner-centered decisions, informal coordination, personal networks, limited specialist resources, and uneven market and technology access. These conditions make it less likely that leadership alone will generate superior performance unless leadership is embedded in repeatable organizational capabilities. This study therefore examines how entrepreneurial leadership relates to SME performance through the parallel mediating roles of strategic agility and innovation capability. It contributes by integrating Upper Echelons Theory and Dynamic Capability Theory, distinguishing adaptive and value-creation mechanisms, and providing evidence from an underrepresented regional SME context.

Hypotheses development, Upper Echelons Theory proposes that organizational choices and outcomes partly reflect the experiences, values, and cognitive orientations of senior decision makers (Hambrick & Mason, 1984). This logic is particularly relevant to SMEs because owner-managers exercise concentrated influence over opportunity selection, risk taking, and resource allocation. Dynamic Capability Theory complements this explanation by showing that managerial influence becomes performance-relevant when firms can sense change, seize opportunities, and reconfigure resources (Teece et al., 1997). Integrating the two theories positions entrepreneurial leadership as an upstream managerial antecedent and strategic agility and innovation capability as firm-level mechanisms through which leadership can affect performance.

Entrepreneurial leaders emphasize opportunity recognition, experimentation, rapid learning, and flexible resource use. These behaviors can increase strategic sensitivity, accelerate decision alignment, and reduce organizational inertia, thereby strengthening the capacity of SMEs to respond to environmental change (Agustin et al., 2026; Reed, 2021; Vrontis, 2023). Hence: H1. Entrepreneurial leadership has a positive effect on strategic agility.

Entrepreneurial leadership can also create conditions that support idea generation, knowledge sharing, experimentation, and opportunity exploitation. By legitimizing calculated risk and encouraging employees to search for new solutions, entrepreneurial leaders can strengthen the routines through which SMEs develop or improve products, services, processes, and market approaches (Bagheri et al., 2022; Yadav, 2024; Zahoor et al., 2026). Hence: H2. Entrepreneurial leadership has a positive effect on innovation capability.

Entrepreneurial leaders may also influence performance directly by improving strategic focus, accelerating opportunity exploitation, and mobilizing employees around growth-oriented objectives (Agustin et al., 2026; Yadav, 2024). Nevertheless, this direct association is expected to be weaker than the capability-mediated relationships because leadership intentions require organizational implementation before they are reflected in business outcomes. Hence: H3. Entrepreneurial leadership has a positive effect on SME performance.

Strategic agility enables SMEs to recognize changes early, coordinate responses, and reallocate limited resources before opportunities disappear or threats intensify. This capacity reduces strategic inertia and supports continuity and responsiveness under turbulence (Adomako, 2022; Vrontis, 2023; Wilopo et al., 2026). Hence: H4. Strategic agility has a positive effect on SME performance.

Innovation capability is more directly connected to customer and market value because it allows SMEs to renew offerings, improve service quality, simplify processes, and differentiate themselves from competitors. Prior evidence associates innovation capability with stronger competitiveness and market and financial performance (AITaweel & Al-Hawary, 2021; Fang, 2022; Machado-Licona et al., 2026; Quintero-Sepulveda, 2025). Hence: H5. Innovation capability has a positive effect on SME performance.

The integrated theoretical logic further suggests that entrepreneurial leadership should affect performance indirectly. Strategic agility transmits leadership influence by embedding opportunity-oriented behavior in sensing and resource-reconfiguration routines, whereas innovation capability transmits it by converting leadership support into new or improved market value. Because the mechanisms are theoretically distinct and are modeled in parallel, the study proposes two specific indirect effects: H6. Strategic agility mediates the relationship between entrepreneurial leadership and SME performance. H7. Innovation capability mediates the relationship between entrepreneurial leadership and SME performance.

2. RESEARCH METHOD

This study used a quantitative explanatory design and a cross-sectional survey to test the proposed capability-based model. The unit of analysis was the SME, and one knowledgeable respondent represented each firm. Eligible respondents were owners, owner-managers, or managers directly involved in strategic decisions, innovation activities, and performance evaluation. Inactive businesses, duplicate responses from the same firm, substantially incomplete questionnaires, and responses from individuals without a decision-making role were excluded.

The target population comprised active SMEs operating in Southeast Sulawesi. Because a complete and current sampling frame was not available for all formal and informal SMEs, purposive sampling was used to reach respondents who could evaluate firm-level constructs. The minimum sample size was determined using Cochran's large-population formula at a 95% confidence level, a 5% margin of error, and maximum response variability ($p = 0.50$), resulting in 384 observations (Cochran, 1977).

The questionnaire was adapted from established multi-item measures and reviewed for conceptual clarity, language suitability, and contextual relevance. Entrepreneurial leadership was measured with seven items based on Renko et al. (2015); strategic agility with 15 items based on Doz and Kosonen (2010) and Reed (2021); innovation capability with six items based on Calantone et al. (2002); and SME performance with five relative-performance items based on Donbesuur et al. (2020) and Wiklund and Shepherd (2005). The first three constructs used a five-point agreement scale, while SME performance was assessed relative to major competitors using indicators covering sales growth, profitability, market position, customer outcomes, and overall business

performance. All constructs were specified as reflective because the indicators were treated as manifestations of their underlying latent variables.

Participation was voluntary, respondents were informed of the academic purpose of the study, and anonymity and confidentiality were assured. Consent was obtained before questionnaire completion. Procedural remedies for common method bias included neutral wording, respondent anonymity, and separation of predictor and outcome sections. A statistical assessment should supplement these procedures (Podsakoff et al., 2003; Kock, 2015).

Table 1. Measurement constructs and sources

Construct	Code	Indicators	Measurement source	Scale type
Entrepreneurial leadership	EL	7	(Renko et al., 2015)	Five-point Likert
Strategic agility	SE	15	(Doz & Kosonen, 2010; Reed, 2021)	Five-point Likert
Innovation capability	IC	6	(Calantone et al., 2002)	Five-point Likert
SME performance	SMES	5	(Donbesuur et al., 2020; Wiklund & Shepherd, 2005)	Five-point Likert

Data screening should document missing values, response-pattern anomalies, and multivariate outliers before model estimation. The hypotheses were tested using PLS-SEM in SmartPLS 4 because the study emphasizes variance explanation, prediction, and comparison of parallel indirect effects in a latent-variable model (Hair et al., 2022; Sarstedt et al., 2022). The analysis followed two stages. The reflective measurement model was assessed using indicator loadings, Cronbach's alpha, rho_A, composite reliability, average variance extracted, and HTMT. The structural model was assessed using inner VIF, path coefficients, effect sizes, R², predictive relevance, and specific indirect effects. Firm age, size, sector, and owner characteristics were not included as controls in the reported model; this parsimonious choice is acknowledged as a limitation because omitted heterogeneity may contribute to the high explained variance.

3. RESULTS AND DISCUSSIONS

Respondent and business characteristics

The final sample comprised 384 SME owners or managers. Male respondents accounted for 58.1% and female respondents for 41.9%. Most respondents were 31-50 years old (63.5%). The business profile was dominated by firms operating for at least three years and employing one to nine workers, indicating that the sample primarily represented micro and small enterprises. Trade, food and beverage, services, home industry, and agriculture or fisheries processing were represented, providing sectoral diversity while remaining geographically concentrated in Southeast Sulawesi.

Table 2. Respondent and business characteristics

Characteristic	Category	Frequency	Percentage (%)
Gender	Male	223	58.1
	Female	161	41.9
Age	<= 30 years	72	18.8
	31-40 years	126	32.8
	41-50 years	118	30.7
	> 50 years	68	17.7
		142	37.0
Education level	High school or equivalent	61	15.9
	Diploma	154	40.1
	Bachelor's degree	27	7.0
	Postgraduate degree	58	15.1
Business age	< 3 years	96	25.0
	3-5 years	132	34.4
	6-10 years	98	25.5
	> 10 years	168	43.8
		122	31.8
Number of employees	1-4 employees	63	16.4
	5-9 employees	31	8.0
	10-19 employees	118	30.7
	>= 20 employees	92	24.0
		81	21.1
Business sector	Trade	53	13.8
	Culinary/Food and beverage		
	Services		
	Manufacturing/Home industry		

Characteristic	Category	Frequency	Percentage (%)
	Agriculture/Fisheries processing	40	10.4

Measurement model assessment

The reflective measurement model was assessed using indicator reliability, internal-consistency reliability, convergent validity, and discriminant validity. Entrepreneurial leadership and innovation capability met the conventional loading, reliability, and AVE criteria. SME performance also achieved acceptable reliability and AVE, although its minimum loading of 0.597 indicates that the weakest indicator should be examined for content and wording. Strategic agility had high internal consistency ($\alpha = 0.925$; $CR = 0.934$), but its AVE was 0.488 and several loadings were below 0.70. The AVE is therefore marginal rather than unequivocally satisfactory. The construct was retained because the shortfall from 0.50 was small, reliability was strong, and deleting indicators solely to improve statistics could reduce content coverage; nevertheless, the indicator-level loadings and sensitivity of AVE to item removal should be reported (Hair et al., 2020; Hair et al., 2022).

Table 3. Measurement model results

Construct	Items	Loading range	Alpha	rho_A	CR	AVE
Entrepreneurial leadership	7	0.714-0.796	0.873	0.877	0.902	0.567
Innovation capability	6	0.718-0.804	0.849	0.849	0.888	0.570
Strategic agility	15	0.587-0.776	0.925	0.928	0.934	0.488
SME performance	5	0.597-0.800	0.775	0.788	0.848	0.529

Discriminant validity was assessed using HTMT. The values ranged from 0.819 to 0.893. Although all values remained below the liberal 0.90 threshold, the entrepreneurial leadership-innovation capability value (0.893) and entrepreneurial leadership-SME performance value (0.892) were very close to the boundary. The results therefore support discriminant validity only cautiously and suggest conceptual proximity among leadership behavior, organizational innovation, and perceived performance.

Table 4. Discriminant validity using the HTMT ratio

Construct	EL	IC	SE	SMES
EL	-			
IC	0.893	-		
SE	0.870	0.853	-	
SMES	0.892	0.843	0.819	-

Structural model assessment

The inner VIF values ranged from 1.000 to 4.179, indicating that collinearity did not exceed the commonly used threshold of 5.00, although the values for innovation capability and strategic agility as predictors of SME performance exceeded 4.00 and warrant caution. Entrepreneurial leadership explained 62.6% of the variance in innovation capability and 62.4% of the variance in strategic agility. The three predictors jointly explained 90.8% of the variance in SME performance. This unusually high R^2 may reflect the theoretical proximity of the capability constructs to subjective performance, common-source measurement, and the absence of controls. It should therefore be interpreted as strong in-sample explanatory power rather than automatic evidence of generalizable out-of-sample prediction.

Table 5. Coefficient of determination and predictive relevance

Endogenous construct	R2	Adjusted R2	Q2 predict	RMSE	MAE
Innovation capability	0.626	0.625	0.622	0.619	0.473
Strategic agility	0.624	0.623	0.620	0.620	0.483
SME performance	0.908	0.907	0.641	0.601	0.461

All reported Q^2_{predict} values were positive, indicating that the PLS predictions outperformed a naive mean benchmark. However, predictive power cannot be classified from positive Q^2_{predict} values alone. Entrepreneurial leadership had strong positive effects on strategic

agility ($\beta = 0.790$, $p < 0.001$) and innovation capability ($\beta = 0.791$, $p < 0.001$). Its direct effect on SME performance was positive but small ($\beta = 0.083$, $p = 0.035$). Strategic agility positively affected performance ($\beta = 0.227$, $p < 0.001$), while innovation capability had the largest direct effect ($\beta = 0.683$, $p < 0.001$). These results support H1-H5 and indicate that leadership is more strongly associated with capability formation than with performance directly.

Table 6. Direct path coefficients

Hypothesis	Path	Beta	t-value	p-value	Decision
H1	EL -> SE	0.790	34.399	<0.001	Supported
H2	EL -> IC	0.791	38.966	<0.001	Supported
H3	EL -> SMES	0.083	2.108	0.035	Supported
H4	SE -> SMES	0.227	7.185	<0.001	Supported
H5	IC -> SMES	0.683	18.691	<0.001	Supported

The effect-size results reinforce this pattern. Entrepreneurial leadership had large effects on innovation capability and strategic agility. Innovation capability had a large effect on SME performance, strategic agility had a small-to-moderate effect, and the direct effect of entrepreneurial leadership on performance was small. The VIF values for the two capability predictors again indicate that their relative effects should be interpreted together with the discriminant-validity evidence.

Table 7. Effect sizes and collinearity statistics

Path	f2	Effect size	VIF
EL -> IC	1.672	Large	1.000
EL -> SE	1.657	Large	1.000
EL -> SMES	0.024	Small	3.080
IC -> SMES	1.213	Large	4.179
SE -> SMES	0.135	Small to moderate	4.156

Both specific indirect effects were significant. The indirect effect through strategic agility was 0.179 ($p < 0.001$), while the indirect effect through innovation capability was 0.540 ($p < 0.001$), supporting H6 and H7. The combined indirect effect was 0.719, and the approximate total effect of entrepreneurial leadership on performance was 0.802 after adding the direct effect of 0.083. Thus, about 89.7% of the total association was transmitted through the two capabilities. Because the direct and indirect effects were positive and significant, the pattern is consistent with complementary partial mediation. The larger innovation-capability coefficient is descriptively dominant, but a formal bootstrap contrast between the two indirect effects is required before claiming that their difference is statistically significant.

Table 8. Specific indirect effects

Hypothesis	Indirect path	Beta	t-value	p-value	Decision
H6	EL -> SE -> SMES	0.179	7.096	<0.001	Supported
H7	EL -> IC -> SMES	0.540	18.101	<0.001	Supported

Discussion

The central finding is that entrepreneurial leadership is strongly related to the formation of strategic agility and innovation capability but only weakly related to SME performance directly. This pattern differs from a simple leadership-performance explanation. It indicates that opportunity orientation, risk acceptance, and visionary direction do not automatically produce business outcomes; they become economically relevant when translated into repeatable firm-level routines. The result extends recent entrepreneurial leadership research by identifying the organizational conversion mechanisms that account for most of the leadership-performance association (Agustin et al., 2026; Bagheri et al., 2022; Yadav, 2024).

The findings refine Upper Echelons Theory in the SME context. The theory explains why owner-managers matter, but the small direct coefficient demonstrates that concentrated managerial influence is not equivalent to immediate performance. Owner-managers first shape the firm's attention, decision speed, experimentation, and resource use. Dynamic Capability Theory then

explains how these managerial orientations are embedded in adaptive and innovative routines. The integration of the two theories therefore clarifies both the source of strategic influence and the organizational process through which that influence becomes performance-relevant (Hambrick & Mason, 1984; Teece et al., 1997).

Entrepreneurial leadership's strong relationship with strategic agility suggests that owner-managers can make SMEs more attentive and responsive by encouraging experimentation and flexible resource deployment. Strategic agility improved performance, but its effect was smaller than that of innovation capability. A plausible explanation is that agility is an enabling capability: sensing change and reallocating resources reduce inertia, but these actions do not necessarily create customer value unless they lead to improved offerings or processes. This interpretation is consistent with research that treats strategic agility as a response and reconfiguration capability under turbulence (Doz & Kosonen, 2010; Reed, 2021; Vrontis, 2023; Wilopo et al., 2026).

Innovation capability was the most proximal performance mechanism. In resource-constrained SMEs, innovation often involves practical renewal rather than radical technology: modifying products, improving packaging, redesigning services, simplifying workflows, adopting digital promotion, or changing distribution practices. Such actions are visible to customers and can affect revenue, efficiency, satisfaction, and differentiation more directly than leadership behavior or strategic awareness alone. This explains why innovation capability produced the largest direct and indirect coefficients and aligns with evidence that innovation capability strengthens SME competitiveness and market or financial performance (AlTaweel & Al-Hawary, 2021; Fang, 2022; Machado-Licona et al., 2026; Quintero-Sepulveda, 2025).

The practical implication is that entrepreneurship development should not treat leadership training as a stand-alone motivational intervention. Government agencies, universities, incubators, and SME associations should connect leadership development with capability-building activities: market-sensing routines, rapid decision protocols, small-scale experimentation, customer-feedback systems, product and service renewal, process improvement, branding, and digital market access. The results are most defensible for SMEs with owner-centered governance and resource constraints similar to those in Southeast Sulawesi. Generalization to larger firms, highly formalized SMEs, or other institutional settings requires replication.

4. CONCLUSION

This study provides a capability-based explanation of how entrepreneurial leadership is associated with SME performance. Entrepreneurial leadership had strong relationships with strategic agility and innovation capability but only a small direct relationship with performance, indicating that leadership matters primarily when it is institutionalized in firm-level routines. Strategic agility functioned as an adaptive-response pathway, while innovation capability functioned as a more proximal value-creation pathway and accounted for the larger indirect effect. The study contributes by integrating Upper Echelons Theory with Dynamic Capability Theory and by comparing two parallel mechanisms rather than treating leadership as an automatic performance driver. For practice, SME programs should combine entrepreneurial leadership development with agile decision routines and systematic innovation activities. The findings should nevertheless be interpreted within the limitations of a cross-sectional, purposively sampled, single-region, single-respondent design using subjective performance measures and no reported controls. The marginal AVE for strategic agility, HTMT values near 0.90, and the very high R^2 also require caution and additional diagnostic reporting. Future research should use longitudinal or multi-source designs, objective performance data, probability or stratified sampling, control variables, and cross-regional replication, and should formally compare the two indirect effects and possible serial relationships among capabilities.

ACKNOWLEDGEMENTS

The authors gratefully acknowledge the SME owners and managers in Southeast Sulawesi, Indonesia, who voluntarily contributed their time, experiences, and business insights to this study. The authors also appreciate the support of the individuals who assisted with questionnaire distribution and data collection. This research received no specific grant from any public,

commercial, or not-for-profit funding agency. The authors declare that there are no financial, professional, or personal conflicts of interest that could have influenced the conduct, analysis, interpretation, or reporting of this research.

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