

AN INTEGRATED STRATEGIC MANAGEMENT FRAMEWORK FOR ENHANCING SME PERFORMANCE: THE ROLES OF STRATEGIC ORIENTATION, COST LEADERSHIP, AND OPEN INNOVATION

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ABSTRACT

The effective incorporation of strategic capacities is vital for the continuity of the organization, in the context of small and medium enterprises (SME) that are always under resource constraints, competitive pressure and technological changes. This study aimed to evaluate an integrated strategic management framework by examining the relative effects of strategic autonomy, competitive aggressiveness, cost leadership, open innovation, proactiveness, and risk taking on SME performance. A quantitative cross-sectional design was applied to secondary data from 283 Malaysian SMEs. Each construct was measured using five questionnaire items and represented by composite mean scores. Reliability analysis, descriptive statistics, Pearson correlation, multicollinearity diagnostics, and multiple linear regression with HC3 heteroscedasticity-robust standard errors were employed. All constructs demonstrated acceptable internal consistency, with Cronbach's alpha values ranging from 0.703 to 0.896. The regression model was statistically significant and explained 47.9% of the variance in firm performance. Cost leadership emerged as the strongest predictor, followed by proactiveness and strategic autonomy, whereas competitive aggressiveness, open innovation, and risk taking did not exhibit significant independent effects after adjustment. The findings indicate that SME performance is enhanced primarily through operational efficiency, proactive market behaviour, and managerial autonomy. Organizational benefits seem to be more pronounced for innovation-oriented and risk-based approaches when these approaches are accompanied by effective internal integration and implementation mechanisms and are suggested as practice-proof guidance for managers to strengthen their long-term competitiveness.

Keyword: SME performance, strategic orientation, cost leadership, open innovation, strategic management

Article History:

Article Type: **Research**

Received Date: **06/04/2026** | Revised Date: **08/05/2026** | Accepted Date: **15/05/2026** | Published Date: **22/05/2026**

1. Introduction

Small and medium enterprises (SMEs) play a critical role in employment creation, innovation and significant contribution towards national productivity and are a fundamental component of economic development. In spite of their economic significance, SMEs are facing more and more dynamic markets, where the pace of technological change, shifting customer expectations and needs, resource shortage, and growing market competition are all significant factors. The difficulties faced by the organizations often affect the growth and sustainability of the business, and strategic decision-making is a crucial factor for business success (Naradda Gamage et al., 2020). In addition to economic value, SMEs need to continuously change their management and operations to keep pace with the changing competitive environment. In strategic management, an organization can synchronize its capacities to the opportunities in the external environment and respond to the uncertainties in the external environment. Therefore, marketing capability, customer responsiveness and strategic positioning have become important organizational capabilities that affect the competitive performance and long-term sustainability of business (Bocconcelli et al., 2018). Strategic planning also helps SMEs to assign resources wisely, to coordinate efficiently in the organisation and to perform sustainably in the context of business changes (Frantz et al., 2017). Financial resources are just one of several factors that impact organizational performance. Being able to build up effective managerial skills, enhance the efficiency of daily operations and be responsive to markets in a proactive way has become a key area of firm competitiveness. Results from European SMEs indicate that strategic and organizational features significantly affect firm performance – this shows how important it is the fact that management approaches must go beyond traditional business ones and must be integrated (Cicea et al., 2019). Likewise, the business model is changing with an increasing speed of digital transformation, which leads to a rethinking of strategic processes of SMEs aiming to gain competitiveness and organizational performance through innovation-driven processes (Bouwman et al., 2019).

In recent years, significant efforts have been made on the identification of strategic capabilities to enhance the performance of SMEs in a changing business world. Performance management systems are suddenly being recognized for their ability to support their organisations in constantly improving, increasing productivity and making decisions based on evidence. A good management system will allow SMEs to ensure that their strategic goals are achieved in measurable terms and that they will continue to remain competitive in the long run (Jones et al., 2024). As with integrating technological adaptation with effective strategic management, sustainable competitive advantage also relies on the ability of organizations to do this. The competitive landscape has been changed by social, technological and environmental challenges, and requires SMEs to build capabilities that enable them to become innovative, flexible and sustainable in their business performance. Those companies that manage to merge the technologies and strategic planning are more likely to face the competitive challenges and uncertainty of the environment (Haseeb et al., 2019).

With the advent of data-driven decision-making, strategic management practices have also been altered in SMEs. The growing use of organizational data can help firms become more accurate when making predictions and forecasts, optimize operational processes, and enhance managerial decision-making. As a result, digital intelligence and analytical skills are valuable strategic assets that add to an organisation's competitiveness and

performance (Kgakatsi et al., 2024). Meanwhile, managerial problems with regard to resource allocation, strategic planning, organizational coordination and capability building remain as challenges for growing SMEs. To overcome these challenges, comprehensive strategic frameworks are needed that can be used to combine several organisational capabilities into coherent managerial practices (Kindström et al., 2024). The strategic capabilities studied in earlier studies that have been shown to affect organisational competitiveness include entrepreneurial orientation, cost leadership and open innovation. Entrepreneurial orientation fosters proactiveness in recognizing opportunities and strategic flexibility; open innovation promotes innovation by acquiring knowledge and innovative value through collaboration. These capabilities are enhanced by implementing cost leadership, which will ensure the operations run efficiently and will help create a more competitive position. Empirical research shows that these aspects of strategy, in combination, are associated with higher SME performance, while cost leadership is one of the key links between entrepreneurial orientation and open innovation and organizational performance (Chelliah et al, 2022).

While the literature has demonstrated the positive effect of entrepreneurial orientation, strategic management practices, innovation capability and operational efficiency on SMEs' performance, respectively, the available literature is divided on how these strategic dimensions work together in explaining SMEs' performance. Most of the available evidence has focused on strategic orientation, cost leadership, digital transformation or innovation as distinct organizational capabilities that do not provide much insight into the joint effects of these capabilities in a common strategic management approach. Moreover, there have been conflicting findings in previous studies about the relative importance of these strategic capabilities to organizational performance in various business settings. Therefore, there is a demand for a unified empirical model that considers strategic orientation, cost leadership and open innovation as complementary drivers of SME performance and quantifies their individual contributions in one model.

In the present study, the role of strategic orientation, cost leadership and open innovation as a multimodal strategic management framework to improve the performance of SMEs is investigated and developed. In particular, the study examines the linkages between these strategic competencies and firm performance, and assesses the relative impact of these strategic competencies in a complete multivariate model for evidence-based strategic decision-making.

2. Methodology

2.1 Research Design

A quantitative cross-sectional research design was adopted to explore the relationship between strategic orientation, cost leadership, open innovation and firm performance in small and medium enterprises (SMEs). The analytical framework was designed to test the contribution of each of the several dimensions of strategic management on organizational performance in a single regression model. A cross-sectional design was deemed suitable because it allows multiple constructs to be measured at a given time and allows for empirical testing of strategic management relationships. The methodological approach was in line with the aims of the study and the statistical methods used in the following analyses.

2.2 Data Source

The empirical analysis was carried out using an open dataset that was gathered from SMEs in Malaysia. The dataset includes responses that are measured using standardized multi-item constructs for strategic orientation, cost leadership, open innovation, and firm performance, and thus can serve as a suitable basis for the study of relationships between strategic management at the organizational level (Kumar, 2022). The final data set consisted of 283 complete observations, with no missing data or duplicated observations; thus, there was no need to impute additional data prior to any statistical analysis.

2.3 Variables and Measurement

Firm performance was used as the dependent variable and strategic autonomy, competitive aggressiveness, cost leadership, open innovation, proactiveness, and risk taking were considered as independent variables. Five questionnaire items were used to measure each construct, and a composite mean score was calculated from the indicators for each construct. To assess the reliability of measurement, the internal consistency of each construct was examined in advance of inferential analysis with Cronbach's alpha. Descriptive statistics were then derived to provide summary statistics of all study variables.

2.4 Statistical Analysis

To summarize central tendency and variability of the study constructs, descriptive statistics were first computed. Pearson correlation coefficients were then calculated to explore the bivariate relationships between the variables and variance inflation factors (VIF) and tolerance statistics were calculated to evaluate multicollinearity of the variables. Multiple linear regression was used to estimate the independent contribution of the constructs of strategic management to firm performance. The significance of the diagnostic tests for heteroscedasticity led to the use of HC3 heteroscedasticity-robust standard errors to ensure reliability of parameter estimates and statistical inference. The model was validated by checking the coefficient of determination (R^2), adjusted R^2 , F-statistic, regression coefficients, confidence interval and significance level.

3. Results

3.1 Reliability of the Measurement Constructs

The internal consistency of the seven study constructs was assessed using Cronbach's alpha. The scales all had acceptable and good reliability, as can be seen in Table 1, as the coefficients ranged from 0.703 to 0.896. The internal consistency of risk taking was highest ($\alpha = 0.896$), followed by firm performance ($\alpha = 0.870$) and strategic autonomy ($\alpha = 0.850$). The lowest coefficient was achieved by proactiveness ($\alpha = 0.703$), which still exceeded the minimum acceptable ($\alpha = 0.70$). The results suggest that the items in these questionnaires were valid and reliable representations of the constructs they measured, and appropriate for further statistical analysis.

Table 1. Reliability Analysis of Study Constructs

Construct	Number of Items	Cronbach's Alpha	Interpretation
Strategic Autonomy	5	0.850	Good
Competitive Aggressiveness	5	0.848	Good
Cost Leadership	5	0.808	Good
Firm Performance	5	0.870	Good
Open Innovation	5	0.831	Good
Proactiveness	5	0.703	Acceptable
Risk Taking	5	0.896	Good

Note: Cronbach's alpha values of 0.70 or higher indicate acceptable internal consistency

3.2 Descriptive Characteristics of the Study Constructs

Generally favourable strategic and performance evaluations among the participating SMEs were reflected in the constructs' scores. Table 2 shows that firm performance recorded the highest mean score ($M = 4.152$, $SD = 0.567$), followed by proactiveness ($M = 4.069$, $SD = 0.495$) and cost leadership ($M = 3.983$, $SD = 0.585$). Open innovation was the lowest with a mean score of $M = 3.330$, $SD = 0.813$ and competitive aggressiveness was comparatively moderate with a mean score of $M = 3.435$, $SD = 0.747$. Risk taking and open innovation had the highest score dispersion, indicating a larger spread among SMEs with regard to their attitude to uncertainty and outside knowledge exchange. For all constructs, responses were skewed to the high end of the measurement scale, showing a negative skewness. The two most extreme skewnesses were obtained for strategic autonomy (-2.055) and firm performance (-1.661).

Table 2. Descriptive Statistics of Study Constructs

Construct	N	Mean	SD	Minimum	Maximum	Skewness	Kurtosis
Strategic Autonomy	283	3.923	0.597	1.40	5.00	-2.055	5.848
Open Innovation	283	3.330	0.813	1.00	4.60	-0.835	0.177
Competitive Aggressiveness	283	3.435	0.747	1.80	4.60	-0.330	-0.799
Cost Leadership	283	3.983	0.585	2.20	4.80	-1.203	1.021
Firm Performance	283	4.152	0.567	2.00	4.80	-1.661	3.452

Proactiveness	283	4.069	0.495	2.80	5.00	-0.801	0.104
Risk Taking	283	3.711	0.835	1.60	4.60	-1.252	0.628

Bivariate Relationships Among Strategic Constructs

A number of statistically significant relationships were obtained through Pearson correlation analysis between the strategic management variables. As can be seen in Table 3, the most positive correlation with firm performance was for cost leadership ($r = 0.608$, $p < 0.001$). Competitive aggressiveness was moderately associated with firm performance ($r = 0.421$, $p < 0.001$), followed by proactiveness ($r = 0.355$, $p < 0.001$) and open innovation ($r = 0.332$, $p < 0.001$). The relationships of risk taking and strategic autonomy were also statistically significant, although comparatively weaker, with firm performance. The strongest correlation was between competitive aggressiveness and risk taking ($r = 0.521$, $p < 0.001$) among the predictors. Competitive aggressiveness was also positively associated with proactiveness ($r = 0.501$, p

< 0.001), open innovation ($r = 0.444$, $p < 0.001$), and cost leadership ($r = 0.434$, $p < 0.001$). None of the observed coefficients was close to the typical values of very high predictor redundancy. The direction and strength of the correlations are illustrated in Figure 1, where the highest positive correlation is between cost leadership and firm performance.

Table 3. Pearson Correlation Matrix Among the Study Constructs

Variable	SA	CA	CL	FP	OI	PR	RT
Strategic Autonomy (SA)	1.000	0.097	-0.053	0.183**	0.320***	0.322***	0.265***
Competitive Aggressiveness (CA)	0.097	1.000	0.434***	0.421***	0.444***	0.501***	0.521***
Cost Leadership (CL)	-0.053	0.434***	1.000	0.608***	0.453***	0.108	0.021
Firm Performance (FP)	0.183**	0.421***	0.608***	1.000	0.332***	0.355***	0.198***
Open Innovation (OI)	0.320***	0.444***	0.453***	0.332***	1.000	0.292***	0.323***
Proactiveness (PR)	0.322***	0.501***	0.108	0.355***	0.292***	1.000	0.434***
Risk Taking (RT)	0.265***	0.521***	0.021	0.198***	0.323***	0.434***	1.000

Note: $p < 0.01$; $p < 0.001$.

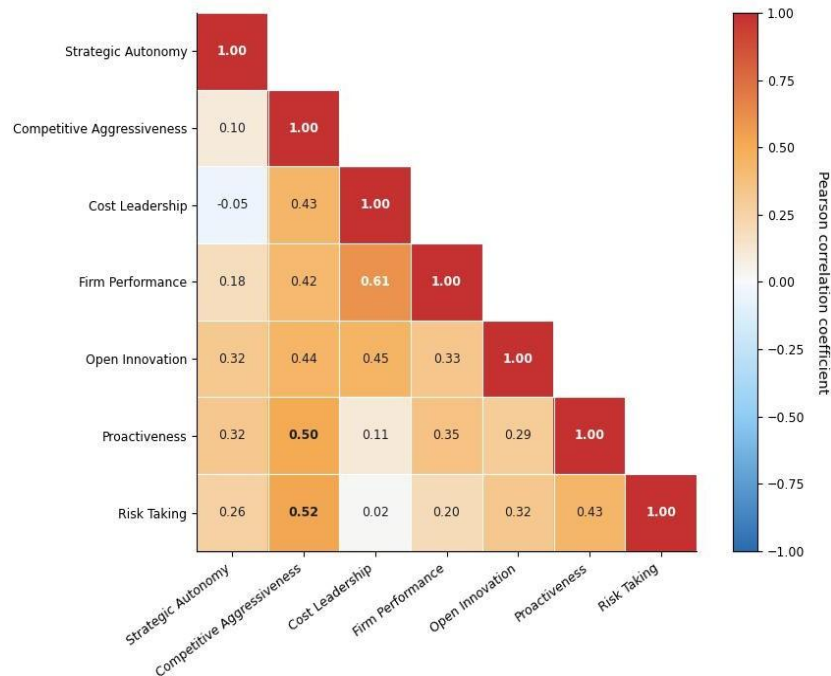


Figure 1. Correlation Structure Among Strategic Management Constructs

Assessment of Multicollinearity

The data were checked for multicollinearity with variance inflation factor and tolerance statistics. As per Table 4, all VIF values were in the range of 1.296 to 2.151 which are below 2.20. The results for the tolerances ranged from 0.465 to 0.771, which is above the commonly used tolerance limit of 0.20. The diagnostic results show that the predictor variables kept statistical independence, which allowed them to be included simultaneously in the multiple regression model.

Table 4. Multicollinearity Diagnostics

Predictor	VIF	Tolerance
Strategic Autonomy	1.296	0.771
Competitive Aggressiveness	2.151	0.465
Cost Leadership	1.592	0.628
Open Innovation	1.645	0.608
Proactiveness	1.537	0.651
Risk Taking	1.635	0.612

Note: VIF = variance inflation factor

Determinants of SME Firm Performance

The independent effect of the six strategic constructs on firm performance was estimated by performing multiple linear regression with HC3 heteroscedasticity-robust standard errors. As seen in Table 5, the overall model was statistically significant with $F = 22.385$, $p < 0.001$ and 47.9% of variance explained in firm performance. The adjusted coefficient of determination (0.468) shows that there was still significant power in the model after controlling for the number of predictors. The cost leadership proved to be the best predictor of firm performance ($B = 0.602$, $\beta = 0.621$, $p < 0.001$). With other factors being held constant, a one-unit increase in cost leadership led to a one-unit increase in firm performance of 0.602. Proactiveness also exerted a significant positive effect ($B = 0.254$, $\beta = 0.221$, $p = 0.003$), while strategic autonomy showed a smaller but significant contribution ($B = 0.150$, $\beta = 0.158$, $p = 0.024$). Competitive aggressiveness was not independently related to firm performance after the other predictors were controlled ($B = 0.029$, $p = 0.558$). Risk taking was similarly non-significant ($B = 0.041$, $p = 0.321$). The coefficient for open innovation was negative but the confidence interval for the coefficient covered the null value and the effect was not statistically significant ($B = -0.071$, $p = 0.272$).

Table 5. HC3 Robust Multiple Linear Regression Predicting Firm Performance

Predictor	B	Robust SE	Standardized β	z	p-value	95% Confidence Interval
Constant	0.121	0.387	—	0.311	0.756	-0.638 to 0.879
Strategic Autonomy	0.150	0.066	0.158	2.258	0.024	0.020 to 0.280
Competitive Aggressiveness	0.029	0.050	0.039	0.585	0.558	-0.069 to 0.127
Cost Leadership	0.602	0.082	0.621	7.362	<0.001	0.441 to 0.762
Open Innovation	-0.071	0.064	-0.101	-1.099	0.272	-0.196 to 0.055
Proactiveness	0.254	0.086	0.221	2.955	0.003	0.085 to 0.422
Risk Taking	0.041	0.041	0.060	0.991	0.321	-0.040 to 0.121

Model Statistic: $N = 283$, $R = 0.692$, $R^2 = 0.479$, Adjusted $R^2 = 0.468$, F statistic = 22.385, p -value < 0.001

HC3 standard errors were used. Firm performance was the dependent variable. The standardized positive effects of the predictors on the dependent variable are depicted in Figure 2; cost leadership explained the largest positive effect, with the confidence intervals for the other predictors crossing zero.

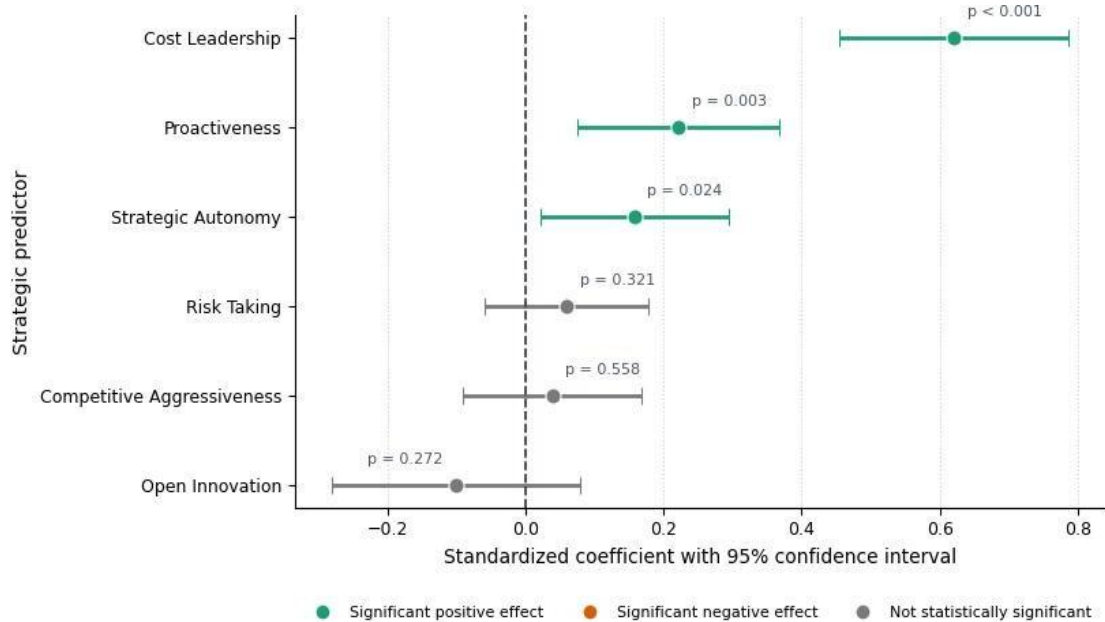


Figure 2. Standardized Effects of Strategic Management Constructs on Firm Performance

Regression Diagnostic Assessment

The regression diagnostics were explored to analyze the distribution and pattern of variance of the model residuals. The structure in the standardized residuals is shown in Figure 3A, where several observations are outside of the range of ± 2 and there is some variation in the spread of the residuals across the range of predicted firm-performance values. The plot of residuals in Figure 3B shows moderate non-normality with the residuals deviating from the normal reference line at the tails. A particular diagnostic pattern emerged that followed the large heteroscedasticity and normality test results during model evaluation. Therefore, HC3 robust standard errors were used for statistical inference as the coefficient standard errors and significance tests are less sensitive to non-constant residual variance.

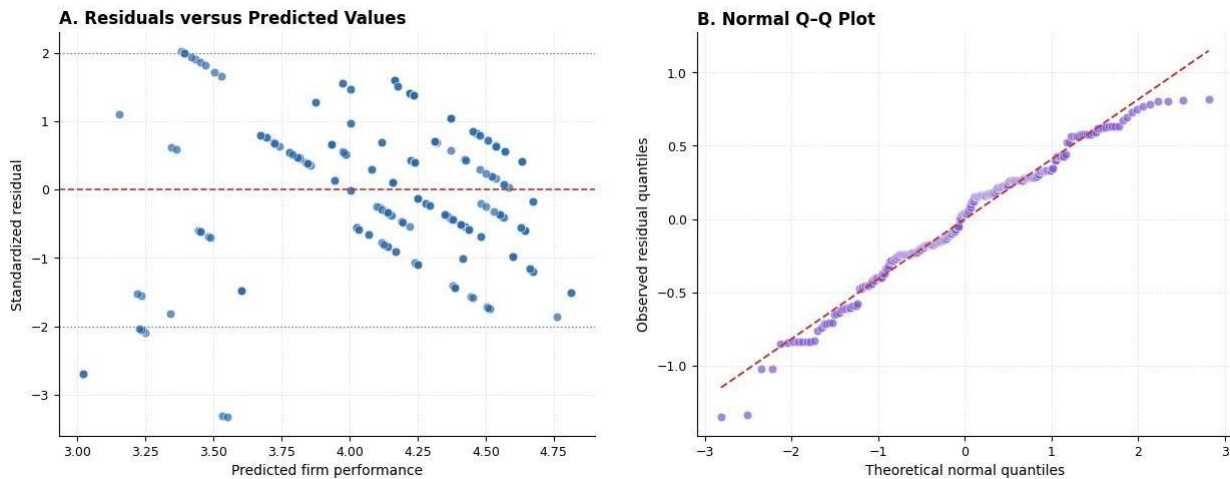


Figure 3. Regression Diagnostic Assessment: (A) Residuals Versus Predicted Values and (B) Normal Q-Q Plot

Discussion

The results illustrate that operational discipline and proactive strategic behavior have more impact on SME performance than being only innovative or even risky. The integrated framework accounted for 47.9% of the variance in the firm performance, which suggested that the regression model was able to explain a significant amount of the variation in firm performance across the sampled SMEs. Cost leadership became the main predictor and proactiveness and strategic autonomy also had significant positive effects. The bivariate relationships between competitive aggressiveness, open innovation, and risk taking with performance were positive, but the latter three of these relationships were no longer statistically significant when the predictors were included simultaneously. High-cost leadership reinforces the importance of the role that cost management plays in increasing the efficiency of SMEs in controlling operating costs, as well as delivering value to the market at a competitive price. In resource-challenged companies, performance improvements might be more related to how they 'process' the limited resources they have, and more to their ability to produce consistent results with it. There is also a relatively high standardized coefficient for cost leadership, which suggests that the efficiency-based strategic dimension was more important than the other strategic dimensions used in the model.

Performance was positively affected by proactiveness, which indicates that SMEs that are proactive and respond to changes in the market and take strategic measures before their rivals are better set up to have positive results. Strategic autonomy also played a great role, suggesting that managerial discretion and autonomy in decision-making can help to contribute to faster responses to new business conditions. The non-significant results for competitive aggressiveness and risk taking imply that assertiveness in the market and the acceptance of uncertainty are not significant in improving performance when the cost efficiency, proactiveness and autonomy are taken together. Open

innovation was positively correlated with firm performance although the regression coefficient was not significant, indicating that there was no significant regression. This shift is not always a bad thing: in other words, not always a negative impact of open innovation. It implies that there may be some crossover between its apparent contribution to performance and the cost leadership, proactiveness and other strategic abilities it can bring. Innovation partnerships can only generate value if they have the ability to absorb, coordinate and transform external knowledge into market-realizable results.

As a whole, the pattern suggests that it is an integrated package of strategic capabilities that enables SMEs to be competitive, not any one capability alone. For SMEs that operate in resource-limited environments and markets with volatility, their strategic frameworks must integrate managerial responsiveness along with operational efficiency and capability to grow (Althawadi, 2025). Further, the importance of autonomy and proactiveness is also in line with the findings that strategic thinking, planning, and innovation are significant factors that impact the performance of SMEs along with the managerial capabilities within these organizations (AlQershi, 2024). The positive impact of strategic management practices is supported by other studies that found that structured planning, allocation of resources, and positioning in business competitiveness have a positive impact on the performance of small businesses (Gure & Karugu, 2018). The preponderance of cost leadership also aligns with previous research, which found that cost leadership is an important pathway by which entrepreneurial orientation and open innovation impact SME outcomes (Chelliah et al., 2022). No direct open innovation effect indicates the need for implementation quality. Ensuring the transfer of knowledge, governance structures and coordination needs to be put in place with external partners before innovation can be transformed into identifiable organizational outcomes (Giardino et al., 2023). Moreover, the effect of cost leadership is similar to the result of Hossain et al. (2025) that entrepreneurial orientation can contribute to performance through competitive strategy focusing on efficiency and market positioning.

A multivariate analysis confirms that the performance of SMEs must be analyzed with a comprehensive approach since the performance of the firm is the consequence of interaction among the managerial, organizational and environmental factors affecting the firm (Ipinnaiye et al., 2017). Cost leadership might thus be the process by which more abstract strategic ideas become more effective strategies. There is similar evidences suggesting that competitive priorities and firm-level outcomes can be linked to manufacturing and operational strategy in SMEs (Kharub et al., 2022). Proactiveness is also important because entrepreneurial orientation, strategic leadership and innovation capability have been found to be associated with positive performance of SMEs in research (Ilyas et al., 2017). These relationships are significant from an economic point of view because their improvement is not only relevant for the improvement of the strategic performance of the individual company, but also for national development, the creation of jobs, production and entrepreneurship (Algan, 2019).

Findings of this study extend the strategic management literature as it reveals that entrepreneurial orientation is not a performance-enhancing characteristic generally. The effects of proactiveness and autonomy proved to be independent, whereas risk taking and competitive aggressiveness did not. It is, therefore, necessary to consider strategic orientation as a multi-dimensional capability and not as one composite tendency. Managers need to focus on cost control, process efficiency and be disciplined in the deployment of resources with enough autonomy to be able to respond quickly to market conditions. Opportunity identification should be an integral part of planning and performance monitoring processes. Open innovation initiatives should be chosen and implemented based on their strategic appropriateness and made possible by well-defined mechanisms for the integration of external knowledge. When working together, there is the potential for greater complexity with no immediate gains in performance.

There are a number of caveats to note. The cross-sectional design provides snapshots of relationships at a single point in time and cannot be used to develop a temporal causal model. The analysis used the self-reported construct scores, which could contain elements of managerial perceptions as well as actual organization conditions. Direct generalization to large firms and/or significantly different institutional settings is also constrained by the SME setting.

Longitudinal designs could further be used in the future to investigate longitudinal effects of strategic capabilities on performance. Comparisons of the four major sectors and countries would help establish if cost leadership is always the key determinant under various competitive pressures. Other studies might also investigate potential mediators (digital capability, human capital, absorptive capacity, environmental turbulence) or moderators (digital capability, human capital, absorptive capacity, environmental turbulence) to understand the conditions under which open innovation and risk-taking result in higher performance returns.

Conclusion

Strategic capabilities are strengthened when they are coordinated around operational efficiency, proactively engaging the market and managerial autonomy, enabling SME performance. The integrated model accounted for a significant variation in performance, and cost leadership was found to be the most important predictor, followed by proactiveness and strategic autonomy. This suggests that lower resource-cost companies could benefit more from managing costs, streamlining processes, capitalizing on market opportunities and maintaining decision-making flexibility. The bivariate association between competitive aggressiveness, risk taking and open innovation with performance was positive but did not remain statistically significant after adjustment in the multivariate model, showing that these three were significant at the bivariate level. Their contribution could thus be determined and depend on the extent to which they can be integrated with internal skills and mechanisms. But openness, especially innovation, does not seem to work simply as a strategy for

performance without the need to integrate external knowledge into products and processes that are of commercial value. The proposed framework makes an important contribution to strategic management research that seeks to differentiate the relative impact of each of the strategic dimensions instead of viewing strategic orientation as a single dimension. The results for practitioners indicate a balanced use of efficiency and proactive measures as the basis of operations, but some use of innovative and risk-oriented strategies. The framework needs to be tested in other industries, countries and in longitudinal settings to evaluate its generalizability for future studies.

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