Research on the Relationship between Entrepreneurship, Enterprises Dynamic Capability, and Innovation Performance of Small and Medium Enterprises in Guangzhou, China

Zhu Huazhong[1], Pasu Jayavelu[2], and Natha Thornjareankul[3]

Faculty of Accounting and Management Science, Southeast Bangkok University Thailand

[1]*Corresponding author*. E-mail: 312016334@qq.com

Received September 20, 2024; **Revised** January 9, 2025; **Accepted** January 30, 2025

Abstract

This research aimed to study: 1) explore the relationship between entrepreneurial spirit, innovation performance, and dynamic capabilities in small and medium-sized enterprises, examine whether dynamic capabilities can play a mediating role between entrepreneurial spirit and innovation performance, and analyze its mechanism and reasons for its impact; 2) Explore whether environmental dynamics play a moderating role between corporate dynamic capabilities and innovation performance, and analyze its mechanism of action and the reasons for its impact; 3) Based on the conclusions obtained from research and empirical testing, propose corresponding management suggestions to enhance the innovation performance of enterprises. This study used small and medium-sized enterprises in Guangzhou as a sample, collected 606 valid questionnaires, and used quantitative research methods—and structural equation modeling (SEM). The research results were found as follows: 1) Entrepreneurial spirit and dynamic capabilities of enterprises have a significant impact on entrepreneurial innovation performance; 2) The entrepreneurial spirit has a significant impact on the dynamic capabilities of enterprises; 3) The dynamic capabilities of enterprises play a significant mediating role; 4) The dynamic environment plays a positive regulatory role. Therefore, small and medium-sized enterprises should actively stimulate and unleash the entrepreneurial spirit and cultivate their dynamic capabilities in order to maintain their advantages in an increasingly competitive market. By enhancing their innovation and self-innovation capabilities, small and medium-sized enterprises can not only enhance their vitality but also positively impact

the improvement of market and social creativity, thereby contributing to the high-quality development of the national economy and promoting the construction of an innovative country.

Keywords: entrepreneurship; innovation performance; enterprise dynamic capability; small and medium-sized enterprises; environmental dynamics

Introduction

The relationship between entrepreneurship, enterprises' dynamic capabilities, and enterprises' innovation performance has received increasing attention from academia and practice. Firstly, entrepreneurship is not only related to personal traits and decision-making abilities but also reflects the sensitivity of enterprises to risks, the desire for innovation, and the effective allocation of resources. Enterprises with strong entrepreneurship can actively identify and seize opportunities in the rapidly changing market environment and promote the development of innovative activities. Secondly, the dynamic capability of enterprises refers to the ability to adjust their own resources and capabilities in the changing market environment. This ability includes a keen perception of market changes and encompasses multiple aspects such as rapid response, resource restructuring, and new product development. With the support of dynamic capabilities, enterprises can better adapt to the external environment, enhance their competitive advantages, and thus promote the improvement of innovation performance. Finally, the level of innovation performance of a company is directly related to its sustainable development and market competitiveness. Innovation is the updating and iteration of products and services and the innovation of enterprises in various aspects, such as business models and management processes. By integrating entrepreneurship and dynamic capabilities, enterprises can form an efficient innovation ecosystem, promote the combination of technological innovation and market orientation, and achieve long-term competitive advantages. In this context, an in-depth exploration of the relationship between entrepreneurship, dynamic capabilities, and innovation performance is significant for enterprises in formulating development strategies and providing guidance for policymakers.

Research Objective

1. To analyze the relationship between entrepreneurship and Enterprise Innovation Performance.

2. To analyze the relationship between entrepreneurship and Enterprise Dynamic Capability.

3. To analyze the relationship between Enterprise Dynamics Capability and Enterprise Innovation Performance.

4. To analyze the dynamic capabilities of enterprises play a mediating role between entrepreneurship and innovation performance

5. To analyze the impact of environmental dynamics on the dynamic capabilities and innovation performance of enterprises

Scope of Research

Population and Sample: This study's main research subjects are senior managers of small and medium-sized enterprises in Guangzhou, including state-owned enterprises, private enterprises, wholly foreign-owned enterprises, Sino foreign joint ventures, and other types of enterprises. However, in terms of enterprise size, this study selected enterprises that meet the standards of small and medium-sized enterprises and are registered in Guangzhou as research samples.

Area: This research focuses on small and medium-sized enterprises registered in Guangzhou, China.

Time: The questionnaire survey phase of this study lasted for 8 months, starting from January 2024 and ending in August 2024.

Literature reviews

The Relationship between Entrepreneurship and Enterprise Innovation Performance

Many studies have shown that entrepreneurship is a multi-level concept, and scholars have researched it extensively from different perspectives. The research findings indicate that individuals with entrepreneurship share some common demographic characteristics such as gender, interpersonal relationships, and educational background: typically male, with a university education or higher, aged between 30 and 40, experiencing their first significant adventure in life during this stage. In addition,

these individuals exhibit outstanding personality traits such as creativity, intrinsic motivation, and risk–taking tendencies (Liu, 2019). In the study of small and medium–sized enterprises, Mao et al. (2016) found that entrepreneurship promotes socio–economic development through innovative and entrepreneurial mechanisms. In addition, some scholars explore entrepreneurship from dynamic and static perspectives, believing that dynamic entrepreneurial theories have more practical operational significance. Although static environments reduce uncertainty, entrepreneurs have more significant agency in dynamic environments. Entrepreneurs bear the risks associated with uncertainty, acting as innovators, organizers, and coordinators of resources. In small and medium–sized enterprises, entrepreneurship is particularly important, and senior managers with this spirit can significantly influence the development of the enterprise. Managers with more entrepreneurship can formulate appropriate development strategies based on changes in the external market environment, timely solve problems in production and operation, and continuously innovate and develop new technologies and products according to consumer demand, thereby enhancing the competitiveness of the enterprise and expanding market share.

The relationship between entrepreneurship and the dynamic capabilities of enterprises

A review of existing literature reveals limited research on the relationship between entrepreneurship and the dynamic capabilities of enterprises. However, for enterprises, entrepreneurship and dynamic capabilities are essential core competencies in their development process. Yang and Li (2008) believe that integrating, acquiring, restructuring, and releasing resources in enterprises is the presentation of dynamic capabilities, enabling enterprises to adapt to changes in the external environment. Yu and Ye (2013). also emphasized the role of enterprise managers in his subsequent research, stating that the dynamic capabilities of enterprises are the ability of enterprise managers to develop, expand, or change their resource base purposefully. Sun and Jiang (2011) believe that dynamic capabilities can enhance enterprises' potential and resource utilization, enabling them to respond to environmental changes. Hu and Zeng (2019) believe that dynamic capability is not only a combination of application capabilities but also an inherent spiritual energy for enterprise progress. Therefore, this study believes that entrepreneurship is a comprehensive quality, and managers with entrepreneurship can better adjust their corporate strategy on time according to the external environment. When necessary, they can integrate and restructure the organization. Especially

in small and medium-sized enterprises, the entrepreneurship of senior managers is increasingly crucial, as this spirit can directly promote the development of dynamic capabilities, enabling the enterprise to respond to changes even with limited resources flexibly. Therefore, managers with entrepreneurship will significantly enhance the dynamic capabilities of enterprises in adapting to market environments and promoting innovation.

The Relationship between Dynamic Capability and Performance of Enterprises

The relationship between the dynamic capabilities of enterprises and their innovation performance has been an important topic in management and innovation research in recent years. Dynamic capability refers to the ability of an enterprise to integrate and restructure resources effectively in a rapidly changing environment. In contrast, innovation performance refers to the performance of an enterprise in new product development, technological innovation, and market response. Related scholars have pointed out that dynamic capabilities improve performance levels through coordination and integration capabilities and promote a spiral improvement of enterprise dynamic capabilities through knowledge integration, thereby having a significant positive impact on enterprise performance (De Jong & van der Meer, 2021); Enterprises with dynamic capabilities can create new resource combinations through integration and restructuring, which can help them achieve excess profits Foss and Knudsen (2019) , and Fu et al. (2016) believe that dynamic capability is not only a combination of application capabilities but also inherent spiritual energy for enterprise progress. In summary, although the academic community has different definitions of corporate dynamic capabilities, it can be concluded that the relationship between corporate dynamic capabilities and innovation performance is complex and diverse. Future research can explore how dynamic capabilities affect innovation performance in specific industries or markets and how to construct effective management mechanisms to enhance enterprises' dynamic capabilities and innovation levels. With the rapid iteration of technology and the constantly changing market environment, enterprises must continuously optimize their dynamic capabilities to maintain competitive advantages and achieve sustainable development.

The mediating role of dynamic capabilities in enterprises

In recent years, the importance of dynamic capabilities in the innovation and development of enterprises has gradually received attention. However, there is still relatively little research on their role as mediating variables. The dynamic capability of an enterprise can be understood as its ability to

identify, integrate, and reconfigure resources in a rapidly changing market environment. As a scarce resource, it critically impacts driving innovation within the enterprise. Existing research has confirmed a significant correlation between entrepreneurship and corporate innovation performance. entrepreneurship has a direct impact and may indirectly affect a company's innovation outcomes through other variables. When exploring the relationship between entrepreneurship, the dynamic capabilities of enterprises, and innovation performance, it can be found that entrepreneurship affects the dynamic capabilities of enterprises. Suppose senior managers of small and medium–sized enterprises have a stronger innovation spirit and risk–taking awareness. In that case, they are more inclined to take forward–looking and innovative measures, thereby enhancing the dynamic capabilities of enterprises. This means that managers with strong entrepreneurship are more willing to actively explore new opportunities in the market, quickly adjust strategies and operational methods, and enhance the adaptability and competitiveness of the enterprise. Therefore, the dynamic capability of enterprises plays a mediating role between entrepreneurship and innovation performance: entrepreneurship cultivates and enhances the dynamic capability of enterprises, thereby improving their innovation achievements. Meanwhile, entrepreneurship can also directly affect the innovation performance of enterprises. This dual impact mechanism emphasizes the important role of entrepreneurship in driving innovation and reveals the importance of enhancing the dynamic capabilities of enterprises.

The regulatory role of environmental dynamics

Zhang et al. (2014) was the first to introduce the concept of environmental dynamism. He noted that the external environment is complex and dynamic, having thus coined the term for the first time. His delineation of a dynamic environment established a robust foundation for subsequent research by other scholars. Subsequently, Liu and Liu (2013) argue that environmental dynamism comprises uncertainty and unpredictability in the external environment, signifying changes' swift and sweeping nature. Chen and Wang (2012) found in their research that environmental dynamism, as a moderating variable, has a positive moderating effect. From the above scholars' research on environmental dynamism, it can usually be used to regulate the relationship between different independent variables, mediator variables, and dependent variables studied by scholars. Similarly, some scholars have found the moderating effect of environmental dynamism when using entrepreneurship as an independent variable, firm dynamic capabilities as an intermediary variable,

and firm performance as the dependent variable. Meanwhile, existing research has shown that internal factors such as organizational structure, culture, and leadership style play an important moderating role in the impact of environmental dynamics on dynamic capabilities. Therefore, in a dynamically changing environment, if enterprises can continuously optimize and update their dynamic capabilities, they will be better able to cope with future uncertainties, improve corporate performance, and maintain sustainable development.

The literature review indicates that the relationship between entrepreneurial spirit, dynamic capabilities of enterprises, and innovation performance is an important area of research in small and medium-sized enterprises, especially in cities like Guangzhou, with rapid economic development and strong innovation capabilities. Firstly, entrepreneurial spirit is widely recognized as an important driving force for innovation in enterprises. According to Drucker's (1985) theory, entrepreneurial spirit embodies innovation, risk-taking, and keen insight into market opportunities. Small and medium-sized enterprises often rely on the personal traits and leadership of entrepreneurs, whose vision and decision-making abilities directly affect the innovation direction and implementation of the enterprise. Secondly, dynamic capabilities provide competitive advantages for enterprises in rapidly changing market environments. Teece (2007) proposed that dynamic capabilities include identifying and capturing market opportunities, integrating resources, and restructuring enterprise capabilities. Due to resource constraints, small and medium-sized enterprises have flexible, dynamic capabilities that enable them to respond more quickly to market changes and improve innovation performance. Especially in small and medium-sized enterprises in Guangzhou, the interactive relationship between entrepreneurial spirit and dynamic capabilities is significant. On the one hand, leaders with strong entrepreneurial spirit are more inclined to cultivate dynamic abilities and encourage employees to unleash their creativity. On the other hand, the enhancement of dynamic capabilities, in turn, strengthens the expression of entrepreneurial spirit. Research has shown that the innovation performance of enterprises is often closely related to the connotation of entrepreneurial spirit and the development of dynamic capabilities.

Research Methodology

Sample Selection and Data Acquisition

The data collection period for this study was from January to August 2024. A total of 4 variables and 11 observed variables were included, and 55 questionnaires were set up. According to the suggestions of scholars such as Bentler and Chou (1987), the sample size should be at least 5–10 times the number of variables. Therefore, the target sample size for collection should be at least 550. The main research subjects of this study are senior managers of small and medium-sized enterprises in Guangzhou. Question Star was used to create a questionnaire, and a total of 621 questionnaires were collected. After checking and eliminating invalid samples such as grassroots, middle-level managers or general employees, those under 18 years old, those who filled in incorrectly, and those with completely identical answers, a total of 606 valid samples were obtained, with an effective recovery rate of 97.6%, which meets the sample size requirements for analysis in this study. At the same time, using the common method bias test, according to the logical reasoning of Herman's single factor method, the results show that the variance explained by the first factor before rotation is 27.812%, which is less than 40%. This proves that there is no serious common method bias problem in the scale, and the interference during the data collection process will not affect the analysis results of the data.

Reliability and Validity Tests

1. The Cronbach alpha coefficient tests the scale's reliability. When the Cronbach alpha coefficient in the analysis is higher than 0.7, it can be considered that the scale has internal consistency or high reliability. The calculation results are shown in Table 1:

Table 1 Cronbach Reliability Analysis

Variable	Dimension	Number of questions	Dimension α value	Overall α value
Entrepreneurship	A1	6	0.907	0.916
	A2	4	0.867	
	A3	5	0.888	
Enterprise dynamic capability	B1	5	0.877	0.902
	B2	5	0.893	
	B3	4	0.855	
Environmental dynamism	C1	4	0.854	0.789
	C2	3	0.782	
	C3	3	0.766	
Enterprise innovation performance	D1	3	0.788	0.83
	D2	3	0.802	

2. The confirmatory factor (CFA) is used to test the construct validity of the questionnaire, using KMO test and Bartlett's sphericity test. When the KMO coefficient in the analysis ranges from 0–1, the closer it is to 1, the better the construct validity of the questionnaire. If the significance of Bartlett's test is less than 0.05, it can also be considered that the questionnaire has good result validity. The calculation results are shown in Table 2:

Table 2 KMO and Bartlett's tests

KMO		0.91
Bartlett sphericity test	Approximate chi-square	6245.526
	freedom	990
	P-value	0.00

Research Results

Descriptive Statistics and Correlation Analysis

Before conducting structural equation analysis, this study conducted descriptive statistics and correlation analysis on all variables. The results showed that each variable's mean and standard deviation were within a reasonable range, and the correlation coefficients between variables had AVE values greater than 0.5 and CR values greater than 0.7, indicating good convergent validity

between variables. This study used the Common Method Bias (CMB) test, and the results showed that the initial variance explained by the first factor before rotation was 27.812%, much lower than 40%. Therefore, this data analysis has no standard method bias problem. Meanwhile, Pearson correlation analysis was used to validate the significance test of the correlation coefficients between variables further, and the results showed that the coefficients between variables were significant. Therefore, the above analysis provides a basis for subsequent hypothesis testing.

Table 3 Pearson correlation analysis

Variable	Entrepreneurship	Enterprise dynamic capability	Enterprise innovation performance
Entrepreneurship	1		
Enterprise dynamic capability	0.508**	1	
Enterprise innovation performance	0.46**	0.469**	1

Note: * is p<0.05, ** is p<0.01, and ns is insignificant.

Model construction and fitting degree test

To further verify the relationship between Entrepreneurship, dynamic capabilities of enterprises, and innovation performance in this study, AMOS 28.0 was used to test the hypothesis. The fitting test results of the structural equation model (SEM) showed that the CMIN/DF value was 0.878, which was lower than 5; The value of RMSEA is 0.000, which is lower than 0.08, while the values of NLI, RFI, and CFI are 0.985, 0.978, and 1.000, all of which are higher than 0.8. Therefore, the fitting index of the structural equation model in this study meets the standard, and the fitting degree is relatively ideal, which can be used for subsequent hypothesis verification.

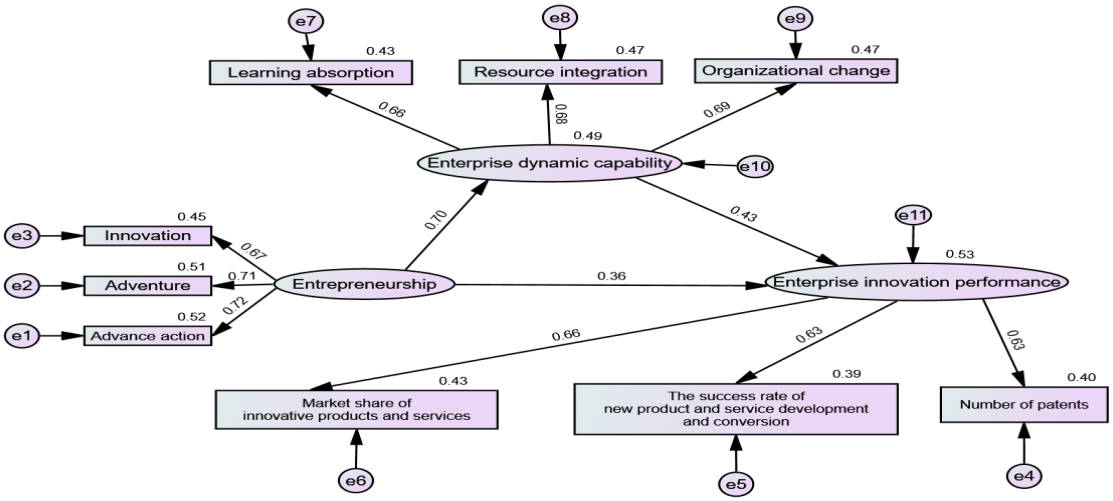

Figure 1 Structural Equation Modeling

Table 4 Model fitting index

Category	CMIN/df	RMSEA	NLI	RFI	CFI
Adaptation standards	<5	<0.08	>0.8	>0.8	>0.8
Inspection results	0.878	0.000	0.985	0.978	1.000
Whether it meets the standard	Compliance	Compliance	Compliance	Compliance	Compliance

Hypothesis testing

Based on the ideal fitting level of the structural equation model, a path analysis was conducted on the research hypothesis of this article, and the results of the path coefficient analysis are shown in the following Table 5:

Table 5 Analysis Results of Model Path Coefficient

Route	Standard Path coefficient	Nonstandard path coefficient	S.E.	C.R.	Significance
Entrepreneurship ⟶ Enterprise Innovation Performance	0.358	0.307	.076	4.043	***
Entrepreneurship ⟶ Dynamic Capability of Enterprises	0.698	0.616	.060	10.359	***
Enterprise dynamic capability ⟶ Enterprise innovation performance	0.431	0.419	.089	4.686	***

In the path "Entrepreneurship ⟶ Enterprise Innovation Performance," the standardized path coefficient is 0.358, and the nonstandardized path coefficient is 0.307, reaching a significant level (P<0.05), indicating that this path has a significant positive impact. Entrepreneurship has a significant positive impact on the innovation performance of enterprises.

In the path "Entrepreneurship ⟶ Dynamic Capability of Enterprises," the standardized path coefficient is 0.698, and the nonstandardized path coefficient is 0.616, reaching a significant level (P<0.05), indicating that this path has a significant positive impact. This indicates that Entrepreneurship has a significant positive impact on the dynamic capabilities of enterprises, with a path correlation coefficient close to 0.7, suggesting that Entrepreneurship plays a very significant role in enhancing the dynamic capabilities of enterprises.

In the path "Enterprise Dynamic Capability ⟶ Enterprise Innovation Performance," the standardized path coefficient is 0.431, and the nonstandardized path coefficient is 0.419, reaching a significant level (P<0.05), indicating that this path has a significant positive impact. This result indicates that the dynamic capabilities of enterprises have a significant positive impact on their innovation performance.

Mediating Effect Testing

This article uses the Process 4.1 analysis tool in SPSS 27.0 to test the mediating effect of enterprise dynamics between entrepreneurial spirit and innovation performance. Assuming that the independent variable is entrepreneurial spirit, the dependent variable is innovation performance, and the mediating variable is dynamic enterprise capability, the mediating effect in the model is validated by introducing the confidence interval method (Bootstrap). The test results obtained through 5000 Bootstrap operations are shown in Table 6:

Table 6 Mediation affect test results

Route	Category	Standardized benefit value	95% confidence interval	Significance
Entrepreneurship⟶ Dynamic capabilities of enterprises⟶ Innovative performance of enterprises	direct effect	0.698	0.617–0.783	0.001
	indirect effect	0.431	0.25–0.621	0.000
	Total effect	0.658	0.568—0.744	0.001

In the intermediary path of "entrepreneurial spirit ⟶ enterprise dynamic capability ⟶ enterprise innovation performance," the effect value of the path of entrepreneurial spirit ⟶ enterprise dynamic capability is 0.698, and the bootstrap confidence interval is 0.617–0.783, which does not include zero and shows significance (p<0.05); The effect value of the path from enterprise dynamic capability to enterprise innovation performance is 0.431, and the bootstrap confidence interval is 0.25–0.621, which does not include zero and shows significance (p<0.05); The total effect value is 0.658, the bootstrap confidence interval is 0.568–0.744, and the significance is P<0.05. The direct effect value of the direct effect "entrepreneurial spirit ⟶ corporate innovation performance" is 0.358, showing significance (p<0.05). This conclusion is a prerequisite for mediation analysis; that is, the independent variable impacts the dependent variable, and entrepreneurial spirit significantly impacts corporate innovation performance. The indirect effect value is 0.301, the bootstrap confidence interval is 0.184–0.459, and the interval does not contain 0, indicating a significant mediating effect.

Moderating Effects Testing

Before conducting formal moderation analysis, this study decentralized all the independent variables, dependent variables, and their interaction terms involved (i.e., zeroed the mean of the variables). Test the moderation effect using Model1 in the Process. Verified the positive moderating effect of environmental dynamics on the relationship between enterprise dynamic capabilities and innovation performance. Model 1 was selected after 5000 iterations, and the analysis results are shown in Table 7:

Table 7 Results of Environmental Dynamic Regulation Effect

Environmental dynamics × Enterprise dynamic capabilities ⟶ Enterprise innovation performance					
	Coefficient	Standard error	T-values	Significance	Confidence interval
Enterprise dynamic capability	0.297	0.36	8.262	0.000	0.226–0.368
Environmental dynamics	0.237	0.36	6.514	0.000	0.166–0.309
Environmental dynamics x Enterprise dynamic capabilities	0.279	0.38	7.422	0.000	0.205–0.353
R2	0.349				
F	107.61				

The analysis results in Table7indicate that the interaction term between the independent and moderating variables is significant (β=0.279, t=7.422, p<0.05). The upper and lower coefficients of the 95% confidence interval do not include 0, indicating that environmental dynamics as a moderating variable positively moderates the relationship between firm dynamic capabilities and innovation performance. The F-value of the model is 107.61, and the overall model shows significance. The equation shows a significant linear relationship, and the R^2 value is 0.349, indicating that the independent variable in the model can explain 34.9% of the variation in the dependent variable, the enterprise innovation performance dimension.

Discussion

1. Entrepreneurship plays a key role in the innovation performance of small and medium-sized enterprises. Research shows that the stronger the entrepreneurship of senior managers, the more outstanding the company's performance in product, process, and market innovation. Scholars such as Mao et al. (2016) and Zhou et al. (2020) unanimously believe that actively introducing and cultivating managers with entrepreneurship can significantly enhance the innovation capability of small and medium-sized enterprises.

2. Entrepreneurship is closely related to the dynamic capabilities of enterprises. Research has shown that the enhancement of entrepreneurship significantly improves the dynamic capabilities of small and medium-sized enterprises in innovation and risk-taking. This conclusion is similar to the research results of scholars such as Yu and Ye (2013) and Sun and Jiang (2011), indicating that senior managers of small and medium-sized enterprises should actively practice entrepreneurship, adhere to innovation, and be brave in challenges in their daily management, to enhance the dynamic capabilities and innovation efficiency of the enterprise.

3. The impact of improving dynamic capabilities on innovation performance is also highly concerning. Enterprises can directly improve their innovation performance by enhancing their dynamic capabilities through effective resource integration, learning absorption, and organizational change. This conclusion is consistent with the research results of scholars such as De Jong and van der Meer (2020) and Foss and Knudsen (2019), who emphasize the importance of dynamic capabilities in performance improvement and knowledge integration.

4. Dynamic capabilities mediate between entrepreneurship and innovation performance, emphasizing that entrepreneurship alone is not enough to ensure success. The key lies in effectively utilizing the entrepreneur's own advantages to cope with external changes.

5. Environmental dynamism is a regulating factor that affects the development of dynamic capabilities. Therefore, when formulating strategies and making management decisions, enterprises should consider constructing dynamic capabilities, flexibly adjusting resource allocation, and capability development strategies to adapt to market changes and enhance overall performance and competitiveness. Developing dynamic capabilities will be the key to achieving long-term enterprise success.

Conclusion

This paper centers on the developmental status of small and medium-sized enterprises (SMEs) in Guangzhou, focusing on the relationship between entrepreneurship, dynamic capabilities, and innovation performance. After clarifying the research purpose and significance, the study reviews relevant domestic and international literature, delineates the definitions and measurement methods for entrepreneurship, innovation performance, and dynamic capabilities, and constructs a research model titled "Entrepreneurship—Dynamic Capabilities—Innovation Performance." The findings reveal that entrepreneurship significantly and positively influences both innovation performance and the dynamic capabilities of SMEs. Specifically, managers with strong entrepreneurship are adept at spearheading innovations, thereby enhancing the enterprise's innovation performance; moreover, a high level of entrepreneurship allows enterprises to exhibit greater flexibility and responsiveness in market shifts, thus bolstering their dynamic capabilities. These dynamic capabilities augment the enterprise's capacity to tackle market challenges and prompt SMEs to integrate resources more efficiently during the innovation process, capitalize on innovation opportunities, and enhance innovation performance. Additionally, the study reveals that corporate dynamic capabilities partially mediate the relationship between entrepreneurship and innovation performance, indicating that other factors may influence this relationship besides dynamic capabilities. Moreover, the dynamism of the environment positively moderates this process. In highly dynamic market environments, enterprises must possess robust dynamic capabilities to adapt to

changes swiftly, strengthen competitive advantages, and attain sustained performance enhancement.

In summary, a close correlation exists between entrepreneurship, dynamic ability, and innovation performance, which drives small and medium-sized enterprises to find new development opportunities in the increasingly fierce market competition.

Suggestion

1. Promoting entrepreneurship, strengthening dynamic capacity building, and enhancing innovation performance is key to the sustainable development of enterprises. Enterprises should organize regular training courses to cultivate entrepreneurship to enhance employees' innovation, risk-taking, and decision-making abilities. At the same time, establish a reasonable incentive mechanism to encourage employees to propose innovative ideas and provide rewards, creating a corporate culture that encourages innovation and risk-taking.

2. To build dynamic capability, enterprises must strengthen R&D investment, promote technological innovation, flexibly integrate resources, and optimize organizational structure to improve decision-making efficiency and market response speed. Establishing a dedicated innovation team responsible for planning and implementing innovative projects will help improve the enterprise's innovation performance.

3. Enterprises need to evaluate and improve their innovation performance continuously, regularly analyze successful and failed cases, and identify best practices and areas for improvement. At the same time, establishing a learning mechanism to encourage employees to share their experiences can help accumulate knowledge wealth and improve innovation efficiency. Enterprises can maintain a leading position in the fiercely competitive market and achieve sustainable development through these measures.

New Knowledge

The relationship between entrepreneurship, the dynamic capabilities of enterprises, and innovation performance is an important topic in modern management and entrepreneurship research. entrepreneurship can drive the dynamic capabilities of enterprises, and dynamic capabilities are an important foundation for achieving innovative performance. A virtuous cycle has been formed among

these three factors. Therefore, based on the research results, this study proposes new knowledge points and new directions:

Digital transformation and upgrading. Modern enterprises are facing unprecedented challenges and opportunities in digital transformation. Digital transformation is about updating technology and requires companies to rethink their business models and operational methods. In this transformation, entrepreneurship and dynamic ability are particularly important. entrepreneurship drives creativity and risk–taking, opening up new development paths for enterprises in rapidly changing market environments. Moreover, dynamic capability is reflected in the ability of enterprises to quickly adapt to market changes, reconfigure resources, and guide innovation. This ability enables businesses to quickly capture new business opportunities in the digital wave, ensuring their competitive advantage.

New changes in sustainable innovation. With environmental and social issues intensifying, sustainable innovation for enterprises has become increasingly important. Enterprises must incorporate sustainable development into their strategic core, combine entrepreneurship with dynamic capabilities, and promote innovative activities to address environmental challenges.

New explorations of cross–border cooperation. Cross–border cooperation is becoming an important trend for future enterprise innovation. In a complex and ever–changing market environment, achieving breakthroughs solely based on one's own resources is difficult. Entrepreneurs must have a strategic vision, identify partners in different fields, and form a strong synergy for collaborative innovation through resource integration and knowledge sharing. By establishing effective cross–border cooperation platforms, enterprises can accelerate their progress on innovation, adapt to constantly changing market demands, and promote sustainable development. Therefore, enterprises must emphasize combining and developing these three aspects in digital transformation to meet future challenges and opportunities.

References

Bentler, P.M., & Chou, C–P. (1987). Practical issues in structural modeling. *Sociological Methods and Research, 16,* 78–117. http://dx.doi.org/10.1177/0049124187016001004

De Jong, J.P.J., & van der Meer, H. (2021). The relationship between a firm's dynamic capabilities and its innovative performance: a study of SMEs. *Entrepreneurship Theory and Practice, 45*(2), 227–244.

Drucker, P. (1985). *Innovation and entrepreneurship: practices and principles*. Harper & Row.

Foss, N.J., & Knudsen, T. (2019). The role of dynamic capabilities in firm innovation and competitive performance. *Strategic Management Journal, 40*(5), 787–818.

Foss, N.J., & Lyngsie, J. (2021). The role of entrepreneurial orientation in the context of dynamic capabilities and innovation. *Industrial Marketing Management, 90*, 1–12.

Fu, B., Xie, F., Han, Y., & Li, J. (2016). Will dynamic capabilities necessarily bring innovative performance—— Multi level analysis in uncertain environments. *Science and Technology Management, 37*(12), 41–52.

Hu, Y., & Zeng, H. (2019). The relationship between dynamic capabilities and innovation performance: Evidence from the Chinese pharmaceutical industry. *Asian Journal of Technology Innovation, 27*(2), 219–233.

Liu, F. (2019). Entrepreneurship, innovation incentives, and enterprise innovation performance. *Finance and Accounting Newsletter, 36,* 55–58.

Liu, G., & Liu, J. (2013). Empirical study on the impact of dynamic capability on enterprise performance: a perspective based on environmental dynamics. *Economic Theory and Economic Management,* (3), 83–94.

Mao, L., Wang, L., & Fang, L. (2016) Empirical study on the impact of entrepreneurship on corporate performance: mediating effect based on organizational learning and innovation. *East China Economic Management, 30*(5), 148–152

Sun, X., & Jiang, C. (2011). Research on the mediating role of entrepreneurship: a case study of the pearl river delta region. *Science and Technology Management, 32*(3), 158–164.

Teece, D.J. (2007) Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal, 28,* 1319–1350. http://dx.doi.org/10.1002/smj.640

Yu, W., & Ye, C. (2013). Research on the impact of social capital and entrepreneurship of private enterprises on innovation performance. *Industrial Engineering and Management, 18*(5), 67–73.

Yang, D., & Li, Y (2008). Research on the impact of corporate entrepreneurship and strategic alliances on innovation. *Scientific Research, 26*(5), 1114–1118.

Zhang, Q., Liu, C., & Shi, J. (2014). The relationship between technological diversification and corporate performance in turbulent environments. *Journal of Journal of Management,* (12), 1818–1825.