

Impact of Tacit Knowledge Acquisition on Innovation Performance of Innovative Enterprises in Guangdong Hong Kong Macao Greater Bay Area

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Abstract

Strategic emerging enterprises are an important part of enterprises in the Guangdong-Hong Kong-Macao Greater Bay Area. The innovation capability of strategic emerging enterprises determines the overall innovation level of existing and future enterprises in the Guangdong-Hong Kong-Macao Greater Bay Area. Strategic emerging enterprises in Guangdong-Hong Kong-Macao Greater Bay Area should build their own innovation resources and innovation capabilities through various ways from the beginning, because their internal knowledge resources are limited, and if they cannot acquire enough tacit knowledge resources, their innovation capabilities will be insufficient. How to improve the innovation performance of strategic emerging enterprises by acquiring tacit knowledge resources has become an important research topic. Taking strategic emerging enterprises in the Guangdong-Hong Kong-Macao Greater Bay Area as the research object, this paper studies the relationship between tacit knowledge acquisition and innovation performance, and strives to explain whether the relationship between the two is achieved through absorptive capacity, thus revealing the mechanism of tacit knowledge acquisition formulating the innovation performance of strategic emerging enterprises and the conditions for the formation of absorptive capacity of strategic emerging enterprises in the Guangdong-Hong Kong-Macao Greater Bay Area. This research can help the strategic emerging enterprises in the Guangdong-Hong Kong-Macao Greater Bay Area to better establish the initiative and awareness of external tacit knowledge acquisition, cultivate and enhance the absorptive capacity of enterprises, and ultimately realize the rapid growth and sustainable development of strategic emerging enterprises in the Greater Bay Area.



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Introduction

Strategic emerging enterprises are an important part of enterprises in the Guangdong-Hong Kong-Macao Greater Bay Area (hereinafter referred to as “the Greater Bay Area”). The overall improvement of the innovation capabilities of these enterprises determines the overall innovation level of existing and future enterprises in the Greater Bay Area (Ren 2018). From the perspective of knowledge management, tacit knowledge accounts for more than 80% of the total knowledge and is the main component of knowledge (Polanyi M, 1966). It has more perfect value creation and is the gold medal to enhance the core competitiveness of enterprises. Yang et al. (2018) proposed that for high-tech enterprises with high knowledge, high technology, and high innovation, knowledge is updated rapidly, and market opportunities are fleeting. As a key variable of enterprise innovation, knowledge acquisition can be effectively combined with knowledge creation, and has a complementary effect on the improvement of enterprise breakthrough innovation capabilities (An & Zhang 2020; Ren 2018; Cohen & Levinthal, 1990). Tacit knowledge has the characteristics of being difficult to imitate, difficult to copy, and difficult to obtain, and can better meet the needs of breakthrough innovation. Therefore, acquiring tacit knowledge has become the key for enterprises to achieve breakthrough innovation. Strategic emerging enterprises in the Greater Bay Area urgently need to obtain valuable, heterogeneous and scarce tacit knowledge resources from the outside, and improve their innovation performance by promoting their own strong absorptive capacity. However, there is still a lack of specific studies on the relationship between tacit knowledge acquisition and innovation, especially on the relationship between tacit knowledge acquisition and innovation performance with strategic emerging enterprises in the Greater Bay Area as the research object. The mechanism through which tacit knowledge acquisition affects the innovation performance of strategic emerging enterprises in the Greater Bay Area is a topic worth exploring and studying in depth in the existing studies (An & Zhang 2020).

Problem Statement

The knowledge-based economy makes knowledge creation, acquisition, transformation, and utilization an increasingly important source of innovation for enterprises, and the R&D investment of enterprises can generate innovation through the creation and application of new knowledge, i.e., the absorptive capacity of enterprises can promote innovation (An & Zhang 2020; Ren 2018; Cohen & Levinthal, 1990). The creation of internal knowledge alone is not sufficient for strategic emerging enterprises in the Greater Bay Area to gain sufficient innovation capability. Bringing in external knowledge resources, focusing on acquiring valuable knowledge resources from outside, and absorbing them are important sources of rapid and sustained innovation for strategic emerging firms in the Greater Bay Area (Tsai, 2001). Research on absorptive capacity has addressed the issue of the relationship between knowledge acquisition and absorptive capacity (Cohen & Levinthal, 1990; Zahra & George, 2002), but previous studies have usually considered that absorptive capacity facilitates the transformation of acquired knowledge into innovative capacity and that absorptive capacity plays a moderating role between the two. At the same time, absorptive capacity is regarded as a fundamental constant, and absorptive capacity is considered to be a capability based on the existing knowledge and prior experience of enterprises, which has relative stability. Under this condition, the impact of knowledge transfer or acquisition on innovation is investigated, and the relationship between organizational variables is examined under different conditions of firms' absorptive capacity. It is clear that since absorptive capacity is a firm-based and dynamic capability, its high or low level will affect and contribute to the changes of some organizational variables. Several empirical studies have also examined the moderating effect of absorptive capacity and have concluded that firms should improve their absorptive capacity to better improve organizational performance or innovation. However, there is no implication on how

to improve the absorptive capacity. The study found that absorptive capacity is not always a fixed constant, it can vary with the type and degree of external knowledge acquisition, that is, absorptive capacity itself is variable. Existing studies have begun to explore the antecedent variables of absorptive capacity, that is, to explore what are the direct influencing factors of absorptive capacity, thus trying to reveal the conditions for the formation of absorptive capacity, which may be more meaningful to enterprise managers. Will external tacit knowledge acquisition improve the innovation performance of enterprises by directly affecting the absorptive capacity of strategic emerging enterprises in the Greater Bay Area? This prompts us to examine the possibility that "absorptive capacity", an important variable affecting the innovation capability of strategic emerging firms in the Greater Bay Area, is directly affected by external tacit knowledge acquisition, that is, external tacit knowledge acquisition may be a direct antecedent variable of absorptive capacity, while absorptive capacity may be a mediating variable between tacit knowledge acquisition and firm innovation performance. The improvement of innovation performance is an important issue for the sustainable development of enterprises. Li et al. (2022) confirmed that absorptive capacity is an important factor affecting enterprise innovation performance, and further found that absorptive capacity not only directly promotes innovation performance, but also plays a mediating role in the influence relationship between tacit knowledge acquisition and innovation performance. Using absorptive capacity as a mediating variable to explore the relationship between tacit knowledge acquisition and innovation performance of strategic emerging firms in the Greater Bay Area will enrich existing theories. (An & Zhang 2020; Ren 2018; Cohen & Levinthal, 1990). How to make use of external tacit knowledge resources for strategic emerging enterprises in the Greater Bay Area to continuously improve their absorptive capacity and innovation performance has become an urgent problem to be solved. Based on the above analysis, this topic is established to study the relationship between tacit knowledge acquisition and innovation performance of strategic emerging enterprises in the Greater Bay Area, and strive to explain whether the relationship between the two is achieved through absorptive capacity, to reveal the mechanism by which tacit knowledge acquisition forms innovation performance and the conditions for the formation of absorptive capacity of enterprises.

Research Questions

According to the problem statement, the research questions are as follows:

1. Is there a significant relationship between tacit knowledge acquisition and innovation performance?
2. Is there a significant relationship between tacit knowledge acquisition and absorptive capacity?
3. Is there a significant relationship between absorptive capacity and innovation performance?
4. Does absorptive capacity play a mediating role in the relationship between tacit knowledge acquisition and innovation performance?

Literature review

Enterprise Performance

When measuring the innovation performance of employees, some scholars at home and abroad use the employee creativity or innovation behavior measurement scale. Scott et al. (1994) proposed a three-dimensional structure of innovation performance, namely, idea generation, idea enhancement, and idea practice. Janssen et al. (2000), on the other hand, argued that when an idea becomes a tangible reality, it is a manifestation of the employee's innovation, and it does not necessarily have to be applied to be valuable. Thus, the idea practice in Scott et al.'s three-dimensional structure is changed to idea realization. In the Chinese context, under the influence of cultural atmosphere and subcultural atmosphere, there are slight differences, so

Han et al. (2021) conducted a localization study and believed that innovation willingness, innovation action and innovation results can better reflect the innovation performance of Chinese employees. In addition, innovation input and output in economic and management fields can also reflect innovation performance. For example, in the five-item innovation performance scale compiled by Zhang and Li (2017) in 2010, new product R&D, promotion speed and new factors such as product quality are included; Luo et al. (2017) proposed to measure the innovation benefits of industrial clusters by using five measurement indicators: the number of patents, the total industrial output value, the sales revenue of new products, the success rate of innovation projects, and the development speed of new products. The growth of new enterprises and entrepreneurship based on innovation are closely related to the external environment and internal innovation activities. Some researchers conducted a review of relevant research in the determinants of organizational innovation, and used three theoretical foundations to classify the determinants of organizational innovation: upper echelons theory provides a theoretical basis for innovative leadership, dynamic capability theory provides theoretical support for management level, and process theory provides a theoretical basis for business processes. Therefore, the influencing factors of innovation performance can be divided into two parts: internal factors (personal factors) and external environmental factors.

(1) Personal factors. Domestic scholars Hou et al. (2022) believe that innovation performance exists in individuals and organizations, and individual factors are manifested in cognitive style, creative personality, self-efficacy, emotional intelligence, innovation capability, and intrinsic motivation. Wang (2017) took university scientific research teams as the research object and found that emotional intelligence was positively correlated with the innovation performance of university scientific research teams.

(2) Organizational factors. It is mainly reflected in team situation, leadership situation, organizational innovation atmosphere, work characteristics, time pressure, and organization and environment. Sui et al. (2012) found through the research results of 51 work teams that the innovation atmosphere has a positive impact on team innovation performance, and innovation self-efficacy plays a moderating role between the two; Based on job characteristics theory and human capital theory, data from field research by Zhang (2017) showed a positive relationship between job characteristics and employee innovation performance. Not only that, scholars believe that the ability of knowledge sharing and development ability have an impact on innovation performance.

(3) Interaction factors between individuals and organizations. Regarding the interaction between individuals and organizations, Yang et al. (2014)'s research proved that the two play a joint role in innovation performance. Their research found that team identification enhanced the positive impact of member heterogeneity on team knowledge, and reduced its negative effect on team tightness; team knowledge has a positive impact on team innovation performance, and tightness can positively moderate the positive correlation between the two.

Tacit Knowledge Acquisition

Since the 1950s, "borrowing" external knowledge rather than just relying on "invention" to create knowledge has become the consensus of more and more scholars (March & Simons, 1958). In the era of knowledge economy, the development of knowledge and science and technology has accelerated significantly, the amount and speed of information flow have increased significantly, and innovation risks and innovation costs have greatly increased. In many cases, companies relying solely on their own internal knowledge creation can no longer

keep up with changes in external knowledge and technology. In particular, the strategic emerging enterprises in the Greater Bay Area have a large capital occupation during the start-up period. If the enterprise only relies on the internal development of knowledge, the enterprise's innovation investment and innovation risk will increase. External knowledge acquisition can improve enterprise innovation performance. The introduction of knowledge from the outside can form innovation, and the interaction between enterprises and external relationship networks enables enterprises to quickly perceive the development trend of new technologies and the demand trends of new markets, grasp the flow of new external information, form a "new combination" of knowledge and information, form innovation ideas, lead to new products and services, and improve innovation efficiency (Smith K G, 2005). Therefore, the effective acquisition of external knowledge is of great significance to the innovation performance of enterprises. Now, many powerful large organizations are also aware of the importance of external knowledge acquisition, and actively seek valuable external knowledge resources to promote their own innovation (Rigby & Zook, 2002). Many scholars have pointed out that the use of external knowledge resources is a significant global trend (Roberts, 1995; Hagedoorn, 2002). For strategic emerging enterprises in the Greater Bay Area, they have weak internal resources and limited space for new market entry, so they need to acquire knowledge resources from outside to quickly develop their own technological and market advantages. Especially in terms of key technologies, management concepts and corporate culture, strategic emerging enterprises often lag behind mature enterprises. If the problems of "lack of legitimacy" and "liability of newness" cannot be solved, it will be difficult for strategic emerging firms in the Greater Bay Area to compete with the stronger established firms, and even their survival will become a serious problem (Stinchcombe, 1965; Carroll, 1983; Freeman, 1983). Therefore, acquiring external knowledge resources is the main task for strategic emerging enterprises in the Greater Bay Area to improve their viability, get rid of resource bottlenecks, and achieve innovative development. Many strategic emerging enterprises in the Greater Bay Area have effectively implemented the strategy of acquiring external knowledge resources under the condition that their own resource base is not very strong, so that they can quickly grasp the direction and demand of the market, form their own core competitiveness, and succeed in fierce competition with powerful competitors.

Absorptive Capacity

There are two main views on absorptive capacity: the structure/content view and the process/capacity view. Some scholars (e.g. Mowery et al., 1996; Ahuja & Katila, 2001), influenced by the resource-based view (RBV) structure/content school, believe that a firm's absorptive capacity depends on the scarcity of firm knowledge. According to the structure/content school of RBV, the competitive advantage of an enterprise depends on whether the enterprise has mastered the scarce resources, that is, whether the enterprise can realize the Ricardian rent (Schulze, 1994), and If an enterprise can acquire or prevent its competitors from acquiring scarce resources that others do not have, it can greatly improve its competitiveness (Bamey, 1986; Peteraf, 1993). The structure/content view of absorptive capacity is reflected in Cohen & Levinthal's (1990) article, as they argued that by increasing R&D investment, new knowledge can be created within the firm and the increase in new knowledge allows for better absorption of external knowledge. In this way, the knowledge stock of the organization increases and the absorptive capacity increases. The absorptive capacity of an individual or an organization is knowledge-based and is a reflection of the level of knowledge stock, which mainly depends on the prior knowledge base and problem-solving experience (Kim, 1998). The model of Vanden Bosch et al. (1999) and the study of Lane and Lubatkin's (1998) showed this logic. Because the structural view of absorptive capacity pays more attention to the scarce knowledge that the enterprise has mastered, it affects the

expansion of the connotation of absorptive capacity in terms of process and capability to a certain extent. The process/capacity view of absorptive capacity is more influenced by the branch of resource-based theory (RBV), the theory of firm capabilities. The theory of enterprise capability emphasizes the gradual process and the accumulation of capability in the improvement of enterprise capability. A firm's competitive advantage depends not only on the firm's scarce resources, but on the ability to acquire, integrate and utilize these resources (Amit & Schoemaker, 1993; Kogut & Zander, 1992; Nonaka, 1994). This ability to access external resources is itself a scarce resource that is unique to the firm, it is a capability, and it is a dynamic capability. This ability can develop and create new resources, which is the process/capability view of absorptive capacity. The process/capacity view of absorptive capacity holds that absorptive capacity, as a capability, emphasizes the allocation, integration and utilization of resources, not just limited to the scarce resources held by enterprises (Nonaka, 1994; Lane et al., 2001).

Methodology

Research Design

This study comprehensively uses the relevant knowledge and theories of management and economics, adopts theoretical analysis, and combines empirical analysis to conduct normative research and empirical research on the selected research topics. On the basis of theoretical research, the framework and hypotheses of the model are proposed, and then the proposed model is analyzed and verified through the questionnaire survey and survey data of empirical research. Specific research methods include: literature research method, theoretical synpaper method, model analysis method, empirical analysis.

Hypotheses

H1: Tacit knowledge acquisition has a positive impact on innovation performance.

H1a: Skill-based tacit knowledge acquisition has a positive impact on technological innovation performance.

H1b: Skill-based tacit knowledge acquisition has a positive impact on management innovation performance.

H1c: Cognitive tacit knowledge acquisition has a positive impact on technological innovation performance.

H1d: Cognitive tacit knowledge acquisition has a positive impact on management innovation performance.

H2: Tacit knowledge acquisition has a positive impact on absorptive capacity.

H2a: Skill-based tacit knowledge acquisition has a positive impact on the ability to recognize and evaluate knowledge.

H2b: Skill-based tacit knowledge acquisition has a positive impact on the ability to assimilate and transform knowledge.

H2c: Skill-based tacit knowledge acquisition has a positive impact on the ability to integrate and apply knowledge.

H2d: Cognitive tacit knowledge acquisition has a positive impact on the ability to recognize and evaluate knowledge.

H2e: Cognitive tacit knowledge acquisition has a positive impact on the ability to assimilate and transform knowledge.

H2f: Cognitive tacit knowledge acquisition has a positive impact on the ability to integrate and apply knowledge.

H3: Organizational absorptive capacity has a significant positive impact on innovation performance.

H3a: The stronger the ability to recognize and evaluate knowledge, the higher the technological innovation performance.

H3b: The stronger the ability to assimilate and transform knowledge, the higher the technological innovation performance.

H3c: The stronger the ability to integrate and apply knowledge, the higher the technological innovation performance.

H3d: The stronger the ability to recognize and evaluate knowledge, the higher the management innovation performance.

H3e: The stronger the ability to assimilate and transform knowledge, the higher the management innovation performance.

H3f: The stronger the ability to integrate and apply knowledge, the higher the management innovation performance.

H4: Absorptive capacity plays a mediating role between tacit knowledge acquisition and innovation performance.

Research framework

The theoretical framework of this paper's research on the relationship between tacit knowledge acquisition, absorptive capacity and innovation performance of strategic emerging enterprises in the Greater Bay Area is shown in Figure 1:

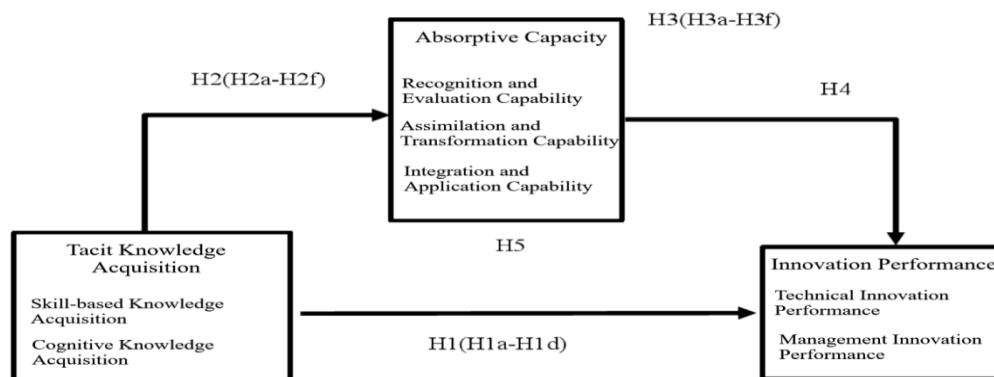


Figure 1 Research Framework

Population / Sampling / Unit of Analysis

Selection of Survey Objects

The object of this paper's formal survey is strategic emerging enterprises in a certain representative industry in the Greater Bay Area, and a large sample is used to conduct a questionnaire survey.

(1) Sample selection scope: This paper mainly studies the relationship between tacit knowledge acquisition, absorptive capacity, and innovation performance of strategic emerging enterprises in the Greater Bay Area. According to the research content and research objects of this paper, the industry types of strategic emerging enterprises in the Greater Bay Area investigated in this paper mainly include energy conservation and environmental protection, digital creativity, information technology, and service.

(2) Analysis level: The research object of this paper is the strategic emerging enterprises in the Greater Bay Area. The main research content is the impact of organizational tacit knowledge acquisition on innovation and its mechanism. Therefore, the analysis level of this research is the organization.

(3) Sampling method and sample size: Due to the difficulty of research at the organizational level and the limited number of eligible strategic emerging enterprises in the Greater Bay Area, the sampling can only be done by convenience sampling. However, in order to ensure the accuracy of the survey and improve the response rate of the questionnaire, this research has received strong support from the Greater Bay Area Strategic Emerging Industry Association and selected 4 strategic emerging enterprises in the Greater Bay Area. A total of 100 electronic questionnaires were distributed to each enterprise for investigation. The four enterprises were energy saving and environmental protection enterprises, digital creative enterprises, information technology enterprises, and service enterprises.

Respondent Profile

Table 1 Analysis of Sample Data (N=345)

Demographic variables	Category	Number of people	Percentage (%)
Gender	Male	213	61.7
	Female	132	38.3
Marital Status	Married	298	86.4
	Single	47	13.6
Age	Under 30 years old	95	27.5
	31-40 years old	118	34.2
	41-50 years old	67	19.4
	Over 50 years old	65	18.9
Academic qualifications	Below undergraduate level	15	4.4
	Undergraduate	181	52.5
	Master's Degree	102	29.5
	Ph.D. and above	47	13.6
Years of work in this company	Less than 2 years	24	6.9
	3-5 years	132	38.3
	6-10 years	111	32.2
	More than 10 years	78	22.6
Position	General Staff	88	25.5
	Basic managers	132	38.3
	Middle managers	87	25.2
	Senior managers	38	11.0

The above is the demographic data of the respondents. However, in order to further test the normal distribution of the sample data, it is necessary to analyze some other numerical conditions of the measurement data to judge the distribution characteristics of the data. The descriptive statistics of the mean, standard deviation, skewness, and kurtosis of the variable measurement items using SPSS23.0 software are shown in Table 2. It can be seen from the table that there is no outlier in the mean of each variable, the absolute values of skewness are all less than 2, and the absolute values of kurtosis are all less than 5. The results of the normal distribution test show that the data of the survey sample are distributed on both sides of the 99% confidence interval, which is significant at a significant level of 0.01, and the data pattern obtained from the measurement belongs to the normal distribution. This shows that the quality of the sample data in this study is high, and the survey data itself meets the basic statistical characteristics of the empirical test, which can be used for subsequent statistical tests and empirical analysis.

Table 2 Descriptive Statistical Analysis of Large Sample Data (N=345)

all	Mean		Standard deviation	Variance	Skewness		Kurtosis	
	Statistic	Standard error	Statistic	Statistic	Statistic	Standard error	Statistic	Standard error
TK1	3.866667	0.050767	0.942946	0.889147	-0.40048	0.131308	-0.59416	0.261872

TK2	3.965217	0.048536	0.901521	0.81274	-0.45817	0.131308	-0.67077	0.261872
TK4	3.889855	0.04873	0.905112	0.819228	-0.37232	0.131308	-0.61167	0.261872
TK5	3.933333	0.047827	0.88834	0.789147	-0.26946	0.131308	-0.93381	0.261872
TK6	3.953623	0.046195	0.85803	0.736215	-0.27184	0.131308	-0.8660	0.261872
TK8	3.913043	0.046751	0.868357	0.754044	-0.66137	0.131308	-0.05722	0.261872
AC1	3.814493	0.051611	0.958632	0.918975	-0.65672	0.131308	-0.26794	0.261872
AC2	3.857971	0.050781	0.943214	0.889653	-0.80007	0.131308	0.118246	0.261872
AC5	3.82029	0.05248	0.974766	0.950169	-0.78853	0.131308	0.233003	0.261872
AC6	3.817391	0.051396	0.954633	0.911325	-0.61558	0.131308	-0.30473	0.261872
AC7	3.768116	0.046575	0.865101	0.748399	-0.45434	0.131308	0.029646	0.261872
AC8	3.768116	0.045477	0.844698	0.713515	-0.12105	0.131308	-0.5588	0.261872
AC9	3.698551	0.047222	0.877114	0.769329	-0.77655	0.131308	1.195729	0.261872
AC14	3.652174	0.047188	0.87647	0.7682	-0.74577	0.131308	1.19528	0.261872
AC15	3.715942	0.044608	0.828564	0.686518	-0.63144	0.131308	1.014694	0.261872
AC16	3.802899	0.048451	0.899931	0.809875	-0.66043	0.131308	0.657235	0.261872
AC17	3.721739	0.051542	0.957357	0.916532	-0.61771	0.131308	0.393449	0.261872
AC18	3.797101	0.049585	0.921003	0.848247	-0.61942	0.131308	0.439499	0.261872
AC20	3.730435	0.052083	0.96739	0.935844	-0.67791	0.131308	0.548837	0.261872
AC22	3.756522	0.051727	0.960783	0.923104	-0.64311	0.131308	0.423812	0.261872
AC23	3.475362	0.057767	1.072978	1.151281	-0.18426	0.131308	-0.5726	0.261872
AC24	3.53913	0.058325	1.083333	1.17361	-0.32895	0.131308	-0.51089	0.261872
IP1	3.504348	0.057782	1.073252	1.151871	-0.18872	0.131308	-0.65881	0.261872
IP2	3.486957	0.05879	1.091978	1.192417	-0.23595	0.131308	-0.60954	0.261872
IP3	3.498551	0.06021	1.118358	1.250725	-0.28482	0.131308	-0.63466	0.261872
IP4	3.75942	0.057547	1.068894	1.142535	-0.95895	0.131308	0.667206	0.261872
IP5	3.950725	0.044419	0.825048	0.680704	-0.50159	0.131308	0.09291	0.261872
IP6	3.994203	0.044021	0.817662	0.668571	-0.47068	0.131308	-0.16798	0.261872
IP7	3.944928	0.044589	0.828198	0.685912	-0.36009	0.131308	-0.52836	0.261872
IP8	3.924638	0.043254	0.803409	0.645467	-0.404	0.131308	-0.10943	0.261872

Influence of Tacit Knowledge Acquisition on Innovation Performance

Taking tacit knowledge acquisition as the independent variable of the model and innovation performance of strategic emerging enterprises in the Greater Bay Area as the dependent variable, a multiple regression analysis of this model is conducted with large sample data, and the results are shown in Table3. As can be seen from the table, the value of adjusted R^2 is 0.614, indicating that tacit knowledge acquisition can explain 61.4% of the overall change in innovation performance, and the F value is 87.758 ($P < 0.01$). The results of regression analysis

show that tacit knowledge acquisition had a significant positive effect on innovation performance (B=0.602, P<0.01). Therefore, Hypothesis H1 is supported.

Table3 Regression Analysis of Tacit Knowledge Acquisition and Innovation Performance

Model (H1)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	1.677	.216		7.781	.000	.614	87.758**
Number of employees	.026	.023	.044	1.159	.247		
Industry	-.205	.019	-.392	-10.631	.000		
R&D investment ratio	.088	.033	.094	2.649	.008		
Diversity Level	.146	.038	.162	3.841	.000		
Degree of internationalization	-.240	.056	-.182	-4.318	.000		
Tacit knowledge acquisition	.633	.039	.602	16.258	.000		

Note: Dependent Variable: innovation performance, ** means significance level p<0.01

Taking skill-based tacit knowledge acquisition and cognitive tacit knowledge acquisition as the independent variable of the model and technological innovation performance as the dependent variable, a multiple regression analysis of this model is conducted with large sample data, and the results are shown in Table 4. It can be seen from the table that the two dimensions of tacit knowledge acquisition have a significant positive impact on technological innovation performance (B=0.171, P<0.01; B=0.501, P<0.01). Therefore, Hypotheses H1a and H1c are supported.

Table 4 Regression Analysis of Tacit Knowledge Acquisition Dimensions and Technological Innovation Performance

Model (H1a, H1c)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	.464	.335		1.384	.167	.550	58.188**
Number of employees	.176	.037	.201	4.784	.000		
Industry	-.193	.032	-.257	-6.044	.000		
R&D investment ratio	.029	.053	.022	.558	.577		
Diversity Level	.389	.059	.301	6.611	.000		
Degree of internationalization	-.497	.087	-.263	-5.695	.000		
Skill-based tacit knowledge acquisition	.215	.059	.171	3.670	.000		
Cognitive tacit knowledge acquisition	.659	.065	.501	10.130	.000		

Note: Dependent Variable: technical innovation performance; ** means significant level p<0.01

Taking skill-based tacit knowledge acquisition and cognitive tacit knowledge acquisition as the independent variable of the model and management innovation performance as the dependent

variable, a multiple regression analysis of this model is conducted with large sample data, and the results are shown in Table 5. As can be seen from the table, the positive impact of skill-based tacit knowledge on management innovation performance is not significant ($B=-0.028$, $P>0.05$), therefore, hypothesis H1b is not supported; the positive impact of cognitive tacit knowledge on management innovation performance is significant ($B=0.552$, $P>0.01$), and hypothesis H1d is supported.

Table 5 Regression Analysis of Tacit Knowledge Acquisition Dimensions and Management Innovation Performance

Model (H1b, H1d)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	2.611	.214		12.180	.000	.578	65.047**
Number of employees	-.208	.023	-.361	-8.850	.000		
Industry	-.119	.020	-.239	-5.800	.000		
R&D investment ratio	.249	.034	.283	7.387	.000		
Diversity Level	-.094	.038	-.110	-2.499	.013		
Degree of internationalization	-.106	.056	-.085	-1.892	.059		
Skill-based tacit knowledge acquisition	-.023	.038	-.028	-.620	.536		
Cognitive tacit knowledge acquisition	.479	.0421	.552	11.510	.000		

Note: Dependent variable: management innovation performance; ** means significance level $p<0.01$

Among the effects of tacit knowledge acquisition on the innovation performance of strategic emerging enterprises in the Greater Bay Area, cognitive tacit knowledge acquisition has a significant positive impact on both technological innovation performance and management innovation performance. H1c ($B= 0.501$, $P<0.01$) and H1d ($B=0.552$, $P<0.01$) are supported.

Influence of Tacit Knowledge Acquisition on Absorptive Capacity

Taking tacit knowledge acquisition as the independent variable of the model and absorptive capacity as the dependent variable, a multiple regression analysis of this model is conducted with large sample data, and the results are shown in Table 6. As can be seen from the table, the value of adjusted R² is 0.688, indicating that tacit knowledge acquisition explains 66.8% of the overall change in absorptive capacity, and the F value is 121.421 ($p<0.01$). The results of regression analysis showed that tacit knowledge acquisition had a significant positive effect on absorptive capacity ($B=0.667$, $P<0.01$). So, H2 is supported.

Table 6 Regression Analysis of Tacit Knowledge Acquisition and Absorptive Capacity

Model (H2)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	.854	.216		3.947	.000	.688	121.421**
Number of employees	.148	.023	.217	6.433	.000		
Industry	-.179	.019	-.307	-9.262	.000		

R&D investment ratio	-.082	.033	-.079	-2.452	.015
Diversity Level	.377	.038	.375	9.896	.000
Degree of internationalization	-.291	.056	-.198	-5.224	.000
Tacit knowledge acquisition	.784	.039	.667	20.056	.000

Note: Dependent variable: Absorptive capacity; ** means significance level $p < 0.01$

Taking skill-based tacit knowledge acquisition and cognitive tacit knowledge acquisition as the independent variable of the model and recognition and evaluation capability as the dependent variable, a multiple regression analysis of this model is conducted with large sample data, and the results are shown in Table 7. It can be seen from the table that skill-based tacit knowledge acquisition and cognitive tacit knowledge acquisition have a significant positive impact on recognition and evaluation capability ($B=0.319, P<0.01$; $B=0.487, P<0.01$), therefore, Hypotheses H2a and H2d are supported.

Table 7 Regression Analysis of Tacit Knowledge Acquisition Dimensions and Recognition and Evaluation Capability

Model (H2a, H2d)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	.597	.240		2.485	.013	.614	75.265**
Number of employees	.172	.026	.255	6.529	.000		
Industry	-.119	.023	-.205	-5.190	.000		
R&D investment ratio	.026	.038	.025	.692	.490		
Diversity Level	.198	.042	.198	4.703	.000		
Degree of internationalization	-.204	.063	-.139	-3.258	.001		
Skill-based tacit knowledge acquisition	.310	.042	.319	7.373	.000		
Cognitive tacit knowledge acquisition	.495	.047	.487	10.625	.000		

Note: Dependent Variable: Recognition and evaluation capability; ** means significance level $p < 0.01$

Taking skill-based tacit knowledge acquisition and cognitive tacit knowledge acquisition as the independent variable of the model and assimilation and transformation capability as the dependent variable, a multiple regression analysis of this model is conducted with large sample data, and the results are shown in Table 8. It can be seen from the table that skill-based and cognitive tacit knowledge acquisition have a significant positive effect on assimilation and transformation capability ($B=0.191, P<0.01$; $B=0.480, P<0.01$). Therefore, Hypotheses H2b and H2e are supported.

Table 8 Regression Analysis of Tacit Knowledge Acquisition Dimensions and Assimilation and Transformation Capability

Model (H2b, H2e)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					

(Constant)	1.238	.245		5.060	.000	.601	71.500**
Number of employees	.102	.027	.152	3.822	.000		
Industry	-.131	.023	-.225	-5.608	.000		
R&D investment ratio	-.130	.038	-.126	-3.377	.001		
Diversity Level	.442	.043	.441	10.293	.000		
Degree of internationalization	-.303	.064	-.206	-4.753	.000		
Skill-based tacit knowledge acquisition	.186	.043	.191	4.337	.000		
Cognitive tacit knowledge acquisition	.489	.047	.480	10.309	.000		

Note: Dependent Variable: Assimilation and transformation capability; ** means significance level p<0.01

Taking skill-based tacit knowledge acquisition and cognitive tacit knowledge acquisition as the independent variable of the model and integration and application capability as the dependent variable, a multiple regression analysis of this model is conducted with large sample data, and the results are shown in Table 9. It can be seen from the table that skill-based knowledge acquisition and cognitive tacit knowledge acquisition have a significant positive impact on integration and application capability (B=0.364, P<0.01; B=0.409, P<0.01). Therefore, Hypotheses H2c and H2f are supported.

Table 9 Regression Analysis of Tacit Knowledge Acquisition Dimensions and Integration and Application Capability

Model (H2c, H2f)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	.560	.242		2.319	.021	.719	120.406**
Number of employees	.118	.026	.149	4.462	.000		
Industry	-.230	.023	-.336	-9.984	.000		
R&D investment ratio	-.080	.038	-.066	-2.114	.035		
Diversity Level	.493	.042	.419	11.632	.000		
Degree of internationalization	-.440	.063	-.256	-7.007	.000		
Skill-based tacit knowledge acquisition	.418	.042	.364	9.875	.000		
Cognitive tacit knowledge acquisition	.490	.047	.409	10.455	.000		

Note: Dependent variable: Integration and application capability; ** means significance level p<0.01

The two dimensions of tacit knowledge acquisition have significant positive effects on each dimension of absorptive capacity, Hypotheses H2a and H2d (B=0.319, P<0.01; B=0.487, P<0.01), H2b and H2e (B=0.191, P<0.01; B=0.480, PV0.01), H2c and H2f (B=0.364, P<0.01; B=0.409, P<0.01) are supported.

Positive Effect of Absorptive Capacity on Innovation Performance

Table 10 Regression Analysis of Absorptive Capacity and Innovation Performance

Model (H4)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	1.116	.140		7.949	.000	.824	256.960**
Number of employees	-.091	.015	-.150	-6.074	.000		
Industry	-.069	.014	-.132	-4.798	.000		
R&D investment ratio	.151	.022	.163	6.742	.000		
Diversity Level	-.151	.026	-.168	-5.834	.000		
Degree of internationalization	-.007	.037	-.005	-.196	.845		
Absorptive capacity	.777	.025	.867	31.072	.000		

Note: Dependent variable: Innovation performance; ** means significance level p<0.01

Taking the three dimensions of absorptive capacity, i.e. recognition and evaluation capability, assimilation and transformation capability, and integration and application capability, as the independent variable of the model and technological innovation performance as the dependent variable, a multiple regression analysis of this model is conducted with large sample data, and the results are shown in Table 11. As can be seen from the table, each dimension of absorptive capacity has a significant positive effect on technological innovation performance (B=0.351, P<0.01; B= 0.394, P < 0.01; B= 0.202, P < 0.01). Therefore, Hypotheses H3a, H3b, and H3c are supported.

Table 11 Regression Analysis of Absorptive Capacity Dimensions and Technological Innovation Performance

Model (H4a, H4b, H4c)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	-.707	.204		-3.470	.001	.824	192.772**
Number of employees	.043	.022	.049	1.916	.056		
Industry	-.035	.022	-.047	-1.621	.106		
R&D investment ratio	.080	.034	.060	2.395	.017		
Diversity Level	-.027	.042	-.021	-.645	.519		
Degree of internationalization	-.141	.055	-.075	-2.563	.011		
Recognition and evaluation capability	.454	.076	.351	5.944	.000		
Assimilation and transformation capability	.508	.065	.394	7.832	.000		
Integration and application capability	.222	.079	.202	2.800	.005		

Note: Dependent variable: Technical innovation performance; ** means significance level p<0.01

Taking the three dimensions of absorptive capacity, i.e. recognition and evaluation capability, assimilation and transformation capability, and integration and application capability, as the

independent variable of the model and management innovation performance as the dependent variable, a multiple regression analysis of this model is conducted with large sample data, and the results are shown in Table 12. From the table, it can be seen that the positive impact of recognition and evaluation, and assimilation and transformation capability on management innovation performance is significant (B=0.426, P<0.01; B=0.354, P<0.01), therefore, Hypotheses H3d and H3e are supported; however, the positive impact of integration and application capability on management innovation performance is not significant (B=-0.302, P>0.01), therefore, Hypothesis H3f is not supported.

Table 12 Regression Analysis of Absorptive Capacity Dimensions and Management Innovation Performance

Model (H4d, H4e, H4f)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	2.810	.220		12.762	.000	.529	46.973**
Number of employees	-.261	.024	-.453	-10.770	.000		
Industry	-.142	.023	-.286	-6.053	.000		
R&D investment ratio	.223	.036	.253	6.135	.000		
Diversity Level	-.216	.045	-.253	-4.746	.000		
Degree of internationalization	.045	.060	.036	.757	.450		
Recognition and evaluation capability	.364	.083	.426	4.404	.000		
Assimilation and transformation capability	.301	.070	.354	4.298	.000		
Integration and application capability	-.219	.085	-.302	-2.563	.011		

Note: Dependent variable: Managing innovation performance; ** means significance level p<0.01

Each dimension of absorptive capacity has a significant positive impact on innovation performance. Hypotheses H3a, H3b, H3c (B=0.351, P<0.01; B=0.394, P<0.01; B=0.202, P<0.01) and Hypotheses H3d, H3e (B=0.426, P<0.01; B=0.354, P<0.01) are supported; but the positive effect of integration and application capability on management innovation performance is not significant, and the Hypothesis H3f (B=-0.302, P>0.01) is not supported.

Mediating Role of Absorptive Capacity Between Tacit Knowledge Acquisition and Innovation Performance

Using SPSS 23.0 software, a multiple regression analysis is conducted using the "stepwise regression method". It is found that the regression coefficient between absorptive capacity and innovation performance is 0.824 (.000) **, and the relationship is still significant. However, the regression coefficient between tacit knowledge acquisition and innovation performance decreased from 0.602 (.000) ** to 0.052 (0.163), and the relationship between the two is no longer significant, which indicates that absorptive capacity is a mediating variable and plays a fully mediating role. So far, it can be determined that the impact of tacit knowledge acquisition on the innovation performance of strategic emerging enterprises in the Greater Bay Area is achieved through absorptive capacity, which is the mediating variable between tacit knowledge acquisition and innovation performance, and plays a full mediating role, so

Hypothesis H5 is supported. The specific analysis of the mediation effect is shown in Table 13 and Table 14.

Table 13 Mediation Analysis of Absorptive Capacity

Model (H5)	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.	Adjusted R ²	F
	B	Std.					
(Constant)	1.047	.149		7.047	.000	.825	221.188**
Number of employees	-.082	.016	-.136	-5.034	.000		
Industry	-.073	.015	-.139	-4.981	.000		
R&D investment ratio	.148	.023	.159	6.566	.000		
Diversity Level	-.132	.029	-.147	-4.526	.000		
Degree of internationalization	-.025	.039	-.019	-.644	.520		
Tacit knowledge	.055	.039	.052	1.399	.163		
Absorptive capacity	.738	.037	.824	19.688	.000		

Note: Dependent variable: Innovation performance; ** means significance level p<0.01

Table 14 Regression Analysis Table of Tacit Knowledge Acquisition, Absorptive Capacity and Innovation Performance

Number of regression	Independent variable	Dependent variable	Regression coefficient (P)	Sig.
1	Tacit knowledge acquisition	Innovation Performance	0.602	.000
2	Tacit knowledge acquisition	Absorptive capacity	0.667	.000
3	Absorptive capacity	Innovation Performance	0.867	.000
4	Tacit knowledge acquisition	Innovation Performance	.052	.163
	Absorptive capacity	Innovation Performance	.824	.000

Absorptive capacity fully mediates the relationship between tacit knowledge acquisition and innovation performance (path coefficients range from 0.602** to 0.052). This indicates that the relationship between "tacit knowledge acquisition-absorptive capacity-innovation performance" discussed in theory is established. The impact of tacit knowledge acquisition on the innovation performance of strategic emerging enterprises in the Greater Bay Area through the mediating variable of absorptive capacity is largely due to the fact that tacit knowledge, a heterogeneous and scarce resource, is tacit and practical in nature and requires a large degree of decoding-encoding-re-decoding process. This process is precisely the function reproduced by the absorptive capacity. The acquisition of tacit knowledge itself does not easily produce innovation directly, and innovation generation requires to a large extent the organization's strong absorptive capacity to transform the acquired tacit knowledge into the commercialized innovation output of the enterprise through recognition and evaluation, assimilation and transformation, and integration and application. It is the inherent mechanism of tacit knowledge acquisition to improve innovation performance by promoting the cumulative improvement of absorptive capacity to further enhance the innovation performance of enterprises.

Conclusions

The overall objective of this study is to analyze the relationship between tacit knowledge acquisition, absorptive capacity, and innovation performance of strategic emerging enterprises in the Greater Bay Area based on the existing research on tacit knowledge acquisition, absorptive capacity, and innovation performance, and to construct a theoretical model of tacit knowledge acquisition, absorptive capacity and innovation performance of strategic emerging enterprises by combining the core viewpoints of growth theory and knowledge management theory of strategic emerging enterprises in the Greater Bay Area. It also conducts a questionnaire survey on a sample of strategic emerging enterprises in the Greater Bay Area to empirically study the relationship between tacit knowledge acquisition, absorptive capacity, and innovation performance of strategic emerging enterprises, and seeks to find and explain the mechanism of tacit knowledge acquisition to generate innovation performance and the formation conditions of absorptive capacity of strategic emerging enterprises in the Greater Bay Area. The main conclusions of this study are:

1. Tacit knowledge acquisition can improve the innovation performance of strategic emerging enterprises in the Greater Bay Area. The empirical research results of this paper show that, except that the positive effect of skill-based tacit knowledge acquisition on management innovation performance is not significant ($B=-0.028$, $p=0.536>0.05$) (H1b is not supported), skill-based tacit knowledge acquisition has a significant positive effect on technological innovation performance and cognitive tacit knowledge acquisition has a significant positive effect on technological and management innovation performance. Skill-based or cognitive tacit knowledge acquired from outside can form a "new combination" of product and technological innovation and establish a new thinking mode, thereby contributing to the technological and management innovation performance improvement of strategic emerging enterprises in the Greater Bay Area.

2. The acquisition of tacit knowledge is an important condition for the formation of the absorptive capacity of strategic emerging enterprises in the Greater Bay Area. The results show that tacit knowledge acquisition has a significant positive impact on all dimensions of absorptive capacity. If the strategic emerging enterprises in the Greater Bay Area continuously acquire skill-based and cognitive tacit knowledge from the outside world, the process of handling such knowledge will make the enterprises' ability to identify and evaluate, digest and transform, and integrate and apply new knowledge, new technologies and new ideas continuously exercised and improved, and the "mental model" of the strategic emerging enterprises in the Greater Bay Area will be improved and strengthened, so that the absorptive capacity of the enterprises will be continuously improved. From another perspective, the acquisition of tacit knowledge is an important condition for the formation of the absorptive capacity of strategic emerging enterprises in the Greater Bay Area.

3. Absorptive capacity has a significant positive impact on innovation performance. The stronger the absorptive capacity of the strategic emerging enterprises in the Greater Bay Area, the more thoroughly they understand the development connotation of technology and products, the more they can gain insight into the operational efficiency and management efficiency of the organization in the early stage of the enterprise, actively implement technological reform and management reform, and improve innovation performance. However, the positive effect of integration and application capability on management innovation performance did not pass the test ($B=-0.302$, $p=0.011>0.01$) (H4f is not supported). The possible reason for this situation is that integration capability is a more advanced capability, which requires a longer period of accumulation. The strategic emerging enterprises in the Greater Bay Area have not yet accumulated a strong ability to identify and evaluate, and digest and transform knowledge, so their integration and application capabilities are necessarily not very strong. Even if they may have some integration capability, it may be a

single integration capability, which has not been matched with organizational processes, practices, culture, and organizational systems, and thus cannot positively influence the management performance of the organization.

4. Absorptive capacity is the mediating variable between tacit knowledge acquisition and innovation performance. Tacit knowledge acquisition improves innovation performance through absorptive capacity, which plays a complete mediating role between tacit knowledge acquisition and innovation performance (path coefficients range from 0.602** to 0.052). The conclusion of this paper verifies the action process and mechanism of "tacit knowledge acquisition–absorptive capacity–innovation performance", which is discussed in theory. It shows that tacit knowledge acquisition itself is not easy to produce innovation directly, and the generation of innovation depends on the strong absorptive capacity of the organization to a large extent. Tacit knowledge acquisition further improves innovation performance through the formation and accumulation of absorptive capacity is the intrinsic mechanism of tacit knowledge acquisition to improve the innovation performance of strategic emerging enterprises in the Greater Bay Area. This conclusion of this paper enriches the study of absorptive capacity theory.

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