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# Supply chain integration, strategic choice and corporate growth of agricultural companies: an analysis of dynamic QCA

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The corporate growth is an important measure of the sustainable growth ability. Most of the existing literature discusses the influence of single factor on the corporate growth. Based on the match of strategy and structure, this research discusses the configuration effects of supply chain integration and strategic choice on the corporate growth of agricultural companies by using dynamic QCA. The main findings are as follows: (1) The match of structure and strategy can better explain high corporate growth, but a single factor does not constitute the necessary condition for high corporate growth. The necessity of the same group effect has time effect. (2) There are three configurations promoting the high corporate growth, which are Internal Collaboration-Imitation Driven Type, Internal Collaboration-Innovation Driven Type, Internal and External Integration-Innovation Driven Type. (3) The Between results show that the consistency of configuration 1 increases in 2020, while the consistency of configuration 2 and configuration 3 decreases. The Within results show that the collaboration between internal integration and peer effect can better explain the high corporate growth of state-owned companies. The collaboration of internal integration, customer integration, and entrepreneurial orientation can better explain the high corporate growth of private companies. (4) At the structure level, agricultural companies do not need to focus on supplier integration. The coordination of internal and external integration is an important condition for the development of companies, among which internal integration is the most important. At the strategy level, entrepreneurial orientation is crucial for the corporate growth. (5) There is a substitution relationship between the factors. When internal integration exists, the peer effect and entrepreneurial orientation can replace each other. The research makes up for the shortcomings of existing research on agricultural supply chain, and provides reference for the sustainable growth of agricultural companies.

## KEYWORDS

corporate growth, supply chain integration, strategic choice, agricultural company, dynamic QCA

## 1 Introduction

With the global population exceeding 8 billion, agriculture is not only the basis of human survival, but also the core of global economic, social and ecological development. According to *The State of Food Security and Nutrition in the World* released by the Food and Agriculture Organization of the United Nations (FAO), there are still 713 million to 757 million people in the world facing hunger. Agriculture is the key to solve this problem, which lays the foundation for economic growth and social stability, providing not only food but also livelihoods for about 40% of the world's population. China's agriculture and related industries

contribute greatly to the national economy. In 2023, the agriculture and related industries accounted for 15.34% of GDP, and played an important role in providing employment opportunities. China's No. 1 central document for 2025 anchors the goal of building up China's agricultural strength and comprehensively promotes rural vitalization, emphasizing the cultivation and expansion of agricultural companies, building the whole agricultural industry chain, and guiding companies, family farms and farmers to closely cooperate. At the same time, the business environment of agriculture is characterized by high uncertainty and complexity. The fluctuation of the global economy, the uncertainty of trade policy and the frequent occurrence of extreme weather caused by climate change have significantly increased the natural risk and market risk of agricultural production. Agricultural production has strict natural laws, and the production process can not be interrupted and it is difficult to adjust quickly, which makes companies lack flexibility in responding to market changes. Enhancing the ability of risk management and adaptation of agricultural companies and promoting their sustainable development are not only the key to promote the high-quality development of agriculture, but also an important strategy to promote the prosperity of China's economy. Corporate growth is an important measure of the development ability of the company. It can not only reflect the operation, but also reflect the future development direction. Therefore, it is of great significance to investigate how to improve the corporate growth and how to achieve sustainable development in agricultural companies.

A large number of scholars have researched how to improve the corporate growth in agricultural companies. Based on the Organizational Structure Theory, Galbraith et al. (2002) proposed that the match of strategy, structure and process can promote the rapid corporate growth. For the sustainable growth of agricultural companies, structure and strategy are the two most important factors, especially the match of them, which can improve the efficiency of operation and make companies more flexible and adaptable. Many empirical studies have proved that the match of structure and strategy can promote the growth of companies (Ji et al., 2022; Feng et al., 2014; Yu et al., 2019). If the structure and strategy do not match, the efficiency of the company will be difficult to increase (Gündemir et al., 2018; Zhang et al., 2016).

At the structural level, the supply chain integration of agricultural companies is very important. With the deepening of the social division of labor, agricultural companies are in an increasingly complex social network, and they have more and more cooperation with upstream suppliers and downstream customers. The agricultural companies needs to pay more attention to their supply chain (Jian et al., 2021). First, supply chain integration improves product quality. Due to the perishability and seasonal characteristics of agricultural products, there are some risks in the supply system, causing problems such as difficult preservation, high cost and low income. By integrating all processes of the supply chain, agricultural companies can monitor the whole process of the production. Second, supply chain integration improves operational efficiency. By sharing the information of production and market with suppliers, coordinating internal information and processes, and establishing strategic partnerships with customers, resources can be optimized and the information flow efficiency can be improved (Flynn et al., 2009; Schoenherr and Swink, 2011). Third, market competitiveness can be enhanced through integrating the supply chain, because of the improvement of the

stability in production and supply, and the optimization in product quality along with the reduction of costs.

At the strategic level, the strategic choice is a key decision for the agricultural companies to make, which has a great impact on the development of companies. The Strategic Choice Theory points out that choosing the appropriate development strategy helps companies to maintain competitiveness in the changing market environment (Child, 1997). Whether a company can achieve growth depends largely on the applicability and effectiveness of its strategic choice (Su et al., 2023). The strategic choice clarifies the future development direction for companies. Actively developing new markets and sensitively identifying environmental changes are the two driving forces for the survival and development of companies.

According to the match of structure and strategy, this research explores the impacts of the supply chain integration and the strategic choice on the corporate growth, with the supply chain integration as the structure and the strategic choice as the strategy. It uses the dynamic QCA method, taking 77 agricultural listed companies from 2013 to 2021 as the research sample, basing on Endogenous Growth Theory, Strategic Choice Theory, Dynamic Capability Theory and Resource Dependence Theory.

The contributions of this research are as follows: First, this research discusses the driving mechanism of agricultural corporate growth from the perspective of structure-strategy matching. Existing researches focus on the impacts of single factors such as supply chain integration at the structural level or strategic choice at the strategic level on the corporate growth, ignoring the collaboration between these factors. This research integrates the multiple factors of supply chain integration and strategic choice, and systematically explores the complex influencing mechanism and configurations of corporate growth. Second, this research makes up for insufficient exploration of agricultural supply chains in existing research. Previous studies focused on the technological innovation of agricultural supply chain, and lacked the exploration in the integration of agricultural supply chain. The integration of agricultural supply chain can help agricultural companies cope with the challenges and achieve stable growth. Finally, this research uses the dynamic QCA method with the panel data of listed companies, breaking through the limitations of the traditional QCA. This innovative method can not only explore the paths in temporal and spacial dimensions, but also effectively explain the paths with typical cases, thereby providing new ideas for the research of corporate growth.

## 2 Literature review and model specification

### 2.1 Literature review

#### 2.1.1 Supply chain integration and corporate growth

Supply chain integration refers to the optimization of the internal processes in an organization and the consistency of strategic interests with key suppliers and customers (Flynn et al., 2009; Donkor et al., 2021). Supply chain integration is classified into three dimensions: internal integration within the firm, integration with upstream suppliers, and integration with downstream customers (Ataseven and Nair, 2017), which are internal integration, supplier integration, and

customer integration. Internal integration means that a company eliminates cross-functional barriers and enables different departments to collaborate in order to quickly respond to potential problems (Shah and Soomro, 2021). Supplier integration and customer integration are often referred to as external integration, reflecting the cooperation between companies and their supply chain partners (Guo et al., 2022). Supplier integration enables companies and suppliers clarify their responsibilities and improves the efficiency and reliability of the supply chain by setting their common goals. Customer integration is to establish a closer relationship between companies and their customers, which makes companies sufficiently know customers' demands so as to improve customers' satisfaction and loyalty.

Most scholars believe that supply chain integration has a "good side" for the corporate growth. In terms of financial performance, Yang and Ren (2018) found that supplier integration has a significantly stronger impact on firm performance than customer integration. In terms of innovation performance, Xu et al. (2024) used AMOS to find that the three types of supplier integration can promote innovation performance in food companies. In terms of sustainable performance, Lin and Fan (2023) proposed that supply chain integration affects sustainable performance by enhancing organizational resilience. However, supply chain integration also has a "negative side." For example, customer integration is usually regarded as a specific investment to customers, which leads to high conversion costs and increases the opportunistic behaviors of partners (Shi et al., 2022). In certain conditions, excessive supply chain integration can lead to resource redundancy, thereby hindering performance improvement (Wiengarten et al., 2019).

### 2.1.2 Strategic choice and corporate growth

According to Strategic Choice Theory, decision makers can make decisions to enhance competitive advantages through identification and analysis of external environment (Zheng and Lu, 2018), and the strategic choice is the key for company's development (Bentley and Kehoe, 2018). On one hand, companies can find innovation opportunities by analyzing the environment, which is called entrepreneurial orientation; On the other hand, they can also follow the "leaders," adjusting product lines and even exiting the market to resist the adverse environment, which is called peer effect.

Entrepreneurial orientation refers to a sustainable strategy to obtain innovative development, which is the decision-making preference of managers to actively explore new opportunities. Most scholars agree that entrepreneurial orientation has a positive impact on corporate growth. Entrepreneurial companies are usually good at seizing the market opportunities, so they can invest quickly to gain competitive advantages (Zhou and Lin, 2015). The entrepreneurial orientation is an effective way for agricultural companies to realize product differentiation, which is mainly reflected in the development of new products, the expansion of new businesses, and the establishment of new business models, etc. However, Wales et al. (2011) believes that the entrepreneurial orientation will not always improve the company's performance, and will change with its life cycle. When resources are limited, if the development direction is wrong and over-exploited, it can also lead to waste of resources and ultimately hinder the sustainable growth.

Peer effect means that individuals are more likely to communicate, learn or imitate with other individuals due to information asymmetry in the decision-making process, so that individuals have relatively

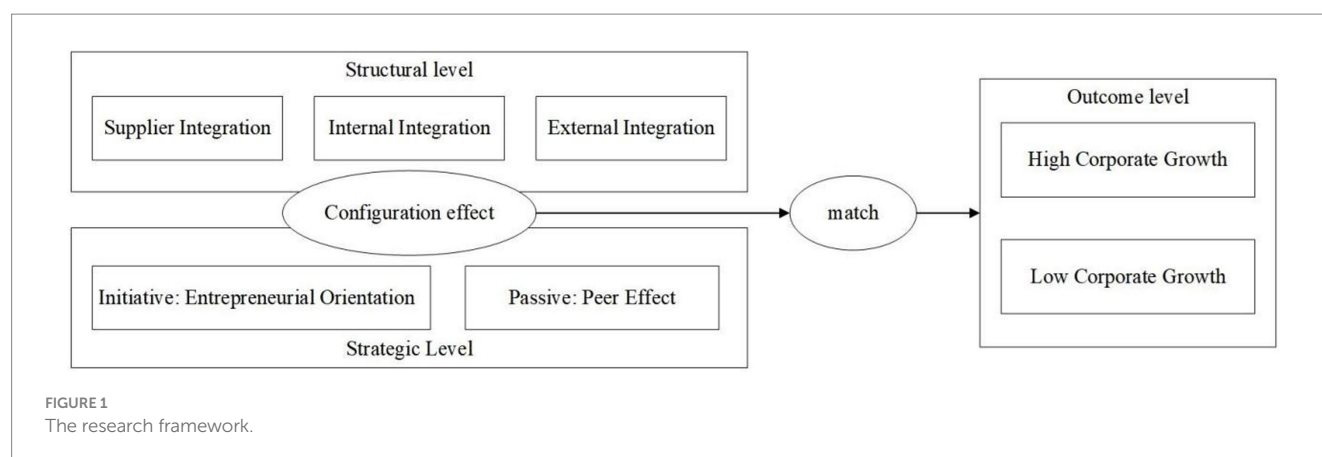
consistent behaviors with their peers. Xu et al. (2024) believes that the peer effect among farmers can influence their production and investment behavior (Xu et al., 2024); Fairhurst and Nam (2018) confirms that the peer effect between companies will have a positive impact on corporate governance. For agricultural companies, on the one hand, peer effect can provide information about market, industry, and policy, so the companies can change strategy in time; On the other hand, by learning experiences and technologies from peer companies, agricultural companies can accelerate their innovation process, optimize production process, and promote their growth.

To sum up, a large number of scholars have verified the impacts of supply chain integration and strategic choice on the growth of enterprises, but there are some shortcomings as follows: First, according to Endogenous Growth Theory, the single driving factor cannot promote the corporate growth, instead the factors of structure and strategy will have comprehensively impacts. The match of structure and strategy can better explain the growth of companies (Wasserman, 2008). When the structure and strategy are highly compatible, companies can optimize the allocation of resources and quickly adapt to the market, thus promoting the sustainable growth of companies. At present, most researches focus on the impacts of supply chain integration at structural level or strategic choice at strategic level on the corporate growth, but do not combine the two factors together, and fail to discuss the corporate growth from the match of structure and strategy. Second, the existing studies mainly focus on the technological innovation of agricultural supply chain, but lack exploration on the integration of agricultural supply chain. Compared with other industries, the agricultural production is dispersed. So, the integration of agricultural supply chain can help agricultural companies cope with the challenges and achieve stable growth. Finally, the existing research mainly focuses on static studies, which cannot reflect the dynamic change of the configuration in time and the differences between companies. Therefore, based on the match of structure and strategy, this research uses dynamic QCA to explore how the synergy between supply chain integration at the structural level and strategic choice at strategic level affects corporate growth.

## 2.2 Model specification

Based on Endogenous Growth Theory, Strategic Choice Theory, Dynamic Capability Theory and Resource Dependence Theory, this research constructs the theoretical model of supply chain integration, strategic choice and corporate growth from the perspective of the match of structure and strategy. The purpose of this research is to explore how the supply chain integration of agricultural enterprises can be matched with development strategies, which is more conducive to the sustainable growth of agricultural companies. Corporate growth is selected as the result variable to measure the development ability of agricultural companies. Supplier integration, customer integration and internal integration are selected as the condition variables to measure the structure changes in the upstream and downstream of the supply chain and within the company. Entrepreneurial orientation and peer effect are regarded as the condition variables to measure the strategic choice. The research model is shown in Figure 1.

In the match of structure and strategy, there is collaboration between conditional variables. First, internal integration and peer effect are cooperated with each other. Resource Dependence Theory



emphasizes that the key to corporate growth is to acquire and rationally utilize external resources (Pfeffer and Salancik, 1979). This theory points out that agricultural companies can obtain scarce resources and advanced knowledge from other organizations to break the resource bottleneck according to peer effect. At the same time, companies also need to integrate internal resources and improve resource utilization efficiency by strengthening departmental collaboration, which will ultimately promote corporate growth. Second, internal integration and entrepreneurial orientation are synergistic with each other. Endogenous Growth Theory points out that the corporate growth do not simply depend on external resources, instead it is determined by both the effective use of internal resources and technological innovation. Internal integration provides a solid resource foundation for entrepreneurial orientation, and entrepreneurial orientation guides enterprises to invest integrated resources into innovative activities that will maximize the value of the resources. Finally, customer integration and entrepreneurial orientation coordinate with each other. The Dynamic Capability Theory emphasizes that facing rapidly changing environment, the companies need to cultivate ability to allocate resources flexibly, which will make them stronger. Customer integration enables agricultural companies to deeply understand customer needs, capture market opportunities, and provide direction for entrepreneurial orientation. Developing new products and services in light of the demand of the market can in turn positively impact customer relationships leading to corporate growth.

In the match of structure and strategy, there is also synergistic relationship between multiple factors. First, supplier integration and customer integration can be matched with entrepreneurial orientation. Supplier integration and customer integration create an efficient and stable value chain, laying the foundation for innovation. At the same time, the entrepreneurial orientation enables companies to actively capture new market opportunities, and realize resource sharing with upstream and downstream partners. Second, supplier integration and customer integration can be matched with peer effect. Peer effect enables companies to obtain resources from external suppliers, and promote collaborative innovation and efficiency in the upstream and downstream in the supply chain through information sharing and technology diffusion. As a result, the companies can enhance their growth capability.

To sum up, the synergy between supplier integration, internal integration, customer integration at the structural level and

entrepreneurial orientation, peer effect at the strategic level is crucial to the growth of agricultural companies. Agricultural companies need to achieve sustainable growth through the synergy of various variables.

## 3 Research design

### 3.1 Selection of samples and data source

The sample of this research consists of representative agricultural listed companies from 2013 to 2021. The data are acquired from the CSMAR database and iFinD database. Considering the characteristics of agricultural production and the integrity of the data, this research process the data as follows: (1) Excluding ST and \*ST companies in 2013–2021; (2) Excluding the company data with serious missing data; (3) Excluding the data whose main business has changed in 2013–2021; (4) Excluding companies that have been listed for less than 3 years. Finally, a sample of 77 agricultural listed companies is obtained. Linear interpolation method and statistical annual report are used to supplement some of the missing data.

### 3.2 Research methods

#### 3.2.1 Dynamic QCA

Traditional QCA is mainly used to analyze the configuration effects of cross-sectional data, which only analyzes the complex problems from a static perspective, ignoring the temporal dimension and dynamic evolution characteristics. The result variable of this research is corporate growth, which involves the past, present and future of the companies. So it is better to use dynamic QCA method to study corporate growth. Referring to the research of Garcia-Castro and Ariño (2016), RStudio 4.4.3 is used to explore the temporal effect and spacial effect of configuration. Pooled, Within and Between Results are calculated by Dynamic QCA, and consistency adjusted distance is used to analyze the consistency change in terms of time and case.

#### 3.2.2 Result variable

Corporate growth is the result variable in this research. Referring to Zhang et al. (2022), the corporate growth can be reflected by the growth rate of main business revenue. The higher the growth rate, the



greater the market share, the faster the market expansion, and the higher the corporate growth. Therefore, this research selects growth rate of main business revenue to measure the corporate growth, which is calculated as the difference in main business revenue of this year divided by the main business revenue of last year.

### 3.2.3 Condition variables

According to [Ataseven and Nair \(2017\)](#), supply chain integration is divided into three dimensions: internal integration, supplier integration, and customer integration. Strategic choice is divided into two dimensions: entrepreneurial orientation, peer effect.

- (1) Internal integration: Some scholars use internal control index and inventory turnover rate to measure internal integration. Referring to [Sun et al. \(2022\)](#), Internal Control Index is used to measure internal integration of the supply chain. The Internal Control Index is comprehensive, which mainly measures the internal control level and risk control ability of companies. It is mainly evaluated by multiple elements of internal control, such as internal environment, risk assessment, control activities, information and communication, internal supervision and so on ([Liu et al., 2015](#)). These elements interact with each other, which is helpful for the flow of information, reasonable allocation of resources and effective management of risks within the company, so as to achieve a high degree of internal integration. On the other hand, internal integration emphasizes the coordination among various parts of the company. The Internal Control Index incorporates internal control elements into the evaluation and assigns different weights, which reflects the interaction and synergy between these elements. So DIB Internal Control Index is selected to measure internal integration in this research.
- (2) Customer integration: Referring to [Buzzell and Gale \(1987\)](#), customer integration is usually measured by the proportion of the total sales of the top five suppliers in the total sales. It reflects the cooperative relationship and integration level between companies and customers ([Dhaliwal et al., 2016](#)).
- (3) Supplier integration: Referring to [Qi \(2021\)](#), the proportion of total purchases from the top 5 suppliers in the total procurement is used to measure supplier integration. The larger the number of products purchased from the top five suppliers, the higher the level of supplier integration.
- (4) Entrepreneurial orientation: Entrepreneurial orientation is a dynamic and continuous strategy implemented by companies for innovation, which reflects the willingness of companies to actively explore opportunities and develop the market. Referring to [Willams and Lee \(2009\)](#), this research uses the

annual R&D intensity and investment intensity to measure entrepreneurial orientation. The specific formula is:

$$ED_{it} = \sqrt{(x_{it} - 0)^2 + (y_{it} - 0)^2} = \sqrt{x_{it}^2 + y_{it}^2}$$

$x$  is R&D intensity, which is the proportion of R&D expenditure in sales revenue.  $y$  represents investment intensity, which is the proportion of net cash flow from investment activities in sales revenue. The greater the  $ED_{it}$ , the stronger entrepreneurial oriented the company is.

- (5) Peer effect: Referring to [Leary and Roberts \(2014\)](#), this research uses the average marketing strategy investment of all companies within the same industry (except the company itself). Referring to [Peng et al. \(2020\)](#), the logarithm of “sales expenses” in the annual reports of agricultural listed companies from 2013 to 2021 is used to measure the degree of marketing strategy investment.

The definitions and measures of all variables are shown in [Table 1](#).

## 4 Results and discussions

### 4.1 Necessary condition analysis

Necessary condition analysis is used to analyze if a singular condition variable is essential for result variable. In traditional QCA, the condition variable can be considered as a necessary condition for the result variable only when the consistency exceeds 0.9. This criterion is also feasible in dynamic QCA. The difference is that dynamic QCA also needs to consider consistency adjusted distance. Consistency adjusted distance is used to measure the stability of consistency. The smaller the value, the higher the stability. It is divided into WICONS adjusted distance and BECONS adjusted distance. The WICONS adjusted distance is used to measure the difference of the relationship between the condition variables and the result variable among different individuals. The greater the value, the greater the difference between different companies in the impact of condition variables on result variable. The BECONS adjusted distance is used to measure the difference of the relationship between the condition variables and the result variable in different periods. The greater the value, the greater the change of the relationship between the condition variables and the result variable in different years. If the BECONS adjusted distance exceeds 0.1, the necessity of the condition variables may have time

TABLE 1 Name of relevant variables and measure index.

Variable name	Variable code	Measurement index
Supplier integration	SI	The purchase proportion of the top 5 suppliers
Customer integration	CI	The proportion of sales from the top 5 customers
Internal integration	II	DIB internal control index
Entrepreneurial orientation	EO	Two indexes of annual R&D expenditure and net cash flow of investment activities are used to calculate
Peer effect	PE	The average level of marketing strategy investment of all enterprises in the same industry except their own
Corporate growth	GROWTH	Increase rate of main business revenue

effect, and the necessity of this condition needs to be further explored (Garcia-Castro and Ariño, 2016).

Table 2 shows the results of the necessary conditions for the high corporate growth. The pooled consistency of supplier integration, customer integration, internal integration and entrepreneurial orientation is less than 0.9, and the BECONS adjusted distance is less than 0.1, indicating that these factors are not necessary conditions for the high growth of agricultural companies. The BECONS adjusted distance for the condition variables are all smaller than 0.1. The pooled consistency is less than 0.9, indicating that these variables are not necessary for the result variable. Although the pooled consistency of the peer effect is less than 0.9, the BECONS adjusted distance is greater than 0.1, which requires further analysis.

Further test is done on whether single peer effect is necessary for the high growth of agricultural companies. As shown in Table 3, in case A, the BECONS consistency in 2017–2019 is greater than 0.9, and that in other years is less than 0.9. In case B, the BECONS consistency is greater than 0.9 in 2013, 2014, 2015 and 2020, and less than 0.9 in other years. Although in case A and case B, the BECONS consistency in several years is greater than 0.9, it is found that more than 1/3 of the companies are distributed above the diagonal by making the X-Y scatter diagram of the condition variables and the result variable (Schneider and Wagemann, 2012). It shows that the consistency test of the single peer effect has passed only in a few years, and cannot constitute a necessary condition for high corporate growth.

Although the peer effect does not constitute a necessary condition for high corporate growth as shown in Figure 2, in case A, the consistency of the peer effect increases year by year from 2013 to 2019, and declines in 2020, and rises again to 0.866 in 2021. In 2020, the necessary effect of peer effect on corporate growth fluctuates. The driving factors of this fluctuation are the impacts of the COVID-19 and policies. The COVID-19 has led to the disruption of raw material supply chains, market demand fluctuations and increased uncertainty in operation. The agricultural companies are more concerned about their survival, and reduces the interaction and cooperation with other companies. At the same time, the epidemic prevention measures restrict the offline communication and learning between agricultural companies, which reduces the efficiency of information transfer and further weakens the influence of the peer effect. In addition, government policies are more inclined to leading companies. The

small and medium-sized agricultural enterprises may be difficult to keep up with the development of leading companies due to lack of funds and technology.

## 4.2 Sufficiency analysis of conditional configuration

The Complex Solution, Intermediate Solution, and Parsimonious Solution are obtained by using Rstudio 4.4.3. Referring to Fiss (2011), this research only focuses on Parsimonious Solution and Intermediate Solution. The core conditions exist in both the Parsimonious Solution and Intermediate Solution, the edge conditions only exist in Intermediate Solution.

### 4.2.1 Pooled results

Table 4 shows the configurations of high corporate growth, and there are three configurations. Internal Collaboration-Imitation Driven Type, Internal Collaboration-Innovation Driven Type, Internal and External Integration-Innovation Driven Type. The pooled consistency is about 0.794, which is greater than the threshold of 0.75 suggested by Schneider and Wagemann (2012), indicating that the pooled results have strong explanatory strength. The pooled coverage is 0.684, indicating that the three configurations can explain 68.4% of the high corporate growth cases. The consistency of each configuration is greater than 0.75, so these three configurations can be regarded as sufficient conditions for high corporate growth.

#### (1) Internal collaboration-imitation driven type

H1 is the first path to promote high growth of agricultural companies. It includes two core conditions: high internal integration and high peer effect. The coverage of this configuration is 0.58, indicating that H1 can explain 58% of agricultural companies. The distinguishing characteristic of this configuration is that the coordinated development of internal integration and peer effect can promote the growth of agricultural companies. The underlying mechanism of configuration H1 is: First, it improves the ability of resource acquisition and optimal allocation. Internal integration provides stable resource basis for companies (Chaudhuri et al., 2018),

TABLE 2 High-level enterprise growth necessity condition analysis.

Conditional variable	High corporate growth			
	Pooled consistency	Pooled coverage	BECONS adjusted distance	WCONS adjusted distance
SI	0.639	0.668	0.049	0.412
~SI	0.71	0.654	0.024	0.367
CI	0.634	0.669	0.091	0.474
~CI	0.706	0.645	0.038	0.412
II	0.783	0.721	0.056	0.224
~II	0.634	0.662	0.080	0.304
EO	0.631	0.714	0.052	0.367
~EO	0.738	0.637	0.049	0.286
PE	0.699	0.656	0.496	0.197
~PE	0.625	0.639	0.633	0.188

TABLE 3 BECONS data whose adjustment distance is greater than 0.1.

Causal combination situation			Years								
			2013	2014	2015	2016	2017	2018	2019	2020	2021
case a	PE* GROWTH	BECONS consistency	0.104	0.451	0.659	0.756	0.957	0.981	0.988	0.394	0.866
		BECONS coverage	0.906	0.849	0.808	0.816	0.577	0.539	0.529	0.816	0.758
case b	~PE*GROWTH	BECONS consistency	0.997	0.969	0.915	0.79	0.241	0.128	0.153	0.947	0.61
		BECONS coverage	0.476	0.55	0.664	0.792	0.886	0.891	0.833	0.591	0.899

PE stands for high peer effect, ~ stands for “not,” ~PE stands for non-high peer effect.

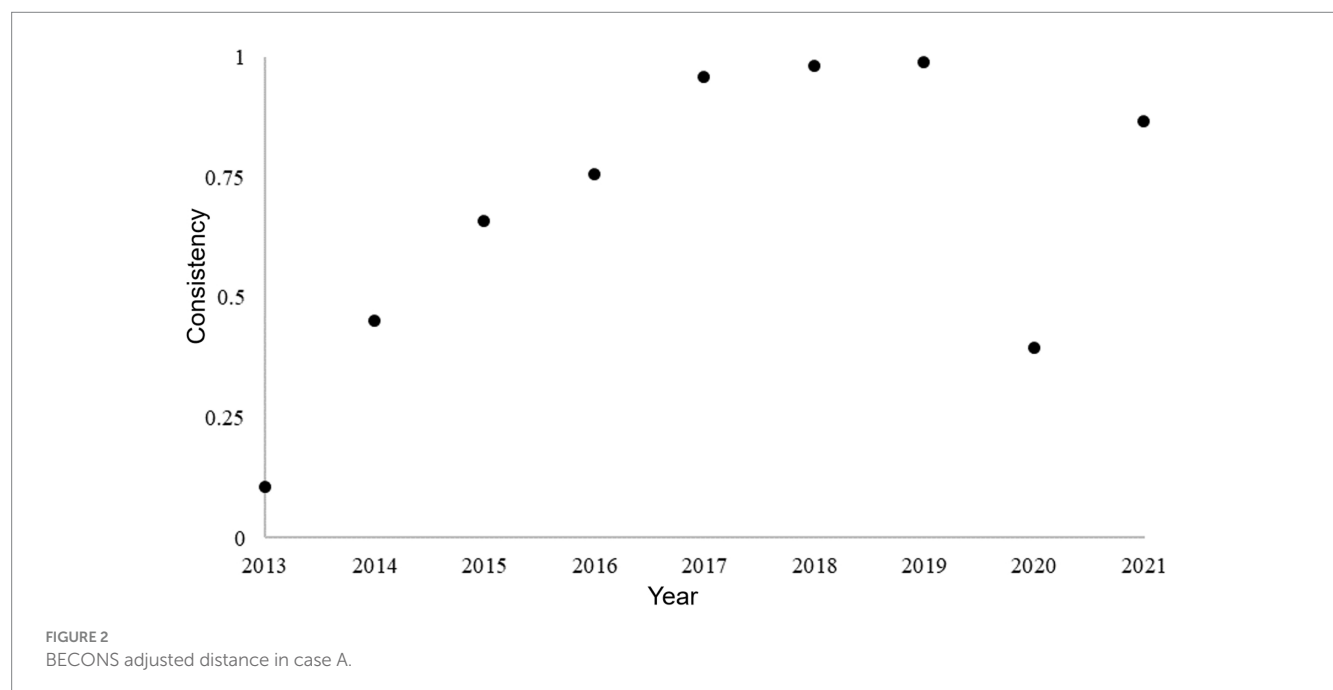


TABLE 4 The configuration path of high enterprise growth of agricultural listed enterprises.

Conditional variable	Internal collaboration-imitation driven type	Internal collaboration-innovation driven type	Internal and external integration-innovation driven type
	H1	H2	H3
SI		⊗	
CI			●
II	●	●	●
EO		●	●
PE	●		
Consistency	0.807	0.857	0.839
Coverage	0.580	0.428	0.408
Unique coverage	0.175	0.025	0.029
BECONS adjusted distance	0.073	0.059	0.07
WICONS adjusted distance	0.161	0.152	0.170
Solution consistency	0.794		
Solution coverage	0.684		

● Indicates that core condition exist; ⊗ stands for absence of core condition; The “space” indicates that the condition does not matter (may or may not appear).

so that they can better absorb and utilize the external resources brought by the peer effect, so as to realize the optimal allocation and efficient utilization of resources; Second, it enhances the ability to adapt to the market. The collaboration of internal integration and the peer effect enables companies to maintain flexibility and competitiveness in the rapidly changing market environment, and quickly adapt to market changes by learning and imitating the successful experience of other companies.

The representative company of path 1 is DaBeiNong Co., Ltd. (002385), which is an agricultural high-tech company majoring in crops, feed, aquaculture and other fields. In terms of internal integration, the company made comprehensive and detailed rules for the implementation of internal control, and established a standardized and efficient internal processes, which reduced the risk of operation caused by environmental uncertainty and improved the operation efficiency. At the same time, the company learned foreign advanced intelligent breeding technology and developed a data analysis platform based on machine learning to achieve accurate prediction of corn and rice stress resistance. This learning ability not only helps DaBeiNong to lead in the market competition, but also provides strong support for its technological innovation and promotes corporate growth.

## (2) Internal collaboration–innovation driven type

H2 is the second path to promote high growth of agricultural companies. It includes two core conditions: low supplier integration, high internal integration, and high entrepreneurial orientation. The coverage of this configuration is 0.428, indicating that H2 can explain 42.8% of agricultural companies. The distinguishing characteristics of this configuration is that the collaboration of internal integration and entrepreneurial orientation can promote the growth of agricultural companies in the absence of supplier integration. The underlying mechanism of H2 is: First, promote resource integration and efficiency improvement. Internal integration can optimize the allocation of internal resources, improve resource utilization efficiency, and provide a solid human, material and financial foundation for entrepreneurial orientation. Second, stimulate organizational vitality and innovation ability. Entrepreneurial orientation emphasizes the capture of opportunities and rapid response ability, while internal integration can stimulate the vitality and innovation ability of the organization through optimizing organizational structure and breaking departmental barriers. This collaboration enables agricultural companies to better identify and leverage entrepreneurial opportunities in a dynamic environment to promote growth. Third, promote organizational learning and knowledge sharing. Internal integration can promote knowledge sharing within the organization, improve the learning ability of the organization, and provide intellectual support for entrepreneurial orientation.

The representative company of path2 is Xuerong Biotechnology Co., Ltd. (300,511). The main reason for the high growth of the company is its strong internal integration ability and research and development ability. The main business of the company is edible fungi. It has independently developed and mastered the technology necessary for the production of edible fungi. It has advanced automatic production technology and a group of R&D personnel who master international advanced technology. At the same time, the company actively expands new markets, such as investing in the industrialized production project of edible fungi in Thailand and the industrialized production project of *Flammulina*

*velutipes* in Shandong, China. On the basis of a well organizational structure, standardized internal control process and efficient business management mode, the company firmly focuses on technology research and market development, showing a representative entrepreneurial orientation, achieving a high match between development strategy and development positioning, and achieving rapid growth.

## (3) Internal and external integration-innovation driven type

H3 is the third path to promote high growth of agricultural companies. It includes three core conditions: high internal integration: high customer integration and high entrepreneurial orientation. The coverage of this configuration is 0.408, indicating that H3 can explain 40.8% of agricultural companies. The distinguishing characteristics of this configuration is that the collaboration of internal integration, customer integration and entrepreneurial orientation can promote the growth of agricultural companies. The underlying mechanism of H3 is first, agricultural companies can accurately grasp the market demand through customer integration. Agricultural companies collect and analyze customer demand information to achieve accurate production and service, and this customer-oriented collaboration helps companies to develop products that meet market needs and increase market share. Second, it can realize the sharing and complementation of resources and form the competitive advantage of agricultural companies. The combination of the optimal allocation of internal resources and the integration of external customer resources can improve the overall resource utilization efficiency of companies, build unique competitive advantages in the rapidly changing market environment, and help companies continue to innovate and adapt to market changes.

The representative company of path3 is Fujian Sunner Development Co., Ltd. (002299). The company has an advanced food research and development team. In 2018, breeding chickens with independent intellectual property rights were cultivated, breaking the market monopoly of white feather broilers. In the process of development, the company attaches importance to internal integration and customer integration. While continuing to promote fine management and improve production efficiency, the company has long-term and stable cooperation with McDonald's, KFC and other industry-leading companies by its excellent deep processing capabilities. Electronic business platform and offline supermarket are used to enhance the contact with consumers in combination with brand publicity and explosive products strategy. Timely feedback customer needs, provide targeted products and services. It can be seen that for agricultural companies, promoting customer integration and internal integration while actively promoting entrepreneurial orientation is an effective path to enhance the growth of agricultural companies.

## 4.2.2 Between results

Between Results are mainly used to analyze whether the explanatory strength of the above three configurations on the high corporate growth is stable in different years, and to judge whether these configurations have cross time applicability. As shown in [Table 4](#), the BECONS adjusted distance of the three configurations is less than 0.1, indicating that there is no obvious time effect. The explanatory strength of the three configurations on the high agricultural company growth is relatively stable in time.

However, further analysis of its time variation, as shown in [Figure 3](#), the consistency of configuration 1 increases, while the consistency of



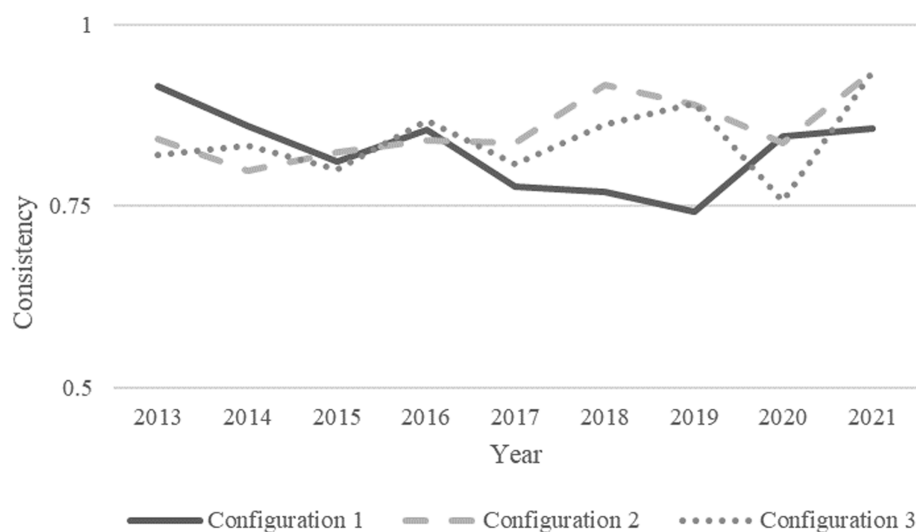


FIGURE 3  
WICONS adjusted distance from 2013 to 2021.

configuration 2 and configuration 3 decreases in 2020. As a serious public health emergency, the COVID-19 in 2020 had a huge impact on the production of companies and people's lives. During the outbreak of the COVID-19, agricultural companies paid more attention to ensuring the stable supply of agricultural products through sharing logistics resources and establishing a joint procurement mechanism; at the same time, agricultural companies are faced with huge operational uncertainty, sharp reduction in market demand, supply chain disruption, capital chain tension and other problems. In this high-risk environment, the managers tend to adopt conservative strategies to reduce investment in innovation. Therefore, in the COVID-19 situation, the collaboration of internal integration and peer effect in configuration 1 have more explanatory strength.

### 4.2.3 Within results

Within results mainly explore whether the explanatory strength of the configurations for the high corporate growth is stable among different types of companies. The within consistency of the three configurations is 0.161, 0.152, and 0.17, which is all higher than the threshold of 0.1, indicating that the explanatory strength of the configuration on the high agricultural corporate growth exists heterogeneity among different corporate. Referring to the research of Liu and Gu (2024), by comparing the within coverage, the characteristics of the cases explained by each configuration can be analyzed more detail (Table 5).

Configuration 1 has the highest coverage for state-owned companies, representing that configuration 1 has the strongest explanation for state-owned companies, which can explain 66.3% of state-owned companies. The collaboration of internal integration and peer effect can better explain the high growth of state-owned corporate. The state-owned companies have strong policy orientation, and their main goals are not only limited to economic benefits, but also to ensure national food security and promote agricultural modernization. Therefore, state-owned companies need to maintain stability in the industry, learn from the successful experience of other companies through peer effect, and avoid the uncertainty caused by

TABLE 5 Growth path combination analysis of agricultural listed companies.

Conditional variable	High corporate growth		
	H1	H2	H3
SI		⊗	
CI			●
II	●	●	●
EO		●	●
PE	●		
Consistency	0.807	0.857	0.839
Coverage	0.58	0.428	0.408
Unique coverage	0.175	0.025	0.029
BECONS adjusted distance	0.073	0.059	0.07
WICONS adjusted distance	0.161	0.152	0.17
Solution consistency	0.794		
Solution consistency	0.684		

● Indicates that core condition exist; ⊗ stands for absence of core condition; the "space" indicates that the condition does not matter (may or may not appear).

excessive innovation. At the same time, internal integration can enable state-owned companies to effectively prevent external risks (Chi and Zhu, 2019), and help state-owned assets reduce operational risks and improve capital profitability (Xiong and Ding, 2013). Therefore, state-owned companies need to pay more attention to the collaboration of internal integration and peer effect. While optimizing internal management, actively responding to national policies, drawing on the experience of leading companies in the industry, and achieving more stable growth.

Configuration 3 has the highest coverage of private companies, representing that configuration 3 has the strongest explanation for private

companies, which can explain 64.4% of state-owned companies. The collaboration of internal integration, customer integration, and entrepreneurial orientation can better explain the high growth of private companies. Compared with state-owned companies, private companies lack policy support and resource advantages, and face higher growth risks. On the basis of internal integration, private companies need to enhance market orientation, create high value-added products through branding construction, customized services and other ways to enhance customer satisfaction. Private companies usually have a short decision-making chain and a flat management structure. This flexibility enables them to capture market opportunities more quickly and achieve growth through technological innovation, business model innovation, and other ways (Lan, 2021). Therefore, private companies need to pay more attention to the collaboration of internal integration, customer integration, and entrepreneurial orientation.

## 5 Discussion

Based on the match of strategy and structure, this research explores the path to enhance the growth of agricultural companies from two aspects: supply chain integration and strategic choice. The theoretical contributions of this research are as follows: first, existing research focused on the impact of a single factor on the corporate growth, neglecting the synergistic effects between various factors. This research is based on structure-strategy matching, incorporating supply chain integration and strategic selection into the analytical framework, systematically exploring the path of growth enhancement for agricultural companies, revealing the complex causal logic of enterprise growth, and enriching the research perspective of agricultural corporate growth. Second, the dynamic QCA method is used to explore the path of promoting the agricultural corporate growth in the time and space dimensions, respectively. This can not only explore the path in time and space, but also explain and supplement it with typical cases, so as to provide new ideas for the research of the agricultural corporate growth in China. Third, this research makes up for insufficient exploration of agricultural supply chains in existing research.

Further discussion find that:

- (1) The match of structure and strategy can better explain the reasons for the high agricultural corporate growth. All the paths obtained in this research are the combination of supply chain integration at the structural level and strategic choice at the strategic level. This shows that companies can not achieve high corporate growth only by relying on a single level of factors, but need multiple factors at the structural level and strategic level to match each other. From the perspective of structure-strategy matching, the path of promoting corporate growth can be described more comprehensively.
- (2) In terms of structure, internal integration is particularly important; the collaboration of internal integration and external customer integration is an important condition for the long-term growth of agricultural companies. Supplier integration has a relatively small impact on the agricultural corporate growth.

For agricultural companies, internal integration is particularly important. The results shows that high internal integration appeared

as the core condition in all three configurations. On the one hand, internal integration allocates production factors such as land, labor, capital, technology, etc., thereby achieving efficient utilization of resources and reducing production costs. On the other hand, internal integration promotes cooperation among departments, facilitate cross departmental sharing of market information, production information and provide more comprehensive and accurate support for company decision-making. Agricultural companies should promote internal integration through optimizing organizational structure, improving information management, optimizing production processes to provide a basic guarantee for the sustainable growth of the company.

The collaboration of internal integration and customer integration is an important condition for the sustainable growth of agricultural company. Germain and Iyer (2006) believes that companies should match internal integration with external customer integration to improve performance. First, agriculture has the characteristic of resource dependence, and agricultural companies are generally located in complex and closely knit social networks, requiring the collaboration of internal integration and customer integration to achieve internal and external information circulation of agricultural companies; Second, the collaboration of internal integration and external customer integration promotes companies to optimize internal resource allocation based on customer needs, improve production efficiency and product quality, respond to customer needs faster, and provide more efficient services; Third, companies establishes cross departmental innovation teams through internal integration, and develops innovative products that better meet customer needs by combining market information obtained from customer integration, so as to promote the sustainable development of the company. In practice, on the one hand, agricultural companies should promote customer integration based on internal integration. Create a good internal foundation for company operation by establishing standardized operation process and digital information management platform, so as to better maintain customer relations and meet customer needs; On the other hand, agricultural companies also need to conduct internal integration based on customer needs, optimize production processes according to customer demands and market changes, and improve product quality. Moreover, agricultural companies should pay attention to balancing the relationship between internal integration and customer integration, dynamically adjusting according to the actual development of the enterprise. In the initial stage, they should focus on internal integration and create a good internal environment. In the growth stage, they should focus on customer integration and expand sales channels through various methods such as direct sales and E-commerce platforms to increase market share.

Agricultural companies may not need to deliberately focus on supplier integration. This contradicts the positive correlation between supplier integration and corporate performance obtained by Bosompem et al. (2024). Although supplier integration can improve corporate performance theoretically, it primarily enhances the company's market position rather than directly driving its growth. In addition, the implementation of supplier integration is difficult, and the suppliers of agricultural enterprises are scattered and small. Agricultural companies need to overcome problems of information asymmetry, uneven profit distribution and high contract execution costs. The current supplier integration in agricultural enterprises is still in early stage and has not fully leveraged its role in promoting

corporate growth. With the changes of the market environment and the strength of the supply chain entities, the influence of supplier integration will gradually become prominent.

- (3) In terms of strategy, entrepreneurial orientation is crucial for the agricultural corporate growth. This confirms the findings of [Hernández-Perlines et al. \(2017\)](#). Entrepreneurial orientation is the core condition in both Configuration 2 and Configuration 3, indicating that the growth of agricultural companies is greatly influenced by entrepreneurial orientation. Entrepreneurial orientation is an important way for agricultural companies to actively break product homogenization, avoid disorderly and inefficient competition, and promote the development of the agricultural industry. For example, the improvement of the processing capacity of agricultural products and the innovation of logistics are conducive to the development of central kitchens, direct supply and direct sales in producing areas, and member agriculture. Artificial intelligence, digital technology, and biotechnology contributes to the development of smart agriculture, rural E-commerce, digital agriculture, and bio agriculture. Agricultural companies should increase research and development investment, attract innovative talents, develop high value-added agricultural products through technological innovation, and improve product premium capabilities. However, [Li et al. \(2024\)](#) suggests that an entrepreneurial orientation beyond one's capabilities can lead to adverse consequences such as excessive resource consumption, dispersed strategic attention, and decreased operational efficiency. Therefore, agricultural companies need to develop new markets and products within their resources and capabilities, and promote corporate growth through entrepreneurial orientation reasonably.
- (4) When internal integration exists, there is a substitute relationship between peer effect and entrepreneurial orientation. By comparing configuration H1 and H2, it is found that when the internal integration is high, configuration H1 takes peer effect as the core condition to achieve high corporate growth of agricultural companies, while configuration H2 takes entrepreneurial orientation as the core condition. When the degree of internal integration is high, the efficient coordination of internal operations can be achieved. On the basis of internal integration, entrepreneurial orientation and peer effect can complement and replace each other. Agricultural companies should choose appropriate development strategies according to resource allocation, market development and risk tolerance. When the market is highly uncertain or resources are scarce, companies may be more inclined to choose a passive development strategy and rely on peer effect to reduce risks. When companies have innovative capabilities and resources, they tend to choose active development strategies and rely on entrepreneurial orientation to explore new markets and develop new products.

## 5.1 Robustness test

Referring to the research of [Chen et al. \(2021\)](#), this research conduct a robustness test by adjusting the consistency threshold to

ensure the stability of the driving mechanism of corporate growth. As shown in [Table 6](#), the consistency threshold is increased from 0.75 to 0.85, and the configuration results are consistent with those before adjustment, indicating that the results of this research are robust.

## 6 Conclusion and enlightenment

### 6.1 Research conclusions

This paper uses the dynamic QCA and takes 77 agricultural companies in China as samples to explore the synergistic impact of supply chain integration and strategic choice on the growth of agricultural companies, and further find the path to promote the sustainable growth of agricultural companies. The main findings include:

- (1) The match of structure and strategy can better promote the corporate growth of agricultural companies.
- (2) A single factor does not constitute the necessary conditions for high corporate growth. But the necessity of the peer effect fluctuates over time, and the influencing factors of this fluctuation are the COVID-19 and government policies.
- (3) There are mainly three configurations, which can be summarized into three paths. The first is Internal Collaboration-Imitation Driven Type, emphasizing the collaboration of internal integration and peer effect to promote corporate growth. The second is Internal Collaboration-Innovation Driven Type, which promotes high corporate growth through the collaboration of internal integration and entrepreneurial orientation when supplier integration is lacking. The third is Internal and External Integration-Innovation Driven Type, which emphasizes the collaboration of internal integration, customer integration, entrepreneurial orientation promotes corporate growth of agricultural company.
- (4) The Between results show that the explanatory strength of the three configurations for the high corporate growth of agricultural companies was stable over time, indicating that the results of this research have strong applicability in analyzing the growth of agricultural companies. However, further analysis of its time change shows that the consistency of configuration 1 increases in 2020, while the consistency of configuration 2 and configuration 3 decreases. The Within results show that the explanatory strength of the configuration to the high growth of agricultural enterprises is heterogeneous among different companies. Configuration 1 has the strongest explanatory strength for state-owned companies, the collaboration between

TABLE 6 Robustness test results.

Intermediate solution	Raw coverage	Unique coverage	Consistency
II*PE	0.58	0.175	0.807
~SI*II*EO	0.428	0.025	0.857
CI*II*EO	0.408	0.029	0.839
Pooled coverage	0.684		
Pooled consistency	0.794		

internal integration and peer effect can better explain the high corporate growth of state-owned companies. Configuration 3 has the strongest explanatory strength for private companies, the collaboration of internal integration, customer integration, and entrepreneurial orientation can better explain the high corporate growth of private companies.

- (5) In terms of structure, internal integration is particularly important; the collaboration of internal integration and external customer integration is an important condition for the long-term growth of agricultural companies. Supplier integration has a relatively small impact on the agricultural corporate growth; in terms of strategy, entrepreneurial orientation is crucial for the agricultural corporate growth. When internal integration exists, there is a substitution relationship between the peer effect and entrepreneurial orientation.

## 6.2 Research limitations and enlightenments

Although this research has made some achievements, there are still some limitations. First, the corporate growth is affected by many factors. This study mainly analyzes the influencing factors of the corporate growth of agricultural companies from the perspective of strategy-structure matching, focusing on the influence of supply chain integration, customer integration, internal integration at the structural level and peer effect and entrepreneurial orientation at strategic level, but fails to consider the influence of external factors such as market environment and government policies more comprehensively. Future research can further analyze the influence of external factors such as market environment and government policies on the corporate growth on the basis of strategy-structure. Second, although dynamic QCA explores the possible time and space effects of the configuration, it fails to reveal how the composition of the configuration changes with time. In the future, it can be combined with Time-Series QCA to reveal the change of condition composition in configuration more comprehensively. Third, the increase rate of main business revenue is used to measure the corporate growth, and the index is relatively single. In the future, multiple measurement indicators can be used to improve the research on corporate growth. Finally, the sample of this research is limited to agricultural companies. The industrial chain of the manufacturing industry is complex, covering raw material procurement, production, processing, logistics, sales and other processes. Therefore, on the basis of selecting appropriate strategies, manufacturing companies also need to establish close cooperation with suppliers, improve internal resource utilization efficiency, and respond to customer needs to promote corporate growth. Future research can be conducted in different industries to enhance the universality of research conclusions.

## Data availability statement

The original contributions presented in the study are included in the article/[Supplementary material](#), further inquiries can be directed to the corresponding author.

## Author contributions

XF: Conceptualization, Methodology, Supervision, Writing – review & editing. YW: Data curation, Writing – original draft. HJ: Data curation, Writing – original draft.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Generative AI statement

The author(s) declare that no Gen AI was used in the creation of this manuscript.

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## Supplementary material

The Supplementary material for this article can be found online at: <https://www.frontiersin.org/articles/10.3389/fsufs.2025.1535458/full#supplementary-material>



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