

Greenfield investment performance impact mechanism based on strategic tripod perspective

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Abstract

Using fuzzy-set qualitative comparative analysis method, this paper integrates six antecedents at the institutional level, resource level and industry level based on the theoretical framework of "strategic tripod", using a sample of 49 Chinese listed enterprises' greenfield investments from 2014-2018, and constructs a theoretical model that affects the greenfield investments performance. The following conclusions are drawn: There are four paths that drive the high greenfield investment performance, namely, strength-led, internal and external synergy, institutional-utilization, as well as risk-hedging. This paper reveals that the drivers of greenfield investment performance have "causal asymmetry", and provides insights for existing managers..

Keywords

Strategic tripod theory, greenfield Investment, fuzzy-set qualitative comparative analysis.

1. Introduction

Greenfield investment, as a major form of OFDI, has grown rapidly in recent years. In 2020, Chinese companies have set up 45,000 overseas enterprises. However, greenfield investment not only faces the disadvantage of being an outsider due to the institutional distance between different countries, but also is subject to the suppression of the original monopolists as new entrants in the host market. As a result, greenfield investment enterprises are often unconvinced by the phenomenon of not acclimatized. When Chinese enterprises go abroad, is it reasonable to choose the greenfield investment approach? Whether the greenfield investment can improve performance is a question that has to be faced.

However, the main mode of OFDI that has been studied is cross-border acquisitions, ignoring the explanation on the drivers of greenfield investment. The decision to establish a MNC is inherently costly, and the model chosen also determines the organizational structure and institutional arrangements of the overseas branch, which have a direct impact on the firm's performance in the host market. Most of the existing quantitative studies have focused on exploring the "net effect" between antecedent conditions and performance, ignoring the complex "joint effect" between internal and external factors that lead to the greenfield investments performance.

The choice of way to establish an overseas subsidiary is a very critical internationalization strategy decision^[1]. Based on this, this paper attempts to explore the influencing factors and driving mechanisms behind firms' choice of greenfield investments to achieve high performance. Based on the theoretical framework of internationalization strategy tripod of enterprises in emerging economies, this paper uses fuzzy set qualitative comparative analysis (fsQCA) to analyze 49 greenfield investment events of Chinese listed enterprises during 2014-2018 to investigate the resource-based view (internationalization experience and technological capability), institutional-based view (formal institutional distance, informal institutional distance, ownership), and industry-based view (equity choice) on the "joint effect" of six

antecedents on Chinese firms' overseas greenfield investment decisions. This paper innovatively uses fsQCA to explain the establishment model of emerging economies, which enriches the research tools and ideas in the field of OFDI strategic decision making; it applies the theoretical framework of internationalization strategy tripod of emerging economies, which expands the future application in the field of international business. In addition, this paper provides constructive practical suggestions for greenfield investment enterprises, and adds to the "going out" and "going up" of Chinese enterprises.

2. Literature Review

2.1. Resource-based view

Most of the existing literature focuses on the resources and capabilities of MNCs when studying the establishment model of greenfield investment. Asset specificity refers to the physical and human resources, etc., that a firm must invest in order to seek advanced technology^[2]. Since it is difficult to determine the degree of specialization of an asset, this paper selects its main factors technological capability and internationalization experience. There is no unanimous conclusion on the relationship between asset specificity and the performance of firms' greenfield investments: the resource-based view suggests that firms with specialized assets have the advantage of investing in foreign markets^[3]. However, information asymmetry can give the existence of opportunistic behavior on both sides of the transaction due to the profit-taking nature of the transaction, making it difficult to price such assets reasonably in an open market. Some scholars argue that having rich internationalization experience helps firms to greenfield investment activities, while organizational learning theory suggests that greenfield investment firms with rich internationalization experience tend to solidify and fall into the "advantage trap" when they reuse their knowledge and resources. As a result, this paper identifies important resource-level variables as two dimensions of asset specificity: technical capability and internationalization experience.

2.2. Industry-based view

The parent company's equity control over foreign subsidiaries has a significant impact on firm performance. Equity strategy is a type of strategic control commonly used by multinational firms over their foreign subsidiaries^[4]. A larger equity share of the parent company in the foreign subsidiary implies a stronger control of the subsidiary by the parent company. Some scholars argue that if the parent company chooses to control the subsidiary with a higher equity stake, it can greatly increase the transfer of knowledge and experience as well as core competencies between the parent and the subsidiary, and this approach can make the parent company more efficient in doing what it wants. In contrast, it has been argued that the degree of control of the parent company over the subsidiary has a negative impact on the greenfield investment performance, and when the parent company has a low degree of control over the subsidiary, the greenfield investment performance is due to the newly established firm, and the performance advantage of the M&A firm gradually decreases as the degree of control of the parent company over the subsidiary increases.

The choice of a firm's equity model for greenfield investments in international markets is actually a need to balance internal and external legitimacy, and firms must choose the appropriate equity strategy to meet institutional and legitimacy requirements. Therefore, this paper identifies important industry-level variables for equity selection.

2.3. Institutional-based view

Greenfield investment performance depends not only on the industrial structure and firm-specific resources and capabilities emphasized by traditional theory, but also on the impact of formal and informal institutions^[5]. Firms are often subject to risky shocks such as host country

government policies and market environment during greenfield investments, which have performance impacts on home country firms. The institutional and cultural differences between the host and home countries make it difficult for firms to gain the legitimacy and advantages of the host country when investing in greenfield. Therefore, scholars conclude that similar institutional and cultural backgrounds of both sides usually lead to higher performance. However, some scholars argue that institutional distance positively affects performance and that sound institutional development facilitates a favorable market environment for firms to exploit institutional differences because of the institutional arbitrage^[6].

The issue of firm ownership attributes has often been ignored in past research, however, in recent studies it has been found that when firms are state-owned enterprises (SOEs), their identity can have a significant impact on firm performance. SOEs are usually considered to have productive assets generated by the government's will form and political strategy. In the process of internationalization, the identity of SOEs can affect them positively or negatively. On the one hand, when investing in greenfield, Chinese SOEs usually reflect the will of the state and will receive policy and financial support from the state and have a certain degree of competitiveness. On the other hand, the special status of SOEs also makes the host government more cautious in reviewing greenfield investment projects and will set up investment barriers due to national security concerns. Therefore, this paper identifies the important institutional-level variables for institutional distance and firm ownership.

Therefore, using the strategic tripod theoretical framework, this paper attempts to explore the antecedent conditions affecting the greenfield investment performance from multiple institutional logic perspectives, including institutional-based view, resource-based view and industry-based view, using formal institutional distance, informal institutional distance and ownership as institutional-based view variables, technological capability and internationalization experience as resource-based view variables, and equity selection as industry-based view variables combination. To explore the multiple concurrent causes and their complex mechanisms that affect firms' greenfield investment performance.

3. Data collection and variable selection

3.1. Data collection

We select Chinese corporate greenfield investment data from 2014-2018, and the sample of greenfield investment is obtained from the 《Directory of Chinese Foreign Direct Investment》. The criteria for sample selection are as follows: (1) the investor is an outbound investment and a mainland Chinese company listed in Shanghai and Shenzhen, and ST (delisted) category companies are excluded; (2) the investor is a corporate entity rather than an individual, not a repeat M&A transaction, and different types of greenfield investments occurring in the same company in the same year are excluded, and if the same type, the larger ones are dominant; (3) the status of the transaction is completed; (4) the company's capital increase in its own overseas subsidiaries is excluded; (5) the tax havens such as Bermuda, Cayman Islands and Virgin Islands are excluded; (6) the sample with incomplete data is excluded.

3.2. Variable selection

(1) Greenfield investment performance

In this paper, corporate greenfield investment performance is measured based on return on assets (ROA). Using the change in return on total assets ROA_{01} in the year of greenfield investment and the change in return on total assets ROA_{02} two years after the greenfield investment. The difference between the change in return on total assets ($ROA_{01}-ROA_{02}$) is used to reflect the performance of the enterprise before and after the greenfield investment.

$$ROA_{01} = ROA_t - (ROA_{t-1} + ROA_{t-2}) / 2 \quad (1)$$

$$ROA_{02} = (ROA_{t+1} + ROA_{t+2}) / 2 - ROA_t \quad (2)$$

(2) Institutional distance

The six indicators of the Global Governance Index were used to measure the formal institutional distance indicator system according to the existing scholars' division of the system^[7]. The Hofstede index is used to calculate the informal institutional distance between the host country and China according to the method of Estrin^[8]. The data were processed using the standard formula for national distance measurement proposed by scholars Singh & Kought^[9].

$$CH = \sum \left\{ \frac{(H_{ij} - H_{ik})^2}{V_i} \right\} / 6 \quad (3)$$

In the above equation, H_{ik} and H_{ij} denote the value of the i th sub-indicator of China and the host country, respectively, and V_i is the variance of indicator i .

(3) Ownership

Referring to previous scholars' research, the nature of enterprise ownership uses the actual controller to distinguish between state-owned and non-state-owned enterprises, and when the actual controller has state-owned attributes then it is a state-owned enterprise, set to 1, otherwise set to 0.

(4) Asset specificity

In this paper, asset specificity is measured by dedicated assets such as firms' technological capability and internationalization experience, based on previous scholars' practice^[2]. Technological capability uses the R&D intensity (R&D expenditure/main business income) indicator used by previous scholars. A firm's internationalization experience is expressed as whether the firm has previous successful cross-border M&A cases according to previous scholars, with a value of 1 if it has and 0 if it has not.

(5) Equity selection

According to the existing research on the division of new equity ratio of greenfield, the establishment of a subsidiary by a company alone is considered as a greenfield sole proprietorship assignment of 1, and the establishment of a subsidiary in joint venture with other companies is considered as a greenfield joint venture assignment of 0.

3.3. Data calibration

This paper uses a direct calibration method, according to Fiss^[10] to calibrate the variables involved in all successful greenfield investment events of Chinese firms during the sample period by taking 25% (fully unaffiliated), 50% (crossover points) and 75% (fully affiliated) values. The specific calibration points for each variable are shown in Table 1.

4. Empirical analysis and discussion

4.1. Necessity analysis of single conditions

With reference to previous mainstream QCA studies, this paper tests whether a single antecedent condition is a necessary condition for corporate greenfield investment performance prior to group analysis. The results of the test are shown in Table 2, and it is observed that the consistency level of all antecedent conditions is less than 0.9, indicating that a single condition per se is not a necessary condition for high greenfield investment performance among each antecedent condition.

Table 1: Calibration of greenfield investment results to antecedent conditions

conditions		Calibration		
result	Performance	3.480	0	-2.191
antecedent conditions	formal institutional distance	3.960	3.130	1.041
	informal institutional distance	4.095	2.189	1.938
	ownership	1	/	0
	technological capability	6.430	3.840	2.350
	internationalization experience	1	/	0
	equity choice	≥100%	/	<100%

Table 2: Necessary condition analysis of greenfield investment performance

antecedent conditions	High performance		Non-high performance	
	Consistency	Coverage	Consistency	Coverage
formal institutional distance	0.47	0.46	0.60	0.66
~formal institutional distance	0.65	0.59	0.52	0.53
informal institutional distance	0.53	0.51	0.51	0.55
~informal institutional distance	0.54	0.49	0.55	0.57
SOE	0.22	0.42	0.27	0.58
~SOE	0.78	0.49	0.73	0.51
technological capability	0.61	0.59	0.45	0.49
~technological capability	0.48	0.44	0.63	0.65
internationalization experience	0.61	0.48	0.59	0.52
~internationalization experience	0.39	0.46	0.41	0.54
Full investment	0.47	0.52	0.38	0.48
Partial investment	0.53	0.43	0.62	0.57

4.2. Sufficiency analysis of antecedent conditions

This paper first tested the driving mechanisms of high performance of greenfield investment, and the results of the study are shown in Table 4, presenting a total of five combinations of sufficient conditions for achieving high performance of greenfield investment.

Table 3: Greenfield Investment High Performance Grouping

antecedent conditions	High Greenfield Investment Performance				
	H1	H2	H3	H4a	H4b
formal institutional distance	⊗	⊗	●	⊗	⊗
informal institutional distance		⊗		⊗	⊗
ownership	⊗	●	⊗	⊗	●
technological capability	●	●	●	⊗	⊗

internationalization experience	⊗	●	●	●	⊗
equity choice	⊗		●	●	●
Raw coverage	0.093	0.065	0.105	0.040	0.027
Unique coverage	0.093	0.065	0.099	0.034	0.027
Consistency	0.991	1	0.823	0.874	0.880
Overall consistency			0.914		
Overall coverage			0.324		

Note: ● means the core condition is present; ● means the edge condition is present; ⊗ means the core condition is missing; ⊗ means the edge condition is missing; space means the condition can be present or missing is irrelevant to the result.

(1) Strength-led type. The core conditions of Formation H1 are lower formal institutional distance, higher technological capability and lack of strong internationalization experience, and the marginal conditions are non-SOEs and greenfield joint ventures. This model implies that non-SOEs lacking internationalization experience but possessing strong technological capabilities implement greenfield joint ventures to host countries with closer formal institutional distance to help achieve high performance. Companies with higher technological capabilities can develop and innovate in technology and become more competitive in production processes and products, which in turn enables them to better meet consumer needs and gain more market share at a lower cost than their competitors in order to achieve a competitive advantage in the market.

(2) Internal and external synergy type. The core conditions for Formation H2 are lower formal institutional distance, state-owned enterprises, and higher technological capabilities. The marginal conditions are lower informal institutional distance and experience with internationalization. This model implies that SOEs with strong resources and capabilities in the process of outward investment, choosing countries with closer institutional distance for greenfield investment is conducive to achieving the internal and external synergistic type, and achieving the high performance of greenfield investment in adaptive governance. Internally, companies with specialized assets such as technological capabilities and international experience can increase their intangible assets and the added value of their products. Externally, the smaller institutional distance means that it is easier to gain legitimacy in the host country and more conducive to new investment activities in the host country. Therefore, this model is named "internal and external synergy" in this paper.

(3) System-utilization type. The core conditions for Formation H3 are higher formal institutional distance, international experience and greenfield sole ownership. The marginal conditions are non-SOEs and higher technological capabilities. This model implies that non-SOEs with high asset specificity can contribute to high performance when implementing greenfield wholly owned capital to countries with high formal institutional distance. The higher formal distance implies that the host country has more control over foreign firms, and the unfamiliar institutional environment increases the risk of investing abroad, reinforces the investor's dependence on and need for internationalization experience, and stimulates the investor to leverage the positive effects of previous experience through conscious and active learning. The more internationalization experience, the better companies are at taking advantage of the institutional distance.

(4) Risk-hedging type. This model consists of two groups, H4a and H4b, with the core conditions of low formal institutional distance and low informal institutional distance, low technological capability and greenfield wholly owned. the marginal conditions for H4a are SOEs and no

internationalization experience, and for H4b are non-SOEs and internationalization experience. This model implies that firms with weaker technological capabilities can contribute to high performance by implementing greenfield wholly owned capital in countries with closer institutional proximity. The closer formal and informal institutional distance implies that firms implementing greenfield investment behavior to countries with closer institutional distance have less negative impact in the outward investment process due to formal rules or cultural distance.

4.3. Robustness tests

Drawing on Ordanini et al^[11], the consistency threshold was increased by 0.05 in this paper, i.e., 0.85 was used instead of 0.80, and the analysis was developed again using a more stringent threshold, and the results of the analysis are shown in Table 6. A comprehensive comparison of the results of the histories at the 0.85 and 0.80 consistency threshold levels reveals that the histories in Table 4 are a subset of Table 3, thus proving the robustness of the findings in this paper.

Table 4: Greenfield Investment High Performance Grouping

antecedent conditions	High Greenfield Investment Performance				
	C1	C2	C3	C4a	C4b
formal institutional distance	⊗	⊗	●	⊗	⊗
informal institutional distance		⊗		⊗	⊗
ownership	⊗	●	⊗	⊗	●
technological capability	●	●	●	⊗	⊗
internationalization experience	⊗	●	●	●	⊗
equity choice	⊗		●	●	●
Raw coverage	0.093	0.065	0.105	0.040	0.027
Unique coverage	0.093	0.065	0.099	0.034	0.027
Consistency	0.991	1	0.823	0.874	0.880
Overall consistency			0.914		
Overall coverage			0.324		

Note: ● means the core condition is present; ● means the edge condition is present; ⊗ means the core condition is missing; ⊗ means the edge condition is missing; space means the condition can be present or missing is irrelevant to the result.

5. Conclusion

This paper investigates the complex context of internal and external factors driving corporate greenfield investment performance using a fuzzy set qualitative comparative analysis approach with a sample of 49 Chinese listed firms. The main contributions of this paper are: firstly, a complex causal theoretical model of corporate greenfield investment performance in emerging economies is constructed by invoking a tripod theoretical framework of corporate internationalization strategies in emerging economies. Secondly, it verifies that different paths of high performance of greenfield investment firms with different characteristics lead to different paths and causal complexity in the combination of antecedent conditions of firms'

greenfield investment performance. And based on the results of the study, the following management insights are provided for firms with greenfield investments.

(1) Strength-driven is one of the patterns that lead to high performance of greenfield investments. Firms with strong technological capabilities and greenfield investments in countries where the formal system is closer can enhance their R&D capabilities, etc., and overcome the lack of international experience. Companies lacking strong technological strength can hardly cope with the possible opportunistic risks when facing the lack of internationalization experience. (2) Firms with strong technological strength and internationalization experience, i.e., those with high asset specificity, can achieve a synergistic domestic and international mismatch by investing in greenfield locations in countries with a closer institutional distance. (3) In contrast, firms with high asset specialization investing in greenfield countries with greater distance from formal institutions can still realize institutional exploitation to achieve adaptive governance and gain institutional arbitrage from institutional differences. (4) Firms with lower asset specialization invest in countries with smaller institutional distance can also achieve risk-hedging type of adaptation, which suggests that closer institutional distance helps firms deal with the adverse effects of weak technological capabilities. (5) In particular, it is important to note that formal institutional distance appears as a core condition in every group of high greenfield investment performance, suggesting that Chinese firms should pay special attention to the formal institutional distance from the host country when making outward greenfield investments, which also coincides with the findings of previous scholars.

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