

The Impact of Alliance Diversity on Internationalization Performance: The Mediating Role of Alliance Governance Structure Diversity

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Abstract. Alliance governance structure is the premise and foundation for the effective operation of alliance diversity. Based on empirical data, this research tested the mediating role of governance structure diversity between alliance diversity and internationalization performance, as well as the moderating role of alliance experience and market entry uncertainty on the relationship between alliance diversity and governance structure diversity. Two main findings were revealed in this study. First, alliance diversity had a positive impact on firm's internationalization performance, with the alliance governance structure diversity playing significant mediating role. Secondly, alliance experience and market entry uncertainty both play significant moderating role on the relationship between alliance diversity and governance structure diversity, with positive role and negative role respectively.

Keywords: alliance diversity; governance structure diversity; alliance experience; uncertainty; internationalization performance

1. Introduction

With the increasingly fierce competition in the domestic market, speeding up the process of internationalization has become an important strategic choice for enterprises. In the process of internationalization, in order to cope with challenges such as resource constraints, market uncertainty, and insufficient internationalization experience, emerging market companies usually actively form diversified alliances to enhance their internationalization capabilities (X.Na-na, 2006). Alliance portfolio diversity not only

allows enterprise to access a wider range of resources, but also makes up for shortcomings in international experience. It is an important guarantee for improving the success rate of transnational operations and gaining competitive advantages in the local market. For a single alliance relationship, there are many research results on its influence mechanism on enterprise performance. However, for the alliance portfolio diversity combination relationship that contains multiple different motives and functions at the same time, its influence mechanism on enterprise performance becomes more complicated. In order to dig out specific influence paths, in recent years, scholars have conducted exploratory studies on the relationship between alliance portfolio diversity and enterprise performance from different perspectives such as country, organization, and technology. Although some direct influence relationships have been found, the conclusion is not rich yet, and the exploration of the process and realization mechanism including various indirect paths is particularly limited (Koka, 2008; Hoffmann, 2007; Beckman, 2014). Yin (2017) provide that the mechanism of alliance portfolio diversity on enterprise performance requires a deeper analysis, and the diversified realization path for alliance portfolio diversity to improve enterprise performance should be further explored.

From the perspective of the resource-based view, we should pay attention to the alliance relationship as the source for enterprises to obtain resources from the outside and effectively use resources to enhance their competitive advantage (Wernerfelt, 1984). Based on the resource-based view, Zhou (2009) revealed that in more complex international business activities, alliance portfolios need to be coordinated with each other. Choosing a more adaptable alliance governance structure to manage alliance portfolios is more sustainable for enterprises. In addition, based on the theory of transaction costs, the fundamental purpose of choosing an appropriate governance structure for enterprises is to reduce the risk of opportunistic behavior of alliance partners, adjust the relationship between alliance portfolio and governance structure, and avoid additional costs (H. Yu-jie, 2008). Therefore, enterprises need to choose a matching alliance governance structure for alliance portfolio diversity, and coordinate the relationship between alliance portfolios to effectively reduce opportunistic behavior among partners, so as to better obtain the required resources from alliance portfolio diversity (Wei, 2015). Based on the above two points of view, it is reasonable to believe that the establishment of governance structure diversity mechanism matching the diversity of alliance might be the path to improve the internationalization performance. Alliance portfolio diversity is an effective way for enterprises to obtain resources from the outside. Only with the help of a suitable alliance governance structure can the goal of obtaining and configuring alliance resources be truly achieved, thereby improving enterprise performance (Cui, 2012). Furthermore, the adaptive relationship between the alliance portfolio diversity and the alliance governance structure should be contextual rather than static. Therefore, it is necessary to consider

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typical contextual factors that may have a moderating effect in the internal and external environments of the organization. As some studies have shown, from an internal point of view, enterprises with rich alliance experience can better choose a suitable alliance governance structure for the alliance portfolio (Xu, 2014); from an external point of view, the uncertainty of market entry makes enterprises lack of overseas market information for decision environment, it is impossible to predict the behavior of alliance partners and it is difficult to better adjust the appropriate alliance governance structure for the alliance portfolio diversity (Santoro, 2005). In view of the complementary role of resource-based view and transaction cost theory in analyzing the problem of alliance governance structure. Therefore, this article will combine these two theoretical perspectives to propose and discuss the following research questions: How does an internationalized enterprise choose a matching alliance governance structure for its diverse alliance relationships, and how to achieve the improvement of its international operating performance. In this process, alliance experience and market entry uncertainty will be incorporated to explore the contextual characteristics of the relationship between alliance portfolio diversity and governance structure diversity. The solution of the above mentioned problems will help to uncover the black-box process of the role of alliance diversity on enterprise performance, and improve the management capabilities and internationalization capabilities of the enterprise alliance portfolio.

2. Theoretical background and hypotheses

2.1 Alliance portfolio diversity and enterprise internationalization performance

With the development of international business activities, enterprises urgently need to search for resources from outside in order to enhance their competitive advantages. The alliance portfolio is usually regarded as an important way for enterprises to obtain resources from the outside, which can enable enterprises to contact new technologies, increase their ability to solve problems, and provide them with new solutions to improve their innovation capabilities (Vanhaverbeke, 2014). It is particularly important for international business enterprises to acquire diversified cutting-edge knowledge (Griffith, 2004). Faems (2005) provide empirical evidence that the alliance portfolio diversity can improve the innovation of enterprises more than the number of alliances. Therefore, alliance portfolio diversity means that there is diversified knowledge in the alliance portfolio, which can enable enterprises to expand the channels of technology acquisition, and learn information needed for international operations from multiple external sources, and provide enterprises with information advantages (Chang-hong, 2017). In fact, building alliance portfolio diversity has become the norm for enterprises to acquire cutting-edge knowledge.

As mentioned earlier, different types of partners can provide enterprises with innovative ideas, experience and resources. Enterprises will be exposed to diversified information to transform and can gain an advantage in market competition before other enterprises (Sarkar, 2017). At the same time, with the development of international business activities, enterprises will pay more attention to absorbing different resources to obtain new innovation drivers and increase the diversity of organizational structure. At this time, it is necessary for enterprises to think about building alliance portfolio diversity, so as to provide enterprises with continuous competitiveness in deepening international business activities, which is conducive to the smooth development of entrepreneurial activities (Xi-xiong, 2005). Han et al (2017) explained that enterprises will experience different resource combinations at different stages of their business activities, and building an alliance portfolio diversity based on the required resources can drive the improvement of enterprise performance. Duysters et al (2011) further proved that the increase in the complexity of alliance portfolio has formed a diversified resource circulation channel for enterprises, and the receipt of external innovation information stimulates enterprises to better realize and maintain innovation, thereby improving enterprise performance. The advantage of alliance portfolio diversity is not only that different types of alliance combinations can provide more diversified information and resources, but also may enable enterprises to better balance alliance risks, and its impact on enterprise performance has exceeded that of a single alliance. The alliance portfolio is a source of new knowledge and new resources that enterprises can use to develop their international organizational capabilities, which will help them overcome the technical disadvantages and lack of market information in the process of international operations, and bring enterprises better international performance (Cegarra-navarro,2005). It can be seen that alliance portfolio diversity can provide enterprises with diversified resources to meet international operations, and is conducive to enterprises to improve their international performance. Hence:

Hypothesis 1. Alliance portfolio diversity has a significant positive impact on enterprise internationalization performance.

2.2. The mediating role of governance structure diversity

At present, the relationship between alliance portfolio diversity and enterprise performance has been confirmed, and positive results have been obtained (Beckman,2014). Although enterprises generally adopt the way of constructing alliance portfolio diversity to obtain different resources, the diversified alliance combination will inevitably cause communication and learning obstacles to enterprises (Niederkofler, 1991). On the contrary, these obstacles will limit the enterprises to obtain the required resources from the alliance partners, and also face the failure of the alliance portfolio relationship. When an enterprise

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builds an alliance portfolio diversity, more consideration is to formulate rules for future transactions with partners. The alliance governance structure can alleviate the conflicts between cooperation and is the basis for managing and controlling alliance portfolio diversity. Diversified governance structure, on the one hand, guarantees and promotes the integration of resources among diverse alliance portfolios, encourages alliance partners to jointly create value, and improves the efficiency of alliance portfolio resource flow (P.Zhen-zhen, 2020); on the other hand, it eliminates free-riding behavior among alliance partners to reduce the risk of opportunism between alliances and to ensure that each other can obtain consistent benefits (H.Shao-qing, 2016). As Bouncken (2005) through empirical research found that a proper alliance governance structure ensures the effective operation of the alliance portfolio and can promote the innovative development of enterprises. Hite (2005) research pointed out that different types of governance mechanisms should be adopted equally for different types of alliance combinations formed by enterprises. In fact, the alliance governance structure should be adjusted according to the different combinations of alliances formed. Moreover, the alliance governance structure has a close relationship between alliance portfolio diversity and international performance. Chiesa et al (1998). provided a simple alliance governance structure selection framework. They found that enterprises should match the attribute requirements and the cooperation form for the alliance portfolio, so as to choose a suitable enterprise alliance portfolio and improve the efficiency of enterprise cooperation. In the context of enterprises implementing international operations, the effectiveness of alliance portfolio diversity to effectively enhance the sustainable competitiveness of enterprises depends more on choosing a suitable alliance governance structure. The adaptive choice of alliance governance structure helps enterprises improve the efficiency of resource allocation and better respond to the dynamically changing international market demands (Larson,1993).

In summary, alliance portfolio diversity can increase the enterprise's access to continuous innovative resources from the outside, thereby helping to obtain key technologies; at the same time, the use of diverse information can increase the probability of enterprises knowing overseas market preferences, thereby helping to quickly respond to the market demand. In addition, matching different governance structures for the alliance portfolio reduces the risk of alliance portfolio failure, avoids the interruption of resources required for international business activities, and helps ensure the channels for obtaining external resources. It can be seen that enterprises can rely on governance structure diversity to provide a rear guarantee for alliance portfolio diversity, thereby providing diversified resources to promote enterprise performance. That is, the governance structure diversity mediates the relationship between alliance portfolio diversity and enterprise international. Hence:

Hypothesis 2. Alliance portfolio diversity has a significant positive impact on the governance structures diversity.

Hypothesis 3. The governance structure diversity has a significant positive impact on the internationalization performance of enterprises.

Hypothesis 4. The governance structure diversity plays an intermediary effect in the influence of alliance portfolio diversity on enterprises internationalization performance.

2.3. The moderating effect of alliance experience

Alliance experience refers to the past experience of an enterprise forming alliances with other partners, and active communication with partners can improve and acquire relevant knowledge and skills (X.Ya-ping, 2018). The partner's specific alliance experience increases the possibility of the partner's choice of alliance governance structure to suit the alliance combination. Enterprise with alliance experience will be able to accurately analyze the appropriate alliance governance structure based on the content of the transaction and the characteristics of the alliance partners (Reuer, 2000). On the one hand, enterprises with alliance experience can better deal with diversified alliance portfolio and coordination issues; on the other hand, the accumulation of corporate alliance experience becomes a source of flexibility for monitoring and capturing new technologies or business opportunities, and understanding alliance partner potential ability (Lee, 2015). Therefore, enterprises with more experience in alliances will have more diversity in the choice of alliance governance structure.

At the same time, through previous alliance experience, enterprises can understand the unexpected situations that may arise, and help them reduce the occurrence of such situations when making agreements with alliance partners. It can be seen that alliance portfolio diversity will largely rely on previous alliance experience and match the alliance portfolio diversity by adjusting the diversified governance structure. Specifically, enterprise with alliance experience will match governance structure diversity to the alliance portfolio diversity. Hence:

Hypothesis 5. In the relationship between alliance diversity and governance structure diversity, alliance experience has a significant positive moderating effect.

2.4. The moderating effect of uncertainty

In the process of international operation, the rapid changes in international market demand have increased the uncertainty of enterprise market entry, and enterprises are facing a more complicated market competition environment. At the same time, the uncertainty of market entry has increased, leading to information asymmetry in the communication and execution of the alliance portfolio formed by enterprises. Therefore, when the degree of uncertainty is too high, enterprises regard the alliance portfolio as a choice that can generate investment returns in the future, and will not make too many adjustments to the adaptive governance

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structure of the diversified alliance portfolio. Instead, they will adopt a single alliance governance structure and avoid irreversible promises (Santoro, 2005). On the one hand, the uncertainty of market entry makes it impossible for enterprises to define the scope of the alliance governance structure for the previously anticipated situation (Sampson, 2004); on the other hand, it is also difficult for enterprises to judge whether alliance relationship diversity formed by the enterprise is compatible with the alliance governance structure. The increasing uncertainty of market entry makes it more difficult to implement the contract, supervision and management agreed upon before the alliance portfolio. It also weakens the benefits of alliance portfolio diversity, forcing enterprises to take self-protection measures to govern the alliance portfolio (H. Yu-jie, 2007). Therefore, the uncertainty of market entry will affect the adjustment of governance structure by alliance portfolio diversity. The diversity of alliances formed in the course of international operations highlights the channels for obtaining overseas market information, and market dynamics are not conducive to enterprises that accurately obtain the resources they need in fierce competition. In addition, because it is difficult to accurately grasp the loyalty of alliance partners to the alliance portfolio, the complexity of the alliance governance structure will increase accordingly. Therefore, under the circumstances of uncertainty, enterprises are reluctant to make diverse choices of governance structures for diverse alliances. Hence:

Hypothesis 6. In the relationship between alliance portfolio diversity and governance structure diversity, the uncertainty of international market entry has a negative moderating effect.

Combined with the above analysis, the conceptual model of this research is proposed, as shown in Figure 1.

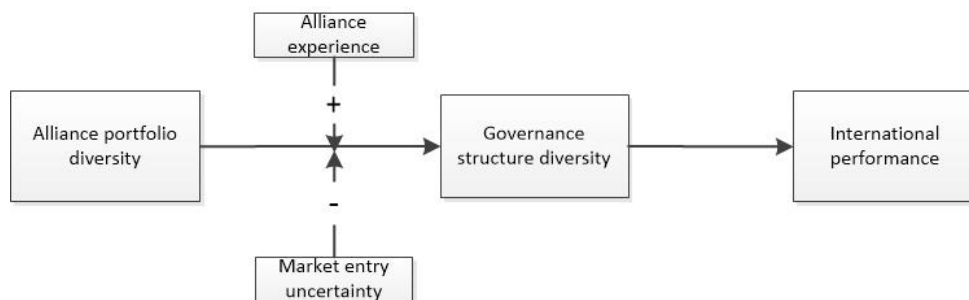


Figure 1: Theoretical model

3. Sample and data collection

3.1. Study design and data collection

This article is based on alliance management in the process of enterprise internationalization, it is an issue at the enterprise strategic level. Therefore, for the purpose of ensuring the quality of the questionnaire and enhancing the validity of the questionnaire, the subject of this questionnaire survey is senior executives of the enterprise. At the beginning of the questionnaire, the questionnaire will be answered as to whether the enterprise is or has already carried out international operations. Only the questionnaire that is answered affirmatively will be regarded as valid. The questionnaire data is collected by signing a cooperation agreement with a third-party platform and entrusting it to distribute and collect it on its behalf. The questionnaire uses a Likert five-point scale, from 1 to 5 representing completely disagree, disagree, general, agree, and completely agree. A total of 691 questionnaires were distributed. Among the 512 questionnaires received, the fillings were not standardized, incomplete, and the answer to the question was filled in with a high repetition rate or obvious regularity. They were eliminated and 454 valid questionnaires were finally obtained. The characteristics of the 454 valid samples are shown in Table 1.

Table 1: Descriptive statistical results of the sample

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Category	Characteristics	Samples	Percentage (%)	Category	Characteristics	Samples	Percentage (%)
Enterprise age (year)	<1	2	0.4	Enterprise size	<50	48	10.6
	2-5	78	17.2		51-100	67	14.8
	6-10	140	30.8		101-500	163	38.9
	>10	234	51.5		501-1000	87	19.2
	—	—	—		>1000	89	19.6
Enterprise attributes	nationalized	96	21.1	International age (year)	<2000	49	10.8
	Private	269	59.3		2000-2005	60	13.2
	Foreign-owned	23	5.1		2006-2010	91	20.0
	Sino-foreign joint venture	63	13.9		2010-2015	121	26.7
	others	3	0.7		2015-2019	133	29.3

3.2. Variable measurement

(1) Independent variable

Alliance portfolio diversity. The definition and measurement of alliance portfolio diversity are different. From the perspective of alliance function, this article defines alliance portfolio diversity as the number of different functions contained in various alliance relationships formed by enterprises. According to the literature and actual research results, we divide the alliance function into 5 categories: intelligence/information alliance, product design alliance, technology R&D alliance, production alliance (such as strategic supply chain partnership), and market sales channel alliance. The diversity index (Herfindahl Index) proposed by Blau is used to measure the diversity of the alliance. The

formula is $Diversity = 1 - \sum P_i^2$, $P_i = \frac{N_i}{N}$. *diversity* represents the degree of alliance portfolio diversity, *i* represents the type of function; P_i represents the proportion of the *i* function alliance in the total alliance; N_i represents the number of alliances with the *i* function; N represents the total number of alliances of each function formed by the enterprise. The value range of alliance portfolio diversity is [0, 1].

(2) Mediating variable

Governance structure diversity. In traditional literature, alliance governance structures are mostly classified according to the two dimensions of contract and equity. In order to enhance the degree characteristics of governance structure diversity and the accuracy of measurement, this article refines its measurement methods. Regarding the alliance relationship of each function, we set up governance forms that have typical matching relationships with it according to the literature, and use the binary assignment method to set each governance form as a 0-1 variable, where "0" means corresponding The functional alliance did not choose this governance form, and "1" means that the corresponding functional alliance chose this governance form. Then use the cumulative method to add up the number of governance forms used in the alliances of various functions formed by the enterprise, and finally get the degree of governance structure diversity of the alliance portfolio formed by the enterprise. The value range of governance structure diversity is [0, 23].

(3) Moderating variables

a. Alliance experience. Alliance experience refers to the experience accumulated by enterprises in the process of participating in alliance activities. Alliance experience is conducive to enterprise learning and knowledge acquisition, and further improves the management ability of the alliance. This article uses the indicator of the number of alliances formed by enterprise s in the past to measure alliance experience (Ahuja, 2000).

b. Market entry uncertainty. Market entry uncertainty refers to the lack of ability of enterprises to estimate the external environment, economy and policies when entering overseas markets. This article draws on the indicators proposed by Hilmersson (2012) to measure the uncertainty of international market entry.

(4) Dependent variable

International performance. Draw lessons from the research results of Knigh and Cavusgil(Knight,2004), and use 5 items to measure the International performance in overseas operations: The net profit of the product in the international market has a growing trend; The return on investment of the product in the international market has increased trend; The sales of this product in the international market continue to grow; The product's share in the international market continues to expand; The product has better customer satisfaction in the international market.

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(5) Control variable

The control variables mainly include the enterprise age, the enterprise size, the enterprise attributes and the international age. The enterprise age is expressed by the number of years of establishment of the enterprise; the enterprise size is expressed by the number of employees; The enterprise attributes is divided into nationalized, private, foreign-owned, Sino-foreign joint venture and others; The international age is expressed by the period when the enterprise first internationalized operations.

4. Data analysis and results

4.1. Reliability and validity test

In this study, the market entry uncertainty and international performance are all quoted from foreign scales. The market entry uncertainty α is 0.837, and the international performance α is 0.863, both exceeding 0.7. It shows that the reliability of uncertainty and international performance has passed the test. After exploratory factor analysis, the KMO value is 0.852, and Bartlett's sphericity test is significant. The cumulative load reaches 62.790%, and the factor load of each item is greater than 0.6, so the scale has good structural validity and good data model fit. See Table 2.

Table 2: Reliability and validity measurement results

variables	Item	Factor loading	Reliability and validity
Market entry uncertainty	The social system of the international market is uncertain	0.652	Alpha=0.837 AVE=0.505 CR=0.836
	It is difficult for enterprises to predict the development trend of technology and products in the international market	0.730	
	It is difficult for enterprises to predict the potential market capacity of new products	0.749	Alpha=0.863 AVE=0.565 CR=0.866
	It is difficult for enterprises to understand the potential needs of local customers	0.717	
	There is huge uncertainty about the impact of government agencies on business	0.711	
	The net profit of this product in the international market has a growing trend	0.753	
	The return on investment of this product in the international market has a growing trend	0.710	
International performance	The sales of this product in the international	0.714	

market continue to grow	
The product's share in the international market continues to expand	0.740
The product has good customer satisfaction in the international market	0.833

Table 3 shows the mean, standard deviation, and correlation coefficient between variables. It can be seen that the correlation coefficient between the variables is not high, indicating that the problem of multicollinearity is not obvious.

Table 3: Descriptive statistics and correlation coefficients

Variables	Mean	Standard deviation	1	2	3	4	5	6	7	8	9
1. Enterprise age	3.335	0.771	1								
2. Enterprise size	3.225	1.224	0.556**	1							
3. Enterprise attributes	2.137	0.927	-0.095*	0.037	1						
4. International age	3.504	1.323	-	0.449**	0.016	1					
5. Alliance portfolio diversity	0.595	0.212	-0.002	0.074	0.090	0.021	1				
6. Alliance experience	1.756	0.794	0.058	0.132**	0.015	-	0.000	1			
7. uncertainty	3.379	0.846	-0.033	-0.014	0.041	-	0.194**	-	0.416**	1	
8. governance structure diversity	6.861	2.819	0.070	0.052	0.059	0.019	0.626**	0.373**	-	0.176**	1
9. International performance	3.996	0.716	0.028	0.123**	0.033	0.031	0.642**	0.112*	0.117*	0.553**	1

*为 $P < 0.05$; **为 $P < 0.01$; $n = 454$.

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4.2. Hypothetical test

This study uses hierarchical regression analysis to introduce the influence of control variables to test the research hypotheses separately. The results are shown in Table 4. Model 6 adds alliance portfolio diversity on the basis of the control variables to test the relationship between alliance portfolio diversity and international performance. From the correlation coefficient of model 6 alliance portfolio diversity and international performance ($\beta=0.636$, $p<0.001$), it can be seen that alliance portfolio diversity has a significant positive effect on the international performance of enterprises, and Hypothesis 1 is confirmed.

The mediating effect of the governance structure diversity is tested according to the method proposed by Wen and Ye (2014). In Table 4, Model 1 takes governance structure diversity as the dependent variable and alliance portfolio diversity as the independent variable on the basis of adding control variables. The correlation coefficient ($\beta=0.627$, $p<0.001$) indicates that alliance portfolio diversity has a significant positive effect on governance structure diversity. Hypothesis 2 is confirmed; Model 6 to Model 8 take international performance as the dependent variable, and alliance portfolio diversity as the independent variable, adding the Mediating variable of governance structure diversity. The regression results show that alliance portfolio diversity and international performance ($\beta=0.636$, $p<0.001$), both have a significant positive effect; Governance structure diversity has a significant positive effect on the international performance ($\beta=0.550$, $p<0.001$). Hypothesis 3 has been confirmed; the relationship between alliance portfolio diversity, governance structure diversity and international performance ($\beta=0.479$, $\beta=0.250$, $p<0.001$) has a significant positive effect. Based on the regression analysis of the previous model alliance portfolio diversity on the international performance, the positive impact of alliance diversity on the international performance weakened, indicating that governance structure diversity played a part of the mediation between alliance portfolio diversity and the international performance. Hypothesis 4 is confirmed.

The moderating effect of this study is to test the moderating effect of alliance experience and uncertainty between alliance portfolio diversity and governance structure diversity in the following steps. Before the moderating effect analysis, the variables were standardized. Model 2 is based on the influence of control variables on governance structure diversity, adding the influence of alliance portfolio diversity ($\beta=0.631$, $p<0.001$) and alliance experience ($\beta=0.383$, $p<0.001$) on the governance structure diversity. The impact of governance structures diversity is significant. Model 3 is a regression model based on Model 2 after adding the product term of alliance portfolio diversity and alliance experience. It can be seen from Table 4 that after joining the alliance portfolio diversity and alliance experience, R^2 increases significantly, and the product term of alliance diversity and alliance experience ($\beta=0.099$, $P<0.01$). In summary, the alliance experience

has a positive regulating effect on the relationship between alliance portfolio diversity and governance structure diversity, and Hypothesis 5 is confirmed. In the same way, Model 4 adds alliance portfolio diversity ($\beta=0.687$, $p<0.001$) and uncertainty ($\beta=-0.307$, $p<0.001$) to the regression model on the basis of control variables. The impact is significant. Model 5 is a regression model based on Model 4 and substituting the product term of alliance diversity and uncertainty. R^2 increased significantly after joining the product term of alliance diversity and uncertainty ($\beta=-0.070$, $p<0.05$). In summary, uncertainty plays a negative role in the positive relationship between alliance portfolio diversity and governance structure diversity. Hypothesis 6 is confirmed.

Table 4 Regression analysis results

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variables	Governance structure diversity					International performance		
	M1	M2	M3	M4	M5	M6	M7	M8
Control variable								
Enterprise age	0.115*	0.129**	0.126**	0.102*	0.094*	-0.006	-0.078	-0.034
Enterprise size	-0.043	-0.094*	-0.092*	-0.052	-0.044	0.103*	0.157**	0.113**
Enterprise attributes	0.014	0.011	0.011	0.021	0.021	-0.029	-0.013	-0.033
International age	0.041	0.060	0.067	0.022	0.023	0.056	0.048	0.046
Independent variable								
Alliance portfolio diversity	0.627***	0.631***	0.633***	0.687***	0.685***	0.636***		0.479***
Mediating variable								
Governance structure diversity							0.550***	0.250***
Moderating variables								
Alliance experience		0.383***	0.397***					
Market entry uncertainty				-0.307***	-0.328***			
Interactive item								
APD*AE			0.099**					
APD*MEU					-0.070*			
F value	59.687***	88.773***	78.909***	71.679***	62.377***	65.434***	42.617***	63.390***
ΔR^2	0.393	0.538	0.546	0.484	0.487	0.416	0.315	0.452
R ²	0.400	0.544	0.553	0.490	0.495	0.422	0.322	0.460

APD indicates alliance portfolio diversity; AE indicates alliance experience; MEU indicates Market entry uncertainty. * Indicates that the significance level is less than 0.05, ** indicates that the significance level is less than 0.01, *** indicates that the significance level is less than 0.001; n=454.

5. Conclusion and inspiration

Based on the resource-based view and transaction cost theory, this paper conducts a questionnaire survey of 454 enterprises that implement multinational operations, and uses a hierarchical regression analysis model to determine how enterprises choose governance structures for functionally alliance portfolio diversity, and further evaluate their international performance. Empirical research was conducted on the impact, and the moderating role played by alliance experience and market entry uncertainty in the relationship between alliance portfolio diversity and governance structure diversity was tested. The main research conclusions of this paper are as follows.

First of all, in the context of an enterprise's comprehensive international business activities, the alliance portfolio diversity can significantly improve the international performance of the enterprise. This is consistent with Griffith [14], and alliance portfolio is an important way for enterprises to obtain external resources, emphasizing that diversified alliance combination can better alleviate the situation that enterprises face resource constraints in the process of multinational operations.

Secondly, as the alliance functions diversity increases, it means that enterprises can access and obtain more alliance resources with the help of alliance relationships. At the same time, the increase of heterogeneous resources will bring about many problems, which will contribute to diversified alliance relationships. It has become an urgent need to establish an appropriate alliance governance structure system. This study found that the degree of alliance governance structure diversity has a significant mediating effect in the process of alliance functional diversity impact on international performance, which means that the contribution of alliance function diversity to international performance is through governance structure diversity. It is important to ensure that the governance structure is matched and effective for the alliance portfolio to perform its function. This also confirms the viewpoint put forward by Huang [24] et al. The governance structure diversity establishes a social protection mechanism within the alliance portfolio, which can enhance the competitiveness of enterprises in international operations and avoid the negative impact of alliance portfolio diversity on international performance.

Finally, alliance functions diversity on the governance structure diversity has contextual characteristics. The alliance experience within the organization and the uncertainty level of market entry in the external environment have a significant moderating effect on the relationship between alliance functions diversity and governance structure diversity. Specifically, the alliance experience plays a positive role in strengthening the relationship between the two, that is, the more alliance experience, the more diverse the governance structure system the company chooses for its diverse alliance portfolio, and the higher the alliance management and control ability; The market entry uncertainty has a negative strengthening effect on the relationship between alliance functions diversity and governance structure diversity, that is, the higher the uncertainty of market entry, the less

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the governance structure that companies choose for their diversity alliances, and they tend to adopt more consistent alliance management methods to reduce risk or strengthen control.

As a research prospect, we point out that the existing research is relatively scarce in the matching and selection of alliance portfolio diversity and alliance governance structure, and there are dynamic changes in the role of enterprises in alliance portfolios. With the continuous increase of corporate cross-border behavior, role changes may occur (Bouncken, 2016). Therefore, future research can conduct in-depth analysis on the above issues in order to more comprehensively explain the influence mechanism of alliance diversity on corporate performance.

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