

Article

The influence of institutional support on innovation performance of new ventures: the mediating mechanism of entrepreneurial orientation

Yang Jie ^{1,*}, Mingxing Yu ²

¹ School of Management and Economics, Beijing Institute of Technology, Beijing 100081, China; yangbit1111@bit.edu.cn

² School of Marxism, Shanghai University of Finance and Economics, Shanghai 200433, China; mingxingyu@163.sufe.edu.cn (M.Y.)

* Correspondence: yangbit1111@bit.edu.cn (Y.J.)

Abstract: Based on the institutional theory and resource-based theory and the "institution-strategy-performance" research paradigm, this research explores the mechanism of institutional support on the innovation performance of new ventures, focusing on the mediating role of entrepreneurs and the moderating role of innovative resource acquisition. An empirical analysis based on 278 survey samples shows that: ① (formal/informal) institutional support positively affects the innovation performance of new ventures; ② entrepreneurial orientation plays an intermediary role between institutional support and innovation performance of new ventures; ③ innovation resource acquisition not only positively regulates the relationship between entrepreneurial orientation and innovation performance of new ventures, but also enhances the mediation of entrepreneurial orientation between institutional support and innovation performance. The conclusion shows that institutional support plays an important role in the innovation practice of new ventures, and can provide guidance for the innovation management practices of new ventures.

Keywords: Institutional support; new ventures; entrepreneurial orientation; innovation resource acquisition; innovation performance

1. Introduction

Under the trend of economic globalization, innovation has become an important factor for enterprises to achieve success[1]. For new ventures in transition economies, innovation is not only an effective way to catch up with incumbents, but also a necessary way to cope with the challenges in their early stages [2]. On the one hand, the introduction of the national policy of entrepreneurship and innovation in China has incubated a large number of new enterprises[3]. On the other hand, the increasingly competitive market environment has constantly highlighted the high risks of innovation and entrepreneurial activities[4]. Compared with mature enterprises, new ventures are weak due to their short establishment life and difficulty in obtaining resources. Statistics show that the failure rate of new ventures in China is as high as 80%[5]. Researches show that the proper acquisition and allocation of resources is a way for new ventures to resolve the growth dilemma[6]. Scholars have carried out a large number of studies on the key influencing factors of enterprise innovation performance[7-10]. From the theoretical perspectives of knowledge management, social capital and resource view, those studies have clarified several organizational factors that affect the innovation performance of enterprises, such as product and technical characteristics, organizational learning, knowledge acquisition, etc.[11-14], but ignored the influence of institutional environmental factors on new ventures.

Institutional theory holds that the success of enterprise innovation depends not only on the internal resources of the organization, but also on the external institutional

environment[15]. Studies have pointed out that institutional support is a key element of resource allocation and other economic activities in the enterprise social relationship network[16]. Limited by the initial resources, new ventures need to constantly seek external innovation resources to meet their own development needs, but the liability of newness will increase the difficulty of obtaining innovation resources[17]. Existing studies have confirmed that institutional support has a positive effect on firm resource acquisition[15]. In practice, it is generally recognized that institutional support can boost the innovation and development of new enterprises[18]. Institutional support for the new ventures provides various resources and entrepreneurial opportunities, which enterprises need to transform into unique competitive advantages through operational decisions. Entrepreneurial orientation is a decision-making culture for new ventures to cope with environmental changes, and is a bridge connecting external environment and organizational performance[19]. It can effectively transform resources and information obtained by organizations from the environment into competitive advantages, that is, institutional support may have an impact on innovation performance through entrepreneurial orientation. Practice shows that new ventures with strong access to innovation resources can obtain valuable information in the institutional environment at the lowest cost and utilize its entrepreneurial orientation, that is, innovation resources acquisition also has an important impact on the relationship between entrepreneurial orientation and innovation performance.

On the whole, there are abundant research results on the influencing factors of innovation performance at the organizational level. The path and mechanism of institutional factors acting on innovation practice of new ventures still need to be further investigated. Enterprise's strategic decision is connected with external environment and organizational performance; Resource acquisition affects firm's innovation performance. However, how does institutional support affect new ventures' innovation activities and performance? How does strategic decision-making affect the innovation practices of new ventures?

In order to fill in the research gap mentioned above, this study explores the institutional support, entrepreneurial orientation and the new mechanism between the innovation performance of new ventures based on institutional theory and resource-based theory, including: the mediating effect of entrepreneurial orientation, and the moderating effect of resource acquisition, between institutional support and innovation performance. We further highlight the managerial implications and suggestions to policy makers based on the empirical findings of this study.

2. Theoretical basis and research hypothesis

2.1 Institutional support and innovation performance of new ventures

All the activities of enterprises cannot be separated from the institutional environment[20]. Xin et al. (1996) has divided institutional support into formal institutional support (regularized institutional support) and informal institutional support (political connection), and this classification method has been recognized by many scholars[21]. This paper adopts this classification method to explore the impact of different types of institutional support on the innovation activities of new ventures. Among them, formal institutional support refers to the regulated support from government agencies to facilitate entrepreneurial innovation such as government subsidies, tax relief, intellectual property rights, government procurement of innovative products, and promotion of industry-university-research alliances. Informal institutional support refers to the efforts by enterprises to establish political connections in order to gain government support. Informal institutional support is the complement and refinement of formal institutional support[22].

Formal institutional support can promote the innovation development of new ventures through a variety of ways. For example, it can reduce the innovation cost of new enterprises by government subsidies and tax relief; it can help new ventures increase

revenue through government procurement; it can also protect the innovation revenues by reinforcing intellectual property rights, thus increase the new enterprises' willingness to commit investment in innovation. [13]. Continuous and large amount of innovation investment is crucial to the product or technological innovation of new ventures. Through the establishment of tech-driven incubator and the promotion of industry-university-research alliance between research institutions and new enterprises, formal institutional support can provide innovative resources and environment, so as to improve the success rate of product or technological innovation, and the innovation performance of new ventures.

Informal institutional support is particularly important for new ventures when they are experiencing increasing market competition. [23]. Informal institutional support can help new ventures reduce costs, obtain key information and identify potential development opportunities among government policies. The higher the uncertainty of the external environment has, the more enterprises tend to rely on external relations with public resource management departments. Because organizations with strong connections to governments distributing public resources will have privilege of having prioritized access to those resources [21]. Here is an example about the study on the identification of development opportunities among government policies. Tan, et al. (2001) interviewed company top management and noticed that most companies failed to have definite access to key information about the industry trends due to the vague or ambiguous information published by government agencies. Those companies may misinterpret government policies and miss out opportunities, increasing the risks of innovation activities [24]. Therefore, new ventures with strong informal institutional support are benefited from obtaining effective institutional information and grasp business opportunities, improving innovation performance. Henceforward, we propose the following hypothesis:

Hypothesis 1a(H1a). formal institutional support has a positive impact on the innovation performance of new ventures.

Hypothesis 1a(H1b). informal institutional support has a positive impact on the innovation performance of new ventures.

2.2. Institutional support and entrepreneurial orientation

Miller(1983) defined entrepreneurial orientation as organizational behavior and decision-making style characterized by innovativeness, proactiveness and risk-taking[25]. Since then, some scholars have added two dimensions of autonomy and competitive aggressiveness to the description of entrepreneurial orientation[26]. Based on Miller's (1983) viewpoint, this paper defines entrepreneurial orientation as a strategic orientation characterized by innovation initiative and risk bearing and with the connotation of innovative cultural values.

Government agencies can provide formal institutional support to new ventures through preferential tax treatment, financial support and intellectual property protection. Formal institutional support can help the new ventures close the funding gap for innovation, increase their funding for new product development or new service promotion, improve the return rate of their innovation, facilitate their motivation and capability to invest in high-uncertainty / high risk projects, thereby increase their propensity to undertake innovations. At the same time, informal institutional support can help the senior management of new ventures to comprehend the external environment, access the scarce resources they need, reduce and avoid institutional risks during their incubation, increasing their tendency to take entrepreneurial-oriented strategic actions. Resource-based theory points out that scarce resources such as technical knowledge, market knowledge and market access can reduce resource constraints faced by enterprises and help them comprehensively evaluate their innovative projects that are high in both risk and reward, so as to effectively capture market opportunities and actively engage in innovative activities[27] According to institutional theory, institutional environment determines enterprises' strategic choices and resource allocation tendencies[28]. The higher the institutional support

is, the more likely entrepreneurs are to dedicate resources in innovative, proactive and risk-taking activities. At the same time, institutional support can create a signal effect inside and outside the organization, enhancing the confidence of organization members and improving the tendency of new ventures to carry out innovative activities, and thus enhancing the willingness of management to pursue entrepreneurial-oriented strategy. Therefore, we propose Hypothesis 2:

Hypothesis 2a (H2a). Formal institutional support has a positive effect on entrepreneurial-oriented strategic decisions.

Hypothesis 2b (H2b). Informal institutional support has a positive effect on entrepreneurial-oriented strategic decisions.

2.3. Entrepreneurial orientation and innovation performance of new ventures

Prior studies have pointed out that heterogeneity in strategies leads to heterogeneity in performance[29]. Entrepreneurial-oriented companies focus on innovation, consolidate resources to pursue innovation and take risks in order to achieve first-mover advantage.

Resource-based theory stressed that the competitive advantage comes possession of valuable and scarce resources[30]. Entrepreneurial orientation can be viewed as a strategic resource, a type of organizational value guiding the pursuit of performance excellence[31]. In other words, an entrepreneurial orientation that is innovative, risk-taking and proactive can be seen as a valuable, hard-to-imitate key resource. It can help enterprises successfully develop new products and improve innovation performance. Covin et al. (1999) pointed out in their study that the innovation practice of an entrepreneurial-oriented organization can have a direct impact on its innovation results[32]. Innovativeness, proactiveness and risk-taking can help new ventures successfully capture market opportunities. In addition, entrepreneurial orientation can also promote new ventures to actively build flexible organizational structures, adopt new rules and regulations, and create an innovative culture, so as to support the innovation practice of new ventures. Therefore, the following hypotheses are proposed:

Hypothesis 3(H3). Entrepreneurial orientation has a positive impact on the innovation performance of new ventures.

2.4. The mediating role of entrepreneurial orientation

According to the institutional theory, institution is the antecedent of the strategic choice and performance of enterprises[33]. As a value guiding strategic decision-making, entrepreneurial orientation is one of the results of institutional support, which can directly affect the innovation performance of the organization[34]. That is, institutional support not only encourages new ventures to take innovation-centered entrepreneurial-oriented strategic decisions, but also affects the output of innovation activities.

Institutional support can provide resources for organizations to carry out innovation activities, reduce the risk of innovation, to enhance the tendency to innovate and improve the innovation performance. On the one hand, the government can regulate market competition, reduce transaction costs, and effectively protect the innovative outputs of new ventures by formulating formal institutions such as intellectual property protection, reduction of government bureaucracy, and promotion of industry-university-research cooperation. Informal institutional support can influence new ventures to adopt entrepreneurial-oriented strategic decisions in a variety of ways to quickly obtain key resources for innovation, effectively grasp external financing opportunities that can enhance innovation willingness, and identify potential market opportunities in government planning, thereby increasing innovation input capacity and improving innovation performance. Enterprises with a higher level of informal institutional support are more able to accurately and effectively grasp institutional information and business opportunities. This prospect makes new ventures more willing to adopt entrepreneurial-oriented strategic decision-making. So, we put forward the following hypotheses:

Hypothesis 4a(H4a). entrepreneurial orientation plays a mediating role between formal institutional support and innovation performance of new ventures.

Hypothesis 4b(H4b). entrepreneurial orientation plays a mediating role between informal institutional support and innovation performance of new ventures.

2.5 The moderating role of innovative resource acquisition

Prior studies have paid great attention to the relationship between resource acquisition and innovative practices. Numerous research results show that innovative resources have laid the foundation for successful innovative practices[30]. Resource-based theory suggests that it is impossible for organizations to have all the resources they need, and they need to continuously negotiate and interact with the external environment to obtain knowledge, technology and funds and other resources needed for innovation. Innovation resources include information, knowledge and funding[35]. Among them, information resources include market information, technical information, and policy information; knowledge includes market development, technology research and development, innovation management, etc.; funds are composed of government funds, tax incentives, and venture capital. At the same time, resource acquisition affects corporate strategic decision-making, corporate performance and their interactions[32]. Resource acquisition enables new ventures to screen and absorb valuable resources, creating a broad resource pool for the effective implementation of entrepreneurial-oriented strategic decisions. Through resource acquisition, enterprises can realize the sharing of internal and external resources, which provides necessary conditions for enterprises to effectively implement proactive competitive strategy, contributes to the improvement of enterprise performance[36], and reduces the cost of risky activities. The higher the level of innovation resource acquisition, the more likely new ventures can break through the existing resource constraints and meet the resource demand of their innovation activities, so as to strengthen the influence of entrepreneurial orientation on innovation performance. In summary, the following hypothesis is proposed:

Hypothesis 5(H5). Innovation resource acquisition plays a moderating role in the relationship between entrepreneur orientation and innovation performance of new ventures.

The above analysis shows that institutional support can promote the innovation performance of new ventures through entrepreneurial orientation, and innovation resource acquisition can strengthen the relationship between entrepreneurial orientation and innovation performance of new ventures. Based on the above reasoning, resource acquisition may have a moderating effect on the whole mediating mechanism of institutional support- entrepreneurial orientation- new venture innovation performance, that is, there is a moderating mediating effect. Specifically, the higher the level of innovative resources acquisition is, the stronger the innovative tendency is, the better the ability is to meet the resource demand in order to capture new opportunities, the better the ability is to reduce the risk and cost of the organization's risky strategic activities, and the better the ability is to mitigate the resource shortage disadvantage of the new enterprise

Hypothesis 6a(H6a). innovation resource acquisition positively moderates the mediating effect of entrepreneurial orientation on the relationship between formal institutional support and innovation performance of new ventures, that is, the higher the level of innovation resource acquisition, the stronger the mediating effect is.

Hypothesis 6b(H6b). innovation resource acquisition positively moderates the mediating effect of entrepreneurial orientation on the relationship between informal institutional support and innovation performance of new ventures, namely, the higher the level of innovation resource acquisition, the stronger the mediating effect is.

To sum up, the theoretical model of this study is constructed, as shown in Figure 1.

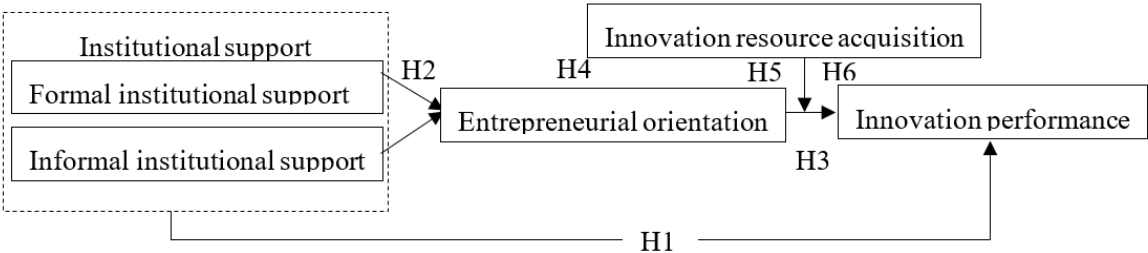


Figure 1. Theoretical model.

2. Research Method

2.1. Sample selection and data acquisition

In order to explore the mechanism of institutional support on the innovation performance of new ventures, this study is based on the definition of new ventures by existing scholars, and new ventures established within 8 years are the research objects. Refer to the data in the "China Statistical Yearbook (2020)", and select Beijing, Hebei, Tianjin, Shanghai, Guangdong, Zhejiang, etc., which are more active in innovation, as the research area, and conduct research on new startups in the region. Random sampling survey. The research team distributes questionnaires in the form of professional market research companies and visits to entrepreneurial incubators. The subjects of the questionnaire survey are middle and high-level managers of new ventures. They have a comprehensive understanding of the company's operations, especially the strategic decision-making process and innovation performance. Fully understand. The research team promised to the survey respondents the obligation to keep the data filled in, and told them that filling in the questionnaire will not involve specific information about the company or project. In order to increase the interview rate and questionnaire response rate, the research team promised the respondents to provide relevant research reports later. In the end, a total of 382 questionnaires were distributed through on-site and electronic questionnaire links, and 313 questionnaires were recovered, with a response rate of 81.94%. After excluding the questionnaires with irregular responses, many missing values, and the company's establishment age that did not meet the requirements, 278 valid questionnaires were obtained, with an effective recovery rate of 72.77%.

2.2. sample statistics

The characteristics of the sample enterprises are shown in Table 1. The majority of companies have been established within 6 years, accounting for 93.17%, which is in line with the definition of new ventures. The majority of startups with a scale of 101 to 300 people account for 34.53%; among the industry types, the number of samples of information technology service companies is the largest, with a total of 183, accounting for 65.83% of the total sample; those with annual sales revenue of 10-50 million yuan The number of enterprises accounted for 35.25%. Generally speaking, the sample is representative and fits the research theme of this article.

Table 1. Characteristic statistics of samples (n=278).

Index	Attribute	Sample	Percentage (%)	Index	Attribute	Sample	Percentage (%)
Age of business	Less than 1 year	26	9.35	type	Production Industry	44	15.83
	1-3years	101	36.33		Trading Industry	23	8.27
	3-6years	132	47.48		IT Industry	183	65.83
	6-8years	19	6.83		other	28	10.07
Size	Less than 30 people	34	12.23	Annual sales revenue (million yuan)	Less than 5	54	19.42
	31-100people	80	28.78		500-1000	79	28.42
	101-300people	96	34.53		1000-5000 million yuan	98	35.25
	More than 30 people	68	24.46		More than 50	47	16.91

2.3. Measurement

The main variables are measured with reference to maturity scales at home and abroad. In order to improve the content validity of the questionnaire, the back translation operation procedure was adopted for the scales of institutional support, entrepreneur orientation, access to innovative resources, and innovation performance of new ventures. Based on this research situation, several rounds of revisions were made to reduce translation deviation and ensure Consistency of the connotation of the items on the scale. Before issuing the formal questionnaire, the research team conducted pre-tests on 9 new ventures in the northwestern region, and adjusted the questionnaire appropriately according to relevant questions and suggestions to ensure the validity of the final questionnaire. The measurement items use the Likert 7-point type, where 1 is extremely non-conforming, and 7 is very consistent. The simplified version of the measurement items is shown in Table 2.

The institutional support measurement draws on the research results of Li et al. (2001)[37], and comprehensively measures the degree of support from relevant government departments to the interviewed new ventures from two aspects: formal institutional support and informal institutional support through 10 items.

The measurement of entrepreneurial orientation mainly refers to Tang Et al. (2015)[38], based on a sample of Chinese new ventures, and measures the entrepreneur orientation of the sample enterprises from three aspects: innovation, proactiveness, and risk tolerance through 8 items. In the measurement, the method of reverse measurement can improve the validity of the measurement scale.

The measurement of innovation resource acquisition refers to the scale prepared by CAI Li et al. (2011)[39]. Through six items, it comprehensively measures various resources required by the interviewed enterprises to obtain innovation in the development process from two aspects of knowledge resource acquisition and operation resource acquisition.

The innovation performance of new ventures refers to the research of Laursen et al. (2006)[40], through 6 items, including the market sales, product development speed and success rate of the enterprise in the past three years or since its establishment (enterprise age <3 o'clock), To measure the innovation performance of new ventures.

Studies have shown that the annual sales revenue of new startups may have an impact on their innovation performance[40]. Therefore, this paper takes the age of the company, the size of the company and the sales volume as the control variables. The age of the company is measured by the time the company was established, the scale of the company is measured by the total number of employees. The result is obtained.

Table 2. Measurement items and reliability and validity test of variables.

Variables	Items	Loading	KMO	AVE	CR	Cronbach α
Formal institutional support FIS	The government has issued policies or projects that are conducive to the development of enterprises, etc.	0.748	0.859			
	The government provides information and technical support.	0.715				
	The government provides assistance for our business to obtain financial support.	0.755		0.552	0.896	0.863
	The government provides assistance for our enterprises to introduce technology and equipment.	0.783				
	The government provides direct financial subsidies for our companies.	0.772				
	The government encourages companies to protect intellectual property rights.	0.733				
	The government provides legal support for our companies to enter new markets.	0.686				
Informal institutional support IIS	We actively implement measures to establish relationships with government departments at all levels.	0.870	0.691			
	We have connections with multiple levels of government.	0.835		0.742	0.897	0.786
	Our relationship with government departments is very important for business development.	0.806				
	Our company tends to market with mature products and services.	0.727	0.828			
	We have not developed new products and services in the past year.	0.665		0.505	0.890	0.784

Entrepreneurial orientation EO	We do not make major adjustments to the combination of products and services.	0.757			
	Faced with competitive behavior initiated by competitors, we are often forced to deal with.	0.739			
	In the face of competition initiated by competitors, we will not preemptively introduce new products or services.	0.762			
	In the face of competition initiated by competitors, we seek peaceful development.	0.633			
	Our management team likes low-risk projects.	0.687			
Innovation resource acquisition IRA	When faced with uncertainties, we like to take cautious actions.	0.703			
	We can quickly discover the effect of new external knowledge on existing technologies.	0.679	0.775		
	We can quickly acquire the technology and knowledge needed in the process of new product development.	0.700	0.522	0.867	0.759
	We can quickly acquire the experience, skills and knowledge needed for market development.	0.768			
	We have extensive social network resources.	0.771			
Innovation performance IP	We can obtain funds through external financing.	0.694			
	We can obtain important industry information from the outside.	0.718			
	In the past three years, the company's sales from new products/services have continued to rise.	0.688	0.839		
	In the past three years, the technical capabilities of enterprise product/service development and innovation have been improved.	0.745	0.572	0.889	0.832
	The success rate of the company's new product/service development has continued to increase in the past three years.	0.713			
	The improvement and innovation of enterprise products/services in the past three years has a good market response.	0.767			
	Companies can launch new products/services faster than their competitors in the past three years.	0.829			
	The market share of the company's new products has continued to increase in the past three years.	0.786			

2.4. Reliability and validity analysis

The reliability and validity test results are shown in Table 2. Cronbach α values of the variables are all higher than 0.7, AVE values of the internal consistent qualified variables of the scale are all greater than 0.5, and CR values are all higher than 0.8, indicating that the scale has good aggregation validity and load coefficients of all dimension factors are all above 0.6, and there is a strong correlation between each measurement item and corresponding variables. Secondly, confirmative factor analysis was conducted on five key factors in the measurement model (formal institution supporting informal institution supporting enterpriser-oriented innovation resource acquisition and innovation performance), and all indicators met the qualified requirements ($X^2/df=1.290$, $GFI=0.831$, $RMSEA=0.048$, $CFI=0.934$, $IFI=0.936$, $TLI=0.926$, $NFI=0.866$), indicating that the model fits well and has good discriminating validity among main variables.

2.5. Common method deviation test

In order to test whether there is a common method deviation, the Harman single factor test method is used to test the factors. The results show that the KMO value of the sample data is 0.878, which is greater than the threshold value of 0.6. The Bartlett sphere test is significant. There are 5 factors with extracted feature values greater than 1, and the variance explanation rate values of the 5 factors are 31.51%, 10.01%, 13.727%, 3.51%, 3.39%, and the cumulative variance explanation rate is 62.15% > 50%, and the explanatory rate of the first factor is 31.51% < 50%. The amount of information in the research item can be extracted effectively, indicating that there is no serious method deviation.

3. Research results and analysis

3.1. Descriptive statistics and correlation analysis

Table 3 shows the mean standard deviation and correlation coefficient of all variables. The results show that all variables are correlated, and the results are consistent with the direction of the null hypothesis of this study. The square root of AVE value is greater than the absolute value of correlation coefficient between AVE value and other variables, indicating that major variables have good discriminant validity At the same time, the VIF coefficients of all variables are lower than 3, indicating that there is no serious collinearity problem

Table 3. Descriptive statistics and correlation coefficient matrix.

	1	2	3	4	5	6	7	8
1 FIS	0.743							
2 IIS	0.508**	0.861						
3 EO	0.270**	0.353**	0.711					
4 IRA	0.411**	0.456**	0.604**	0.723				
5 IP	0.498**	0.702**	0.598**	0.678**	0.756			
6 Age	0.050	0.063	0.047	0.087	0.006	1		
7 Size	0.096	0.087	-0.091	0.022	0.052	0.434**	1	
8 Turnover	0.053	-0.030	-0.026	0.065	-0.107	0.061	0.017	1
Mean	4.689	4.535	4.681	4.515	4.560	2.77	2.79	2.02
SE	1.018	1.177	0.813	0.778	0.951	1.120	1.135	0.680

Note: The bolded part on the diagonal is the square root of the AVE value, N=278, ***, **, * are p<0.001, p<0.01, p<0.05, the same below.

3.2. Direct effect test

The regression analysis results are shown in Table 4. The results of M2 show that the regression coefficient of formal institutional support to the innovation performance of new ventures is positively significant (β =0.200, p<0.001), and H1a is supported; the regression coefficient of informal institutional support to the innovation performance of new ventures is positively significant (B=0.600, p<0.001), H1b is supported.

Table 4. Linear regression analysis results.

Variables	IP						EO	
	M1	M2	M3	M4	M5	M6	M7	M8
FIS		0.200*** (2.723)		0.147** (2.331)				0.283** (3.228)
IIS		0.600*** (8.173)		0.485*** (7.459)				0.293** (2.982)
EO			0.612*** (8.419)	0.394*** (6.704)	0.222* (2.338)	0.163+ (1.709)		
IRA					0.532*** (5.611)	0.612*** (6.265)		
EO×IRA						0.174** (2.573)		
Age	-0.014 (-0.136)	-0.035 (-0.498)	-0.080 (-0.996)	-0.074 (-1.223)	-0.086 (-1.203)	-0.094 (-1.336)	0.109 (1.081)	0.098 (1.045)
Size	0.060 (0.594)	-0.002 (-0.034)	0.144+ (1.785)	0.065 (1.069)	0.100 (1.382)	0.089 (1.259)	-0.137 (-1.368)	-0.171+ (-1.820)
Turnover	-0.107 (-1.180)	-0.097 (-1.538)	-0.089 (-1.230)	-0.087 (-1.605)	-0.133* (-2.042)	-0.104 (-1.622)	-0.030 (-0.330)	-0.027 (-0.319)
R2	0.014	0.531	0.382	0.661	0.524	0.568	0.018	0.161
Adj-R2	-0.010	0.512	0.362	0.644	0.513	0.531	-0.006	0.125
F	0.588	26.770***	18.417***	38.105***	51.095**	22.759***	0.748	4.516**

Note: t values are in parentheses

3.3. Mediating effect test

We verify the mediating effect of the acquisition of innovative resources. The regression results in Model 8 show that the regression coefficient of formal institutional support to entrepreneur orientation is positively significant ($\beta=0.283$, $p<0.005$), and H2a is supported; the regression coefficient of informal institutional support to entrepreneur orientation is positively significant ($\beta=0.293$, $p<0.005$), H2b is supported. The regression results in Model 3 show that the regression coefficient of entrepreneur orientation on the innovation performance of new ventures is positively significant ($\beta=0.612$, $p<0.001$), and H3 is supported. The results in Model 1, Model 2 and Model 4 show that after adding the mediation variable entrepreneurial orientation, the regression coefficient of formal institutional support on the innovation performance of new ventures decreased from $\beta=0.200$ ($p<0.001$) to $\beta=0.147$ ($p<0.005$), that is, entrepreneurial orientation plays a part of the mediating role between formal institutional support and the innovation performance of new ventures; the regression coefficient of informal institutional support on innovation performance decreases from $\beta=0.600$ ($p<0.001$) to $\beta=0.485$ ($p<0.001$). Entrepreneurial orientation plays a part of the mediating role between informal institutional support and innovation performance, and H4 is supported.

Using Bootstrap method to re-examine the mediation effect. The results show that the indirect effect value of formal system support to influence innovation performance through entrepreneur orientation is 0.135, and the 95% confidence interval is [0.028, 0.252], excluding 0, H4a is supported again; informal system support is influenced by entrepreneur orientation. The indirect effect value of innovation performance is 0.120, and the 95% confidence interval is [0.050, 0.209], excluding 0, H4b is again supported.

Table 5. Results of Bootstrap mediation test.

Path	Coefficient Est.	SE	Bias-Corrected 95% CI	
FIS-EO-IP	0.135	0.056	0.028	0.252
IIS-EO-IP	0.120	0.041	0.050	0.209

3.4. Moderating effect test

In order to test the moderating effect of innovation resource acquisition on entrepreneurial orientation and innovation performance, the product term was standardized to form the related variables of the interaction term, and then model 6 was obtained. 0.005), namely the innovation resources access regulation was established for more directly show innovation resources access between entrepreneurial orientation and innovation performance of regulation, draw the regulating effect diagram shown in figure 2 When enterprise's access to higher levels of innovation resources, entrepreneurial orientation effects on startup innovation performance is stronger, the opposite effect weak H5 supported.

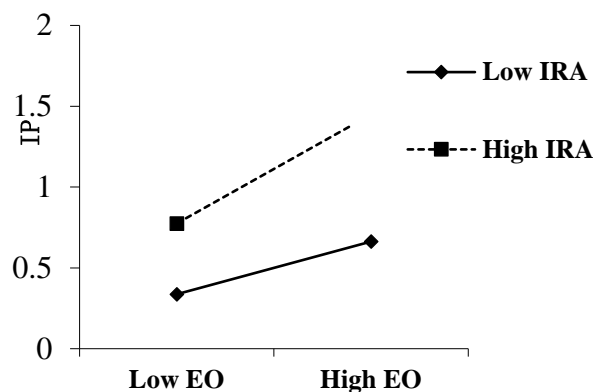


Figure 2. Moderating effect of innovation resource acquisition.

3.5. Test of moderated mediation effects

PROCESS is used to test the moderated mediation effect, as shown in Table 6. At the low level of innovation resource acquisition, the indirect effect value of entrepreneur orientation between formal institutional support and innovation performance of new ventures is 0.021, and the 95% confidence interval is [-0.056,0.118], including 0. Under the high level of innovation resource acquisition, the indirect effect value of entrepreneur orientation between formal institutional support and innovation performance of new ventures is 0.079, and the 95% confidence interval is [0.019,0.162], excluding 0. This indicates that the indirect effects of the two values are significantly different, that is, in the relationship between formal institutional support and innovation performance of new start-ups, innovation resource acquisition can adjust the mediating role of entrepreneur-orientation, and H6a is supported. Similarly, under different levels of access to innovation resources, there are significant differences in the indirect effects of entrepreneur orientation between informal institutional support and new venture innovation performance, and H6b is also supported.

Table 6. Test of moderated mediating effects.

Variables	Inspection level	coefficient	SE	Bias-Corrected 95% CI	
FIS	IRA (-1SD)	0.021	0.037	-0.050	0.101
	IRA (+1SD)	0.079	0.036	0.019	0.162
	Moderated mediation effects	0.038	0.022	0.007	0.095
IIS	IRA (-1SD)	0.026	0.036	-0.047	0.098
	IRA (+1SD)	0.071	0.030	0.022	0.137
	Moderated mediation effects	0.030	0.018	0.003	0.073

4. Conclusion and Discussion

4.1. Research conclusions

Based on the resource-based theory and institutional theory, this paper attempts to explore the internal mechanism of institutional support affecting the innovation performance of new ventures based on the empirical analysis of 278 new ventures. In this section, we discuss the results of this study from the following aspects. First, institutional support has a positive impact on new ventures' innovation performance, and entrepreneurial orientation plays a mediating role between institutional support and new ventures' innovation performance. Specifically, both formal institutional support and informal institutional support affect new ventures' innovation performance through entrepreneurial orientation.

Second, innovation resource acquisition moderates the relationship between entrepreneurial orientation and innovation performance of new ventures. The higher the level of innovation resource acquisition of new ventures, the more significant the positive impact of entrepreneurial orientation on innovation performance.

Third, Innovation resource acquisition moderates the mediating effect of entrepreneurial orientation on innovation performance of new ventures. The higher the level of innovation resource acquisition of new ventures is, the more obvious the effect of institutional support on innovation performance of new ventures through entrepreneurial orientation is, and vice versa.

4.2. Theoretical contribution

The theoretical contribution of this paper includes the following aspects. First, we clarified the mechanism of institutional support and the innovation performance of new ventures, supplemented the existing research on the relationship between institutional support and enterprise innovation performance[41-43], and proved that institutional support, as an important way to promote the innovation performance of new ventures, not only can enhance the confidence of new ventures in investing in innovation and but also reduce the cost of innovative activities for new ventures.

Second, we demonstrated that the entrepreneurial orientation in the system support and new bridge between the enterprises innovation performance - strategy - based on system performance research paradigm, through empirical study found that formal institutional support and informal institutional support can stimulate new ventures investment in innovation will, help them to better grasp the market opportunity Reduce the risk of innovation activities Improve organizational innovation performance will be entrepreneurs guide strategic decisions as analysis institutional to support the relationship between cohesion and new ventures innovation performance variables, to explain the institutional support and the theory of relationship between organizational innovation performance provides a new Angle of view, also enhances the institutional support entrepreneurs guide - new explanatory power mechanism of enterprise innovation performance theory.

Third, it proves the important role of innovation resource acquisition in the innovation practice of new ventures, and expands the boundary conditions of institutional support influencing the innovation performance of new ventures through entrepreneurial orientation. The moderating effect of the mechanism further proves that institutional support can encourage new ventures to implement entrepreneurial-oriented strategic decisions, help alleviate their innate disadvantages such as insufficient resources, and improve their willingness to innovate and ability to withstand high risks of innovation.

4.3. Practical implications

The conclusions have the following implications for the innovation practices of new ventures. On the one hand, new ventures should pay full attention to the current status and changes of the institutional environment, and, on the premise of complying with the institutional constraints, combine their own resources and current capabilities to set goals and take actions. In order to obtain formal institutional support, new ventures actively assume social responsibilities, improve their social image, and strive to obtain more projects, funds and technical support from related government agencies. In order to obtain informal institutional support, new ventures should seek to establish good relations and active communication with relevant departments, and establish and maintain good political connections. In addition, new ventures must not only pay attention to the current institutional environment, but also clearly identify the changing trends of the institutional environment, and cultivate the strategic consciousness of actively investing in innovation practice[44].

On the other hand, the close interaction between the institution and the organization affects the strategic orientation of the organization[45,46]. Therefore, new ventures should capture the changes and trends in the institutional environment in real time to provide sustained impetus for the implementation of enterpriser-oriented strategic decisions. Entrepreneurial orientation has the characteristics of innovation, proactiveness, and risk-bearing nature[47], which helps new ventures grasp market opportunities, quickly identify and develop entrepreneurial opportunities, and enhance the willingness of companies to take risks when they carry out innovative practices, and improve their the ability to innovate helps new ventures gain a competitive advantage in a highly competitive market environment.

In the end, new ventures should attach importance to cultivate the innovative ability to access resources Innovation resources acquisition is between entrepreneurial orientation and innovation performance booster, and system support through entrepreneurial orientation influence the whole process innovation performance of activator On the one hand, new ventures need to strengthen the external resources to identify analytical skills, acquire and integrate the latest innovative information and feedback to the team, the timely implementation of innovation activities; On the other hand, new enterprises should enhance the ability of integration and utilization of internal and external innovation resources, and be good at rationally investing all kinds of resources in the innovation process to guarantee the output of innovation results. In addition, new ventures should

actively invest resources to establish network relations, for example, through cooperation with universities and colleges Scientific research institutes and other institutions establish cooperation, use multiple channels to obtain innovative resources, in order to effectively alleviate their resource shortage situation, and then make rapid response to the changing market environment, improve their market competitive advantages.

4.4. Limitations and Directions for Future Research

This article deeply explores the mechanism of institutional support on the innovation performance of new ventures, but there are still limitations: ① This article conducts an empirical analysis based on cross-sectional data. Future research can effectively combine subjective and objective data, or use time series data to improve the conviction of conclusions. ② This article takes new ventures as the empirical research object. One of the reasons is that new ventures are more sensitive to institutional support. Entrepreneur-oriented strategic decision-making has a more significant impact on organizational innovation performance. Sample selection limits the externalities of this research conclusion. Validity, whether the conclusion is suitable for mature enterprises, needs to be further tested. ③ There are various forms of institutional support. Different forms of institutional support may have different mechanisms of action. For example, government subsidies for enterprises include direct subsidies (such as innovation funds) and indirect subsidies (such as tax refunds). The subsidy system may have different mechanisms of action on the innovation performance of new ventures. In the future, a comparative study of the mechanism of different forms of institutional support can be carried out.

Author Contributions: Conceptualization, Y.J.; methodology, M.Y. and Y.J.; software, M.Y.; validation, Y.J.; formal analysis, Y.J.; investigation, M.Y.; resources, Y.J.; data curation, M.Y.; writing—original draft preparation, Y.J.; writing—review and editing, Y.J. and M.Y.; visualization, Y.J. and M.Y.; supervision, M.Y.; project administration, Y.J. and M.Y. All authors have read and agreed to the published version of the manuscript.

Funding: This research was supported by the National Natural Science Foundation of China (No. 71573014)

Acknowledgments: We appreciate all research assistants who assisted in the data collection.

Conflicts of Interest: The authors declare no conflict of interest.

References:

1. Nambisan, S.; Siegel, D.; Kenney, M. On open innovation, platforms, and entrepreneurship. *Strateg Entrep J* **2018**, *12*, 354-368.
2. CARRASCO-CARVAJAL, O.; GARCÍA-PÉREZ-DE-LEMA, D. INNOVATION CAPABILITY AND OPEN INNOVATION AND ITS IMPACT ON PERFORMANCE IN SMES: AN EMPIRICAL STUDY IN CHILE. *International Journal of Innovation Management* **2021**, *25*, 2150039.
3. Xie, X.; Wang, H. How to bridge the gap between innovation niches and exploratory and exploitative innovations in open innovation ecosystems. *J Bus Res* **2021**, *124*, 299-311.
4. Gentile-Lüdecke, S.; Torres De Oliveira, R.; Paul, J. Does organizational structure facilitate inbound and outbound open innovation in SMEs? *Small Bus Econ* **2020**, *55*, 1091-1112.
5. Nagy, B.G.; Blair, E.S.; Lohrke, F.T. Developing a scale to measure liabilities and assets of newness after start-up. *Int Entrep Manag J* **2014**, *10*, 277-295.
6. T, B.; E, N.R. Creating Something from Nothing: Resource Construction through Entrepreneurial Bricolage. *Admin Sci Quart* **2005**, *50*, 329-366.
7. M., G. Economic action and social structure: the problem of embeddedness. *Am J Sociol* **1985**, *91*, 481-510.
8. Yuan, L.; Hai, G.; Yi, L.; Al, E. Incentive Mechanisms, Entrepreneurial Orientation, and Technology Commercialization: Evidence from China's Transitional Economy. *J Prod Innovat Manag* **2008**, *1*, 63-78.
9. Snow, C.C.; Fjeldstad, Ø.D.; Lettl, C.; Miles, R.E. Organizing Continuous Product Development and Commercialization: The Collaborative Community of Firms Model. *The Journal of product innovation management* **2011**, *28*, 3-16.
10. Zahra, S.A.; Nielsen, A.P. Sources of capabilities, integration and technology commercialization. *Strategic Manage J* **2002**, *23*, 377-398.

11. Nerkar, A.; Shane, S. Determinants of invention commercialization: an empirical examination of academically sourced inventions. *Strategic Manage J* **2007**, *28*, 1155-1166.
12. Lo, C.; Wang, C.; Chien, P.; Hung, C. An empirical study of commercialization performance on nanoproducts. *Technovation* **2012**, *32*, 168-178.
13. Henard, D.H.; Szymanski, D.M. Why Some New Products Are More Successful Than Others. *J Marketing Res* **2001**, *38*, 362-375.
14. Gideon D. Markman, D.S.S.A. Research and technology commercialization. *J Manage Stud* **2008**, *8*, 1401-1423.
15. Lee, K.; Yoo, J. How does open innovation lead competitive advantage? A dynamic capability view perspective. *Plos One* **2019**, *14*, e223405.
16. Ji, H.; Xu, G.; Zhou, Y.; Miao, Z. The Impact of Corporate Social Responsibility on Firms' Innovation in China: The Role of Institutional Support. *Sustainability-Basel* **2019**, *11*, 6369.
17. Dai, Y.; Byun, G.; Ding, F. The Direct and Indirect Impact of Gender Diversity in New Venture Teams on Innovation Performance. *Entrep Theory Pract* **2019**, *43*, 505-528.
18. Adomako, S.; Opoku, R.A.; Frimpong, K. Entrepreneurs' improvisational behavior and new venture performance: Firm-level and institutional contingencies. *J Bus Res* **2018**, *83*, 10-18.
19. Lee, Y.; Howe, M.; Kreiser, P.M. Organisational culture and entrepreneurial orientation: An orthogonal perspective of individualism and collectivism. *International Small Business Journal: Researching Entrepreneurship* **2019**, *37*, 125-152.
20. Schøtt, T.; Jensen, K.W. Firms' innovation benefiting from networking and institutional support: A global analysis of national and firm effects. *Res Policy* **2016**, *45*, 1233-1246.
21. XIN, K.K.; PEARCE, J.L. GUANXI: CONNECTIONS AS SUBSTITUTES FOR FORMAL INSTITUTIONAL SUPPORT. *Acad Manage J* **1996**, *39*, 1641-1658.
22. Tellis G J, P.J.C.C. Radical Innovation Across Nations: The Preeminence of Corporate Culture. *J Marketing* **2009**, *73*, 3-23.
23. Shu, C.; Wang, Q.; Gao, S.; Liu, C. Firm Patenting, Innovations, and Government Institutional Support as a Double-Edged Sword. *J Prod Innovat Manag* **2015**, *32*, 290-305.
24. J., T. Innovation and risk-taking in a transitional economy: A comparative study of Chinese managers and entrepreneurs. *J Bus Venturing* **2001**, *16*, 359-376.
25. D., M. The Correlates of Entrepreneurship in Three Types of Firms. *Manage Sci* **1983**, *7*, 770-791.
26. G., L.G.T.D. Clarifying the Entrepreneurial Orientation Construct and Linking It to Performance. *Acad Manage Rev* **1996**, *21*, 135-172.
27. Padgett, R.C.; Moura-Leite, R.C. Innovation with High Social Benefits and Corporate Financial Performance. *Journal of technology management & innovation* **2012**, *7*, 59-69.
28. Sakaki, H.; Jory, S.R. Institutional investors' ownership stability and firms' innovation. *J Bus Res* **2019**, *103*, 10-22.
29. Shan, P.; Song, M.; Ju, X. Entrepreneurial orientation and performance: Is innovation speed a missing link? *J Bus Res* **2016**, *69*, 683-690.
30. J., B. Firm resources and sustained competitive advantage. *Journal of Management*, **1991**, *17*, 99-120.
31. Ince, H.; Imamoglu, S.Z.; Karakose, M.A. Entrepreneurial orientation, social capital, and firm performance: The mediating role of innovation performance. *The International Journal of Entrepreneurship and Innovation* **2021**, 683199960.
32. Covin J G, M.M.P. Corporate entrepreneurship and the pursuit of competitive advantage. *Entrep Theory Pract* **1999**, *23*, 47-74.
33. Geels, F.W. From sectoral systems of innovation to socio-technical systems. *Res Policy* **2004**, *33*, 897-920.
34. Ahsan, M.; Adomako, S.; Mole, K.F. Perceived institutional support and small venture performance: The mediating role of entrepreneurial persistence. *International Small Business Journal: Researching Entrepreneurship* **2021**, *39*, 18-39.
35. Wiklund, J.; Shepherd, D. Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium-sized businesses. *Strategic Manage J* **2003**, *24*, 1307-1314.
36. Simsek, Z.; Heavey, C. The mediating role of knowledge-based capital for corporate entrepreneurship effects on performance: A study of small- to medium-sized firms. *Strateg Entrep J* **2011**, *5*, 81-100.
37. Li, H.; Atuahene-Gima, K. PRODUCT INNOVATION STRATEGY AND THE PERFORMANCE OF NEW TECHNOLOGY VENTURES IN CHINA. *Acad Manage J* **2001**, *44*, 1123-1134.
38. Tang, G.; Chen, Y.; Jin, J. Entrepreneurial orientation and innovation performance: roles of strategic HRM and technical turbulence. *Asia Pac J Hum Resou* **2015**, *53*, 163-184.
39. Cai Li, Z.X.L.Y. The impact of entrepreneurial orientation on the acquisition of new enterprise resources. *Research in Science of Science* **2011**, *29*, 601-609.
40. Laursen, K.; Salter, A. Open for innovation: the role of openness in explaining innovation performance among U.K. manufacturing firms. *Strategic Manage J* **2006**, *27*, 131-150.
41. Zhang, M.; Qi, Y.; Wang, Z.; Zhao, X.; Pawar, K.S. Effects of business and political ties on product innovation performance: Evidence from China and India. *Technovation* **2019**, *80-81*, 30-39.
42. Wu, J.; Wu, Z.; Zhuo, S. The effects of institutional quality and diversity of foreign markets on exporting firms' innovation.

Int Bus Rev **2015**, 24, 1095-1106.

43. Rasiah, R.; Shahrivar, R.B.; Yap, X. Institutional support, innovation capabilities and exports: Evidence from the semiconductor industry in Taiwan. *Technol Forecast Soc* **2016**, 109, 69-75.
44. Filiou, D.; Golesorkhi, S. Influence of Institutional Differences on Firm Innovation from International Alliances. *Long Range Plann* **2016**, 49, 129-144.
45. Franco-Leal, N.; Camelo-Ordaz, C.; Dianez-Gonzalez, J.P.; Sousa-Ginel, E. The Role of Social and Institutional Contexts in Social Innovations of Spanish Academic Spinoffs. *Sustainability-Basel* **2020**, 12, 906.
46. Chaudhry, I.S.; Ali, S.; Bhatti, S.H.; Anser, M.K.; Khan, A.I.; Nazar, R. Dynamic common correlated effects of technological innovations and institutional performance on environmental quality: Evidence from East-Asia and Pacific countries. *Environ Sci Policy* **2021**, 124, 313-323.
47. Tang, G.; Chen, Y.; Jin, J. Entrepreneurial orientation and innovation performance: roles of strategic HRM and technical turbulence. *Asia Pac J Hum Resou* **2015**, 53, 163-184.