# The Influence of Organizational Context on the Innovation Performance of Enterprises ——An Empirical Study Based on Manufacturing Enterprises

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**Abstract** The Chinese economy is in a new situation of "speed shifting." Innovation is the new engine for China's economic development. This paper divides the internal situation of the organization into two dimensions: centralization and departmental collaboration. It uses the two indicators of product innovation performance and process innovation performance to measure the innovation performance of the enterprise. The manufacturing enterprise is used as a sample to apply empirical analysis to study the internal situation and innovation of the organization. The relationship between performance shows that centralization has a positive and related impact on process innovation performance; departmental collaboration has a positive and related impact on product innovation performance and process innovation performance, and has a greater impact on process innovation performance. Therefore, this article has a certain guiding significance for how companies can improve their innovation performance in different internal situations.
**Key words** Organizational situation; Innovation performance; Manufacturing enterprise

## 1 Introduction

At present, China's economy is undergoing a period of transformation and upgrading. New concepts such as "China's wisdom-making" and "Made in China 2025" have been constantly raised, reflecting the government's emphasis on manufacturing. Xi Jinping stressed that innovation has always been an important force for the advancement of a country and a nation. We must lag behind if we do not innovate, and we must lag behind if innovation is slow. Therefore, how companies use innovation to lead development is the focus of attention. In previous studies, Beatriz and other scholars often viewed innovation performance as an integrated, sole factor and did not consider intra-organizational contextual factors. Enterprises face a dynamic and diversified external environment. In contrast, the internal situation of a company is relatively stable. The internal situations between companies are different. Does the internal situation of the organization affect the performance of the company's innovation? How is it affected? Based on the existing literature, this paper uses the empirical analysis method of manufacturing enterprises as a sample to study the relationship between the internal situation of the organization and the enterprise's innovation performance. This can not only enrich the theoretical foundation of the research related to organizational situation and enterprise innovation performance. Moreover, it is of great significance for us to help companies choose the right method to effectively improve their innovation performance in different internal situations.

## 2 Theoretical background and research hypothesis

Relevant scholars have found that organizational context factors such as leadership support, clear goals, and organizational incentives have important influence on the speed of innovation[1]. Zhang Jian et al. [2] (2007) designed a questionnaire on organizational context factors affecting corporate innovation in response to the specific circumstances faced by domestic companies, and found that the contextual factors that affect employee creativity include leadership and organizational characteristics.Wu Aihua et al. [3] (2012) studied the role of organizational context factors, including leadership support, task challenges, and incentives, on the speed of innovation from the perspective of technological volatility. Amabile [4] (1989) believes that organizational contexts that affect employee innovation include various environmental factors that employees can perceive and be influenced by. By sorting out the research status of organizational context factors by scholars at home and abroad, it can be found that internal contextual factors in the organization have an impact on corporate innovation performance, such as: Kessler, Mabert, Zhang Jian, and others believe that leadership support, organizational encouragement, clear goals, etc. Have an impact. This study draws on the

research results of Zeng et al. [5] and only considers the influence of the two elements of organizational internal situational centralization and departmental collaboration on the innovation performance of the firm.

### 2.1 Centralization and corporate innovation performance

Centralization refers to the fact that senior leaders have the right to command all matters, and lower employees have no right to make decisions on their own.Certain characteristics of the organization itself promote innovation. Some scholars have found that centralized control model will inhibit breakthrough innovation performance. Decentralization and hybrid management model are not important factors to promote breakthrough innovation performance, and market uncertainty plays an important role in centralized control model and innovation performance. [6]. Walton pointed out that organizations operating under the control model emphasize management authority and location authority. Scholars generally believe that decentralized organizations can promote innovation because of the flexibility and openness of this type of organization, which is conducive to the promotion of innovation by encouraging new ideas from employees; centralization is seen as a major obstacle to innovation[7]. The following assumptions are made from the above arguments:

H1 has a negative impact on product innovation performance

H2 centralization has a negative effect on process innovation performance

### 2.2 Departmental collaboration and corporate innovation performance

Departmental collaboration refers to the collaboration among various departments in terms of resources, technology, mobility, and information in the process of achieving organizational goals. Foreign scholars call it the integration of functions, and the content expressed by them is the same. This paper uses domestic manufacturing companies as research samples, and in order to better understand the understanding of this concept by domestic companies, the term department collaboration is used. Germain[8] (1996) believes that departmental collaboration refers to the extent to which various departments are related to each other. Each department can work in a well-integrated way of decision-making. There is no continuous conflict between departments. Managers collaborate on important decisions. High level of departmental collaboration can promote knowledge transfer and horizontal communication. Through cooperation, sharing of information, and mutual attention, employees can establish communication channels for communication to exchange relevant professional knowledge, and then improve enterprise innovation performance (Janz et al., 2003) [6]Flynn[9] (1999) believes that in the face of the same problem, horizontal communication can improve the quality of decision-making by exchanging information from various departments. When companies have a high level of departmental collaboration mechanisms, they tend to increase employee interactions and create an environment for knowledge sharing and cooperation. Without departmental collaboration, companies cannot effectively communicate and implement new ideas. Effective communication among various departments is crucial for continuous improvement and innovation. The following assumptions are made:

H3 sector collaboration has a positive impact on product innovation performance

H4 sector collaboration has a positive and related impact on process innovation performance

## 3 Research methods and empirical analysis

### 3.1 Data Acquisition and Analysis

The samples selected in this study were processed and manufactured by various industries in China. A total of 260 questionnaires were sent out for screening. 221 valid questionnaires were obtained and the effective rate reached 85%. A descriptive statistical analysis was performed on the elements of each study variable. The skewness and kurtosis values of each variable in the model were within ±2, and the sample data was considered to meet the normal distribution requirements.Table 3-1 shows that the Cronbach's α value of the overall reliability of the questionnaire is 0.935, which is much larger than 0.7. This shows that the overall questionnaire has a high degree of reliability. The Cronbach's α values of the two variables in the organization's internal situation and the company's innovation performance are all higher than 0.7, and the Cronbach's α value of each variable is higher than the Cronbach's α value after deleting one measurement of the variable, indicating that the reliability of each variable is consistent with Claim

**Table 3-1 Overall Reliability of the Questionnaire**

| Cronbach's α | Number of items |
|---|---|
| .935 | 16 |

The KMO and Bartlett sphere test analysis was conducted on the organization's internal situational scale and the company's innovation performance scale, and the KMO value was greater than 0.7, and the variables met the requirements for factor analysis; the Bartlett's sphere test had a Sig value of less than 0.05, reaching a significant level, and could reject the original Assume that factor analysis can be done on variables; factor analysis has a common degree of more than 0.7 for each indicator, indicating a higher factor explanatory power.

### 3.2 Empirical Analysis

This paper draws on the measurement metrics in Zeng's research. It uses a combination of centralization and departmental collaboration. It consists of seven items, measuring the internal situation of the organization; using Prajogo and Sohal's measurement indicators for companies. Innovation performance is divided into two secondary indicators of product innovation performance and process innovation performance. A total of nine measurement indicators are measured. In this questionnaire, a Likert 5 scale is used to measure the score "1-5" representing the degree of "completely inconsistent" to "fully consistent."

3.2.1 Establishment and Estimation of Models

Using AMOS 21.0, a structural equation model for the relationship between organizational internal situation, quality management, and corporate innovation performance is constructed, as shown in Figure 3-1.

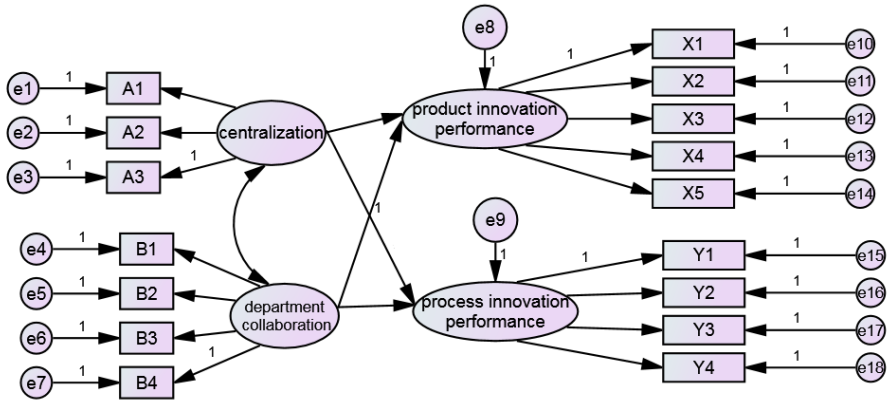


**Figure 3-1 Structural equation model of the relationship between organizational internal situation and corporate innovation performance**

The meaning of each variable and symbol in Figure 3-1 is shown in Table 3-2.

**Table 3-2 Meaning of the Symbols of Each Variable**

| First-level indicator | Second-level indicator | Symbol | Measuring variable | Syombol |
|---|---|---|---|---|
| Organizational context | centralization | A | Even the most trivial things have to be decided by the leadership of the superior. | A1 |
| | | | Any decision I make must be approved by the leader | A2 |
| | | | There is generally no action until the supervisor approves the motion | A3 |
| | Department collaboration | B | Various functional departments can work together very well | B1 |
| | | | Various functional departments can work together to solve the various conflicts that occur | B2 |
| | | | All functional departments can fully coordinate their work tasks | B3 |
| | | | The functional departments can fully interact in their work | B4 |
| Innovation performance | Product innovation performance | X | The company's new products are highly innovative | X1 |
| | | | The company uses the latest technological innovations in new products | X2 |
| | | | The company's new product development is fast | X3 |
| | | | The number of new products the company has introduced to the market | X4 |
| | | | The company has a large number of new products unique to the market | X5 |

Table 3-2, cont.

| | | | |
|---|---|---|---|
| Process innovation performance | Y | The company's technology is very competitive | Y1 |
| | | The company is quick to accept process innovations in the process of innovation | Y2 |
| | | The company's technological innovation in the innovation process is very fast or novel | Y3 |
| | | The company's processes, processes and technologies are updated quickly | Y4 |

Using AMOS 21.0, a preliminary simulation calculation was performed on the established structural equation model, and the CR of the product innovation performance on centralization was 0.838 less than the standard value of 1.96, and the corresponding P value was 0.402, which was greater than 0.05; indicating the significance of this path. The test failed. In the subsequent study, these two paths need to be deleted, and the error variance of each variable passed the significance test and did not violate the basic fitting index.

In this dissertation, the maximum likelihood method is used to find the parameter with the smallest difference between the theoretical variance matrix and the sample variance matrix. If the difference is small, the hypothesis model and the sample data are considered to match. A preliminary fitting of the established structural equation model yields a 2/df value of 1.528, a RMSEA value of .046, an NFI value of 0.873, an IFI of .950, and a CFI of .950, both meeting the fitting criteria; GFI The value is .710 and the AGFI value is .729. These two indicators are slightly smaller than the standard value. Part of the model and sample data fitting results do not meet the standard value, indicating that the goodness of fit between the model and the sample data does not reach the ideal level, there is still room for further optimization.

3.2.2 The model of the amendment

The CR of product innovation performance is equal to 0.838 which is less than the standard value of 1.96, and the corresponding P value is 0.402, which is greater than 0.05. This indicates that the significance test of this route has not passed and the path that failed to pass the test needs to be deleted for the first time. Corrected. Through the correction of the model restriction direction of the initial model, it can be found that each path coefficient passed the significance test at 95% confidence. The corrected index of each model after correction is more perfect than before correction, and it is closer to the ideal level. However, the value of GFI is .821, and the value of AGFI is .884. It still does not reach the ideal level, indicating that it needs to be secondary. Correction: The correction of the model expansion direction will be based on the correction index MI. That is, the maximum value of the correction index will be found sequentially, and a path will be added between the corresponding residuals until each fitting index reaches an ideal level. From the corrected index MI of a modified model, it can be seen that the order of increasing the correlation between the residuals is e7-e5,e3-e2; as shown in Figure 3-2.

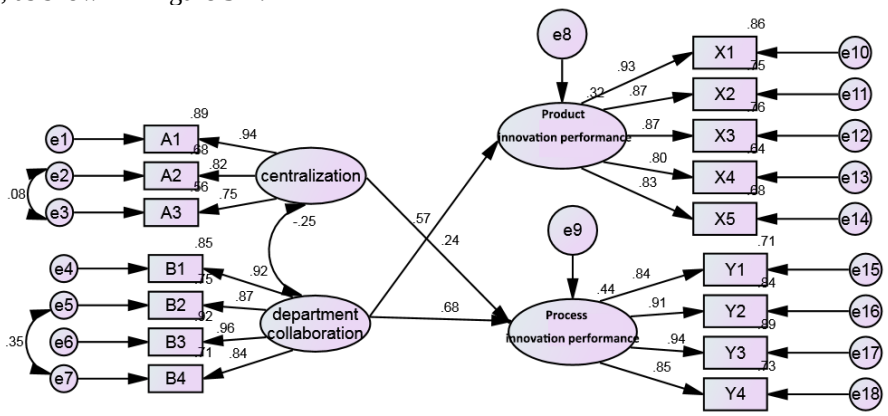


**Fig. 3-2 The post-correction structural equation model**

The fits of the model after the second correction are shown in Table 3-3. It can be seen that each fitting index has improved and meets the corresponding standard requirements, indicating that the model and sample data after the second correction are correct. The degree of fit is very good.

**Table 3-3 The Fitting Index of the Model after Secondary Modification**

| χ2/df | GFI | RMSEA | AGFI | NFI | IFI | CFI |
|---|---|---|---|---|---|---|
| 1.426 | .921 | .036 | .908 | .935 | .964 | .922 |

After correcting each path coefficient and load factor in the model, it can be seen from Table 3-4 that the absolute value of CR for each estimated parameter is above 1.96. According to the corresponding P value, each parameter has a 95% confidence level. Significant.

**Table 3-4 Parameter estimation of the revised model**

| | | | Estimate | Estimat | S.E. | C.R. | P |
|---|---|---|---|---|---|---|---|
| Process innovation performance | <--- | centralization | .016 | .026 | .062 | 4.186 | *** |
| Product innovation performance | <--- | Department collaboration | .213 | 0.639 | .075 | 8.530 | *** |
| Process innovation performance | <--- | Department collaboration | .347 | .686 | .073 | 9.461 | *** |
| A3 | <--- | centralization | 0.884 | 1.000 | | | |
| A2 | <--- | centralization | .943 | 1.017 | .079 | 12.908 | *** |
| A1 | <--- | centralization | .815 | 1.212 | .092 | 13.227 | *** |
| B4 | <--- | Department collaboration | 0.667 | 1.000 | | | |
| B3 | <--- | Department collaboration | .896 | 1.143 | .055 | 20.959 | *** |
| B2 | <--- | Department collaboration | .878 | .991 | .053 | 18.525 | *** |
| B1 | <--- | Department collaboration | .850 | 1.104 | .056 | 19.646 | *** |
| X1 | <--- | Product innovation performance | 0.954 | 1.000 | | | |
| X2 | <--- | Product innovation performance | .846 | .835 | .041 | 20.564 | *** |
| X3 | <--- | Product innovation performance | .887 | .946 | .047 | 19.986 | *** |
| X4 | <--- | Product innovation performance | .893 | .634 | .039 | 16.285 | *** |
| X5 | <--- | Product innovation performance | .817 | .847 | .049 | 17.276 | *** |
| Y1 | <--- | Process innovation performance | 0.985 | 1.000 | | | |
| Y2 | <--- | Process innovation performance | .822 | .975 | .058 | 18.378 | *** |
| Y3 | <--- | Process innovation performance | .831 | .891 | .058 | 15.485 | *** |
| Y4 | <--- | Process innovation performance | .853 | .954 | .052 | 18.197 | *** |

Note: *** indicates P<0.001.

3.2.3 Results analysis and conclusions

Using AMOS 21.0 to estimate the parameters of the second modified model, by analyzing the inter-variable path coefficients, we can find that in the four hypotheses proposed in this paper, hypotheses H3 and H4 passed the significance test, the hypothesis was established; One is contrary to hypothesis H2. Assuming that H1 does not pass the significance test, these two assumptions do not hold.

The direct effect of departmental collaboration on product innovation performance is equal to 0.24, and the direct effect of departmental collaboration on product innovation performance is equal to 0.68. Departmental collaboration has a positive and related impact on product innovation performance and process innovation performance, and has a greater impact on process innovation performance. It can be seen that departmental collaboration has a significant role in promoting corporate innovation performance in different dimensions. Companies need to establish a good interactive communication mechanism among various departments to facilitate the exchange and exchange of various information and resources.

Centralization has a positive correlation effect on process innovation performance. The direct effect is 0.57, but it is contrary to the assumption. The author thinks that the reason may be that this paper selects production and production modeling companies as samples for research, while process innovation introduces

new elements in the organization to produce products or provide services. Wanting to rapidly promote innovation needs to proceed from the top The degree of centralization can only proceed more smoothly. From this point of view, centralization has a positive and relevant influence on process innovation performance. It is reasonable in domestic manufacturing companies. In the future business, the enterprise needs centralized power, but it needs to grasp the appropriate degree of centralization, and the appropriate authorization can mobilize the enthusiasm of employees and cultivate sense of ownership.

The role of centralization in product innovation performance is not significant and this assumption has not been verified. The author believes that there may be several reasons. First, questionnaires and research hypotheses are mostly based on the research of Western scholars. Due to the differences between Chinese and Western cultures, the development of manufacturing enterprises in China and the West is not synchronized, resulting in different internal situations. Second, the internal situation and innovation performance of a company's organization are dynamically changing, and the survey questionnaire only intercepts data at one of these moments and does not fully and accurately reflect the interrelationships among the three.

## 4 Suggestions and Prospects

Based on the conclusions of the study, the following points are proposed for manufacturing enterprises:First,rationally allocate rights to work and choose the appropriate stage of development. A high degree of centralization is conducive to the rapid development of technology and tools to upgrade and update enterprises, and further promote the improvement of enterprise process innovation performance; full authorization can fully mobilize the enthusiasm of employees.It will greatly benefit the promotion of product innovation performance. In terms of the distribution of rights, enterprises need to purposefully select the degree of centralization in light of actual conditions.Second,properly establish a collaborative mechanism for effective communication among various departments. During the organizational structure construction process, enterprises need to solve the problem of horizontal communication and cooperation among various departments and establish an efficient collaboration mechanism among various departments. The resources and technology between departments and departments Cooperation, information and other aspects can have good cooperation and cooperation in order to better improve the company's innovation performance.

Due to the author's limited capabilities, only the two elements of the organization's internal situational centralization and departmental collaboration have been explored. The company's other situational factors have not been studied in depth; the surveyed and researched enterprises are all manufacturing and manufacturing enterprises, but have not studied the internal contexts of different industries. The relationship between corporate innovation performance; The number of questionnaires collected in this paper is cross-sectional data, and the company is in a dynamic process, resulting in differences between the actual indicators and the base period indicators. Based on the above limitations of this study, more accurate empirical analysis is needed, and to provide further support for further understanding of the organization's internal context on the impact mechanism of the company.

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