

THE IMPACT OF ORGANIZATIONAL TRANSFORMATION ON THE FIRM'S PERFORMANCE, THE MODERATING ROLE OF OPEN INNOVATION

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Abstract: The impact of organizational transformation on the firm's performance has become increasingly prominent against the backdrop of dramatic upheavals in global business and economic activities. This dissertation aims to empirically investigate the impact of organizational transformation on the firm's performance, with a special focus on the moderating role of open innovation. In order to comprehensively assess the relationship between organizational transformation and the firm's performance, this study constructs a core conceptual framework and introduces open innovation as a moderating variable. The study used random sampling method to distribute questionnaires and 374 responses collected were statistically analyzed. The results of the study show that organizational transformation has a positive and significant effect on the firm's performance, ($r=0.504$, $p<0.001$) while open innovation plays a significant negative moderating role between organizational transformation and the firm's performance ($r= -0.325$, $p<0.001$). The results of this research are expected to provide practical recommendations for organizational leaders and policy makers to help them effectively deal with complex change processes and select innovation strategies, thus providing solid theoretical support and policy guidance for corporate organizational optimization and performance improvement.

Keywords: Organizational Transformation, The Firm's Performance, Open Innovation

Introduction

In today's new and fast-growing global business environment, different types of enterprises in various industries, etc. It will move towards the path of transformation and development to adapt to the dynamically changing external market environment, and the importance of existing literature geared towards organizational transformation to cope with the complex and volatile market environment has been widely discussed (Smith, 2020; Johnson, 2018). By integrating and optimizing internal functional organizational processes, developing strategies, and enhancing brand image and reputation, firms can achieve greater operational efficiency and corporate performance (Wang, 2024). As for the firm's performance, Venkatraman (1986) argued that the firm's performance is a kind of behavior, which is a

manifestation of the practical actions of employees in the enterprise. However, many scholars believe that the firm's performance is a combination of business processes and results, representing the overall performance of all aspects of manufacturing, sales, management, finance, etc. in a certain period of time (Campbell, 1993). From an academic perspective, the research of this paper can enrich the current literature on organizational transformation, the firm's performance, and open innovation. Through in-depth exploration of the complex interaction among independent variables, dependent variables and moderator variables in this study, the purpose is to supplement and improve the theoretical framework for the study of the relationship among the above three, and at the same time provide real statistical analysis data, so that the researchers can more clearly understand the mechanism and interaction results of organizational transformation, the firm's performance and open innovation. The conceptual framework developed in this study mainly refers to the works and articles published by Anderson (2019), and discusses the various aspects of organizational transformation and the basic concepts of open innovation in detail. On this basis, with reference to the dynamic and accelerating evolution of the external business environment, this paper will provide a new understanding of the specific path through which organizational transformation affects the firm's performance. By sorting out and summarizing the research views on open innovation, we mainly read the articles of West & Bogers (2017), and the purpose of this study is to illustrate how open innovation practices affect the effectiveness of various measures taken for organizational change. This helps to deepen researchers' understanding of the moderating effect of open innovation on the relationship between organizational transformation and the firm's performance. This aspect mainly includes the conditions for open innovation to enhance or weaken the impact of organizational transformation on various indicators of the firm's performance. This study is expected to have an important impact on enterprises that are undergoing transformation or are inclined to change. (Desarbo,2005)

To sum up, the expected benefits of this study are mainly in two aspects: the first is to contribute to the academic discussion and exchange on organizational transformation, the firm's performance and open innovation; The second is to analyze the complex relationship among variables in this paper based on the literature review and the actual data, so as to provide a theoretical framework for the firm's performance analysis based on organizational transformation and provide theoretical support for promoting enterprise open innovation. It provides practical theoretical guidance and practical reference for enterprises that are reforming or planning to reform. Third, in the open innovation environment, we should build policy suggestions and basic theoretical framework to improve enterprises' more effective play and use organizational change to guide, motivate and improve the firm's performance.

Research Objective (s)

Objective 1: Study the relationship between organizational transformation and the firm's

performance.

By searching and reading literature, we comprehensively understood the classification and influencing factors of various aspects of organizational transformation and the firm's performance, enriched the theoretical basis, and collected empirical data. A conceptual framework is developed to briefly describe the process and mechanism of organizational transformation influencing the firm's performance. To empirically evaluate the direct relationship between organizational transformation and the firm's performance.

Objective 2: Study the process mechanism of organizational transformation.

Summarize and analyze specific types and standards of organizational transformation, such as the degree, purpose, content and degree of initiative, so as to better explain the division and definition of organizational transformation. Explore the influence of external factors such as economic environment and technical factors and internal factors such as organizational system and mechanism, organizational interests and work efficiency, explore the main contents of organizational culture, technology, structure and process, members, goals and strategies, and evaluate the impact of opportunities and challenges related to different reform processes on the firm's performance.

Objective 3: Study the theoretical and practical process of open innovation.

Search and read the definition of open innovation in the existing literature, and understand the specific classification in detail. On the basis of understanding its breadth and depth, analyze the concept of open innovation from the perspective of the actual operation of enterprises, and evaluate the weight ratio of open innovation to the improvement of the firm's performance.

Objective 4: To study the moderating effect of open innovation on the relationship between organizational transformation and the firm's performance

A model was conceived and developed with organizational transformation as the independent variable, the firm's performance as the dependent variable, and open innovation as the moderator variable. Through empirical statistical analysis and testing of the moderating effect, this paper explores under what conditions open innovation will enhance or weaken the relationship between organizational transformation and the firm's performance.

Literature Review

At the same time, organizational open innovation has become one of the key contents of innovation management research, and scholars and entrepreneurs have a relatively unified understanding of open innovation (Lichtenthaler, 2009; Spithoven, 2013). Innovation is the core driving force of economic and social spiral in the new development pattern, and enterprise performance can well show the results of innovation. Open innovation plays a significant role in promoting the adaptability of enterprises (Chesbrough, 2003; Carayannis, 2012). Scholars divided open innovation

according to characteristics, mainly including Inbound open innovation(Inbound OI) and Outbound open innovation (Outbound OI). Taking China as an example, it is currently in an all-new development pattern with its domestic cycle as the main body and domestic and overseas double cycles promoting each other. In this new situation, high-quality growth of enterprise performance requires enterprises to tap their own potential, strengthen independent innovation, and reduce dependence on key technologies and markets (Bai, 2004).

In addition, the individual effects of organizational transformation and open innovation have been fully studied in the literature, but the interaction between the two phenomena has not been explored enough (Huizingh, 2011; Wischnevsky, 2006). This paper aims to make up for this deficiency by studying how to regulate the relationship between organizational transformation and the firm's performance in the process of open innovation practice. Some researchers have different opinions on the impact of organizational transformation on the firm's performance (Ebersberger, 2012), which also indicates the significance of this paper to study this issue.

In the process of dynamic changes in the external business environment, enterprises not only need internal adjustment, but also need to have good communication and coordination with the external environment(Bhagat, 2008; Alyami, 2024). It is very important to understand in detail how open innovation practices affect the goals of organizational transformation, and then promote the improvement of enterprise performance. In summary, this paper attempts to explore the process and mechanism of the impact of organizational transformation on the firm's performance in the open innovation environment, providing valuable reference theoretical viewpoints and practical decision-making basis for enterprises that are undergoing transformation or have the tendency to change.

Methodology

The research methods of this survey are as follows:

1. Participant selection: The participants of the study were selected by stratified random sampling method. They were recruited from HXSM Company, YSX Company, LQPM Company, HLS Company, DQJQ Company and other types of organizations in China, covering employees of different levels and departments.

2. Tools and data collection: The main data collection tools are based on relevant literatures(Laursen, 2006) and a structured questionnaire designed according to the research objectives. In order to ensure the scientific rationality and validity of variable measurement, this paper mainly refers to the mature scale used by world-renowned scholars. In order to ensure efficient and rapid data collection, questionnaires were distributed and collected in the form of electronic version through the questionnaire star mini program. The questionnaire uses five-point Likert scale to evaluate the variables related to organizational change, open innovation and enterprise performance.

3. Variable measurement: Organizational transformation (OT) : This research scale combines the items translated by García-Rubiano et al.(2020), mainly adopts the view of Chen (2022), sorts out and selects the topics of this study, and determines 12 items, mainly including: "Enterprises can conduct self-denial and update to enhance competitive advantage", "the level of organizational structure of enterprises is reduced and the organizational structure tends to be flat", "enterprises can quickly establish temporary cooperation teams with partners to complete some common tasks" and so on.

The firm's performance (FP): The scale in this study is based on the scale of Govindarajan (1984), with a total of 11 items, mainly including: "Relative to major competitors, the operating net profit of the enterprise is higher", "relative to major competitors, the operating cash flow of the enterprise is higher", "relative to major competitors, the return on investment of the enterprise is higher", etc., which are used to evaluate the enterprise performance.

Open Innovation (OI): This research scale uses the items in Chesbrough and Crowther (2006), and adopts the view of Dahlander (2010). There are 9 items in total, mainly including: "Often scan the external environment and introduce external technologies, information, concepts and knowledge", "believe that using external knowledge and technology sources is a beneficial supplement to enterprise R&D", "often jointly develop technologies and products with external organizations or participate in their commercialization activities to expand market share", etc.

Control variables (CV): demographic variables were introduced, and there were 6 items, mainly including gender, age, working years, company size, etc.

Participants' subjective assessment and specific indicators were used to measure the CV. In the questionnaire, the item options were set from 1 to 5, with 1 indicating "completely disagree", 2 indicating "relatively disagree", 3 indicating "general", 4 indicating "relatively agree" and 5 indicating "completely agree". The average value of all variable measurement indicators was used to assign values to each variable.

4. Data analysis: Quantitative methods such as regression analysis and SPSS21.0 were used to analyze the relevant data, and the direct impact of organizational transformation on the firm's performance and the moderating effect of open innovation were evaluated.

5. Interpretation of results: The final results of statistical analysis are presented in the form of quantitative data and charts, and they are interpreted and analyzed.

Conceptual Framework: The formulation of the conceptual framework mainly refers to the published work of Anderson (2019), with organizational transformation as the independent variable, enterprise performance as the dependent variable, and open innovation as the moderator variable. According to research objectives, the Conceptual Framework of this paper is shown in Figure 1.

Hypotheses:

H1: Organizational transformation has a positive and significant effect on the firm's

performance.

H2: Open innovation has a negative and significant moderating effect on the relationship between organizational transformation and the firm’s performance.

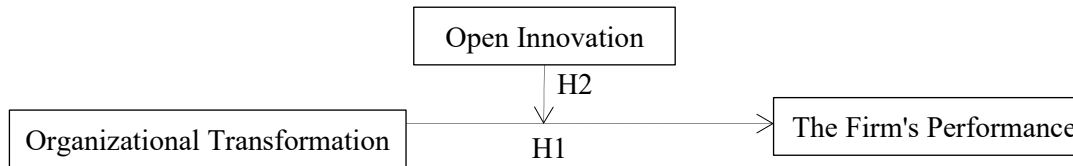


Figure 1. Conceptual Framework

Results

A total of 374 people were surveyed by the questionnaire research had shown that in Table 1. It can be seen that most of the respondents are male (209, 55.90%), most of the respondents are between 31 and 40 years old (100, 26.74%), more of the respondents have bachelor's degree (171, 37.70%), more of the respondents have worked for more than 10 years (191, 51.10%). Most of the respondents were grass-roots employees (225, 60.16%), and most of the respondents worked in companies with 301-500 employees (127, 34.00%).

Table 1: Demographic of Respondents

Item	Frequency	Percent	Item	Frequency	Percent
Gender	374	100.00	Jobs	374	100.00
Male	209	55.90	General Employee	225	60.16
Female	165	44.10	Basic Management	43	11.50
Age	374	100.00	Professional and technical staff	91	24.33
Below 25 years old	61	16.31	Middle Management	12	3.21
25 to 30 years old	81	21.66	Senior Management	3	0.80
31 to 40 years old	100	26.74	Company Size	374	100.00
1 to 50 years old	82	21.93	Less than 100 people	58	15.50
Over 50 years old	50	13.37	101 to 300 people	88	23.50
Education background	374	100.00	301 to 500 people	127	34.00
Below college	30	8.00	501 to 1000 people	73	19.50
College	141	45.70	More than 1000 people	28	7.50
Bachelor’s degree	171	37.70			
Master’s degree	26	45.70			
PHD and above	6	1.60			
Working years	374	100.00			
Less than 2 years	33	8.80			
2 to 4 years	63	16.80			
5 to 7 years	26	7.00			
8 to 10 years	61	16.30			
More than 10 years	191	51.10			

Table 2: KMO Test and Bartlett's Test (N=374)

Cronbach's Alpha		0.835		
Variable List	Item	M	Σ	Numbers
Control Variable	Q1-Q6	2.553	0.519	4
Organizational Transformation	Q7-Q18	3.819	0.904	
Firm's Performance	Q19-Q29	3.794	0.903	
Open Innovation	Q30-Q38	3.838	0.896	

Table 2 shows that Cronbach's α of the whole model is 0.835, indicating that the questionnaire possesses significant utility value. The mean value of organizational transformation is 3.819 with a standard deviation of 0.904, the mean value of Firm's performance is 3.794 with a standard deviation of 0.903, and the mean value of open innovation is 3.838 with a standard deviation of 0.896.

Table 3: KMO and Bartlett Test (N=374)

Kaiser-Meyer-Olkin	0.785		
Bartlett's Sphericity Test	Pseudo Chi-square	Df	Sig.
	1617.274	3	0.000

Table 3 shows that the KMO value is 0.785, indicating that the model constructed in this paper has good applicability for factor analysis. Sig. value is 0.000, which indicates that the questionnaire selected in this paper possesses significant utility value.

Table 4: Pearson Correlation Analysis among Variables (N=374)

Variable List	Organizational Transformation	Firm's Performance	Open Innovation
Organizational Transformation	1		
Firm's Performance	0.940**	1	
Open Innovation	0.930**	0.927**	1

Note: **Significant correlation at the 0.01 level (two-sided).

Table 4 shows that the three variables in this paper are all significant at the level of 0.01, and the correlation value between organizational transformation and firm performance is $r=0.940$, $p<0.01$, which indicates that there is a significant correlation between organizational transformation and firm performance. The correlation coefficient between organizational transformation and open innovation is $r=0.930$, $p<0.01$, indicating that there is a significant correlation between organizational transformation and open innovation, and the correlation coefficient between open innovation and firm performance is $r=0.927$, $p<0.01$, indicating that there is a significant correlation between open innovation and firm performance.

In this paper, we define the Y variable as firm performance, the X variable as organizational transformation, and the Moderating variable as open innovation. So construct a formula:

$$Y = \beta_0 + \beta_1 X + \beta_2 M + \beta_3 XM + \varepsilon \quad (1)$$

The PROCESS plug-in in SPSS21.0 was used for centralized data processing and regression analysis was performed to obtain the following results: R-sq value was 0.355, $p=0.000 < 0.01$; The R²-chng value of XM is 0.055, that is, the contribution rate of the regulatory effect is about 5.5%. According to Table 5 $\beta_0=3.648$, $\beta_1=0.473$, $\beta_2=0.330$, $\beta_3=-0.325$. The adjustment path is shown in Figure 2. When the influence of M is not considered, the regression analysis shows that X has a significant relationship with Y ($r=0.504$, $p=0.000 < 0.01$). Therefore, it can be concluded that organizational transformation has a significant impact on the firm's performance.

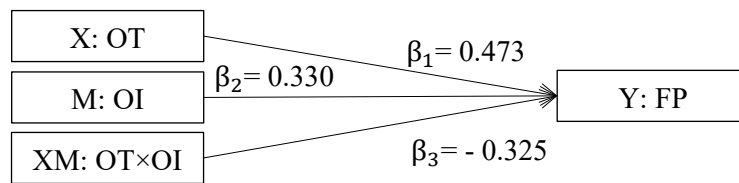


Figure 2. Path Diagram of Moderating Effect

Table 5: Test Results of The Moderating Effect of Open Innovation

Model	Coeff	se	t	p	LICT	ULCT
Constant	3.648	0.041	87.626	0.000	3.566	3.730
X	0.473	0.041	11.328	0.000	0.390	0.555
M	0.330	0.052	6.279	0.000	0.227	0.434
Int 1	-0.325	0.057	-5.621	0.000	-0.438	-0.211

Table 5 shows that there is a significant interaction between organizational transformation and open innovation ($t=-5.621$, $p=0.000 < 0.05$). It means that when organizational transformation has an impact on the firm's performance, open innovation at different levels has a significant difference in impact amplitude. For details, see the following simple slope chart in Figure 3.

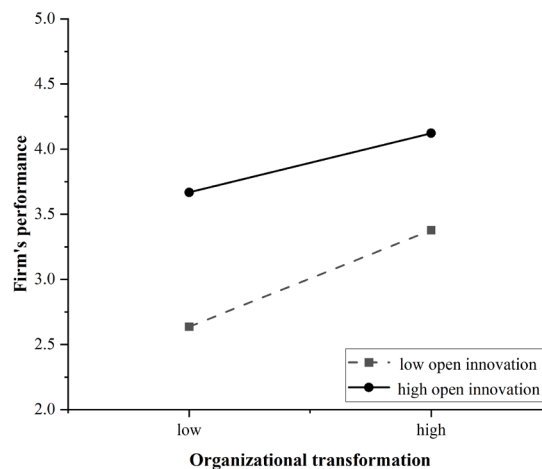


Figure 3. Simple Slope Chart

Figure 3 shows that as organizational transformation changes from low to high, the firm's performance also changes from low to high, showing a positive correlation, which also verifies H1 in Table 6. Secondly, the slope of the line representing low open innovation is higher than that representing high open innovation, which also indicates that with the increase of open innovation, the impact rate of organizational transformation on the firm's performance becomes slower, and open innovation negatively regulates the relationship between them, which verifies H2.

Table 6: Summary of Hypotheses Testing Results

Hypotheses	Content	Results
H1	Organizational transformation has a positive and significant effect on the firm's performance	Support
H2	Open innovation has a negative and significant moderating effect on the relationship between organizational transformation and the firm's performance.	Support

Discussion

The results of this paper effectively support the view widely discussed in academia, which is that organizational transformation will greatly affect the firm's performance. As organizations adjust their structure, process and strategy, corporate performance will be significantly positively affected. This positive correlation is consistent with existing research views (Johnson, 2018).

In addition, the results of this study show that open innovation has a moderating effect on the impact of organizational transformation on the firm's performance, which explains that open innovation plays a positive role in promoting organizational transformation and optimizing firm performance, and illustrates its importance in promoting cooperation with external partners, optimizing internal workflow, and choosing strategies (Andriyani, 2024).

When considering the impact of open innovation, it should not only be considered separately, but also be combined with other aspects, such as the integration of external resources and the improvement of technological capabilities, to further influence the enterprise performance synchronously, so as to achieve the comprehensive improvement of enterprise competitiveness (Huizingh, 2011).

In conclusion, this study provides empirical data, supports and expands existing theories on organizational transformation, open innovation and firm performance, and contributes to academic exchanges and discussions.

Conclusions

Through statistical analysis of the impact of organizational transformation and open innovation on the firm's performance, the corresponding research results are obtained. The results show that organizational transformation has a significant positive impact on firm performance, while open

innovation significantly moderates the negative impact. This paper provides a unique insight into the complex interaction mechanism between organizational transformation, firm performance and open innovation, and has certain reference value in the management practice and academic research of enterprises or organizations in the future.

Recommendations

While acknowledging the contribution of this study, we need to be more aware of its inherent limitations. This study only selected participants for specific industries and did not consider potential differences between different industries, so further exploration is needed. In the future, we can further explore the operating mechanism of open innovation-led organizational transformation affecting enterprise performance. By investigating the problems and successful experiences in the implementation of open innovation strategy inside enterprises, we can provide more substantial content for the theory.

1. Future research should be carried out at the depth level to more comprehensively explore the time dependence of organizational transformation on firm performance. By adopting open innovation as a moderating factor, we can gain a deeper understanding of organizational transformation over time and analyze the factors that affect the corresponding changes in firm performance.

2. Future research should expand the scope of the investigation, especially for specific industries such as high-tech enterprises, energy enterprises and manufacturers. These industries are chosen because they face a complex business environment, and if they persist in maintaining the original model, the competitiveness of enterprises will gradually weaken.

3. The current research focus is to fully consider the impact of external environment and emergencies on organizational transformation, open innovation and firm performance. Factors such as regulatory environment, market conditions and organizational culture may have an impact on the results of organizational transformation and innovation, so taking these factors into account can help improve the theoretical and practical recommendations for organizational transformation under specific circumstances and conditions.

4. Future research should pay more attention to employee perspective. We can specifically explore the role of employee perspectives in the successful selection of change, and analyze how employees perceive and participate in organizational transformation, so as to comprehensively influence the change process of relevant enterprises.

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