

<sup>1</sup>Xiaodan Luo,  
<sup>2</sup>Niyom Suwandej,  
<sup>3</sup>Mooktra Thongves,  
<sup>4</sup>Muhammad Shahid  
 Khan

## The Mediating Role of Organizational Learning Ability in the Impact of Green Innovation Strategy on New Venture Performance in Electrical and Energy Systems



**Abstract:** This paper focuses on green innovation strategy. From the two perspectives of "why" and "how", it conducts research around the theme of "the impact of green innovation strategy on the performance of new ventures", trying to answer whether green innovation strategy can have an impact on the performance of new ventures. Positive impact on business performance? How can we realize the transformation of green innovation strategy into the performance of new ventures? Does environmental uncertainty have a certain regulating effect? In order to further explore the above issues, based on the situation that manufacturing enterprises urgently need to achieve green transformation and innovative development, this paper chooses new manufacturing enterprises as the research object and carries out the green innovation strategy of new enterprises. The impact of green innovation strategies on the performance of new enterprises Research on the mechanism of action. This study is based on the basic view of natural resources, follows the research logic of "strategy-behavior-performance", introduces organizational learning capabilities as the intermediary explanation mechanism in the path of "green innovation strategy-new venture performance", and uses green technology turbulence as a contingency factor. 384 sample data were used for empirical testing.

This study draws the following conclusions. First of all, green innovation strategy, as a proactive environmental strategy, has a significant positive impact on the performance improvement of new ventures. Organizational learning capability mediates the positive relationship between green innovation strategy and new venture performance and its dimensions; secondly, environmental uncertainty plays a significant moderating role in green innovation strategy and new venture performance. This paper deeply explores the mechanism of green innovation strategy on the performance of new ventures. The research is of great significance and has certain reference value in driving my country's new ventures to choose green innovation strategies, improve corporate performance, and promote the green transformation of the economy and society.

**Keywords:** Green innovation ; Organizational learning ability;New Venture Performance;Environmental Strategy

### 1. INTRODUCTION

Increasing industrialization, population surge, development of new products, and excessive consumption of high quality have promoted the development of the global economy, but have also led to damage to ecosystems and environmental degradation (Severo et al., 2017). Therefore, environmental protection and sustainable development have become key issues of concern to the industry and academia in recent years. Our government

<sup>1</sup> 1 Doctor of Philosophy Program student, College of Innovation and Management, Suan Sunandha Rajabhat University, Bangkok, Thailand.

<sup>2</sup> 2 College of Innovation and Management, Suan Sunandha Rajabhat University, Bangkok, Thailand. E-Mail: niyom.su@ssru.ac.th

<sup>3</sup> 3 College of Innovation and Management, Suan Sunandha Rajabhat University, Bangkok, Thailand. E-Mail: mooktra.th@ssru.ac.th

<sup>4</sup> 4College of Innovation and Management, Suan Sunandha Rajabhat University, Bangkok, Thailand. E-Mail:shahid.kh@ssru.ac.th

has also introduced a series of policies to promote the harmonious coexistence between man and nature and the sustainable development of the economy and society. In 2015, the Fifth Plenary Session of the 18th Central Committee of the Communist Party of China proposed to establish a new development concept of innovation, coordination, green, openness and sharing. In 2017, the report of the 19th National Congress of the Communist Party of China once again emphasized the need to unswervingly implement the new development concepts of innovation, coordination, green, openness and sharing to achieve modernization in which man and nature coexist harmoniously. In 2020, my country proposed at the 75th United Nations General Assembly to achieve "carbon peak" (referring to the carbon dioxide emissions reaching.

After the peak, it will stop growing and achieve a decline), and achieve the mission goal of "carbon neutrality" (which refers to offsetting the carbon dioxide emissions generated by enterprises, groups or individuals through energy conservation and emission reduction) before 2060.

The above policy recommendations point out the future development direction and put forward specific requirements for production enterprises, especially manufacturing enterprises. Manufacturing is the main body of the national economy, the foundation of a country, a tool for rejuvenating a country, and the foundation of a strong country. In 2015, my country proposed "Made in China 2025", which is China's first ten-year action plan to implement the strategy of becoming a manufacturing power. It mentioned that innovation should be placed at the core of the overall development of the manufacturing industry and sustainable development should be an important focus in building a strong manufacturing country. In the 2022 Government Work Report, Premier Li Keqiang pointed out that we must continue to implement the innovation-driven development strategy in depth, enhance the core competitiveness of the manufacturing industry, build a green manufacturing and service system, and promote the research, development, promotion and application of green and low-carbon technologies. Therefore, manufacturing companies are facing a new situation of taking a green development path and achieving innovation and upgrading. Green innovation strategy is considered to be a proactive environmental strategy that can take into account both economic and social benefits of the enterprise. It reduces the adverse impact of the enterprise's production and operation practices on the environment by realizing green innovation in products and processes, and brings unique advantages to the enterprise. Competitive advantage and profitability (Chen et al., 2006; Eiadat et al., 2008; Tomomi, 2010). New start-ups are considered to be an important basis for stimulating innovation vitality and achieving sustainable development. Therefore, encouraging new start-ups to implement green innovation strategies will help promote enterprises to achieve green innovative development, shape core competitiveness, and stimulate national economic vitality and Achieve low-carbon and environmentally friendly development of the economy and society.

## 2. LITERATURE REVIEW

This section of the research presents the relationship between Green Innovation Strategy and New Venture Performance.

### 2.1 The relationship model between green innovation strategy and new venture

The traditional view is that the resource and capacity constraints of new ventures will affect the innovation and daily operation of enterprises (van Burg et al., 2012), but some studies have also found that the resource constraints faced by new ventures will actually promote enabling them to innovate and develop (Hoegl et al., 2008).

Especially in emerging economies, where resource constraints have a more pronounced impact on firms, new ventures must strategically find a niche market to improve their chances of success (Amankwah-Amoah et al., 2018). Based on the resource-based view, heterogeneous resources and capabilities that are difficult to imitate or

transfer help organizations achieve superior performance levels (Barney, 1991, 2001), while environmental strategies are considered to be able to reduce costs or provide differentiated products. It is an important means to achieve performance growth (Albertini, 2013; Dai et al., 2017; Danso et al., 2019). Existing studies have found that the strategic actions of enterprises determine the performance of enterprises. As an active environmental strategy, the green innovation strategy can effectively promote the use of tangible and intangible resources of the enterprise itself, realize the green innovation of the enterprise in terms of products or processes, reduce the environmental burden, enhance the competitive advantage of the enterprise and improve the performance of the enterprise (Waheed, A. et al. 2023). Based on the above analysis, this study proposes the following hypotheses:

H1: Green innovation strategy has a positive impact on enterprise performance.

## **2.2 Green Innovation Strategy and Organizational Learning Ability**

Hart (1995) proposed that green innovation strategy would improve organizational innovation, organizational learning and other capabilities. Sharma and Vredenburg (1998), through case studies and interviews with 19 senior and middle managers in 7 companies, found that the implementation of responsive environmental strategies by enterprises would lead to the generation of certain capabilities, which are the ability of enterprises to acquire knowledge and utilize tangible and intangible resources, namely organizational learning ability. And the study also found that it is through the promotion of this organizational learning ability that enterprises establish their unique competitive advantages (Jieru & Khan, 2024). Davis et al. (2000) pointed out in their research that the implementation of environmental strategies by enterprises can form a cultural environment within the organization, through which employees can enhance their knowledge sharing and learning ability. Yang Defeng and Yang Jianhua (2009) conducted empirical research on enterprises in three industries and found that the implementation of positive environmental strategies can improve the organizational learning ability of enterprises, and improve the cost advantage through organizational learning and innovation ability (Li & M.S, 2023). This paper believes that the implementation of the green innovation strategy of the enterprise can drive the establishment of a good learning environment within the enterprise to a certain extent, and open up new ideas for employees to innovate. This paper puts forward the following assumptions:

H2: Green innovation strategy has a positive impact on organizational learning ability.

## **2.3 Organizational learning ability and enterprise performance**

Most scholars have found through research that strengthening organizational learning capabilities can improve the performance level of enterprises. Research shows that the knowledge owned by enterprises and the intelligence level of organizational members determine the technical level of enterprises, and the technical level determines the quality of products or services provided by enterprises (Khan et al. 2022). Advanced nature, and this advanced nature determines the leading position in the market, so that the enterprise can win a higher market share, and the enterprise will naturally achieve better performance. Li Chun (2020) pointed out that organizational learning capabilities can create new dynamics for organizations and improve organizational production and development capabilities. Chen Caiyan, & Chen Liping. (2020) concluded that organizational learning has a greater impact on future performance through long-term follow-up of some companies. Therefore, Based on the above theoretical analysis, this paper puts forward the following hypothesis:

H3: Organizational learning ability has a positive impact on New venture performance.

#### 2.4 The mediating effect of organizational learning ability on green innovation strategy and New venture enterprise performance

Based on the research on the relationship between green innovation strategy and corporate performance, domestic and foreign scholars have explored the intermediary role between green innovation strategy and corporate performance (Xing, 2022) proposed that corporate environmental strategies will promote the improvement of organizational learning capabilities, thereby strengthening Communication among members of the organization, and then obtain the unique competitive advantage of the enterprise (Tanveer et al 2020). Through empirical research, it is found that the dynamic capabilities of enterprises play an intermediary role between corporate green innovation strategies and corporate performance. (Sun, 2019) companies promote green learning capabilities by implementing green innovation strategies to improve corporate performance. Therefore, this paper puts forward the following assumptions:

H4: Organizational learning ability plays a mediating role in the relationship between green innovation strategy and New venture performance .

#### 4.2 Descriptive statistics of the sample

The relationship model proposed in this study includes Green Innovation Strategy, Enterprise performance, Organizational learning ability and Environmental uncertainty, 4 variables, each variable has 3 sub-dimensions and 60 items. All scales use a 7-point Likert scale, with the maximum value being 7 and the minimum value being 1. For all variables, the higher the score, the higher the corresponding evaluation level. The descriptive statistical results of the 60 measurement items are shown in the table

**Table 4.2 describes the statistical results**

Observation variable	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
GIS1	1	7	4.84	1.48	-0.53	-0.323
GIS2	1	7	4.82	1.413	-0.488	-0.261
GIS3	1	7	4.76	1.388	-0.619	-0.034
GIS4	1	7	4.79	1.415	-0.532	-0.057
GIS5	1	7	4.72	1.338	-0.534	0.049
GIS6	1	7	4.74	1.613	-0.536	-0.549
GIS7	1	7	4.65	1.457	-0.38	-0.411

GIS8	1	7	4.71	1.604	-0.445	-0.685
GIS9	1	7	4.62	1.616	-0.512	-0.54
GIS10	1	7	4.7	1.563	-0.471	-0.491
GIS11	1	7	4.82	1.56	-0.326	-0.679
GIS12	1	7	4.65	1.45	-0.295	-0.535
GIS13	1	7	4.68	1.563	-0.317	-0.676
GIS14	1	7	4.82	1.583	-0.324	-0.807
GIS15	1	7	4.79	1.533	-0.419	-0.548
ENP1	1	7	5.03	1.538	-0.654	-0.394
ENP2	1	7	4.93	1.487	-0.65	-0.105
ENP3	1	7	4.91	1.527	-0.474	-0.581
ENP4	1	7	4.89	1.546	-0.524	-0.292
ENP5	1	7	4.98	1.492	-0.637	-0.231
ENP6	1	7	4.71	1.54	-0.49	-0.542
ENP7	1	7	4.65	1.549	-0.446	-0.678
ENP8	1	7	4.64	1.512	-0.522	-0.445
ENP9	1	7	4.65	1.547	-0.454	-0.453
ENP10	1	7	4.68	1.515	-0.474	-0.528
ENP11	1	7	4.97	1.522	-0.634	-0.021
ENP12	1	7	4.87	1.456	-0.512	-0.215
ENP13	1	7	4.91	1.407	-0.627	-0.038
ENP14	1	7	4.93	1.441	-0.735	-0.027
ENP15	1	7	4.85	1.461	-0.625	-0.203
OLA1	1	7	5.18	1.441	-0.701	-0.051
OLA2	1	7	5.13	1.368	-0.656	0.199
OLA3	1	7	5.14	1.408	-0.777	0.347
OLA4	1	7	5.28	1.446	-0.954	0.68
OLA5	1	7	5.25	1.373	-0.724	0.109
OLA6	1	7	4.94	1.429	-0.499	-0.144
OLA7	1	7	4.91	1.416	-0.498	-0.159
OLA8	1	7	4.91	1.312	-0.345	-0.241
OLA9	1	7	4.86	1.359	-0.406	-0.433
OLA10	1	7	4.96	1.323	-0.639	0.104

OLA11	1	7	5.25	1.403	-0.858	0.693
OLA12	1	7	5.22	1.347	-0.891	0.573
OLA13	1	7	5.18	1.185	-0.883	1.207
OLA14	1	7	5.23	1.291	-0.651	0.183
OLA15	1	7	5.25	1.316	-0.81	0.591
ENU1	1	7	5.2	1.552	-0.851	0.106
ENU2	1	7	4.76	1.504	-0.485	-0.266
ENU3	1	7	5.04	1.583	-0.672	-0.287
ENU4	1	7	4.89	1.482	-0.556	-0.265
ENU5	1	7	5.05	1.51	-0.743	-0.084
ENU6	1	7	5.12	1.571	-0.783	-0.106
ENU7	1	7	4.68	1.493	-0.495	-0.357
ENU8	1	7	4.91	1.549	-0.576	-0.336
ENU9	1	7	4.73	1.476	-0.45	-0.449
ENU10	1	7	4.89	1.522	-0.627	-0.212
ENU11	1	7	5.23	1.538	-0.874	0.127
ENU12	1	7	4.8	1.436	-0.48	-0.253
ENU13	1	7	5.04	1.524	-0.529	-0.479
ENU14	1	7	4.99	1.477	-0.52	-0.379
ENU15	1	7	5.17	1.482	-0.782	0.111

#### 4.3 Normal Distribution Test

The skewness and kurtosis in the above table are normal distribution tests for formal survey data. It is generally believed that when the absolute value of skewness is less than 3 and the absolute value of kurtosis is less than 7, it indicates that the sample basically conforms to the normal distribution. As can be seen from the table above, the absolute values of skewness of all measurement items are less than 3, and the absolute values of kurtosis are less than 7. Therefore, it can be considered that the large sample survey data of each measurement item in this study basically meets the above critical value requirements, and further development can be carried out. Analysis.

#### 4.4 Reliability Analysis

The reliability test of the questionnaire is a test of the reliability and credibility of the questionnaire. It is mainly based on the consistency or stability of the results obtained by the test tool and reflects the true degree of the measured data. Reliability is divided into internal reliability and external reliability. The internal reliability test is to test whether a set of questions measures the same concept and the degree of internal consistency of each item that makes up the scale. The higher the internal consistency of the questionnaire, the higher the credibility of the questionnaire. In this study, Cronbach's Alpha was used to measure the internal reliability of the questionnaire. The larger the coefficient in the Cronbach's Alpha measure, the higher the internal consistency of

the questionnaire. The internal consistency of the questionnaire is tested by testing the reliability of each part of the scale separately, and the test results are shown in the table. As can be seen from the table, the Cronbach's Alpha of the scales are all above 0.7, indicating that the internal consistency of the questionnaire is relatively high, and the questionnaire can be used as a research tool for this study.

**4.5 Validity analysis**

**4.5.1. Exploratory factor analysis**

Exploratory factor analysis is to measure the structural validity of the scale and to determine whether the measured variables of each latent variable have stable consistency and structure. It is the most commonly used indicator when evaluating the validity of the scale. This article uses spss.27 software to analyze. Examine the composition of each dimension. When using factor analysis for validity analysis, you must first determine whether the conditions for factor analysis are met. Generally, two conditions need to be met. One is that the KMO value must be greater than 0.7; the other is that the significance of Bartlett's sphericity test is less than 0.05. If these two conditions are met, it means that there is a strong correlation between the observed variables and it is suitable for factor analysis.

**Table 4.4 Validity test of Green Innovation Strategy scale**

Latent variables	Observation variable	Component		
		1	2	3
Green product innovation	GIS1	0.840	0.167	0.210
	GIS2	0.789	0.195	0.224
	GIS3	0.760	0.195	0.210
	GIS4	0.709	0.220	0.237
	GIS5	0.819	0.217	0.165
	GIS6	0.154	0.791	0.273
Green process innovation	GIS7	0.227	0.740	0.257
	GIS8	0.191	0.802	0.167
	GIS9	0.287	0.737	0.217
	GIS10	0.189	0.749	0.328
	GIS11	0.236	0.203	0.777
Green management innovation	GIS12	0.281	0.227	0.724
	GIS13	0.181 0.752	0.292	
	GIS14	0.163 0.750	0.273	
	GIS15	0.236 0.785	0.225	

KMO		0.938
Bartlett's Test		3388.392
Total	7.343 1.338	1.718
% of Variance	23.729 22.791	22.808
Cumulative %	23.729 69.327	46.537

The results of exploratory factor analysis show that the KMO value of the Green Innovation Strategy scale is 0.938, which is significantly greater than the standard 0.70. Bartlett's sphericity test value is 3388.392, and the significance sig value is 0.000, so it is suitable for factor analysis. The principal component analysis method was used to extract factors with eigenvalues greater than 1. As a result, a total of 3 common factors were extracted, and the cumulative sum of squares of rotation was 69.327%, which was greater than 60%. After being rotated by the orthogonal rotation method, the 15 question options can be classified into 3 types of factors. The loadings of each item are higher than 0.5, indicating that the extracted 3 factors contain more comprehensive information and there is no double factor loading. In the case of high, each observed variable is aggregated into each dimension according to theoretical presets.

*Table 4.5 Validity test of Enterprise performance scale*

Latent variables	Observation variable	Component		
		1	2	3
Financial Performance	ENP1	0.185	0.306	0.806
	ENP2	0.136	0.292	0.789
	ENP3	0.211	0.188	0.804
	ENP4	0.149	0.193	0.822
	ENP5	0.198	0.177	0.834
	ENP6	0.273	0.815	0.247
Growth performance	ENP7	0.32	0.807	0.245
	ENP8	0.313	0.737	0.313
	ENP9	0.212	0.812	0.214
	ENP10	0.203	0.832	0.248
	ENP11	0.795	0.323	0.182
Environmental performance	ENP12	0.818	0.197	0.185
	ENP13	0.792	0.208	0.193
	ENP14	0.827	0.241	0.137
	ENP15	0.840	0.224	0.189

KMO	0.933		
Bartlett's Test	4441.982		
Total	7.906	2.033	1.461
% of Variance	25.586	25.246	25.164
Cumulative %	25.586	50.832	75.996

The results of exploratory factor analysis showed that the KMO value of the Enterprise performance scale was 0.933, significantly greater than the standard 0.70, the Bartlett's sphericity test value was 4441.982, and the significance sig value was 0.000, so it was suitable for factor analysis. The principal component analysis method was used to extract factors with eigenvalues greater than 1. As a result, a total of 3 common factors were extracted, and the cumulative sum of squares of rotation was 75.996%, which was greater than 60%. After being rotated by the orthogonal rotation method, the 15 question options can be classified into 3 types of factors. The loadings of each item are higher than 0.5, indicating that the extracted 3 factors contain more comprehensive information and there is no double factor loading. In the case of high, each observed variable is aggregated into each dimension according to theoretical presets

**Table 4.6 Validity test of Organizational learning ability scale**

Latent variables	Observation variable	Component		
		1	2	3
Study commitment	OLA1	0.779	0.268	0.192
	OLA2	0.712	0.225	0.247
	OLA3	0.750	0.261	0.188
	OLA4	0.756	0.196	0.270
	OLA5	0.820	0.237	0.218
	OLA6	0.248	0.138	0.804
	OLA7	0.164	0.234	0.809
Open mind	OLA8	0.244	0.166	0.690
	OLA9	0.147	0.140	0.800
	OLA10	0.269	0.256	0.738
	OLA11	0.230	0.779	0.165
	OLA12	0.204	0.786	0.200
Share a vision	OLA13	0.238	0.687	0.164
	OLA14	0.292	0.720	0.183
	OLA15	0.180	0.859	0.210

KMO		0.928	
Bartlett's Test		3301.230	
Total	7.109	1.724	1.407
% of Variance	22.865	22.836	22.569
Cumulative %	22.865	45.702	68.271

The results of exploratory factor analysis show that the KMO value of the Organizational learning ability scale is 0.928, which is significantly greater than the standard 0.70. Bartlett's sphericity test value is 3301.230, and the significance sig value is 0.000, so it is suitable for factor analysis. The principal component analysis method was used to extract factors with eigenvalues greater than 1. As a result, a total of 3 common factors were extracted, and the cumulative sum of squares of rotation was 68.271%, which was greater than 60%. After being rotated by the orthogonal rotation method, the 15 question options can be classified into 3 types of factors. The loadings of each item are higher than 0.5, indicating that the extracted 3 factors contain more comprehensive information and there is no double factor loading. In the case of high, each observed variable is aggregated into each dimension according to theoretical presets.

Table 4.7 Validity test of environmental uncertainty scale

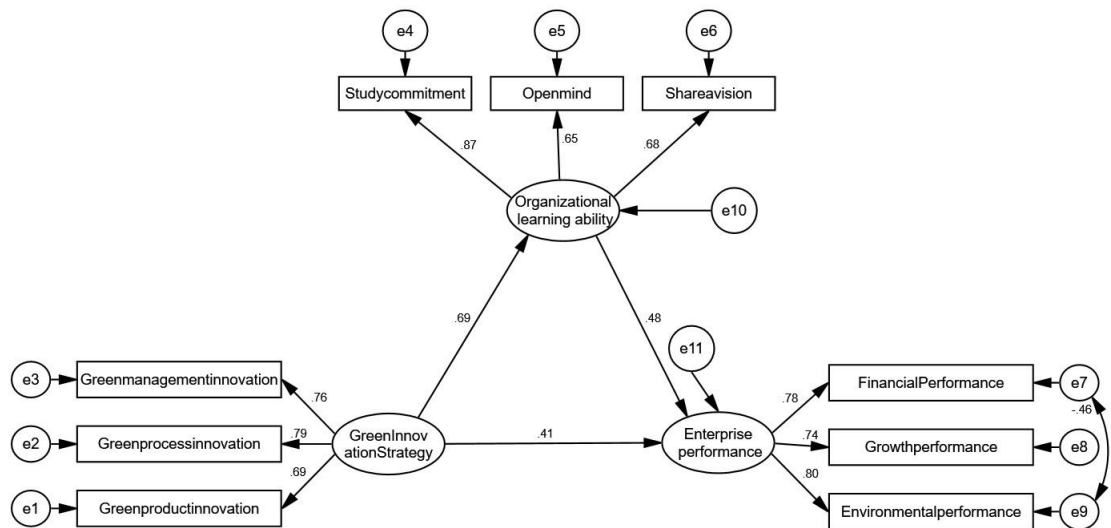
Latent variables	Observation variable	Component		
		1	2	3
Market turbulence	ENU1	0.729	0.314	0.294
	ENU2	0.799	0.24	0.175
	ENU3	0.771	0.265	0.237
	ENU4	0.756	0.192	0.279
	ENU5	0.784	0.198	0.322
	ENU6	0.153	0.814	0.244
Technological turbulence	ENU7	0.179	0.757	0.253
	ENU8	0.284	0.706	0.189
	ENU9	0.263	0.729	0.173
	ENU10	0.239	0.768	0.208
	ENU11	0.272	0.229	0.737
Intensity of competition	ENU12	0.173	0.289	0.705
	ENU13	0.259	0.188	0.699
	ENU14	0.204	0.18	0.768
	ENU15	0.299	0.203	0.764
	KMO		0.941	

Bartlett's Test		3284.565		
Total	7.446	1.481	1.279	
% of Variance	23.438	22.682	21.922	
Cumulative %	23.438	46.119	68.042	

The results of exploratory factor analysis show that the KMO value of the Environmental uncertainty scale is 0.941, which is significantly greater than the standard 0.70. Bartlett's sphericity test value is 3284.565, and the significance sig value is 0.000, so it is suitable for factor analysis. The principal component analysis method was used to extract factors with eigenvalues greater than 1. As a result, 3 common factors were extracted, and the cumulative sum of squares of rotation was 68.042%, which was greater than 60%. After being rotated by the orthogonal rotation method, the 15 question options can be classified into 3 types of factors. The loadings of each item are higher than 0.5, indicating that the extracted 3 factors contain more comprehensive information and there is no double factor loading. In the case of high, each observed variable is aggregated into each dimension according to theoretical presets.

**4.6 structural equation modeling**

According to the theoretical model, amos26 is used to establish a structural equation model (picture).



**Figure 4.1 Standardized Path Estimation of Structural Equation Model**

**Table 4.8 Model Goodness-of-Fit Index**

Reference index	X <sup>2</sup> /df	GFI	AGFI	NFI	TLI	CFI	RMSEA
Statistical value	2.283	0.970	0.942	0.964	0.968	0.980	0.058

Reference value	<3	>0.8	>0.8	>0.9	>0.9	>0.9	<0.08
Conclusion	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified	Qualified

When judging whether the structural equation model is established, it is mainly measured by measuring some fitting indicators, among which  $\chi^2/df$  is generally required to be less than 3, GFI is the fitness index, AGFI is the adjusted fitness index, and NFI standard fitness Fit index, IFI value-added fit index, and CFI comparative fit index. Generally, these values are required to be greater than 0.9, indicating that the model has good adaptability, but greater than 0.8 means that the model is acceptable. RMSEA should be less than 0.08, which means that the fitting energy is better and the model fitting degree is better. From the table below, we can see that  $\chi^2/df$  is 2.283 and less than 3, GFI is 0.970 and greater than 0.8, AGFI is 0.942 and greater than 0.8, NFI is 0.964 and greater than 0.9, and TLI is 0.968 greater than 0.9. CFI is 0.980 is greater than 0.9, RMSEA=0.058 is less than 0.08. It shows that the fitting degree of the model is good and the model is acceptable. According to the standard of the model fitting index, the fitting index of the model meets the requirements, so the path of the model is analyzed.

Table 4.9 Path Coefficient between The Variables

			Estimate	S.E.	C.R.	P
OLA	<---	GIS	0.691	0.083	10.363	***
ENP	<---	GIS	0.405	0.094	5.369	***
ENP	<---	OLA	0.484	0.076	6.374	***

\*<0.05 \*\*<0.01 \*\*\*<0.001

The standardized path coefficient from GIS to ENP is 0.405 (t value=5.369, p=0.000<0.01), indicating that GIS has a significant positive impact on ENP, that is, the higher the GIS, the higher the ENP, so H1 is established;

The standardized path coefficient from GIS to OLA is 0.691 (t value=10.363, p=0.000<0.01), indicating that GIS

has a significant positive impact on OLA, that is, the higher the GIS, the higher the OLA, so H2 is established;

The standardized path coefficient from OLA to ENP is 0.484 (t value=6.374, p=0.000<0.01), indicating that OLA

has a significant positive impact on ENP, that is, the higher the OLA, the higher the ENP, so H3 is established;

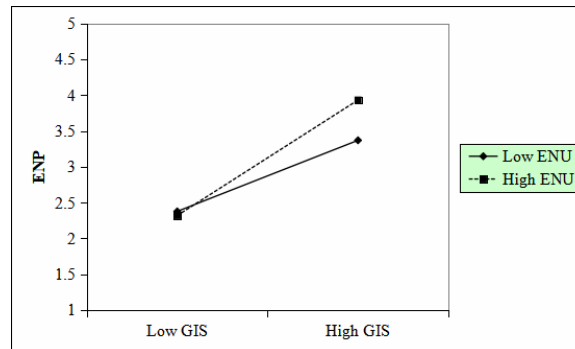
**4.7 Mediation effect test**

**Table 4.10 mediation Effect test**

Parameter	Estimate	Lower	Upper	P
GIS-OLA-ENP	0.334	0.222	0.478	0.000
GIS-ENP	0.405	0.226	0.558	0.001



coefficient of the interaction term between the variable and the regulating variable is ( $\beta=0.208$ ,  $P=0.000$ ); indicating that the interaction term has a significant impact on Enterprise performance, and the  $R^2$  of model 2 is 0.394, and the  $R^2$  of model 3 is 0.430, significantly The significant improvement indicates that the explanatory ability of the model has been enhanced. Therefore, it is proved that the regulating variable Environmental uncertainty has a significant moderating effect on the impact of Green Innovation Strategy on Enterprise performance, and the hypothesis is established.



**Figure 4.2 moderation effect diagram**

## 5. Research Conclusions

This paper takes the green innovation strategy as the core point of the research, and develops the driving mechanism of the green innovation strategy of new ventures, as well as the research on the mechanism of the green innovation strategy on the performance of new ventures. The overall research conclusions are as follows:

The effect mechanism of green innovation strategy on the performance of new ventures.

In the research on the mechanism of green innovation strategy on the performance of new ventures, this paper draws the following main conclusions: First, the green innovation strategy has a significant positive impact on the performance of new ventures. The second organizational learning capability mediates the positive relationship between green innovation strategy and new venture performance. Green innovation strategies can have a positive impact on the performance of new ventures through organizational learning capabilities. Fifth, environmental uncertainty, as a situational factor, plays a moderating role in the process of green innovation strategy affecting corporate behavior and performance. Among them, environmental uncertainty has a significant moderating effect on the relationship between green innovation strategy and new venture performance. To sum up, this paper conducts research on the green innovation strategy, which reveals the specific path to realize the transformation of the green innovation strategy into the performance of new ventures, in order to better promote the green innovation development of new ventures and promote the green development of China's economic society. Transformation provides theoretical basis and practical enlightenment.

## Reference

- [1] ABOELMAGED, M., & HASHEM, G. (2019). Absorptive capacity and green innovation adoption in SMEs: The mediating effects of sustainable organizational capabilities. *Journal of Cleaner Production*, 220, 853-863.
- [2] Ahmed, Tanveer et al. (2020) 'Impact of Employees Engagement and Knowledge Sharing on Organizational Performance: Study of HR Challenges in COVID-19 Pandemic'. 1 Jan. 2020: 589 –

601.

- [3] Albertini, P. (2013). Sustainable tourism strategies: A tool for managing destination competitiveness. *Current Issues in Tourism*, 16(8), 785-791.
- [4] Amankwah-Amoah, J., Zhang, H., & Wang, X. (2018). Global business and management research: An international journal, 10(1), 1-4.
- [5] Baker, S. R., Bloom, N., & Davis, S. J. (2016). Measuring economic policy uncertainty. *The Quarterly Journal of Economics*, 131(4), 1593-1636.
- [6] Cai, L., Shan, B., & Zhou, L. (2010). The Influence of market Orientation on Performance of new enterprises: the mediating role of resource integration. *China Industrial Economy*, (11), 77-86.
- [7] Chen, Y. S., Lai, S. B., & Wen, C. T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of Business Ethics*, 67(4), 331-339.
- [8] Dai, M., Xu, Y., & Du, S. (2017). The impact of corporate social responsibility on customer loyalty: The mediating role of reputation and customer satisfaction. *Journal of Retailing and Consumer Services*, 35, 137-145.
- [9] Danso, A., Adomako, S., & Uddin, M. (2019). Corporate governance and cash holdings in the UK: Evidence from the agency and stakeholder theoretical perspectives. *International Journal of Accounting & Information Management*, 27(1), 35-57.
- [10] Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (2000). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982-1003.
- [11] Ding, X. (2022). Environmental regulation and influence on the development of the green financial synergy for manufacturing high quality research (Ph.D. Dissertation, Nanchang University).
- [12] Dong, D. (2023). Under the background of "double carbon" energy-intensive enterprise green transition power, path and the effect of study (Master's thesis, Zhejiang Industry and Commerce University).
- [13] Geffen, D. (1998). Exploring the dimensions of flow in electronic commerce. *Journal of Organizational Computing and Electronic Commerce*, 8(1), 53-69.
- [14] Hart, S. L. (1995). A Natural-Resource-Based View of the Firm.
- [15] Hoegl, M., Parboteeah, K. P., & Munson, C. L. (2008). Team-level antecedents of individuals' knowledge networks. *Decision Sciences*, 39(2), 299-321.
- [16] Khan, Muhammad Shahid (2022) Encouraging Pro-environmental behavior in University Employees: An approach toward environmental sustainability as moderated by green organizational culture - khan - 2022 - journal of community psychology - wiley online library.
- [17] Li, Y., & Khan, M. S. (2023). Impact of Perceived Organizational Support on Turnover Intention in Luxury Hotels: The Mediating Role of the Perceived Value of Artificial Intelligence. *Vision*, 0(0). <https://doi.org/10.1177/09722629231180435>
- [18] Li, C. (2020). Executive background and corporate development: financialization, innovation, and business performance. In *Southwestern University of Finance and Economics Press (Songbo) (Ed.)*, [Chapter title] (pp. 197–218).
- [19] Li, M. (2023). Manufacturing enterprise digital transformation degree of research on the mechanism of action of enterprise performance (Master's thesis, Zhejiang Industry and Commerce University).
- [20] Lu, S. (2022). Digital business ecosystem under high technology enterprise symbiosis mechanism, the performance of technology commercialization ability to (Ph.D. Dissertation, Jilin University).
- [21] Marcus, A. (1998). Interactions between users and designers: Some implications for instructional design. *Journal of the American Society for Information Science*, 49(6), 509-516
- [22] Peng, H. (2023). The influence factors of Internet insurance customers sticky and improve analysis (Master's thesis, Hebei University of Economy and Trade).
- [23] Quan, Jieru and Khan, Muhammad Shahid (2024) 'The Mediating Role of Job Satisfaction and Competitive Advantage Between Quality Management Practices and Sustainable Performance: Case of Hospitals in Guangxi, China'. 1 Jan. 2024 : 1 – 18.
- [24] Severo, E. A., Guimarães, J. C. F., & Dorion, E. C. H. (2017). Cleaner production and environmental management as sustainable product innovation antecedents: A survey in Brazilian industries. *Journal of Cleaner Production*, 142, 87-97.

- [25] Sharma, S. (1998). *Applied multivariate techniques*. John Wiley & Sons.
- [26] Sun, L., Ren, X., & Li, Y. (2019). Strategic flexibility, green innovation and corporate performance. *Science and Technology Progress and Countermeasures*, 36(22), 82-91.
- [27] Waheed, A. et al. (2023) 'Environmental policy vs. environmental innovation: An examination of policies disclosure on Sustainable Development from stakeholder theory perspective', *Sustainable Development*, 32(3), pp. 2506–2516. doi:10.1002/sd.2782.
- [28] Xing, L., Yu, H., & Ren, X. (2022). Network Embedding, Green Dynamic Capabilities and Enterprise Green Innovation—The Moderating Effect of Environmental Regulation and Managers' Environmental Attention. *Science and Technology Progress and Countermeasures*, 39(14), 105-113.
- [29] Yang, D. (2009). China's trade patterns and international comparative advantage. *China Economic Review*, 20(3), 430-439.
- [30] Rezaee, Z., Asiaei, K., & Deloioie, T. S. (2021). Are CEO experience and financial expertise associated with financial restatements. *Spanish Accounting Review*, 24(2), 270–281.