

THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY ON ORGANIZATIONAL PERFORMANCE OF PRIVATE MANUFACTURING ENTERPRISES IN YUNNAN PROVINCE, CHINA: THE MEDIATING ROLE OF INNOVATION INVESTMENT*

Chen Min¹, Adilla Pongyila² and Pornthip Tantivisetshak³

¹⁻³Dhurakij Pundit University, International College, Thailand

¹College of Arts and Sciences, Kunming, China

Corresponding Author's Email: 707026082@qq.com

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Abstract

This study examines the structural relationships among corporate social responsibility (CSR), innovation investment (INI), and organizational performance (OP) in private manufacturing enterprises in Yunnan Province, China. A quantitative research design was employed, and data were collected from employees and managers, yielding 620 valid responses. Structural Equation Modeling (SEM) was used to test the proposed relationships and mediating mechanism.

The results indicate that CSR has a significant positive direct effect on organizational performance and also positively influences innovation investment. In addition, innovation investment significantly enhances organizational performance. Furthermore, innovation investment plays a partial mediating role

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in the relationship between CSR and organizational performance, indicating that CSR can indirectly improve performance through promoting innovation activities. These findings provide empirical evidence for understanding the internal mechanism linking CSR and performance in underdeveloped regions and offer practical implications for enhancing sustainable development strategies in private manufacturing enterprises.

Keywords: Corporation social responsibility (CSR), Organizational performance (OP), Innovation investment (INI), Private manufacturing enterprises, Structural Equation Modeling (SEM)

Introduction

Corporate social responsibility (CSR) is considered a key criterion for assessing sustainable business practices. The concept of CSR appeared in the United States at the beginning of the 20th century. CSR refers to “corporate social or environmental behavior that goes beyond the legal or regulatory requirements.” Many enterprises have elevated social responsibility to the strategic level, embedded in corporate culture, throughout the daily operation, CSR has gradually become a new marketing method of differentiated competition. Some enterprises, in pursuit of maximizing their own interests, only focus on short-term gains and fail to actively assume social responsibilities (Song, 2024). This has had a huge impact on our environment and the vital interests of the people. In China, the contribution of private enterprises in the manufacturing sector is increasingly prominent. However, the manufacturing industry in Yunnan of China is constrained by issues such as insufficient independent innovation capabilities and aggravated environmental pollution.

Innovation plays an extremely important role in the fierce market competition. The innovation investment (INI) of enterprises, including investment in research and development funds, technical talents, and research equipment,

is the key guarantee for enterprises to enhance their core technical capabilities, launch new products and services, and enter new markets. INI has the characteristics of high risk, high uncertainty, and long cycle. CSR and INI, as important directions of enterprise resource allocation, have complex relationships with enterprise performance. On one hand, enterprises need to invest certain resources to fulfill their social responsibilities, which may have an effect of crowding out innovation investment and thereby affect the short-term performance of the enterprises. On the other hand, proactive social responsibility practices can create a favorable external environment for the enterprises, thereby promoting the improvement of enterprise performance.

This study takes manufacturing private enterprises in Yunnan Province as the research object, combining their "manufacturing attributes" and "private attributes", and theoretically clarifying the internal logic between CSR and OP. This can enrich the theoretical connotation of the research on the social responsibility of manufacturing private enterprises and provide support for the expansion of the application scope of related theories. This study provides practical guidance for manufacturing private enterprises in Yunnan Province to effectively fulfill CSR and enhance OP.

Objectives

1. To examine the structural relationships among corporate social responsibility (CSR), innovation investment (INI), and organizational performance (OP) in private manufacturing enterprises in Yunnan Province.
2. To analyze the direct effects of CSR on organizational performance and innovation investment.
3. To investigate the impact of innovation investment on organizational performance.

4. To test the mediating role of innovation investment in the relationship between CSR and organizational performance.

Literature Review

1. Corporate Social Responsibility (CSR) and Organizational Performance (OP)

As the core issue of interaction between enterprises and society, CSR has long been a research hot spot in the fields of management and economics. However, due to differences in research contexts, variable measurement methods and theoretical perspectives, the conclusions drawn by existing studies regarding the relationship between the two are inconsistent. The current studies have reached four main conclusions regarding the relationship between CSR and performance: positive correlation, negative correlation, nonlinear relationship, and no significant correlation. Each of these viewpoints is supported by empirical evidence.

CSR is significantly positively correlated with an enterprise's financial performance, and this correlation holds true in both emerging economies and developed economies. When CSR investment exceeds the carrying capacity of the enterprise's strategy, CSR redundancy will occur, leading to a decline in performance, that is, a inverted U-shaped relationship. However, the research samples of such studies are mostly concentrated in high-pollution industries, and their universality remains to be verified. Xie et al. (2017) found in their research on Chinese enterprises that the impact of CSR on performance is entirely mediated through customer satisfaction. If this variable is not controlled, the direct relationship between CSR and performance is not significant. The effects of different CSR dimensions on performance cancel each other out, resulting in no significant correlation between overall CSR and performance.

In summary, through a literature review of the relationship between CSR and OP, it can be observed that CSR not only directly affects the financial and non-financial performance of the organization, but also, regulatory variables such as industry characteristics, enterprise size, and market environment significantly influence the relationship between CSR and OP. Hence, the following hypothesis is proposed:

H1. CSR positively influences organizational performance.

2. Corporate Social Responsibility (CSR) and Innovation Investment (INI)

Innovation, as a key driving force for enterprises to maintain their competitive edge and achieve sustainable growth. Existing studies have centered on core issues such as "how CSR affects innovation" and "the mechanism and boundary conditions of their relationship", but no completely consistent conclusions have been reached. Some studies have confirmed that CSR promotes innovation through paths such as resource acquisition and reputation building (Liu et al., 2025; Hanaysha et al., 2025), while other studies have pointed out that CSR may inhibit innovation due to the resource crowding effect. It was found that CSR enhances customer trust and employee identification, providing enterprises with innovative inspiration and human support. Moreover, the stakeholder network established through CSR can share the costs of innovation failure and reduce enterprises' concerns about innovation.

Enterprises with good CSR performance are more likely to attract technical talents and investors, and their R&D intensity is higher than that of their peers. CSR has a positive impact on enterprises' innovation, and the cost of debt financing plays a mediating role between CSR and enterprise innovation. These studies reveal that CSR influences enterprises' INI through different regulatory mechanisms. Compared with non-state-owned enterprises, state-owned enterprises demonstrated a more significant performance in promoting enterprise INI. These research results indicate that the relationship between CSR and

innovation investment may vary depending on the characteristics of the enterprises.

In summary, current research indicates that CSR has a significant positive impact on enterprises' innovation investment. However, the relationship between CSR and INI is not linear. As the amount of INI by enterprises increases, the positive impact of CSR on it gradually weakens. Moreover, the promoting effect of CSR on enterprises' INI is still regulated by various factors, such as the type of the enterprise and environmental uncertainty. Hence, the following hypothesis is proposed:

H2: CSR positively influences innovation investment.

3. Innovation Investment (INI), and Organizational Performance (OP)

Shahzad et al. (2025) conducted a study on the manufacturing industry in China and found that innovation capability has a significant direct positive impact on OP, and this impact is not significantly interfered by enterprise size or industry segmentation. From the mechanism perspective, innovation capability acts on performance through two paths: one is to directly enhance market competitiveness by developing new products and optimizing production processes; the other is to indirectly amplify the performance effects of technological innovation and green innovation by promoting the deep implementation of digital transformation.

Pandey et al. (2025) empirical study on the Indian manufacturing sector indicates that technological innovation has a significant positive effect on OP, this study further points out that technological innovation can achieve a dual improvement in financial performance and product quality. Green innovation has a significant positive impact on organizational performance. Among them, the improvement effect on environmental performance is the most prominent, followed by financial performance and other OP. Bai (2025) found that INI was significantly positively correlated with the enterprise's operating performance.

Green innovation significantly and positively impacts firm performance, however, the effect of green innovation on firm sustainability performance is insignificant. It was found a positive correlation between resource investment and the financial performance of ecological innovation-oriented enterprises. Song (2024) used the heavy-polluting enterprises listed on the A-share market from 2010 to 2022 as a sample, they found that green technological innovation has a direct impact on enterprise performance, but this impact usually has a certain lag period.

In summary, although there have been studies, there are still many unsolved mysteries in this field, such as the non-linear relationship between innovation and performance, and the differences in the effectiveness of innovation across different industries. Hence, the following hypothesis is proposed:

H3: Innovation investment positively influences organizational performance.

4. CSR, Innovation Investment, and Organizational Performance (OP)

CSR mediates its impact on environmental performance through the chain path of "green capability (GC) → green innovation (GI)". If small and medium-sized enterprises lack green capability, even if they invest in CSR, it is difficult for them to transform into green innovation and environmental performance. In addition, Hanaysha et al. (2025) conducted a survey of small and medium-sized enterprises in multiple industries and verified the impact of green innovation on sustainable performance. They also confirmed that CSR, green entrepreneurial orientation, and technical capabilities have a positive impact on green innovation and sustainable performance.

Mao (2025) based on the data of manufacturing companies listed from 2010 to 2022, the study found that the impact of corporate social responsibility on financial performance exhibited an inverted U-shaped pattern, and the innovation of green technology by enterprises played an important regulatory

role in this process. CSR promotes the integration of environmental performance and financial performance through the promotion of green INI.

A survey in the Indian IT industry shows that investment in technological innovation is a key mediating factor for the impact of CSR on enterprise performance. Enterprises need to rely on the resources accumulated through CSR to support innovation activities in order to achieve performance improvement. Moreover, the mediating effect of INI varies in dimensions: technological INI is more likely to mediate the impact of environmental CSR on OP, while management INI can strengthen the correlation between social CSR and market performance.

In summary, enterprises not only need to focus on economic benefits, but also must assume responsibilities towards society and the environment. At the same time, innovation, as a key factor driving the sustainable development of enterprises, its interaction with CSR is receiving increasing attention. However, existing research has certain differences and deficiencies in exploring how CSR affects INI and how this interaction further influences enterprise performance. Hence, the following hypothesis is proposed:

H4: Innovation investment mediates the relationship between CSR and organizational performance.

Most existing literature focuses on the developed eastern regions or state-owned enterprises, and lacks targeted research on the particularity of CSR in private enterprises in the western regions of China. Innovation investment in Yunnan's private enterprises is often influenced by both "legitimacy resources" and "financial constraints", and the threshold effect between it and CSR needs to be deeply verified. Based on this, this research proposes the following framework.

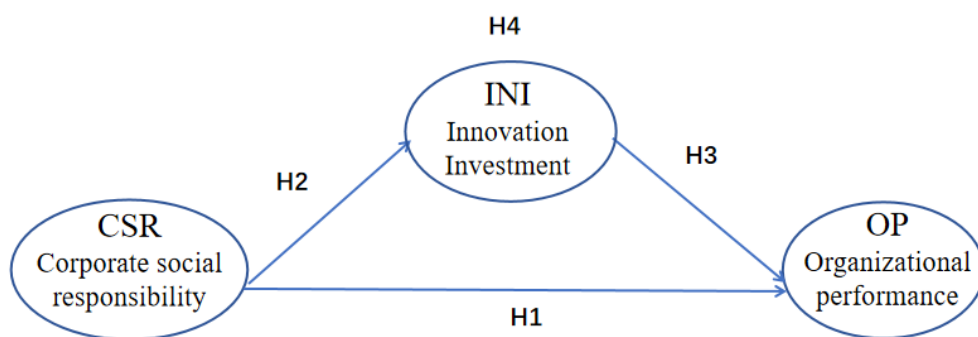


Figure 1 Conceptual Framework (Source: Constructed by the researcher)

Methodology

1. Measurement constructs

The main variables of this study include Corporate Social Responsibility (CSR), Innovation Investment (INI), and Organizational Performance (OP). The measurement of these variables is based on existing literature. All dimensions are measured using the Likert five-point scale, where 1 indicates "strongly disagree" and 5 indicates "strongly agree".

CSR is the independent variable in this study, aiming to measure the enterprises' investment and performance in social responsibility. According to Carroll (1991), the pyramid of CSR includes four dimensions: government responsibility, environmental responsibility, employee moral responsibility, and community charitable responsibility. INI is the mediating variable, representing the enterprises' investment in technological research and development and human resources. INI is measured through the following three dimensions: R & D financial investment, technological transformation investment, and human resource investment. OP is the dependent variable, which is a key indicator for measuring the overall performance of the enterprises. In this study, OP is measured through the following three dimensions: financial performance, employee performance, and market performance.

The measurement tools of this study mainly collect data through questionnaire surveys. The questionnaire design is based on the operational definitions of the aforementioned variables. The scales used in this study are established scales that have been used in previous research.

2. Data Analysis Method

This study uses structural equation model (SEM) for data analysis. The pre-test questionnaires are subjected to item analysis, exploratory factor analysis, and reliability analysis. After removing items from the pre-test questionnaires, the formal questionnaire is formed, and confirmatory factor analysis, descriptive statistical analysis, variance analysis, and correlation analysis are conducted on the valid responses to the formal questionnaire. Finally, test the mediation model to verify the mediating role of INI in the relationship between CSR and organizational performance. Additionally, the bias-corrected non-parametric percentile Bootstrap method with 5000 resampling iterations is used to construct a 95% bias-corrected confidence interval to further validate the research hypotheses.

Results

To ensure alignment between research objectives and findings, the results are presented based on the structural relationships specified in the research objectives and hypotheses.

1. Descriptive analysis of the questionnaire

Before conducting further estimation of the structural equation model (SEM), this study conducted descriptive statistical analysis on all measurement variables to comprehensively understand the basic characteristics of the sample data. Descriptive statistical analysis can provide a better understanding of the distribution of each measurement item, the central tendency and dispersion of the data.

The mean values of all variables range from 2.942 to 3.073, with extremely small fluctuations. The means are all close to 3 points, and the overall distribution shows a "moderately positive slightly positive" characteristic. This indicates that most respondents' scores for each measurement item are at a moderately high level. The standard deviation ranges for all dimensions are from 0.982 to 1.049, all falling within the reasonable dispersion range of 0.8 to 1.2. This indicates the data dispersion is moderate, with good discrimination, and is suitable for subsequent empirical tests. The kurtosis values for all dimensions are negative (ranging from -0.377 to -0.545), all falling within the category of mild platykurtic distribution (the Pearson kurtosis reference value is 0, and an absolute kurtosis value < 1 indicates a mild deviation). This indicates that the data distribution for each dimension is more gentle compared to the standard normal distribution, with fewer extreme values at the tails and a more uniform distribution.

2. The reliability test

To ensure that the measurement tools used in this study have sufficient reliability, this paper employed the Cronbach's Alpha for reliability testing. The Cronbach's Alpha is used to assess the internal consistency among the items in a scale, with a higher coefficient value indicating better internal consistency of the scale. According to Nunnally's (1978) standard, a Cronbach's Alpha greater than 0.7 is generally considered to have good reliability. The Cronbach's Alpha of government responsibility is 0.800, environmental responsibility is 0.816, Employee ethical responsibility is 0.792, community charity responsibility is 0.812; R & D financial investment is 0.775, Technological transformation investment is 0.741, Human resource investment is 0.775, financial performance is 0.881, Employee performance is 0.746, Market Performance is 0.782. The Cronbach's Alpha of all Items are greater than 0.7, all the latent variables in this study have passed the reliability test, indicating that the questionnaire data of this study has good internal consistency and can be further analyzed.

3. Validity testing and model analysis

In this study, the structural or dimensional validity tests conducted through the structural equation model (SEM) were used to evaluate the fit of the model. SEM is a useful statistical tool that can assist researchers in addressing various management and theoretical issues. The data were analyzed through SEM. Since the items are derived from established scales, this study adopts a three-step modeling process. The first step is confirmatory factor analysis (CFA). The second step is to construct a structural model to verify the hypotheses and the relationships among various factors. And the third step is to test the model.

Table 1 Standardized regression weights

Indicator		Constructs	Estimate	S.E.	C.R.	P	AVE	CR
Government responsibility	<---	CSR	0.684					
Environmental responsibility	<---	CSR	0.758	0.074	15.789	***		
Employee ethical responsibility	<---	CSR	0.701	0.07	14.816	***	0.511	0.807
community charity responsibility	<---	CSR	0.713	0.071	15.033	***		
R & D financial investment	<---	INI	0.65					
Technological transformation investment	<---	INI	0.604	0.082	11.541	***	0.412	0.677
Human resource investment	<---	INI	0.67	0.086	12.278	***		
Financial performance	<---	OP	0.875					
Employee performance	<---	OP	0.633	0.039	16.373	***	0.572	0.797

Market performance	<---	OP	0.74	0.038	20.133	***
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Note: *** $p < .001$

As shown in Table 1, the standardized factor loadings are all greater than 0.5, and the C.R. values are all greater than 1.96 ($p < 0.001$), indicating that each indicator has good representativeness for the latent variable to which it belongs. The CR values of the latent variables are all greater than 0.6. Among them, CSR (0.807), OP (0.797), and INI (0.677) is also within the acceptable range, indicating that the internal consistency of the latent variables is good. The AVE of CSR (0.511) and OP (0.572) are both greater than 0.5, while the AVE values of INI (0.412) is slightly below 0.5, but still above the acceptable level of 0.4. Overall, the reliability and convergent validity of the measurement model meet the requirements of the study.

Table 2 Discriminant Validity analysis

	CSR	INI	OP
CSR	0.715	–	–
INI	0.367	0.642	–
OP	0.710	0.767	0.756
AVE	0.511	0.412	0.572

Note: The diagonal numbers are the square root values of AVE.

As shown in Table 2, the square root of AVE for CSR (0.715) is greater than its correlation coefficients with INI (0.367), and OP (0.710). The square root of AVE for INI (0.642) is greater than its correlation coefficients with CSR (0.367), although it is slightly less than its correlation coefficient with OP (0.767). Considering that the AVE value of INI is slightly lower and OP is theoretically closely related to INI, this result is within the acceptable range. The square root of AVE for OP (0.756)

is greater than its correlation coefficients with CSR (0.710), and INI (0.767). The result shows that there is a good discriminant validity among the latent variables.

4. Structural equation modelling (SEM)

This study employed the structural equation model (SEM) to analyze the relationships among CSR, INI, and OP. To enhance the accuracy of model estimation, maximum likelihood estimation (MLE) and the bootstrap method were combined for data estimation. The relationships among different dimensions were analyzed to confirm or reject the research hypothesis. Figure 2 presents the structural equation model constructed, covering three core variables: Corporate Social Responsibility (CSR), Innovation Investment (INI), and Organizational Performance (OP).

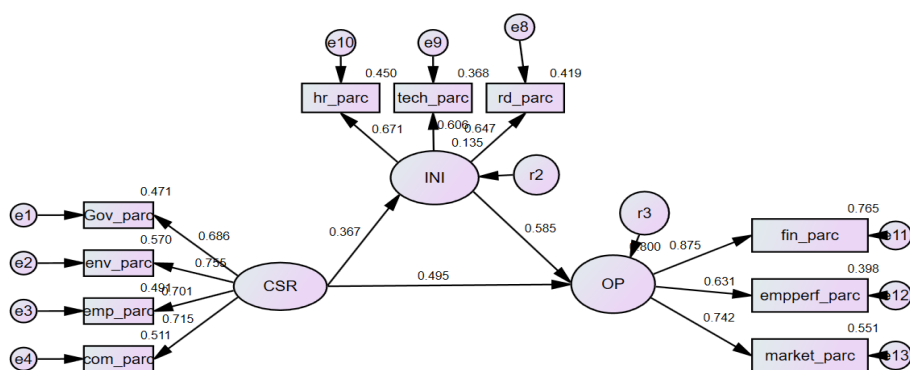


Figure 2 The path diagram of SEM (Source: Constructed by the researcher)

Table 3 SEM model fitting indicators

Indicator	χ^2	df	p	χ^2/df	GFI	RMSEA	RMR	CFI	NFI	TLI
Criteria	-	-	>0.05	<3	>0.95	<0.06	<0.08	≥0.95	>0.9	≥0.95
values	2	3	0.95	0.62	0.99	0.000	0.01	1.00	0.99	1.00
	3	2	1	5	4		0	0	1	8

As shown in Table 3, this model has met or exceeded the standards for good fit in all fitting indicators. The model fitting effect is extremely excellent and can well reflect the structural characteristics of the data. Further exploration can be conducted on the structural relationships among variables, as well as the research hypotheses.

Table 4 Results of analysis of direct effect, indirect effect, and total effect

Variable (Effect Path)	Estimate	S.E.	Bootstrap 95%CI	P
CSR → INI	0.367	0.050	[0.265, 0.462]	***
INI → OP	0.585	0.039	[0.509, 0.660]	***
CSR → INI → OP	0.215	0.032	[0.155, 0.282]	***
CSR → OP (Direct Effect)	0.495	0.039	[0.420, 0.568]	***
CSR → OP (Total Effect)	0.710	0.030	[0.648, 0.771]	***

Note: *** $p < 0.001$

Direct effect test: CSR→OP: the path coefficient is 0.495 ($p < 0.01$), and the 95% confidence interval [0.420, 0.568] does not include 0, indicating that CSR has a significant positive direct impact on OP. Hypothesis H1 is supported. CSR→INI: The path coefficient is 0.367 ($p < 0.01$), and the 95% confidence interval

[0.265, 0.462] does not include 0, indicating that CSR has a significant positive direct impact on INI. Hypothesis H2 is supported. INI→OP: the path coefficient is 0.585 ($p < 0.01$), and the 95% confidence interval [0.509, 0.660] does not include 0, indicating that INI has a significant positive direct impact on OP. Hypothesis H3 is supported.

Mediation effect test: The indirect effect of CSR through the INI mechanism on OP was 0.215 ($p < 0.01$), with a 95% confidence interval of [0.155, 0.282], which did not include 0. This indicates that the INI played a significant partial mediating role between CSR and OP, supporting Hypothesis H4.

The total effect of CSR on OP was 0.710 ($p < 0.01$), with a direct effect accounting for 69.7% and an indirect effect accounting for 30.3%. This shows that CSR can not only directly enhance OP but also indirectly promote performance growth by driving INI.

Table 5 Summary of Hypothesis Testing

Research Hypothesis	Results
H1: CSR has a positive impact on organizational performance (OP).	Supported
H2: CSR has a positive impact on innovation investment (INI).	Supported
H3: Innovation investment (INI) has a positive impact on organizational performance (OP).	Supported
H4: Innovation investment (INI) plays a mediating role between CSR and organizational performance (OP).	Supported

Discussion

This study is based on the actual situation of private manufacturing enterprises in Yunnan Province, China, focusing on three core variables: corporate social responsibility (CSR), innovation investment (INI), and organizational performance (OP). By questionnaire survey, a total of 620 valid samples were

collected, and the structural equation model was constructed. Through standardized path coefficient tests and Bootstrap mediation effect tests, the influence of CSR on OP, and the mediating roles of INI, were systematically verified. This study revealed the mechanism and transmission path of the impact of CSR on OP, and answered the core research questions raised. These findings are consistent with the research objectives, which focus on examining the structural relationships and mediating mechanisms among CSR, innovation investment, and organizational performance.

This study verified the transmission mechanism of "CSR - INI - OP" through structural equation modeling and Bootstrap testing: CSR has a significant positive direct impact on both INI and OP; INI has a significant positive direct impact on OP; INI plays a significant mediating role between CSR and OP, that is, CSR can directly affect OP, and can also indirectly promote OP improvement by enhancing INI. The above results provide new empirical evidence for understanding the relationship between CSR and performance in border regions, and also offer practical guidance for the sustainable development strategy of enterprises.

Conclusion

Based on the research objectives, this study confirms that CSR significantly influences organizational performance both directly and indirectly through innovation investment, and validates the structural relationships among CSR, innovation investment, and organizational performance.

One of the core findings of this study is that CSR has a complete direct effect + mediating effect mechanism on OP. On the other hand, INI is the key to resolving these challenges. It enables enterprises to directly establish a competitive advantage. Therefore, by mandating the implementation of INI, CSR

has a relatively high transmission efficiency in achieving performance improvement, which is also highly consistent with the empirical results.

Recommendations

First, strengthen the role of INI, and prioritize addressing the shortage of human resources. Based on the key findings of this study, enterprises should take INI as the core lever for performance improvement, and optimize the allocation structure of innovation resources. Prioritize increasing human resource investment, establish an innovation talent recruitment and cultivation platform, and through cooperation with universities, talent introduction subsidies, internal training, etc., fill the shortage of innovation talents in border areas, enhance employees' innovation capabilities, promote the efficient conversion of human resource investment to performance.

Second, strengthen green policy support and guide enterprises to focus on environmental responsibility and green innovation. In line with Yunnan's strategic orientation of green strong province and low-carbon transformation, local governments should refine environmental protection support policies, offer tax exemptions, financial subsidies, etc. to private manufacturing enterprises that actively fulfill environmental responsibilities and increase investment in green innovation, thereby reducing the costs of green production and environmental protection for these enterprises.

Thirdly, we can break through resource constraints and make up for the shortcomings in terms of talents and innovation. increase support for the innovation investment of private manufacturing enterprises, set up innovation funds, focus on supporting enterprises' human resource investment and green technology research and development, promote innovation cooperation among enterprises, and enhance the overall innovation level of the regional manufacturing industry.

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