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SOME SOLUTIONS TO ENHANCE THE INNOVATIVENESS INDEX OF THAI NGUYEN PROVINCE, VIETNAM

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ABSTRACT

Thai Nguyen, a province in the northern midlands and mountainous region of Vietnam, possesses significant economic, cultural, and social potential. Famous for its lush green tea hills, Thai Nguyen is striving to become a modern and civilized industrial province, based on a foundation of science, technology, and innovation. The Provincial Innovativeness Index (PII) is a measure that evaluates the effectiveness of innovation activities in localities. Enhancing the PII is the key for Thai Nguyen to fully exploit its potential, promote economic growth, improve the quality of life for its residents, and assert its position on the national map. This paper proposes several solutions to enhance the PII of Thai Nguyen Province, contributing to the province's breakthrough in innovation and making it a shining example in the region and the country.

Keywords:

Solution, enhance, Provincial Innovativeness Index (PII), Thai Nguyen Province, Vietnam.

1. OVERVIEW OF THE PROVINCIAL INNOVATIVENESS INDEX (PII)

The Provincial Innovativeness Index (PII) is a system of indicators designed to evaluate the innovation capacity of localities nationwide. This system is built based on the structure of the Global Innovation Index (GII), which is published annually by the World Intellectual Property Organization (WIPO). PII plays a crucial role in assessing the current state of innovation in each locality. It helps leaders at various levels and sectors understand the innovation landscape, providing a foundation for developing appropriate strategies and policies. Additionally, PII helps identify the strengths, weaknesses, potentials, and challenges related to innovation in each locality. This enables localities to concentrate resources on developing strengths, addressing weaknesses, effectively exploiting potential, and finding suitable solutions to face challenges. PII also plays an important role in comparing the innovation capacities between localities. This comparison allows localities to learn from each other's experiences, promoting healthy competition in attracting investment and developing the socio-economic environment. A high PII is a significant factor in attracting potential investors to the locality, thereby fostering economic and social development.

PII consists of 52 component indicators, divided into 7 main pillars:

- **Institutions:** Evaluates the legal environment, policies, and regulations related to innovation.
- **Human Capital and Research & Development:** Assesses the educational level and skills of the workforce, the number of scientific staff and researchers, and research & development activities.
- **Infrastructure:** Evaluates the quality of transportation, telecommunications, energy infrastructure...
- **Market Sophistication:** Assesses the size, competitiveness, and efficiency of the market.

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- Business Sophistication: Evaluates the innovation capacity and the ability of businesses to apply science and technology.
- Knowledge, Technology Outputs: Assesses the number of patents, innovations, and high-tech products created.
- Impact: Evaluates the impact of innovation on economic growth, labor productivity, and the quality of life of residents.

The process of building the PII involves collecting data from various sources. Firstly, statistical data is gathered from authorized state agencies. Additionally, surveys are conducted with businesses, research organizations, and individuals involved in innovation. Besides, data is also collected from international organizations and reputable websites. The collected data is processed and analyzed using scientific methods to calculate scores for each component indicator and aggregate scores for the PII of each locality.

2. A COMPREHENSIVE VIEW OF THE PROVINCIAL INNOVATIVENESS INDEX (PII) IN VIETNAM FOR 2023

In 2023, Vietnam reached a significant milestone as the Ministry of Science and Technology publicly released the Provincial Innovativeness Index (PII) for all 63 provinces and cities nationwide for the first time. The PII serves as a crucial assessment tool, reflecting the level of innovation across Vietnam's localities based on science, technology, and innovation. Throughout 2023, the PII provided a comprehensive and detailed overview of the socio-economic development status of each province and city.

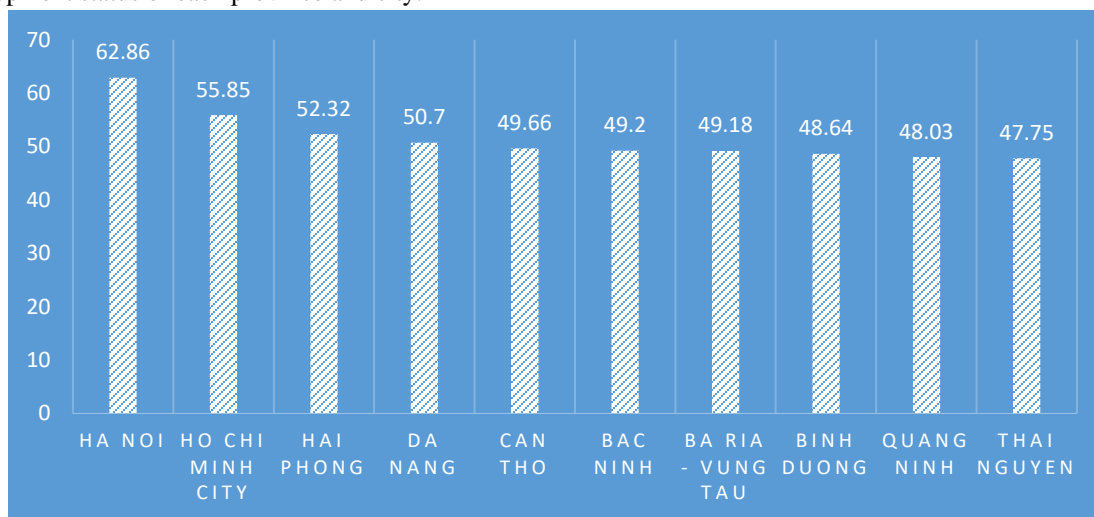


Figure 1. Top 10 localities in Vietnam with the highest PII index in 2023

(Source: Ministry of Science and Technology, 2023)

Leading the pack, Hanoi scored 62.86 points, followed by Ho Chi Minh City with 55.85 points, and Hai Phong with 52.32 points, showcasing relentless efforts in driving innovation in the country's major economic centers. This not only contributes to their local development but also fosters healthy competition among provinces and cities nationwide.

Vietnam officially implemented the PII in 2023 with the aim of enhancing national-level innovation capabilities and outcomes. This reflects Vietnam's commitment to transforming its growth model, improving growth quality, labor

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productivity, and economic competitiveness, as outlined in Resolution No. 05-NQ/TW of the Party Central Committee, 12th term.

Different localities have applied specific strategies to improve their PII scores, ranging from investments in science and technology to supporting innovative ideas and inventions. This diversity in approaches underscores the adaptability of innovation strategies tailored to local conditions and characteristics. However, there are challenges that need addressing, such as the lack of localized statistical data and discrepancies between international evaluation methods and practical applications in Vietnam. Overcoming these barriers is essential to achieving a more accurate and comprehensive picture of innovation at the local level.

The results of the 2023 PII represent a significant step towards shaping a knowledge-based and innovation-driven economy. This not only helps Vietnam enhance its position on the global innovation map but also creates a favorable business environment, attracting investment and promoting sustainable development. For localities, the PII serves not only as an assessment tool but also as a decision-support mechanism, aiding in identifying strengths, weaknesses, and formulating appropriate development strategies.

With concerted efforts from the government and local authorities, Vietnam can look forward to a future of innovation and creativity, where each province and city contributes not only to economic growth but also to the overall prosperity of the nation. The PII will continue to be an indispensable part of assessing and guiding the innovation process in Vietnam.

3. THE PROVINCIAL INNOVATIVENESS INDEX (PII) IN 2023 OF THAI NGUYEN PROVINCE

In 2023, Thai Nguyen made a significant mark on the Provincial Innovativeness Index (PII) map by ranking among the top 10 provinces and cities nationwide with a score of 47.75, leading the Northern Midlands and Mountainous region. This achievement underscores the efforts of the local government, businesses, and residents of Thai Nguyen in advancing innovation and creativity (I&C) in recent years. Its top regional position demonstrates Thai Nguyen's emergence as a pivotal I&C hub in the area, contributing significantly to the socioeconomic development of the region as a whole.

Table 1: The Provincial Innovativeness Index (PII) results for Thai Nguyen Province, Vietnam in 2023

Index	Category	Highest	Lowest	Value/Score
1	Institutional Framework	51.90	77.16	27.85
2	Human Capital and Research & Development	41.84	63.06	13.72
3	Infrastructure	58.76	82.47	12.59
4	Market Development	46.82	77.81	14.30
5	Business Development	46.64	56.85	8.40
6	Knowledge, Innovation, and Technology	27.65	63.13	3.19
7	Impact	64.97	66.21	20.54

(Source: Ministry of Science and Technology, 2023)

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Thai Nguyen has demonstrated excellence across multiple indices, especially in the average annual production capital of businesses, the level of enterprise development with foreign direct investment, and export value. This not only reflects the province's efforts in attracting investment and developing industries but also highlights significant potential in innovation and creativity, particularly in the high-tech manufacturing sector. The robust development of Thai Nguyen in innovation also contributes to improving the quality of life for its residents by creating numerous employment opportunities and higher incomes. This is further reinforced by investments in labor training, research, and development, particularly within key industries and enterprises of the province. Looking towards the future, Thai Nguyen has every opportunity to continue advancing and enhancing its position on the national and international innovation map. With government support and proactive application of appropriate policies, Thai Nguyen serves not only as an inspiration for other provinces in the region but also as proof of sustainable development based on innovation. Thai Nguyen is on its way to becoming a pioneering center of innovation, a beacon of Vietnam's economic landscape both regionally and globally. This achievement is not only a source of pride for its people but also a strong encouragement for other regions to strive for continuous innovation and development.

However, alongside its strengths, Thai Nguyen also faces several weaknesses that need to be addressed. One of the challenges is maintaining and improving its position in the PII rankings, which requires continuous innovation and updating of development strategies. A deeper analysis of the component indicators of the PII will help clarify potential factors and necessary conditions to foster sustainable development based on innovation. A workshop organized by the Department of Science and Technology of Thai Nguyen marked a significant step towards evaluating and proposing solutions to improve the PII. Experts from the Ministry of Science and Technology analyzed calculation methods, strengths, and weaknesses of component indicators. They discussed and evaluated related issues concerning data collection, provision, and solutions aimed at enhancing the PII in 2024 and beyond.

4. SOME SOLUTIONS TO IMPROVE THE PROVINCIAL INNOVATIVENESS INDEX (PII) OF THAI NGUYEN PROVINCE

Thai Nguyen has been witnessing steady progress in improving its Innovation Index (PII). The PII is a crucial assessment tool that reflects the capability and potential of a locality in socio-economic development based on science, technology, and innovation. For Thai Nguyen, enhancing the PII is not just a strategic goal but also a driving force for comprehensive development.

One of the significant solutions to improve the PII is through flexible and effective credit policies. The State Bank of Vietnam's branch in Thai Nguyen has implemented credit policies to support and promote economic growth, particularly in the private sector and priority areas. The safe and effective credit growth has contributed to enhancing two important component indices within the PII. To achieve the target of approximately 12% credit growth per year, the State Bank's branch in Thai Nguyen has proposed solutions such as improving credit access, supporting enterprises and individuals, and focusing on loan interest rates, conditions, and credit procedures. Favorable credit programs and policies have also been implemented, including interest rate support programs and restructuring repayment terms to assist customers facing difficulties.

Additionally, analyzing existing limitations and challenges is crucial in proposing solutions to enhance the PII. Conferences and workshops have been organized to analyze PII results, thereby identifying the root causes of issues and recommending improvements in public administration and governance efficiency.

Furthermore, improving the business investment environment through enhancing the Provincial Competitiveness Index (PCI) is also indispensable in raising the PII. Departments, committees, sectors, and People's Committees of

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districts and cities need to coordinate closely to implement specific solutions that bring clear and practical benefits to local enterprises.

Thai Nguyen should develop public-private partnership models to mobilize resources for infrastructure projects. This approach helps alleviate financial pressures on the state budget and enhances project efficiency. Encouraging the participation of private enterprises in research and development projects is crucial for promoting innovation and local economic development. To foster entrepreneurship and innovation, Thai Nguyen needs to enhance support for startups through training programs, providing suitable infrastructure, and creating a favorable business environment. Particularly, supporting access to venture capital and risk management is vital to fostering the growth of emerging enterprises.

Moreover, Thai Nguyen needs to invest in training and enhancing the capacity of its workforce, especially in high-tech and business management fields. Close collaboration with universities and research institutes to develop training programs that meet the practical needs of the labor market will play a crucial role in improving the quality of human resources for local enterprises. Enhancing investment in transportation, telecommunications, and energy infrastructure to create favorable conditions for business operations and attract investment is essential. Additionally, strengthening the application of information technology in public administration and service delivery needs to be intensified to improve the efficiency of local government and public satisfaction.

Thai Nguyen should strengthen cooperation with provinces, cities, both domestically and internationally, to create production value chains and expand consumer markets. Participating in international forums and organizing business exchange events effectively attracts investment and expands opportunities for international business cooperation. To create favorable conditions for business development, Thai Nguyen needs to review and refine policies related to taxes, land, labor, and credit. Organizing trade promotion programs and supporting enterprises to participate in international exhibitions will enhance brand value and expand consumer markets.

Lastly, improving the local-level Innovation Index (PII) needs to be considered in the context of globalization and the Fourth Industrial Revolution. The Department of Science and Technology of Thai Nguyen has organized workshops to evaluate results and propose solutions to maintain and improve Thai Nguyen's position in the PII ranking board. Thai Nguyen has demonstrated that with determination and appropriate solutions, enhancing the PII is not only feasible but also brings long-term benefits to the socio-economic development of the province. This is the direction that Thai Nguyen is pursuing to build a sustainable future based on innovation, science, and technology.

5. CONCLUSION

The PII index in 2023 has painted a promising picture of Thai Nguyen's capacity for innovation and creativity, leading the region with significant developmental potential. However, alongside these achievements, there are still many limitations that need to be addressed for Thai Nguyen to achieve even greater breakthroughs in the future. With high political determination and collective efforts from government levels, businesses, and the community, Thai Nguyen can transform these solutions into reality. This effort will enhance its innovation capacity, attract investment, and provide momentum for sustainable socio-economic development, making the province increasingly prosperous and cultured, deserving of its leadership position in innovation. Improving the PII is not solely the responsibility of the Science and Technology sector but a shared responsibility of society as a whole. Every individual and group should contribute to making Thai Nguyen an attractive destination for innovation, thereby contributing to the construction of a richer, more civilized homeland.

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REFERENCES

1. Le Quang Tien (2022), Thai Nguyen Province accelerates digital transformation to promote socio-economic development, State Organization Journal.
2. Ministry of Science and Technology (2024), Provincial Innovativeness Index Report 2023.
3. Nguyen Thanh Hai (2021), Thai Nguyen Province strives to become one of the modern industrial and economic centers in the North Central and Northern Mountainous region by 2030, Communist Magazine.
4. Thai Nguyen Provincial Statistics Office (2023), Report on the socio-economic situation of Thai Nguyen province in 2023."
5. Thái Nguyen Provincial E-Government Portal, <https://en.thainguyen.gov.vn/>.