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Development of the Lao Cai Border Economic Zone

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- **Learning Resource Center – Thai Nguyen University**
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**List of the Author's Published Research Works Related to the
Dissertation**

- Li Si Jie (2025).Determinants of Cross-border Economic Zone Development: Empirical Evidence from Lao Cai, Vietnam. *Journal of Global Economics, Management and Business Research*, 17(3), 309-320. ISSN: 2454-2504.

- Li Si Jie(2025).Development of the Lao Cai Border Gate Economic Zone. *International Journal of All Research Writings*, 7(4), 16-22. ISSN: 2582-1008.

INTRODUCTION

1. Research Background and Significance

Amid globalization and international economic integration, the development of border gate economic zones (KKTCK) plays a strategic role in promoting growth in border regions and enhancing international cooperation. Lao Cai Border Gate Economic Zone, located along the Kunming – Lao Cai – Hanoi – Hai Phong economic corridor, serves as a crucial gateway connecting Vietnam with China and the Greater Mekong Subregion, while also acting as a growth pole for trade and logistics.

During the period 2020–2024, the zone has achieved notable progress in import–export activities and investment attraction, reaffirming its role in the development of border trade. However, it still faces several constraints related to institutional frameworks, logistics infrastructure, human resources, governance models, and regional linkages. At the same time, fluctuations in the global economy, together with the requirements of digital transformation and green development, pose new challenges.

From a research perspective, there remains a lack of in-depth analyses from a comprehensive economic management and cross-border cooperation standpoint. Therefore, a systematic study of the Lao Cai Border Gate Economic Zone, in relation to Hekou, is necessary to improve policy frameworks and enhance the effectiveness of its development.

2. Research Objectives

2.1. General Objective

The dissertation conducts a comprehensive analysis of the development status of the Lao Cai Border Gate Economic Zone during the period 2020–2024 from the perspective of economic management. Based on this analysis, it proposes orientations and solutions to promote the development of the Lao Cai Border Gate Economic Zone into a growth pole and a key hub for international economic connectivity, logistics, and cross-border trade between Vietnam, China, and the ASEAN region.

2.2. Specific Objectives

The specific objectives of the dissertation focus on the Lao Cai Border Gate Economic Zone as the central unit of analysis:

First, to systematize the theoretical and practical foundations of border gate economic zone development from an economic management perspective, clarifying the roles of institutions, infrastructure, human resources, regional linkages, and governance models in growth and sustainable development.

Second, to assess the development status in the period 2020–2024 in terms of growth, economic structure, infrastructure, investment attraction, and national defense and security, thereby identifying limitations and their underlying causes.

Third, to analyze and quantitatively test the impact of economic management factors on growth, competitiveness, and participation in value chains in the context of international integration and digital transformation.

Fourth, to propose a system of feasible solutions to effectively leverage border advantages and promote sustainable development toward 2030, with a vision to 2045.

3. Research Object and Scope

3.1. Research Object

The research object of the dissertation includes the theoretical framework for the development of the Lao Cai Border Gate Economic Zone from an economic management perspective, as well as its development status during the period 2020–2024.

3.2. Research Scope

3.2.1. Spatial Scope

The dissertation is conducted within the Lao Cai Border Gate Economic Zone, located in Lao Cai Province, Vietnam.

3.2.2. Temporal Scope

Secondary data are collected for the period 2020–2024, primary survey data are collected in 2024. The proposed solutions are oriented toward implementation up to 2030, with a vision to 2045.

3.2.3. Content Scope

The dissertation evaluates the development status of the Lao Cai Border Gate Economic Zone during 2020–2024 across key dimensions, including: development planning, organization and management, and monitoring and evaluation of management activities. In addition, appropriate quantitative analytical models are employed to assess the extent to which various factors have influenced the development of the Lao Cai Border Gate Economic Zone in recent years.

4. New Contributions of the Dissertation

4.1. Theoretical Contributions

The dissertation clarifies key concepts, theoretical foundations, and development models of border gate economic zones in the context of regional and global integration, particularly under recent dynamic changes. It contributes to enriching and refining several theoretical aspects of the management and development of border gate economic zones in Vietnam in general and in localities with specific characteristics in particular. The findings provide a foundation for improving mechanisms and policies for the development of border gate economic zones nationwide, especially in northern border regions; they also support balanced regional development, strengthen regional linkages, and reinforce the role of border trade in the national economy.

4.2. Practical Contributions

The dissertation provides a comprehensive analysis of the development status of the Lao Cai Border Gate Economic Zone during 2020–2024—a period marked by significant global disruptions (pandemics, conflicts). The assessment of influencing factors reflects greater volatility compared to previous studies.

The evaluation covers multiple dimensions, including transport and logistics infrastructure, investment attraction, border trade, incentive policies, human resources, and regional connectivity.

The proposed solutions are practical and aimed at maximizing the advantages of the international border gate, enhancing competitiveness, and attracting development resources.

The dissertation structures its solutions into three components: implementation basis, implementation measures, and expected outcomes, thereby facilitating practical application at the local level.

Notably, the dissertation introduces two new solutions not addressed in previous studies and tailored to the specific context of Lao Cai Province and emerging conditions: (i) the development of a dedicated electronic portal for cross-border economic cooperation integrated into the official website of the Lao Cai Border Gate Economic Zone Authority; and (ii) the development of an integrated electronic one-stop mechanism.

5. Structure of the Dissertation

In addition to the Introduction and Conclusion, the dissertation is organized into five chapters with the following main contents:

Chapter 1: Literature Review

Chapter 2: Theoretical and Practical Foundations of Border Economic Zone Development

Chapter 3: Research Methodology

Chapter 4: Current Development Status of the Lao Cai Border Economic Zone

Chapter 5: Solutions to Promote the Development of the Lao Cai Border Economic Zone

Chapter 1

Literature Review

1.1. Major Findings from Existing Studies

1. Main Research Outcomes in Existing Works

1.1.1. Studies on Legal Frameworks and Policies for Border Gate Economic Zone Development

Research confirms the state's role in promoting border gate economies through policies and management reforms. Border Gate Economic Zones (BGEZs) are viewed as catalysts for trade, services, and tourism development, attracting investment and infrastructure; concurrently, they require a transparent legal framework and effective coordination mechanisms for sustainable operation (Luong Dang Ninh, 2004; Dong Jiaxiang, 2013; Sun Xia, 2014).

1.1.2. Studies on Cross-Border Economic Cooperation

Studies emphasize the role of Economic Zones/Cross-Border Cooperation Zones as "gateways" for integration, promoting trade, investment, and cultural exchange; highlighting the crucial importance of infrastructure, investment climate, and institutional cooperation/linkage mechanisms (Quan Hongtao et al., 2012; Fan Hongwei, 2011; Luke & Hu Liequ, 2014; Zhang Ruikun, 2019; Zuo Ming & Zhang Renwen, 2014).

1.1.3. Studies Related to Infrastructure Development in Border Gate Economic Zones

Focus on spatial planning, border urbanization, logistics development, and environmental integration in land-use planning. A common limitation is that many studies tend to be technical/qualitative and tied to specific localities, making broad generalization difficult (Dang Xuan Phong, 2012; Nguyen Van Tri, 2014).

1.1.4. Studies on Economic Efficiency in Border Gate Economic Zones

Clarify the role of border gates/BGEZs in commodity economic development and integration; propose solutions related to infrastructure, incentives, management, and institutional cooperation. Common weaknesses include outdated data, limited impact quantification, insufficient in-depth analysis of specific BGEZ characteristics, and a lack of focus on modern governance requirements (Pham Van Linh, 1999, 2011; Yang Qiang & Zhang Yan, 2009; Lalkaka, 2011; Wallack, 2010; Nguyen Minh Hieu, 2011; Giang Thi Dung, 2014).

1.1.5. Studies on Cross-Border Trade

Works describe the process, current status, advantages, and limitations of border trade; emphasize the need for strategic planning, border gate infrastructure, and state management. Limitations include many early studies, predominantly qualitative, lacking updates on digital transformation, e-commerce, and supply chain volatility (Nguyen Minh Hang, 2001; Pham Thi Cai, 2003; Ha Van Hoi, 2018; Nguyen Van Hoi, 2018).

1.1.6. Factors Influencing BGEZ Development

Prominent factors include: (i) institutions, policies, and procedures; (ii) transportation, logistics, and ICT infrastructure, and environmentally integrated planning; (iii) trade and investment attraction; (iv) human resource quality and support services; (v) international cooperation/bilateral relations and the degree of integration.

1.1.7. On BGEZ Organizational and Management Models

Research emphasizes that the management model is the "institutional backbone," aiming for connectivity, single-window operations, transparency, and flexibility, referencing models such as single-point management, central-local decentralization, and PPP. Vietnamese practice shows that BGEZs are developing but still face limitations in infrastructure, incentives, and governance mechanisms; Lao Cai is a bright spot but still lacks logistics, human resources, data connectivity, and is susceptible to policy changes from the partner side, requiring a development orientation towards an integrated trade-industry-logistics-service model and digital transformation.

1.2. General Assessment

1.2.1. Research Gaps

The literature review indicates that, despite significant contributions to BGEZ development, considerable research gaps persist. Studies primarily focus on economic and political aspects, failing to clarify the role of cultural and social factors for sustainable development, especially in the Lao Cai – Hekou context. Additionally, the impacts of the environment, climate change, transportation infrastructure, and regional connectivity have not been fully analyzed. Policy effectiveness, cross-border cooperation, along

with issues related to human resources, SMEs, and e-commerce remain inadequately addressed.

1.2.2. Issues Requiring Further Research

The thesis focuses on addressing four main research problems: (1) Analyzing the impact of global shocks (pandemics, conflicts, supply chain disruptions) on the development drivers and structure of the Lao Cai BGEZ during the 2020-2024 period. (2) Developing and applying a comprehensive, multi-dimensional assessment framework covering logistics infrastructure, investment, trade, policies, human resources, and regional connectivity to fully identify development bottlenecks. (3) Proposing a highly feasible system of solutions, clearly structured into three components: basis for implementation, implementation measures, and expected outcomes for easy local application. (4) Supplementing specific digital solutions, including establishing a dedicated electronic portal for cross-border economic cooperation and developing an interconnected single-window electronic mechanism, to modernize governance and enhance competitiveness.

CHAPTER 2

THEORETICAL AND PRACTICAL FOUNDATIONS OF THE DEVELOPMENT OF BORDER-GATE ECONOMIC ZONES

2.1. Theoretical Foundations for the Development of Border Gate Economic Zones

2.1.1. Conceptualization of Border Gate Economic Zone Development

2.1.1.1. Concepts and Characteristics of Border Gates and Border Gate Areas

A border gate is primarily understood as a land border gate—namely, an official point of entry and exchange located at the territorial interface between two countries along a land border. A border gate area refers to a territorial zone that coincides with or is adjacent to the national boundary,

organized into functional sub-zones to serve state management, trade, services, and security–defense control activities.

2.1.1.2. Concept of Border Gate Economic Zone Development

The development of a border gate economic zone is a process of enhancing the quality and efficiency of economic activities in border areas through the expansion of economic space, increased import–export turnover, modernization of infrastructure, attraction of investment, and institutional improvement. This is a state-oriented process involving economic actors aimed at leveraging geographical advantages, promoting international trade, strengthening regional linkages, and thereby contributing to economic growth, structural transformation, improved social welfare, and the assurance of national defense and security.

2.1.2. Classification and Roles of Border Gate Economic Zone Development

2.1.2.1. Classification of Border Gate Economic Zones

By location and nature of border gates.

By primary economic functions.

By scale and territorial scope.

By models of cross-border economic linkage.

2.1.2.2. Roles of Border Gates in Socio-Economic Development

Serving as hubs for cross-border exchange of goods, services, and investment.

Acting as drivers of border regional development through investment attraction mechanisms, infrastructure development, and job creation for local populations.

Functioning as critical control points for national security, anti-smuggling, and trade fraud prevention.

Serving as bridges for cultural exchange, tourism, and international cooperation.

2.1.2.3. Roles of Border Gate Economic Zone Development

Promoting border trade development and regional connectivity.

Strengthening international economic cooperation and fostering friendly relations.

Facilitating economic restructuring, urbanization, and infrastructure development.

Ensuring national defense, security, and social stability in border areas.

Formalizing informal cross-border trade and reducing the informal economy.

Enhancing the quality of border human resources and trade governance capacity.

2.1.3. Research Content on Border Gate Economic Zone Development

2.1.3.1. Formulation of Development Plans

Development planning constitutes the initial stage, shaping the vision, model, and development trajectory of border gate economic zones. Plans should be based on comprehensive assessments of natural conditions, socio economic factors, infrastructure, logistics, regional connectivity, and trends in border trade. Key components include selecting an appropriate development model; defining multi-dimensional objectives and indicators (economic, social, environmental); forecasting resource needs; conducting risk analysis; ensuring alignment with related plans and strategies; and establishing inter-agency coordination mechanisms and business consultation processes.

2.1.3.2. Implementation and Management of Border Gate Economic Zones

Implementation and management determine operational efficiency, investment attraction capacity, and competitiveness. Studies emphasize the central role of the Management Authority, with an appropriate degree of autonomy, effective inter-agency coordination, consistent implementation of incentive policies, and efficient management of infrastructure, logistics, and non-tariff zones. At the same time, it is essential to promote digital technology adoption and the “single-window, single-stop” model, while

integrating economic management with the maintenance of security, order, and the prevention of trade fraud.

2.1.3.3. Monitoring and Evaluation of Management Activities

Monitoring and evaluation serve as critical feedback mechanisms to enhance governance effectiveness. Evaluation criteria include development outcomes (trade, investment, infrastructure, fiscal contributions), the effectiveness of public administration (administrative procedures, inter-agency coordination, business satisfaction), and socio-economic and environmental impacts. The literature recommends adopting multi-dimensional indicator systems, strengthening transparency and accountability, and applying digital technologies in monitoring and evaluation to support timely policy adjustments and sustainable development.

2.1.4. Factors Influencing the Development of Border Gate Economic Zones

Infrastructure.

Management policies and incentives.

International relations and regional cooperation.

Competitiveness and innovation capacity.

Global economic environment.

Human resources.

Social and living environment.

2.2. Practical Foundations for the Development of Border Gate Economic Zones

2.2.1. International Experiences in Border Gate Economic Zone Development

2.2.2. Development Experiences of Selected Border Gate Economic Zones in Vietnam

2.2.3. Lessons for the Development of the Lao Cai Border Gate Economic Zone

Drawing on both domestic and regional experiences, the development

of the Lao Cai Border Gate Economic Zone requires a clear identification of its strategic role within national planning frameworks and economic corridors. It is essential to establish flexible cross-border governance mechanisms to enhance customs clearance efficiency and logistics performance.

Synchronized investment in connectivity infrastructure and logistics services is a key prerequisite, alongside the mobilization of diverse resources, particularly through public–private partnerships and international cooperation. In addition, greater decentralization to local authorities and the Management Authority is necessary to enhance operational autonomy.

The development strategy should also ensure a balance between attracting foreign investment and strengthening domestic capacity, while diversifying border trade activities. Furthermore, it is important to reinforce leadership, implement tailored policy mechanisms, strengthen regional linkages, integrate development with national defense and security considerations, and prioritize human resource development and digital transformation to ensure long-term sustainability.

Chapter 3

Research Methodology

3. Research Questions

What are the main components of the theoretical framework for developing an International Border Gate Economic Zone?

What is the current status of the development of the Lao Cai Border Gate Economic Zone during the 2020–2024 period?

What factors influence the development of the Lao Cai Border Gate Economic Zone, and to what extent do they affect it?

What solutions are needed to promote the development of the Lao Cai Border Gate Economic Zone in the context of regional and global integration?

3.2. Research Approaches

3.2.1. Systems Approach

3.2.2. Participatory Approach

3.2.3. Deductive Approach

3.2.4. Inductive Approach

3.2.5. SWOT Analysis Approach

3.3. Specific Research Methods

3.3.1. Data Collection Methods

Secondary Literature Review Method: This is a crucial research tool that leverages accumulated and published knowledge to provide a comprehensive and multi-dimensional perspective on the development of the Lao Cai Border Gate Economic Zone, while also contributing to building a solid theoretical foundation for the study.

Primary Data Collection: For management officials at the Lao Cai Province Economic Zone Management Board, a purposive non-random sampling method was used, yielding 85 valid questionnaires.

For enterprises: a census survey was conducted of all 191 active enterprises/projects, resulting in 180 valid questionnaires.

3.3.2. Data Processing Method

Collected data and documents are screened and systematized to calculate indicators suitable for the research topic. Subsequently, the data is synthesized, statistically analyzed, compared, and evaluated to serve as a basis for assessing the current situation, highlighting achieved results, existing problems, and limitations, which form the foundation for proposing solutions to promote the development of the Lao Cai Border Gate Economic Zone.

3.3.3. Data Analysis Methods

3.3.3.1. Descriptive Statistics Method

3.3.3.2. Comparative Analysis Method

3.3.3.3. Exploratory Factor Analysis (EFA) Method

The thesis identifies factors influencing the development of the Lao Cai Border Gate Economic Zone, including Infrastructure, Management and

Incentive Policies, International Relations and Regional Cooperation, Competitiveness and Innovation, Global Economic Environment, Human Resources, Living and Social Environment.

3.3.3.4. Multiple Linear Regression Analysis

3.4. Research Process

Step 1: Identify the Research Problem

Step 2: Define Research Objectives

Step 3: Conduct Qualitative Research

Step 4: Investigate the Current Status of Lao Cai Border Gate Economic Zone Development

Step 5: Perform Exploratory Factor Analysis (EFA)

Step 6: Analyze Influencing Factors

Step 7: Propose Solutions to the Research Problem

3.5. Research Indicator System

3.5.1. Development of Border Gate Economic Zone Infrastructure

3.5.2. Planning and Management of the Border Gate Economic Zone

3.5.3. Import-Export Activities of the Border Gate Economic Zone

3.5.4. Indicators for Assessing Factors Influencing Border Gate Economic Zone Development

Chapter 4

Current Status of Development of the Lao Cai Border Economic Zone

4.1. Overview of the Study Area

4.1.1. Natural Conditions of Lao Cai Province

4.1.2. Socio-Economic Conditions of Lao Cai Province

4.1.3. Introduction to the Lao Cai Border Economic Zone

4.1.4. General Assessment

4.1.4.1. Advantages

Lao Cai Province possesses a highly favorable geo-economic location, situated along the Vietnam–China land border and serving as a key gateway on the Kunming–Lao Cai–Hanoi–Hai Phong Economic Corridor. This

strategic position enables the province to function as an important transshipment hub for goods between the two countries, while also facilitating connectivity between the ASEAN market and Southwest China. Transport infrastructure has been progressively upgraded, notably with the completion of the Noi Bai–Lao Cai Expressway, along with significant investments in modern warehouses, border gates, and logistics centers. Furthermore, the increasing demand for Vietnam–China trade, particularly in agricultural products and export commodities, has created favorable conditions for the Lao Cai Border Economic Zone to strengthen its role as a major national hub for border trade and logistics.

4.1.4.2.Challenges

Despite these advantages, Lao Cai Province continues to face substantial challenges. Its complex mountainous terrain presents significant obstacles to the development of transport and logistics infrastructure. Harsh climatic conditions, including frequent flash floods, landslides, and severe cold spells during winter, often disrupt import–export activities. Border trade remains relatively unstable due to heavy dependence on the Chinese market, making it vulnerable to policy changes from China. Seasonal congestion of goods persists, while the quality of human resources remains limited—particularly in logistics expertise and foreign language proficiency—falling short of the requirements for modern international trade and cross-border logistics development.

4.2. Current Development Status of the Lao Cai Border Economic Zone

4.2.1. Formulation of the Development Plan for the Lao Cai Border Economic Zone

The Lao Cai Border Economic Zone (LCBEZ) was established pursuant to Decision No. 100/1998/QĐ-TTg of the Prime Minister, with the objective of developing Lao Cai into a major hub for Vietnam–China trade and a key gateway connecting Vietnam with ASEAN markets. Since commencing operations in 2001, the zone has been continuously improved through a series of important legal and policy documents, including Decree

No. 29/2008/NĐ-CP on management and incentive policies for border economic zones; Decision No. 317/QĐ-TTg (2014), establishing the Lao Cai Economic Zone Management Board under a single-window governance mechanism; Decision No. 1627/QĐ-TTg (2018), approving the master plan through 2040 with a vision to 2050; and Decision No. 1199/QĐ-TTg (2023) concerning the planning of Vietnam–China border gates. In addition, provincial authorities have issued several plans and thematic programs, such as Plans No. 02-ĐA/TU and 05-ĐA/TU (2020), and Plan No. 39/KH-UBND (2023), aimed at promoting industrial and logistics development.

This policy framework has contributed significantly to upgrading transport and logistics infrastructure, attracting investment in processing industries, services, and warehousing, and strengthening Lao Cai’s role in regional economic linkages. However, survey results indicate that adjustments to development plans have been relatively slow due to complex legal and administrative procedures, particularly during periods of heightened uncertainty such as the COVID-19 pandemic. Overall, development planning has been positively evaluated in terms of procedural rigor and practical alignment; nevertheless, further administrative reform and enhanced policy responsiveness are required.

4.2.2. Organization of Implementation and Management of the Border Economic Zone

4.2.2.1. Organizational Structure of Management

The Lao Cai Economic Zone Management Board was established under Decision No. 317/QĐ-TTg (2014) through the merger of the Industrial Park Management Board and border gate authorities. Operating under the Provincial People’s Committee, the Board implements a “single-window” mechanism for managing investment, trade, services, and enterprise support within the zone. This institutional arrangement has improved administrative coherence, strengthened inter-agency coordination, and facilitated spatial development across three functional subzones associated with the international border gates of Lao Cai, Ban Vuoc, and

Muong Khuong. However, further improvements are required in coordination mechanisms, human resource capacity, and adjustments to existing legal constraints.

4.2.2.2. Infrastructure Development

During 2020–2024, substantial investments were made in land clearance, resettlement, transport networks, warehousing, logistics, and digital infrastructure. Although land clearance followed prescribed procedures, progress remained slow and disbursement rates relatively low due to compensation issues and overlapping planning regulations. Transport infrastructure improved through expansion of expressways, national highways, and provincial roads, alongside preparations for the Sa Pa Airport project. However, limitations remain in route quality (notably the Hanoi–Lao Cai Expressway) and in railway and air transport capacity.

Warehousing and logistics infrastructure—particularly the Kim Thanh–Ban Vuoc Logistics Center and digital border gate platform—has reduced clearance times and improved cargo handling capacity. Nevertheless, logistics costs remain high and enterprise linkages weak. ICT systems have advanced toward a “digital border gate” model, reducing procedural steps and enabling online processing and tracking. Surveys indicate relatively high satisfaction levels (3.4–3.7/5), though concerns persist regarding land clearance and investment in information infrastructure.

4.2.2.3. Management of Import and Export Activities

During 2020–2024, import–export activities were significantly affected by the COVID-19 pandemic. However, through flexible coordination by authorities, operations were largely maintained. Measures included driver quarantine zones, traffic regulation, trade promotion for agricultural products, participation in “green lanes,” and coordination with Yunnan authorities to alleviate congestion. Nonetheless, data synchronization issues occasionally caused delays.

Trade performance fluctuated considerably. In 2021, turnover reached USD 3.5 billion but declined sharply in 2022 due to China’s “Zero COVID”

policy. Recovery was strong in 2023–2024, reaching nearly USD 3.0 billion in 2024 (up 72%). Agricultural exports—such as durian, dragon fruit, and bananas—grew strongly. The number of enterprises increased from 653 (2023) to 792 (2024), reflecting an improved business environment. Despite incentives, enterprises still face overlapping policies and procedural complexity. Survey scores range from 3.42 to 3.58/5.

Overall, management has achieved positive outcomes, though improvements are needed in coordination, digitalization, and logistics infrastructure.

4.2.2.4. Management of Trade and Commercial Cooperation

Trade cooperation achieved notable results, supported by coordination with domestic agencies and Chinese counterparts. During COVID-19, Lao Cai maintained communication via online dialogues, diplomatic channels, and bilateral meetings, stabilizing supply chains. Cooperation has become more diversified and technology-driven, with the “single-window–one-stop” model rated highly (above 4/5).

However, cooperation remains largely local in scope, and large-scale investment and logistics cooperation progress is limited. Future priorities include institutionalizing agreements at higher levels, increasing logistics investment, and advancing smart border gate development.

4.2.3. Inspection and Evaluation of Management Activities

Inspection and evaluation were conducted regularly, with 9–10 missions annually. These covered administration, trade, investment, planning, land use, environmental protection, and enterprise satisfaction.

Results indicate progress in coordination, planning management, investment supervision, and land use review. However, shortcomings include delays in infrastructure projects, limited coordination in customs clearance, risks of trade fraud, and weaknesses in labor and environmental management.

Survey results show high evaluation scores (4.34/5). Inspection activities also provided corrective guidance, contributing to improved management effectiveness.

4.3. Analysis of Factors Affecting Development

4.3.1. Research Model and Hypotheses

4.3.2. Reliability Assessment Using Cronbach's Alpha

Most measurement scales demonstrate acceptable reliability and internal consistency. After removing inappropriate variables, scales for International Relations and Regional Cooperation (INT) and Competitiveness and Innovation (COM) achieve high reliability (≥ 0.80).

Other scales (Infrastructure, Policies, Human Resources, Environment) also meet acceptable thresholds.

4.3.3. Exploratory Factor Analysis (EFA)

EFA results indicate good alignment between theoretical constructs and empirical data. Most variables load appropriately, with minor acceptable cross-loadings.

4.3.4. Regression Analysis and Hypothesis Testing

A multiple regression model was applied with six independent variables. The model shows strong explanatory power ($R^2 = 0.657$), explaining 65.7% of variation. The ANOVA test confirms statistical significance ($F = 88.583$, $p < 0.001$).

The regression equation is:

$$\text{DEV} = 0.314 + 0.110 \times \text{INF} + 0.157 \times \text{INT} + 0.156 \times \text{POL} + 0.098 \times \text{COM} + 0.265 \times \text{HR} + 0.121 \times \text{SOC}$$

Human resources exert the strongest impact ($\text{Beta} = 0.411$), followed by social environment ($\text{Beta} = 0.294$) and international cooperation ($\text{Beta} = 0.246$). This reflects a shift toward “soft factors.” Infrastructure and policies remain foundational but not decisive advantages. The global economic variable was excluded due to multicollinearity.

4.4. Overall Assessment

4.4.1. Achievements

The period 2020–2024 saw significant achievements. Trade turnover remained large and recovered post-pandemic. Agricultural exports were vibrant, and trade shifted toward formal channels.

Infrastructure and logistics systems improved, and functional zones developed. Investment attraction increased, and the business environment improved.

Administrative reform and digitalization advanced through the single-window mechanism and digital border gate system. International cooperation with China strengthened, resolving bottlenecks and expanding supply chains. These achievements contributed to employment, economic restructuring, and improved living standards.

4.4.2. Limitations and Shortcomings

Exports remain highly dependent on China's policies. Frequent regulatory changes create uncertainty and congestion risks.

The trade structure lacks diversification, with low-value agricultural exports dominating. Logistics costs remain high.

Coordination mechanisms are sometimes ineffective, especially during disruptions. Infrastructure still lags behind demand, with shortages in cold storage and logistics facilities.

Rail transport remains underutilized, and digital systems are incomplete. Informal trade persists, posing regulatory risks. Human resource quality remains limited.

4.4.3. Causes of Limitations

4.4.3.1. Objective Causes

Geographical and climatic conditions increase infrastructure costs. Global instability (pandemic, conflicts) reduced trade demand. Competition from other border gates is strong. Cooperation frameworks remain limited. Legal and administrative constraints slow planning adjustments.

4.4.3.2. Subjective Causes

Infrastructure development lacks integration and long-term vision. Planning adjustments are slow, and funding constraints delay projects.

Administrative inefficiencies persist. Enterprises are mostly SMEs with limited capacity. Informal trade practices and lack of standardization increase risks and reduce sustainability.

Chapter 5

Solutions to Promote the Development of the Lao Cai Border Economic Zone in the Context of Global Economic Integration

5.1. International, Regional, and Domestic Contexts and Forecast for the Development of the Lao Cai Border Economic Zone

5.1.1. International Context

5.1.2. Regional Context

5.1.3. Domestic Context

5.1.4. Development Outlook for the Lao Cai – Hekou Border Economic Zone

5.2. Orientations, Objectives, and Development Projections for the Lao Cai Border Economic Zone toward 2030 in the Context of Global Economic Integration

5.2.1. Development Orientations

5.2.2. Development Objectives for the Lao Cai Border Economic Zone toward 2030 in the Context of Global Economic Integration

General Objective

To develop the Lao Cai Border Economic Zone into a key growth pole of the Northern Midlands and Mountainous Region, serving as a strategic trade gateway between Vietnam and Southwest China, and as a modern center for logistics, supporting industries, and cross-border commercial services, closely integrated with border urban development while ensuring national defense and security in the border area.

Specific Objectives to 2030

5.2.3. Key Development Indicators and Spatial Organization Plan to 2030

5.3. Solutions to Promote the Development of the Lao Cai Border Economic Zone in the Context of Global Economic Integration

First, to improve institutional frameworks and develop specific policy mechanisms for the Lao Cai Border Economic Zone. It is necessary to establish a dedicated and flexible institutional framework with strong competitiveness, including enhanced decentralization and delegation of authority to the Management Board, improvement of an integrated electronic “single-window” mechanism, and stabilization of investment incentive policies. At the same time, bilateral Vietnam–China cooperation at border gates should be further institutionalized to improve coordination efficiency, reduce policy risks, and create a transparent and stable investment environment.

Second, to refine the management model and spatial planning of the border economic zone. This solution focuses on three key aspects: (1) transforming the Management Board into a specialized, autonomous coordinating body with digital governance systems and flexible financial mechanisms; (2) restructuring spatial organization into integrated functional zones with green and smart infrastructure; and (3) fully digitalizing planning processes and data. The objective by 2030 is to establish a centralized management model, efficient spatial organization, and a transparent digital governance system that can be replicated.

Third, to develop specific financial mechanisms and mobilize investment capital. Priority should be given to enhancing financial autonomy, allowing the retention of a portion of revenues for infrastructure reinvestment; establishing a Border Economic Zone Development Fund; and mobilizing off-budget resources through public–private partnerships (PPP), infrastructure bonds, and official development assistance (ODA). Financial mechanisms should ensure transparency, be linked to performance outcomes, and enhance the attraction of strategic investors.

Fourth, to develop integrated connectivity infrastructure and logistics systems. Priority should be given to upgrading inter-regional transport networks connecting expressways, border gates, and industrial zones, developing regional logistics centers, inland container depots (ICDs), bonded warehouses, and cold storage facilities. Simultaneously, logistics digitalization, green logistics, and multimodal transport connectivity should be promoted to reduce costs and enhance competitiveness.

Fifth, to improve the quality of human resources and enterprise support services. Efforts should focus on training specialized human resources in logistics, border trade, foreign languages, and digital technologies; strengthening the capacity of border management personnel; and implementing policies to attract high-quality experts and skilled labor. Enterprise support services should be developed under a “one-stop, on-site” model, with particular emphasis on supporting small and medium-sized enterprises (SMEs).

Sixth, to promote cross-border e-commerce and the digital economy. This includes developing e-commerce infrastructure at border gates, supporting local enterprises in participating in international e-commerce platforms, expanding electronic payment systems, enhancing product traceability, and ensuring cybersecurity. These measures aim to gradually shift border trade from traditional models toward modern digitalized operations.

Seventh, to strengthen enterprise support services within the Lao Cai Border Economic Zone. This solution aims to address existing limitations, particularly for SMEs, by improving the “single-window” mechanism in conjunction with digital transformation; developing trade promotion, logistics, and e-commerce services; building a comprehensive enterprise support ecosystem; and enhancing human resource quality. Expected outcomes include improvements in the investment environment, increased competitiveness, and the transformation of Lao Cai into a regional logistics and trade hub.

Eighth, to enhance international cooperation and regional linkages. It is necessary to establish a cross-border coordination mechanism between Lao Cai and Hekou, while strengthening regional linkages with provinces in the Northern Midlands and Mountainous Region to form integrated value chains encompassing production, processing, logistics, and export. Deeper participation in international cooperation programs will enable the Lao Cai Border Economic Zone to expand its development space and enhance its regional position.

5.4. Policy Recommendations

5.4.1. Recommendations to the Government

5.4.2. Recommendations to Central Ministries and Agencies

5.4.3. Recommendations to the Lao Cai Provincial People's Committee

CONCLUSION

In the context of deepening international economic integration and the increasingly dynamic development of border trade, border gate economic zones play a crucial role in promoting international trade, developing logistics, and strengthening regional economic linkages. With its strategic geo-economic position along the Kunming – Lao Cai – Hanoi – Hai Phong Economic Corridor, the Lao Cai Border Economic Zone serves as an important gateway connecting Vietnam with Southwest China and the ASEAN region. In response to these practical demands, this dissertation has focused on examining the development of the Lao Cai Border Economic Zone from the perspective of economic management, achieving the following main findings:

First, from a theoretical perspective, the dissertation has systematized and clarified the theoretical and practical foundations of border gate economic zone development in the context of international economic integration.

Second, from a practical perspective, the dissertation has conducted a comprehensive analysis and assessment of the development status of the

Lao Cai Border Economic Zone during the period 2020–2024 across multiple dimensions, including development planning, implementation and management, transport and logistics infrastructure, import–export activities, investment attraction, and cross-border economic cooperation.

Third, the dissertation has developed and empirically tested a model of factors influencing the development of the Lao Cai Border Economic Zone using quantitative analytical methods.

Fourth, based on an analysis of international, regional, and domestic development contexts, the dissertation has proposed a system of orientations and solutions to promote the development of the Lao Cai Border Economic Zone toward 2030, with a vision to 2045.

Despite these contributions, the dissertation still has certain limitations. The research scope primarily focuses on the Lao Cai Border Economic Zone and therefore does not allow for in-depth comparative analysis with other border economic zones nationwide. In addition, emerging factors such as digital transformation in border management and smart logistics have only been addressed at a general, directional level. These areas represent potential directions for further research.

Overall, the findings of this dissertation contribute to clarifying both the theoretical and practical foundations of border gate economic zone development, while providing scientific and practical evidence to support policy formulation and the design of solutions aimed at promoting the development of the Lao Cai Border Economic Zone in the context of international economic integration.