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**DEVELOPMENT OF HIGH-QUALITY HUMAN
RESOURCES ASSOCIATED WITH THE DEVELOPMENT OF
THE KNOWLEDGE ECONOMY IN THE RED RIVER DELTA
REGION TODAY**

DOCTORAL DISSERTATION IN PHILOSOPHY

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INTRODUCTION

1. Rationale for the Study

In the context of globalization, the Fourth Industrial Revolution, and the rapid advancement of digital transformation, the knowledge economy has increasingly become a dominant development trend. In this economy, knowledge, science and technology, innovation, and particularly high-quality human resources play a decisive role in determining productivity, competitiveness, and sustainable development. High-quality human resources are both the agents who create, acquire, and master technology and the direct force that transforms knowledge into economic value. Therefore, developing high-quality human resources in association with the development of the knowledge economy is an inevitable requirement of the current process of renewing the growth model.

In Vietnam, the development of high-quality human resources has been identified as one of the strategic breakthroughs. However, both theoretically and practically, many issues still require further research. From a theoretical perspective, the connotation and assessment criteria of high-quality human resources in the context of the knowledge economy, as well as the mechanisms of interaction among human resources, science and technology, innovation, and economic growth, need to be further clarified. From a practical perspective, the quality and structure of the labor force remain inadequate; the digital skills, innovation capacity, and technological adaptability of a segment of the workforce are still limited; training has not yet been closely aligned with labor market demand; shortages of high-quality human resources persist in several sectors; and mechanisms for attracting and effectively utilizing talented individuals have not been sufficiently effective. These limitations are hindering the transformation of human resource potential into higher productivity and enhanced competitiveness of the economy.

The Red River Delta region was selected as the research area because of its particularly important position, as it concentrates a large number of universities, research institutes, enterprises, industrial parks, and major science and technology centers, while also experiencing a high pace of industrialization, urbanization, and digital transformation. These are favorable conditions for developing high-quality human resources in association with the development of the knowledge economy. However, disparities in human resource quality among localities within the region still exist; shortages of highly qualified personnel persist in several sectors; and linkages among education and training institutions, research organizations, and enterprises remain limited. Therefore, the Red River Delta represents a typical area for examining both the potential, the existing bottlenecks, and the solutions for developing high-quality human resources in association with the knowledge economy.

Stemming from the above-mentioned requirements, research on the development of high-quality human resources in association with the development of the knowledge economy in the Red River Delta region is of significant importance from both theoretical and practical perspectives. This study not only contributes to clarifying theoretical issues concerning high-quality human resources in association with the development of the

knowledge economy, but also analyzes the current situation and the issues arising in the process of human resource development in the region. On that basis, it proposes orientations and solutions to improve the quality of human resources so as to meet the requirements of the region's socio-economic development in the context of international integration and the transformation of the growth model. For these reasons, the doctoral candidate has selected the topic: "Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region at Present" as the research topic of the dissertation.

2. Research Aim and Tasks

2.1. Research Aim

To develop a theoretical framework concerning the objectives, actors, and contents of high-quality human resource development in association with the development of the knowledge economy; on that basis, to assess the current state of high-quality human resource development in the Red River Delta region according to relevant criteria, thereby analyzing the issues arising in this process and proposing viewpoints and solutions for developing high-quality human resources in association with the development of the knowledge economy in the region in the new context.

2.2. Research Tasks

- First, to review research works related to the dissertation topic, clarify the results that have been achieved, and identify the issues and research gaps that need to be further addressed in the dissertation.

Second, to elucidate the theoretical and practical foundations of high-quality human resource development in association with the development of the knowledge economy.

Third, to assess the current state, achievements, and limitations; identify their causes; and clarify the current issues arising in the development of high-quality human resources in association with the development of the knowledge economy in the Red River Delta region.

Fourth, to propose a number of viewpoints and solutions for developing high-quality human resources in association with the development of the knowledge economy in the Red River Delta region in the new context.

3. Research Object and Scope

3.1. Research Object

The research object of the dissertation is high-quality human resources and the development of high-quality human resources in association with the development of the knowledge economy in the Red River Delta region.

3.2. Research Scope

- *In terms of content:* The dissertation focuses on studying the theoretical and practical issues related to the development of high-quality human resources in association with the development of the knowledge economy, including: concepts, objectives, actors, contents, methods, influencing factors, the current situation, and viewpoints and solutions for developing high-quality human resources in association with the requirements of the knowledge economy

- *In terms of spatial scope*: The study is conducted in the Red River Delta region, including the provinces/cities in the region according to the current administrative classification (Ha Noi, Quang Ninh, Hai Phong, Bac Ninh, Hung Yen, and Ninh Binh) in the Red River Delta region.

- *In terms of time scope*: The period for assessing the current situation is from 2020 to 2026.

- *Period for orientations and proposed solutions*: Up to 2030, with a vision to 2045, in accordance with the national and regional development orientations.

4. Theoretical Foundations and Research Methods

4.1. Theoretical Foundations and Analytical Framework of the Dissertation

4.1.1. Theoretical Foundations

The dissertation is conducted on the basis of applying the fundamental principles of Marxism-Leninism, Ho Chi Minh Thought, and the viewpoints and policies of the Communist Party of Vietnam concerning human beings, human resources, the development of the productive forces, education and training, science and technology, and the development of high-quality human resources.

At the same time, the dissertation selectively draws upon several modern theories, including human capital theory, endogenous growth theory and knowledge economy theory, strategic human resource development theory, and the skills ecosystem approach. Specifically, human capital theory is employed to explain the process of forming and improving the quality of human resources; endogenous growth theory and knowledge economy theory provide the basis for analyzing the role of knowledge, human capital, and innovation in economic growth, thereby clarifying the relationship between the development of high-quality human resources and the development of the knowledge economy; strategic human resource development theory is applied to analyze the objectives, contents, and methods of human resource development; and the skills ecosystem approach is used to analyze the roles and interactions of relevant actors, as well as the influencing factors within the regional space of the Red River Delta.

The application of these theories is not intended to replace the theoretical foundation of Marxism-Leninism, Ho Chi Minh Thought, and the viewpoints of the Communist Party of Vietnam, but rather to supplement it with modern analytical tools for the specific study of high-quality human resource development in association with the development of the knowledge economy in the Red River Delta region at present.

4.1.2. Analytical Framework of the Dissertation

The dissertation proceeds from the theoretical framework to analyze the current situation and identify the issues that need to be addressed in the development of high-quality human resources in association with the development of the knowledge economy in the Red River Delta region. On that basis, it proposes viewpoints and solutions for developing high-quality human resources in association with the development of the knowledge economy in the Red River Delta region

4.2. Research Methods

The research methods employed in the dissertation include information collection and processing; systematization; statistical and quantitative analysis; analysis and

synthesis; comparative analysis; and document analysis, among others, in order to achieve the research objectives of the dissertation.

5. New Contributions of the Dissertation

First, the dissertation contributes to supplementing and refining the theoretical framework for the development of high-quality human resources in association with the development of the knowledge economy, with particular emphasis on clarifying the objectives, actors, contents, and criteria for assessing the development of high-quality human resources under the conditions of the knowledge economy.

Second, the dissertation develops and applies a theoretical framework and an analytical framework to assess the current state of high-quality human resource development in the Red River Delta region, thereby clarifying the achievements, limitations, causes, and, in particular, the issues arising in the development of high-quality human resources in relation to the requirements of knowledge economy development in the region at the present stage.

Third, on the basis of theoretical and practical analysis, the dissertation proposes a system of coherent viewpoints and solutions suited to the specific characteristics of the Red River Delta region, with the aim of improving the quality, structure, innovative capacity, adaptability, and effectiveness of the utilization of high-quality human resources, thereby meeting the requirements of digital transformation, science and technology, innovation, and knowledge economy development in the new context.

Through these contributions, the dissertation provides scientific and practical grounds for the formulation of policies on the development of high-quality human resources in the Red River Delta region in the coming period.

6. Theoretical and Practical Significance of the Dissertation

6.1. Theoretical Significance

The research findings of the dissertation contribute to the further development of the theoretical foundations of high-quality human resource development in association with the development of the knowledge economy, adopting a systemic and regional linkage approach. These contributions are not only of academic significance but also provide a theoretical basis for development policy formulation in the Red River Delta region at present.

6.2. Practical Significance

The research findings of the dissertation contribute to providing scientific grounds for the development of high-quality human resources in association with the development of the knowledge economy. On that basis, the dissertation proposes solutions to improve the quality of training for high-quality human resources in order to promote the development of the knowledge economy in the Red River Delta region in the new context.

7. Structure of the Dissertation

In addition to the Introduction, Conclusion, List of the Author's Published Scientific Works Related to the Dissertation, and References, the dissertation consists of four chapters and fourteen sections.

Chapter 1

OVERVIEW OF RESEARCH WORKS RELATED TO THE DISSERTATION TOPIC

1.1. Research Approaches to High-Quality Human Resources and the Development of High-Quality Human Resources

Studies on high-quality human resources have adopted a variety of approaches. Nguyễn Đắc Hưng and Nguyễn Văn Khánh approach the issue from the perspectives of talent and intellectual resources; Phạm Thành Nghị, William J. Rothwell, Robert K. Prescott, and Maria W. Taylor from the perspectives of human resource management and development; Nguyễn An Ninh, Tạ Ngọc Tấn, and Đặng Xuân Hoan emphasize the role of education and training and the development of the intellectual workforce; Vũ Văn Phúc, Nguyễn Duy Hùng, and Trần Thọ Đạt approach the issue from the requirements of industrialization, modernization, and international integration; while Ngô Doãn Vịnh and Lưu Tiểu Bình focus on criteria and methods for assessing the quality of human resources. These studies have clarified the roles, characteristics, influencing factors, and mechanisms of training, attraction, utilization, evaluation, and remuneration of high-quality human resources. However, they have mainly been conducted at the national or organizational level and have not yet established a unified research framework at the regional level.

1.2. Research Approaches to the Knowledge Economy and the Development of the Knowledge Economy

The works of Dale Neef, Đặng Mộng Lân, and Đặng Hữu focus on clarifying the concept, characteristics, and conditions for the formation of the knowledge economy. Tachiana Leonova, Nguyễn Văn Thân, and Trần Đình Thiên approach the issue from the perspectives of innovation systems, science and technology, and the commercialization of knowledge; Nguyễn Thị Minh Hà emphasizes the role of institutions; while Nguyễn Thị Thu Hiền and Trần Văn Tùng extend the research to digital transformation, the digital economy, and criteria for assessing the knowledge economy. These studies affirm that knowledge, science and technology, innovation, institutions, and high-quality human resources are fundamental elements of the knowledge economy. However, they have not yet fully linked these factors with the quality and structure of human resources at the regional level.

1.3. Research Approaches to the Relationship Between High-Quality Human Resources and the Development of the Knowledge Economy

The works of Đặng Hữu, Lê Thị Hồng Điệp, Hoàng Thị Thành, Phạm Thành Nghị, Bùi Việt Phú, and Nguyễn Văn Minh have directly or indirectly clarified the relationship between high-quality human resources and the development of the knowledge economy. These authors consistently affirm that high-quality human resources constitute an important condition and driving force for the knowledge economy, while also emphasizing requirements relating to professional qualifications, innovative capacity, digital skills, adaptability, lifelong learning, and policies for attracting and effectively utilizing talent. However, existing studies have not fully clarified the two-way nature of this relationship, nor have they systematically addressed issues concerning the actors, contents, methods, and

assessment criteria for the development of high-quality human resources in association with the knowledge economy.

1.4. Regional Approaches and Studies Related to the Red River Delta

The studies of Nguyễn Văn Sửu, Phạm Thị Thu Hằng, Nguyễn Ngọc Mai, Đỗ Thị Thanh Loan, and Nguyễn Thanh Bình have analyzed the Red River Delta from the perspectives of regional development, economic restructuring, urbanization, sustainable development, and human resources. Notably, Nguyễn Thị Hương directly examines the development of high-quality human resources in the Red River Delta region, while Phạm Thị Nguyệt Ánh and Vũ Hải Thúy further analyze the region's high-quality human resources in relation to socio-economic development. These studies have identified significant potential as well as limitations of the region's human resources, but they have not yet developed an in-depth analytical framework for high-quality human resource development in association with the development of the knowledge economy.

1.5. Overview of the Research Findings from the Reviewed Studies and the Issues to Be Further Addressed by the Dissertation

1.5.1. Overview of the Research Findings from the Reviewed Studies Existing studies have established a relatively rich theoretical and practical foundation concerning high-quality human resources, the knowledge economy, and regional development. They have also clarified the roles of education and training, science and technology, innovation, institutions, and policies in human resource development.

1.5.2. Issues to Be Further Addressed by the Dissertation

The dissertation needs to develop a unified theoretical framework for high-quality human resource development in association with the development of the knowledge economy at the regional level; clarify its objectives, actors, contents, methods, and assessment criteria; analyze the current situation in the Red River Delta region; identify the issues arising; and propose viewpoints and solutions appropriate to the current context of digital transformation, the digital economy, and innovation.

Chapter 2

DEVELOPING HIGH-QUALITY HUMAN RESOURCES IN ASSOCIATION WITH THE DEVELOPMENT OF THE KNOWLEDGE ECONOMY – SOME THEORETICAL ISSUES

2.1. Some Basic Concepts and the Dialectical Relationship between the Development of High-Quality Human Resources and the Development of the Knowledge Economy

2.1.1. The Views of Marxism–Leninism, Ho Chi Minh Thought, and the Communist Party of Viet Nam on the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

Marxism–Leninism affirms that the productive forces constitute the unity of workers and the means of production, in which human beings play the decisive role, particularly when associated with science and technology and the level of labor skills. Ho Chi Minh creatively applied this theoretical foundation to the Vietnamese context, emphasizing that human beings are both the objective and the driving force of

development. He argued that developing the productive forces requires improving people's educational attainment, training human resources, nurturing talents, and applying science and technology in accordance with practical conditions. Inheriting these viewpoints, the Communist Party of Viet Nam identifies the development of the productive forces in association with the development of high-quality human resources, science and technology, innovation, and digital transformation as the foundation and primary driving force of the national economy.

2.1.2. Some Basic Concepts

2.1.2.1. *The Concepts of Human Resources, High-Quality Human Resources, and the Development of High-Quality Human Resources*

Based on the theoretical foundations of Marxism–Leninism, Ho Chi Minh Thought, the viewpoints of the Communist Party of Viet Nam, and the approaches adopted by domestic and international scholars, the author of this dissertation argues that

The concept of human resources: Human resources may be understood as the combination and integration of the qualities and capabilities of individuals that are mobilized in the labor process to create overall productive capacity. They are reflected in physical fitness and health status; educational attainment, professional competence, vocational skills, and work performance; as well as employees' attitudes, sense of responsibility, and commitment to their assigned tasks.

The concept of high-quality human resources: High-quality human resources refer to the core segment of the overall labor force. They consist of individuals with high educational attainment and advanced professional and technical qualifications, outstanding occupational skills, sound professional ethics, the ability to adapt to change, and the capability to utilize advanced technologies and modern production processes to generate higher productivity, quality, and work efficiency, while making significant contributions to socio-economic development.

The concept of the development of high-quality human resources: High-quality human resource development encompasses all activities undertaken by the State, enterprises, and society to ensure an appropriately scaled workforce and enhance its educational attainment, professional and technical qualifications, occupational skills, innovative capacity, ethical qualities, and physical well-being, thereby meeting the demands of socio-economic development, modern science and technology, and deeper international integration.

2.1.2.2. *The Concepts of the Knowledge Economy and the Development of the Knowledge Economy*

The concept of the knowledge economy: The knowledge economy is a modern development trend and serves as the foundation for shaping new economic models such as the data economy, the digital economy, the green economy, and the circular economy. These economic models are all fundamentally based on knowledge, innovation, and technology, with high-quality human resources playing a central role in the creation and application of knowledge to socio-economic development.

The concept of the development of the knowledge economy: The development of the knowledge economy is the process of building and advancing an economy in which knowledge, science and technology, innovation, and high-quality human resources

become the decisive factors for economic growth, increased labor productivity, and enhanced national competitiveness. This process is not only associated with the creation of new knowledge but also encompasses the dissemination, application, and transfer of knowledge to socio-economic activities in order to promote sustainable development.

2.1.2.3. The Concept of the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

The development of high-quality human resources in association with the advancement of the knowledge economy refers to the comprehensive process of training, further education, effective utilization, and full realization of workers' capabilities, including their educational attainment, professional and technical qualifications, occupational skills, and innovative capacity, in accordance with the dynamics of a modern economy. The essence of this process lies in the dialectical transformation between knowledge and practical competence, enabling workers to master science and technology and generate breakthrough value-added chains. Through this process, high-quality human resources not only meet the stringent requirements of the knowledge economy but also become direct agents in the creation of new knowledge, thereby enhancing social labor productivity, promoting sustainable economic growth, and improving the Human Development Index (HDI).

2.1.3. Theoretical Foundations of the Dialectical Relationships in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

2.1.3.1. The Relationship Between the Productive Forces and the Relations of Production

According to historical materialism, the productive forces and the relations of production are two unified aspects of the mode of production and exist in a dialectical relationship. The productive forces play the determining role, while the relations of production possess relative independence and, in turn, exert an influence on the productive forces. Relations of production that are compatible with the level of development of the productive forces will promote their development, whereas incompatible relations of production will constrain it.

Applied to the development of high-quality human resources in association with the knowledge economy, this relationship indicates that, as workers, science, technology, and knowledge increasingly become important elements of the modern productive forces, mechanisms for education and training, recruitment, utilization, evaluation, remuneration, and benefit distribution must be simultaneously improved. The compatibility between the quality of human resources and the mechanisms of labor organization, management, and utilization is a necessary condition for unleashing creative capacity and promoting the development of the productive forces.

2.1.3.2. The Relationship Between Economics and Politics

Economics and politics exist in a dialectical relationship, in which economics ultimately plays the determining role, while politics possesses relative independence and exerts an influence on the economy through the state, law, institutions, guidelines, and policies. An appropriate political system can promote economic development, whereas an inappropriate one may become an obstacle to such development.

With regard to the development of high-quality human resources in association with the knowledge economy, the level and requirements of economic development determine the demand for the scale, structure, and quality of human resources, while the political system and public policies play an important role in providing direction, organization, and an enabling environment for the training, attraction, utilization, and effective promotion of human resources. Therefore, it is necessary to ensure consistency between the requirements of the knowledge economy and policies on education and training, science and technology, wages and remuneration, talent attraction and utilization, and resource allocation.

2.1.3.3. The Relationship Between Human Beings and Socio-Economic Development

Human beings are both the subjects and the ultimate objective of development. As subjects of development, through labor and creative activities, human beings create material wealth, knowledge, science, and technology, thereby promoting socio-economic development. Conversely, socio-economic development creates the material, educational, cultural, and institutional conditions necessary for the comprehensive development of human beings.

Therefore, the development of high-quality human resources should not only aim at increasing labor productivity and contributing to economic growth, but also at promoting the comprehensive development of human beings in terms of knowledge, skills, qualities, creative capacity, and adaptability. Economic development can only be sustainable when it is closely associated with the improvement of human quality and social progress.

2.1.3.4. The Relationship Between Science and the Development of the Productive Forces

Science has increasingly become a direct element of the modern productive forces. When applied in practice, scientific knowledge is materialized in technology, instruments of labor, production processes, and methods of organization and management, thereby increasing productivity and efficiency and creating new products and forms of value.

In the knowledge economy, science and technology have become a major driving force behind the development of the productive forces. However, scientific knowledge can only be created, acquired, and applied through human beings. Therefore, the development of high-quality human resources, particularly experts and highly qualified workers, is an important condition for transforming scientific knowledge into productive power, promoting innovation, and advancing the knowledge economy.

2.1.3.5. The Relationship Between the Development of High-Quality Human Resources and the Development of the Knowledge Economy

The knowledge economy imposes higher requirements that drive the upgrading of high-quality human resources; the knowledge economy promotes educational innovation, thereby improving the quality of high-quality human resources; it creates a more flexible labor market, thereby facilitating the reallocation of high-quality human resources; it creates an environment conducive to innovation, thereby fostering the

capabilities of high-quality human resources; and it increases the value of labor, thereby encouraging the further development of high-quality human resources.

The Development of High-Quality Human Resources Should Be Viewed in the Relationship between the Productive Forces and the Relations of Production

The development of high-quality human resources requires the simultaneous development of both the human factor and an appropriate system of socio-economic relations in order to create favorable conditions for human resources to develop and maximize their potential. Accordingly, the development of high-quality human resources cannot be limited to education, training, and the improvement of workers' qualifications; it also requires the establishment of appropriate relations of production capable of liberating and fully utilizing human potential.

The Development of High-Quality Human Resources Should Be Viewed in the Relationship between the Economy and Politics, and between the Economic Base and the Superstructure

The development of high-quality human resources in association with the development of the knowledge economy is an objective and inevitable process determined by the advancement of the knowledge economy. It is governed by the law of the correspondence between the productive forces and the relations of production, while also being profoundly influenced by the relationship between the economy and politics, as well as by the role of the superstructure in creating an environment conducive to human development.

2.2. Objectives, Actors, Contents, and Approaches to the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

2.2.1. Objectives of the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

General objective: To develop high-quality human resources in association with the development of the knowledge economy in order to build a workforce possessing advanced knowledge, skills, professional qualities, and innovative capacity; capable of accessing, mastering, and developing modern science and technology; meeting the requirements of the knowledge economy; and becoming the decisive driving force for economic growth, the transformation of the growth model, and the enhancement of national competitiveness.

Specific objectives: First, to increase the proportion of trained workers and improve the quality of education and training in line with the requirements of the knowledge economy, digital transformation, and the key economic sectors of the Red River Delta region.

Second, to strongly develop a workforce of scientists, technology specialists, entrepreneurs, and highly skilled technical workers capable of conducting research, promoting innovation, and mastering new technologies.

Third, to establish a working environment capable of attracting, utilizing, and retaining high-quality human resources within the region.

Fourth, to develop high-quality human resources in association with digital transformation, the development of a learning society, and the enhancement of workers'

capacity for international integration within the region, while strengthening digital competencies, innovative capacity, and the adaptability of human resources to the rapid changes in science and technology.

2.2.2. Actors in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

2.2.2.1. The State – The Actor Responsible for Formulating Strategic Orientations for the Development of High-Quality Human Resources to Meet the Requirements of the Knowledge Economy

The State plays the central role in establishing a strategic vision, setting development priorities, and creating the institutional framework for the development of high-quality human resources. It considers the development of high-quality human resources as a strategic breakthrough and a long-term, foundational investment. The State not only formulates policies but also directly invests, coordinates resources, and creates a favorable institutional environment that enables all relevant actors to participate effectively in the development of high-quality human resources.

2.2.2.2. Educational and Training Institutions – The Core Actors in Training High-Quality Human Resources for the Knowledge Economy

This is one of the primary responsibilities of educational and training institutions, which aim to enhance professional qualifications, vocational skills, and to cultivate ethical values, personal character, and knowledge among the workforce, thereby meeting the requirements of the knowledge economy.

2.2.2.3. Enterprises – The Decisive Actors in Human Resource Development, Retraining, and the Effective Utilization of High-Quality Human Resources

Enterprises are not only employers but also actors that co-create human capabilities and transform knowledge into productive outcomes. Therefore, enterprises should actively participate in the development of high-quality human resources. This requires enterprises to engage as strategic partners throughout the process of human resource development through appropriate mechanisms for training, retraining, skill development, technological innovation, and the effective utilization of high-quality human resources.

2.2.2.4. Workers – The Actors Who Proactively Engage in Lifelong Learning and Improve Their Professional Competence to Meet the Requirements of Developing High-Quality Human Resources in Association with the Knowledge Economy

Workers play the central role in the development of high-quality human resources through lifelong learning, continuous self-improvement, and the ability to adapt to changing conditions, all of which have become indispensable requirements for the development of high-quality human resources in the knowledge economy.

2.2.3. Contents of the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

2.2.3.1. Improving the Productive Forces

Improving the productive forces means enhancing the quality of human resources, in which workers, equipped with advanced scientific and technological knowledge, modern means and instruments of production, as well as organizational, application, and innovative capabilities in the production process, play a central role. Human beings are

the decisive factor in effectively utilizing and maximizing the potential of all other productive elements, thereby creating the driving force for improving productivity, quality, and production efficiency.

2.2.3.2. Reforming the Relations of Production

Reforming the relations of production in the development of high-quality human resources must be consistent with the level of development of modern productive forces. The primary focus should be on reforming education and training toward competency-based learning, strengthening digital skills, and aligning education and training with labor market demands. At the same time, mechanisms for labor management and utilization, salary policies, incentive systems, and talent management should be improved on the basis of competence and performance. In addition, it is essential to establish institutional frameworks and transparent working environments that promote collaboration among the State, educational institutions, and enterprises. These measures will unleash human creative potential, create momentum for the development of high-quality human resources, and promote the sustainable development of the knowledge economy.

2.2.3.3. Creating an Increasingly Appropriate Correspondence between Modern Productive Forces and Advanced Relations of Production

The correspondence between the productive forces and the relations of production is reflected in the continuous improvement of institutions, mechanisms, and policies that link education and training with human resource utilization, connect knowledge development with labor market demands, and align individual capabilities with career opportunities. This constitutes a fundamental condition for the effective development and utilization of high-quality human resources in the knowledge economy. Conversely, outdated relations of production, rigid management mechanisms, and inequitable distribution systems hinder the development of the productive forces and weaken the motivation for innovation. Therefore, the development of high-quality human resources must be pursued in parallel with the modernization of the productive forces and the reform of the relations of production, thereby establishing a solid foundation for the sustainable development of the knowledge economy.

2.2.4. Approaches to the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

2.2.4.1. Developing High-Quality Human Resources through Education, Training, and Lifelong Learning

This is the fundamental and most direct approach to improving the quality of the productive forces. This approach includes fundamentally and comprehensively reforming education and training; developing an open and interconnected education system; promoting retraining and upskilling; encouraging self-directed learning and lifelong learning; and enhancing workers' digital competencies.

2.2.4.2. Developing High-Quality Human Resources through Science, Technology, Innovation, and Digital Transformation

In the knowledge economy, science, technology, and innovation constitute the direct environment for the formation and development of high-quality human resources. Therefore, favorable conditions should be created to enable workers to participate in

scientific research, technology transfer, innovation, innovative entrepreneurship, and digital transformation.

2.2.4.3. Developing High-Quality Human Resources through Reforming the Mechanisms for Human Resource Management, Utilization, and Incentives

This approach directly influences the relations of production in order to unleash and maximize human creative potential. Its principal contents include reforming the mechanisms for the recruitment, utilization, and evaluation of human resources based on actual competence.

2.2.4.4. Developing High-Quality Human Resources through Strengthening Linkages among the State, Educational and Training Institutions, and Enterprises

2.3. Factors Influencing the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

2.3.1. Objective Factors

2.3.1.1. Socio-Economic Factors

First, The Red River Delta possesses numerous advantages for economic development, including its central geographical position, relatively synchronized infrastructure, diverse resources, and Hanoi as the region's core growth center. The region has a large labor force, a relatively high level of educational attainment, and a proportion of trained workers higher than the national average. Its economy has grown rapidly and makes significant contributions to GDP, exports, state budget revenues, and foreign direct investment (FDI) attraction; at the same time, industry, services, and high-technology sectors have developed strongly.

2.3.1.2. Factors of Science, Technology, Innovation, and Digital Transformation

Science, technology, innovation, and digital transformation are key factors in promoting labor productivity and improving economic efficiency. Through automation, process optimization, and decision-making support, these factors contribute to optimizing production, supply chains, and resource allocation, while reducing costs, enhancing transparency, and facilitating the expansion of new business models. In addition, linking the development of high-quality human resources with scientific research and technology transfer provides an important foundation for sustainable growth and enhanced competitiveness.

2.3.2. Subjective Factors

2.3.2.1. The Communist Party of Vietnam's Viewpoints and Orientations, and the State's Policies, Laws, and Institutions

First, the political orientations and development viewpoints of the Party and the State constitute the fundamental basis for shaping strategies for the development of high-quality human resources.

Second, institutions exert a direct impact on the effectiveness of human resource development.

Third, the institutional linkage among the State, educational institutions, and enterprises clearly demonstrates the role of political and institutional factors in human resource development.

Fourth, the political and administrative environment, together with administrative procedure reform, exerts an indirect but profound influence on the development of high-

quality human resources. In addition, social security policies and the development of a favorable living environment constitute an inseparable component of the political and institutional factors affecting the development of high-quality human resources.

2.3.2.2. Education and Training Factors

Education and training contribute to promoting socio-economic growth, enhancing competitiveness, meeting labor market demand, facilitating economic restructuring, increasing labor productivity and work efficiency, and laying the foundation for sustainable development. In particular, the development of high-quality human resources in association with the development of the knowledge economy is promoted through the tripartite linkage model among educational institutions – the State – enterprises.

2.3.2.3. Educational Attainment, Professional Qualifications, and Skills of Workers

Educational attainment, professional qualifications, and skills are three core components of high-quality human resources in the knowledge economy. Educational attainment provides the foundation of knowledge and thinking capacity; professional qualifications determine the ability to participate in knowledge-intensive economic sectors; while skills, particularly digital skills and soft skills, determine the effectiveness with which knowledge is applied in practice.

Chapter 3

THE DEVELOPMENT OF HIGH-QUALITY HUMAN RESOURCES IN ASSOCIATION WITH THE DEVELOPMENT OF THE KNOWLEDGE ECONOMY IN THE RED RIVER DELTA REGION – CURRENT SITUATION AND EMERGING ISSUES

3.1. Overview of the Red River Delta Region

3.1.1. Geographical Locat

The Red River Delta is a region of strategic geographical importance, serving as the economic hub connecting the northern region of Viet Nam and as an international gateway for trade through its seaport system, economic corridors, and well-developed infrastructure network. The region is home to major economic centers such as Ha Noi, Hai Phong, and Quang Ninh, providing favorable conditions for attracting investment, facilitating technology transfer, and developing modern economic sectors. This geographical advantage not only enhances market accessibility and infrastructure development but also creates a favorable

3.1.2. Population: Size, Structure, and Trends

Population: The Red River Delta has a large population, a high population density, and is currently experiencing a "golden population" period, providing the region with the advantage of an abundant labor force. Its high educational attainment, near-universal literacy rate, and well-developed education system constitute an important foundation for improving the quality of human resources. However, changes in the population structure and trends resulting from urbanization and labor

migration have led to an uneven population distribution, giving rise to disparities in the quality of human resources across localities, regions, and economic sectors.

3.1.3. Labor Force

The proportion of trained workers in the region is higher than the national average and has shown a continuing upward trend, reflecting improvements in the quality of human resources. Nevertheless, although the labor structure has shifted toward the industrial and service sectors, the majority of workers remain concentrated in medium- and low-skilled occupations, primarily engaged in processing and assembly activities within foreign direct investment (FDI) enterprises. The proportion of highly skilled workers with advanced digital skills *and innovative capacity* remains limited. At the same time, labor segmentation between urban and rural areas has created disparities in access to the opportunities offered by the knowledge economy.

3.2. Current Situation of the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

3.2.1. Current Situation of the Actors Involved in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

3.2.1.1. The State

The State and local authorities in the Red River Delta region have promulgated numerous mechanisms and policies for developing high-quality human resources in association with the knowledge economy, with a particular focus on implementing Resolution No. 30-NQ/TW and the National Digital Transformation Program. Ha Noi, Hai Phong, Quang Ninh, Bac Ninh, and Hung Yen have all prioritized the development of digital human resources and high-technology human resources by aligning education and training with enterprise demand and innovation. These localities have gradually shifted their focus from expanding the scale of education and training to improving quality, digital skills, and workers' adaptability. This reflects the State's developmental role in fostering high-quality human resources to support the knowledge economy. However, disparities in development levels among localities and the regional coordination mechanism remain challenges that require further improvement.

3.2.1.2. Educational and Training Institutions

Educational and training institutions play a direct role in developing high-quality human resources by providing workers with knowledge, professional qualifications, skills, and professional ethics, thereby supplying human resources for high-technology industries, the service sector, and the digital economy. At the same time, these institutions have continuously reformed their curricula, strengthened digital skills training, promoted cooperation with enterprises, and aligned education and training with labor market demands. In addition, they have placed greater emphasis on professional ethics, soft skills, entrepreneurship, and innovation in order to enhance learners' adaptability. Consequently, educational and training institutions have become central actors in the development of high-quality human resources in association with the development of the knowledge economy.

3.2.1.3. Enterprises

Enterprises not only recruit employees but also participate in training, retraining, skills standardization, and cooperation with educational institutions based on practical demands. Through these activities, enterprises both create incentives for improving the quality of human resources and contribute to the formation of the region's innovation ecosystem and the development of the knowledge economy in the Red River Delta.

3.2.1.4. Workers – The Actors Who Acquire Knowledge for Their Own Development

Workers are the direct actors in the development of high-quality human resources through lifelong learning and the continuous improvement of their professional qualifications, skills, and technological capabilities. At the same time, they actively engage in self-learning, retraining, and updating their knowledge and technological expertise to meet the evolving demands of the labor market. In doing so, they contribute to improving the quality of human resources and promoting the development of the knowledge economy in the region

3.3.2. Current Situation of the Content of the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

3.2.2.1. Improving Educational Attainment and Professional Qualifications

Improving educational attainment and professional qualifications provides the foundation for the development of the productive forces. The Red River Delta possesses many favorable conditions and outstanding advantages for promoting socio-economic development.

3.2.2.2. Developing Vocational Skills and Innovative Capacity

Vocational skills and innovative capacity determine the ability to transform knowledge into productivity, quality, efficiency, and added value in practical work activities.

3.2.3. Current Situation of the Approaches to the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

3.2.3.1. Through Education, Training, and Lifelong Learning

3.2.3.2. Through Promoting Science, Technology, Innovation, and Digital Transformation

3.2.3.3. Through Reforming the Mechanisms for Human Resource Management, Utilization, and Incentives

3.2.3.4. Through Strengthening Linkages among the State, Educational and Training Institutions, and Enterprises

3.3. Evaluation of Achievements, Limitations, Causes, and Emerging Issues

3.3.1. Achievements in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

3.3.1.1. Achievements of the Actors Involved in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

First, the State has gradually improved the institutional framework, policies, and strategic orientations for the development of high-quality human resources in

association with the development of the knowledge economy. High-quality human resources have been identified as one of the strategic breakthroughs in national resolutions, development strategies, master plans, and socio-economic development programs, as well as in those of individual localities.

Second, the education and training system has gradually undergone reform, improved the quality of education and training, and supplied human resources for the knowledge economy.

Third, enterprises have increasingly affirmed their central role in the utilization, training, and development of high-quality human resources.

Fourth, workers have proactively improved their qualifications and professional capabilities, gradually becoming active creators of knowledge.

3.3.1.2. Achievements in the Content of the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

First, improvements in educational attainment and professional qualifications.

Second, the development of vocational skills and innovative capacity.

3.3.1.3. Achievements in the Approaches to the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

First, the development of high-quality human resources through education, training, and lifelong learning.

Second, the development of high-quality human resources through science, technology, innovation, and digital transformation.

Third, the development of high-quality human resources through reforming the mechanisms for human resource management, utilization, and incentives.

Fourth, the development of high-quality human resources through strengthening linkages among the State, educational and training institutions, enterprises, and workers.

3.3.2. Limitations in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

3.3.2.1. Limitations of the Actors Involved in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

First, regarding the State: Although the State and local authorities in the region have gradually improved the institutional framework, policies, and strategic orientations for the development of high-quality human resources, the policy system remains insufficiently coordinated and has yet to establish an effective mechanism for regional coordination.

Second, regarding the education and training system: Although the scale of education and training has continued to expand, the quality of education and training at a number of institutions has not yet kept pace with the requirements of the labor market and the process of digital transformation.

Third, regarding enterprises: Although enterprises have become increasingly involved in the training and utilization of high-quality human resources, the extent of their participation varies considerably across enterprises.

Fourth, regarding workers: Above all, workers in the region have not yet developed a strong culture of lifelong learning and continuous professional development.

3.3.2.2. Limitations in the Content of the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

First, limitations in improving educational attainment and professional qualifications.

Second, limitations in the development of vocational skills and innovative capacity.

3.3.2.3. Limitations in the Approaches to the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

First, limitations in developing high-quality human resources through education, training, and lifelong learning.

Second, limitations in developing high-quality human resources through science, technology, innovation, and digital transformation, where the expected effectiveness has not yet been fully realized.

Third, limitations remain in reforming the mechanisms for human resource management, utilization, and incentives.

Fourth, the approach to developing high-quality human resources through strengthening linkages among the State, educational and training institutions, enterprises, and workers has not yet become fully sustainable.

3.3.3. Causes of the Achievements and Limitations in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

3.3.3.1. Causes of the Achievements in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

The Objective Causes

The achievements have been facilitated by advantages in geographical location, infrastructure, urbanization, and the level of socio-economic development; a well-developed network of education, training, and scientific and technological research institutions; the rapidly increasing demand for high-quality human resources driven by industrialization, digital transformation, and the knowledge economy; advances in science and technology and the Fourth Industrial Revolution, which have promoted improvements in qualifications, skills, and adaptability; and international integration and foreign direct investment (FDI), which have created favorable conditions for access to advanced technologies, management practices, and labor standards.

Subjective Causes

The achievements have mainly resulted from the gradual renewal of awareness and policies regarding the development of high-quality human resources; the increasing alignment of education and training with labor market demand; the active participation of enterprises in training and utilizing human resources; the strengthening of linkages among the State, educational institutions, research institutes, and enterprises; and the growing initiative of workers in improving their qualifications, skills, and adaptability. As a result, the quality of human resources in the region has gradually improved in a more comprehensive manner, better meeting the requirements of knowledge economy development.

3.3.3.2. Causes of the Limitations in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

Objective Causes

The limitations in the development of high-quality human resources in the Red River Delta region initially stem from the rapid advancement of science and technology and the knowledge economy, which continuously changes the requirements for qualifications, skills, and technological capabilities, while education and training inevitably involve a certain time lag. In addition, disparities among localities in terms of socio-economic development, infrastructure, education, and research capacity; the predominance of small and medium-sized enterprises; increasing competition in the high-quality labor market; and new requirements arising from international integration have placed considerable pressure on the processes of training, attracting, and utilizing human resources.

Subjective Causes

Human resource planning and forecasting in some localities remain limited; coordination mechanisms among the State, educational institutions, research institutes, and enterprises are not sufficiently close; and policies for attracting, utilizing, and remunerating high-quality human resources are not competitive enough. Education and training have been slow to innovate, while quality assurance conditions remain uneven; enterprises have not yet fully regarded human resource development as a strategic investment; and activities relating to science and technology, innovation, and digital transformation have not generated sufficiently broad spillover effects. At the same time, a segment of the workforce remains limited in terms of self-learning motivation, digital skills, foreign language proficiency, adaptability, and innovative capacity.

3.3.4. Issues Arising in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region at Present

There is a need to shift from developing human resources primarily to meet the requirements of an industrial economy toward developing human resources with capabilities in creativity, digitalization, research, and the mastery of knowledge; to address the imbalance between the supply of high-quality human resources and the demand of knowledge-intensive economic sectors; to develop human resources not only in terms of quantity but also with greater emphasis on structure, quality, and strategic groups of human resources; to build a workforce in science, technology, and innovation as a core force of the knowledge economy; to strengthen linkages among the State, educational institutions, research institutes, enterprises, and workers in the development and utilization of human resources; to improve mechanisms for attracting, valuing, and retaining talent amid increasingly intense competition for high-quality human resources; to enhance the adaptability of human resources to digital transformation, artificial intelligence, and the rapid advancement of science and technology; and to shift from a fragmented, locality-based approach to human resource development toward the development of human resources within the broader regional space and ecosystem of the Red River Delta.

Chapter 4

SOME VIEWPOINTS AND SOLUTIONS FOR THE DEVELOPMENT OF HIGH-QUALITY HUMAN RESOURCES IN ASSOCIATION WITH THE DEVELOPMENT OF THE KNOWLEDGE ECONOMY IN THE RED RIVER DELTA REGION IN THE NEW CONTEXT

4.1. The New Context

4.1.1. *International Context*

The rapidly changing international environment, together with the development of the Fourth Industrial Revolution and the process of economic integration, is transforming employment structures and imposing increasingly demanding requirements on high-quality human resources. In addition to professional qualifications, workers are required to possess digital skills, innovative capacity, and the ability to meet international standards. At the same time, intensified competition for talent, global economic fluctuations, and geopolitical risks require the workforce to be adaptable, multi-skilled, and capable of flexible career transitions.

4.1.2. *Domestic Context*

Opportunities: Vietnam is prioritizing the development of science and technology, innovation, digital transformation, and the private sector, thereby creating a favorable foundation for the development of high-quality human resources. The transition towards high-tech industries, the digital economy, the green economy, and modern services is increasing demand for workers with advanced professional qualifications and skills. Institutional reforms and the restructuring of the state apparatus also provide opportunities to improve governance, recruitment, training, and the effective utilization of human resources.

Challenges: Rapid technological development is causing knowledge and skills to become obsolete more quickly, thereby increasing the risk of labor shortages and job displacement. The quality and structure of the workforce remain inadequate, particularly in terms of digital skills, foreign-language proficiency, research capacity, creativity, and the ability to meet enterprise needs. In addition, mechanisms for training, utilization, remuneration, and workforce allocation remain insufficiently coordinated, potentially widening disparities among industries, enterprises, and localities.

4.2. Perspectives on the Development of High-Quality Human Resources in Association with the Knowledge Economy in the Red River Delta in the New Context

4.2.1. Viewpoints on the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

4.2.1.1. The Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy Is a Strategic Breakthrough and the Direct Driving Force for the Development of the Knowledge Economy

4.2.1.2. The Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy Must Be Closely Linked to the Development of Science, Technology, Innovation, and Digital Transformation

4.2.1.3. The Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy Must Be Closely Aligned with Education and Training and the Demands of the Labor Market

4.2.1.4. The Development of High-Quality Human Resources Must Be Based on Institutional Reform to Create a Favorable Environment for Unleashing Human Creativity

4.2.1.5. The Development of High-Quality Human Resources Must Be Associated with Building a Learning Society and Promoting Lifelong Learning

4.2.2. Requirements for High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region in the Coming Period

The socio-economic development of the Red River Delta region requires the development of high-quality human resources in accordance with the comparative advantages of each locality and the region's orientation toward the development of the knowledge economy. Ha Noi should focus on developing human resources in science and technology, innovation, and governance; Hai Phong and Quang Ninh should prioritize human resources for logistics, the marine economy, and high-technology industries; Bac Ninh and Hung Yen should give priority to human resources for the semiconductor industry, electronics, and smart manufacturing; while Ninh Binh and other localities should emphasize human resources for the green economy, tourism, and high-quality services. At the same time, greater regional linkages should be promoted by aligning human resource development with regional planning, labor market demands, and mechanisms for attracting, utilizing, and retaining talented people. These constitute strategic requirements for enhancing regional competitiveness and promoting the development of the knowledge economy throughout the Red River Delta region.

4.3. Major Solutions for the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region in the New Context

4.3.1. Enhancing Awareness and Building Consensus among Stakeholders on the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy in the Red River Delta Region

It is necessary to build consensus in both awareness and action among the State, local authorities, educational and training institutions, enterprises, and workers regarding the development of high-quality human resources in association with the development of the knowledge economy. The development of high-quality human resources should be identified as a strategic task for both employers and workers.

4.3.2. Focusing on Improving the Institutional Framework and Policies for the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

The State should formulate and further improve the institutional framework and policies for the development of high-quality human resources. This includes developing regional master plans and strategies for high-quality human resource development; establishing a systematic and substantive institutional linkage among the State, educational institutions, and enterprises; promulgating policies to attract, utilize, and retain talented people, particularly highly qualified personnel in such fields as technology, modern public administration, education, healthcare, data science, artificial intelligence, integrated circuit design, logistics, and innovation; adopting policies to strongly promote the development of local human resources; institutionalizing investment policies for

higher education, vocational education, and innovation at the provincial level; introducing policies to support enterprises in training and upgrading workers' skills; and establishing institutional mechanisms that strengthen coordination between provincial-level development and regional cooperation in human resource development.

4.3.3. Promoting the Development of the Education and Training System and Career Orientation for High-Quality Human Resource Development

It is necessary to reform the objectives and orientation of education and training toward competency-based learning in line with the requirements of the knowledge economy; to closely align educational reform with the development needs of knowledge- and technology-based economic sectors, thereby overcoming the mismatch between education and labor market demands; to promote the application of science and technology and digital transformation in education, training, and human resource development as an important solution for improving the quality and effectiveness of high-quality human resource development; to develop a highly qualified workforce of lecturers, experts, and scientists; and to strengthen education in professional ethics and social responsibility.

4.3.4. Enhancing the Role and Responsibilities of Employers in the Development of High-Quality Human Resources in Association with the Development of the Knowledge Economy

Long-term human resource development strategies should be developed within government agencies, organizations, and enterprises. Greater emphasis should be placed on training, retraining, and the continuous development of vocational skills in the workplace. Linkages between employers and educational and training institutions should be strengthened, while working environments that encourage innovation and human resource development should be established.

4.3.5. Promoting the Proactive Role of Workers in Developing Their Competencies and Skills

Workers should strengthen their awareness of lifelong learning and enhance their capacity for self-directed learning. Training programs should be designed to meet the specific requirements of different occupational groups. At the same time, the State, enterprises, and educational and training institutions should establish practical support mechanisms to create favorable conditions for workers to pursue learning opportunities and improve their qualifications.

4.3.6. Establishing Mechanisms and Policies to Attract Human Resources and Ensure Their Rational Allocation in Order to Enhance the Effective Utilization of High-Quality Human Resources across the Provinces and Cities of the Region

It is necessary to establish a professional, transparent, and modern working environment in both the public and private sectors. The development of a comprehensive system of public services and living conditions is an important factor in enhancing the attractiveness of localities. Competitive and flexible salary and incentive mechanisms should be established. Preferential policies for the recruitment and utilization of high-quality human resources should be improved in a flexible, practical, and effective manner. An environment that encourages innovation and creativity should be fostered. Human resources should be allocated on the basis of competencies, skills, and practical experience. In addition, the evaluation and management of the effective utilization of high-quality human resources should be fundamentally reformed.

CONCLUSION

The dissertation has systematically examined and clarified the role of the development of high-quality human resources as an objective necessity in the process of developing the knowledge economy. Particularly in the context of the Fourth Industrial Revolution and increasingly deep international integration, the development of high-quality human resources is not only an inevitable requirement but also a prerequisite for promoting rapid and sustainable economic growth and enhancing the position of the economy within global value chains.

Based on a systems-based, interdisciplinary, and region-specific approach, the dissertation has accomplished the research objectives and tasks set forth.

First, the dissertation has systematically reviewed domestic and international studies related to high-quality human resources and the knowledge economy, thereby identifying the theoretical and practical values that have already been established, while also revealing the existing research gap concerning the development of high-quality human resources in association with the development of the knowledge economy from the perspective of the Red River Delta region in the new context.

Second, the dissertation has contributed to clarifying the theoretical foundation for the development of high-quality human resources in association with the development of the knowledge economy on the basis of the viewpoints of Marxism–Leninism, Ho Chi Minh Thought, and the Communist Party of Viet Nam's guidelines on human beings and human development. The dissertation has interpreted the conceptual content of high-quality human resources and clarified the dialectical relationship between the development of high-quality human resources and the development of the knowledge economy, in which the knowledge economy both creates new requirements for, and is in turn promoted by, a workforce possessing high levels of knowledge, skills, and innovative capacity.

Third, through an analysis of the current situation in the Red River Delta region, the dissertation demonstrates that the region's high-quality human resources have improved in terms of scale, quality, and structure, thereby contributing to economic growth, economic restructuring, and the enhancement of regional competitiveness. Nevertheless, a number of limitations remain, including a training structure that has not yet fully matched labor market demands; weak linkages between education and training and human resource utilization; limited digital skills, foreign language proficiency, and innovative capacity among a segment of the workforce; and significant disparities among localities in attracting and utilizing high-quality human resources. These limitations stem from various causes, including shortcomings in institutional mechanisms and policies, the education and training system, enterprises, and workers themselves.

Fourth, based on the current situation and future development trends of the region, the dissertation has identified the key issues that need to be addressed in the development of high-quality human resources in the new period. These include enhancing awareness and building consensus among stakeholders; improving the institutional framework and coordination mechanisms for human resource development; reforming education and training; strengthening the roles of enterprises and workers; and creating a favorable environment for attracting, utilizing, and maximizing the potential of high-quality human

resources in the context of digital transformation, green transformation, and international integration.

On this basis, the dissertation proposes a system of viewpoints and major solutions for developing high-quality human resources in association with the development of the knowledge economy in the Red River Delta region in a coordinated and integrated manner, while taking into account the specific characteristics of each locality. These solutions focus on enhancing stakeholders' awareness; improving institutions and policies; reforming education and training, particularly higher education and vocational education in line with enterprise demands; developing a highly qualified workforce of lecturers and scientists; strengthening the role of enterprises and promoting workers' initiative; and establishing mechanisms for the attraction, utilization, and efficient allocation of high-quality human resources within the region.

The findings of this dissertation not only contribute to enriching the theoretical foundation for the development of high-quality human resources in association with the development of the knowledge economy but also provide scientific and practical evidence for policy formulation and implementation in the Red River Delta region in the new period. Although the dissertation has achieved significant results, certain limitations remain due to the rapid changes in the socio-economic environment and advances in science and technology. These limitations also provide valuable directions for future research aimed at further developing the theoretical and practical understanding of high-quality human resource development in the context of the knowledge economy and increasingly deep international integration.

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