



**DEVELOPING HUMAN RESOURCES OF ETHNIC
MINORITIES IN THE MOUNTAINOUS AREA OF NGHE
AN PROVINCE, VIETNAM IN THE CONTEXT OF THE
IMPACT OF THE 4.0 INDUSTRIAL REVOLUTION**

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Abstract:

The Fourth Industrial Revolution has been developing strongly, with a profound and comprehensive impact on all aspects and areas of social life. The development of science and technology and production forces on a global scale with new speed and quality has been promoting the world economy to shift to a knowledge economy, bringing new scientific achievements - technology is applied to optimize the process of production, distribution, exchange, consumption, management, and administration. That poses new requirements for developing human resources in general and training and using high-quality ethnic minority human resources in Vietnam. In recent years, developing and improving the quality of human resources of ethnic minorities in mountainous areas has always been of concern to Nghe An province, Vietnam. In the coming time, the development of human resources for ethnic minorities in the mountainous regions of Nghe An province, Vietnam, will be an essential and urgent issue that requires feasible strategies and solutions to meet the requirements, facing the increasing challenges of the revolution industry 4.0.

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1. Introduction

The human resources of ethnic minorities in the mountainous area of Nghe An today are all ethnic minority workers - political subjects in the mountainous regions. This human resource can participate in socio-economic development processes in mountainous areas. The fourth industrial revolution brought new hopes to humanity regarding the development of a new civilization. It profoundly impacts all aspects and areas of social life everywhere in countries worldwide. At the same time, it makes the labor market fragmented with increasingly high demands on the quality of the workforce if they need to be equipped with new skills - creative skills. Therefore, building a strategy to develop human resources for ethnic minorities in the mountainous region of Nghe An today is the basis for orienting and creating human resources to meet the needs of the labor market in the coming time. This is an urgent and vital job.

2. The role of ethnic minority human resources in the development of the mountainous region of Nghe An in the context of the 4.0 industrial revolution

Due to different approaches, there are still many different understandings when discussing human resources. According to the United Nations, "*human resources are all the knowledge, skills, experience, capacity and creativity of people related to the development of each individual and the country.*" The World Bank believes that human resources are all human capital, including each individual's physical strength, mental capacity, and professional skills. Thus, human resources are considered a source of capital alongside other physical capital: monetary capital, technology, and natural resources. According to the International Labor Organization, a country's human resources are all people of age who can participate in work. Human resources are understood in two senses: In a broad sense, human resources are the source of labor for social production, providing human resources for development. Therefore, human resources, including the entire population, can develop normally. In a narrow sense, human resources are the labor capacity of society, a resource for socio-economic development, including working-age population groups, capable of participating in labor social production, that is, all specific individuals participating in the labor process, is the totality of their physical and mental factors mobilized in the labor process [2].

In the current period, human resources play a decisive role in developing a modern economy [1, 10]. Investing in people is always an indispensable part of the socio-economic development process of all countries. There is always a close relationship between human resources, capital, natural resources, physical and technical facilities, science, and technology, in which human resources are considered the endogenous capacity that governs other resources. Human resource development is "*the process of*

creating and using comprehensive human capabilities for the self-improvement of each person and the development of the organization where people operate." Reality has proven that some countries are not rich in resources and have unfavorable natural conditions, such as Japan, Singapore, and Israel... but still develop, starting from the fact that those countries know how to attach importance to development and promote the country's human resources [3, 9]. A country can only develop if it has good human resources; in other words, the economic growth of a country can only be achieved when human resource development is given attention and emphasis.

Globalization is taking place more and more deeply, and economic links appear and have more and more influence, promoting a deep division of labor and forming global value chains; economic competition is fierce, and each country must give itself an advantage in that competition. In particular, human resources have become a solid competitive advantage that shifts the comparative advantage between countries. Many countries today have been building national human resource development strategies through guidelines, policies, and operational plans based on the current state of human resources for training and improving the quality of human resources to serve the country's economic and social development goals to meet the country's practical requirements and the trends of the times. At the macro level, national human resource development is about improving the quality of the human resource structure in all aspects, including educational and professional qualifications, political attributes, ethics and lifestyle, job skills, and workers' health. Therefore, human resource development in the current period has become an incredibly urgent task at the national level and an issue for each region and region based on geographical characteristics, population, and requirements for socioeconomic development orientation [4].

The human resources of ethnic minorities in the mountainous area of Nghe An today are all ethnic minority workers - political subjects in the mountainous regions. This human resource can participate in various activities in the socio-economic development process in mountainous areas. The 4.0 Industrial Revolution brings new hopes to humanity regarding the development of a new civilization. It profoundly impacts all aspects and areas of social life in all countries worldwide [5]. In particular, it creates significant challenges for the training and use of human resources in general and ethnic minority human resources. With the increase in automation and digital applications in production, the advantages of natural resources and unskilled labor are increasingly losing competitiveness, leading to a surplus in widespread labor and increasing unemployment. Ethnic minorities in the mountainous districts of Nghe An are in the low-income group and have not had complete access to modern technology. In addition, this is also an area with difficult natural conditions. The terrain is complex and fragmented, the population is sparse and unfocused, and livelihoods still need to be solved and improved.

This affects the development of quantity and quality of human resources and increases the gap between rich and poor in mountainous areas and other areas throughout the province. Therefore, the current development of ethnic minority human

resources in the mountainous region of Nghe An is to improve the quality of the ethnic minority human resource structure in all aspects, including educational level, specialization, political attributes, ethics, lifestyle, job skill, health... contributes to increasing the quality of human resources, contributing most effectively to economic and social development in mountainous areas of Nghe An province. The quality of human resources of ethnic minorities in the mountainous districts of Nghe An, if improved, will be an essential key to solving the problem of human resource quality for the mountainous districts of Nghe An - where very lacking and weak in human resources to promote economic and social development in this area, which is a breakthrough for comprehensive development in the mountainous region of Nghe An in the coming time. Therefore, building a strategy to develop human resources for ethnic minorities in the mountainous districts of Nghe An today is the basis for orienting and creating human resources to meet the needs of the labor market in the future. The new era is a truly urgent and important matter.

3. Current status of human resources of ethnic minorities in the mountainous area of Nghe An, Vietnam in the context of the 4.0 industrial revolution

Nghe An is a province with the largest area in Vietnam, with mountainous districts accounting for 2/3 of the entire province's area. With a 419 km long border, the mountainous districts of Nghe An are an essential strategic area in maintaining national security and defense and socio-economic development in the mountainous region of Nghe An and the North Central region. Nghe An mountainous districts have large areas, complex terrain, specific human geography, ethnic culture, and sparse population density. Most ethnic minorities in the mountainous region of Nghe An today have a typical situation of slow socio-economic development, low living standards, and a high poverty rate as of January 2019. By December 2022, the rate of poor households in mountainous areas will be 21.20%, near-poor households will be 11.66%, and in challenging areas, the number of poor households will increase to over 60% [6, 3].

Outdated customs and practices often influence ethnic minority communities, so they usually find it difficult to integrate because most of them have limited awareness and ethnic minorities use their languages. Due to natural and social conditions, especially factors affecting production and life, the level of development and intellectual level among ethnic groups, between groups within a nation, and between regions and regions are different. There is a large gap, reflected in production level and awareness of nature and society; Customs and practices such as wedding ceremonies, funerals, house construction... are also very different. This poses an essential requirement in building and implementing development policies, narrowing the level of development, and awareness of the transformation in socio-economic life in mountainous areas is a necessary issue to make. They are establishing orientations for human resource development in ethnic minority areas in Nghe An today.

3.1. Achievements in human resource development for ethnic minorities in mountainous areas of Nghe An province, Vietnam

In recent years, based on thoroughly grasping the Government's policy... on investment in developing ethnic and mountainous areas, Nghe An has issued many legal documents on training and developing human resources for ethnic minorities to meet the requirements for the quality of human resources in the context of the country's deep international integration and the current globalization trend. These are essential foundations for mountainous localities in Nghe An to develop different plans and projects to improve the quality of ethnic minority human resources.

With many different guidelines and policies to promote mountainous areas and ethnic minority areas to develop increasingly, as of December 2022, ethnic minority areas in Nghe An have had a relative transformation clear and specific:

"In education and training, they are implementing the Government's Project 1640 - "Consolidating and developing the boarding school system for ethnic minorities in 2011 - 2015". After ten years of implementation (2011 - 2020), the entire Nghe An province, from having only one ethnic boarding high school, has developed into eight ethnic boarding high schools with 105 classrooms and 2,774 students (including two ethnic minority schools) high school and six junior high schools in the districts of Tuong Duong, Con Cuong, Quy Hop, Que Phong, Quy Chau, Ky Son) [7, 5]. The system of ethnic boarding high schools in recent years has played a significant role in improving the quality of education for ethnic minority students, has met the aspirations of a large number of people, and created favorable conditions for students in the mountainous areas are studied and cared for in a comprehensive educational environment, contributing to improving the quality of human resources for ethnic minorities."

In the entire Nghe An province, sixteen colleges (including branches of other colleges located in Vinh City) are recruiting and training students and providing human resources inside and outside Nghe An province. Many students studying here are ethnic minority children from different mountainous areas in the province. Training forms are also quite diverse, from centralized training to distance training. Therefore, the proportion of trained ethnic minority workers is increasing rapidly. Please give an example of the O Du ethnic group in the mountainous region of Nghe An, concentrated mainly in Vang Mon village, Nga My commune, Tuong Duong district. From 2005 onwards, it was rare for O Du ethnic people to be literate. Nevertheless, after only fifteen years, after resettling to Nga My, human resources changed rapidly. Of the three hundred and twenty-eight O Du ethnic people in this village, twenty-one are professionally trained from intermediate to university, accounting for 6.4% of the population. Among them are twelve university levels, seven college levels, and two intermediate levels [7, 15]. Considering education as a ladder to evaluate the quality of human resources of ethnic minorities in the mountainous area of Nghe An, the O Du ethnic group is increasing daily due to the increasing number of people receiving higher education. With

such a small ethnic minority community in the mountains, of course, in other communities and localities with more favorable conditions, the change will be even faster.

In addition to colleges, there are seven universities in Nghe An province. In addition to training human resources for the North Central provinces and the whole country, universities in Nghe An province are also places to train human resources for the mountainous districts of Nghe An. Therefore, the quality of human resources in Nghe An's mountainous districts is constantly improving. Education is carried out with an open motto, with many Training forms: centralized, distance, in-service, online... Therefore, the quality of human resources of ethnic minorities in the mountainous district of Nghe An in recent years has doubled from 3% (year 2001) to 6.1% in 2022.

The proportion of ethnic minority human resources working in agencies, units, and localities throughout the province has gradually increased, accounting for over 13% of the proportion of civil servants and public employees in the entire province. The quality of civil servants and officials of ethnic minorities in mountainous districts working in the political system and with university degrees or higher is over 78%. In particular, after participating in training and fostering classes, the critical staff have developed their abilities and strengths and consolidated their expertise, making an essential contribution to the effectiveness of leadership, direction, and administration. Carrying out tasks and public duties in agencies, units, and localities, especially in areas where many ethnic minorities live, ensures the effective implementation of local political tasks. Regarding recruitment, use, and management of ethnic minority officials: From January 2020 to June 30, 2023, the number of ethnic minority civil servants recruited in the whole province was 272 people out of 1,288 officials. Recruited officials account for 20.9% [8]. In addition, to improve knowledge and operational skills for ethnic minority civil servants and public employees, the province has developed a training and fostering plan for 4,372 ethnic minority civil servants and public employees ethnic minorities in terms of expertise, operations, political theory, information technology, foreign languages, and state management knowledge. The entire Nghe An province has 9,159 civil servants of ethnic minorities out of 83,894 civil servants currently working in agencies, units, and localities (accounting for 13.3%). Of which, at the provincial level, there are 1,560/16,565 people, accounting for 9.4% of the total existing payroll; district level is 5,054/42,541 people, accounting for 11.9% of the total available payroll; commune level is 2,580/9,382 people, accounting for 27% of the total existing payroll [8].

3.2. Shortcomings and limitations in the process of developing human resources for ethnic minorities in the mountainous areas of Nghe An province, Vietnam, in recent times

Despite the results achieved, ethnic minorities' human resources in the mountainous area of Nghe An still have many limitations and inadequacies.

Firstly, the human development index (HDI) of ethnic minority areas in the mountainous region of Nghe An is shallow. The school attendance rate at the right age is

still low, with only about 70% of school-age students attending school at the right level. The average rate of students attending the correct high school level is only 32.3%; The rate of ethnic minorities who can read and write Mandarin is only 79.2%.

Secondly, medical facilities and the quality of medical staff in the mountainous districts of Nghe An are lacking, weak, and inconsistent. The ratio of doctors per 10,000 people is still low, there is a lack of medical staff with deep local expertise staff, and the number of ethnic minorities granted health insurance cards is high, but the number of people examined, treatment, the level of enjoyment of health insurance services, and the average payment on health insurance cards are low. The average life expectancy of ethnic minorities is low, the mortality rate of ethnic minority children under one-year-old is high, stunting and malnutrition in children are common, and the rate of child marriage and close marriage is high. The bloodline in some very few ethnic groups is still high. All of these factors directly affect the physical health of ethnic minorities. These are also factors that affect the quality of people's human resources. Ethnic minorities in the mountainous districts of Nghe An have not been able to meet the current international integration trend [9, 4].

Thirdly, the rate of trained ethnic minority labor force in the mountainous area of Nghe An is meager, from 5.5% - 6%, less than 1/3 of the average rate of the labor force's current workforce. The labor force of ethnic minority areas is mainly involved in farming and simple occupations, fields requiring very little high and medium technical expertise. As of December 2020, the proportion of ethnic minority workers in agriculture in the mountainous districts of Nghe An accounted for over 68%. Only 10.8% of trained ethnic minority human resources in the working age group (compared to 25% of the whole country) have been trained, while the untrained population accounts for a substantial proportion of 88.2%; ethnic minority human resources with university and postgraduate degrees reached 3.9% (4 times lower than the national average).

Fourthly, the current ratio of officials, civil servants, and public employees who are ethnic minorities in the province generally basically ensures the regulations in Decision No. 402/QĐ-TTg, dated March 14, 2016 of the Government. Prime Minister, however, there is an uneven distribution among agencies, units, and regions. Some provincial-level agencies do not have officials, civil servants, and public employees who are ethnic minorities. The capacity and qualifications of the ethnic minority staff are not uniform, and their presence does not meet the requirements. The proportion of ethnic minority officials holding leadership positions at the provincial and district levels is still tiny. The source of staff adjacent to ethnic minorities is limited. The spirit and responsibility of some ethnic minority officials are not high, and there is not much creativity and breakthroughs in advisory work, so implementing several Party guidelines and resolutions, policies, and State laws is still slow and ineffective. Some policies on recruitment, placement, and use of ethnic minority officials, civil servants, and public employees have not been issued uniformly and synchronously, such as policies to attract, foster, utilize, and treat people who have talent in public service activities in ethnic minority areas; policies for recruiting ethnic minorities; Provide guidance on the ratio of

ethnic minority officials, civil servants, and public employees working in administrative agencies in ministries, central branches, People's Committees at all levels.

The issues raised above show that human resource development for ethnic minorities in mountainous areas is an important issue both politically and socially in mountainous regions, and in the context of the 4.0 industrial revolution, it directly impacts the current process of building and developing the country.

4. Proposing some solutions to develop human resources of ethnic minorities in mountainous areas of Nghe An province, Vietnam today

Firstly, mountainous areas need to implement the "election" policy effectively. This is a "traditional" solution, one of the essential policies to develop high-quality human resources for ethnic minorities and mountainous areas, especially for ethnic minorities. Nghe An Province, selecting and closely monitoring subjects participating in the election policy must be essential, derived from the practical needs of districts, communes, villages/hamlets. It should only be done with children in areas with very few ethnic minorities and some ethnic groups with low-quality human resources, no or very few people participating in the local political system, and at the same time must attach associated with arranging jobs after graduation for learners to avoid waste. To "nurture the talents" of ethnic minorities and create quality resources for training facilities in Nghe An province, it is necessary to continue to promote investment in developing boarding and semi-boarding high schools for ethnic minorities in the Program the national target program for socio-economic development in ethnic minority and mountainous areas for the period 2021-2030 is being implemented.

Second, through "ordering" training and retraining of human resources working in the province's districts, communes, and villages. This is a practical and feasible solution to use existing human resources effectively. In Nghe An province, there are currently seven universities with a total of nearly one hundred training majors and a training scale of almost forty thousand students, which can well meet the university education needs of ethnic minority children minorities in mountainous areas of the province. Ordering must comply with general admission regulations of schools to ensure input quality.

Third, there needs to be a separate scholarship or support policy for children in ethnic minority and mountainous areas during their studies and promote the implementation of the "volunteer connection" program, which seeks new resources and efforts to support educational establishments in mountainous districts, promoting educational socialization in mountainous areas.

Fourth, it is necessary to diversify human resource training models, combine many different training models, and build new training models suitable for the subjects that need to be trained. Specifically, it follows two directions: One is professional training for young people to serve the development of mountainous areas shortly. The second is to provide skills training for people who are and will be participating in the current

mountainous development process, including those past working age and those who still need to be of working age. More than the education and training sector is necessary, it also requires many other industries, communities, businesses, and social organizations to share.

Fifth, human resource training in the mountainous region of Nghe An today must be associated with applying science and technology to production. Currently, the mountainous districts of Nghe An are facing the digital age with the development of communications and social networks. Therefore, ethnic minorities today must also have complete skills in using modern means and equipment to serve production and daily life. Nowadays, agriculture is developing towards modernization, so mountain people must also know how to use machinery and modern equipment to replace manual labor. Must know how to search for market information and learn about policies to plan for development. So, they must have a whole system of skills and study them carefully and thoughtfully before applying them.

5. Conclusion

Thus, for socio-economic development, sustainable poverty reduction, and improved living standards for ethnic minorities and mountainous areas of Nghe An, the fundamental and sustainable solution is to develop human resources, especially human resources, which is a high-quality human resource for this area. First, it must come from solving the relationship between the supply and demand of human resources well, the critical part of which is from the "demand" side. Nghe An province needs to carefully review the current situation of surplus and shortage, the quality of each type of human resources in each district, each commune, each industry, and each field to develop a project to develop human resources in ethnic minority areas minorities of the province in the period 2025-2030 and orientation to 2035. Proactively develop plans and have specific policies to attract, recruit, use, and train each type of human resource. Focus on prioritizing review of all kinds of human resources. Information about these types of human resources needs to be publicly announced or ordered to training facilities in the coastal province for coordinated implementation.

Conflict of Interest Statement

The authors declare no conflicts of interests.

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