



Received: 30-08-2023  
Accepted: 10-10-2023

## International Journal of Advanced Multidisciplinary Research and Studies

ISSN: 2583-049X

### Industrial Revolution 4.0 with Training and Development of Human Resources in the Finance-Banking Industry in Vietnam Now

Thi Thu Giang Ngo

University of Labour and Social Affairs, Hanoi, Vietnam

Corresponding Author: Thi Thu Giang Ngo

#### Abstract

The 4.0 industrial revolution has truly posed many challenges and opportunities for countries around the world. Vietnam is entering a period of deep and comprehensive international economic integration. In that context, training and developing high-quality human resources play an extremely important role. In particular, the finance and banking industry is considered the lifeblood of the national economy. Therefore, improving the quality of training and developing human resources in the banking and finance industry is an issue that needs special attention. In fact, human resources in the finance and banking industry in Vietnam are facing many difficulties, especially the shortage

of personnel capable of analyzing and being proficient in digital technology programs. Vietnam in general and universities training in economics, finance, and banking need to seize opportunities, learn, and change to respond to challenges and take advantage of opportunities to train human resources in finance. Quality bank for the sustainable development of the economy. The article uses a qualitative research method. Based on analyzing the current situation and evaluating the causes of the problems, the authors make a number of recommendations to develop human resource training in the finance and banking sectors in Vietnam in the context of integration.

**Keywords:** Human Resources, Finance and Banking, Industrial Revolution 4.0, Economic Integration

#### 1. Introduction

In recent years, along with the explosion of the digital era, the world has witnessed the strong development of banking systems and economic organizations around the world. The need for high-quality and stable human resources for banks and economic organizations plays an important role in ensuring the successful development and implementation of strategies, goals, and business plans, as well as the bank's ability to respond quickly and appropriately to the erratic fluctuations of the current economy as well as to changes in national and international policies.

Although the quality of human resources is paid attention to in investment and development, weaknesses in this issue appear not only in the finance and banking industry but in all sectors of Vietnam. According to the World Bank's (WB) assessment of Vietnam's human resources, at the present time, our country is lacking many workers with high technical qualifications, and the quality is lower than in other countries. The quality of Vietnam's human resources only reached 3.79/10, ranking 11/12 of the Asian countries participating in this assessment. On the other hand, according to a report at the 2012 regional conference "Developing human capital in the banking and finance industry" only about half of the 29,000 students trained in the banking industry were able to qualify. Recruitment standards (Stephen Choo, 2012) <sup>[12]</sup>. Human resources are an important factor determining economic growth in addition to capital, resources, and technology. Human resources here are the knowledge and skills that workers acquire through education, training, and experience. According to the Ministry of Science and Technology (2019), the digital economy is a part of the economy, which includes business models that create digital products and services or support the provision of digital services for businesses. Karma. A digital economy is an economy that operates mainly on the basis of digital technology and has the convergence of a series of new technologies, such as cloud computing, computer technology, big data, artificial intelligence (AI), the internet of things, digital platforms, etc., that are present and have an impact on all sectors of the economy (industry, agriculture, services, production, distribution, and circulation of goods). chemistry; transportation, logistics, finance, banking, etc. In the digital economy, especially with the rapid advancement of artificial intelligence, machines can perform many stages of the production process. As machines gradually replace humans, it will lead to increasing job losses for workers. According to Autor and Handel (2013), technological change will create a general decline in employment; in the future, about 50% of jobs in the US and other advanced countries will be replaced by machines. Calculation or algorithm.

However, the Organization for Economic Cooperation and Development (OECD) believes that it is necessary to approach analyzing this issue based on the characteristics and tasks of each individual job instead of on the general level of all jobs. Based on this approach, an average of about 9% of jobs are at high risk of being replaced by automation. Meanwhile, on average, 50-70% of jobs can be automated [3]. The digital economy has a huge impact on the labor market, such as creating new jobs; change job; Changing work patterns and switching jobs. Job changes will primarily affect low-skilled workers. Compared to the traditional economy, workers in the digital economy receive fewer social protection benefits, fewer opportunities for vocational training and career development, and difficulty accessing credit and banking. Row. The digital economy also affects the salary structure of businesses. Highly qualified workers will have many offers with higher salaries, while the demand for workers with intermediate skills is increasing day by day. Decreases, creating salary competition in this area. These changes increase the risk of income inequality, increasing labor poverty more than before. These inequalities will also have geographical implications, as new jobs for highly skilled workers will be created in smart, prosperous (high-tech) cities. Meanwhile, other cities will see workers lose their jobs. A report by Google, Temasek, and Bain in 2019 shows that the digital economy of Southeast Asian countries reached a value of 12 billion USD in 2019, contributing 5% of national GDP, four times higher than the value of the year 2015, and is expected to reach 43 billion USD by 2025.

Vietnam is the country with the fastest digital economic development in Southeast Asia. It is expected that by 2030, the digital economy will expand 11 times more than it currently does; this growth will take place evenly in all regions. all industries, such as e-commerce, logistics, tourism, and banking. Although the COVID-19 pandemic caused heavy damage in most sectors, this is a factor that pushes businesses to change to respond to immediate and long-term challenges. IDC & Backbase's 2021 report shows that about 44% of the 250 largest banks in the Asia-Pacific region will work on modern platforms, allowing data connections through API gateways and 60% of banks will apply AI/ML (machine learning) technologies for their decision-making. To face these changes, the labor market, education, and state policies need to be adjusted to promote workers and improve adaptive skills, labor mobility, and training programs. Professional and labor support. Therefore, the issue of training and developing human resources in the finance and banking sectors is urgent and important for economic development and integration.

## 2. Literature Review

Due to digital transformation requirements, financial and banking organizations will have more and more demand for jobs that require adaptation to technology and high-level human resources. This may lead to a risk of a shortage of high-level human resources in the finance and banking industries. In Southeast Asian countries, including Vietnam, as well as around the world, retaining and attracting high-quality technical talent is considered one of the most common challenges that banks and organizations face. finances are faced. Technical personnel at financial technology enterprises or banks are currently most sought after not for traditional employee positions but have now

shifted to new positions, including data scientists, financial engineers, and computer programmers. About 60% of financial and banking institutions in Southeast Asian countries (including Vietnam) surveyed agreed that there is currently a shortage of necessary technical and technological personnel. Most perceive a lack of technology skills, product management software, sales, and marketing skills in electronic form. Retaining and attracting talent for new, high-quality engineering jobs is considered one of the most common challenges faced by fintechs. The majority of fintechs (61%) have hired foreign personnel, mostly relying on personal connections (57%) and consulting intermediaries (43%). Particularly in the finance and banking sectors, Vietnam is currently under pressure to attract human resources with high technical and technological qualifications, and there is a risk of shifting high-quality human resources to credit institutions. Foreign use. The need for human resources at all levels for information technology and digital transformation positions continues to increase, especially for application development, technology development, transformation management, administration and analysis positions. Data, marketing, and business on digital platforms [6]. According to Navigos Search in 2022, due to the focus on developing digital services, there is a need to recruit mid- and senior-level positions in the finance and banking industry in Vietnam in the fourth quarter of 2022 at related positions. also increased, specifically positions in data analysis, digital banking service business development, customer experience analysis, and the information technology segment. In the entire system, currently only about 10–15% of senior personnel working at headquarters have high-level scientific and technological capabilities, and finance and banking experts have national qualifications. Economics, mainly operating in the areas of risk management, management, and investment [7]. This group of human resources is currently in short supply because finance and banking are specific industries, so organizations still prioritize recruiting personnel from this industry first. However, the domestic candidate source is still not trained and qualified as expected, especially in financial technology.

### *The Digital Transformation Trend at Banks is Creating Huge Changes in the Workforce*

Although there are attractive policies to attract and treat domestic and foreign talent, human resources in the fields of information technology, finance, and technology in financial institutions are still scarce. In Hanoi and Ho Chi Minh City, there is a need for experts in digital banking and business data, along with the need for understanding machine learning, financial programming, and artificial intelligence. creation,... are always increasing, such as the position of chief financial officer (CFO), head of the cost management department, with a quite high salary of nearly \$400 million per month but still very difficult to recruit.

It is forecast that by 2025, the demand for high-level human resources in the finance and banking industry will increase by about 20% per year, of which university or higher degrees and college degrees account for 80.4% of recruitment needs. The digital transformation trend in banks is creating huge changes in the workforce in this field. According to a survey by the State Bank of Vietnam in 2022, 95% of banks have been building and implementing digital transformation strategies. Many banks have deployed

specialized departments to carry out digital transformation tasks and innovation initiatives, such as the Digital Transformation Center of the Joint Stock Commercial Bank for Foreign Trade of Vietnam (Vietcombank), the Center for Digital Transformation. Digital Bank of the Bank for Investment and Development (BIDV); some banks do not establish a specialized department but integrate the digital transformation task with the information technology center, such as Joint Stock Commercial Bank Vietnam Industry and Trade (Vietinbank). Military Commercial Joint Stock Bank (MB) aims to become a technology enterprise and determines that by 2024, technology personnel will account for 25% of the entire bank's personnel, becoming a key force and helping MB expanded its scale; 49% of responding banks said the level of digitization of their human resource management operations was over 50% [8]. Modernize the payment system with new and modern payment services and means based on the application of strongly developed science, technology, and telecommunications, creating new, convenient, and beneficial payment channels for consumers. By the end of 2022, Vietnam will have about 76 banks implementing payment services via the internet and over 41 banks providing payment services via mobile phones. The number of transactions in 2022 via the internet will be 255 million, equivalent to 16 million billion VND, an increase of 33.6% compared to the end of 2021. Grasping the trend of developing payment technology in the world, a number of banks have researched, cooperated, and applied new and modern technology to payment activities on mobile devices through applying biometrics (fingerprint, face, voice), quick response code (QR Code), card information encryption technology (tokenization), contactless payment, mPOS

technology,... Besides, to support the development of non-cash payment activities, the State Bank Vietnam has licensed 26 non-bank organizations to provide payment intermediary services to serve low-value, retail payment transactions. Infrastructure and technology for non-cash payments continue to be invested in to improve service quality and efficiency. The work of ensuring the security and safety of card and electronic payment systems is increasingly focused. For the implementation of Decision No. 06/QĐ-TTg, dated January 6, 2022, of the Prime Minister, "On approving the Project to develop application of population data, identification, and electronic authentication serving the national digital transformation period 2022-2025, with a vision to 2030", up to now, the State Bank of Vietnam has completed a technical test of connecting the National Database on the public service population. money laundering prevention, credit information, and public services of the State Bank of Vietnam; coordinate with the Ministry of Public Security and the Ministry of Information and Communications to complete an inspection and assessment of the safety and security of the public service system; and submit the application for operation registration upon official connection.

**3. Current Status of Training and Human Resources in the Financing Industry in Vietnam**

*Human Resources in the Finance and Banking Industry*

According to the State Bank of Vietnam's statistical report in April 2020, the structure of human resources in the finance and banking industry is as follows:

**Table 1:** Structure of human resource qualifications in the finance and banking industry

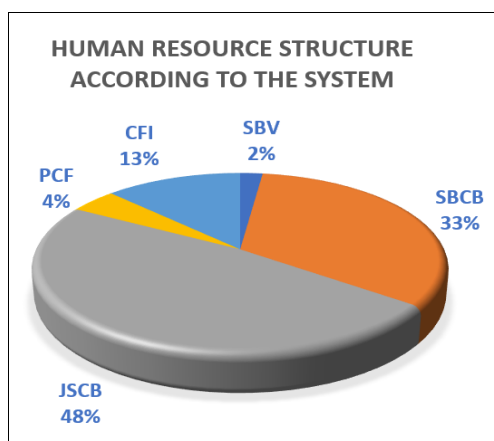
Level of Education	Doctorate	Master's Degree	University Degree	College Degree	Intermediate Level	Elementary Level	Total
Number of People	569	20.286	263.927	23.453	20.054	18.325	346.614
Proportion (%)	0.16%	5.85%	76.16%	6.77%	5.79%	5.29%	100%

Source: State Bank of Vietnam (2020) [8]

**Table 2:** Human resource structure of the finance-banking industry by system (quantity)

System	SBV	Credit institutions			Total
		SCB	JSCB	People's Credit Fund	
Number of people	6.871	110.947	161.211	14.500	346.594

Source: State Bank (2020) [8]



Source: State Bank (2020) [8]

**Fig 1:** Human resource structure of the finance-banking industry by system (ratio)

**In which:**

SBV: State Bank  
 CFI: Credit Financial Institution  
 SBCB: State Commercial Bank  
 JSCB: Joint Stock Commercial Bank

From Table 1, it shows that the majority of human resources in the finance and banking industry have college degrees or higher (accounting for 88.92%), which is a human resource with high professional quality and training. at professional training facilities. Meanwhile, in our whole country, only 7.3 million people (accounting for 14.9%) of the labor force are trained out of a total of 49.2 million people of working age, so this proportion compared to other sectors is quite high. Table 2 and Fig 2 show the number and proportion of human resources in the finance-banking sector by system, accounting for a large proportion and mainly the commercial banking system (commercial banks) with 81% (of which state-owned commercial banks have 110,947 people), accounting for 33% and Joint Stock Commercial Bank 161,211 people, accounting for 48%), People's Credit Funds 14,500 people (4%), financial companies 41,937 people (13%), and State Bank 6,871 people (2%). With the number, level structure, and distribution in the system as above, human resources in the finance and banking industry have proactively implemented professional processes and developed banking services through the application of digital technology, building a modern branch model based on the technology of automation, multi-dimensional connection, and intelligence of the Industrial Revolution 4.0.

**Training in the Finance and Banking Industries**

From the first years of implementing economic innovation in 1980, from having only 1 human resource training facility in the finance and banking industry, until now, according to statistics from the Ministry of Education and Training, 2019–2020, there are more than 60 universities nationwide offering this major.

Applying digital technology in the finance and banking industry is a new field, requiring systematic, in-depth training to manage operations and development in banks and economic organizations. Some universities have opened human resource training majors in the information technology (IT) and finance-banking (management information systems) sectors, and educational and training establishments have focused on increasing technology content. technology in the training program, with cooperation with commercial banks, credit institutions, securities companies, economic organizations, and professional associations in student training.

**General Assessment of Training and Human Resource Development in the Finance and Banking Industry**

It can be observed that over the past few years, the human resources in the finance and banking sectors have made remarkable strides in both quantity and quality. However, there are still some limitations, as follows:

*Firstly, the workforce's level of expertise and leading specialists in the field.*

The bank lacks a team of officials with deep expertise in specialized fields and key operations, especially proficient experts in economics and macro-management. These experts are required to possess research capabilities, forecasting

skills, strategic planning abilities, and the capacity to guide the development of the banking system, restructure the bank, formulate macroeconomic policies related to banking, and supervise system safety and payments.

Economic organizations lack highly specialized staff in key operational areas of business entities, which determines their performance effectiveness and safety, such as modern business management, financial analysis, internal control and auditing, project investment analysis and appraisal, risk management, etc.

*Secondly, the professionalism of the workforce.*

In various job positions across numerous banks and economic organizations, the level of professionalism still falls short of meeting expectations, and there are discrepancies in the spirit and skills of customer service. The knowledge in economics, banking expertise, foreign languages, and working skills (communication, customer relations, etc.) of a significant portion of banking personnel is still limited and requires training and development. In some credit organizations and other institutions, issues of professional ethics have emerged, causing considerable material and reputational damage to the organization.

*Thirdly, engaged in human resource training work.*

In recent years, there has been a shift in the quality of our teaching staff; however, some issues persist. The proportion of teachers with postgraduate qualifications (especially those with doctorates) has increased, but at a slow pace and is still low compared to the requirements for research and innovation capabilities set by regional university standards (such as the AUN-QA standard). Universities are greatly lacking in teaching staff (both full-time and part-time) with high expertise, good teaching skills, and practical experience.

The content of the program, teaching and learning methods, and evaluation of each step have been innovatively updated, closely following international standards. Various higher education institutions have developed short-term and long-term training programs that are relatively aligned with societal needs. However, the program has not seen many changes and has not kept up with the pace of scientific and technological changes domestically and globally. Collaborative programs with developed countries have not truly received investment or development.

*Fourthly, regarding the level of technology*

All IT service systems in the finance-banking sector must be regularly upgraded and updated to ensure international standards, seamlessly connecting with global banking-finance systems. Therefore, the primary and current challenge is the limitation in terms of the level, capacity, quantity, and quality of the IT staff in the finance and banking sector and other organizations.

**4. Cause**

Despite investments from the state and various organizations, the training and development of human resources in the finance-banking sector has not yet achieved high effectiveness. This stems from several reasons, as follows:

- There is a lack of useful, standard tools to manage, utilize, and measure human resource management activities in the sector, such as occupational standards,

competency frameworks for job positions in the sector (according to leadership titles, management and expertise, and profession), and information infrastructure for human resources across the sector.

- Human resources policies such as welfare, recruitment, training and development, talent utilization, and reward policies are either incomplete or not entirely suitable, affecting the retention of capable employees, their morale, and their ability to self-learn and self-train within the industry. Overall, the policies on human resource development have not truly made a breakthrough in identifying, evaluating, nurturing, and enhancing the working capabilities of individual workers and the overall workforce in general.
- The quality of education and the output standards of training programs at financial and banking sector institutions vary significantly, especially between public and private institutions. The evaluation and assessment of training results are still limited; the coordination among training institutions, organizations, professional associations, and management agencies is often lacking in cohesion, primarily administrative in nature, and lacking in unity and cooperation towards the goal and steps to develop human resources across the sector.

## 5. Recommendations

Based on the analysis of the current situation and evaluating the existing issues and causes in training and development of human resources in the finance-banking sector in Vietnam, our team proposes several recommendations to enhance the effectiveness of training and human resource development, as follows:

### *For State Management Agencies*

- The state needs to issue a set of common standards for personnel, such as occupational standards and competency frameworks for job positions in the sector (according to leadership titles, management, and professional duties).
- Increase the budget for training and development abroad, such as by increasing postgraduate scholarship rates and the number of staff participating in advanced professional development courses, acquiring new knowledge that domestic institutions cannot provide.

### *Regarding the Banking System*

*First, Supplement the Team with Capable Staff and Experts who Play a Pivotal Role in Specialized and Professional Fields*

Vigorously and decisively promote the training and development of capable personnel in the finance and banking sector, especially in the field of digital technology. Banks and organizations need to establish specialized training programs for their staff, focusing on deep expertise, to ensure that they are trained in accordance with job requirements. At the same time, they should develop policies for fair treatment and usage to provide conditions for staff to demonstrate their abilities and commitment to the sector. Regular evaluations and reviews should be conducted to supplement truly capable staff, while those who do not meet standards or make significant contributions should be removed from planning.

### *Second, Innovate Management and Foster Human Resources*

Execute well the planning and development of human resources and the development direction of each banking organization, which serves as a basis for the construction of training plans, implementation plans, and reasonable allocation and utilization of human resources after training.

Develop standards for banking job titles and banking professions equivalent to the standards of advanced countries in the region. In particular, pay attention to the requirements for specialized knowledge and skills needed to perform the job as a basis for managing and utilizing human resources according to job positions. This is an indispensable tool for managing and improving the quality of human resources.

Develop reasonable policies such as recruitment policies, workforce utilization policies, wage policies, etc., according to job positions, creating the best foundation for encouraging the workforce's capability to perform tasks, linking training with usage, scientific research, and technology transfer.

## Regarding Educational and Training Institutions

### *On General Conditions*

Educational institutions need to improve their physical facilities to support teaching and learning (classrooms, equipment, libraries, information systems, practical facilities, etc.) to meet the standards set by the Ministry of Education and Training. For training schools and education centers, it is essential to have adequate facilities for students to study, research, interact, and build good working relationships.

### *Regarding the Training Program*

The quality of training and the output standards of the training programs at financial-banking sector institutions need to be consistent. The work of assessing and evaluating training outcomes requires collaboration between training institutions, organizations, professional associations, and management agencies to foster unity and coordination in order to achieve a common goal in human resource development across the entire sector.

Our advanced training program is tailored to meet the needs of employers with an open, updated, and flexible approach that aligns with international standards in the face of globalization. Leveraging information and communication technology, we expand learning methods to cater to the diverse needs of our students, helping them develop their personalities, professional ethics, legal understanding, job requirements, and quality of life. Our training and development programs are closely aligned with practical job requirements, particularly those related to professional titles, specialized fields such as inspection and supervision, monetary policy planning, banking service development research, risk management, capital business, credit, banking information technology, customer relationship management, etc.

### *Regarding the Teaching Staff*

We have successfully built a team of full-time and part-time lecturers who are involved in both teaching and research.

They are not only abundant in number but also highly skilled in effective teaching methods. We have adjusted policies related to the development of our teaching staff, such as providing incentives for overseas training, allowing participation in scientific seminars related to their teaching and research content, as well as ensuring other benefits for the lecturers.

#### *On International Cooperation in Human Resource Training*

Higher education institutions need to expand their collaboration with international financial organizations and foreign training institutions, particularly with developing countries such as the UK, US, Germany, Switzerland, etc. This can be achieved by diversifying cooperative partners and forms of cooperation, maximizing financial support, programs, training content, faculty members, and teaching methods. Furthermore, cooperative partnerships can enhance management capabilities, training, scientific research, technology transfer, and teacher training. It is possible to develop and implement high-quality training programs designed for students to gain practical experience during their study period at school. This allows students to proactively approach new technologies in the fields of finance, banking, etc.

#### **6. Conclusion**

Effective training and development of human resources is a key factor in successfully achieving the goals of the finance and banking sectors. The development of human resources requires continuous inheritance and innovation, especially during transitional periods. This stems from the rapid development and changes in banking technology. Human resources in the sector must constantly be nurtured, updated, and their capabilities enhanced to adapt to and master technology. In the upcoming period, banks and economic organizations need to boldly propose and consistently implement breakthrough solutions in quality to discover, attract, and build a team of talented officials who are passionate about the sector's development. The development of human resources needs tight coordination between training institutions, labor-using organizations, professional associations, and management agencies. This is a basic condition for training and nurturing associated with use, avoiding wastage of social resources.

#### **7. References**

1. Ministry of Education and Training, Higher education statistics for the 2018-2019 school year, 2019.
2. Brett King, Bank 3.0, the future of banking in the digital era, National Economics University Publishing House, 2017.
3. Earn & Young, Global banking outlook 2016: Transforming talent-The banker of the future, 2015.
4. Earn & Young. The future of talent in banking: workforce evolution in the digital era, 2018.
5. IDC & Backbase: "Fintech and Digital Banking 2025 Report", 2018. <https://www.backbase.com/fintech-and-digital-banking-2025>
6. Minh Khoi. Banks are "thirsty" for human resources in the 4.0 era, Electronic Banking Times, 2018.
7. Navigos Search, Vietnam Banking Panorama Special Issue 2019, 2019.

8. State Bank of Vietnam, Survey data and statistics on human resources in the banking industry, Department of Personnel and Organization, 2020.
9. State Bank of Vietnam, Decision No. 1537/QĐ-NHNN of the State Bank dated July 17, 2019 on approving and promulgating the plan to implement the strategy for human resource development in the banking industry to 2025, orientation to 2030, 2019.
10. Nguyen Thi Hien, Do Thi Bich Hong. Impact of the 4th industrial revolution on the finance and banking sector, Electronic Magazine of Finance, 2017.
11. Reserve Bank of Australia (RBA). Bank Branch Trends in Australia and Overseas, Reserve Bank of Australia Bulletin, 1996.
12. Stephen Choo. Manpower Development Trends-In collaboration with BTC, BTC, Hay Group, 2012, 2-5.
13. Prime Minister, Directive No. 16/CT-TTg dated May 4, 2017 on strengthening capacity to access the 4.0 Industrial Revolution, 2017.
14. Vo Thi Phuong Thoa, Prospects for human resources in the banking industry in the context of the 4.0 industrial revolution, Finance Magazine, 2019.
15. World Bank. World Development Indicators, 2012.
16. WHO. Constitution of the World Health Organization-Basic Documents, Forty-fth, 2006.