

## Job opportunities of employees in the context of digital transformation

Yen Thi Doan and Hong Thi Nguyen \*

*Faculty of Human Resource Management, University of Labour and Social Affairs, Hanoi, Vietnam.*

World Journal of Advanced Research and Reviews, 2023, 18(03), 079–085

Publication history: Received on 19 April 2023; revised on 30 May 2023; accepted on 01 June 2023

Article DOI: <https://doi.org/10.30574/wjarr.2023.18.3.1033>

### Abstract

Digital transformation is an inevitable trend and a matter of survival for countries, organizations, businesses, and workers. In Vietnam, digital transformation, which is seen as a breakthrough opportunity in the fourth industrial revolution. Digital transformation helps Vietnam mobilize and allocate resources more effectively, adopt new knowledge, technology, and international experiences, etc. In the field of employment, under the impact of digital transformation, there are significant changes in the jobs of workers, creating both opportunities and challenges. Digital transformation generates a multitude of new jobs with more diverse forms of employment. Workers have more opportunities to change their jobs and engage in various tasks on internet platforms, thereby improving income, working conditions, etc. To seize employment opportunities, it is necessary to identify and implement appropriate solutions. This article focuses on studying the employment opportunities for workers in the context of digital transformation, aiming to clarify the theoretical basis and identify employment opportunities for Vietnamese workers in the digital transformation era.

**Keywords:** Digital transformation; Job; Opportunity; Employees.

### 1. Introduction

Digital Transformation is an inevitable trend, a vital issue for countries, organizations, businesses and workers around the world. Huge changes in labor productivity, user experience and new business models are being formed showing the role and impact of digital transformation on socio-economic. For Vietnam, digital transformation is an opportunity to break through in the 4th industrial revolution (Industry 4.0), is defined in the Resolution of the 13th National Party Congress and Decision No. 749/QĐ-TTg issued by the Prime Minister on June 3, 2020 [1]. Digital transformation creates a breakthrough in socio-economic development, fundamentally and comprehensively renovating the management and administration activities of the government, agencies, organizations, and enterprises, the way of living and working of citizens and the whole society based on digital technology [2].

Digital transformation makes it possible for Vietnam to more effectively mobilize and allocate resources, and absorb international knowledge, technology and experience to realize socio-economic development. In the field of labor and employment, the state and related parties also have policies to support jobs for workers, policies to develop the labor market, etc, and have brought many opportunities to employees. However, under the impact of digital transformation, the employment of workers is changing, which has created great opportunities and challenges [3].

Employment in most economic sectors is likely to be impacted by digital transformation, including employment in the formal and informal sectors. The change in employment in the context of digital transformation comes from a change in the mindset of employers on how to manage, way of working as well as from the higher requirements of the job. Digital transformation creates a series of new jobs that were not available before. Among them, digital technology workers can be mentioned. They are those who are trained in technology such as internet of things, big data organization, artificial intelligence, etc. Next is the workforce who based on the application of digital technology. This is a large force working

\* Corresponding author: Hong Thị Nguyen

in all socio-economic fields, and they themselves must know how to apply the tools and means created by digital technology to their daily work according to the correct procedure. Third is labour group who exploits advantages from digital technology such as exploiting internet infrastructure and social networks. Employment experts have also pointed out which industries and occupations will tend to develop in the labor market in the next 5-10 years. Accordingly, the information technology industry is considered the core industry of Industry 4.0 and digital transformation. In addition, the electrical engineering technology; robotics and artificial intelligence; biotechnology - creating high labor productivity and generating output for businesses, mobile internet, cloud computing, 3D printing will develop quickly. Service industries also tend to develop such as financial investment services, design, healthcare, auto repair, refrigeration, beauty, etc. The most recognizable benefit of digital transformation with business is to reduce operating costs, reach customers in the long time, easily report timely and optimize work productivity for employees. These increase the efficiency as well as the competitiveness of the business [4].

## 2. Material and methods

### 2.1. Information collecting methods

To clarify job opportunities for workers in the context of digital transformation, primary and secondary data are used. The secondary information sources compiled from topics, reports at conferences, and statistical data from relevant agencies. Meanwhile, primary information sources are obtained from (1) conducting workshops, roundtable discussions to gather opinions from experts, businesses, and trade union officials; (2) conducting typical surveys of 48 enterprises in 3 industries: manufacturing, agriculture, and services in Hanoi.

A total of 480 questionnaires were distributed (16 enterprises per industry, 10 questionnaires per enterprise), and 465 valid questionnaires were collected... The questionnaire is designed with the content of exploiting job opportunities such as the number of jobs, types of employment, salary and income, labor relations, etc. The design questions in the article are inherited and evolved from the research of Sehnbruch et al (2020) [5]. This questionnaire was utilized direct surveys combined with online surveys through the support of Google Docs.

### 2.2. Data analysis and processing methods

All information is processed by excel software. Descriptive statistics and comparative statistics will give data that reflect the actual employment situation as well as compare employment opportunities of workers in economic sectors, industries, etc.)

## 3. Results and discussion

### 3.1. New job opportunities for employees

According to a report by the World Bank in 2021, within the next 3 years, 85% of jobs will undergo changes. Among them, 32% of jobs will require employees to be trained and enhance their skills, 26% of new jobs will be created, and approximately 27% of jobs will disappear. The number of new jobs created by digital transformation will be seven times as high as the number of jobs lost. By 2045, an estimated 10 million new jobs are expected to be created, primarily in modern service sectors and some new employment opportunities in the manufacturing field [6].

**Table 1** Employment opportunities for workers by economic sector

STT	Job opportunities for positions	Total	Official area	The informal sector
1	Senior management labor	149	101	48
2	Middle management labor	150	98	52
3	Direct labor	166	57	109
	Total	465	255	210

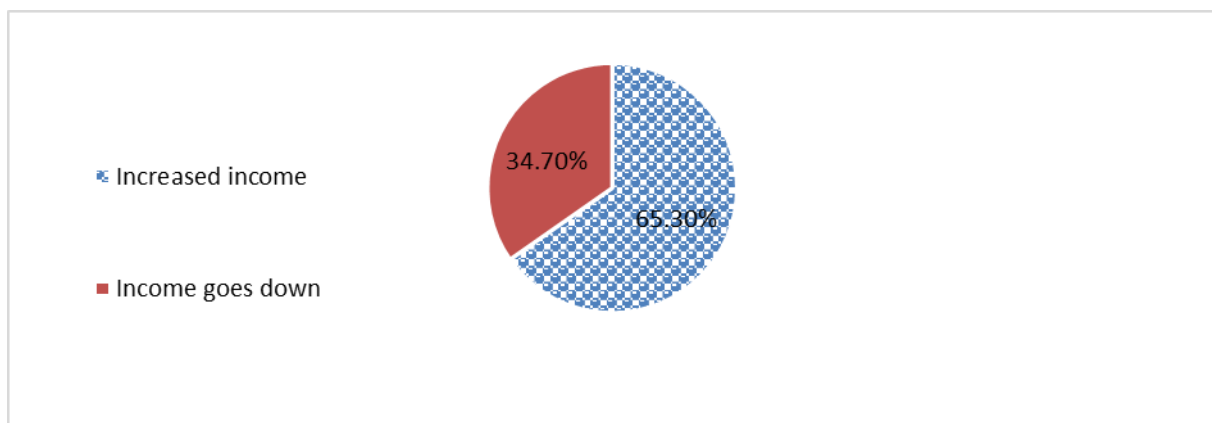
Unit of measure: picks

According to the assessment of employees, job opportunities vary between managerial positions and employees within businesses. Overall, in various industries, direct labor has more opportunities with 166 out of 465 choices (35.7%), mid-level management has 150 out of 465 choices (32.3%), and senior management has 149 out of 465 choices (32%)

Job opportunities also differ based on economic regions. In formal sectors, there are more employment opportunities for high-level and mid-level management positions. Conversely, in informal sectors, there are more job opportunities for direct labor positions. Specifically, in formal sectors, the job opportunities for senior management positions account for 101 out of 149 choices (67.8%), mid-level management has 98 out of 150 choices (65.3%), and direct labor has 57 out of 166 choices (34.3%). On the other hand, in informal sectors, the job opportunities for senior management positions account for 48 out of 149 choices (32.2%), mid-level management has 52 out of 150 choices (34.7%), and the job opportunities for direct labor positions amount to 109 out of 166 choices (65.7%) (Table 1).

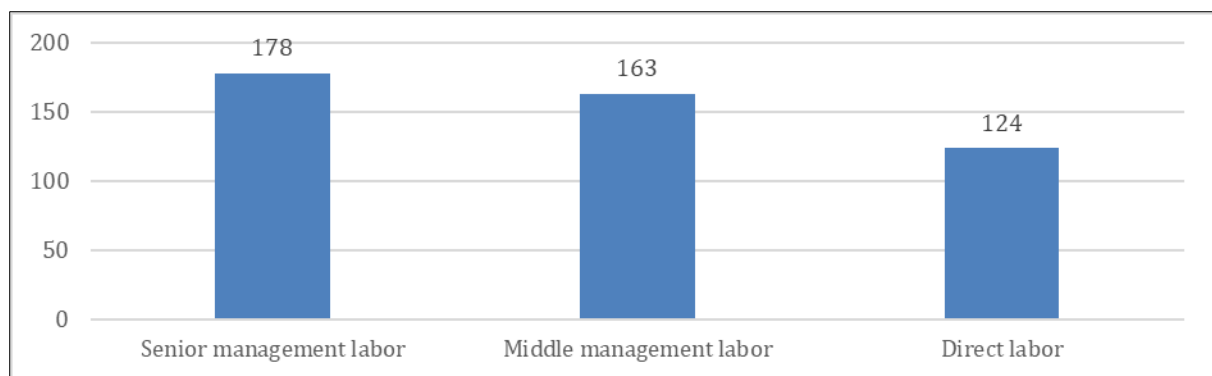
### 3.2. Opportunity to increase income for employees

Regarding to the question "Does digital transformation affect your future income?", 395 out of 465 respondents answered "yes" (84.9%), while 70 out of 465 respondents answered "no" (15.1%). Among those who answered "yes," 258 out of 395 individuals believed that their income tends to increase (65.3%), and 137 out of 395 individuals believed that their income tends to decrease (34.7%). Therefore, the workers are quite optimistic about the changing income trend, expecting it to increase under the influence of digital transformation.



**Figure 1** Income trends of employees in the context of digital transformation

Regarding to the job position, digital transformation brings more income opportunities for high-level management. The percentage of employees who believe that digital transformation provides more income opportunities for the high-level management group reaches 38.2% (178 out of 465 respondents), while for the middle-level management group, it is 35.1% (163 out of 465 respondents), and for direct workers, it is 26.7% (124 out of 465 respondents) (figure 2).



Unit of measure: picks

**Figure 2** Opportunity to increase income for employees by job position

Turning to the job position in each economic region, income growth opportunities vary among job positions in each economic region. In general, the formal economic region is a potential area that provides high income growth opportunities for high-level management with 111 out of 255 selections (accounting for 43.5%). Similarly, within the formal region, there are 98 out of 255 selections (accounting for 38.4%) for middle-level management and a lower proportion for direct workers with 46 out of 255 selections (accounting for 18.1%). In the informal economic region,

the highest income growth opportunities are for direct workers with 78 out of 210 selections (accounting for 37.1%) (Table 2).

**Table 2** Income opportunities for workers by economic sector

STT	Income opportunities for positions	Total	Official area	The informal sector
1	Senior management labor	178	111	67
2	Middle management labor	163	98	65
3	Direct labor	124	46	78
	Total	465	255	210

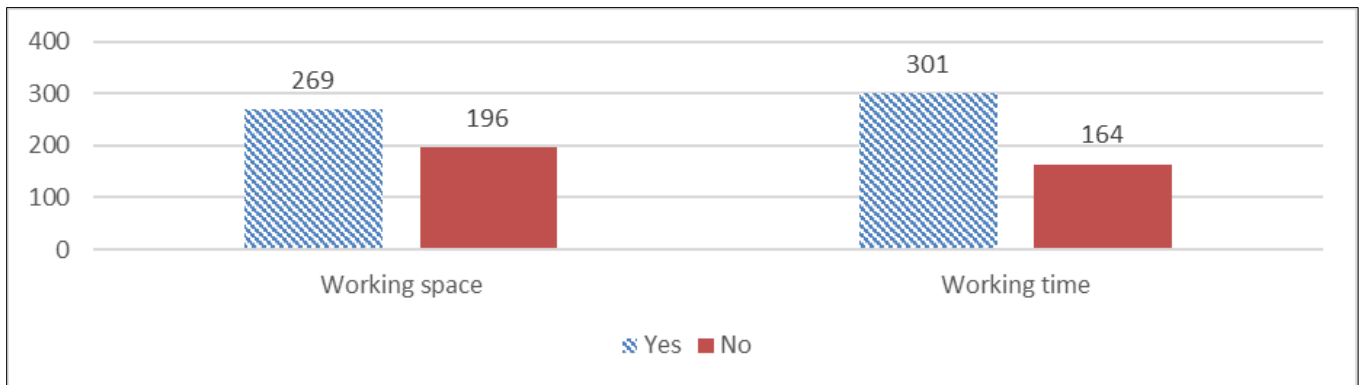
Unit of measure: picks

### 3.3. Various forms of employment

Digital transformation enables employees to effectively utilize and flexibly manage their time and workspace. For certain positions, employees are not necessarily required to be physically present at the workplace. They can take advantage of suitable time and space that align with their schedules.

When asked, "*Can your job be flexible in terms of workspace in the context of digital transformation?*", 269 out of 465 respondents answered "yes" (accounting for 57.8%), while 196 out of 465 respondents answered "no" (accounting for 42.1%).

When asked, "*Can your job be flexible in terms of working hours in the context of digital transformation?*", 301 out of 465 respondents answered "yes" (accounting for 64.7%), while 164 out of 465 respondents answered "no" (accounting for 35.3%).



Unit of measure: picks

**Figure 3** Flexible opportunities in terms of time and workspace

The level of flexibility in terms of workspace and working hours varies among workers based on their job positions (Table 3).

The high-level management positions have higher opportunities for flexibility in terms of working hours and workspace compared to other positions (with 262/465 choices indicating high-level flexibility (56.3%); medium-level flexibility with 135/465 choices (29%); and low-level flexibility with 54/465 choices (11.6%)).

For direct labor positions, the high-level flexibility in terms of working hours and workspace has 172/465 choices (37%); medium-level flexibility with 158/465 choices (34%), and low-level flexibility with 79/465 choices (17%).

**Table 3** Flexible opportunities in terms of time and workspace by job location

Job position	Opportunity to be flexible in time and space work when converting numbers			
	High	Medium	Low	Constant
Senior management labor	262	135	54	14
Middle management labor	198	166	73	28
Direct labor	172	158	79	56
Total	632	459	206	98

Unit of measure: picks

### 3.4. Opportunity to improve working conditions

When undergoing digital transformation, opportunities for flexibility in working hours and workspace can alter working conditions. Additionally, working conditions within businesses often change as they adopt new technologies. Factors that may undergo changes include occupational health and safety, working hours and breaks, facilities, and work equipment (Table 4).

**Table 4** Opportunities to change working conditions in the workplace

The element belongs to working conditions	Opportunity to improve working conditions			
	High	Medium	Low	Constant
Occupational safety and health	176	134	101	54
Time to work and rest	188	165	73	39
Means, working equipment	102	191	159	13
Total	466	490	333	106

Unit of measure: picks

Regarding to the occupational health and safety factor, 176/465 respondents believed that there are high opportunities for improvement (37.8%), with a medium level at 28.8%, low level at 21.7%, and no change at 11.6%. For working hours and breaks, 40.4% of respondents indicated high opportunities for improvement, while the medium level was at 35.4%, the low level at 15.7%, and no change at 8.4%. In terms of facilities and work equipment, 21.9% of respondents saw high opportunities for improvement, with a medium level at 41.1%, a low level at 34.2%, and constant at 2.8%.

**Table 5** Opportunities to improve working conditions by economic sector

STT	Working conditions factors	Total	Official area	The informal sector
1	Occupational safety and health	176	121	55
2	Time to work and rest	188	137	51
3	Means, working equipment	102	84	18

Unit of measure: picks

By economic region, the formal economic sector had a significantly higher proportion of workers who assessed the opportunities for improving working conditions compared to the informal economic sector (formal sector: 121 opinions - 68.8%; informal sector: 55 opinions - 31.2%).

## 4. Conclusion

Digital transformation creates numerous employment opportunities for workers, including significant increase in formal employment; a portion of the workforce experiences improved income and the chance for further growth;

greater work flexibility (in terms of space and time); improve working conditions through technology adoption and simplified labor relations; employment opportunities for skilled workers and managers who possess the necessary competencies; expanded job prospects for younger workers who are adept at quickly grasping and applying information technology; increased employment opportunities in service industries and agricultural sectors as e-commerce develops; more job opportunities for proactive workers who actively update their knowledge and skills, exhibit lifelong learning discipline, and adhere to self-discipline.

In order for employees to take advantage of opportunities and quickly overcome challenges, it is necessary to coordinate and enhance the roles and responsibilities of all three parties in the labor market. The government needs to continue to improve institutions and policies on employment and labor market in line with the country's socio-economic development orientation in the context of integration, such as researching, developing and implementing policies to support and encourage enterprises to employ older workers; policies to support job creation for disadvantaged groups and vulnerable groups in society; perfecting the legal framework for smooth and synchronous operation of markets, developing elements of the labor market; review and further ratify International Labor Organization conventions relating to the labor market.

In addition, the government has also implemented macro solutions related to the development of the education and training system. Changing the way of educational management, teaching methods associated with digitization, in line with the application orientation and requirements of the labor market; update training programs in the direction of conformity with international standards, digital universalization to ensure opportunities to access digital skills as soon as possible for students. Implement educational reform programs in the direction of connecting high school and university education, integrating information technology training programs, tightening output standards to ensure learners have information technology capabilities. at a basic level upon graduation.

In order to focus on digital transformation to become digital businesses, the government needs to build a legal environment that allows new business models to apply new and innovative technologies, and at the same time create a testing space along with supporting businesses in training and retraining human resources, and develop the workforce to meet the requirements of enterprises.

The government should also set up a number of reputable and quality information technology training centers to create opportunities for employees to learn basic, foundational and specialized digital skills, in order to help them learn more about digital skills to shorten the gap between the supply and demand of the digital skilled workforce in the market, accelerating Vietnam's digital transformation process.

The government also needs to carry out the inspection of private information technology training centers to ensure the quality of training; and at the same time prevent and detect cases of buying and selling professional qualifications such as web design, programming, office computing in contravention of the law.

The government promote a culture of lifelong learning within organizations, businesses and communities; build an ecosystem to support each citizen, each worker to be retrained and enhanced throughout life; build and spread motivation in learning, especially those in adulthood members, employees working in occupations at risk of being replaced, elderly workers; implement training and support during the transition and job search stages. At the same time, it is necessary to promote the spirit of self-study and self-development of individuals to move towards the model of "learning citizen 4.0" with full skills, including global citizenship skills, innovation skills, IT skills, interactive skills,...

---

## **Compliance with ethical standards**

### *Acknowledgements*

The authors would like to thank for the support of Ministry of Labour, War Invalids and Social Affairs.

### *Disclosure of Conflict of interest*

The authors declare that no conflict of interest.

---

## **References**

- [1] Prime Minister of the Socialist Republic of Vietnam. Decision No. 749/QĐ-TTg: Approving the "National Digital Transformation Program to 2025, with orientation to 2030". Issued on 03/06/2020.

- [2] Chen Yubo (2021), Future of China's digital economy; Future of China's digital economy; © 2022 [cited 2022 Sep 21]. Available from <https://www.chinadaily.com.cn/a/202101/28/WS6011fe41a31024ad0baa5911.html>.
- [3] Longmei Zhang. China's Digital Economy: Opportunities and Ristks. IMF Working Papers. Volume 2019 Issue 016.
- [4] Nguyen Thang, Nguyen Thu Huong. The 4th Industrial Revolution and issues for human resource development in the 2021-2030 period. Proceedings of the Workshop: Strategic orientation of labor, employment work and develop skills for the period 2021-2030. Jrganized by the Ministry of Labour, Invalids and Social Affairs in collaboration with the Hanns Seidel Foundation in May 2019.
- [5] Sehnbruch, K., González, P., Apablaza, M., Méndez, R., & Arriagada, V. The Quality of Employment (QoE) in nine Latin American countries: A multidimensional perspective. World Development, 2020. 127, 104738. doi:10.1016/j.worlddev.2019.104738.
- [6] World Bank. Digitizing Vietnam: The Road to the Future, Review Report August 2021. 1818. H. NW, Washington DC, 20433, USA