

# Industrial Revolution 4.0 and Its Impacts on Indonesian Labor Force

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# Industrial Revolution 4.0 and Its Impacts on Indonesian Labor Force

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**Abstract**—The most significant impact of Industrial Revolution 4.0 goes to low-educated labors with repetitive work. International Labor Organization (ILO) reported that 56 % of job opportunity are threatened due to the emergence of robots and automation. Experts predict that labors will lose jobs and stagnancy of wages for high market competition suggests businesses to minimize labor cost. It might gets worse if liberal market system continues and waging policy does not advocate labor's interest. Transition of jobs as the result of Industrial Revolution 4.0 gives businesses advantages of less labor cost due to robots and automation, yet putting labors aside to disadvantage. More massive automation will challenge labor consolidation because more permanent labors will lose their jobs. However, others are optimistic that Industrial Revolution might brings forth advantages for labors such as less working hours, more productivity and balanced life. In the case of Indonesian labor market, BPS (Central Body of Statistics) shows that Industrial Revolution 4.0 has not yet bring high-scale impact. Still awareness and preparation is obligatory to embrace these impacts. Government plays significant role in this matter to lead to labor's prosperity.

**Keywords**—Industrial Revolution 4.0, Labor Force, ILO

## I. INTRODUCTION

The Fourth Industrial Revolution is already upon our own very eyes. It is only natural on every event of Industrial Revolution, an issue always arose. However, it appears about 57% of job loss, but despite that there is always new job opportunities being made, which affecting the world of employment. While doing their jobs, people can chose to be independent (as an entrepreneur) or they can work with other people [1], but machines, digitalization, and artificial intelligence such as robots, tends to be disrupting the role of the labors. The recent event that caught our interest was the laborer at the highway might lose their jobs, since the implementation of non-cash transaction obligations. Its no longer necessary to have a cashier on every checkpoint at the highway because now people must use the electronic e-toll card as a transaction device.

The banking industry is one of the examples that most often faces employment issues due to technological advances. If in the past the bank's office was filled with customers' queues to withdraw/deposit money, as well as make transfers, now customers can simply do so at an ATM machine. In fact, some types of bank transactions can already be done by customers at home through the mobile banking application or internet banking. Practically, banks no longer need to employ many tellers and customer

service officers. The birth of financial technology or better known as financial technology is predicted to change the face of banking in the next few years. With the Peer-to-Peer (P2P) Lending scheme, people can now obtain financing without having to interact directly with bank officers, the era of bank employee extinction will begin due to financial technology.

## II. RESEARCH METHOD

Research methods on Industrial Revolution 4.0 and its Impact to Indonesian Labor force, using the normative juridical method with a statutory approach that uses secondary data as the main data in research.

## III. FINDINGS AND DISCUSSION

The results of Research methods on Industrial Revolution 4.0 and its Impact to Indonesian Labor force are explained as follows.

### 1. Impact of the Industrial Revolution 4.0 in the labor force

The initial concept of industrial relations in its development was dominated by the relationship between workers/laborers and private employers between the two which often caused many problems in the production process. Among them is the dominance of employers against workers/laborers who work for him in the production process which ends in the exploitation of workers/laborers. The concept is as a result of the application of laissez-faire politics [3]. This happens to countries, where the state cannot intervene in the trade process, including the production process, which then results in low wages, excessive working hours, increasing poverty rates for workers/laborers and no appreciation of workers/laborers [4]. The situation then led to protests from workers/laborers who tried to defend their interests and rights, while on the other hand employers remained in a position that tried to become dominant in the production process.

The people began to see that problems in industrial relations were problems between workers/employers and employers and the government began to think that laissez-faire politics could not create a good industrial system, but instead caused various problems. Therefore, the government began to take the view to intervene in the production process. This then becomes the general view

that industrial relations is no longer only built on the relationship between workers/employers and employers, but there are three elements in industrial relations, namely workers/laborers, employers and the government. However, the initial concept of industrial relations which saw the relationship between workers/employers and employers as the main element in the concept of industrial relations is still thick felt. Although there has been inserted an element of balance between workers/laborers and employers which in practice is manifested in the form of government/state intervention in the form of regulations and legislation.

One of them is in the Labor Dictionary which interprets the term industrial relations as "The relations between employers and employees in industry. In the board sense, the terms also include the relationships between the various unions, between the unions and employers, between the State and the unions as well as those between the employers and the Government " [5]. Thus, it can be seen that the concept of industrial relations is basically a very dynamic concept.

The development of the industrial revolution era 4.0, greatly impacted the employment sector. The industrial revolution 4.0 has given birth to a flexible labor market, by shifting the meaning of employment relations. The relationship between workers and employers is no longer in the form of employment relations but partnership relations, changes in the pattern of work relationships that no longer follow the system in the law. In some employment employment contracts are based solely on trust, there are no written contracts. Flexible labor market is a market in which workers and employers have a relatively equal freedom to interact and make rational exchanges [6]. Seeing the pattern of work relations that developed in the era of the industrial revolution 4.0 has changed into partnership relations.

Changes in employment have an impact on wages too. Some matters in the field of employment that were affected by the Industrial Revolution 4.0 are:

- 1) The concept of industrial relations, which is based on work relations between companies and workers/laborers, is not a permanent and static relationship, but is a partnership. This concept has consequences for workers to work for several companies. Understanding of job location and working time becomes flexible.
- 2) Wage concept. Calculation of payment can be hourly, per day, per week or per month, depending on the agreement or agreement and according to the level of expertise.
- 3) The concept of industrial relations disputes, for example termination of employment, the concept of time of termination of employment can also change due to the flexible nature of the work.
- 4) Model of industrial relations dispute resolution, whether using the Alternative Dispute Resolution model or the litigation model through industrial

relations justice. The authority of the court in examining what types of cases, etc.

## 2. *Government's Efforts and Policies in the face of the Industrial Revolution 4.0*

In addition to the future employment relations will be more flexible, a worker can work for more than 1 employer, industrial revolution 4.0 presents challenges in various aspects of life, not least in the employment sector.

Mechanization, automation, and the presence of artificial intelligence are threats that must be faced by workers or laborers in the current era of disruption. On the one hand, the industrial revolution presents many new jobs, but on the other hand not a few jobs are lost.

The World Economic Forum predicts four issues that will affect future work:

- 1) Artificial intelligence and robots will create more jobs, not mass unemployment. Automation will cause some jobs to be lost, but on the other hand this actually brings new job opportunities in other fields.
- 2) Each city will compete with each other over human resources with the best talent. Most of the labor force in developed countries will become freelance workers who will be dominated by millennial generation. On the other hand, companies are believed to prefer recruiting freelance workers over permanent workers to fill the talent gap they need.
- 3) The education system has changed from a partial to a holistic approach. Schools will begin to adopt a project-based curriculum as a bridge to break down barriers that have been a barrier to the generation of creative thinking.

Making Indonesia 4.0 as a government policy, still threatens the workforce of workers in Indonesia. With the increasing automation of human work by machinery, some workers will naturally experience termination of employment. Therefore, the challenges for the labor sector must be anticipated by all parties because there will be many Indonesian workers who are unable to compete and are excluded from the world of work if they are not prepared for changes in skills, changes in occupations and changes in the lifestyle of their communities.

Some of the challenges in the industrial revolution 4.0 are:

- 1) Access to a massive increase in competence and state presence through social security that is able to protect the work and income of its citizens is crucial in the face of the current 4.0 industrial revolution.
- 2) The challenge of job transformation. As a result of technological developments, work is no longer limited by time and space. In addition, with the demands of a higher job and the increasing number of repetitive jobs that can be replaced by machines or robots.

- 3) The challenges of community transformation. The impact on society, inequality of competence and income between individuals who have access to computers and the internet will be increasingly felt. Becoming a threat to domestic workers who do not have the skills to adapt in new types of jobs.

Efforts and policies must be made considering the Work Pattern of the industrial revolution era 4.0 are:

- 1) The desire of workers to work according to competence.
- 2) Workers can work according to the time requirements available.
- 3) Work while doing other activities.
- 4) Work with 2-3 employers.
- 5) There is work protection or safety guidance.
- 6) There is a wage system for units of time (per hour), units, units and bonuses.

Besides the challenges some of the benefits of the Flexible Labor Market according to the World Bank [7] are:

- 1) Production efficiency will be achieved, maximizing profits, as well as equal employment opportunities, reducing unemployment and improving income levels.
- 2) Will open up opportunities for unemployed people to get work, and for workers in the informal sector to more easily move to the formal sector which is considered safer, fairer, and prosperous, so that ultimately the unemployment rate will be reduced.

The owner of capital and the work of the entrepreneur will always be a stronger party than the worker who merely owns and sells labor or services. Therefore, efforts and policies that can be carried out by the government in welcoming the 4.0 industrial revolution in the field of employment are:

- 1) The law must be created in such a way as to provide protection for workers to avoid the possibility of contracting or exploitative work relationships and/or hobbessian contracts, where workers are encouraged to be willing to enter into contracts that enslave themselves voluntarily, surrender their rights to employers who have.
- 2) The need to revise the Manpower Act. The revision is needed to accommodate the development of the industrial revolution 4.0 because there will be many changes such as the employment relationship between workers and employers.
- 3) There needs to be a policy that links wages with productivity.
- 4) Define labor, the relationship between employers and workers, which includes a description of the rights and obligations of each party and the mechanism for its application, which is then known as industrial relations.
- 5) Worker protection is no longer just a certainty of work and wages, but also the right to form a union as a representation of workers in dealing with

employers in work relationships. Therefore, as a system, industrial relations according to Solomon consists of three actors: workers and their organizations, employers and their organizations, and the government.

- 6) An ideal, more realistic Flexible Labor Market (PKF) concept needs to be built, namely a kind of trade-off between PKF and worker protection, which provides an opportunity to increase company competitiveness while ensuring minimum standards of worker protection. This will provide a safer and better climate for employers, workers and the government.
- 7) Regulations need to be made regarding labor social security in the Flexible Labor Market model. In developed industrial countries, flexible labor market policy measures are always balanced by the application of social security systems. The social security system is put in place as part of the social protection system. This is due, can change the status of one's work quickly. The change in status from work to unemployment is not always caused by economic turmoil, but rather can be part of an ongoing system. Therefore, a social protection system is needed that integrates the social security system and social assistance schemes that are integrated and longer-term.
- 8) Policies to deal with flexible labor markets must be integrated with related institutions, by sitting together because it is not only the responsibility of the ministry of labor.

These policies are carried out in order to provide government protection to the people as a counterweight in industrial relations. Legal protection for workers is the fulfillment of basic rights which are attached and protected by the constitution as regulated in Article 27 paragraph (2) of the 1945 Constitution of the Republic of Indonesia [8].

In the era of industrialization with the concept of flexible labor markets, the role of the state was replaced by the function of market mechanisms, both in the context of the labor market and industrial relations. In a number of developed industrial countries, this transition to the role model of the country is preceded by a history of the effective role of the state in the system of work protection and social and economic welfare guarantees of workers and citizens in general. The transition was characterized by the characteristics of a full-employment labor market, a balanced bargaining position between workers and employers, and a labor market that has a larger skilled labor force [9].

In developing countries the transition of the role of the state is not preceded by an effective state role in the development of a coherent industrial relations model and an effective socio-economic welfare system for workers [10]. As a result, the fundamental problems of the role of the state in the development of the labor market system have emerged in line with the changing changes in the more



liberal labor market system. Important issues in this context are law enforcement, labor market regulatory functions, and weaknesses in the social security system.

According to Widiyanto [11] that in order for the state to have a strong role in structuring a socio-economically secure labor market system for workers, it is necessary to formulate explicitly the extent of a safe level of market flexibility for existing labor force and labor market conditions. In addition, labor market policies must also be integrated with related institutions, and be placed as objects of other macroeconomic policies. The need to sit together with related agencies both transportation, cooperatives, industry, trade and related agencies that have a direct impact of the industrial revolution to formulate policies for flexible workers in each sector as a follow up to the revision of the Manpower Act, because basically the ministry of labor cannot implement itself in the face of the birth of a flexible labor market which, among others, is related to industry, trade, cooperation, transportation in the era of the industrial revolution 4.0.

#### IV. CONCLUSION

The industrial revolution 4.0 is both a challenge and a threat, if there is no change in the concept of industrial relations. The existence of the Industrial Revolution 4.0 must be welcomed by changing the concept of industrial relations which was originally a working relationship into a partnership relationship. Therefore revision of the Act in the field of Manpower is an absolute thing to do. If there is no such effort then the situation will be like a slogan in Dutch: "het recht achter de feiten" (the law always runs behind the events).

Worker protection is no longer just job security and wages only for workers of the industrial revolution era 4.0, but also the right to form trade unions, protection guarantees due to the rapid change of one's work status and policies to deal with the flexible labor market must be integrated with related institutions. In order for the state to have a strong role in structuring a socioeconomic secure labor market system for workers, it is necessary that labor market policies must also be integrated with related institutions, and placed as objects of other macroeconomic policies.

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