

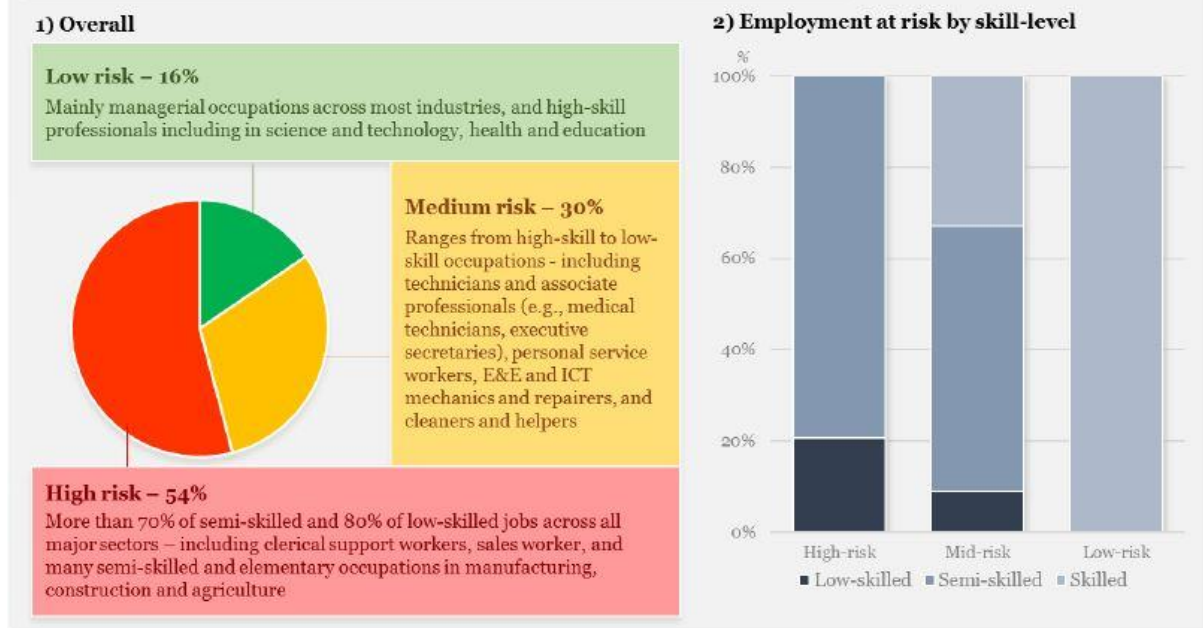
In this age of modernity and fast-paced innovation, technology is rapidly taking over human jobs worldwide. Economists predicted that by 2030, robots would have replaced over 1.5 million jobs in the United States whereas in China, the figure is expected to exceed 11 million.¹ Our country Malaysia is no exception. Our Human Resources Minister, M Kula Segaran, said almost half of the companies in the nation would cut down some full-time labour to make way for automation by the year 2022.²

Today, technology has advanced to great lengths that many large businesses in most, if not all, countries are capital-intensive in their production process. Companies and industries are more focused on lowering their cost by replacing labour with technology. The lucrative benefits of efficiency, high quality and high output offered by these machines are slowly driving so many employers away from human labour.³ With the increasing variety of high-powered machines alongside the rapid technological advancements, it is self-evident that robots and artificial intelligence (AI) have been taking jobs away from humans. As technology continues to develop, there are many debates on how jobs and careers are affected and the consequences it could have on employment.

Malaysia aims to become a developed nation by 2025 and hence technological development will continue to play a crucial role in our economy. Although the digital society of Malaysia is already at the global forefront, Norhizam Kadir, the vice-president for growth ecosystem development at Malaysia Digital Economy Corporation (MDEC), believes that the issues concerning the digitalization of traditional industry sectors and talent development will have to be addressed in order to bridge the digital divide that is still existing.⁴ Fortunately, the government has been actively tackling the problem over the recent years. The Malaysia Digital Economy Blueprint aims to improve network connectivity over the next 5 years,⁵ and the Industry4WRD policy, launched in 2018, is striving to transform the manufacturing sector and related services by 2025, thereby furthering technological advances in Malaysia. Highly advanced imported technologies are also speeding up this process drastically.

There is much fear surrounding the impact of automation on employment and among them are: reduced earnings, lower future employment opportunities, negative effects on consumption, health and life expectancy. About 18,000 workers from the banking industry lost their jobs in 2015 as a result of the introduction of technology.⁶ According to the Khazanah Research Institute (KRI), automation will affect jobs of every skill level. More than 70% of all semi-skilled and 80% of all low-skilled jobs are at high risk while 40% of skilled jobs are at medium risk (Figure 1).⁷

Figure 1: Malaysian jobs at risk of automation
4 out of 5 of jobs at high risk of displacement by technology are semi-skilled



Sources: Methodology adapted from Frey and Osborne (2013) and ILO (2016), data from ILOSTAT and DOSM, author's calculation

Figure 1
 Source: Khazanah Research Institute, 2017

The current Fourth Industrial Revolution, otherwise known as Industry 4.0. as described by the German economist Klaus Schwab, is ‘a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres.’⁸ Previous revolutions were only able to replace routine manual and cognitive tasks but the current revolution is also able to replace non-routine tasks that require application of logic.⁹ As such, more jobs are easily replaceable.

If displaced workers are not able to find new jobs, structural unemployment may arise and income inequality will be an inevitable consequence. The impact would be even more damaging if it affects jobs of all levels. Low-skilled and semi-skilled workers are most prone to be replaced by automation, so poverty levels are expected to rise. In the event that if high-skilled and professional jobs are replaced, then falling income would affect the population on a larger scale.

Lower household income will impede the growth of the economy, as people now have less purchasing power and will tend to spend less. Even though firms may cut down prices of goods and services due to the technological economies of scale, the low price will not stimulate much demand.

On the other hand, there are gainers too in such a scenario. The high-tech entrepreneurs and top CEOs in the country would be reaping huge profits for their innovative ideas¹⁰ since automation is bound to reduce the costs of production. Thus, the redistribution of income will flow from the lower and middle class towards the small minority of the very wealthy.

The significant increase in automation use would also result in tremendous improvements in productivity, whereby a large number of inputs can be generated at lower costs, raising the

overall welfare of Malaysian citizens and spurring economic growth. However, the positive effects may be offset if unemployment persists.

Conversely, economic researchers Steven Brown and Pamela J. Loprest, believe that robots, automation, and artificial intelligence (AI) are more likely to change jobs and not eliminate them. Jobs that involve routine tasks may disappear with advancement in computers but this change would also lead to the creation of new challenging jobs. For example, with use of robots, workers on the production lines have moved up to programming.

AI will automate many repetitive tasks like data entry and assembly line manufacturing. The technology will also change the nature of work for many other jobs, allowing workers to focus on higher-value and higher-touch tasks that often require interpersonal interactions. These newly enhanced jobs will create benefits for both businesses and individuals who will have more time to be creative, strategic, and entrepreneurial. Sales representatives will have to become more capable with online marketing and engagement in order to adapt to customer preferences.

In manufacturing, companies are experimenting with mechanical exoskeletons that can help floor and line workers reduce strain and fatigue when lifting heavy objects.¹¹ This illustrates the complementary effects of machines on jobs, in which technology aids the workers and expands productivity, leading to higher employment and wages.⁹

An increase in productivity can lead to increased income. A study conducted by Georg Graetz of Uppsala University and Guy Michaels of the London School of Economics titled "Robots at Work" in December 2018, show that industrial robots can raise productivity. Their study looked at the United States and 16 other countries and analysed a variety of data for a 15-year period ending in 2007. The study shows, on average, across the 17 countries, the increasing use of industrial robots over the time period raised the annual growth of GDP by 0.36%.¹²

Historian Carl Benedikt Frey writes, "The extent to which labour-saving technologies will cause dislocation depends on whether they are enabling or replacing. Replacing technologies render jobs and skills redundant. Enabling technologies, in contrast, make people more productive in existing tasks or create entirely new jobs for them."¹³ It may seem like only the workers equipped with the complementary skills that can work in tandem with the technologies would emerge as the winners amid the technological change. But, with some government intervention and an adaptable labour force the entire Malaysian economy would stand just as much chance of winning.



Figure 2
Source: *The Edge Malaysia*, 2017

It is important to identify which jobs are lost and which are proliferating to ensure “people will have the opportunity to shift from working in the jobs of yesterday to the jobs of tomorrow.”¹¹ Workers having the right set of skills will possibly transform replacing technologies into enabling technologies. Labour market reform will have to be enacted and directed towards improving workers’ flexibility and mobility in response to technological shocks so that negative effects on wages and employment can be reduced.

Retraining and reskilling programmes for displaced workers can help them find employment and even earn higher pay in the future as they would then possess more flexible skills to meet changing labour demands. To ensure the younger generation is ready by the time they join the workforce, educational reforms are essential to prepare them with the complementary skills that would come in handy and increase their employment opportunities. Schools may integrate the relevant skills highly demanded by firms (Figure 2), such as computational skills and soft skills into the day-to-day curriculum of their students. The ‘#mydigitalmaker’ movement led by MDEC and the Ministry of Education is evidence that progress is being made to develop Malaysian youths with the necessary skills to navigate our digital economy.⁴

The public institution has a major role to play when it comes to mitigating the consequences of technological unemployment. Robot taxes,⁶ which cut incentives of automation, is worth considering as the tax revenue generated can be used to fund the reskilling of replaced workers. The government may enhance social protection by introducing safety nets to support workers who may lose their jobs as a result of new technologies being implemented in their workplace, e.g. cash transfers to the poor and unemployed. Offering unemployment benefits, making tax credits more generous, providing more and improving the quality of public goods are some other ways the government can intervene, all of which would help in distributing the

technological dividends evenly among the population. If targeted well, these policies could also combat poverty and inequality effectively in the long run.⁹

Exhibit 7: Employed Persons by Skill Level, Malaysia, Third Quarter (Q3) 2020 & Fourth Quarter (Q4) 2020

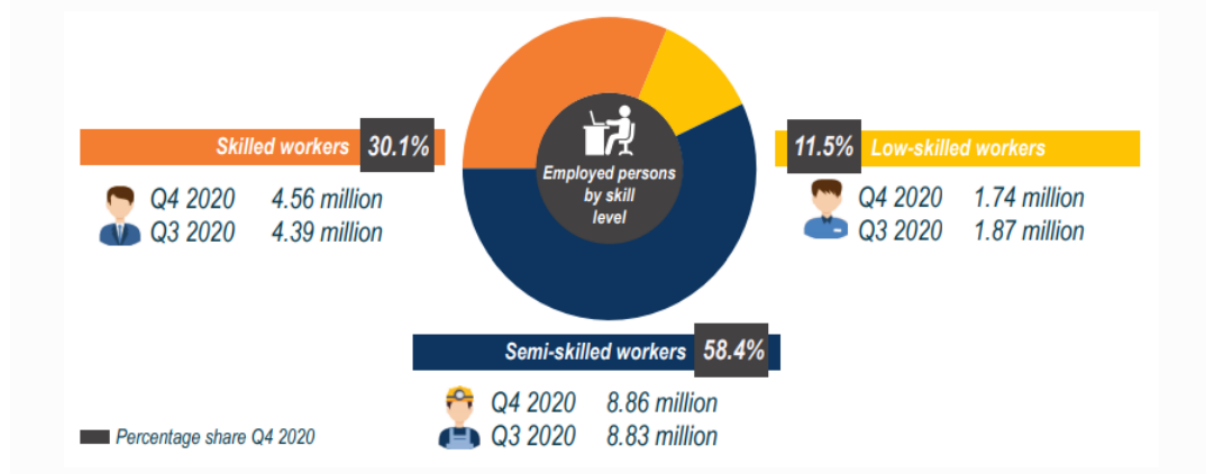


Figure 3

Source: Department of Statistics Malaysia, 2020

Whether or not we, as citizens of Malaysia, would be better off ultimately depends upon the degree of cooperation between the public and the private sectors. Unemployment is an inevitable effect when half of the labour force is replaced by technology, but the duration it takes for our economy to recover from the setback in the labour market will be the key to the economic welfare of Malaysians.

As our workforce is largely dominated by semi-skilled workers (Figure 3) and their jobs are at stake, widespread employment will occur and continue to disrupt the economy in the long run if neither the government nor the private sector adjusts to the abrupt technological changes. Whereas, with the right policy mix and proper tax and benefit system to reallocate the gains from high productivity and tax revenue to the affected and disadvantaged, the government will be able to bring unemployment under control.

When the public and the private work hand in hand, unemployment will only be a short-term problem. Once it is overcome, we will be able to enjoy higher incomes and a higher standard of living.

(1639 words)

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