International Labour Organization (ILO)

Technology Replacing Human Workers

Overview

Automation has been increasingly replacing the need for many industries to employ human workers. One of the most prominent catalysts for this is the development of artificial intelligence (AI), a phenomenon where computers become so advanced that they can perform tasks thought only to be feasible for intelligent beings. As this technology evolves, it becomes an increasingly significant cause for layoffs, especially among unskilled workers. This can be attributed to the fact that at this point in technological advancement, the scope of tasks that can be completed by AI is somewhat limited. However, it should be noted that this trend already affects a significant number of workers and will ultimately bleed into more industries, trades, and professions as technology continues to advance.

The International Labour Organization (ILO) works with governments, employers, and workers to develop standards, policies, and programs that allow for workers to enjoy decent conditions in the workplace. They believe that social justice is essential to universal and lasting peace and have thus devoted themselves to the mission of promoting social justice and internationally recognized human and labour rights.[1] While automation is a nuanced topic whose effects continue to be widely debated, it should be noted that the ILO has recognized that it is an inevitable consequence of technological advancements within the workplace. As a result, they have been conducting research relating to the consequences of automation and creating policies in response to their findings that seek to benefit affected people.[2]

Prevalence of Automation

In order to understand to what degree automation will affect employment, it is important to first examine how feasible it really is for industries to become automated. It is estimated that 49% of the activities that people are paid to do have the potential to be automated; however, this is an oversimplification of the reality of automation. First of all, in the case of most occupations, they are not likely to be fully automated, but certain activities are more susceptible to automation than others.[3] This means that technology is unlikely to take entire jobs away from humans, but rather will likely assist humans in the performance of their operations. Second of all, the degree of

potential for automation varies by industry and country. This is due to the fact that potential for automation can be attributed to five main factors: technical feasibility, the cost of developing and deploying solutions, labour market dynamics, economic benefits, and regulatory and social acceptance.[3] In short, in order for automation to be feasible, the operations in question must be able to be performed by intelligent computers and the incorporation of automation must be profitable enough for the associated costs to be considered valuable. This is due to the fact that artificial intelligence requires the installation of both hardware and software in order to be implemented, which can be expensive. Therefore, workforces and industries that are dominated by unskilled labour are most susceptible to automation.

This trend becomes apparent when examining the automation potential of various industries based on the types of activities generally performed in each. For example, predictable manual labour is most likely to become automated, since it requires little cognition and judgement, meaning it is easier to create an algorithm that would allow machines to perform this type of work. On the other hand, management is the least likely to become automated, as it relies on forming human relationships and making judgement calls. These are uniquely human qualities that are more difficult to be emulated, even by artificial intelligence. By applying this type of analysis across different industries and occupations, it becomes easier to predict which ones are likely to succumb to automation. For example, the two sectors most capable of automation are accommodation and food services and manufacturing. However, while the former's automation potential is measured at 73%, the latter's is measured at 60%. This discrepancy can primarily be attributed to the fact that accommodation and food services entail far more predictable manual labour and far less management and expertise than manufacturing.[3]

Understanding automation potential across industries is crucial, as this data and these methods of analysis can be transferred to the analysis of automation potential within countries. One of the methods used to understand a country's potential for automation is examining the sectors which dominate the economy of the country in question. As explained previously, industries that revolve around simple work that can easily be performed by artificial intelligence are more likely to undergo automation than those that require skill, complex analysis, and human connection. One example of how this process applies to countries is when comparing the automation potential of Japan and the United States. The former's is measured at 55% as manufacturing comprises a larger

sector in its economy, while the latter's is measured at 46% as it has a higher proportion of work hours in management, architecture, and engineering jobs, all of which are more specialized occupations.[4]

The other method used to analyze automation potential across countries is to take socioeconomic factors into account. Many countries view automation as an investment, since the goal is generally to increase productivity, but nonetheless requires money, time, and resources. This explains why it is easier for countries with more advanced economies to afford higher rates of automation, while countries with large and cheap workforces may be more reluctant to the idea. When taking these measures into account, we see that India and China are the two most technically automatable countries in the world,[4] even if their dominating industries would not lead one to believe so. These include manufacturing of iron and steel, textile, automobile, banking and insurance services, and agriculture. Both India and China's economies have been growing over the past few decades, which has led to the establishment of set minimum wages. In addition, while China has one the largest populations (and subsequently, one of the largest workforces) in the world, their population is aging. As more of the workforce gets older, they will retire and cause a decrease in available workers, meaning automation will be more useful.

Consequences of Automation

While automation is inevitable due to the advancement of technology and its economic benefits, it is worth noting that the flipside of this is the likelihood of mass layoffs of human workers since many of their jobs are projected to be taken over by AI. Before expanding on this, it should be noted that automation is projected to increase in the near future over the course of three waves: the first in the early 2020s, the second in the mid-to-late 2020s, and the third in the early to mid-2030s. During the first wave, only 3% of jobs are expected to be displaced, but by the third wave, 30% of jobs could be automatable.[5] Again, this is a generalization, since these numbers will vary across industries and countries.

While unemployment is a common phenomenon in most economies, overly high rates of it can have undesirable effects for a country's economy. This can be explained by the fact that high unemployment rates lead to an increase in expenditure and a decrease in revenue for the state, since the government is forced to provide subsidies for those who lost their jobs, which were likely

their primary source of income. While these subsidies are helpful, they are usually not enough for civilians to maintain their former standard of living; as a result, demand for products decreases, forcing businesses to adjust their supply by decreasing production. This lowers the country's GDP, which is positively correlated to its economic progress. In addition, unemployment rates are negatively correlated to a country's rate of income tax collection, which is generally considered to be a primary source of revenue for the state.[6]

Unemployment affects not only the state as a whole, but individuals as well. As mentioned previously, the primary source of income for most workers is their salary; government subsidies are usually insufficient to completely replace it. As a result, if this primary stream of income disappears, both peoples' standard of living and quality of life will decrease. This can cause people to lose faith in their governments, as they may be led to believe that the government failed in its duty to serve the people and protect their interests.[7] If enough civilians feel this way, this can cause civil unrest, which leads to a decrease in the influence of the state.

This decrease in quality of life also has physical and mental consequences on unemployed individual and their family. They can become unable to afford essential items such as food, medication, and household items as well as recreational activities, education, and other expenditures that promote overall wellbeing. The stress of unemployment takes a major toll on mental health.

International Response & Proposed Solutions

There are two main schools of thought used to understand the effects of automation. The first revolves around the idea that as AI continues to advance, it will continue to replace humans across all sectors. Therefore, in order to prevent mass unemployment, automation should not be fully embraced until governments develop programs and policies that both regulate the methods and speed of automation and decide how to deal with the displaced workers.[8]

The other school of thought suggests that automation is a product of progress and that attempts to restrict it are simply a result of fearmongering. They argue that automation has been prevalent for centuries and that whenever a revolutionary technological advancement is made, the masses tend to fear replacement and attempt resisting its implementation, while in reality, it just changes the types of work performed by humans.[9]

The ILO's view pulls from elements of both schools of thought. While they recognize that automation is likely to ultimately lead to the creation of new jobs, they recognize that this transition will be challenging for many, especially at first, and that governments should ensure that their workers and industries are ready for it. They predict that in the short term, many workers will be replaced by computers, which are both cheaper and more efficient than humans. The ILO foresees this to lead to increased rates of unemployment and further contribute to income inequality; thus, they recommend implementing a "robot tax" and a universal income. The former entails imposing a tax on businesses for robots that replace human workers, which would seek to slow down the speed of automation and create government funds. This would give governments the time and resources they need to implement programs designed to teach skills and create job opportunities for displaced workers. The latter essentially entails a government welfare program designed to provide beneficiaries with enough money to sustain their basic needs, which, in this case, would give displaced workers the time and resources needed to find employment.[10]

The ILO also predicts that one of the long-term effects of automation could be a decline in the demand for unskilled labour. While automation ultimately creates new jobs, many of them will likely revolve around AI. As such, it will be difficult for an unskilled worker to find a job in such a technical job marker. Because of this, the ILO recommends the implementation of government policies that focus on funding universities and other institutions that seek to create skilled workers and that encourage civilians to seek higher education.[10]

Canada's approach focuses on empowering workers in order to help them adapt to an increasingly automated workforce. They seek to achieve this by investing in programs that are meant to create new jobs, compensate those who lose their jobs, and promote education and skills training.[11]

The European Union's approach is similar to Canada's in that it focuses on adaptation but differs by also focusing on social benefits regarding the redistribution of the benefits of automation. They seek to achieve this by implementing programs that promote work-life balance (especially with regard to the use of technology), policies that give workers more say with regard to how automation should be implemented, and regulations that monitor the implementation and use of technology in the workplace.[12]

Questions to consider

1. Does your country have any laws regarding the replacement of unskilled workers with AI?
   - If so, what are they? Are they being properly implemented and followed?
   - If not, why not? Are there any plans to implement legislation?
2. Which countries share your country's views on this issue?
3. What industries are most present in your country? Could they easily become automated? If so, have they been automated?
4. How is your country preparing for an increasingly technological future?
   - How do they plan to protect workers from losing their jobs to automation?
5. How can the international community help each other adapt to the positive and negative consequences of automation?

Useful delegate resources

- http://www.un.org/en/index.html
- http://www-formal.stanford.edu/jmc/whatisai/
- http://www.aaai.org/
- https://www.technologyreview.com/s/534871/our-fear-of-artificial-intelligence/
- https://www.iwh.on.ca/summaries/issue-briefing/unemployment-and-mental-health

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