Centre for Economic Policy Research

Working Paper on

Role of artificial intelligence in Indian economy

With the growing trend of 'Artificial Intelligence' globally, its graph is showing an upward trend in Indian economy as well. With a move towards digitization, AI has acquired a bit higher position for providing a better future. This better future is not only including better techniques and tools that will help economy to operate efficiently, but also opportunities for employment ensuring a better livelihood.

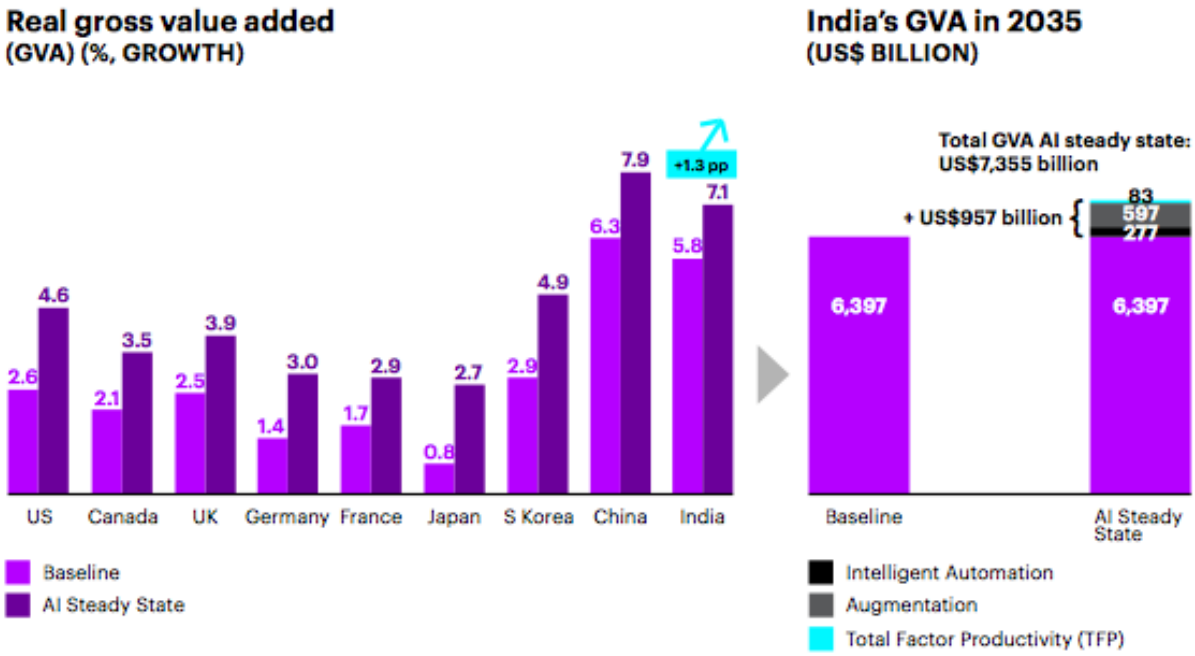
It has been debated that AI will replace human beings with machines resulting in huge job losses. But, according to a report of FICCI and Nasscom with EY, AI will create 2.3 million new jobs while eliminating only 1.8 million jobs in 2020. Although AI will eliminate millions of middle and low level job positions, but what is interesting about AI is that, it will on the other hand will create millions more new highly skilled job positions. It will also help in improving the productivity of various other existing job positions. Moreover, it has also been stated that in 2021, AI augmentation will generate $2.9 trillion in business value and recover 6.2 billion hours of worker productivity.

Apart from this, the interesting fact about AI has been pointed out by a recent cognizant whitepaper wherein it proposed 21 such jobs that will emerge over the next 10 years creating mass employment. The most interesting ones were Man-Machine teaming manager, AI Business Development manager, Data detective, Bring your own IT facilitator & AI-Assisted healthcare technician.

GLOBAL EXPERIENCE:

Evaluating individual performance of India in the field of AI will not be correct. In the era of globalization, it's important to evaluate the comparative performance of countries. According to a report published by one of the renowned firm 'Accenture', AI sector in India has the potential to add US$957 billion to India's economy in 2035. They have done a comparative analysis among the G20 nations. Based on that analysis, they stated that India remains the most competitive in South Asia. Beside this, they also stated that AI is expected to raise India's annual growth rate by 1.3% in a scenario of intelligent machines and humans working together to solve the country's e most difficult problems in 2035. The comparative analysis for the year 2035 among G20 countries have been explained through the graph below.

FIGURE 1: THE ECONOMIC IMPACT OF AI ON SELECTED G20 COUNTRIES

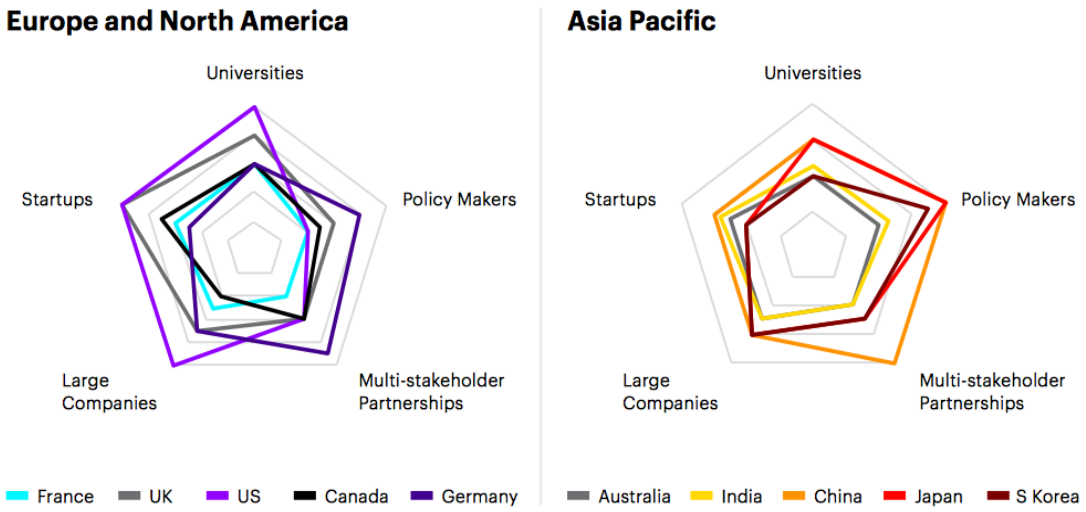


SOURCE: 'ACCELERATING INDIA'S ECONOMIC GROWTH WITH ARTIFICIAL INTELLIGENCE' report of Accenture

It can be depicted easily from the graph above that corresponding to the baseline i.e., at 5.8%, there can be an increase of 1.3% points in GVA by 2035. Moreover, from the second part of the above figure we can see the further segmentation of US$957 billion increase in GVA by 2035. Out of this amount, the biggest share of US$597 billion accrues to the augmentation part, US$ 277 billion accrues to Intelligent automation part and the remaining US$83 billion to total factor productivity.

Apart from this an interesting fact that came out in one of the research report of American firm 'Accenture', is that different countries are following different regional approaches. The growth of AI is majorly determined by the kind of approach that has been followed in a particular country. In order to conduct this research, the researcher divided these approaches into 5 segments namely, role of universities, policy makers, start-ups, large companies and multi-stakeholder partnerships. Based on this segmentation following results were derived.

FIGURE 2: REGIONAL APPROACHES TO AI DEVELOPMENT



SOURCE: ACCENTURE RESEARCH REPORT

It can be observed from the above figure that countries like US & UK that are out excelling in AI industry has followed approaches that corresponds to start-ups, large companies & universities. These countries have a limited role to play in other two segments. Whereas if we have to consider countries from Asia Pacific region, we can consider China & Japan, as these countries are doing great in the field of AI. We can easily depict from the graph above that China & Japan strictly follow the approach that corresponds to the role of policy makers. China has also shown preferential treatment to the role of multi-stakeholder partnerships. In comparison to these countries, if we have to evaluate the performance of India in this field, we can see that India has mostly approached to this field via start-ups. Although all other segments are given less priority, but at the same time we cannot deny the fact that India has not strictly adopted any approach so far. So India has to decide which model country they would like to follow in order to attain the desired development scenario in AI industry.

CHALLENGES:

Although the figures of employment status for year 2020 seems very plausible to us. But, in order to achieve these figures, there are several challenges that need to be eliminated. Some of the major ones are:

- The major challenge that stands forth the government is the fact that AI-based applications have been driven largely by the private sector and have been focused majorly on consumer goods only. So, in order to maximize the scale of AI in our country it's important to lay down effective policies keeping these things in mind.
- The education system prevailing in our economy do not support the required work environment for AI based applications. As the nature of jobs are shifting rapidly, its important to keep our education system updated accordingly.
- Access to AI-led technology is likely to be heavily differentiated. AI-based technology is most likely adopted by organized sector only and as the industries in organized sector are mostly capital intensive than labor intensive, it is unlikely on its part to contribute to large scale employment. Moreover, it is also unlikely in the short or medium term that the unorganized sector will adopt AI technologies, which engages more than 80% of India's labor force, strengthening the former statement. So, it's important for government to formulate such policy measures that will remedy this differentiation so created in AI field.
- AI-based industries operate with a factor of risk as they are not sure of whether the product they are producing will be a success or a failure. Due to the presence of this uncertain factor, investors hesitate to invest in such projects. Most of the investors do not want to risk an investment in something they don't understand. So, this requires government to step in and to fulfil the remaining gap.

RECOMMENDATIONS:

Looking at the current scenario of AI in our economy and based on various studies in this respect, various recommendations have been suggested time to time. Some of the major ones that need to be highlighted in this context are the following ones:

- Policymakers should make AI a critical component of various initiatives and programs launched by Prime Minister Modi such as Make in India, Skill India and Digital India. This can be done by offering incentives for manufacturers, students and start-ups to innovate.

- The National Education policy must be transformed radically to suit the change that is expected in this industry in future.
- As only private sector is majorly operating in this sector, which clearly shows a huge capacity that is available which can be efficiently utilized by the public sector. Moreover, government can also provide aid by investing for businesses that finds it difficult to attract funds from outside.
- India should come up with policies that will view machine intelligence as a critical element of its national security strategy and should also take incentive in evaluating models of defense research in collaboration with various universities involved in the field of innovation.
- AI sector requires a different set of skills and capabilities in order to carry out their operations. In order to upgrade its citizens with the required skill set, it's important for government to initiate appropriate policy measures that will help to train the citizens of our country accordingly. This will help the currently employed people to secure their job positions in future and at the same time will increase chances of employment for those who are currently unemployed.

CONCLUSION:

As the whole globe is entering into a new phase of technology, it's important for our country to keep innovating and upgrade its technology in every sector accordingly. Artificial Intelligence is one such field that contains a lot of opportunity and good fortune if, India is capable to utilize all the potentials from it and at the same time it contains a bad fortune in case it's not able to match the technology level required by the prevailing competition level. So, it's important to take corrective measures and initiate policies that are required by this sector. Looking at the current challenges that this sector is facing, a lot of efforts are required from government front. No doubt this sector has a huge potential to generate employment in coming years, but that can only be achieved if our country would be able to overcome all the challenges its facing in this industry.

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