International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 05 Issue: 08 | Aug - 2021 ISSN: 2582-3930

# Artificial Intelligence and its Impact on Employment

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## ABSTRACT

Evolution is the essence of life and humans are the biggest result of continuous evolution. The working world has also seen various evolutions since time immemorial.

This paper highlights how modern technologies and machines powered by artificial intelligence highly influence the workplace. A few centuries back, it could hardly be imagined that the work could be carried out without humans.

It discusses about the current changes, the advancements in the workplace, humans being replaced by machines and the revolution and ease brought by it. With the present advancements, one can now imagine what the future of workplace would look like.

It also discusses about the belief and opinions of people about the notion that this would lead to stealing of human jobs, and also some of the projection reports of future employment.

Since humans are the ones who gave computers the artificial intelligence to make them work on their stead, so is it possible that they wouldn't have thought of giving them restricted powers to prevent them from overpowering humans?

**Keywords:** Robots, Artificial Intelligence, Employment, Industrialization, Technological Revolution.

## I. INTRODUCTION

Human like machines and robots are increasingly found in various factories and industries where they work with humans mostly under their supervision. This is not a sudden change, these have been worked upon since a long time.

There have always been various speculations and theories regarding these automations. Sometimes they are put in a positive light where they are praised for increasing productivity, effectiveness of work and making cumbersome human tasks easier. But they are also accused of stealing human jobs.

This paper discusses about the ability of humans to use the technological advances for the benefit of making their work easier, faster, with a high accuracy rate, which is a proof of the improved quality of human capital.

This paper is about the modern technologies, automations , advancements of the current workplace, changes in the future of workplace, about what led to these changes, the driving forces behind these and the effect of these automations on the lifestyle of people, on their employment, as well as opportunities rising in various sectors in the forth coming future.

## II. RISE IN AUTOMATION

A surge in the number of robots being used in the workplace has been seen over the last decade. According to the latest statistics issued by IFR ( International Federation of Robotics ), Singapore is world's most automated country with 918 robots per 10,000 employees in the workplace in 2019. South Korea comes second with 868 units per 10,000 employees. Following the list are Japan, Germany, Sweden, Denmark, Hong Kong, Chinese Taipei, United States of America, Belgium and Luxemburg.

According to an RBC Global Asset Management study, the costs of robots and automation have fallen substantially. It used to be that the "high costs of industrial robots restricted their use to few high-wage industries like the auto industry. However, in recent years, the average costs of robots have fallen, and in a number of key industries in Asia, the cost of robots and the unit costs of low-wage labour are converging … Robots now represent a viable alternative to labour."

Not only do the robots follow human instructions for assisting them, but also carry out various complex functions. According to a presentation on robots, "the early 21st century saw the first wave of companionable social robots. As robotics become more sophisticated, thanks largely to the smart phone, a new wave of social robots has started, with humanoids Pepper and Jimmy and the mirror-like Jibo, as well as Geppetto Avatars' software robot, Sophie. A key factor in a robot's ability to be social is their ability to correctly understand and respond to people's speech and the underlying context or emotion."

Henn-na, a hotel in Japan uses robots to check people in and escort guests to their rooms. The robotic receptionist speaks in English and Japanese based on the preference of guests. It also sets up reservations for people, guide them to rooms, adjust temperatures and receives voice commands inside the room to alter the lightings, assist the guests with time and weather reports.

## III. STEALING JOBS OR MAKING NEW OPPORTUNITIES

There has been a lot of accusations made on the automation and robots of stealing human jobs. Various leading newspapers and journals have catered to this issue being raised globally.

People fear of them being completely replaced by machines, though this might be true for certain jobs which could be repetitive and monotonous for humans but could be achieved easily and more accurately by machines such as bookkeeping.

Prior to industrialization, the clothes were woven manually, the workers were then replaced by handlooms and now the process has completely become machine driven. During all these phases there were certain people being replaced but even today the textile industry is still being managed by humans. The Indian textile industry continues to be the second largest employment generating sector offering direct employment to over 30 million people in the country.

There has been a rise in the demand of well paid, skilled, high education jobs such as managers and engineers. The jobs which can be replaced by computers and computer operated machines and robots are less sought upon. So we can conclude that there is a certain middle skill requiring jobs that are taken over by machines.

Automation in shopping through e-commerce, though can be viewed as a threat to the real local marketplace and retail shop owners but looking at the big picture, it has increased demand for online retail goods and has indeed lead to increase in overall employment in retail sector. Supply chain management, e-commerce and logistics have become a new and much sought upon sector for education and work.

## IV. FUTURE EMPLOYMENT PROJECTIONS

There has been various speculations about the future of employment though many experts feel that we are still in the early stages of technological revolution and so it is difficult to clearly figure out the way robots, artificial intelligence and sensors will affect the workplace.

Despite this there are a few experts who have strong opinions regarding the emerging trends and the impact of these. The following reports are focused on the displacement effect of automation. As mentioned by economists Erik Brynjolfsson and Andrew McAfee in their book " The Second Machine Age: Work, Progress and Prosperity in a Time of Brilliant Technologies", "technological progress is going to leave behind some people, perhaps even a lot of people, as it races ahead. As we'll demonstrate, there's never been a better time to be a worker with special skills or the right education because these people can use technology to create and capture value. However, there's never been a worse time to be a worker with only 'ordinary' skills and abilities to offer, because computers, robots, and other digital technologies are acquiring these skills and abilities at an extraordinary rate."

North western economist Robert Gordon argues that "recent progress in computing and automation is less transformative than electrification, cars, and wireless communication, and perhaps even indoor plumbing. Previous advances that enabled people to communicate and travel rapidly over long distances may end up being more significant to society's advancement than anything to come in the twenty-first century."

In a national public opinion survey conducted by Pew Research Centre it was revealed that people had little unease about the emerging trends. According to the survey "65% think it would be a change for the worse if lifelike robots become the primary caregivers for the elderly and people in poor health." Additionally, people were sharply divided on the emerging technology of driverless cars. When asked whether they would ride in a driverless car, 48% said they would while 50 answered that they would not.

## V. CONCLUSION

The impact of new technologies on labour market does not only depend on the industries in which they operate but also on adjustments in other parts of the economy. In other words, the labour freed from the tasks now performed by machines, might be able to adapt to the jobs in other sectors.

It is a part of human nature to create new opportunities when the existing ones subside and just as human workers had bounced back from the industrialization, similarly they would definitely bring out the best for themselves from this robotic automation.

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