# Employment Transformation through Artificial Intelligence in India

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**Abstract**
We all are moving at pace towards innovative technologies and adopting these technologies, human are being entered into the digital world, where they are going to be facilitated by transformed traditional systems into modern systems. In next few years, most of systems will be smart and able to do anything as human can do. This transformation will be a reason to bring the human into very comfort zone where they will take the advantages of these modern facilities. This transformation will help to government in developing the new aspects of developments in their country .As today, the traditional systems are being smart and intelligence along with that cities are also being smart day by day. This transformation will be a cause of bringing a big revolution for the human's life across the world. On another side, this transformation will have positive and negative impact on employability in different sectors. India is essentially entering into a new industrial revolution and it is going to wipe out millions of jobs in India. Innovative transformation through industry revolution will restructure the infrastructure and working environment in services as well as in manufacturing industries. Productivity and revenue of industries will be up after replacing existing methods with innovative methods. Basically, these innovative methods will replace the human with intellectual artificial (AI) machines which will transform the working environment of industries partially or entirely. AI Machines will be responsible for transformation in employability across the world. Machine will take control over the human work means in future most of the work will be executed by the Artificial Intellectual Machines. As per the experts, entire repetitive jobs (low skill and middle skills) will be diminished after implementing Artificial Machines in the Industries, but high skills jobs will be remain sustained in future. This paper shows the impact of Artificial Intelligence Machines on employment potential in different sectors, also focus on opportunities and challenges which will affect the working environment in the industries.

**Keywords:** Employability, Transformation, Artificial Intelligence, India.

## Literature Review
In this paper, researcher studied that how the India is moving at pace towards new technologies and entering into the world of artificial intelligence in reshaping the structure of India's development and growth. He focused on opportunities and challenges that will come in India for brining AI into operating mode and as well as he highlighted that due to AI how the different service sectors particular Health Sector will be affected **[1].**

**Shashi Shekhar Vempati** had described in his paper that how China as a developing country is moving into research work at pace and doing more research on AI to be more advanced. Comparatively, India's efforts are very less on Research work on AI and this is a wakeup call to Policymakers in India **[2].**

As per International Labour Organization report, at the beginning of era of emerging technologies, in India future of work will be restructured and advanced computerization is already disrupting job structure around the world. Latest research estimates that India has high computerization potential, calculated in terms of the task content of various employments. In many industrialized economies, Industry 4.0 technologies are projected to add a void of labor markets, as many regular and rule-based jobs that typically involve low to medium skills are computerized. Cashiers, receptionists, legal aids, and travel agents are thus most exposed to the impact of computerization **[3].**

This paper describes that how the world of technology is changing rapidly, with advanced intelligence machines like robots, replacing simple human activities. Artificial Intelligence **("AI"),** simply put, is the capability of a machine to try to be like intelligent human and perform intelligence activities. It is an umbrella expression that refers to information systems stimulated by biological systems, and includes various skills including machine learning, deep learning, computer vision, natural language processing **("NLP"),** machine reasoning, and strong AI **[4].**

Reports on the impact of AI in the manufacturing and IT and Services sector in India often paint a image of heavy job growth and even employment loss. AI is disrupting traditional business Models in the IT sector, the auto sector, and other manufacturing industries. Professional have highlighted the call for getting used to these changes, commencement with education towards facilitating individuals to move and work privileged the value chain in inventive competence. This report searches for map the present condition of AI in the manufacturing and services industries in India as well as look for what is the present use of AI in different sub sectors of manufacturing and services and what is the potential and existing impact of AI in manufacturing and services [5].

**Report published by PWC India** highlighted that how Intelligence Machines are enabling jobs to be restructured in India'. The report is based on how AI is reshaping the frame of employment in India'. The report is based on a survey which was carried out to gain insight from Indian industries into how AI is going to impact on employments and the industry readiness to adapt to an AI-led job scenario. Employment dynamics are rapid shifting with the implementation of emerging technologies such as robotics and artificial intelligence (AI), which decrease the necessitate for human participation in many everyday jobs. Technology has remodelled the place of work over the past two centuries—the pace with which computerization technologies are developing nowadays and the extent at which they might disorder the world of work are largely without standard. The rise of AI and machine learning (ML) has already started to impact the employment market **[6].**

Report on Advance artificial intelligence for growth publishes by PWC India in April 2018 focused on influencing AI and robotics for India's economic transformation. In the recent history, India has gone through the different phases of technology transformation where we can see of an artificial intelligence (AI) and machine learning's impact on the society. This report highlighted that in next few years, how the AI would be using in the media and news sectors and would be considered as an introductory technology for entering into the next stage of media's modernization and, as a result, India's economic will be on boom **[7].**

Many authors from IBA Global Employment Institute, in their report discussed about the impact of Artificial Intelligence (AI) on the global labour market in next few years as well as they discussed legal, financial and trade issues, such as transforms in the future employment market and in business structures, impact on working time, payment and on the operational environment, new structures of employment and the impact on labour relationships **[8].**

**H Darrell M. West,** in his paper explored the different impact of growing technologies like robots, artificial intelligence, and machine learning on the work force and as well as highlighted health benefits, pensions, and social insurance' s provisions and important polices based on emerging technologies are necessary for the labor force **[9].**

**Dr. Geetali Tilak and Dheeraj Singh,** in their paper concluded that how Artificial Intelligence will be a dynamic and rising industrial revolution 4.0 for the manufacturing and service sectors that would be causing of transforming; the work structure in next few years and it will have direct impact on employability across the world. This revolution will swipe out the maximum jobs from the market and low level and middle level jobs will be in danger. But on the other side, high skilled jobs will be remaining. Therefore, more skilled people will be in high demand to sustain the high skilled jobs in the market **[11].**

**Introduction**
Artificial Intelligence may be best defined by analyzing the two components of the term i.e. artificial and intelligence. While defining "artificial" may prove to be an easier task, it is the definition of "intelligence" over the years which have proved to be the difficult task **[4].**

India is the world's largest sourcing destination, accounting for approximately 55 per cent of the US$ 146 billion market. The country's cost competitiveness in providing Information Technology (IT) services, which is approximately 3-4 times cheaper than the US, continues to be its Unique Selling Proposition (USP) in the global sourcing market. India's highly qualified talent pool of technical graduates is one of the largest in the world and is available at a cost saving of 60-70 per cent to source countries. Many new companies were set up in the 1980s by entrepreneurs with ambitions of creating world-class software development centers. But one thing that threatens the model of Indian IT sector is Automation. According to a research conducted by the World Bank in 2016, it is expected that about 69 per cent of jobs in India is under threat due to automation. This is mainly because the traditional methods followed by the industries may not help in achieving the requirements of the future. The emergence of new technologies will disrupt the market and bring in lot of changes **[10].**

**Objective**
1. To shows the Impact of Artificial Intelligence on Employment Potential in India.
2. To find out the factors due to AI ,lead to job opportunities and challenges in India
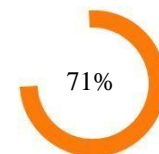
**Research Methodology**
For this research secondary data has been collected. Many articles, reports and published papers were reviewed by the researcher. After reviewing total 50 papers including articles and reports only 20 papers were selected related to research topic. The following outcomes is expected from the research
1. Awareness about Artificial Intelligence.

2. Impact of Artificial Intelligence on Employment Potential in different sectors of India.

3. Awareness of Challenges due to AI for low, medium and high skills jobs in different sectors.

4. Awareness of job opportunities due to AI in India.

**Impact of Artificial Intelligence
(Social, Economic and Environmental)**

It shows the response of respondents on Social, Economic and environmental impact of Artificial Intelligence on Human life [12].



71% 

71 percent respondents have believed that in future human will be capable to solve the different complicated problems through AI technology which will help them to live enrich life.
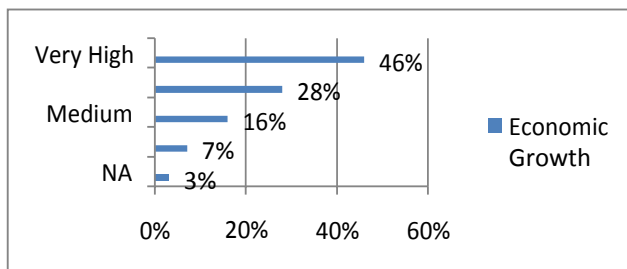.



43%

43 percent of participants have the opinion about the AI that the government will bring it and implement AI technology to get better global environment, health and education [12].

63%

63 percent of participants think that AI will support to labor force as a assistance and will be helpful to improve the productivity [12].
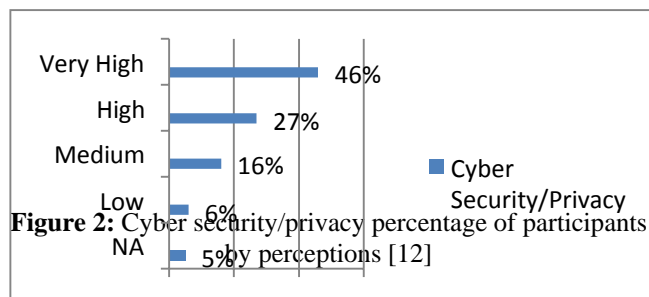
60%

60 percent of participants believe that AI would provide the facilities of financial advisors or tax preparers for the human [12].
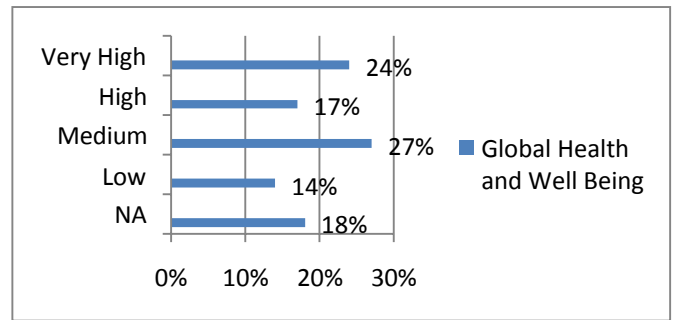


**Figure 1:** Economic growth percentage of participants by perceptions [12]

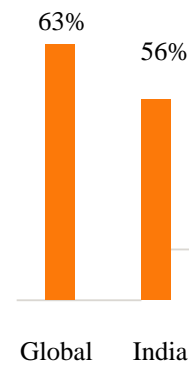Figure 1 shows the percentage of participants' who belief that AI will have impact on economic growth.



**Figure 2:** Cyber security/privacy percentage of participants by perceptions [12]

Figure 2 shows the percentage of participants' belief in the conception that AI is important to the cause of Cyber Security/Privacy.
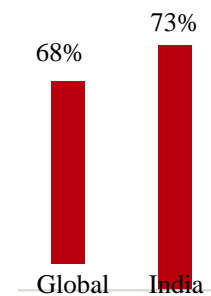


**Figure 3:** Global health and well being percentage of participants by perceptions [12]

Figure 3 shows the percentage of participants' belief in the conception that AI is important to the cause of Global health and well-being.
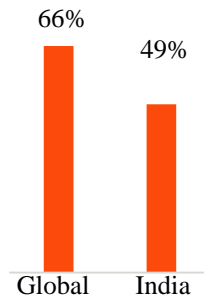


**Figure 4:** Percentage of participants: Solving the disease problems of modern societies [12]

Figure 4 show that Fifty-six percent of the participants agree that AI will help to solve the complex disease problems for the modern societies in India as compared to 63% globally.



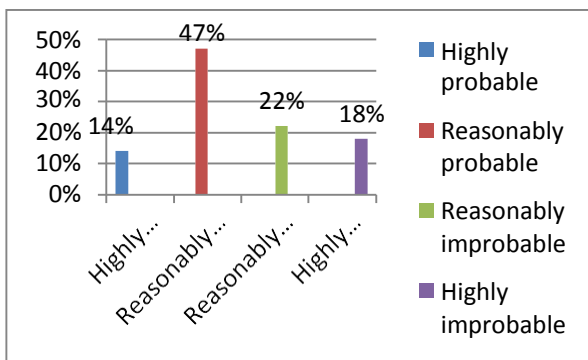**Figure 5:** Percentage of participants: AI's importance in cyber security and privacy [12]

Figure 5 shows that 73% of the participants believe that the AI will more important to provide security and privacy for the user's data in India as compared to 68% globally.

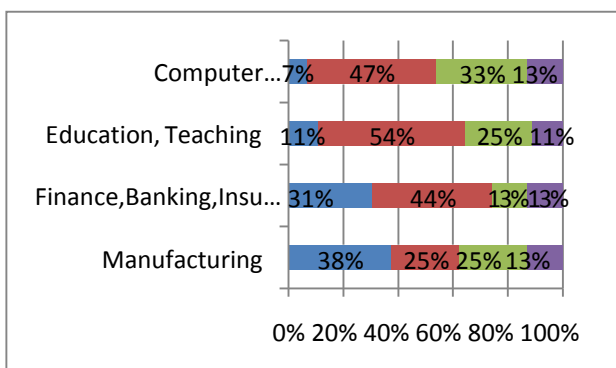**Figure 6:** Percentage of participants: The importance of AI in solving cancer and other diseases [12]

Figure 6 show that only 49 percent of the participants think that AI will help to solve the cancer and other complicated diseases in India as compared to the global 66%.

**Impact of Artificial Intelligence on Employment**



**Figure 7:** Perceived probability of jobs due to Artificial

Intelligence [6]

Figure 7 shows that apparent probability of jobs due to artificial intelligence and further, almost part of the participants studied felt that job automation was reasonably probable; however, it was likely to be partial, with humans retained for specific expertise [6].



Highly probable – Probability to be fully automated in the next 5 years

Reasonably probable – Probability to be at least partially automated with humans retained for specific expertise

Reasonably improbable – unlikely to be automated with stable or growing need for human expertise

Highly improbable – depends universally on human proficiency

**Figure 8:** Perceived probability of jobs due to Artificial Intelligence across sectors [6]

Figure 8 shows the views of professionals working across different industrial sectors. It can conclude that most of the sectors are likely to be partially automated, but the probability of complete automation in the next 5 years are the highest in the manufacturing sector (38%), followed by the finance sector (31%) [6].

**Discussion**
Based on the results of a comprehensive assessment it was found that the Digitization has given a significant push to AI. It is helping to complete task that would normally take months to complete in no time which is also why demand for this advanced technology is increasing in every field from health to manufacturing , retails, sports , space and banking.
AI can help in accomplishing many task related to human life. From completing day-to-day chores to doing research in science education and medicine. Recognition of potential of the technology the biggest companies these days are ready to invest in this advanced technology. AI has made medical research easier from X-ray reading, detecting disease and even performing surgeries on humans. This technology is also used in sports. t helps in capturing images predict and understand playing conditions and also to make the ideal strategy for nay ideal game Infrastructure in manufacturing has also seen a lot of improvement through this advanced technology. AI is useful in space related searches.
We have seen negative impact of AI on Jobs in different sectors. Due to Automation, Artificial Intelligence and Robots all sectors are being affected and not only blue collar jobs as well as white collar jobs working IT sectors are also in danger zone due to these technologies. Exactly same fears are expressed about AI. The apprehension is that if machines do all the work of human beings what will be left for people to do. According to experts people can then handle work related to supervision, maintenance, sale and manufacturing of these machines. It only becomes a crisis for people who are unable to adapt themselves, readjust according to the needs of the market or become a costumed to new technology and skills failure to do so leads to jobless.
The competition has well and truly started between human being and self-sufficient and independent machines. Experts have already warned the world about the drawbacks of the AI. It is also argued that the machines can not truly compete with the

human brain and that they even know we are close to human intelligence. Given these divergent views it is important to be clued into market needs and trends and how technology is responding to them with corresponding growth in human intelligence.

**Artificial Intelligence "Threat or Revolution"**

Artificial Intelligence is really going to kill all the jobs or it will be a good job creation platform for new generation this is always big question in front of experts. Somewhere, Artificial Intelligence is a big threat to job market in India and all over the world. Because of AI, few jobs will be killed and few jobs will be remaining as it. AI will not be able to replace all the jobs completely. Jobs where repetitive work or task is required , in that case machine will take control over the human but where high intelligence decision making jobs has to be executed, at that point machine will not be able to do . As a result, low skills and middle skills jobs will be reduced due to AI but high skills jobs will be sustained. This is going to be big threat to labor workers who comes under the category of low and middle skills jobs. Due to employment transformation, job polarization will be a big threat to Job market in India.

But if we see on other side of Implementation of AI as developed technology, it is not difficult to say, AI can be a big platform of job creation for youth. If we create any object or machine, we need to maintain that machine regularly and to maintain that machine always need workforce. Similarly, AI implementation will be a wakeup call to youth to be a skilled to maintain their career status. As the technology is coming up day by day at pace, people will have to match that speed by upgrading their skills in particular field. Due to AI implementation in India, new opportunities will be creating in next few years and as well as it will help the country in uplifting the economic status. To implement these technology, at initial stage high investments has to do by the Government of India and it will take time to be settled in the job market. After 10 years of implementation, economic and social status of country will be upgraded. Consequently, AI is coming with as a big revolution in India.

**Conclusion**

India is on the move and moving rapidly to meet the needs of a dynamic India and a transforming global economy. As per the experts, AI revolution will be the rising revolution as 4th Industrial revolution for the services and manufacturing sectors both. Due to the AI revolution in Industries, most of the jobs in different sectors will be in danger zone. On one side cities will be equipped with all modern facilities and will be becoming smart and other side jobs will be killed due to transformation. As per other experts' view, 100 percent jobs will not be killed by the machines but definitely few jobs will be vanished by the intelligence machine. Low and Middle skills level jobs will be shrinked but high skilled jobs where the critical decision will have to take, there machine will not be able to take intelligence decision as human can do. This transformation will add new development aspects in India's infrastructure as well as bring up the economic status in next coming years. However, few jobs in few sectors will be disappeared because of transformation through AI in next 5 to 10 years.

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