

The effects of technology on manual jobs – chapter i

[Technology](#)



1. 1 Introduction

Back in the 1950s, concerns had been raised about the implications that “automation’ has on the manual workers and this led to a thorough evaluation of probable impacts of diffusion of the electronic computers as well as other changes. In order to explore effects of these advanced technologies with regards to employment, labor-management relations, job skills and productivity, plant-level case studies were continuously carried out in the industries like electronics and petroleum refining.

Advances in technology have reshaped the economic and business landscapes over time. The unemployment rate in the United States has stagnated above the seven percent mark as well as the job growth anemic; this has led to the notion that the robotics have taken over people’s jobs. With regards to this perspective, high productivity that is influenced by the increasingly powerful Information Technology (IT) enabled machines can be blamed as the reason for the United States labor market issues. Hence, acceleration of the technological change would just make such issues worse. Nonetheless, this notion is not supported by valid evidence hence it cannot be supported by logic.

This research will carefully analyze how technology has taken over manual jobs through examining various arguments, examine the extensive economical literature on productivity and employment relationship and explain the logic of the manner in which productivity can lead to many more jobs. Evidently, there are many benefits that arise from technology apart from economic advantages, the workers also stand to gain from it; better

technology is important to a country's competitiveness as well as higher standards of living.

The impact that computerization has on the labor market has resulted to several established literature that document the decrease of employment in the routine intensive occupations. This means that the occupations majorly comprise of tasks that follow procedures which are well-defined hence can be easily be done by the sophisticated algorithms. For instance, a study done by Aldrich & Auret stress that the decline in the manufacturing employment, as well as the disappearance of similar routine jobs, causes the low rates of current employment (2013, 556). Additionally, the computerization of the routine manufacturing work has led to a structural shift within the labor market. Hence, the workers have their labor supply reallocated from a middle-income manufacturing to the low-income occupations. It is for this reason that manual service occupation tasks have become decreasingly susceptible to the computerization because they need a high level of physical adaptability and flexibility.

Interestingly, the falling computing prices and the problem-solving skills have kept on becoming productive and this explains the growth of substantial employment in the occupations that involve the cognitive tasks whereby possession of skilled labor is a comparative advantage. Bock & Linner imply that the pace of the technological advancements has potentially increased whereby more innovative software technology is disrupting the labor markets through making the workers more redundant (2015, 56).

Strikingly, this assumption shows that the computerization is not just confined to the routine manufacturing tasks. For example, the automatic

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driverless vehicles created by Google, shows how the manual transport tasks and logistics could become automated in future.

The rising concern over the technological unemployment began several decades ago. Historically, the procedure of the creative destruction, with regards to technological inventions, has led to enormous wealth as well as undesired disruptions. It should be noted that absence of the inventive ideas in the past led to the setting of boundaries for the economic development; however, powerful economic and social interests promoted the status quo of technology. In 1589, William Lee, an inventor based in the United Kingdom requested Queen Elizabeth for the patent to a new kind of knitting machine which had the ability to produce stockings of higher quality as compared to weaving by hand. Unfortunately, the Queen denied this request by stating that it would have a negative impact on the jobs of the weaver. This means that she feared that they would be unemployed and be turned into beggars. Nonetheless, centuries later, the United Kingdom came to be a world leader in the textile manufacturing.

The list of the new technologies grows each day; they include robots, algorithms, 3-D printing, autonomous vehicle and machine to machine communications that assist people to do different tasks. These types of technologies are wide-based within their scope and are significant when it comes to the ability to change or transform the personal lives and businesses. Therefore, they can ease the lives of people as well as enhance their business and personal dealings. It is important to note that technology has become more sophisticated hence it has a significant effect on the work environment.

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As the automation technologies like robotics and machine learning play an important role in daily life, their ability to affect the workplace is a concern that is being focused on socially and economically. Even though automation will take on human jobs, it could also have an effect on other parts of the rest of the jobs to either a lesser or greater degree; this depends on the kind of work that they entail. Automation has gone beyond the routine activities of manufacturing and it has the ability to change sectors like finance and healthcare that involve relatively sufficient share of knowledgeable work.

One necessary requirement for automation is technical feasibility, but this still does not mean that a task can be automated. Cost is the second factor that related to developing and deploying both the software and the hardware for the automation. Cost of the labor, as well as the related supply-and-demand, brings a rise to employment rates and products become cheaper. Theoretically, a robot could replace various functions of the nurse but the chance of this happening proves to be unpalatable for most patients that need human contact. In order for automation to dominate a particular occupation or sector, the interplay between the different factors has to be reflected on as well as the trade-offs that are involved.

In the past several years, technological advancement has managed to influence the current process of manufacturing immensely. It is for this reason that robotics and automation has to be taught in a manner that considers the development from every aspect of the production processes and modern economics. The manufacturers must adapt to the change in the demands of the customers and this is done by creating products which the market needs. Furthermore, the manufacturers must develop products which

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possess a potential of becoming successful so that competitors can be kept at bay. Development of these new products could be followed up by production and it is at this level that the entire robotics and automation procedure comes into play.

Most robots were designed to assist or be a high-tech tool; they help individuals with various tasks which are considered as difficult, boring, repetitive or unsafe. Some of the first industrial robotics did tasks which were hazardous, heavy or hot meaning that they were too dangerous or too hard for individuals. The robots show different levels of autonomous behavior; most robots have been programmed to diligently perform particular repetitive actions with no variation as well as with high levels of accuracy. The actions have been determined by the programmed routines which specify acceleration, direction, distance, deceleration and velocity of a sequence of the coordinated motions. At times, they mimic human emotions accurately while other times they improved, moved faster, smoothly and precisely as compared to humans.