

The Impact of Sustainable Transition of Automation on Employees in the Automotive Sector and the Influence of Corona Pandemic

Nicoleta ISAC¹
Cosmin DOBRIN²
Waqar BADSHAH³

Abstract

The automotive sector have been hit hard by the corona pandemic and the future is showing that will be a shift towards automation. Automation is not a new phenomenon, and for years, robots have had an increasing role in automobile manufacturing and differs across sectors and activities. According to the sustainability trends, due to automation, business and future of work will be transformed. While automation will completely eliminate very few jobs over the next decade, it will affect portions of almost all jobs to a greater or lesser degree, depending on the type of work involved.

The aim of this paper is to analyze the trend of automation in automotive sector and to see the impact of corona pandemic on employees.

Keywords: automation, robots, automotive, employees, corona pandemic

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1. Introduction

Automation will have a big effect on the next decade on work and society. According to Tom Mayor, KPMG's strategy leader, automakers have been using robots since the late 1980s, but as McKinsey Global noted, advances in artificial intelligence (AI) and robotics will have a powerful effect on working lives day by day. If before Covid-19 according with (Berman, 2016) the main driver behind this evolution were economics, now robots provide opportunities for a restart of the economy after the damage caused by the coronavirus.

As many offices and factory floors sit empty during the pandemic, the manufacturers are thinking to replace up the spaces with robots. The pandemic makes it more dangerous to come into work so robots have quickly become essential as long social distancing could extend through 2021 (April Miller for Rehack, 2020).

¹ Nicoleta Isac, Istanbul Sabahattin Zaim University, Turkey, nicoleta_isac2004@yahoo.com

² Cosmin Dobrin, Bucharest University of Economic Studies, Bucharest, Romania, cdobrin@yahoo.com

³ Waqar Badshah, Istanbul Sabahattin Zaim University, Turkey, waqar.badshah@gmail.com

Due to this situation workers started to worry that they will be replaced by machines. A new report predicts that by 2030, as many as 800 million jobs could be lost worldwide to automation. These figures are constantly debated, but increasing automation will most likely affect the jobs currently held by people with limited skills. According with (Vincent, 2017) the implication of artificial intelligence (AI) on jobs will finally depend on the nature of demand but the accelerated increasing of artificial intelligence started to created a concern that in the next 10 or more years the rate of unemployment will increase (Bessen, 2018).

2. Automatization in the automotive sector

Authors Levy and Murnane (2003) pointed that technology cannot replace human labour in non-routine tasks but the human labour in routine tasks can be replaced. The question that rises is that there will be enough work to ensure full employment due to advances in technologies? (McKinsey, 2017) As technology evolves in unpredictable ways due to the corona pandemic, will workers be prepared?

As noted by Acemoglu and Restrepo (2018), AI may influence employment in two essential ways:

- *Movement effect* – shifting workers from tasks they were previously performing.

In this scenario, the rate of unemployment will increase because AI will replace more job tasks.

- *Efficiency effect* – as a result of technological progress will increase the demand of labor.

In this scenario, most or all workers should follow retraining programs and find new and better jobs.

(West, 2015) said that it is not clear how new technologies will affect various jobs but according with (Chui et al., 2016) automation will affect portions of almost all jobs to a greater or lesser degree, depending on the type of work they entail. In all cases the most important aspect is education and training. Education lead to workplace adaptability, so automation will be easier for workers with a good education while for employees trained to do only a specific task will represent a threat. Investing in employees will ensure people to learn new skills that will make them invaluable for the manufacturing industry.

As we can see in the Table 1, almost 11% of EU manufacturing employment is in the automotive sector.

Table 1. Direct automotive manufacturing employment by country/2015

Austria	30,804	Estonia	3,233
Netherlands	20,295	Lithuania	4,496
Belgium	30,838	Finland	7,282
Poland	178,274	United Kingdom	169,000
Bulgaria	20,512	France	224,000
Portugal	33,436	Germany	850,857
Croatia	2,825	Greece	1,765
Romania	168,68	Hungary	88,532
Cyprus	104	Ireland	2,311
Slovakia	66,356	Italy	159,148
Czech Republic	159,732	Latvia	1,821
Slovenia	12,746	Sweden	68,336
Denmark	1,606	Luxembourg	314
Spain	142,480		

Source: EUROSTAT

If we look at the past, the industries of advanced European economies in the 1990s and early 2000s show a significant increase of the robots as we can see in the Figure 1. In 2007 the automotive sector has automatized a large share of its production (52%) and between 2007 and 2015 more industrial robots were installed.

Due to the decrease in demand during the financial crisis in 2008, there was a smaller increase in automation between 2007 and 2015. The differences between countries where automation reveal the disparity of the economic structure.

For example Germany in 2007 (because of his strong automobile industry) employed 4.5 robots/1000 workers while France had half of this rate. (Chiaccho et al., 2018) noticed that the difference was more noticeable in 2015, mainly due to a slowdown in robotisation in the French markets.

The manufacturing industry in Germany was highly automated before COVID-19 and this trend probably will keep going after the crisis. The advantage is that production can be converted faster with robots which will lead to cost decrease. As (Edwards, 2020) mentioned in his article, the new requirements for safe workplaces made the industrial companies which use robots to ensure social distancing in production by automating the individual work steps.

If we refer to estimated annual supply of industrial robots at year-end by industries worldwide (Figure 2) we can observe that the robot sales increased in 2016 by 16%. The main driver of the growth was the electrical/electronics industry (+41%). There were a considerable increase between 2010-2014, but in 2015 robot sales in the automotive industry increased more with 6%. The automotive industry is still the major customer of industrial robots with a share of 35% of the total supply in 2016. If between 2005-2008 the average annual supply was lower, the average of robot sales increased 84% between 2011-2016. If we except automotive

industry where the growth rate was 12% and electrical / electronics where the growth rate was 19%, the sales to all industries increased by 5% in 2016. It is noteworthy that other industries have also increased their robot installations in recent years and not only the automotive and electrical / electronics industries.

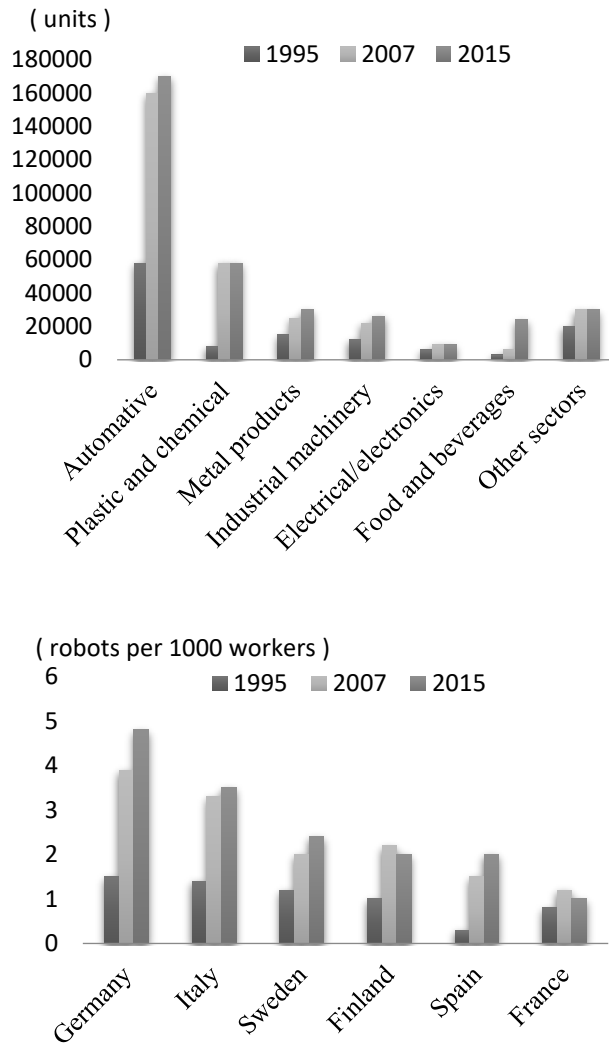


Figure 1. Number of industrial robots, by sector
Source: The impact of industrial robots on EU employment and wages: A local labour market approach, 2018

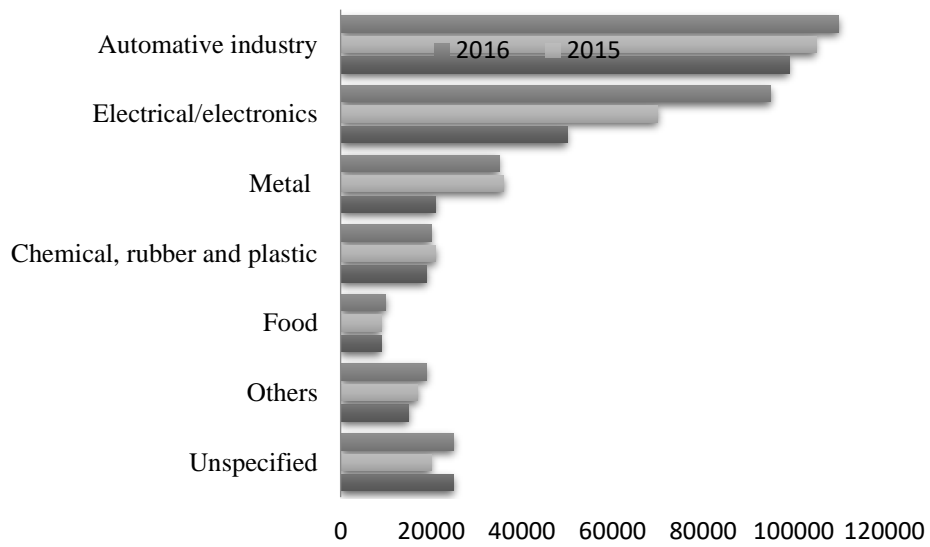


Figure 2. Estimated annual supply of industrial robots at year-end by industries worldwide 2014-2016

Source: IFR World Robotics, 2017

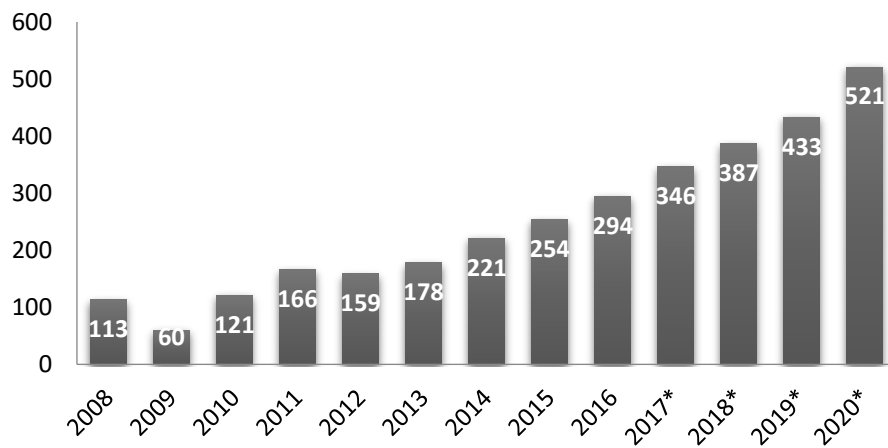


Figure 3. Estimated annual worldwide supply of industrial robots 2008-2016 and 2017*-2020*

Source: IFR World Robotics 2017

In Figure 3 we can see that IFR World Robotics estimated that from 2017, global robot installations will increase, which means that in 2020 total global sales will reach approximately 520,900 units. The coronavirus might accelerate the transition to automation in the automotive sector and we can remark that this pandemic pushed Chinese companies to deploy robots and automation technology. (Priya, 2020)

The entire value chain will change and what is going to be more interesting is how the products will change. According with (Zarkadakis et al., 2016), selecting the right technology to automate workloads and improve performance is therefore essential for business, as is aligning the selected technology with a comprehensive strategy for the future of work.

Currently, there are already robotic machines installed to carry out the manufacture of parts and the assembly of vehicles. Some of the latest technology is based on computer-based software that works from pre-programmed plans. Although there is still a need for car operators, the jobs are very different from what they once were. Instead of making parts by hand, workers need to understand how to operate the new high-tech equipment (Vincent, 2017). As the automation of physical and knowledge work advances, (Chui et al., 2015) said that many jobs will be redefined rather than eliminated – at least in the short term.

On the one hand, automotive manufacturers have noticed that automation of the production process becomes much more profitable and many consider it an attractive move. By replacing human labor with robots, the company's costs of wages and other associated costs will decrease, which will bring companies significant savings in large sums of money. On the other hand, according to (Weller, 2017) Bill Gates mentioned that “just because a worker is not” alive “from a technical point of view does not mean that he can earn money in vain.”

The question is: Can all car manufacturers switch to automation?

Automakers need cash as long the vehicle sales decrease due to corona pandemic and only the financial position of the companies will allow them to this shift in a new business model.

Therefore if the big leaders focus on R&D investment in advanced driver assistance system, other automakers will focus on technology that can help them with revenue in the short-term (Lambert, 2020).

3. Conclusions

Due to the corona pandemic, the efficient use of automation requires the transformation of processes, changing what people do, even those who are not redundant with automation. Industrial companies with robots can selectively automate individual work steps to ensure social distancing in production. The fact that automation shifts human labor activities creates a set of real challenges for the companies. Despite the growing popularity of robots, however, human workers will likely remain essential to businesses. The robots can increase productivity and competitiveness and it seems that in the near future robots and humans will work together. In this regard employees have a positive attitude in creating new job

opportunities if the companies will provide them training opportunities for robotics and digital technology. Companies should communicate automation plans to employees from the beginning, and there should be dialogue about their preferred options for the next step in their careers. They should also be motivated by financial and technical support to help them pursue a new career. Options offered to employees may include:

- **Internal Job Search:** Retraining and assistance for employees to search for new opportunities inside the company
- **Training:** Subsidies for employees to continue retraining for a new occupation. As Pand Drischi mentioned, central challenge for some countries in the next decade will be to providing professional reskill and enabling individuals to learn new marketable skills.
- **Reform:** A coronavirus strategy proposed by McKinsey for industrial and automotive companies is large-scale flexible employment contracts and more distance work opportunities, which will allow a better leverage of the global talent pool.

We can conclude that the challenge for the coming decades will be to create effective large-scale retraining programs. This may require action by policy makers, business leaders, and individuals.

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