Robotics in the Economy

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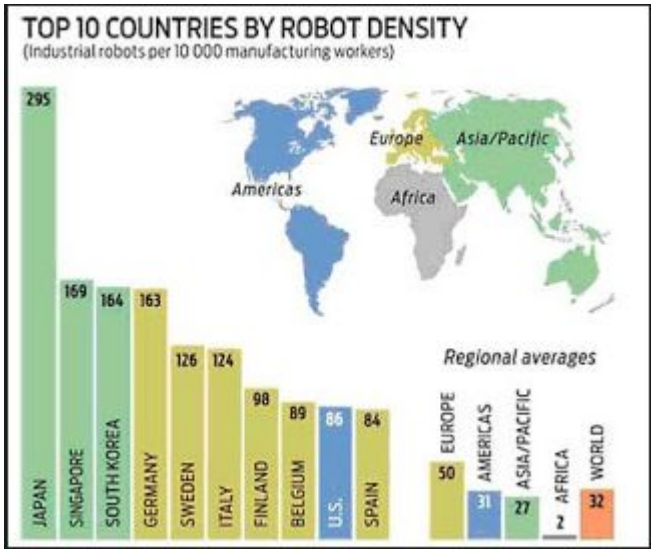
When hearing the word *robot*, it is likely that many people think of a little metal man with a voice suggesting that he belongs to another planet, as well as making spastic movements.

However, in recent years, robotics has experienced great advances, to the point of becoming an indispensable element in our lives, and is currently considered the "Fourth Industrial Revolution", or "Robotic Evolution".

In this sense, United States, Japan, Germany and China are at the top of the technological vanguard, with robots that are already involved in the health system by assisting medical interventions, or performing tasks as waiters in restaurants. Furthermore, as shown in the following image, the ten countries with the highest density of robots per worker are: Japan, South Korea, Singapore, United States, Finland, Sweden, Germany, Belgium, Italy and Spain.



Thus, although traditionally, its use was purely industrial, nowadays they are used in many households and in the provision of a wide range of services, which are increasingly linked to advances in the technological field.

Given the previous facts, the following question arises: What would happen with humans if, in a foreseeable future, robots could perform nearly all of the tasks currently done by people?

What seemed to be a science fiction movie has never been so close to reality. And, while it is true that machines will not end up controlling humans, the latter will depend more on them when it comes to organising their socio-economic life.

This dependence will be so great that, in the near future, according to estimations, three out of four jobs will be related to the field of computer systems and security, as well as data management. This will enable greater growth, as robots will double their productivity at least every four years, while people will do so every decade, however, on the other hand, there will also be a more noticeable decrease in average income; a decrease that may lead to potentiating inequality in the distribution of wealth. Moreover, it must be noted that robots' performance will approximately increase by 5%, while its associated costs will be reduced by 20% in the following year.

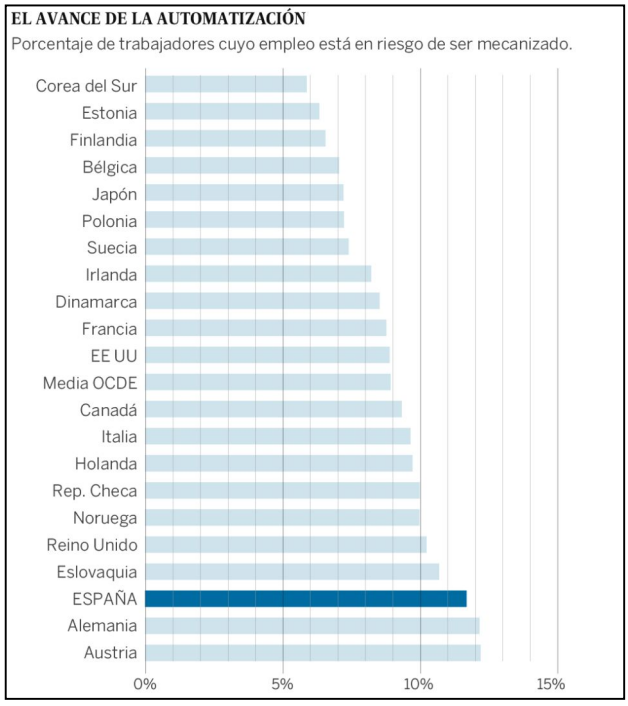
According to a study carried out by CaixaBank, the jobs most likely to be automated are those positions related to finance, accounting or economics, as well as other jobs that require less professional qualifications and that involve manual or repetitive tasks, although it must be highlighted that this process will occur slowly.

On the opposite side are those professions based on human interaction and creativity, such as musicians or family doctors. The same applies to countries where innovation and digitalisation already play a key role in day-to-day life, and where it is unlikely that the previously mentioned robotic revolution will affect them.

In addition, educational levels will also influence, since it is expected that between 40% and 50% of workers with basic educational levels will suffer the competitive threat posed by these machines, whereas those who have a higher educational level will have less chances of being replaced by them.

However, when addressing this subject, several contradictions arise, as other experts disagree that mechanisation will only affect the less skilled jobs, and believe that, on the contrary, automatization will take place in other areas where intermediate qualifications are expected, such as health, administration and transport.

Without doubt, the most affected territories will be those in which professional qualifications are lower, having a greater impact in emerging markets than in developed economies, because the first ones will see how their competitive advantage, based on offering cheap labour, is diminished.



However, even those countries that have superior qualifications will undergo this robotization. Therefore, considering a report published by the Organisation for Economic Co-operation and Development (O ECD), Germany, Austria and even Spain (in this exact order), are among the counties most affected by the robotic revolution.

It is expected that, in these territories, around 12% of employees will be replaced by robots; a figure that is considerably superior to the one corresponding to the OECD's average of 9% and, in particular, Finland and Belgium, where the percentage does not exceed 7%.

Specifically, in Spain, in accordance with the studies carried out by CaixaBank, it is calculated that around 43% of the existing jobs in this country will be affected, in a near future, by automatization (with a probability exceeding 66% that this happens).

Currently, 8% of jobs are performed by robots, but this percentage is expected to rise to a whopping 26% in 2020. In addition, their capabilities will improve and develop to the point where they will be able to interact and make complex decisions.

On the other hand, the implementation of robots will also have consequences in the structure of society and in the organisation of companies. In this sense, a decrease in the amount of hierarchical levels is estimated to take place, which, at the same time, will have repercussions in the development of a career by employees of any company,

as it will be more difficult to do so, and the demand for skilled workers will be greater.

Given this situation, less developed counties, including Mexico, Argentina and Brazil, have decided to not embark on the automation of production processes.

On the other hand, not all is black. Since the Industrial Revolution, machines have been displacing a workforce that, subsequently, has been reabsorbed and used in other economic sectors.

In relation to the above is education, considering the that, currently, there is an important gap between a world characterised by continuous and speedy technological changes, and a population that is not receiving the appropriate training to deal with these situations.

Therefore, the key is to know how to redirect the education system, so that, in the future, there will not be massive unemployment that, at the same time, would provoke consumption to decrease, which is essential in the economy, as all the system, as well as producers, needs consumers.

Ultimately, the biggest problem surrounding robotization and automatization is not the jobs that will be lost, but the capacity to create new ones, enough to compensate for their loss. That is to say, the process of change will generate new opportunities, in which new economic sectors will be born, although nowadays these still remain unknown.