



# **IMPACT OF AUTOMATION ON EMPLOYMENT IN SPAIN**

*Brussels, September 28, 2018*

## Objectives of the study

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The consequences of technological innovation on employment have been, historically, a recurrent subject of economic and philosophical discussions. The recent development of disruptive technologies, such as RPA (Robotic Process Automation) and Artificial Intelligence has renewed this debate, putting the issue in the spotlight, especially on the potential repercussions of technological discontinuity on the labor market in general, and on the volume and quality of employment in particular.

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Organizations, governments and companies from all over the world have launched their forecasts, which has produced an oversaturation of information, with often contradictory diagnoses, creating two versions: first, based on historical background, in the long run the benefits will be greater than the damages, which will result in a growth of the net employment and of higher quality, as well as an increase in the productivity. The other tendency affirms the opposite: employment will undergo a profound, radical and lasting transformation, both in your net volume and in your quality.

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Consequently, the high number of studies, their heterogeneous scopes of analysis and their disparate conclusions, have created, on the one hand, a deficit of knowledge that it must be corrected, and on the other, they have triggered controversy, confusion and media scaremongering.



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Now therefore, this work aims to collect and transpose the assumptions and conclusions of these studies to the reality of the Spanish labour market, trying to be faithful to both the original methodology and the idiosyncrasy of our labour market, in the search of common points and conclusions with high consensus, providing the reader and the bodies responsible for developing policies in these areas, a benchmark document, neutral and rigorous, with the widest and most accurate perspective possible.

Selection papers on the subject under discussion, as long as they bring prestige and relevance, both for the quality of its contents and for the organizations that subscribe them, that give them the credibility, methodology and moderation indispensable for any rigorous research.

To make a comparable analysis, the following parameters will be indicated: volume of employment (profit or loss, in figures), quality of employment (improvement or deterioration), effects of technological discontinuity on employment (positive or negative), time period of the forecasts and methodology used.

The number of studies between the two trends is clearly uneven: the majority concludes that the digital revolution will be detrimental to workers. For this reason, and in order to balance the number of studies of both trends, references are included to essays from entities that may not have the international relevance of others, but that are essential to provide an analysis with neutrality and broad spectrum. In the same vein, I have not included sectorial studies, isolated from the total economy, to facilitate a comparative analysis in terms of the labour market as a whole.

The following table allows us to observe, at a glance, the coincidences and differences between the analyzed papers, as a final summary:

Studies/Authors	Volume of employment	Quality of employment	Time frame
<b>La digitalización: ¿crea o destruye empleo?</b> Randstad	1.250.000 new jobs	Deterioration	2016-2022
<b>El trabajo del futuro.</b> AFI, ADEI and Google	More than 2,000,000 new net jobs	Deterioration	2016-2025
<b>The future of employment: How susceptible are jobs to computerisation?</b> Frey&Osborne	3,359,571 jobs less	Deterioration	2023/2033
<b>Artificial Intelligence, Automation, and the Economy.</b> Executive Office of the President	Reduction in several million jobs (net employment)	Strong deterioration	2023/2033
<b>The Risk of Automation for Jobs in OECD Countries.</b> Arntz, Gregory, Zierahn	1,600,133 jobs at high risk of disappearing	Deterioration	Not specified
	5,067,087 jobs at mean risk of machining		
	2,891,143 jobs at risk for their educational level		
	2,743,085 jobs at risk for their income level		
<b>Automation and independent work in a digital economy.</b> OCDE	4.25 million workers will see part of their tasks automated (between 50-70%)	Deterioration	Not specified
<b>Automation, skills use and training.</b> OCDE	5.8 million workers will see part of their tasks automated (between 50-70%)	Strong deterioration (-4.3% in salaries for every 10% of automation)	Not specified
	2.7 million workers will see a large part of their tasks automated (> 70%)		
<b>Trouble in the Making?</b> World Bank	947,861 jobs less	N/A	Not specified
<b>A future that Works: automation, employment and productivity.</b> McKinsey Global Institute	933.411 jobs less	Not applicable	2017-2030
<b>PwC Young Workers Index 2017.</b> PwC	8.7 million jobs are potentially automatable (4.3 million full-time equivalent jobs)	Deterioration	2017-2030
<b>Employment and Social Developments in Europe. Annual Review 2018.</b> Comisión Europea	6,112,736 fully automated jobs	Increased polarization, at the expense of jobs with intermediate skills	Next decade
	5,725,854 partially automated jobs		
<b>Will robots really steal our jobs?</b> PwC	580.323 jobs less	N/A	2018-2024
	4,062,261 jobs less		2018-2030
	6,576,994 jobs minus		2018-2035
<b>Harnessing revolution: Creating the future workforce.</b> Accenture	Adequate training will drastically reduce the employment affected and labour inequality.		



1. In general, the studies analysed coincide in pointing out that the development of Artificial Intelligence and Robotic (RPA) will have direct and indirect consequences in several million jobs in Spain during the next decade, especially in relation to the content of jobs, which they will tend to be less routine, demanding in return, more specialized in technological knowledge
2. There is a universal consensus in all the documents studied on the impact of technological discontinuity on the quality of employment: it will be deteriorated, with a high increase in social inequality and a strong increase in polarization, especially severe in workers with skills and intermediate skills

3. These two conjunctures, framed in the Spanish labour market, with a high structural unemployment and with systemic precariousness and instability, could multiply the repercussions of work machining exponentially. Both evidences are so clear that they incite, by themselves, to legislators, regulators and politicians to develop, immediately, measures that take great advantage of this opportunity, and simultaneously, that soften any negative impact.

4. Regarding the impact on the net volume of employment, two visions coexist, radically opposed: one defends that net employment will be generated; the other affirms the opposite, that many jobs will be destroyed. The number of studies that predict a negative scenario is much greater than those that propose a positive development; In addition to being more numerous, the pessimistic studies are endorsed by organizations of greater prestige.

It is important to emphasize that the studies that predict the destruction of net employment **do not depend on any exogenous condition to consolidate their results**; that is, if new policies are not assumed, and technological development continues on the same path of progress, a scenario of loss of net volume of employment will be reached. In the case of studies that predict the creation of net employment, a series of exogenous conditions must always be combined to consolidate their forecasts, such as the articulation of new policies, stimuli to the labour market, new measures to favour vocational training, and reforms in the educational systems, especially in the university education system.

**In summary: if no action is taken, the worst auguries would be consolidated; Only if the right measures are taken will there be a positive relationship between technological discontinuity and employment.**

5. Spanish workers are very concerned about their future in a technified labour market, not considering yourself sufficiently prepared, and believe that new technologies will destroy and precarize employment.

6. Unanimously, it is affirmed that **an adequate training would drastically reduce the volume of employment affected and inequality, balancing the labour polarization and improving the employability of all labour force.**

Based on these conclusions, which show a situation of high risk for the Spanish economy and a labour uncertainty unknown in decades, **it is necessary that public and private organizations, trade unions and employers associations, political, social, economic and governmental organizations prepare for a scenario of deep and radical changes in the labour market and in the economy in general.**

**Muchas gracias**

**Thank you very much**



Comunicaciones

