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Podcast transcript:

Algorithmic management: what it is, what it does and what it means for the future of work

Interview with Uma Rani, Senior Economist at the ILO's Research Department and Enrique Fernandez Macias, Researcher at the European Commission's Joint Research Centre

Introduction by host:

Welcome to the ILO Employment Policy Department's podcast series, "Global challenges – Global solutions: The future of work".

I'm your host Tom Netter, and today we'll be discussing algorithmic management and the future of work

A friend of mine recently turned down a job because of concerns that his performance, number of steps, and whereabouts at work would be closely biased

The digital monitoring and control of work processes is called algorithmic management, or AM, and it's a growing factor in today's world of work.

What's more, increasing digitalization has accelerated AM—and has sped up during the COVID-19 pandemic –especially with the huge increase in teleworking.

That raises all kinds of issues, from the value of measuring efficiency and productivity, to ensuring privacy and personal space.

So, how is this new trend playing out now?

Here to unpack all this and tell us how we can approach this are two experts on AM, Uma Rani, a Senior Economist at the ILO's Research Department and Enrique Fernandez Macias, a researcher at the European Commission's Joint Research Centre.

Uma, Enrique, welcome to the programme.

Tom: I'd like to start with the general question about defining AM. What it is, what it does and how it applies in the workplace and also, I'd like to ask whether we should assume it's most prevalent in developed economies or is there a move towards AM in emerging or developing economies as well. Uma?

Uma Rani: Good morning, Tom, and thanks for posing this very important question and it's a pleasure to be here. In simple terms, algorithmic management actually can be defined as a use of computer program procedures for the coordination of labour input in any organization. And this algorithmic management has two components. The first is the algorithm, which is actually a set of predefined rules that are to be followed in sequence to solve a problem and it can be used in any situation that is susceptible to standardization and coding. So, what is happening is with digitalization, you have massive collection of data and this process has intensified. And the capacity of the computers to actually process this numeric data has increased immensely, both in terms of magnitude, speed, efficiency and complexity. So, what we find is that an increasing range of real-world problems can today be potentially solved using computer algorithms.

The second component of this is the management and once you have this algorithm, they can be used for different management purposes such as managing work processes, managing workforce, monitoring, surveillance, et cetera. So that is what in simple terms algorithmic management would mean.

Tom: Thanks, Uma. Now I'd like to turn to Enrique to get his view.

Enrique Fernandez Macias: Thanks a lot, Tom, and delighted to be here as well. Well, just to add to Uma's points is that in some ways algorithmic management is

not so new. It has important historical precedents and in particular it is quite similar to bureaucracy. Which is also a system of management, which is governed by formal rules, which are implemented impersonally. And in fact, algorithmic management because of the use of algorithms and digital technology can take these principles much further because the rules can be implemented automatically, without any human intervention. And in this sense, it's interesting to go back to the sociologist Max Weber, who studied bureaucracy as part of the general process of civilization. And he thought that bureaucracy was the most efficient way to organize human activity and then he expected that it could only grow. But he also feared that it could end up trapping human beings in an iron cage and this is the concept that he used himself, of impersonal rules. Now algorithmic management in that respect, it takes that to the extreme and it can have similar benefits and risks, perhaps to a higher level. Because it can increase the efficiency of work organization, no doubt about that. But it can also create oppressive work environments where management decisions are opaque and incomprehensible to workers.

Tom: Thanks, Enrique, that's quite interesting. Uma, can you tell us a bit about whether AM is also prevalent in emerging or developing economies.

Uma: Algorithmic management is quite widespread, actually on digital labour platforms, which have grown at a very rapid pace in many developing countries. They've also grown in developed countries but this is where you see quite a widespread use of algorithmic management and this is where it's been tested, thoroughly, and in the traditional workplaces in developing and emerging economies, you still see that it is in a very nascent stage, as many of the sectors and also firms within these sectors are only now moving towards digitalization. And it is only over time that we will see whether there's a possibility of use of these algorithmic management practices in these workplaces. However, I'd like to mention that these practices are in some sense being used in human resource policies, such as introducing AI-based recruitment practices where, you know, prospective employees can be screened or to manage talent or to rationalize the recruitment processes. But again, here we are not too sure the extent of adoption of these practices, how widespread it is. That is still unclear and I think we need to do more work to figure out how much of penetration has taken place in developing and emerging economies.

Tom: Okay, thanks, Uma. I'd like to continue now with the question of whether the increasing digitalization of the economy during the Covid-19 pandemic has led to the expansion of algorithmic management practices and

if so, how and in what kind of workplaces, and does this extension of AM interact with existing management practices. Enrique?

Enrique: Yes, without any doubt, it's very clear that Covid led to an expansion of algorithmic management practices and this is for two reasons, at least. First, because the pandemic triggered, as we all know, a big increase in telework because of the need to minimize social contact. And to coordinate the activity of millions of people that moved to a telework regime, to working from home using the internet, companies had to implement new software tools, new networking software tools, which in many ways incorporated some form of algorithmic management, as part of these tools. Secondly, the pandemic even in cases of work processes with actual physical presence also required often minimizing social contact. And therefore, there were new systems of monitoring workers, monitoring, for instance, the location of workers so that they wouldn't be too close or monitoring the health condition, et cetera.

This monitoring systems were also implemented on a large scale in many cases. And these systems also often incorporated some form of algorithmic management. In more general terms, the pandemic accelerated the digitalization of work. This is very clear and again, both because of telework and because of the need to increase the level of monitoring of work processes and the position of workers, et cetera. And digitalization tends to expand the use of algorithmic management because any data-driven process is better coordinated, is more efficiently organized using algorithms.

Tom: Thanks again. Now, I'd like to ask Uma for your perspective on this.

Uma: In addition to what Enrique's been talking about, we have also observed the increasing use of these algorithmic management practices, such as, you know, monitoring surveillance or tracking by especially firms in sectors such as logistics, transportation and storage services. And this was done largely to manage, monitor and supervise and evaluate workers, which not only led to work intensification but also had a negative impact on workers. And we observed this especially so in some of the countries in the Global North, while what was quite interesting in the Global South, that is largely the developing and emerging countries, is that these practices were not yet so much entrenched in these sectors and humans still continue to do the monitoring and supervision of tasks and also to take decisions. So, you know, there's still human control that is there. Now, there seems to be some sort of a hesitancy in introducing such practices, part of it could be the entire

issue around labour versus capital but it also could be due to the cultural context and importance of social relations.

However, you know it's too early to say to what extent some of these practices are going to be entrenched further in many of the sectors, these sectors and also other sectors, and only time would tell us how this will evolve in these countries and to an extent it also depends upon the nature of regulations that might come by then, which might have some sort of an impact about, you know, the extent to which you can put some of these practices in place.

Tom: Thanks. It seems from what you're saying that this development of AM could be seen as double-edged. On the one hand it could promote connectivity and improve efficiency and profitability but on the other, some people could see it as disruptive or somehow even as invasive or gathering too much information on the movements and work habits of employees. What's your view on this, Uma?

Uma: That's a great question You're very right, Tom, I like the way you've posed this question. There's absolutely no doubt that the adoption of these algorithmic management techniques or practices or even further digitalization that we see through, you know, various digital tools and technologies that are being introduced in many of their traditional workplaces, can help in improving efficiency and profitability because what it does is, it provides some sort of an assistance, direction and prediction to both the management and to the workers and employees. So, it helps firms to take decisions with regard to the organization of tasks and jobs and it has a huge potential for improving productivity and efficiency and even in our own work that we are doing in some of the developing countries in the healthcare sector, we do see how this digitization and automation process can actually set certain standards and can try to improve the way the tasks are being done. However, I think one needs to be very careful with regard to how these practices of digitization at work can also generate some of the new challenges for worker rights and job quality.

Let me take an example to show you how it can be invasive in some sense, like, you know, what we have seen, especially in the logistic sectors is increased surveillance, through algorithmic management tools, such as the variable devices and other technologies that are there. Now, this could have adverse effects on workers' well-being and even potentially their ability to work. Now, algorithmic decision-making practices as such, through these tools can perpetuate not only existing but also lead to potentially new biases and discrimination, and here, I

think it's very important for us to understand the role that data plays for predicting such algorithms, as the data that is fed into is quite bias. So, I think we need to be very careful about how these practices are used what is used into the programming of the algorithm, what is the kind of data that is being used because all this has implications on the workers.

Tom: Thanks, Uma. Enrique, I'm sure you have views on this as well.

Enrique: Yes, of course, I was thinking that to think about this possibly, a good example about this that we have all experienced in recent years of the potential benefits but also the risk of algorithmic management could be seen during the pandemic. And we previously discussed some of this. It was the availability of digital technologies and digital networks that facilitated this large-scale shift to telework, which was, without any doubt, good because it reduced health risks for many workers. And algorithmic management systems were critical to ensure that this shift to telework did not involve a disruption in economic activity and this is something that is, it's very clear, I mean many, both the companies and the workers are saying, okay, so we can really shift to these very different forms of working and things continue to work. And so, this shows the potential benefits of these systems. But also, on the other hand there has been an increasing concern and you can see in the news the discussions about these issues and we could feel it privately in many cases.

There has been an increasing concern about some of the possible excessive uses of some of these tools of algorithmic management in the context of teleworking in the pandemic for the monitoring of workers' activity and even workers' private lives in some cases, also about the implication for working conditions for instance in terms of intensification of work, there has been a general discussion and a feeling that we could see in surveys, about work intensification linked to these tools, and very importantly as well, the blurring of boundaries between work and private life.

All of these are, you know, potential negative side effects of these technologies and I think that in general terms, when you're discussing the potential implications of any new technology that is implemented in the workplace, you have to think that it's always the same in the sense that the impact will ultimately depend on what it is used for. And in that sense, what is important is when a new technology, which is potentially as disruptive as algorithmic management, is introduced, it is very important to know what potential implications it has and then that we

collectively regulate it to ensure that we draw from the benefits but we avoid these possible negative implications on the other hand.

Tom: Okay, well, thanks Enrique. Now, continuing in this vein, where do we go from here? Do we have enough information to establish policies for management of AM or do we need more research? And, if the latter is the case, how are the ILO and its partners planning to approach this issue? Enrique?

Uma: I would definitely agree with Enrique on the point that we need more research, as what we know is specific to few developed countries, largely, I would say, the United States. So, we need to understand how these practices will evolve across a number of different sectors and also different sizes of firms because, you know, many of these practices might come in in large firms or medium-sized firms but might not come into small firms. So, I think we need to have a much better understanding about the extent to which digitization is happening at different workplaces. So, in this context actually, ILO along with the Joint Research Center, where Enrique is based, is developing case studies in specific sectors such as logistics and health. In two European countries, Spain and Italy, and two developing countries, South Africa and India, and at the ILO we are planning to extend this work further to look at a number of other manufacturing sectors, such as textiles and automobiles, and also spread across other regions, like Latin America and Asia, to understand what is the extent to which these practices are being used by firms and companies and at what level.

Is it at the lower end, you know, whether you're talking about the lower end staff or is it coming in at medium skills or mid-level skills and high-level skills. I think this is something again unclear for us and it would be very important to look at. I think one more point I'd like to say is that there is this notion of technological determinism. But I think the same with digitalization. Actually, there are choices that are made available and the question here would be how do we engage with the workers in society in that process of this discussion; about, you know, whether these kinds of algorithmic management practices or digitization should be adopted within a particular sector or within a particular firm. And here what would be quite important for us is to have a process of consultation with workers and unions at the firm or sectoral level and this is something that ILO stands for and believes in, is the whole social dialogue process to engage with the different stakeholders, to understand, you know, which new technologies can be employed in workplaces for what purpose and what the implications would be. Whether one is talking about productivity and or efficiency at one level but also, you know, the

social relations, the labour processes and the kind of impacts it would have on workers quality of work or the occupation, safety and health and the job quality per se. So, I think we need to have a better understanding of what's happening at the firm and sectoral level before we get into any policy discussion.

Tom: Uma, Enrique, thank you for shedding light on this important, and I'm sure for some very interesting, issue. Some people may be asking if we're headed for a brave new world where AI (artificial intelligence) and algorithms basically know more about our work than we do. Or is this a useful and important new management tool that can help improve our work processes and create new types of work and jobs.

It sounds like a cliché but only time will tell.

I'm Tom Netter and you've been listening to the ILO Employment Policy Department podcast series, "*Global Challenges, Global Solutions: The future of work*". Thank you for your time.