

Working in apparel and footwear manufacturing: How does technological upgrading and automation affect women?

Interview with ILO's Valeria Esquivel, Employment Policies and Gender Specialist, and David Kucera, Senior Economist

Introduction by host:

Welcome to the ILO Employment podcast series, Global Challenges, Global Solutions: The Future of Work. I'm your host Tom Netter...and today we're going to talk about some of the issues facing women working in the apparel and footwear manufacturing sectors.

It is well-known that the clothes and shoes we wear are often or more often than not made by women. That's because the workforce in the clothing and footwear manufacturing sector, which has traditionally been a pathway to economic development for many countries, is often predominantly made up of female workers.

Although these jobs require a high degree of skills, they are often underpaid, insecure and characterized by an uncertain future, in particular because of the risk of being replaced by automated equipment.

So, what do we know about this important area of work? How are women in the apparel and footwear manufacturing sectors really affected by automation and

technological upgrading? Do these factors favour men over women? And if so, why?

Studying the impact of technology and women's and men's employment is a complex business. Here with us today to share their research and discuss these issues are the ILO's Valeria Esquivel, Employment Policies and Gender Specialist, and David Kucera, Senior Economist.

Valeria, David, welcome to the programme. Let's start with David.

You're doing research on the impacts of automation on employment in the apparel and footwear industry, and how these impacts differ for women and men workers. Can you tell us what motivated this research and why you think it's important?

David: Thanks, Tom. Well, the apparel and footwear industry has long been strategic for countries endeavoring to break into global markets. So more than any other manufacturing industry by far, it is both labour-intensive and female intensive. It has that combination. This is a pattern we observe all around the world and also going way back historically. While the industry then has a strong potential to create jobs, they're often not decent jobs. They're commonly characterized by low pay, long working hours, and limited prospects. Now combined with that, recent studies have also argued that the jobs in these industries are at high risk of automation in coming years because many of the tasks within them are considered to be routine. So on top of this, there's also prior research. I've done two papers, for example, with my co-author, Sheba Tejani. It shows a technological upgrading of which automation is one component. It's often associated with the defeminization of employment, meaning falling shares of women's employment.

Now, a key limitation of those studies, including our own, is they're generally based on aggregate macro or industry-level data. But if you look at where decisions on hiring and firing take place, as well as technology investment decisions, those take place on firm or factory level. So really, the motivation of our research was to step into this gap and to bring together those three elements, the strategic role of the industry in economic development, concerns about automation and technological upgrading in the industry, and then these studies on how technological upgrading across manufacturing, for the most part, lead to defeminization. But we wanted to do this through case studies of factories in these two countries we're looking at, Mexico and Indonesia, and their two quite important apparel and footwear exporters. More specifically then in terms of method, what we did was we based our study on interviews with employers, with technology specialists, with women and men production workers, as well as with worker representatives.

Tom: Thanks, David. I'd like to now turn to Valeria to tell us a bit about your main findings, both in terms of what you see as the drivers and the bottlenecks to automation and impacts on employment.

Valeria: Thanks, Tom. The studies on the impact of automation and employment typically focus on technological feasibility, including the studies we've done at the ILO. In the apparel and footwear, this is often overstated because these studies don't adequately account for technological bottlenecks. For example, fabrics are difficult to handle and there is a wide range of products and size to be produced. So we wanted to address technological bottlenecks at the level of factories. The studies also tend to underestimate how much skill is involved in production work in apparel and footwear, particularly in sewing where most of the jobs are. Though commonly classified as "unskilled" or "semi-skilled work," I mean in quote, unquote, many of these workers are in fact very skilled and the factories need them.

One of the reasons that women's skills are underappreciated and undervalued is because women often learn how to sew as girls in their homes. So the training they received, in fact, before joining the firm, is basically invisible. So we focus in our case studies, not on jobs and their technological feasibility, but also on the economic feasibility. Here it is important to bear in mind that these investments are typically made by supply factories in the lower tiers of the global supply chain. So the firms must bear the cost and the risks of investing in technology that is often new and relatively untested. For unlike, for example, the automobile and electronic industries, the apparel and footwear sectors are relatively lagging behind in terms of technology adaptation and adoption. So there is quite a bit of automation in cutting and the production of footwear soles, for instance. But sewing still tends to be done in fairly conventional sewing machines, the ones that perhaps we remember from when we were children.

Tom: That's very interesting, Valeria. Thanks for that response. Now, back over to David. Your research was carried out in two countries, Indonesia and Mexico, correct? As you said, actually. What were the particular gender impacts in Indonesia, for example?

David: Right. Well, one of the things that I think is really worth pointing out, and that distinguishes Indonesia from Mexico, is that three of the four firms we looked at in Indonesia are Better Work factories. Better Work is a joint program of the ILO and the International Finance Corporation. What we know from prior studies is that participation in that program is associated, for the most part, not just in Indonesia, but a number of other countries, with better economic performance, but also reduced gender inequality by several measures, including gender pay gaps. In that sense, I mean, we're not looking exactly at representative firms, and that was by design. What we do find is we don't really find strong evidence of... or even anecdotal evidence really of differences in the impacts of automation on men and women's employment.

One of the things that we do find though, is that technological upgrading, it has led to labour displacement at the level of the task. For example, in terms of fabric cutting. We see that in terms of fewer workers per machine with higher output, but we don't see labour displacement at the factory levels. In fact, because demand is expanding in the sector, the demand for apparel and footwear is expanding, we actually see in some firms of growth of employment during this period of technological upgrading. More generally, I would say that technological upgrading from the point of view of the firms is as much about improving product quality and lowering rejection rates than dealing with issues of labour costs.

However, labour costs do play a role, and one of the things that's quite distinctive... Well, at least I think in the case of Indonesia, is you see strong regional differences in the level of minimum wages. So there's no national minimum wage rate. For example, if you look around the area around Jakarta, minimum wages are about double of what they are in central Java. So obviously that plays a key role in how firms are thinking about locating their factories. This is something that runs throughout the study. But it also means that firms who are in higher wage areas, they have this greater incentive to automate.

I guess the final point is that, bringing in the gender dimension again, is that working on these automated or semi-automated machines, it's not necessarily associated with wage increases. What we see in the factors we look at is that there's a very compressed wage structure. You don't, for example, have this dynamic so much of men moving into higher paying jobs associated with automation, which we might have expected from our prior studies. So I think that's quite an interesting dynamic, and some of those aspects are quite, I would say, unique to Indonesia at least, between the two countries that we did indeed look at.

Tom: David, thank you very much for that. Now, Valeria, can you tell us about the significance in the case of Mexico, and in particular with regards to the gender impacts of automation and technological upgrading?

Valeria: Yes, thank you, Tom. As it was in the case of Indonesia, automation of course improves output, quality, and productivity. The firms we interviewed, the four firms, told us that it was critical to remain competitive. But perhaps a difference from... or a difference that we identified in the case of Mexico is labour shortages in the industry and difficulty to attract young workers was consistently reported to be a driver of automation. But of course, there are limits to automation in the sense that the varying degrees of automation are linked to the standardization of goods. Also, automation comes along with lots of changes in the system of production to adequate it to the automated or the new equipment, so it's not an easy change to put in place. So, in terms of barriers, one firm, for example, told us that it doesn't make sense to automate more than they've already done because they sell artisanal parts which are done in the traditional way.

We identified, in terms of the gender dimension, as you asked, Tom, the persistence of gender segregation. Most female workers are still in sewing, and cutting is disproportionate male in the case of apparel. In footwear, the majority of workers in finishing are women, whereas the majority of workers shaping heels are men. There was a kind of dissonance between what we heard and what we saw. We heard that there were no gender limitations in the hiring and placements of workers across tasks, but we saw the persistence of traditional patterns. So it is not that gender segregation patterns are broken by technological upgrading, or the idea that tasks are less hard or strenuous. But on the other hand, that the automation happens but it is filtered through traditional gender patterns.

So we didn't see the change that we were expecting, perhaps because we saw, or we interviewed, successful firms, firms that were able to automate and upgrade their technologies, and at the same time keep or expand the number of workers. And therefore, workers, both women and men, became more skilled or multi-skilled in some ways, but didn't lose their jobs. So we didn't see what David mentioned at the beginning as a process of defeminization of the industry, at least not in Mexico, and not in the short term as a response to automation.

Tom: Valeria, thanks. That was great. David, thank you. Also, great. Always good to have both of you here with us to give us your insights, and well, basically a whole new perspective on these issues.

I think one of the takeaways is that it's not just labour policy related or academic. It's worth thinking about the next time we buy a new outfit or a new pair of shoes. Who made them? Do they enjoy decent wages and working conditions? What are their future prospects? And do they have a degree of job security that would ensure them a good livelihood?

It seems like with the right approach to technological changes, women working in these sectors will be able to enjoy positive answers to these and other questions.

I'm Tom Netter, and you've been listening to the ILO EMPLOYMENTT podcast series, "Global Challenges, Global Solutions: The future of work". For more on this, go to www.ilo.org/employment. Meanwhile, thank you for your time.