

Work and Technological Innovation in the Retail Sector. The Case of Fast Fashion Stores in Italy*

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Abstract

The impact of technological innovation on employment has been a subject of extensive study, particularly regarding job polarization, where routine, medium-skilled jobs are more likely to be automated compared to high-skilled and manual jobs. However, medium-skilled jobs requiring face-to-face interaction, such as those in the retail sector, are less susceptible to automation. This article examines how technological innovation is transforming the roles of frontline service workers in the retail sector, focusing on sales assistants in the fast fashion industry in Milan.

Retail is not a leading industry in technological innovation, making it a suitable example for studying gradual changes in job roles due to technology. The research investigates how the integration of online sales and digital tools has impacted the work organization and job quality of sales assistants. Despite the rise in online sales, brick-and-mortar stores have not been entirely replaced, but the nature of in-store work has become more complex.

Drawing on three strands of literature—technology’s impact on employment, digitalization and algorithmic management, and job quality—the study uses interviews with workers, managers, and trade unionists and maps recent changes that occurred in fast fashion stores. Findings reveal that

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technological innovation in retail has made sales assistants' jobs more demanding but has not necessarily improved job quality or wages, highlighting a need for better training and economic recognition to support these workers through the ongoing transformations.

Keywords: job quality, innovation, fast fashion, frontline workers, e-commerce, retail.

1. Introduction

The impact of technological innovation on employment has been extensively studied in recent decades, highlighting both the risk of technology replacing workers and the possibility of creating new jobs. Some authors have pointed out that, in many advanced countries, there is a trend towards job polarization, as technology would more easily replace standardized, routine, medium-skilled activities than high-skilled and manual ones. It is true, however, that among the medium-skilled activities, there are many that require face-to-face contact and, therefore, cannot easily be replaced by robots or automatic machines. The work of frontline service workers in the retail sector falls into this group and will be the focus of this article.

We are aware that retail does not represent a leading industry in terms of technology innovation. Precisely for this reason, it represents a good example of how technology is changing, slowly but inexorably, the essence of the work in many sectors where there has been not a radical substitution of the human workforce: where, thus, traditional occupations are not disappearing, but changing much more than we think. Therefore, instead of entering into the debate about the risks of the (potential) “disappearing of the work” due to the “digital revolution” at the macro level, we investigate, at a micro level, how this transformation is having an impact on the work organization and workers' job quality.

In the retail industry, online sales were already widespread before the COVID-19 pandemic, and their relevance increased significantly during the lockdown phases. After the health emergency, many companies have implemented their online purchasing channels, starting a process of technological innovation from which there will be no turning back. However, this does not mean online commerce will entirely replace “brick-and-mortar” stores. It is difficult to predict future trends in purchasing behaviour. Still, the current scenario is notable: the increase in online sales is already influencing

offline selling activities in a more gradual and nuanced way, impacting sales assistants' jobs that has not been sufficiently investigated.

From a theoretical point of view, the article draws from three different strands of literature that we will outline in the next paragraph. After the section describing the methods used to conduct the research, paragraph 4 provides some data concerning the impact of the pandemic on online sales in fast fashion retail. The following three sections focus on the impact on workers' jobs and tasks and the role played by managers and supervisors in this process. Finally, paragraph 9 offers some concluding remarks.

2. Technologies at work

In recent decades, one of the themes driving the public and academic debate is the *impact of technological innovations* and, in particular, digitalization on employment (Acemoglu and Restrepo, 2020), skills and work organization (Cirillo et al., 2023), job quality (Gosetti, 2023) and inequalities among workers (Domini et al., 2022). At the macro level, technological innovation can cause a reduction (or even a disappearance) of job positions characterized by a high density of routinary and standardized tasks (Autor et al., 2003; Autor, 2015; Frey and Osborne, 2017). On the one hand, this makes it necessary for workers to develop new skills; on the other, it leads to the risk of “technological unemployment” - if the new jobs created do not compensate for those lost (Berger and Frey, 2016; Gordon, 2012), and to the growth of inequalities (Brynjolfsson and McAfee, 2011; 2014; Manyika et al., 2013). Moreover, artificial intelligence can make redundant highly qualified jobs, along with those requiring a long training period and specific skills (Acemoglu and Autor, 2011; Biagi and Sebastian, 2020).

Nevertheless, jobs based on face-to-face interactions and tacit competencies can hardly be automated (Chui et al., 2015; Manyika et al., 2017). Therefore, while technology can automatize single tasks, some jobs, even if medium-low skilled, comprehend a heterogeneous plurality of activities that are not entirely exchangeable by algorithms. In order to evaluate the effect of technology innovations, therefore, it is necessary to look at the micro dimension of the phenomenon, taking into consideration the job characteristics in terms of single tasks performed by workers (Arntz et al., 2016; Nedelkoska and Quintini, 2018). In the following pages, we aim to adopt this perspective.

Another stream of literature that focuses on labour transformations related to technology innovation revolves around the study of *digitalization and algorithmic management*. While digital technology allows managers and supervisors to increase their control over workers, the former increasingly find themselves

interacting with software instead of flesh-and-bone supervisors. In Amazon warehouses, technology is used to assign tasks to be performed through electronic devices (Delfanti, 2019) and similar solutions are adopted in some large supermarkets, where workers are guided by electronic devices that indicate how to store the items. In several cases, work hours are structured by scheduling algorithms based on customers' inflow predictions (Van Oort, 2019), and wages are influenced by customer reviews (Briône, 2020; Kellogg et al., 2020).

Even though this stream of studies takes into consideration the retail sector, they focus on the most advanced cases of technological innovation – still quite rare – and disregard the investigation of more gradual changes that are happening in the rest of the industry. On the contrary, small technological innovations are taking place in most workplaces: automatic checkouts are appearing in various shops, digital kiosks for ordering and paying are more and more present in fast-food restaurants, and digital platforms allow customers to select and purchase any kind of goods from home. Scholars have investigated such changes by studying marketing strategies and consumer behaviours. They have been focusing mainly on how extensively new technological tools are used in retail stores (Pantano and Vannucci, 2019), their impact on management strategies (Hagberg et al., 2016; Willems et al., 2017), and the role of digital technologies in changing and improving the in-store customers experience (Carre and Tilly, 2019; Kozinets et al., 2002; Perry et al., 2019; Roy et al., 2018). More recently, attention has been devoted to the impact of the pandemic on these innovation processes (Shankar et al., 2021).

However, the consequences of sales assistants' work were not under scrutiny, even if they were hard to predict. While specific tasks may become obsolete, frontline service workers are still essential for assisting customers in utilizing automated cash registers or digital kiosks, and they need additional skills to provide effective support. Does the quality of their jobs increase or decrease? Studies on job quality – the third stream of literature we want to recall here – identify several dimensions of it (Edwards, 2005; Gallie, 2007; Gosetti, 2021 and 2023; Muñoz de Bustillo et al., 2011). Besides the classical ones, economic, ergonomic, autonomy and complexity (Gallino, 1978), in the last decade, other dimensions have been highlighted as central: work-life balance, employment instability and workers' participation.

Technological innovations can affect job quality in many ways, impacting different dimensions of it. In manufacturing, for instance, the improvements brought by automation are undoubtedly as far as the ergonomic dimension is concerned. These advancements require specific skills and make jobs more complex and more satisfying. Is something similar happening in the retail industry? Does the work of sales assistants become more complex and gratifying or more repetitive and alienating? Does digitalization increase

managers' control over workers' performances, reducing therefore their autonomy (Bri ne, 2020; Kellogg et al., 2020)? These are the research questions that guided our analysis.

Through interviews with workers, managers and trade unionists, as well as mapping of online sales channels, digital devices and automated checkouts in the stores, we aim to investigate the processes of change that have been set in motion by the pandemic and that could trigger further changes in frontline jobs in the retail sector. We focused our attention on the clothing chain stores of the "fast fashion world" in Milan's city center. Given their young customer base, these companies have been more ready than others to invest in developing devoted mobile Apps and platforms for online sales. Among retail subsectors, the fast fashion world is the most innovative in this sense (Pantano and Vannucci, 2019).

3. Data and methods

The fast fashion retail industry consists of apparel companies that are not "haute couture" or trend-setters but fashion followers targeting the mid-to-low price range. They appeal to young people who are fashion-conscious but income scarce (Fullin, 2021; Hall, 2018; Sun et al., 2019; Taplin, 2014). The term "fast" draws an analogy with the fast-food industry; however, in the fast-fashion industry, speed primarily pertains to the ability to rapidly produce and make new products available in stores, responding to customer demand. The business model revolves around a consumption pattern characterized by a fast turnover of products (Bhardwaj and Fairhurst, 2010). They cater to fashion-conscious, budget-restricted young customers (Sun et al., 2019; Taplin, 2014). The sector is dominated by large national and multinational chains (i.e., Zara, H&M, Bershka, and so forth) with numerous physical stores and some online presence. Apart from large chains and frequent assortment changes, another crucial characteristic is low pricing.

The research focuses on Milan, the largest city in the North of Italy, internationally recognized as one of the world's most influential fashion capitals¹, along with Paris, New York, and London. Milan represents a peculiar scenario where, generally, the presence of brands operating in fast fashion is higher than in the rest of the country and where innovations are often tested (D'Ovidio and Pacetti 2020; Godart 2014).

¹ The Global Language Monitor shows how Milan is among the 10 global cities associated to the phrase "fashion capital" on social media.

The research is built on qualitative methods, involving two different techniques: interviews and direct observation. Firstly, we conducted 59 semi-structured interviews (between 40 and 60 minutes), which aimed at grasping the real impact of the use of technology in the stores. The interviews have been conducted in Milan between March and April 2022, during a recovery phase after the closures defined by lockdown measures in 2020 and the partial reopening between the end of 2020 and 2021. We built our sample by including several companies properly classified as fast fashion and belonging to the Inditex group (Stradivarius, Zara, Pull&Bear, Bershka and Oysho), as well as other chains selling products considered affordable and “cheap”(Uniqlo, Tezenis, Decathlon, H&M and Primark, OVS and Upim), and brands selling products slightly more expensive, which can still be considered part of the “fast fashion world” (Subdued, Nadine, Motivi, Joss Store, Mixerì, Urban Outfitter, Benetton, Tally Weijl, Cotton & Silk, Mango, Lui Jo, Intimissimi and Alcott). In the rest of the article, therefore, the term “fast fashion” is used in an evocative way in order to identify this group of companies instead of referring to those adopting that specific business model (that have been largely studied by business management scholars). Indeed, from our point of view, focused on job quality and work organization, the chain stores considered are all very similar (see section 5), and the specificities of the business model are less relevant.

The interviews (all recorded and analyzed through the use of the software Nvivo) involved managers and store managers (30) and sales assistants (23) aged between 22 and 59 years. We also interviewed 6 trade unions representatives (FILCAMS-CGIL and UILTUCS-UIL) (see appendix).

In addition to the interviews, we conducted direct observations to investigate the extent to which technological tools (such as tablets and phones) were used by sales assistants and were present in the stores (as screens and automatic cash registers). In particular, we first mapped the fast fashion stores located in Milan and focused on two of the main “shopping streets” of the city (Via Torino and Corso Buenos Aires), where the concentration of such stores is highest. As the second step, we mapped the companies’ websites to investigate what services were provided. Thus, we organized a “covered” observation with students of labour sociology, who entered the stores, acting as customers and registering some information on the use of technology² (Pantano and Vannucci, 2019).

² They spent about 45 minutes in each store: in order to not be recognized as researchers they used mobile phones to record information through a google form. They observed in particular whether sales assistants were using tablets or earphones and the presence of automatic (self-service) cash registers in the stores. They also simulated some

4. The pandemic and the unstoppable growth of online commerce

When the COVID-19 pandemic started, all the economic activities considered not essential were closed (Purkayastha et al. 2021), including the stores operating in the fast fashion industry. In Italy, as in other European countries, specific policies were implemented to guarantee a minimum income to workers employed in these sectors through *ad hoc* measures, such as the CIGS “Cassa Integrazione Guadagni Straordinaria” (Pavolini et al., 2023). Additionally, thanks to the ban on dismissals that remained in force in Italy until 31 December 2021, employment in the trade sector did not collapse (in particular, it should be borne in mind that workers who received CIGS remained employed by the company)³. In May 2020, shops started to reopen. During this gradual reopening period, the number of customers allowed inside the stores was limited, but in the meantime, many companies tried to strengthen their online selling channels.

Even before the pandemic in Europe, e-commerce was constantly growing. According to Eurostat data (2019 and 2020), the proportion of citizens who purchased or ordered goods and services online for personal use increased from 55% in 2012 to 75% in 2022. In Italy, over the past decade (2012-2022), the percentage of individuals engaging in e-commerce transactions surged from 29% to 57% (Fig.1). Despite the sustained increase of 28%, this percentage still falls below the European average.

The pandemic accelerated the changes in consumption habits, especially in countries where online purchasing was less diffused, such as Italy. Regarding the European average, the data show a greater preference for online shopping among young people, particularly in the 24-35 age group. This trend is also confirmed in Italy, where 66% of respondents of this age bracket reported making at least one online purchase (Eurostat, 2019 and 2020).

In Europe, during 2022, purchases made through e-commerce platforms primarily consisted of *clothing, shoes and accessories* (42%). The second type of purchase was *deliveries from restaurants, fast-food chains, and catering services* (19%), followed by *cosmetics, beauty or wellness products* (17%). In Italy, clothing was also the most frequently purchased item online (22%).

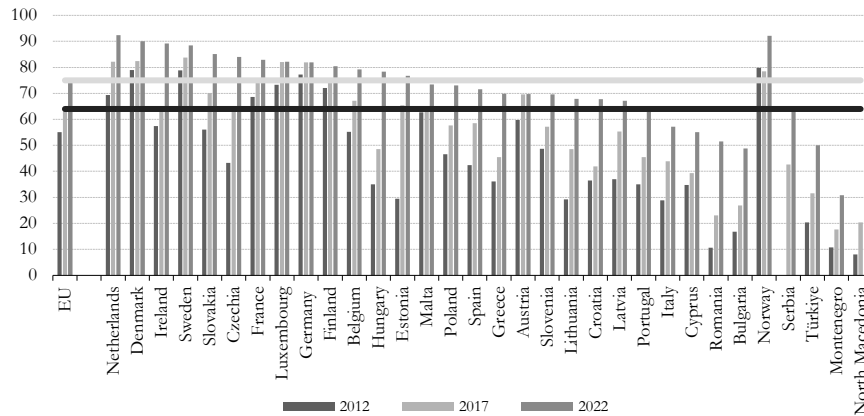
In order to understand the impact of the pandemic on online sales in the clothing sector, it is useful to take into consideration the sales trend of Inditex, one of the main fast fashion groups (Fig. 2). In 2020, Inditex recorded a reduction in sales of -28%. In the following year, sales returned to pre-pandemic

requests asking for help to find a specific product or buying it online if it was not in the store.

³ Decree-Law No. 18/2020 followed by Decree-Law No. 73/2021.

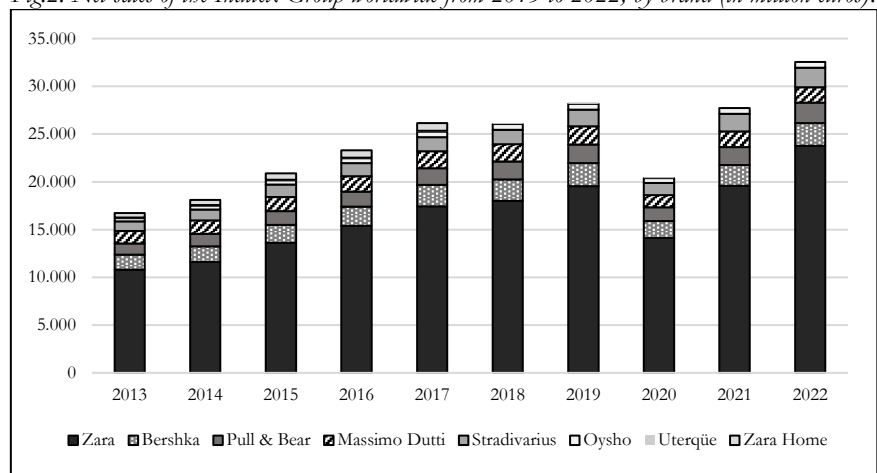
levels, with a growth of +35% in 2021 compared to the previous year and +18% in 2022.

Fig. 1. Internet users who bought or ordered goods or services for private use in the previous 12 months, 2012-2017-2022 (in %) compared to the EU average.



Source: Eurostat

Fig.2. Net sales of the Inditex Group worldwide from 2013 to 2022, by brand (in million euros).



Source: Inditex Group⁴ Annual Report 2021 and 2022.

⁴ In 2018 Zara includes the Zara Home segment; in 2021 Massimo Dutti includes the Uterqüe.

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Online sales have increased significantly, as highlighted by their contribution to the total revenue. Although the data do not provide specific information on online sales revenue, we know that 2020 online sales accounted for 32%⁵ of the total revenue. Since then, the growth has been steady but limited. In 2019, net sales from the website zara.com amounted to \$2.617 billion. After the pandemic, Zara's clients continued to buy online, impacting revenue by \$4.471 billion in 2020 and \$5.099 billion in 2022. As explained in the following paragraphs, this change has had consequences for work organization within stores and the workforce.

Concerning employment, as expected, in 2020, the number of Inditex's employees (Table 1) dramatically decreased (-18%). Non-permanent job positions decreased stronger than permanent positions. In 2021, when stores reopened, employment recovered slightly (+15%). Nevertheless, while the total revenue in 2022 has exceeded pre-pandemic levels, the number of employees remains 7% lower, and the percentage of part-time workers increased (Table 2).

Table 1. Employees and n. of stores Inditex Group, years 2018-2022.

	2018	2019	2020	2021	2022
Number of employees	174,386	176,611	144,116	165,042	164,997
Average employee age	28.7	28.9	30.1	29.3	29.6
% of woman	75	76	76	76	75
% of man	25	24	24	24	25
Number of stores	7,490	7,469	6,829	6,477	5,815

Source: Inditex Group Annual Report 2022.

Table 2. Type of contract and working hours Inditex Group, years 2018-2022 (in %)

	2018	2019	2020	2021	2022
Permanent	73	77	87	81	82
Temporary	27	23	13	19	18
Total	100	100	100	100	100
Full-Time	51	47	50	44	41
Part-time	49	53	50	56	59
Total	100	100	100	100	100

Source: Inditex Group Annual Report 2022.

Although digital innovation and the increase in online sales did not cause a significant decrease in the total number of employees in brick-and-mortar stores, their work has been changing more than we can imagine. In the following pages, we will highlight how.

⁵ Inditex Group Annual Report 2022:
https://static.inditex.com/annual_report_2022/pdf/Inditex-group-annual-report-2022.pdf

5. Hybrid retail stores

In order to understand to what extent online sales channels are becoming relevant for fast fashion chains, we mapped their websites and investigated what services they provide (Table 3). All the retailers sell their products online except for Primark. 17 out of 21 fast fashion companies have a mobile App in which customers can check the availability of items in the stores (in 14 out of 17 cases) and directly purchase products. The App presents a “virtual window” that proposes outfit combinations and points out new collections. Customers receive notifications about promotions or sales on their phones. Thus, the mobile App is used to increase customers’ “loyalty” and represent a contact point between the online and the offline store.

Besides the technological tools, fast fashion brands also offer services to create a *continuum* between online and offline purchases, such as in-store pick-up and/or return⁶. In addition, 5 out of 21 brands offer some collections that can be bought only online. In these cases, online channels are an alternative to the “physical” stores.

Table 3 Digital tools and services for online sales in the companies’ websites.

	Mobile App	Check the availability of products in-store (by App or website)	Some products are sold ONLY online	Pick-up/ Return in store
ZARA	Yes	Yes	Yes	Yes
zH&M	Yes	Yes	Yes	Yes
MANGO	Yes	Yes	Yes	Yes
MASSIMO DUTTI	Yes	Yes	Yes	Yes
PULL&BEAR	Yes	Yes	Yes	Yes
BENETTON	Yes	Yes	No	Yes
BERSHKA	Yes	Yes	No	Yes
CALLIOPE	Yes	Yes	No	Yes
OVS	Yes	Yes	No	Yes
OYSHO	Yes	Yes	No	Yes
STRADIVARIUS	Yes	Yes	No	Yes
TERRANOVA	Yes	Yes	No	Yes
TEZENIS	Yes	Yes	No	Yes
ZUIKI	Yes	Yes	No	Yes
SUBDUEDE	Yes	No	No	Yes
PRIMARK	Yes	No	No	No pick-up/Yes Return
TALLY WEIJL	Yes	No	No	Yes
UPIM	No	Yes	No	Yes
ALCOTT	No	Yes	No	Yes
CELIO	No	No	No	Yes
YAMAMAY	No	No	No	No

Source: our analysis of companies’ websites. Note: last update November 2022.

⁶ This service has shown an increase after the pandemic: according to our analysis of the companies’ websites, 20 out of 21 brands offer the option of making returns in the stores, while 19 also foresaw the pick-up.

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The increasing use of multiple sales channels requires an internal store organization that is different from the past. Both from direct observation inside the stores and from the interviews, it has emerged that there are specific areas in the stores specifically designed to let customers complete their online purchases. For example, H&M and Zara have a particular desk to pick up what has been ordered online (*click and collect*). In one of the Zara stores in Milan, technology has replaced human work, considering that there is an automatized device where it is possible to both pick up and return products without the help of any sales assistants.

In three chains – among the 21 observed – a portion of the clothes is exposed in the physical store but can be purchased only online:

«In some shops, there is an exclusive section of items called “Pop-ups,” which are displayed in the shop and are available for customers to try. But they can only be purchased through e-commerce » [Sale assistant 14, Zara]

In some stores, there are also specific areas where digital devices allow customers to search and select clothes that can be bought online.

«We had a touchscreen digital display in the store, and we called it a “chiosco”, through which customers could buy products that weren’t there in size or colour in the store, and then have them delivered either to their home or to the store» [Store Manager 21, Uniqlo]

Technological innovation is therefore changing the physical aspect of the stores. If, as seen, the “physical consumer” tends, at least partly, to “shift” towards the online store, the reverse is also true. Some sales assistants claim that when customers enter the store to return items purchased online, they decide to buy something else directly in the store. Conversely, some are in the shop and *choose* to complete the order online.

«It happened to me that one client, on a Saturday, she saw a very long line for the changing rooms and, since she did not want to wait to try on the clothes, also because it was hot as hell, she asked me if she could buy that item online, try it at home, and eventually make a return» [Sale assistant 3, Stradivarius]

The mobile App used by the customers directly inside the store represents another way through which the online and the offline worlds “intertwine”. Direct observations of the stores have revealed that the use of the mobile App is mandatory for customers to use automatic cash registers and to receive

specific discount vouchers⁷, and in some cases, to receive virtual (not printed) payment receipts for their in-store purchases. Sales assistants are evaluated through indicators that quantify their capacity to obtain new downloads and subscriptions to the brand's mobile App.

«In my job, as a shop assistant, you really have to push for orders. There are targets for new subscriptions to the application that you have to reach during the weeks gradually. Now, we are at 54% of the assigned goal, but the number of people is always the same. How can you always make new accounts? It is really difficult, but you have to do it. The subscription is suggested with the idea that you get discounts. For example, if you see someone buying several things, you approach them by saying: Did you know that if you register with your account and sign to the website, you can obtain a 10% discount on everything you buy?» [Sale assistant 10, H&M]

We see technology entering fast fashion stores through sales assistants' devices and customers' phones and progressively changing sales assistants' work. These transformations have happened incrementally. For instance, the QR codes visible on the clothes' labels, which can now be read by customers through their smartphones, were initially introduced to make store replenishment easier and faster. Until a decade ago, in fact, sales assistants were supposed to manually count the items on the shelves (by size and colour), go to the storehouse to check availability, and bring the items to the shop floor. Today, this process is no longer necessary as salespersons' devices not only allow them to know how many sizes of an item are present in the store but also where they are (on which floor and on which shelf). At the same time, the QR code provides information to the customers too and makes the online purchase of a product not available in the store relatively easy

6. How does the sales assistants' work change?

Except for very few cases of chains that did not adopt the online purchasing channel at all – or have kept the two spheres separated (only offering the in-store pick-up service) – the hybridization of online and offline shopping has an evident impact both on the workload and on the specific tasks carried out by sales assistants. Let's see how.

⁷ In the H&M stores, for instance, a program encourages customers to bring in old or unwanted clothes for recycling. Participants receive a discount voucher that is spendable only through the App.

6.1 An increasing workload

If the literature about the impact of technological innovation highlights the risk of job replacement, our research on fast fashion stores shows a counterintuitive effect of digitalization on sales assistants' work, as their workload increases rather than decreases. This happens for two different reasons, and it can be attributed to different segments of the labour force, depending on the organization of the stores.

On the one hand, since the stores offer pick-up services, sales assistants are supposed to assist both customers who have made online purchases and are there for pick-up or shipping, as well as those who enter the store to make in-person purchases

«The real change is managing higher in-store affluence because online customers opt for in-store delivery to avoid shipping costs. This option leads a high number of customers to be handled during the week and especially at weekends» [Sale assistant 19, Bershka]

On the other hand, it is necessary to consider the impact on the workload of warehouse workers. The processing of online orders differs from chain to chain. In some cases, the delivery of clothes purchased online is handled by the warehouse of the physical stores where products will be picked up.

«After the pandemic, the online orders have increased a lot. So, in your daily routine, you have to spend time on them, which consequently affects the overall organization of a typical day because you must dedicate a part of your day to the organization of online orders» [Sale assistant 2, Oysho]

In some cases, the same sales assistants who work on the shop floor take care of the orders in the warehouse, picking the items from the shelves and packing them.

«H&M offers the “click and collect”, we handle it. Initially, only a few stores did it, like in Milan, now not all of them but almost all. It's complicated to manage; you need more workers because you must prepare the order quickly. Sometimes the product is out of the stock... and you have to make it come from a nearby store, a real mess for us» [Sale assistant 1, H&M]

This is the case for store chains that have only recently developed the pick-up in-store service. Conversely, companies like Zara, which developed the e-commerce channel some time ago, have reorganized the roles of their in-store

staff: a team of sales assistants is exclusively in charge of managing online operations within the store.

«Currently, I am in the online section, so I am mainly in charge of handling all the online orders. Generally, when I arrive at work, depending on the day's needs, I do specific tasks rather than others. [...] I also work with customers in the store, such as a cashier, but having been in the online section for two years, I am in the store for two hours an eight-hour working day. Whereas at the beginning of my career, being in the store with customers was my only duty» [Sale assistant 14, Zara]

6.2 An increasingly complex job

Besides the increased workload for sales assistants, it is also worth considering that integrating online and offline trading makes their work more complex compared to the past for several reasons. First, assisting customers is more complicated because their requests are different than they used to be.

«In the past, a girl would come and say, “I need a white shirt”, so you had to look for the white shirt in the store. Now she says, “I saw this influencer wearing this shirt”, and we scan the product digitally and know everything in real-time: the colours and the sizes available. It happens more and more often that not only shop assistants but also customers themselves consult the mobile App. So, the customers open the Mango application on their own, scan the product, and get the information about that product in real time; that is the difference. [...] The digital devices allow to check if a product that the customer sees online - on a website, on Instagram, or an influencer's account - is present in the store or in a nearby store, if it is out of stock in physical stores but available online etc., to provide a customer service that is more digital than before» [Manager 19, Mango]

It happens more and more often that younger customers go into the stores to find clothes they saw sponsored by specific “ambassadors” or “social media influencers”. Sales assistants, therefore, have to identify the products and check if they are available rather than advising on what to buy.

«No doubt the main change concerns the role of the sales assistants and how customers perceive them when they enter a store. In particular, in the past, customers would ask for advice on size, fit, and fashion trends, while nowadays, they seem absolutely sure about their purchases because they often view the articles on the website and, only after that, they go to a store to check their characteristics in person» [Sale assistant 10, H&M]

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If products are unavailable in the store, sales assistants, instead of merely proposing some alternative products, have to invite the customer to buy them online. In some stores, sales assistants are expected to help customers order products directly from the shop floor by using their devices.

«We have a small tablet [that the sales assistants call “iPods”] in the store, which allows us to find the products on the shelves and check the availability of different sizes and colours. Through these iPods, we can make orders for the customer. [...] When the customer comes in and asks for a certain size, I first check the availability in the store, and if the product is not available, I can tell them: that it’s available online, and if they want, I can order it for you» [Sale assistant 5, Zara]

In another chain, there is a bonus to trigger online purchasing inside the store.

«We encourage customers to buy online as there is a challenge between Stradivarius stores that are ranked according to the number of online purchases induced by sales assistants in the store» [Sale assistant 13, Stradivarius]

In other cases, the customers have to order through the App using their smartphone, eventually asking for help from the sales assistants.

«You also have to push online sales. Obviously, if there is no item in the shop, we tell them to buy it online [...]. Through the QR code that you find now on the tags, instead of the barcode, if you frame it with your camera, it redirects you to the product on the App, and you can buy it. But wait, not everybody knows how to do that. So you have to show them how to do it, and that requires an extra amount of time » [Sale assistant 10, H&M]

Some chains try to push all customers to download the App so that they can target them with promotional advertisements. At the cashier desk in some stores, sales assistants propose the customers provide an electronic receipt via the App instead of a paper receipt (in Italy, the payment receipt is mandatory by law, and it is necessary to return the product). This duty can be a source of stress when several customers are queuing:

«[Managers] put a lot of pressure on the electronic receipt, and it’s frustrating having to ask every customer... sometimes we turn around to see if someone isn’t listening to us in order not to ask this! [...] For this reason, there’s always a queue at the checkout, leading to long wait, and sometimes insults come from customers in line» [Sale assistant 23 Zara]

6.3 New skills needed

In general, the customers' requests and the need to use electronic devices require the development of specific skills that were not needed to perform the job before the pandemic:

«We already had meetings every morning, but it was overwhelming with the increase in online sales. We are young [laughs], but my older colleagues had a hard time dealing with it. Also, Apps are fast-paced; they change constantly, and products are uploaded all the time to make more and more sales. You have to be constantly updated; the most absurd thing is that the products that are visible in the App very often haven't arrived in the shop yet. Then customers come and say, "Where is this?"» [Sale assistant 17, H&M]

Younger workers find it less difficult to keep themselves updated, while older ones need training on these aspects. In any case, the work has become more demanding for everyone from this point of view.

The consequences on job quality are twofold. On the one hand, using tablets and other devices in everyday work makes workers' tasks more varied, thus decreasing the potential repetitiveness and increasing the level of autonomy (Edwards, 2005; Gallie, 2005; Muñoz de Bustillo et al., 2011). Another positive impact worth underlining regards the decrease in physical fatigue. For example, tablets allow workers to check what is present in the storehouse without physically going there many times during the working day.

On the other hand, these new devices can also lead to some "hidden effects" that are potentially negative. In fact, managers' control over workers increases (Briône, 2020; Kellogg et al., 2020). Indeed, the device makes it possible to track individual transactions, putting pressure on employees who must persuade customers to make online purchases in addition to their "regular" daily responsibilities.

7. What unions claim: need for training and incentives

After describing the technological innovations introduced by fast fashion stores, this section explores the trade unionists' perspective to highlight what aspects they see as most problematic. In particular, trade unions focused on two

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issues: the investment in proper training and the introduction of economic incentives⁸.

Regarding the first point, interviews emphasized the lack of specialized training for the use of online devices. If the complexity of the job increases, as described above, workers who do not have the necessary skills are likely to experience higher stress and lower job quality (Edwards, 2005). Given that investment in training is generally quite scarce in the fast fashion world (Fullin, 2021), the lack of specific training courses focused on digital devices is not surprising. The young workforce hired after the pandemic is accustomed to online shopping and using smartphones and tablets, therefore, companies can resort to turnover to hire newcomers who do not need training.

«They [the company] usually hire young people [...] because they usually have a better knowledge of everything related to the technological sphere... it's easier. Young people learn how to use those devices faster; thus, they do not need training. One of the things that the company told us is that the workers in that store were old and had to be moved to other stores [the company owns different stores with different types of customers] because, even with training... they would not have learnt how to use those technologies» [Trade union's representative, Filcams-CGIL]

The other request of trade unions concerns pay levels⁹. Online sales increase the sales assistants' workload and necessitate new skills to use digital devices. Therefore, trade unions claim economic recognition for this additional effort¹⁰.

«So we have stimulated a discussion about the impact of online sales on workers' tasks. We asked for recognition of their contribution to the economic revenue of that store, daily, monthly, yearly.» [Trade unions' representative, Filcams-Cgil]

An example is the recent integrative contract signed by the Inditex company:

⁸ See also Marcolin and Gasparri (2023) on the role of trade unions governing the effect of digitalization in the retail sector.

⁹ In the retail sector, unions have difficulties in bargaining other issues, such as working schedules, and usually focuses on economic compensations (Carreri, 2022).

¹⁰ This request can be interpreted as an effort aiming at increasing the job quality in the workers' participation dimension (Gallie, 2007).

«We managed to sign, for the first time, an integrative collective agreement introducing new bonuses if the company's revenue reaches a certain level [...]. It is definitely a step forward compared to other companies... there have also been advancements in the economic aspect because, in the previous integrative contract, this aspect was completely absent.» [Trade unions' representative Filcams-Cgil]

Trade unionists, during the interviews, drew our attention to another issue connected to the general increase in the use of technology. In stores that are heavily investing in new devices, instant messaging (e.g. WhatsApp) is increasingly used to communicate workers' shifts and last-minute requests for shift changes. This might not seem very different from "traditional" phone call notifications. However, the level of managerial control is higher as they can check when the messages have been read and require a prompt answer.

«One of the most widespread issues is the use of WhatsApp groups with workers' personal numbers outside working hours [...]. Employers communicate shift changes for the next morning just the evening before [...] and rely on views or double-checks to see if the worker has read the message and not responded [...]. This is also a nuance of how the use of new technologies can impact the work environment» [Trade Union Representative, Filcams-CGIL]

The unionists we interviewed stressed two negative aspects of this use of instant messaging by employers: the lack of an effective separation between work and private lifetime and the lack of proper economic recognition of this constant availability.

«There is no payment for this constant availability; it is not regulated. [...]. They push workers to check their mobile phones every minute. They hear a beep, and they look at it [...]. Companies use it to make schedules and communicate shift changes. They start using these devices for these things, and I don't like it.» [Trade Union Representative, Uiltucs-UIL].

In this regard, unions are advocating for the regulation of "physical and virtual hours" and for a proper right to disconnect from messaging channels. They specifically ask for the definition of the time during which workers are expected to use WhatsApp and for the provision of accounts dedicated to work communication that can be switched off outside working hours.

8. Conclusions

The choice to analyze the impact of digital technologies on sales assistants' jobs in the fast fashion industry might seem paradoxical for two reasons. First, fast fashion and retail, in general, are not leading industries in technological innovation. Second, the spread of e-commerce, driven by the increased use of digital technologies, poses a real threat in this industry, potentially leading to a drastic reduction of brick-and-mortar stores and the disappearance of sales assistants. Nevertheless, data show that, despite the increase in online sales, employment in the sector recovered after the pandemic and was only slightly lower in 2022 than in 2019. The pandemic has had an unexpected impact: it did not cause the end of brick-and-mortar businesses but rather accelerated the implementation of some of the innovative processes initiated just before the health crisis. After the health emergency subsided, customers returned to physical stores. However, in the meantime, something was changing, as online and offline purchase channels were gradually intertwining and partially overlapping.

Our research on Milan's stores highlighted how the rise of online sales did not lead to the complete elimination of the sales assistants' role but rather increased their complexity. When the increase in the complexity of the job's tasks is not followed by a proper adjustment in the work organization - and by targeted in-store training, as also underlined by the trade unions' representatives - it leads to increased worker stress. The workload has also increased, as sales assistants now have to assist customers in picking up products bought online and prepare orders for delivery from the store warehouse. With the exception of a few stores, the lack of economic recognition of this increased workload has led to a further decline in job quality. It is worth noting that the use of smartphones or tablets in stores makes it much easier than before to check the availability of the items in stock, improving job quality from an ergonomic perspective. However, the unionists we interviewed stressed that workers' smartphones are increasingly used by supervisors to communicate the working schedules, with the risk of not respecting the agreed notice periods and negatively affecting work-life balance (Fullin, 2021). In particular, changes in the working hours are often required with very short notice, and supervisors demand an almost immediate response, invading the workers' free time.

Technological innovation and online commerce, rather than simplifying and/or eliminating the work of sales assistants, have made it more complex, requiring skills in the use of software and devices that were previously unnecessary. However, this does not necessarily lead to an improvement in the job quality and an increase in the wages of sales assistants. The point that appears most critical is the absence of adequate economic recognition and

training for workers, who must navigate significant transformation in their jobs that technological innovation processes, albeit incremental and progressive, have brought in recent years. Instead of increasing wages and investing in training, companies in the sector opt for high workforce turnover: they hire young workers who are already used to the online platforms for their purchases and, more generally, to the technology in general (for example, through smartphones). This is a less expensive strategy that was already prevalent in the fast fashion industry and is even more effective in this phase of technological innovation.

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Appendix

The following table summarizes the interviews conducted for this work.

<i>Interviewee</i>	<i>Chain/TU</i>	<i>Age</i>	<i>Sex</i>
Manager 1	Zara	22	F
Manager 2	Benetton	23	F
Manager 3	Subdued	23	F
Manager 4	OVS	24	F
Manager 5	Pull&Bear	24	F
Manager 6	Desigual	24	F
Manager 7	Intimissimi	25	N.A.
Manager 8	Bershka	25	M
Manager 9	Subdued	26	F
Manager 10	Nadine	29	F
Manager 11	Urban Outfitters	29	F
Manager 12	Alcott	29	N.A.
Manager 13	OVS	30	F
Manager 14	Tally Weijl	30	F
Manager 15	Urban Outfitter	31	F
Manager 16	Bershka	31	M
Manager 17	Mango	59	M
Manager 18	Motivi	34	F
Manager 19	Mango	35	N.A.
Manager 20	Tezenis	35	F
Manager 21	Uniqlo	35	F
Manager 22	Tally Weijl	36	M

Manager 23	Joss Store	36	F
Manager 24	Primark	36	M
Manager 25	Urban Outfitters	39	N.A.
Manager 26	Upim	40	N.A.
Manager 27	Mango	40	N.A.
Manager 28	Lui Jo	46	N.A.
Manager 29	Uniqlo	53	F
Manager 30	Mixerì	55	F
Sale assistant 1	H&M	22	F
Sale assistant 2	Oysho	22	F
Sale assistant 3	Stradivarius	23	F
Sale assistant 4	Zara	24	F
Sale assistant 5	Zara	24	N.A.
Sale assistant 6	Zara	25	F
Sale assistant 7	Cotton and Silk	26	M
Sale assistant 8	OVS	26	F
Sale assistant 9	Primark	26	M
Sale assistant 10	H&M	28	F
Sale assistant 11	OVS	29	N.A.
Sale assistant 12	Zara	29	F
Sale assistant 13	Stradivarius	30	M
Sale assistant 14	Zara	31	F
Sale assistant 15	Zara	31	M
Sale assistant 16	OVS	35	M
Sale assistant 17	H&M	35	F
Sale assistant 18	Mango	N.A.	N.A.
Sale assistant 19	Bershka	40	N.A.
Sale assistant 20	Decathlon	44	F
Sale assistant 21	Bershka	45	N.A.
Sale assistant 22	OVS	45	N.A.
Sale assistant 23	Zara	40	F
TU1	Filcams-CGIL	N.A.	F
TU2	Filcams-CGIL	N.A.	F
TU3	Filcams-CGIL	N.A.	F
TU4	Filcams-CGIL	N.A.	F
TU5	Uiltucs-UIL	N.A.	M
TU6	Filcams-CGIL	N.A.	F
