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Abstract: The paper presents the main findings of an exploratory study concerning the platformization of "dirty jobs" – specifically, cleaning work – in Italy, focusing on the *Yoopies.it* marketplace platform. Cleaning activity is inherently dirty work: an occupation that is likely to be perceived as disgusting or degrading and that has strong gender and ethnic connotations in Italy. Invisibility is ideal for this type of service, but what happens when the platform contributes to the visibility of dirty workers? Our main expectation is that marketplace platforms reproduce the historically gendered and racialized nature of domestic work, which is present offline. We selected and analyzed the content of 50 cleaner profiles in Bologna, Florence, Milan, and Rome for a total of 200 profiles within the *Yoopies.it* platform. The article shows that the platform does reproduce the historically gendered nature of cleaning work. Simultaneously, two further main findings emerge from our empirical analysis: 1) the platform creates new barriers to access to work, especially for migrant workers, and 2) the platform acts as a leveler of prices, though downwards.

Keywords: dirty job; cleaners; platform economy; Yoopies; domestic work

1. Introduction

There is a well-established and consolidated body of research within the comparative sociological literature dealing with the phenomenon of "dirty jobs" (e.g., Hughes 1951, 1958; Douglas 1966; Dick 2005; Ashforth *et alii* 2007, 2017; Slutskaya *et alii* 2016; Deery *et alii* 2019). With such an expression – first employed by Everett Hughes (1951) – we refer to occupations that are likely to be perceived as disgusting or degrading. People who perform dirty work tend to become stigmatized, as society projects the negative characteristics associated with their occupation on them, depicting them as "dirty workers" (Ashforth, Kreiner 1999).

As pointed out by the literature, on the one hand, a job can be dirty because of its content and the kind of tasks it involves; on the other hand, it can be considered dirty because of the kind of social construction and stigmatization that surrounds it, especially when it involves a subordinate relationship with the employer (Sales, Santana 2003). According to this strand, a job is dirty when there is an intersection of several variables, particularly related to the ethnicity and gender of the worker (Glenn 1992).

Domestic work, particularly cleaning activity, is therefore inherently dirty work: a work that, in addition, has strong gender and ethnic connotations in Italy (INPS dataset, 2022[2]).

A paradox emerges when considering this specific occupation. Cleanliness is an undisputed value of our society: it is a sign of decency and morality, productivity and efficiency, health and well-being, while dirt represents what is out of place and threatens the social order (Douglas 2003). Therefore, eliminating dirt is a founding and fundamental act of society. However, the people whose actions make it possible for us to live in a clean space receive little recognition: cleaning is

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one of the lowest-paid jobs; much like domestic work – non-work par excellence – it is considered unproductive. Whether carried out by private companies or by in-house services, cleaning is performed in such a way as to interfere as little as possible with the economic, social, or cultural activities of companies and institutions, i.e., early in the morning, late in the evening, or at least when it is least disruptive. The same applies to domestic cleaning: the person who does the cleaning often lives in the house so that cleaning does not interfere with family life or has access to the house when the family is away (Alemani 2004). This organization makes cleaning invisible work, just as the people doing the work are invisible to the beneficiaries. Invisibility is ideal for this type of service: beneficiaries demand clean spaces, but they do not want and should not be disturbed by the people and gestures that produce the cleaning (Allen, Pryke 1994).

But what happens when the platform contributes to the visibility of dirty workers?

This exploratory study investigates what happens to cleaning work with the introduction of online storefronts that make these workers less invisible. We ask whether the platform "cleans up" dirty works or, on the contrary, helps reproduce and indeed exacerbate inequalities already present in the "offline" domestic sector. We address this research puzzle by focusing on the Italian case study, which remains relatively understudied up to the present. More specifically, the work examines one cleaning service online platform (*Yoopies.it*) operating in four medium/big cities of the Center-Northern regions (Bologna, Florence, Milan, and Rome).

In line with other empirical studies (e.g., Van Doorn 2017, 2021; Mateescu, Ticona 2020), we expect that marketplace platforms do not "clean up" dirty jobs; conversely, they are likely to reproduce the historically gendered and racialized nature of domestic work which is present offline. In other words, marketplace platforms do not remove the physical and social stigma associated with cleaning services, which thus remains perceived as "dirty jobs."

The study is explorative: we do not aim to trace causal mechanisms but to provide a preliminary assessment of whether and how the disadvantages that characterize a specific "dirty job" – cleaning service – are reproduced online.

The research contributes to advancing the literature in the field twofold. First, it puts into a fruitful, mutual dialogue two different bodies of research: the one dealing with "dirty jobs" on the one hand and the one concerning the platform economy on the other. The former has primarily investigated the evolution of domestic work but paid less attention to how the "dirtiness" of the jobs may be affected by the rise of the platform economy. The latter has focused less on how platforms have reproduced or have not reproduced and intensified such "job dirtiness" and, thus, the multiple stigmas associated with these occupations.

Second, the research focuses on a case study, Italy, which is relatively underexplored, thus providing new empirical findings.

The article is structured in the following way: first, we frame cleaning work within the theoretical framework of the dirty job by providing some data concerning this sector in the *offline* Italian labor market. In the third section, we review the state of the art in the field of platforms and cleaning. That is followed by illustrating our main hypothesis and the method employed. In the fifth section, we present the main findings of our analysis and interpret them through the theoretical tools provided by the literature. The final section is devoted to the conclusions.

2. Cleaners in Italy: women doing the dirty job

This section intends to frame domestic work – specifically, cleaning work – within the theoretical framework of the dirty job.

With the term "cleaner," we refer to those domestic workers involved in cleaning other people's homes. This definition may sound like an oxymoron given that those who clean are actually doing a dirty job, especially in Italy. As specified in the Introduction, dirty jobs refer to tasks and occupations that are distasteful, disgusting, or demeaning (Huges 1951): dirty tasks thus carry a

stigma. Stigmatization is a prominent feature of dirty work (Coletto, Carbonai 2023). Workers employed in dirty jobs are faced with negative stereotypes of the work they do and who they are. Jobs that involve physical dirt are often designated as low-status and low-skilled and are seen to be carried out by groups who are deemed to be potentially inferior and less socially valuable (Dick 2005). In line with this definition, cleaning activities are precarious, poorly paid, and socially penalizing jobs (Ambrosini 2005; Giuliani 2023).

As the INPS dataset on Domestic Work (2022) shows (Fig. 1), in 2022, only 33.4% of cleaners in Italy are of Italian origin, with more than 70% having a foreign background. Most domestic helpers in Italy in 2022 are from Eastern Europe (26.8%) and the Philippines (11.8%). The same dataset shows that, at the regional level, Italian domestic workers decreased in the last year in all regions, especially in Sicily (-11.5 percentage points), Marche (-9.4 pp), and Basilicata (-9.4 pp).
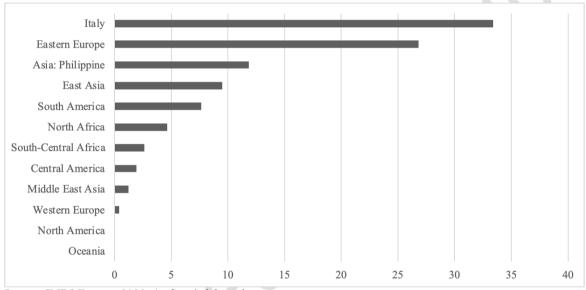
Fig. 1. Cleaners with regular employment contracts in Italy by geographical origin in 2022, % values

Source: INPS Dataset 2022. Authors' elaboration.

Furthermore, the composition by gender of this category of workers shows a growing prevalence of female domestic workers (Paraciani, Rizza 2021).

The historical series of the last six years (table 1) shows that the downward trend until 2019 in the number of domestic workers (including cleaners and carers) is similar for men and women, although the gender composition displays a clear predominance of women. The number of female workers in the sector has increased over time, reaching its highest value in the last six years in 2019, at 88.5%. The share of female workers, with the increase in the number of workers in 2020-2021, has decreased and stands at 86.4% in 2022, while males, falling below 122,000 in 2022, show a decrease of more than 18% compared to 2021.

Domestic workers are considered to constitute a vulnerable category, not only for being mostly foreign and female but also as a consequence of the places where they work: their isolation makes these workers more exposed to the risk of being exploited and being subjected to irregular working conditions (Davies 2020). Although the data shown consider regular employment contracts, within the domestic sphere, employment contracts are often absent or not complied with. Furthermore, the high degree of informality that characterizes the workplace and working relationships leads many employers (families) not to apply the national collective agreement (Redini *et alii* 2020). This means that much domestic work is not declared for tax and social insurance purposes (Sarti 2010).

Tab.1. Domestic workers with regular employment contracts in Italy by gender and year (2017-2022)

	Male		Female		Total
	Absolute	%	Absolute	%	Absolute
2017	104,296	11.9	772,202	88.1	876,498
2018	101,586	11.7	766,918	88.3	868,504
2019	97,898	11.4	761,276	88.6	859,174
2020	125,502	13.2	822,464	86.8	947,966
2021	148,635	15.3	822,212	84.7	970,847
2022	121,374	13.6	772,925	86.4	894,299

Source: INPS Dataset. Authors' own elaboration.

Cleaning work also carries various stereotypes and conventions due to the predominantly foreign origin of female workers and the gender segregation that characterizes it (Soni-Sinha, Yates 2013). Indeed, it is perceived as an unskilled job that anyone can do (Browne, Misra 2003) and is often associated with unproductive unpaid work (Messing 1998). Cleaning is a low-prestige job: it does not confer social status, it is not a high-quality job, it does not require education, and the pay is low (Zock 2005). Cleaners are, therefore, dirty workers associated with the stigmatization of their work: we imagine them to have certain personality traits, social relationships, and specific socio-cultural and socio-demographic characteristics.

Against this background, is it possible for cleaning platforms to reduce this stigma and help clean up' this dirty work?
The following section provides a literature review to understand the state of the art on platforms and cleaning work.

3. The platformization of cleaning work: a literature review

There is a very informative sociological literature concerning the *platformization* of domestic work – including *cleaning jobs* (e.g., Van Doorn 2017, 2021; Ticona, Mateescu 2018; Ticona *et alii* 2018; Flanagan 2019; Litman *et alii* 2020; for a review see Manzo, Paraciani 2022). Sociologists have highlighted a rapid global rise in domestic workers using digital platforms to search for jobs (De Groen *et alii* 2017; Florisson, Mandl 2018; Mateescu, Ticona 2020).
The growth of the platform economy has raised questions regarding its effects on the labor markets (Pais 2019), especially when it comes to the low-skilled service sector, such as cleaning work, which is historically characterized by sharp inequalities in terms of low wages, informal job relations, and a high gender and racial segregation, as discussed in the previous section. As Hoang *et alii* (2020) have underlined, empirical research has offered mixed answers to these questions, depending on the optimistic or pessimistic perspectives adopted.
On the optimistic side, platforms may reduce unemployment since they remove barriers to labor market entry for workers in the most disadvantaged sectors of the economy, including cleaning workers (e.g., Graham *et alii* 2017; Ticona *et alii* 2018).
Digital platforms, thus, would have made visible domestic jobs – such as cleaning – which are traditionally invisible since they are performed within domestic walls (Ticona, Mateescu 2018). More specifically, platforms have potentially made these workers visible through two processes: by facilitating the domestic workers' self-branding – which is supposed to enhance their capacity to find a job – and through the platform's promotion of labor contract regulation (Ticona, Mateescu 2020). In this regard, in their empirical analysis of babysitting online platforms, Ticona and Mateescu (2018) have stressed that the platform encourages the regulation of job contracts –

providing info and resources to the families to draft the job contract – and, in parallel, highlights the risks associated with not formalizing the job relationship. By increasing workers' visibility, the platform could thus create new opportunities for the labor market integration of these groups of disadvantaged workers who cannot rely on better opportunities (Rodríguez-Modroño *et alii* 2022a). Furthermore, by making these workers more visible, the platform could also have positive repercussions regarding labor market regulation, thus offering more rights in a sector that has always been distinguished by limited access to the social safety net (Sedacca 2022). In addition, platforms are said to guarantee high flexibility to the workers, thus allowing them to supplement their existing income – to benefit workers trapped in precarious and low-paid jobs (Fabo *et alii* 2017).

On the pessimistic side, scholars have questioned the positive impact of platforms on domestic work. According to the empirical analysis, such a positive effect remains only potential and does not translate to the factual level (e.g., Van Doorn 2017; Ticona, Mateescu 2018; Ticona *et alii* 2018; Lutz 2019). Three leading critics have been made. First, visibility may also have adverse effects since it comes with new online mechanisms for workers' surveillance and discipline (Sedacca 2022). The rating system, for example, functions as an institutionalized threat to the workers' reputation, thus potentially damaging their possibility of finding a job in case of negative or below-expectation ratings (Ticona, Mateescu 2018; Flanagan 2019). Furthermore, platforms pressure workers to verify and constantly update their personal identity, thus threatening their privacy. These two dynamics – ratings and the so-called individualized visibility (Ticona, Mateescu 2018) – may produce a vicious cycle since ratings are also inclined to be affected by structural prejudices related to race, gender, and age (Sedacca, 2022). By having access to their personal information, users' choice and evaluation of workers can be discriminatory. Workers' visibility thus often ends up being the only users' benefit, which can examine the worker's profile in detail. It is thus not surprising that in their descriptive analysis of care and domestic workers, Molitor *et alii* (2021) found that most platform workers were critical regarding reputational mechanisms, such as ratings. Second, the self-branding activity requested in order to find a job requires new technological and communication skills that may be missing by a high number of workers – for example, those who are older or have an immigrant background and thus a lower command of the language – which end up to be destabilized (Ticona, Mateescu 2020). In this sense, self-branding creates new hiding barriers that reproduce the same inequalities that are present within the offline economy (Ticona *et alii* 2018). Third, empirical research has stressed that increasing workers' visibility has not translated to more job security. In their analysis of the domestic cleaning platform *Heliping* in five Western European countries, Koutsimpogiorgos *et alii* (2023) stressed that there has been no change over time in classifying independent contractors into employees. *Helpling* thus has maintained its original gig-platform model as a digital intermediary facilitating the connection and transaction between self-employed workers and clients. Furthermore, the platform stopped setting prices in all investigated countries. This change demonstrates *Helpling*'s will to preserve the global independent contractor status of its gig workers to prevent being classified as an employer and, consequently, its workers as employees (Koutsimpogiorgos *et alii* 2023). Similarly, Ticona and Maatescu (2018), in their study on babysitting online platforms, highlight that the platform's encouragement of regularizing labor contracts is more rhetorical than substantive. There is no willingness on the part of the platform analyzed to take responsibility or verify agreements. Such a finding has been confirmed by Molitor *et alii* (2019), which show that, in most cases, there was no formalization of labor contracts. Furthermore, the status of self-employed workers is constantly "threatened" by customers' ratings, and that is said to trigger a race to the bottom in the price setting (Von Doorn 2021): being put in direct competition, domestic workers are forced to lower their hour price request – sometimes even below the minimum wage – in order to remain competitive in the online market (Sedacca 2022). While flexibility has been positively evaluated by most gig workers (Molitor *et alii* 2019), it has come with a high cost in terms of lack of social benefits. The exclusion from unemployment benefits and sick pay is particularly problematic for

those workers who rely on the platform as the primary source of income (Sedacca 2022). In other words, platforms reproduce the same precarious job relations – atypical and informal contracts, low pay, and limited access to the welfare state – that characterize the cleaning work sector offline: while they simplify the job matching, this is always to the benefit of the client and ends up amplifying the vulnerability of those workers who are already in a disadvantaged position (Ticona *et alii* 2018). The relatively high satisfaction level displayed by platform workers seems connected to the fact that, for many of them, the platform provides only a complementary income and not the primary source of revenue (Molitor *et alii* 2019).

Besides these specific critics, scholars have also emphasized the gender and racial implications of the platformization of cleaning work. Digital platforms, indeed, are said to replicate online gender and racial disparities that have historically characterized these sectors offline, thus making more pronounced intersectional inequalities (Ticona, Mateescu 2018; Ticona *et alii* 2018).

As far as gender inequalities are concerned, Rodríguez-Modroño and colleagues (2022a) affirm that platforms are not gender-neutral. This is especially true when considering domestic work platforms. Even though women are less likely to be present in the platform economy compared to men, they represent the absolute majority of workers in platforms dedicated to cleaning work – as perfectly explicated by the case of the Hassle platform in the UK, where almost 90% of cleaners are women (Hunt, Samman 2019). Furthermore, the presence of women within such platforms is expected to be higher in those national contexts where female employment is low, and women are mainly concentrated in the secondary, non-standard sectors of the labor market (Rodríguez-Modroño *et alii* 2022a). The occupational segregation distinguishing the domestic work sector is thus plastically reproduced online (Rodríguez-Modroño *et alii* 2022a).

Gender disparities tie with racial ones (Von Doorn 2017). As discussed by Atanasoski and Vora (2015) in their analysis of the on-demand butler platform *Alfred*, the platform economy reproduces the same gender and racial patterns occurring offline since domestic jobs are performed mainly by non-white women. Similarly, in their analysis of home care platforms in Spain, Rodríguez-Modroño *et alii* (2022b) highlight that, while platforms can facilitate the labor market entrance of migrant women from the Global South, they perpetuate the same precarious job relationships that have long been entrenched in the labor market offline. Domestic work platforms have thus inherited «the prior forms of racialized and feminized, intimate labors supporting the nuclear, heteronormative, and white family form» (Atanasoski, Vora 2015: 23). In this sense, the platform economy perpetuates the devaluation of domestic labor (Sedacca 2022): as a dirty job, it has to be performed by the most disadvantaged groups, predominantly non-white women.

4. Theoretical expectations and methodological choices: an exploratory study

As discussed in the Introduction, this exploratory study aims to investigate what happens to cleaning work with the introduction of online storefronts that make these workers less invisible. In line with other empirical studies (e.g., Van Doorn 2017, 2021; Mateescu, Ticona 2020), our primary expectation is that marketplace platforms do not "clean up" dirty jobs; conversely, they are likely to reproduce the historically gendered and racialized nature of domestic work which is present offline (*H1*).

More precisely, we expect female workers to be disproportionately represented within the platforms compared to men (*H1a*). Secondly, we expect that gender segregation interacts with race inequalities, and thus, we assume *foreign female workers* to be disproportionately represented (*H1b*). At the same time, platforms are likely to intensify gender and ethnic inequalities further. First, we suppose male cleaners to be more requested, allowing them to set a higher hourly price for their services than their female counterparts. In other words, we expect to find a *gender wage gap* (*H1c*). Second, we presume platform users to prefer hiring native rather than foreign cleaners, thus allowing the latter to set higher prices. Put differently, we expect to detect an *ethnic pay*

disparity (*H1d*). Finally, as it happens offline, even in the platforms, gender and ethnic inequalities may combine, thus generating a double penalization: we expect that foreign female cleaners – though being the majority of the platform profiles – will be less requested and thus forced to set lowest price in order to remain competitive (*H1e*).

Marketplaces will not remove the physical and social stigma associated with cleaning services, which will remain perceived as "dirty jobs."

We address this research puzzle by focusing on the Italian case study, which remains relatively understudied up to the present. More specifically, the work examines one cleaning service online platform (*Yoopies. it*) operating in four medium/big cities of the Center-Northern regions (Milan, Bologna, Florence, and Rome).

We choose the only platform active in Italy in multiple cities and within which domestic workers can be selected by assessing personal profiles. We then selected four north-central cities because, in Italy, platforms are used more in northern Italian regions and in the cities, while in the South and small towns, these jobs still rely heavily on informality (Bonifacio *et alii* 2023). In line with Ticona and Maatescu's research (2020), we selected and analyzed the content of 50 cleaner profiles for each city, for a total of 200 profiles.

For each profile, based on the COLLEM survey (Brancati *et alii* 2020), we consider the following variables available within the platform: a) age, b) gender, c) country of origin, d) years of experience, and e) hourly rate. We decided not to include ratings since there was no significant variation among the profiles. These latter were filtered according to the last activity on the platform to be sure of the actual use of the tool. We have thus created an original database on which our empirical analysis is based.

5. Principal findings

This section discusses the main findings of our exploratory research. The first subsection describes the case study, the *Yoopies.it* platform, and the construction criteria of our dataset. We then present the main characteristics of our reference sample.

5.1 The Yoopies platform and the research sample

Yoopies.it is a marketplace platform providing different personal services: cleaning, babysitting, pet sitting, tutoring, and home care. It was founded in 2012 to help peers find recommended childcare. In 2014, it added non-professional services such as tutoring, cleaning, pet sitting, and home care. The platform currently operates in ten European countries: Italy, France, Spain, Belgium, Germany, Austria, the Netherlands, Switzerland, Portugal and the UK.

There are two types of users on the Yoopies platform: peer providers listing their services and peer consumers looking for a professional. The first step for both is to register on the platform.

Peer providers must also provide a description of themselves and their expertise, years of experience, specific tasks, any qualifications or references, and their hourly rate. Peer consumers can filter peer provider listings by price, distance, publication date, or additional profile criteria (e.g., active in the last three months, with reviews). After paying the subscription fee, peer consumers can access peer providers' contact details, such as phone numbers and reviews. Without a subscription, they can see a provider's rating, number of reviews, profile verification, status, availability, services offered, area, and years of experience.

As mentioned above, we only focus on peer providers who offer cleaning services. Table 2 provides a snapshot of the *Yoopies.it* workers' profile within our sample.

Tab. 2. *Yoopies.it* workers' profile: main statistics from the sample

Gender	Women	97.0%
	Men	3.0%
Country of Origin	Italian	57.0%
	Foreign country	43.0%
Age	Mean Age	41.2 [min. 21 – max. 68]
	Mean Age Female	41.3 [min. 21 – max. 68]
	Mean Age Male	36.2 [min. 23 – max. 52]
	Mean Age Native Worker	41.4 [min. 21 – max. 68]
	Mean Age Migrant Worker	40.9 [min. 23 – max. 62]
Hourly Rate	Mean Hourly Rate	10.2 € [min. 8.0 € – max. 15.0 €]
	Mean Hourly Rate Female	10.2 € [min. 8.0 € – max. 15.0 €]
	Mean Hourly Rate Male	9.9 € [min. 8.5 € – max. 15.0 €]
	Mean Hourly Rate Native Worker	9.9 € [min. 8.0 € – max. 15.0 €]
	Mean Hourly Rate Migrant Worker	10.6 € [min. 8.0 € – max. 15.0 €]
Years of Experience	Mean Years of Experience	5.4 [min. 0 – max. 20]
	Mean Years of Experience Female	5.4 [min. 0 – max. 20]
	Mean Years of Experience Male	5.3 [min. 0 – max. 10]
	Mean Years of Experience Native Worker	5.0 [min. 0 – max. 20]
	Mean Years of Experience Migrant Worker	5.9 [min. 0 – max. 15]

Source: Authors' own elaboration

As expected, there are only six men in our sample out of 200: 97% of platform cleaners are women. Regarding the country of origin, 57% of female platform workers are from Italy. This is not very much in line with our expectations, but we will discuss this result in section 5.2. Even though there are more Italian cleaners on the platform than off it (see Figure 1), the countries of origin of our sample are consistent with the INPS data presented in section two. Even on the platform, the predominant communities are from Eastern Europe, Latin America, and Asia.

The average age of cleaners on the platform is 41: the youngest is 21, and the oldest is 68. The average hourly rate of the selected platform workers is 10.2 € per hour. The lowest rate is 8 € per hour, and the highest is 15 € per hour. Finally, the average experience of the cleaners is about five years: we can find cleaners with no experience up to a maximum of 20 years.

5.2 Platform as a new barrier for vulnerable workers

The first clear finding that emerges from our empirical analysis regards the gendered nature of cleaning work. As highlighted in Table 2, almost all of the workers in our sample are women. Therefore, it seems fair to state that the gender segregation that characterizes such an occupation is plastically reproduced online: cleaning remains a feminized activity. Our first sub-hypothesis (H1a) is thus confirmed.

The second finding concerns the country of origin of the cleaners on the platform. As showed in figure 1, the percentage of Italian cleaners in the offline labor market is about 33%, while here it

is close to 60%. Contrary to our expectations, over half of the cleaners registered and active on the *Yoopies.it* platform are Italian. Our second sub-hypothesis (H1b) is thus not confirmed. Not only does the platform reproduce some of the inequalities that exist offline, such as the strong gender segregation in the sector, but it also contributes to creating new difficulties of access to the detriment of the most vulnerable female workers. Indeed, the platform presents itself as more accessible for those familiar with the Italian language, making it a complex tool for foreign cleaners. More specifically, *Yoopies.it* does not offer an alternative language to Italian for potential users and suppliers, not even for registration or filling in the profile. A factor that supports this interpretation is that 30% of the foreign workers in our sample came from Latin America and thus speak Spanish (the majority) or Portuguese (Table 3). The fact that these two languages are similar to Italian are expected to facilitate the use of the platform and thus create an advantage for these workers.

Tab. 3. *Yoopies.it* foreign workers' country of origin, % values.

Foreign Workers' Area of Origin	%
Eastern Europe and Balkans	30.2
Latin America	30.1
Asia	22.9
Africa	12.0
Western Europe	4.8
Total	100.0

Source: Authors' own elaboration

Another reason for this result is that many workers can use the platform as an instrument to easily get a "small job" to round up (Marrone 2019). If we also look at the age variable, the Italian female workers in our sample are at the extremes: they are mostly under 28 or over 45, and are workers with little experience. We think that in these cases, the platform facilitates entry or re-entry into the labor market for a group of disadvantaged female workers by helping them find a small job that is not the main source of income. In the case of Italians over 45, the platform can be a useful tool to help women re-enter the labor market after leaving it to care for their children, thus rounding out the household income (Morell *et alii*, 2022).

Finally, it is interesting to note that all the cities in our dataset follow this trend, except for Milan, where foreign female workers make up 55% of our sample. One reason for this difference can be found in the fact that Milan is a city that tends to attract more foreigners: here, they represent 15% of the resident population, compared with 8.6% nationally (Istat dataset). Furthermore, this result can be explained by the important role foreign communities in Milan play in peer help, especially in work (Caselli 2006; Coletto, Guglielmi 2013). This could be translated into peer-to-peer help using the platform, breaking down the access barrier to dirty work. Another explanation for this trend is that Milan is the city in Italy that makes the most use of marketplace platforms for services (Bonifacio *et alii* 2023).

5.3 The hourly rate setting

The analysis of the hourly rate setting – and its variation – among cleaning providers within the platform has provided interesting – and, to a certain extent, unexpected – findings.

First of all, as previously mentioned, the average hourly rate in our sample is 10.2€, which is slightly higher than the current minimum wage proposal currently supported by the main center and center-left Italian opposition parties (9€). It seems thus fair to say that cleaners aim at setting an hourly price online that, at least theoretically, should be able to insulate them from the in-work

poor risk[3]. However, the analysis also illustrates that 40% of the cleaners set a price below this average, while only 32% ask for higher pay. In other words, it is possible to identify a *race to the bottom* in the hourly rate setting: the relative majority of the cleaners is ready to lower their compensation, sometimes even (slightly) below the symbolic 9€ fees.

Two explanations can be provided for such a result. The first one refers to what can be labeled the "less at stake" argument: as already mentioned, several cleaners are expected to consider platforms as an opportunity to have an additional job and not as the primary source of income. Therefore, they could be more inclined to accept a lower rate since these side jobs are intended only to add extra money to their main income. In other words, they have less to lose, in economic terms, from low pay than those who use the platform as a principal means of earning. Second, as discussed in the theoretical sector, online platforms engender rising competition dynamics. Thus, cleaners could be convinced to lower the hourly rate to remain competitive in an increasingly crowded online market.

We can proceed in discussing whether cleaners' earning is conditioned by their age (in connection with the years of experience), place of origin, and gender. The analysis suggests mixed results.

Starting with age, Table 4 shows that 55% of the younger generation (18-29) set a rate below the average – a much higher share compared to that of the whole online platform workforce (39%) and much higher than those of the middle-aged (30-39 and 40-49) cohorts (respectively, 24.5% and 30.3%). In other words, young cleaners would be more likely to accept lower pay. Consistently, only a relatively small percentage of them (25.5%) set an hourly rate above the platform average rate. A similar, even though less pronounced, pattern can be identified when looking at the oldest age cohort (50+): almost 44% of them set an hourly rate below 10€, while only 19.4% decide to ask for higher pay. Therefore, age does not affect the hourly rate linearly, but it seems to be detrimental mostly for the two extreme cohorts – the younger and the older.

Tab. 4. Hourly rate setting by age cohorts, % values.

	Below-average Hourly Rate	Average Hourly Rate	Above-average Hourly Rate	Total
19-29 (*younger cohort*)	55.3	19.2	25.5	100
30-39	24.4	35.6	40.0	100
40-49	30.4	34.8	34.8	100
50+ (*older cohort*)	43.6	37,1	19.3	100
Whole platform workforce	*39.0*	*32.0*	*29.0*	100
N=200				

Source: Authors' own elaboration

We can interpret these results using the same reasoning previously discussed. First, younger and older cleaners are likely to see platforms as a side job and not as the primary source of income and, therefore, be willing to lower their price request. Second, "competition" pressure could prevent both cohorts from setting higher prices, though for different motivations. Younger cleaners have fewer years of experience and thus, they could compensate for such a lack of expertise with a

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[3] Clearly, in this case, the protection against the in-work poverty risk does not depend only on the average hourly rate, but also on the total amount of working hours: if cleaners have a low work intensity, they could remain at-risk of in-work poverty. Many scholars in fact (see Allégre 2008; Marx, Nolan 2014) underline the fact that in-work poverty depend mainly by low work intensity.

cheaper service. The older ones, though owning more experience, will likely lack the technological and communication skills requested by the platform for self-branding – which seems increasingly pivotal for procuring new clients and securing the old ones. That would convince them to set a cheaper price to remain competitive online. Furthermore, cleaning service requires good physical conditions – which, on the other hand, naturally worsen as the years go by. Older workers could be not considered fit for the job by the platform users and thus not selected. A below-average rate could, once again, be a way to maintain competitiveness in the online market.

Shifting the attention to the cleaner's place of origin, it is interesting to note that, contrary to what was expected, migrant workers set a slightly higher mean hourly rate than Italians (10.6 € and 9.9 €, respectively). An ethnic wage gap could not be identified and thus our fourth sub-hypotheses (H1d) cannot be confirmed[4]. This result can be interpreted in a twofold, interlinked way. First, it is reasonable to think that once migrant workers overcome the platform's technological and linguistic barrier, they expect a minimum economic return. Consequently, they would no longer be willing to earn less than the Italians. Thus, the platform acts as a sort of "leveler," even though it is toward a relatively low level since the average hourly rate remains slightly higher than the (proposed) minimum wage. Second, as previously discussed, migrants could be more likely than Italians to use the platform as the primary source of income rather than a side job to make extra money. In this case, the "less at stake" argument would not be valid: low pay could put migrant cleaners at a serious in-work poverty risk.

Interestingly, rate variations among migrants can be identified depending on their place of origin. Cleaners from Eastern Europe and Latin America set the highest prices (approximately 11€), while those from Africa are willing to work for a lower rate. Therefore, while the platform levels prices between native and non-native workers, it continues reproducing disparities among migrants, thus crystallizing a new hierarchy of prices.

Finally, moving to the role of gender, data do not reveal a gender wage gap: women indeed set a slightly higher hourly rate (10.20 €) compared to men (9.92 €), though the difference remains not significant (0.27 €). It follows that our third sub-hypothesis (H1c) is not confirmed. However, the extremely low share of men in our sample prevents us to make a strong argument.

6. Conclusions

This explorative article has investigated the platformization of a dirty job – specifically, cleaning work – in Italy. We have tried to understand whether the platform "cleans up" dirty works or, on the contrary, helps reproduce and exacerbate inequalities already present "offline." To solve this research puzzle, we have examined one cleaning service online platform (*Yoopies.it*) operating in four medium/big cities of the Center-Northern regions (Bologna, Florence, Milan, and Rome). Our principal hypothesis was that marketplace platforms tend to reproduce the historically gendered and racialized nature of cleaning work (H1). Notably, relying on the comparative literature and the characteristics of the Italian context, we articulated our principal hypothesis in 5 sub-hypotheses: H1a) female cleaners will be disproportionately represented within the platform; H1b) foreign female cleaners will be disproportionately represented within the platform; H1c) male cleaners will set a higher hourly rate within the platform; H1d) foreign cleaners will set a lower hourly rate within the platform; and H1) foreign female cleaners will set a lower hourly rate within the platform.

The empirical analysis confirms our principal hypothesis: the platform reproduces and exacerbates inequalities already present in the "offline" cleaning sector. However, regarding our sub-hypotheses, some unexpected results have emerged.

Based on our evidence, we present three main findings. First, the platform reproduces the same gender segregation that characterizes the offline realm: cleaning remains a feminized occupation

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[4] Given that women account for almost all of the workers in out platform, even our last hypothesis (H1e) concerning an intersectional pay gap is automatically not confirmed.

also online. Therefore, our work adds up to the empirical studies that have highlighted the gendered nature of some dirty jobs, both offline and online. Second, the platform creates new barriers to access to work, even if it is dirty work, to the detriment of the most (female) vulnerable groups of workers. More specifically, *Yoopies.it* poses a greater difficulty in using the *Yoopies.it* platform for workers who do not speak Italian: this could justify the greater presence of Italian cleaners (57%). In this way, it seems that discrimination based on ethnicity comes before the platform, which is an obstacle to be overcome for workers who are not familiar with the Italian language. This trend is confirmed in all the cities included in our sample, except for Milan, where service platforms are a much more widespread tool (Bonifacio, Pais 2024), and the presence of deeply-rooted foreign communities can help overcome the linguistic barrier (Coletto, Guiglielmi 2013)[5]. Third, the platform can be seen as a leveler of prices downwards, although the price differences depend mainly on the significance of the work (e.g., "main job" or "small job"), the age of the workers, and the place of origin. More specifically, our analysis shows a race to the bottom: while the average hourly rate is slightly higher than the current minimum wage proposal, most of the cleaners are willing to set a lower price. In addition, data display that the younger and older generations are more likely to set a below-average rate. Furthermore – contrary to our expectations – no ethnic and gender gaps have been identified. Both migrant's and women's hourly rate is (slightly) higher than that of natives and men. Finally, it seems that race and gender do not combine in a double penalization since female migrants set a higher price than female natives. The platform thus acts as a price leveler but to the bottom. We explained such unexpected results by considering how the nature of the jobs (main job vs. second job) incentivizes cleaners to set a lower or higher rate - what we have called the "less at stake argument." We also speculated about how the platform triggers new competition dynamics, which could lead those providers lacking "self-branding" skills to compensate with cheaper rates.

To conclude, the platform helps ensure that the client gets what they are looking for, in most cases, a "dirty worker" who lives up to (stereotypical) expectations. We have discussed the fact that the platform acts as a price leveler. Among our baseline assumptions, we expected male cleaners to be more in demand, asking for a higher hourly rate. However, this is not the case because the worker is stereotyped just as the dirty work is stereotyped. It follows that the user expects a woman to do the cleaning. Similarly, we did not find an Ethnicity Pay Gap in our sample: on the one hand, because, as already widely assumed, the platform tends to equalize the prices of peer providers, and on the other hand, because the customer expects the dirty work to be done by a foreigner.

Thus, foreign women embody the perfect stereotype of workers who are fit to do the dirty work, so the customer will look for providers on the platform who match the imagined characteristics. In a nutshell, what the customer expects, both offline and on the platform, is a worker dirty enough to do the dirty job.

Future works could expand the scope of this explorative study by including other European cities where *Yoopies* operates. That comparison would allow researchers to identify cross-country similarities and differences and understand how some specific institutions – first of all, labor market policies – and contextual factors – for example, the configuration of gender and racial disparities in a country or the prevalence of a familistic (as in the case of Italy) or Scandinavian welfare model – affect the platformization of dirty jobs. At the same time, future research may narrow the focus, paying attention to the case of Milan, which appears to be a "key" case study, so as to better capture its specificities within the Italian context.

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[5] As noted by the scholars, in Rome, while it is true that there is a strong presence of foreign communities, there are still few people using cleaning online platforms. It is therefore plausible to think that foreign communities in Rome play a key role primarily in easing the entry of newcomers into the *offline* labor market. In contrast, in Milan, where platforms are widely spread, these communities will also facilitate their fellow citizens' entrance into the *online* labor market.

Finally, we should not underestimate the need for qualitative research on the subject. In-depth interviews with cleaners registered on the platform are indeed the most appropriate way to deepen our lines of interpretation.

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