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Gender inequalities in the platform economy

The cases of delivery and private passenger transport services in the Buenos Aires Metropolitan Area

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Abstract
This article inspects how the expansion of the platform economy affects gender inequalities, in some new forms as well in reinforcing pre-existing ones. It focuses on two platform occupations in the Buenos Aires Metropolitan Area: ride-hailing and delivery services. First, it explores the ways in which the platform economy constitutes a welcoming environment for female workers. Second, female versus male performance is assessed in terms of hours worked and earnings. Using a combination of qualitative and quantitative approaches it performs a gender gap analysis via linear regression. The article finds that platforms are facilitating an increase in female participation due to three main factors: the impossibility of finding another job, the impersonal recruiting mechanisms and time flexibility offered by platforms. This trend still implies significant gender gaps. The analysis suggests that the differentiated economic performance of male and female riders and drivers is mainly associated to on-the-job characteristics that are reinforced by algorithmic bias in the platform. Women experience more restrictions in terms of when and where they can work, as location and time choices are both constrained by care responsibilities and are also due to the subjective perception of exposure to insecurity and harassment during the work shift.

Keywords
Digital platforms, Gender, Gender gap, Argentina, Decent work

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Résumé
Cet article examine comment l'expansion de l'économie de plateforme impacte les inégalités de genre, sous des formes nouvelles ou préexistantes. Il se concentre sur deux métiers de plate-forme dans la zone métropolitaine de Buenos Aires : les services de transport et ceux de livraison. Premièrement, il explore les manières dont l'économie de plateforme constitue un environnement plus perméable pour les travailleuses. Deuxièmement, la performance des femmes par rapport aux hommes est évaluée en termes d'heures travaillées et de gains. En utilisant une combinaison d'approches qualitatives et quantitatives, il effectue une analyse de l'écart entre les sexes via des modèles standards de régression linéaire. L'article constate que les plateformes facilitent une augmentation de la participation des femmes au marché du travail en raison de trois facteurs principaux : l'impossibilité de trouver un autre emploi, les mécanismes de recrutement impersonnels et la flexibilité horaire offerte par les plateformes. Cette tendance implique encore des écarts importants entre les sexes. L'analyse suggère qu'une performance économique différenciée des travailleurs hommes et femmes est princi-palement associée à des facteurs liés à l'emploi, renforcés par les biais algorithmiques. Les femmes connaissent plus de restrictions en termes de quand et où elles peuvent travailler, car les choix de lieu et de temps du travail sont à la fois contraints par une série de responsabilités familiales (activités de care) et sont également dus à une perception d'exposition à l'insécurité et au harcèlement pendant le temps de travail.

Mots-clés
Plateformes numériques, Genre, Écart entre les sexes, Argentine, Travail décent

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Cet article s'inscrit dans le cadre du partenariat de recherche entre l'UNGS et l'AFD pour le projet « *Platform economy and personal services in the Buenos Aires Metropolitan Area: Implications on working conditions and gender inequalities* ». Les auteurs sont reconnaissants aux nombreux travailleurs interrogés et aux plateformes pour leur coopération dans la réalisation de ce travail. Les auteurs remercient également Carlos Pincemin (AFD) et Valeria Esquivel (OIT) pour leurs commentaires et suggestions pour la diffusion de cet article dans une future publication. Merci à l'agence AFD de Buenos Aires, aux agents du Ministère du Travail et des autres agences gouvernementales qui ont participé à l'atelier de validation du projet qui s'est tenu en août 2020. Merci aux participants de la 17e Conférence sur le marché du travail et l'équité (UNGS, Argentine) Conférence WORK2021 (Université de Turku, Finlande), 15e Congrès national d'études sociales (ASET, Argentine), LVI réunion annuelle de l'Association argentine d'économie politique (AAEP, Argentine) pour des commentaires utiles. Ce document a également bénéficié des données partagées par le bureau de l'OIT en Argentine, que l'AFD et l'UNGS remercient chaleureusement pour leur collaboration. Tous résultats, interprétations et conclusions exprimés dans cet article n'engagent que les auteurs et ne reflètent pas nécessairement les points de vue de l'AFD, de l'OIT, de l'UNGS ou d'autres institutions affiliées.

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Foreword

Cecilia Poggi (AFD - Economic Assessment and Public Policy Department)

This article is part of a **research partnership** between the **AFD Economic Assessment and Public Policy Department** and the **Area de Economía at the Instituto de Ciencias of the Universidad Nacional de General Sarmiento (UNGS)** for the **period 2020-2021**, seeking to produce and analyse some primary qualitative and quantitative data on digital labour platforms in the Buenos Aires Metropolitan Area. The collaboration aims to explore some characteristics of workers using app-based platforms for the personal service sector, such as those for domestic work, office repair services, food delivery and ride-hailing services. It does so by producing **five complementary articles that together give an initial picture of how workers engage in this new work modality**.

In Argentina, the participation to the platform economy is a recent but rapidly expanding phenomenon. The severe recent economic crisis and its reinforcement with the Covid-19 crisis have been destabilizing to standard work relations, in an environment where informality is widespread and where gender inequalities are experienced across occupations. The high rate of internet connectivity as well as the unstable economic conditions experienced in the labour market provide a particularly favourable environment for the expansion of the platform modality. The project develops five articles inspecting various aspects of the platform economy, and it is considered an initial exploratory inquiry on the topic of on-the-platform work.

The articles presented address each a specific aspect of on-the-platform work, they do not cover wider analyses for the overall Argentinian labour force or for off-platform occupations, nor do they question the demand for platform work. Their value-added is the contribution to a growing and dynamic body of literature shading light on who are the workers that engage in a platform, on their labour conditions, as well as their perceptions about this type of insertion, by proposing a series of gender-sensitive analyses. The project produced its primary qualitative and quantitative data. In-depth interviews and focus groups were conducted with workers of each occupation and an *ad-hoc* survey was designed to collect quantitative data about workers and their experience. The survey is based on a non-probabilistic sample with gender quotas per platform, seeking to ensure comparability among occupations and demographic groups. The timing of the data collections over 2020-2021 make this one of the few projects across the globe having investigated the platform use variations at the onset of the pandemic. Moreover, thanks to a research agreement with the ILO Country Office for Argentina, some articles have benefited in their analysis of an additional dataset shared by the ILO.

The project articles are available on the AFD website (www.afd.fr/en/carte-des-projets/platform-economy-buenos-aires-metropolitan-area-work-conditions-gender-inequality) exploring the following topics:

The first article investigates whether **working through a digital platform increases labour**

registration in high-informality occupations. It analyses how labour entry occurs in three selected platform-based occupations in Argentina. Considering the peculiarities of each occupation, it identifies which elements may contribute to a "formalization effect" and how this is experienced by workers.

The second article explores **the role of labour regulations in the classification of platform workers** based on the case of Argentinean riders. The article analyses the treatment of three dimensions that tend to be at the centre of workers' own concerns when it comes to the regulation of their occupation: the preservation of flexible schedules, the continuity of income self-regulation and the need to gain effective access to social protection.

The third article explores **how the *digitalization* of the work relation affects domestic workers** in Argentina at the onset of the Covid-19 crisis. It analyses the use workers do of *Zolvers*, the only digital platform for domestic work in the country, and it compares what are the differences between jobs that have been taken on the platform and those outside.

The fourth article investigates **gender inequalities among platform riders and drivers**. It identifies whether there exist gender gaps in terms of hours and income and what is their magnitude. Moreover, it analyses some possible determinants, including features specific to these occupations, like the work schedule, perceptions of safety on the job or access to productive assets.

The last article delves deeper into **female platform drivers' labour market trajectories**. The article inspects the profile of female drivers joining the platform in exploring which previous job experiences may have helped them to dare into a male-dominated occupation. Additionally, the article reviews how, once in the platform, female drivers juggle between this activity and their socially assigned care responsibilities.

Introduction

One of the most relevant transformations of the world of work in the last decade has been the emergence of digital platforms that mediate between provision and consumption of a wide range of services. Platform-based work includes web-based platforms, which outsource digital tasks from a geographically disperse network (crowdsourcing), as well as location-based applications that allocate work among providers in a specific area. The latter involves several low-complexity services such as passenger transport, home cleaning and repairs, as well as courier and delivery services (Berg, Furrer, Harmon, Rani, & Silberman, 2018; Aleksynska, Bastrakova, & Kharchenko, 2018).

Growing literature on the subject has raised some concerns regarding these new forms of employment. Though it has been pointed out that these platforms greatly facilitate the connection between labour demand and supply, the dangers of extreme labour commodification have also raised attention (De Stefano, 2016). Workers are usually subject to great uncertainty on the stability of labour conditions (Mateescu & Nguyen, 2019; Filipetto et al, 2022; Pereyra & Poblete, 2022). Furthermore, the fostering of "independent" labour contributes to existing problems in self-employment, particularly when it comes to access to social protection—mainly aimed at registered salaried work (ILO, 2016).

As for the upside, it has been pointed out that the flexibility offered by this type of labour might promote labour participation in certain groups that frequently face time and mobility constraints - mainly women, due to the burden of care work that is socially allocated to them (Berg et al, 2018; Barzilay & Ben-David, 2017; 2018; Chen, Chevalier, Rossi, & Emily, 2017; García, 2022). Nevertheless, studies on the subject that build on a gender perspective are virtually non-existent in the region and very scarce worldwide.

This paper contributes to this branch of research by analysing the Argentine case. Platform economy is a recent but rapidly expanding phenomenon in the country. If in the beginning of 2016 only a handful of essentially national platforms were active, the change of government orientation that took place that year paved the way for the arrival of world leading companies in the business (especially as a consequence of capital movement deregulation). In addition, a local economic crisis that sparked off in 2018, and aggravated during the COVID-19 global pandemic, pushed many workers seeking for refuge into the platform economy.

The paper focuses on the cases of two flagship occupations of platform location-based work: home delivery services and passenger transport services in the Metropolitan Area of Buenos Aires. Although almost fully male in their traditional forms, local evidence shows that the platform version is opening the way for female workers in these services, as the proportion of women in them has grown considerably. While women made up 13% of platform-based delivery work in July 2019, it reached 21% in July 2020 (ILO, 2020). For *Uber*,

information provided by the company shows hat women grew from 11% of this labour force[1] in June 2018 to more than twice as much in June 2019[2].

Firstly, we explore the extent to which these forms of employment amount to a friendlier environment for female workers. We analyse the determinants of female entry and permanence, paying special attention to the role of time flexibility. Secondly, we analyse the reproduction of gender inequalities in these labour spaces, comparing the performance of men and women in terms of working hours and income. Once the size of gender gaps is established, we proceed to assess their causes, including sociodemographic features, responsibilities in terms of care and domestic work, access to more efficient vehicles in order to maximize earnings and work behaviour related to street safety, among others. Lastly, as most of the field work took place between June 2020 and March 2021, all these dimensions are analysed taking into account the effects of the pandemic.

The article is organised as follows. Section 1 proposes a review of the literature contextualising the riders and drivers platforms. Section 2 briefly presents the data used in this analysis and then inspects factors associated to female participation to the platforms, using a mix of descriptive statistics and qualitative analysis. Section 3 inspects the gender gaps in the two platforms, proposing an econometric methodology used for our preliminary investigations of this article, followed by the interpretation of the main quantitative results with additional analysis stemming from our qualitative enquiry. In Section 4 we conclude our analysis with some final remarks and recommendations.

[1] In 2017, women made up only 2% of registered taxi drivers in Buenos Aires (Madariaga, Buenadicha, Molina, & Ernst, 2019).

[2] Information provided by the company to the press, see Infobae (9/14/2019) in the reference section.

1. Literature review

Research on platform economy is expanding globally, as the phenomenon itself grows all over the world. In this context, international literature has progressed in the classification, characterization and analysis of platform labour, while also shedding light on certain concerns and challenges that this new form of labour organization brings about. One of the most central debates revolves around the effects of these new labour modalities on labour conditions: the extent to which workers are fully able to exercise the advertised flexibility in their working hours, and the risk of labour precarisation due to workers' ranking and rating systems and the use of algorithms to evaluate and assign tasks (De Stefano, 2016; Berg, 2016; Möhlmann & Zalmanson, 2017; Rosenblat & Stark, 2016; Graham, Hjorth & Lehdonvirta, 2017; Chen et al, 2017; Berg et al, 2018; Mateescu & Nguyen, 2019; Madariaga et al, 2019; López Mourelo, 2020; Hidalgo Cordero & Salazar Daza, 2020).

Emerging from the analysis of the resulting labour conditions, and in tension with the model of independent workers that these platforms propose, another important debate—in which a consensus has yet to be achieved—stems from the question of the true nature of the contract between the workers and the platforms (CIPD, 2017; Vallas & Schor, 2020; Saenz de Buruaga Azcargorta, 2019). In addition to this, the alleged independency in this labour contract raises concerns regarding ensuing difficulties in access to social protection (De Stefano, 2016; Berg et al, 2018; Rogers, 2017; Weber, 2018). Closely related to this issue, these new labour modalities also cast draw attention to the subject of workers' organization and their ability to unionise and collectively negotiate, according to each labour force's particular activity and context (Vandaele, 2018; Johnston & Land-Kazlauskas, 2019; Johnston, 2020; Negri, 2020; Grohmann, 2020).

Regulatory issues have also received increasing attention in the literature, as they have emerged in many countries' public agendas in the form of bills aimed at regulating the services offered by platforms. While these discussions focus mainly on the legal applicability of the traditional labour contract status, local regulations involving insurance coverage, data protection, conflict resolution, fraud, competition and intellectual property are also analysed (Cherry, 2016; Dubal, 2017; Vallas & Schor, 2020).

When it comes to studies on platforms and gender, the intersection of which is the subject of this paper, research on occupational segregation in the platform economy points to the reproduction of gender segregation in this environment, both in crowdwork and in app-based labour (Hunt & Machingura, 2016; van Doorn, 2017; Ticona & Mateescu, 2018; Hunt & Samman, 2019).[3] Therefore, these new labour modalities that are mediated by technology generally reproduce "typical" female and male territories. However, some evidence suggests that despite this segregation platforms are promoting the entry of women into generally male fields. This is true in several countries for one of the emblematic

[3] Hunt & Machingura (2016), van Doorn (2017) and Ticona & Mateescu (2018) study domestic and caretaking platforms in the USA, India, Kenya, Mexico and South Africa. Hunt & Samman (2019) review literature on platform-based labour in different activity sectors and occupations in the following countries: USA, Ghana, Kenya, Nigeria, Tanzania, United Kingdom, India, Mexico and South Africa.

occupations of app-based jobs: passenger transport services through the *Uber* platform (IFC, 2018)[4]. This research also warns about the particular characteristics of women's entry into this field, since female drivers usually adopt different driving patterns, and value different aspects of platform labour, especially flexibility (see for example García, 2022).

Research has also shown gender income gaps in platform-based crowdwork labour (Adams & Berg, 2017; Barzilay & Ben David, 2017; Liang, Hong, Gu, & Peng, 2018). However, fewer studies focus on the issue that is the object of this paper - income gender gaps in app-based labour. Probably the most outstanding piece of research on the topic is that of Cook, Diamond, Hall, List, and Oyer (2019)[5]. The authors analyse the incomes of more than a million *Uber* drivers in the USA and report a weekly income gender gap of approximately 7% among drivers at a national level, and an hourly gap of approximately 5% among drivers from the metropolitan area of Chicago.

To sum up, even though the occupations considered in this paper are probably among the most widely studied in the literature on platform-based work, evidence on occupational segregation and gender wage gaps remains scarce. In fact, for platform-based delivery services—despite the large number of studies—there is a clear lack of reference papers on this topic. Furthermore, for both rider and driver occupations, more research in different socio-economic contexts is needed, especially for developing and emerging countries.

2. Gender inequalities in selected occupations

2.1. Data

The paper is built on two quantitative and qualitative data collections made in the Metropolitan Area of Buenos Aires between 2020 and 2021. For transport service, we interviewed workers from *Uber*, while for delivery services, several companies operating at the time of the survey were included (*Pedidos Ya, Glovo, Rappi and Uber Eats*[6]). The qualitative work consisted of a series of group interviews in March 2019 and a series of in-depth individual telephone interviews in June 2020. This exercise accounted almost 70 workers, divided in equally sized occupation groups. At least a third of interviewees were women, to ensure their experiences were represented. The information gathered in this first stage was useful to design closed form questionnaires in order to collect quantitative information on the subject.

[4] This research was conducted by the International Finance Corporation (IFC) and the company Accenture. It combined information provided by Uber with interviews and questionnaires administered to over 11,000 drivers and users/passengers from six countries: Egypt, India, Indonesia, Mexico, South Africa and United Kingdom.

[5] This paper analyzes data from drivers in the USA from January 2015 to March 2017. Firstly, they estimate the income gender gap at a national level, based on weekly income and number of hours worked by drivers in 196 different cities. Afterwards they focus on drivers in the metropolitan area of Chicago, in order to study the main causes of the income gender gap by examining information at a driver-hour level. They define one hour for a driver as a block of one complete hour in which any driving activity took place -from 8 to 9 am from a specific Monday, for example-.

[6] *Glovo* and *Uber* would leave the country by the end of 2020.

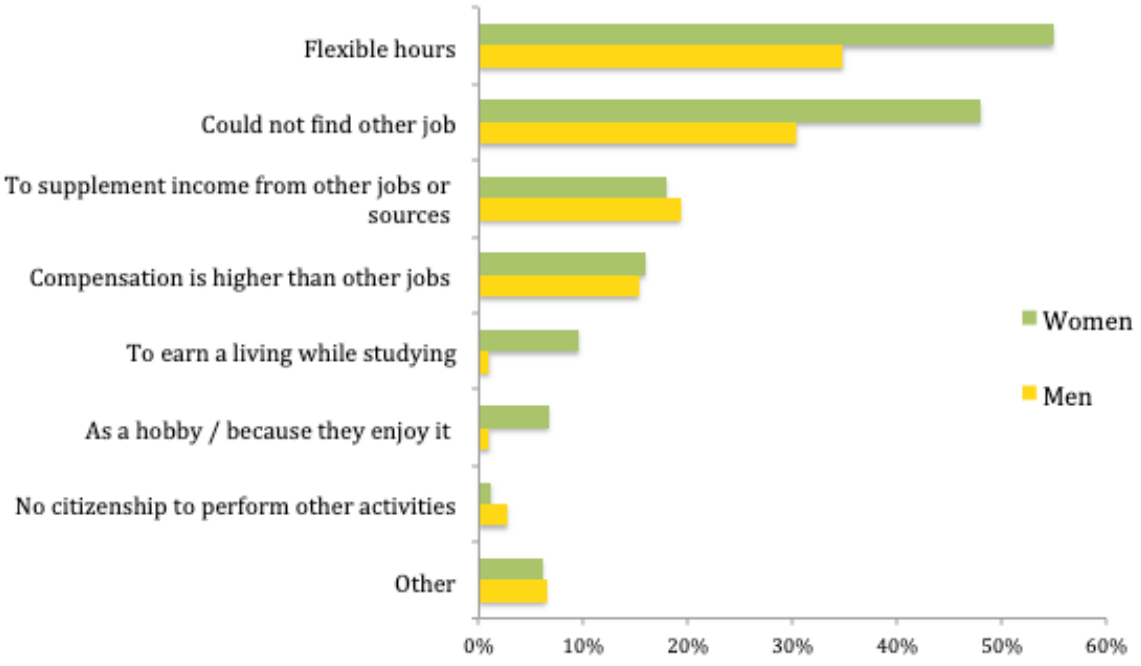
The quantitative data collection as run between June 2020 and March 2021, covering for the platforms of interest with 750 interviews—300 delivery workers and 450 *Uber* drivers. In both datasets, a female quota of 150 cases was deliberately included in the sample definition, to ensure results were representative for each particular universe of platform workers. Moreover, for the dataset of delivery workers, we additionally make use of a survey conducted by the local office for Argentina of the International Labour Organization (ILO) in July 2020— received as part of a cooperation agreement. This survey largely served as a guide for the design of the subsequent survey carried out by our team in the following months of 2020 and 2021 within the context of a wider research project (see the Foreword in this article for more information on the project and its website page).

Since the driver and rider companies only provided general information on their workers, the interviews' sample was determined through the population of platform workers. As with the qualitative interviews, for the quantitative survey we used mixed non-probabilistic sampling: first, an online sampling was conducted in social networks where these workers interact, in the quest to represent the socio-demographic attributes of this population, including its geographic distribution. In a second stage, we resorted to traditional snowball sampling, offering an economic incentive for participation and limiting the number of contacts any given worker could bring to two, so as to preserve as much of the sample's heterogeneity and representativeness as possible. The questionnaires were then administered using the CATI (*Computer Assisted Telephone Interviewing*) system. We note that the sample size for the delivery workers dataset is smaller in size than the one for passenger drivers, as part of the former sample was obtained through the ILO survey, whose size was fixed. Regardless of this difference, in this study we have ensured that for every case segment (be them determined by occupation, gender or both) the sample size allowed for statistically valid results, with acceptable error margins and confidence levels—the error margin ranges from 5.6 to 7.7% depending on the selected group and the confidence level is 95% in all cases.

2.2. Factors associated to female entry and participation

Hour flexibility is the first and foremost reason drawing women to these typically male occupations in their platform-based version. Although the control over one's working day is a relevant factor in all cases, it stands out as a crucial asset among women: 35% of men mention it whereas 55% of women do.

Figure 1. Drivers and delivery workers: reasons for entering the platform



Source: own elaboration based on survey (2020-2021).

Besides more frequently evoked, this advantage is envisioned differently in qualitative explorations. For men, flexibility is associated to a feeling of freedom that results from not being "kept inside" (a facility) or "under someone" (a boss or supervisor), being able to manage one's own schedule: "you don't have to clock in". Many male interviewees value "being on the streets", "seeing daylight", "moving around", "handling their schedule", etcetera.

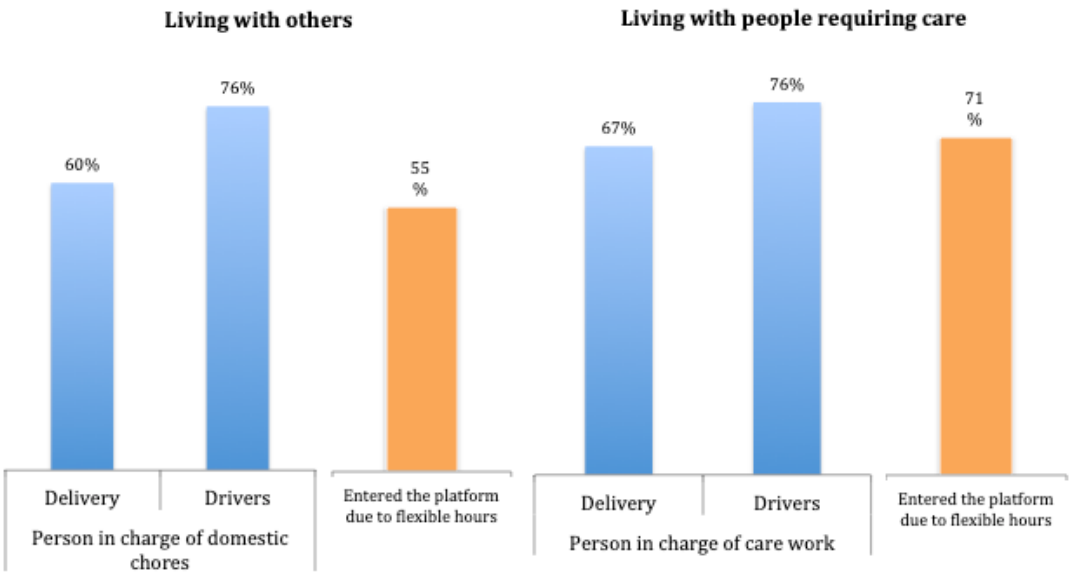
For women, on the other hand, the positive assessment of flexibility is not usually associated to the idea of freedom as in men, but to the possibility of matching work with socially assigned care responsibilities. Therefore, in women's accounts, the agency over the schedule is usually related to being able to "drop everything and go back home", as well as to adapt the workday to care demands in their households.

Nearly half female interviewees state the presence of household members that require care (although children are the prevalent case, elders are also mentioned). The vast majority of female workers who live with people requiring care - almost 85% of female riders and 70% of female drivers - explain this affects the way they plan and organize their workday.

How do they adapt to paid labour while balancing care responsibilities? The survey shows that, mostly, they cannot work as many hours as they would like to or need (74% of female riders and 83% of female drivers). Also, almost 60% of female riders and 55% of female drivers state not being able to work in the most profitable hours. Furthermore, 66% of female riders (most of whom ride bicycles) suffer from not being able to work in the more convenient areas as they need to stay close to their homes. Finally,

uncertainty on hours dedicated to the job is also an issue as women frequently miss working days due to sick children, nannies who fail to show up, closed schools or children's doctor appointments.

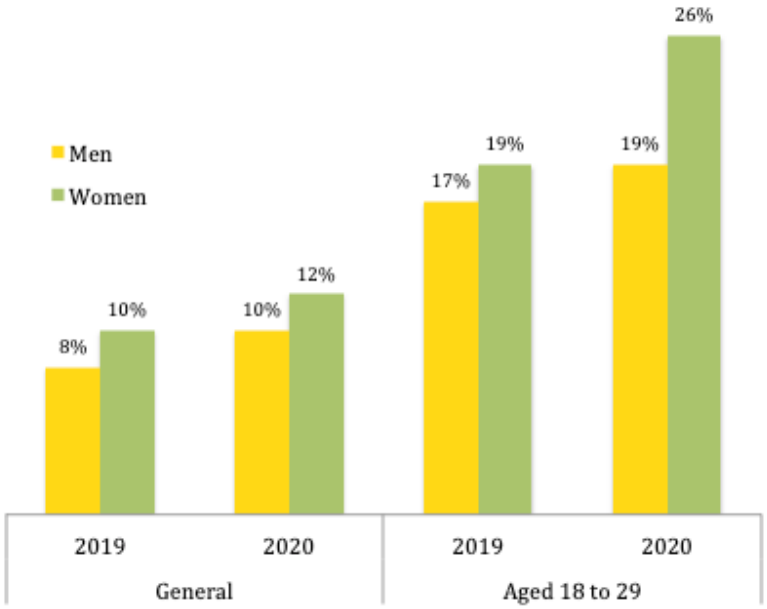
Figure 2. Women, domestic and care responsibilities



Source: own elaboration based on survey (2020-2021).

The big majority of female riders and female *Uber* drivers state being the person in charge of domestic work in their households, when they live with other household members. In addition, when other household members require care (essentially, children), most state being in charge of such care too. In those cases, hour flexibility is mentioned as the reason for entering the platform in 55% and 71% of cases, respectively (Figure 2).

Figure 3. Unemployment rate by gender and age. Argentina, main cities, 2019-2020



Source: own elaboration based on Argentina's Permanent Household Survey (National Institute of Statistics and Census).

Being unable to find another job is another paramount reason to start working in these platforms. Though this reason is strong, as expected, among men, it is stronger among women (Figure 1). Rising unemployment and worsening social conditions due to the pandemic account for the relevance of this factor, and the gender gap historically observed in unemployment became even more salient (Figure 3).

It is also important to point out that the pandemic widened the gap between men and women in unemployment among young people- the population group most traditionally affected by the shortage of jobs (Figure 3)-. This strengthening of the gap is particularly harmful for female riders, most of whom are 18 to 30 years old.

Platform delivery service therefore shows the consolidation of female work during the pandemic, due to the aggravation of unemployment among young women. Comparing the survey conducted by ILO in 2019 to the one in July 2020, we find that the proportion of women in the occupation rose from 13% to 21%. Many of the female interviewees who entered delivery apps during the pandemic had a background in typically feminine occupations that are among the most affected by the pandemic in Buenos Aires -particularly, waitresses and retail shop's sellers[7]. Likewise, the loss of the spouse's job due to the pandemic also played a key role as an incentive for previously inactive women to enter the

[7] Work in commerce, restaurants and services in general is also prominent in males' backgrounds but, this is mostly due to a large group who lost a higher-quality formal job during the recession that preceded the pandemic (often in industry, including machinery factories, textile manufacturing, shoe production, etcetera).

labour market, to complement falling household income (what is known in the literature as the "*additional worker strategy*").

In the case of *Uber*, female recruiting is somewhat different as its labour force mostly consists of workers aged 30 to 50, which make up 59% of the total workforce and 63% of women.

While the pandemic certainly drove many women to the platform due to the aggravation of labour conditions, it is actually a trend also observed in the preceding years. In fact, the qualitative enquiry shows several cases of women who lost wage-earning jobs in the private sector during the recession that preceded the pandemic and found in *Uber* an "easy fix". Some even mentioned they used severance payments to buy the car to start working in the platform.

Finally, among younger women with no family responsibilities, the qualitative data shows a significantly higher rate of attendance to educational institutions (usually college) than that of males from a similar background - more than 50% of female workers attend college in contrast with 30% of men[8]-. This is why finding a paid activity that allows them to study (in such an adverse context as we have described) is much more frequently mentioned by women interviewees as an incentive to enter this kind of activity. This type of answer is more common among female riders than female *Uber* drivers, given the younger age composition of the former group.

When it comes to accounting for female entry to this occupation, an additional and highly important factor came up in our qualitative enquiry - the impersonal and massive character of platform recruiting -. To this regard, female workers point out that the discrimination they may suffer from when attempting to enter highly masculinized activities is neutralized by an entry modality that requires no direct interaction and where selection processes seem to be solely based in the need to meet certain requirements and the fulfilment of basic bureaucratic procedures. As explained by a deliverywoman:

"The platform does not discriminate (...) whereas in actual shops in order to do this work you have to be male and own a motorbike (...) I think this is why girls enter, [because] outside of the platform (...) you need to go to and interview and they only select you if you are 'this way'. In the platform anyone can enter (...) you fill in the application on your phone and (...) as long as you can pedal or have a motorbike, whatever, they don't discriminate" (Andrea)

Hence, while most female riders have not attempted to perform this job for shops through direct contracts outside platforms, they assume potential employers prefer men, due to their alleged greater "resistance" or "strength", attributes that would be desirable for this activity:

"They think that, I don't know, suddenly a man is... maybe if someone crashes into him, he would be stronger than a woman. I think that is it. Stupid, right?. I feel that shops that have their own delivery services, they mostly hire men, (...) I don't know if this is because men are stronger than women, but well... it's just force of habit".

[8] The observed difference is in accordance to national data, which shows a higher female education rate for people over 18-40% of women attend some kind of educational institution, while this proportion is only 30% for men (Source: Argentina's Permanent Household Survey, third quarter, 2020).

Since some female *Uber* drivers had had previous experiences doing this work outside of the platforms (usually in "remiserías[9]"), another advantage they find in the platform version is that they do not need to share their workspace and time with (mostly male) coworkers. Thus, female interviewees stress the impersonal and more individual characteristic of the platform version of this job, as Sandra puts it:

"Now he [her husband] didn't want me to be in a male environment, because the truth is there are practically no women in *remiserías*. (...) Here [*Uber*] it's like you don't have any contact with your workmates... it's just you. (...) Right, but in a *remisería* you need to share some time and a place with your workmates. In *Uber* you don't... in *Uber* you just get into your car, you drive with the platform, you come back to your house and you never encounter any workmates" (Sandra)

3. Analysis of women and men's performances in the platform

3.1. Methodology

We restricted the analysis of gender gaps to the population of workers who were active at the time of the survey, which implies a sample of self-selected workers in the two occupations chosen. The empirical strategy is based on a linear probability model (LPM) estimated by ordinary least squares (OLS). The baseline regression for this analysis is estimated for each group (Uber or delivery) according to the following specification:

$$y_i = \alpha_0 + \alpha_1 male_i + \alpha_2 X_i + \alpha_3 region_i + e_i \qquad (1)$$

Where y_i is the dependent variable either representing the weekly hours worked or its elasticity ($y_i = Hours_i$ or $y_i = ln(Hours_i)$), or it is defining the hourly income deflated by the consumer price index of Greater Buenos Aires (IPC-GBA), with base in June 2020, or its elasticity ($y_i = income_i$ or $y_i = ln(income_i)$). Controls include a binary gender variable ($male_i$) and a vector for demographic information X_i composed of an international migrant binary indicator, age and its square term and a binary variable for completed higher education. We also include a binary variable to identify workers who state at least one person in their households that is economically dependent on them ($any\ dependents_i$). In addition, a variable that captures the ownership of productive assets ($work\ asset_i$) is also defined differently for each occupation: for passenger drivers, the dummy identifies workers who are owners of the vehicle they drive; while for delivery riders it equals to one if the worker uses a motorcycle or a car instead of a bicycle (or no vehicle at all). For both samples, access to productive assets might induce different work behaviour and therefore affect the worker's economic results. Finally, we also include a geographic control ($region_i$) that is defined differently in each case. For delivery workers, the variable indicates being resident in Buenos Aires (CABA_i) as opposed to in the outskirts. For passenger drivers, as the database features more information on the subject for these

[9] Suburban taxi cab companies with a central office where drivers gather and wait for clients to call and request fares.

cases, we defined the dummy variable to equal one when the person works far from their usual work area (Distant_i, such as being resident in GBA but declaring to work most of the time in the CABA, or *vice versa*). Robust standard errors are calculated in all estimations.[10]

Furthermore, we apply a decomposition analysis, implementing the traditional Oaxaca-Blinder decomposition (Blinder, 1973; Oaxaca, 1973; Oaxaca & Ransom, 1994), a technique that separates observed differences in outcomes (hours worked or income generated) in two components, one explained and one unexplained. Therefore, we estimated equation (1) for each gender ($y^g = x^{g\prime}\alpha^g + e^g$ where g=m,f indexes gender) and then calculated:

$$\bar{y}^m - \bar{y}^f = (\bar{x}^{m\prime} - \bar{x}^{f\prime})\hat{\alpha} + \bar{x}^{m\prime}(\hat{\alpha}^m - \hat{\alpha}) + \bar{x}^{f\prime}(\hat{\alpha} - \hat{\alpha}^f) \tag{2}$$

The first term on the right-hand side is the explained part of the difference, which can be attributed to observable differences between the two groups, such as age or higher education. The second and third term make up the unexplained part, which consists of differences in the way such attributes are compensated in the labour market (which can be interpreted as a form of discrimination), as well as potential differences in unobservable attributes. The first term is also referred to as "endowments effect" and the second as "coefficients effect". Standard errors are calculated through bootstrapping.

Since the platforms under study use dynamic rate schemes, we performed a second estimation exercise to study how the choice of working days and hours influences economic results. The specification for a fully saturated model is:

$$y_i = x_i'\alpha + \sum_p \theta_p^1 day_i^p + \sum_q \rho_q^1 time\_slot_i^q + \sum_{p,q} \varphi_{pq}^1 day_i^p \cdot time\_slot_i^q + \varepsilon_i \tag{3a}$$

Similarly, as the descriptive analysis indicates that workers obtain better compensations if they choose to work on weekends or at the evening-night hours, we implement an alternative version of equation (3a) that incorporates these effects:

$$y_i = x_i'\alpha + \sum_p \theta_p^1 day_i^p + \sum_q \rho_q^1 time\_slot_i^q + \sum_{p=Fri}^{p=Sun} \varphi_{pq}^2 day_i^p \cdot time\_slot_i^{eve\_night} + \epsilon_i \tag{3b}$$

In these equations, x_i is the vector of all covariates from equation (1), day_i^p is a set of binary variables that capture days of the week, $time\ slot_i^q$ is a set of dummies that capture time slots, which are interacted among each other (3a). Although the choice of working days and hours is certainly not exogenous, the aim of these exercises is to test whether they influence gender gaps in any way, as

[10] As additional analyses we perform estimations including other control variables (not present in this version of the article, but available on request) such as: household size, number of children in the household, being the main income provider or the presence of other income earners in the household. Their inclusion does not affect the primary results reported in the more restricted model presented here.

men and women might opt for different work schedule. Following Cook *et al.* (2018), we might interpret equations (3a) and (3b) as an approximation to workers' experience on the platform, possibly acting as an indicator of the effects of learning by doing on hours and income. We will therefore use (3b) to explore whether after accounting for differences in the choices of days and hours between men and women, these choices influence gender gaps in hours and income.

3.2. Gender gaps in hourly income and hours worked

Tables 1 and 2 show the results of the estimation of equation (1). We show only the coefficients of interest, as well as differences in results between men and women for each occupation.

Among delivery workers (Table 1), the first finding is that being male is significantly associated to longer weekly working hours in the linear version of the estimation but not in the log-linear. Secondly, the first two columns of the table show that being migrant is also associated to longer working hours on the platform (on average, 11 more weekly hours). This result is consistent with previous studies that, among migrant delivery workers, this job is the main source of income (see, for instance, van Doorn, Ferrari, & Graham, 2020). It is also interesting to point out that results divided by gender (columns 5 and 6) show that the effect of migrant status is statistically different from zero for both men and women.

The proportion of migrants among delivery workers is considerable. Almost 60% of these workers are foreigners, mostly recent migrants coming from Venezuela (almost 80%)[11]. Labour income is the main income source for most workers in the sample (about 80%), regardless of their migrant status. However migrant riders work more: while natives work on average 36 hours a week, this figure rises to 52 among migrants.

Thirdly, for female riders, a relevant factor that explains longer working hours is the use of a productive asset (motorbike or car) to work. While 40% of male riders reported using motorbikes for their work, this proportion is halved in the case of female riders (21%). The main explanation women provided for this lack of a productive asset is, predictably, their elevated purchase price -66% of female riders who do not own a motorcycle mentioned this as one of the causes-. However, their high maintenance cost was also mentioned (42%), especially among those female riders who are only able to work part time in this activity and, therefore, do not generate enough income to afford these expenses.

One last observation regarding the results for the weekly hours worked variable has to do with economic dependants in the household. When delivery workers have people who depend economically on them this leads to working more hours on the platform, when compared to those who have no dependents[12]. Even though we are dealing with a mostly young population (the average age for both men and women is 30), most of them (46%) state living with people who depend -at least to

[11] The arrival of digital delivery platforms coincided with a heavy migration flow of Venezuelan workers to Argentina. The economic crisis Venezuela is going through pushed the number of migrants from this country from 57,000 in 2017 to 130,000 in 2019 (López Mourelo & Pereyra, 2020).

[12] We have investigated whether this effect changes when two other variables are included—the first one shows if the worker states being the primary caretaker for the dependents of the house and the second one captures whether underage people are living in the same house. In both cases the main results have shown no changes.

some extent- on the income generated by their delivery work. Given that 35% of the men and 38% of the women live with at least one person under 18, it is a safe assumption that most of the dependents are underage sons and daughters. However, it cannot be ruled out that delivery riders are economically aiding other family members as well.

Interestingly, while there are no significant differences to be found in this respect between women and men, Table 1 shows that it is men who intensify their working hours when they have people who economically depend on them. It could be argued that for the case of women, while dependents may generate this movement towards more working hours, it could be simultaneously offset by these very dependents' (usually underage children, as mentioned) need for care and time, which tends to be regarded primarily as a female responsibility. In fact, men usually report that when they have underage children depending on them, their dedication to their paid job is not affected by domestic and care labours, since they perceive that their main responsibility is to generate income (*"I work around the clock because I have children to feed"*). Remarkably, these perceptions that validate the male provider stereotype are mostly shared by female riders (*"men work more hours because most of them have more responsibility to bring money to their homes"*)

In any case, even when our female interviewees generate income that is crucial to provide for their homes, abandoning care labours is not an option that they can consider. Our survey confirms this situation. As we have explained in the first section of this paper, the double burden of paid and unpaid labour implies important restrictions for women, such as the impossibility to work in the most convenient days, times and places. We will revisit this topic shortly.

As for results for the hourly income dependent variable the productive asset plays an important role. Workers using a motorcycle or a car are associated to a higher hourly income, when comparing to those using a bicycle or working on foot (since, as might be expected, cars and motorcycles allow for the completion of more orders in less time). When reviewing the sample by gender (columns 7 and 8), we find that both groups show a positive income elasticity with respect to the usage of these productive assets.

Table 1. Delivery, OLS regression of weekly hours and actual hourly income, total sample and dividing by gender

	Full sample				**Semi-elasticities by gender**			
					Male sample	**Female sample**	**Male sample**	**Female sample**
	Hours	Ln Hours	Hr Income	Ln Hr Income	Ln Hour	Ln Hour	Ln Income	Ln Income
Male	4.1550**	0.0808	-6.4147	0.1011				
	(2.015)	(0.057)	(15.274)	(0.062)				
Int. migrant	11.0529***	0.3120***	3.8473	0.0550	0.3899***	0.2239**	-0.0395	0.1390
	(2.264)	(0.065)	(17.960)	(0.070)	(0.094)	(0.091)	(0.114)	(0.089)
Age	-0.8637	-0.0268*	3.4745	0.0220	-0.0643*	-0.0104	0.0132	0.0041
	(0.547)	(0.014)	(5.067)	(0.025)	(0.033)	(0.018)	(0.042)	(0.032)
Age sq.	0.0143**	0.0004**	-0.0663	-0.0004	0.0010**	0.0002	-0.0001	-0.0002
	(0.007)	(0.000)	(0.068)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)

CABA	3.5007*	0.0520	-9.0492	-0.0306	0.0122	0.0761	0.1881*	-0.1443*
	(1.905)	(0.055)	(12.835)	(0.065)	(0.097)	(0.066)	(0.108)	(0.078)
Work asset	3.4918*	0.0880	26.0170*	0.1941***	0.0193	0.1576**	0.2840**	0.1548*
	(2.002)	(0.054)	(14.903)	(0.063)	(0.103)	(0.068)	(0.115)	(0.080)
Tertiary	-3.6714	-0.1080	-26.6011	-0.1226	-0.0886	-0.1233	-0.1308	-0.0964
	(2.412)	(0.071)	(17.833)	(0.075)	(0.100)	(0.105)	(0.120)	(0.102)
Any dependent	4.4136**	0.1512***	-27.3763*	-0.0977	0.2068**	0.1045	-0.1561	-0.0456
	(1.874)	(0.055)	(14.525)	(0.059)	(0.100)	(0.070)	(0.106)	(0.070)
Obs	279	279	278	278	102	177	102	176
R2	0.187	0.158	0.038	0.075	0.229	0.091	0.119	0.079

Source: own elaboration based on survey (2020-2021).

Note: sample of delivery workers who were actively working at the time of the survey (2020-2021). Standard errors are shown in parentheses. The dependent variable is reflected in the header of each column.

In the case of *Uber* drivers (Table 2), a gender differential is observed for the weekly hours dependent variable, which indicates that male drivers tend to work more hours than their female counterparts. Another relevant variable in the hours' equation is the one that captures the effect of the distance between the place of residence and the area where they usually work with the platform.

The table also shows that those who own their vehicle tend to work fewer hours than those who rent it. This is a significant effect for both women and men. It may be intuitively argued that this suggests a tendency to work more hours in order to cover the sunk costs of renting the car. As for the effect of dependents in the home, on average, having people economically depend on the drivers coincides with a higher number of hours worked in the platform. As we have analysed for delivery workers, this effect appears to be driven by the male sample.

In this regard, the information in the survey shows that 20% of the drivers state that they live with people who depend on them economically. Similar to what we have described for delivery workers, since 36% of male and 31% of female *Uber* drivers live with at least one person under 18, it is to be expected that a large proportion of the dependents are actually underage children who require care. As with delivery workers, we are inclined to think that for women the effect of having dependents is twofold and ambiguous in sign: on the one hand, the economic burden would induce them to work longer hours, but, on the other hand, the burden of care labour (which usually falls mostly onto them) acts as an obstacle in this respect.

Regarding the results of the regression using the hourly income dependent variable, the coefficient on the male dummy is positive, though statistically insignificant. Dependents and productive asset variables do not show statistically meaningful results in this estimation either.

Table 2. Uber, OLS regression of weekly hours and actual hourly income, total sample and dividing by gender

	Full sample				Semi-elasticities by gender			
					Male sample	Female sample	Male sample	Female sample
	Hours	Ln Hours	Hr Income	Ln Hr Income	Ln Hour	Ln Hour	Ln Income	Ln Income
Male	4.0749***	0.0659*	31.5756	0.0695				
	(1.475)	(0.039)	(39.542)	(0.055)				
Int. migrant	2.5453	0.0286	-10.9977	-0.0253	0.0200	0.0262	-0.0838	0.0411
	(2.322)	(0.064)	(55.717)	(0.080)	(0.091)	(0.085)	(0.111)	(0.119)
Age	-0.5150	-0.0162	36.6337***	0.0611***	-0.0250*	0.0029	0.0736***	0.0293
	(0.482)	(0.012)	(7.774)	(0.016)	(0.015)	(0.017)	(0.020)	(0.028)
Age sq.	0.0053	0.0002	-0.4294***	-0.0007***	0.0002	-0.0000	-0.0008***	-0.0004
	(0.006)	(0.000)	(0.090)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Distant	3.3524**	0.0756*	34.0190	0.0651	0.0583	0.1121*	0.0966	0.0051
	(1.565)	(0.040)	(32.710)	(0.054)	(0.053)	(0.060)	(0.071)	(0.082)
Tertiary	-1.1332	-0.0603	47.2716	0.0849	-0.0393	-0.1177	0.1455	0.0379
	(1.860)	(0.051)	(52.526)	(0.065)	(0.071)	(0.076)	(0.090)	(0.098)
Work asset	-5.4714***	-0.1270***	36.1209	0.1045	-0.1175*	-0.1532**	0.1082	0.0963
	(1.955)	(0.049)	(30.897)	(0.069)	(0.062)	(0.070)	(0.086)	(0.109)
Any dependent	4.4571***	0.0831**	-3.3259	-0.0583	0.1104**	0.0330	-0.0561	-0.0456
	(1.543)	(0.040)	(31.441)	(0.054)	(0.053)	(0.058)	(0.072)	(0.080)
Obs	430	430	430	430	275	155	275	155
R2	0.097	0.064	0.041	0.050	0.057	0.077	0.073	0.028

Source: authors' own calculation based on survey (2020-2021).

Note: sample of delivery workers who were actively working at the time of the survey (2020-2021). Standard errors are shown in parentheses. The dependent variable is the one in the header of each column.

When performing the decomposition analysis based on equation (1), we find that for both the delivery and the passenger driver samples there is a gender gap in the number of weekly hours worked, while we only find a significant gender gap in income for the delivery sample.

In the case of delivery work (panel A), the gender gap in gross hours is considerable: women work almost 8 hours a week less than men (16.6%). Half the gap is explained by differences in observable attributes of both groups, and the other half is accounted by the *unexplained component* (an unequal retribution of these attributes between genders). As for the hourly income gap, there is a statistically significant difference of 13.9%, this difference is explained mostly by the model's unexplained component.

An important factor that may be affecting both the gap in the amount of worked hours and the disadvantages in the economic return of the activity for women might be related to certain "choices" they need to make regarding the time when they work. Indeed, be it due to their care responsibilities or due to safety reasons, female riders avoid working in "peak" demand hours, especially at night and

during weekends. Actually, almost 80% of male riders work the night shift (from 8pm on), in contrast with the 40% of female riders who do so. During our in-depth interviews, the reasons mentioned for this usually revolved around safety issues:

"At night there is much more movement but (...) I don't take it because it's not the same not to know a street during the day, than at night. And something else: you are carrying cash, your cell phone (...) it's scary, anything can happen to you" (Andrea)

"I'd like to go back to working at night, but I'm scared (...) there's fewer people and, well, since the time my partner was robbed while he was working (...) I started getting scared (...) so I started going out only at noon. And well, my income dropped drastically, I think men will go anywhere in order to make more money. I think women think it over a bit more" (Samanta)

Also, men once again benefit more than women from the opportunity to work during weekends, which are also marked by a rise in demand. Almost all male riders work on Saturdays and 80% of them work on Sundays (in contrast with 85% and 63% of women, respectively). In these cases, our in-depth interviews reveal that female riders with care responsibilities resort to a variety of strategies in order to work during the weekend (asking for help to neighbours and other women in their families, for example). However, precisely because during weekends they cannot rely on the hours their children spend at school, all these other arrangements are short-term and fallible. In addition to these restrictions regarding the moments in which women are able to work, other limitations may also account for the gender gap, especially the ones related to the areas where they perceive is safe to work (which may lead to reject some job requests based on location).

Table 3. Decomposition analysis of the gender gap: weekly hours worked and actual hourly income, Delivery and Uber

	(A) Delivery: gender gaps				**(B) Uber: gender gaps**			
Differentials	***Hours***	***Ln Hours***	***Hourly income***	***Ln hourly income***	***Hours***	***Ln Hours***	***Hourly income***	***Ln hourly income***
Women	38.2090***	3.5581***	198.2613***	4.9726***	40.4194***	3.6426***	372.1588***	5.7538***
	(1.099)	(0.034)	(6.854)	(0.040)	(0.730)	(0.022)	(26.565)	(0.045)
Men	45.8627***	3.7244***	195.0839***	5.1116***	46.2727***	3.7466***	402.4631***	5.8153***
	(1.662)	(0.050)	(17.604)	(0.058)	(1.059)	(0.029)	(21.717)	(0.034)
Difference	-7.6537***	-0.1663***	3.1774	-0.1390**	-5.8534***	-0.1040***	-30.3043	-0.0615
	(2.073)	(0.060)	(19.638)	(0.061)	(1.235)	(0.035)	(38.425)	(0.056)

Decomposition	***Hours***	***Ln Hours***	***Hourly income***	***Ln hourly income***	***Hours***	***Ln Hours***	***Hourly income***	***Ln hourly income***
Endowments	-3.4987***	-0.0855**	-3.2373	-0.0379	-1.7785***	-0.0381***	1.2713	0.0080
	(1.192)	(0.034)	(8.319)	(0.027)	(0.638)	(0.012)	(9.418)	(0.019)
Coefficients	-4.1550**	-0.0808	6.4147	-0.1011*	-4.0749***	-0.0659*	-31.5756	-0.0695
	(2.015)	(0.056)	(16.772)	(0.055)	(1.222)	(0.035)	(42.220)	(0.062)
Observations	279	279	278	278	430	430	430	430

Source: own elaboration based on survey (2020-2021).

Note: panel A includes information from delivery workers and panel B from drivers, both only consider those who were actively working at the time of the survey (2020-2021). The table shows the results of a decomposition that uses the coefficients of a pooled model as those of the reference group. Standard errors are included in parentheses. The top three rows show mean values by sub group and their difference, and the lower rows show the explained component (endowments) and the unexplained component (coefficients).

For the case of *Uber* (panel B), we also find a considerable gender gap in gross worked hours: women work almost 6 hours less a week than men (which represents a difference of 10.4%). This difference is mostly explained by the coefficients effect, the *model's unexplained component,* which is to say that it can be attributed to gender discrimination in the job market and also to the potential effects of differences in unobservable attributes. As for the gap in hourly income, we do not find a statistically significant difference between men and women: the analysed sample appears to contain a certain amount of homogeneity in the return male and female drivers obtain for each hour of fares, once we control for observable attributes.

The data in our survey, as well as the qualitative evidence, reflect different patterns of working hours and weekdays between men and women - with the consequent failure to exploit the most profitable hours by the latter -. Indeed, while 43% of men work at night (from 8pm and later), only 20% of female drivers do so. Likewise, 80% male drivers work on Saturdays and 42% of them work on Sundays, which compares to female drivers' 70% and 30%, respectively.

These differences in the way women and men organize their working hours is greatly conditioned by the feminine work experience and its link to the safety risks they perceive and the different driving practices that are associated to it. Even if safety is an important issue for all the drivers we interviewed (particularly, the risk of getting robbed), women tend to fear the most the possibility of being sexually harassed by passengers—these experiences, which were repeatedly mentioned during our interviews, happen, as they emphasize "*inside a car!*".

As a consequence, most female drivers explain that they prefer to avoid working during the night, something that prevents them from taking advantage of the dynamic rates that go up because of the

rise in demand. In fact, women who "dare" to go out at night do so at the expense of suffering and enduring difficult situations. Interestingly, the qualitative data also shows that for some women the choice not to work during the night responds to their preference for staying at home with their children. This is a choice they make while being fully aware that it directly affects their ability to generate income.

Besides, as explained by our female interviewees, adapting their working hours to their care responsibilities also affects their ability to take advantage of other high demand moments of the day (besides nights), such as those coinciding offices' entry and exit hours (because usually offices have the same schedules as their children's schools do).

Finally, we analyse gaps after including covariates related to choices of days of the week and time slots. The estimation in Table 4 shows that the gender gap persists in the delivery sector both for worked hours and for hourly income, and the model still fails to explain most of this differential -which points towards the possibility of internal unobservable attributes operating and leading to this discrimination-. In the *Uber* sector the hours' decomposition shows that half the gap is still accounted for by the coefficients effect, the model's *unexplained component,* but this result is sensitive to specification as the difference in endowments becomes more relevant when the dependent variable is used in logarithm (column 6, "Ln hours"). Therefore, we conclude that the number of hours that drivers devote to working on the platform is significantly influenced by the days of the week and time slots when they are able to do it.

Table 4. Gender gaps decomposition analysis, considering choice of days of the week and time slots Delivery and Uber

	(A) Delivery gender gaps				**(B) Uber gender gaps**			
Breakdown	**Hours**	**Ln hours**	**Hourly income**	**Ln hourly income**	**Hours**	**Ln hours**	**Hourly income**	**Ln hourly income**
Difference	-7.6537***	-0.1663***	3.1774	-0.1390**	-5.8534***	-0.1040**	-30.3043	-0.0615
	(2.103)	(0.055)	(16.716)	(0.063)	(1.430)	(0.043)	(37.207)	(0.053)
Endowments	-1.7748	-0.0330	2.9758	-0.0087	-2.9597***	-0.0583**	6.0808	0.0121
	(1.893)	(0.055)	(9.471)	(0.040)	(1.104)	(0.024)	(14.687)	(0.025)
Coefficients	-5.8789***	-0.1333***	0.2016	-0.1303**	-2.8936**	-0.0457	-36.3850	-0.0736
	(1.772)	(0.040)	(13.951)	(0.060)	(1.340)	(0.039)	(40.719)	(0.056)
Observations	279	279	278	278	430	430	430	430

Source: own elaboration based on survey (2020-2021).

Note: panel A includes information from delivery workers and panel B from drivers, both only consider those who were actively working at the time of the survey (2020-2021). The table shows the results of a decomposition that uses the coefficients of a pooled model as those of the reference group. Standard errors are included in parentheses. The top three rows show mean values by sub group and their difference, and the lower rows show the explained component (endowments) and the unexplained component (coefficients).

4. Final remarks

The increased presence of women in typically male-dominated activities such as platform-based delivery work and platform-based private passenger transport undoubtedly constitute progress in terms of occupational sorting and horizontal gender segregation. The economic crisis that took place in Argentina in late 2018 and its aggravation due to the pandemic had a strong impact on the labour market. Our research shows that such characteristics of the Argentinian economy combined with the flexible schedules allowed by these jobs, are undoubtedly important factors that attract women to the platform economy. Moreover, another central element that promotes the increasing female participation in these occupations is the impersonal character of these platforms' recruiting processes. Through our qualitative analysis we infer that entry procedures that require no face-to-face interactions appear as a way to avoid direct discrimination and the potential intimidation female workers may otherwise experience when entering traditionally male-dominated environments.

Despite the advantages that rider and driver platforms offer for women's entry in male-dominated occupations, it is also clear from our analysis that female performance in these activities (especially in their ability to generate income) is not without conditioning. The preliminary results of our quantitative analysis show evidence that both female riders and female drivers experience greater limitations than their male counterparts as to how much, where and when they work, due to a series of factors.

On the one hand, both female riders and female drivers work fewer hours than their male counterparts, thus affecting their ability to generate income. While the presence of (mostly underage) dependents generates in men an increase in working hours (since their socially assigned role of main providers kicks in), for women the effect is reversed since these dependents' need for care implies that they assume their role as main care providers. The latter induces subsequent restrictions on the time female platform workers are able to devote to their paid activities. Other limitations to women's working hours are associated to safety issues. Even if both men and women are concerned about the risk of exposure to dangerous situations in the street, this concern is stronger and generates more tangible restrictions for female platform workers. Thus, many women that would be able otherwise to work during night shifts choose not to do so, since they perceive it as a particularly dangerous time in terms of robberies, muggings and especially sexual harassment situations.

In addition to the factors affecting female income generation capacity and hours worked, it is important to remark what happens with these female workers' hourly income. Interestingly, we find a penalty in female riders' hourly income when compared to male riders (we find a statistically significant gender gap in income), while this situation is not clearly verified for drivers with the model detailed in this paper (the gap is not statistically different from zero). A central element that appears as a determinant of the profitability of each hour worked is the property of the productive assets, namely the means of transportation used while working. In the case of delivery work, we find clear gender segmentation when it comes to the access to motorcycles, since female riders mostly use bicycles. The use of motor vehicles implies, undoubtedly, a greater speed in deliveries, and therefore

allows for higher profits in the same time period. Besides cultural factors that favour men's early contact and access to these motor vehicles, several women mention that in order to afford the expenses these vehicles generate they would need to work full time. Since care work implies that this possibility is often unavailable to them, this leads to a vicious circle. In the case of passenger transport, however, we find no such gender segmentation in the access to the ownership of a car (as opposed to renting it); hence this factor does not visibly affect the hourly income gender gap. In future revisions of this article we will further detail the characterisation of other possible channels linked to the gender gaps found here.

Even though it is clear that gender inequalities in the analysed occupations are explained by a combination of factors, we believe it is worth reflecting on the issue of safety. This is a limitation that is not frequently mentioned when studying obstacles women face in the workplace, and one that is evidently important for their entry and permanence in these and other typically masculine occupations that take place in the public space. Indeed, regardless of their entry in these activities, "the street" - a masculinized territory, of the unknown, the risk, the public and the random encounters (Tizziani, 2017) - represents for women a space they have only partially conquered and that continues to place them in disadvantage when compared with their male peers. In fact, this issue has not gone unnoticed to the very platform companies and has led, in the case of *Uber*, to the recent launching of a new application (*Uber Ellas*), available only to female drivers. By using this app, women may choose to filter their assigned trips and only pick the ones where the passenger is identified as a woman (in this same movement the platform also aims to provide safety and trust to female passengers who are reassured in the knowledge that their driver will be a woman). These and other initiatives directed towards ensuring safe female mobility -which may come from the very platform companies but which should mainly be fostered by public policy- could contribute to the decrease of the multiple forms of violence they experience both in transport and in public spaces (IDB, 2015; FIA, 2017). This issue is a limitation found to be significant in the determination of gender inequalities analysed in this study, but that no doubt has effects that go beyond female platform workers. Differential effects of street insecurity on women negatively impact several dimensions related to their work, like their ability to generate income or their active participation in the public life, as well as their general well-being.

Through our preliminary analysis we infer three main recommendations for policy making. First, our analysis suggest that a gender-sensitive approach is needed for platform regulation in Argentina. Policymakers have the opportunity to provide more inclusive and fair frameworks for a growing number of women joining the platform economy. Although there are some draft bills under discussion for regulating platform labour in Argentina, the explicit inclusion of a gender perspective constitutes a pending task.

Second, platform regulatory framework or occupation-specific policies should be designed with an explicit gender-sensitive and bias-free approach. This includes a gender-sensitive approach in the definition of the service provision and of the methods for allocating requested services in passenger transport and delivery, as well as frameworks for evaluating the service delivery within each specific platform. Regulations should tackle the algorithmic bias observed by revising the definition of privileges or penalties associated with workers behaviour in their hourly engagement, speed or job

rejections. Additionally, regulatory frameworks for riders and drivers should preserve flexible schedules as they play a key role allowing women to participate in these activities.

Third, regulations beyond the platform economy should favour work environments tailored to female labour participation. These include wider policies beyond labour regulation such as those oriented to achieve an equitable distribution of non-paid domestic and care work among men and women, or those aiming at reducing street insecurity or those protecting against violence and harassment, regulatory areas affecting women more intensely and that could influence the reaping of job opportunities as well as overall well-being.

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