Digital platforms: a qualitative approach to the labor conditions in Peru.

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FUTURE OF WORK
IN THE GLOBAL SOUTH

Index

1. Introduction

Throughout the twenty-first century, and especially in recent years, we witnessed a process of constant expansion of Internet access and use at a global level. Through a series of digital platforms, it has gained increasing weight in our lives, even becoming a key element in the constitution of everyday experience (Benítez, 2018).

The centrality that the Internet and digital platforms have acquired has led to major transformations, not only at the economic level, but also in the workplace. One of the most notable phenomena is the emergence of a set of platforms that provide a certain type of service, connecting customers or users with a set of workers considered "independent." In some cases, these platforms offer services made entirely by digital means (called crowdwork). In other cases, they articulate a series of services that continue to be carried out in person (taxi, delivery, domestic service, etc.). The popularity of these applications in recent years is the result of a process of "platformization" of work, which has formed what is called "digital economy," "platform economy," "collaborative economy," or gig economy. This process of "platformization" has significantly albeit heterogeneously involved the Global South, reproducing a set of inequalities and power relations in the process.

Peru was no exception. Since their introduction in the country, in the mid-2010 decade, the presence of this type of digital platform has increased exponentially. At the same time, the number of people who have found in said platforms their main (often unique) source of income has increased. Although there are no official figures in this regard, tens of thousands of "partners" or "affiliates" are known to work with the most popular platforms in the country. Highlights include smartphone applications that recruit drivers to offer taxi service (Beat, Uber, Cabify, among others) and product delivery services (Rappi, Glovo, among others).

The working relationship that companies responsible for this type of platform maintain with their workers is radically different from that established in previous business models, and continues to be the subject of extensive debate within and outside Peru. There are several countries where the use of the term "worker" to refer to drivers, as well as the benefits to which they should access, have been the subject of extensive legal debate, including lawsuits and demonstrations by civil groups. Those who defend

this business model claim that they create jobs, allow for an increase in drivers' incomes and facilitate their formalization. Their autonomy would be guaranteed through flexible working conditions and the possibility of choosing their working hours. These statements are questioned by numerous specialists from the social sciences, who have identified a number of shortcomings in the working conditions of drivers. Factors such as job instability, oversupply, work overload, lack of transparency, and lack of non-wage benefits would lead to the "precariousness" of their working conditions (Carrión & Ticona, 2020; Dinegro, 2020; Hidalgo & Valencia, 2019).

Although some academic articles have recently been published analyzing the topic, it's necessary to clarify the real working conditions of drivers working with digital platforms in Peru, the number of which continues to increase to this day. For this, it is necessary to take into account that this is not a homogeneous group, but that there are significant differences in income and working conditions. Some of these differences respond to gender inequalities between drivers, which has not yet been sufficiently addressed in the country. This factor is relevant, especially since research conducted in other countries shows that while the digital economy facilitates women's access to the labor market, gender gaps in income related to gender stereotypes continue to exist (Galperin et al., 2018). Although it is said that working conditions in the digital market have also been affected by the measures taken following the spread of Covid-19 (FairWork, 2020), the impact of these changes on digital platform drivers in Peru is still widely unknown.

This report presents the results of the qualitative study carried out as part of the Future of Work in the Global South project, in which the Institute for Peruvian Studies participates. This study aimed to describe and analyze the main features that drivers' working conditions acquired as a result of their participation in digital platforms in Peru. To this end, twelve semi-structured interviews with application drivers were conducted. Through these, information regarding income and employment benefits, as well as the representations and evaluations that drivers themselves have regarding their working conditions were collected. The interviews also helped to identify differences between drivers (some of them related to gender) and some major changes in the work with applications following the measures taken due to the arrival of Covid-19. In this way, the present report seeks to help clarify the working conditions of drivers working

with taxi and delivery applications, with a view to generating an academic discussion in this regard in our country and guiding the formulation of public policies.

Next, we will briefly present the international academic discussion on work on digital platforms, which framed the present research, as well as the work carried out in this regard in Peru. The methodological design that led the qualitative research will also be mentioned. Sections 4, 5, and 6 of the report help contextualize the findings, presenting the paths of the companies and interviewed drivers, as well as the features of the services offered by the applications. The different dimensions of working conditions in the analyzed digital platforms are discussed in depth in section 7, after which the forms of organization and collaboration among workers are mentioned. The heterogeneity of these, as well as its implications for income and working conditions, is discussed in section 9. Finally, a tenth section presents the main changes in the platforms following the measures taken due to the arrival of Covid-19 in Peru.

2. Digital work seen from the social sciences

As you can see, digital platforms of different types constitute a major source of income for millions of people around the world. The number of workers involved in this type of business has increased rapidly since at least the beginning of the 2010 decade. This major phenomenon has been analyzed by researchers from different disciplines, who have made dozens of academic publications. Thus, today it is possible to affirm that there is an abundant academic discussion in social sciences on platform economics in its different modalities, including case studies of taxi and delivery applications. Although it is not the main objective of the research, we consider it relevant to present a brief review of these latest publications, the statements of which will be bringing up throughout the report.

Generally speaking, these publications refer to a specific category of digital platforms, through which affiliated "freelancers" earn income by performing a set of specific tasks for different users. These platforms, owned by companies that follow similar business models, generate comparable economic and social dynamics. However, there is no single or delimited term to refer to the interaction framework they generate[1]. Terms such as "digital economy" or "platform economy" are often used, which refer to the

central importance of digital platforms as a framework and means of interaction between the owner company, workers, and customers. However, this term can also be used to refer to other applications or websites (Randolph & Dewan, 2018). It is also common to use the term "collaborative economy," in which the emphasis is placed on the "new" business model of these platforms. Through digital technologies, it would allow users to access goods and services of others that were not used properly before, increasing their value (and hence the bidder's revenues) (Armas-Morales, 2016; Carrión & Ticona, 2020). A last term used in the academic discussion is that of online gig economy, which refers to "labor markets characterized by independent contracting that happens through, via, or on digital platforms" (Woodcock & Graham, 2020, p. 10; own translation). In this case, the emphasis goes to the short nature of agreements with workers, which are reduced to a specific task. This would make jobs in the gig economy temporary, unpredictable, and precarious (Woodcock & Graham, 2020).

Together, these terms allow us to delimit a business model involving three actors. These are the platform (and the staff of the company that manages it), the user and the worker, who provides the service that is offered and consumed. The interaction between them would be, for the most part, through the digital platforms themselves, and in relation to specific tasks.

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[1] Similarly, no term has been coined to refer only to digital applications where affiliated drivers earn income from making one or more trips.

Once these are done, there is no need or obligation to continue with the relationship. Therefore, this type of work is considered temporary and extremely flexible. From digital platforms, workers are also labeled as "freelancers," without any long-term relationship with the companies offering their services.

Within this general framework, a differentiation is often made between two subtypes of platforms. In one of them, the tasks are performed and provided to the user completely by digital means. The term crowdwork is usually used to refer to the type of work done in this way. The second type of platforms corresponds to those that offer a series of services that include performing face-to-face tasks. In this case, the companies in charge are involved in setting minimum standards for the performance of the service and managing the workforce (De Stefano, 2016).

Among the applications of the latter subtype are those offering taxi service (Uber, Didi, among others) and those that carry out the delivery service of products (Glovo, Rappi, among others)[2]. The relationship that workers have with these platforms has been the target of abundant criticism around the world from civil society agencies, even becoming the subject of judicial proceedings. In parallel, numerous publications have been developed on this relationship from the law and related disciplines. Generally speaking, most of them claim that there is a working relationship between drivers and the platforms offering their services, alerting about the existence of issues of subordination and inequity. Within Latin America, publications of this type have been made in Argentina (Sala Mercado & Rodríguez Cuenca, 2019; Vallefin, 2018) and Peru (Armas-Morales, 2016; Mercado, 2019).

Publications from the social sciences have paid special attention to the working conditions generated within the framework of the online gig economy, alerting about the disadvantages they could generate. Graham et al. (2018) indicate, for example, that there is not enough evidence to indicate that these types of working relationships are beneficial to workers. On the other hand, there are cases in which they generate oversupply, insecurity, discrimination, isolation, overload, opacity, and intermediation in the performance of the service. Regarding this, O'Neill (2018) states that, contrary to what

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[2] Of course, this is not the only type of services that can be offered in this way. Thus, some articles refer to applications from which they offer domestic work.

they offer, digital platforms cut the flexibility and independence and motivation of their workers, which have an impact on the quality of the services offered. These facts are aggravated by low remuneration and lack of legal protection. To counteract this situation, Graham et al. (2020) propose a list of principles of "fair work" (payment, working conditions, contracts, management, representation), which can be used to analyze the situation of a digital platform.

Similarly, there are numerous analyses showing that the business model of the platforms offering taxi service has a negative impact on their drivers (see, for example, Chen, 2018; Isaac, 2014; Rogers, 2017). The case of Uber, a North American company that has become one of the world's market leaders, has been especially studied and is illustrative. According to Isaac (2014), its business model reduced the company's risk, increasing the number of workers. Not only did they see their rates reduced, but they were subject to labor agreements under which they lost labor benefits and could be exploited. This situation was favored by an existing legal loophole in the United States. Something similar seems to happen with other applications. Chen (2018), who analyzes the case of the Chinese application Didi, shows how many of its drivers perceive a decline in income and lose their autonomy, which contribute to increased work stress.

The loss of autonomy of drivers plays a crucial role in the very functioning of the applications and algorithms that companies handle (J. Chen, 2018). The latter are usually unknown or very little known to drivers, which causes them to worry and may allow them to be manipulated affecting them (L. Chen et al., 2015). In many cases, the allocation of fares and rewards includes criteria not related to driver performance, resulting in asymmetries in payments that are perceived as arbitrary. Even their freedom of choice can be undermined by mechanisms such as concealment of user destiny, which are part of a "soft control" strategy (Rosenblat & Stark, 2016). Despite all the aforementioned, drivers of taxi applications maintain a certain level of freedom, being able to subvert or use in their favor the mechanisms provided by the platforms on which they work. Different case studies show that they have a repertoire of strategies to maximize their income, including the use of several applications simultaneously, the

installation of applications to subvert algorithms or accepting rides during hours of higher demand (J. Y. Chen, 2018; M. KChen & Sheldon, 2016). In addition, workers have the opportunity to organize and carry out strikes in defense of their interests (J. Y. Chen, 2018).

In Latin America, special attention has been paid to the working conditions of drivers of delivery applications. In recent years, studies have been conducted on these workers in Lima (Carrión & Ticona, 2020; Dinegro, 2020), Quito (Hidalgo & Valencia, 2019) and Argentina (Negri, 2020), which have included conducting interviews and participant observation. As in the research presented above, these studies maintain a critical look at the operation of applications. In general terms, they conclude that working conditions on digital delivery platforms contribute to reproducing a growing asymmetry to the detriment of workers. By virtue of an informal and temporary working relationship, the latter lose labor benefits and occupational safety, acquiring the obligation to provide the full means of production. They also lose control of their time and income to a large extent, due in part to the way algorithms work. Although drivers are exposed to accidents and abuse, they would often not have the right to reply within the platform's poor communication channels (Dinegro, 2020). Despite all this, workers are able to establish solidarity networks among them and organize mobilizations (Negri, 2020)[3].

Some of these researchers call drivers of delivery platforms as "precariat." This concept refers to workers whose working relationships put them into constant job instability and prevent them from accessing non-wage benefits. This condition affects their emotional health and limits their access to civil, cultural, social, political, and economic rights (Carrión & Ticona, 2020; Hidalgo & Valencia, 2019)[4].

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[3] Some of the studies reviewed indicate, on the contrary, that the working conditions of delivery applications make it difficult to establish bonds of solidarity between drivers (Carrión & Ticona, 2020; Hidalgo & Valencia, 2019).

[4] Unlike what happens in other regions, in Latin America precariousness would be a preexisting situation with the arrival of digital platforms, due to the predominance of informal working relationships (Hidalgo & Valencia, 2019).

As can be seen, in the course of the decade of 2010, numerous academic publications have been developed on the work of drivers in applications, within the framework of a broader discussion on the online gig economy. The applications are part of a new and disruptive business model that would be characterized by the importance of digital platforms in the interaction between actors during the completion of the service, but also by the establishment of temporary and precarious working relationships with workers. There are many cases in which these types of relationships detract from benefits and autonomy. Even so, drivers continue to have a certain level of freedom, developing a series of strategies to boost their own agendas and interests. Within this general framework, the situation varies in each country and each platform (Rosenblat & Stark, 2016). On the other hand, this series of publications warn of a number of components related to the working conditions of drivers that might be affecting them, and which should be given special attention. Among them, payment rates, non-monetary benefits, labor flexibility, representation, workload, presence of algorithms, job stability, discrimination, and organization of workers can be pointed out.

Finally, it is important to note that some dimensions of the online gig economy have not yet been explored enough[5]. For example, while the impact of working on digital platforms for women has been explored, gender differences in workers' working conditions are not fully clear. The consequences of the arrival of Covid-19 in the online gig economy remain also unclear to this day. Only one publication of the Fairwork Project explores the issue, finding that the pandemic has led to job losses and reduced income among workers on most platforms (except for product delivery). In the face of this situation, the response of the proprietary companies has been limited.

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[5] This fact is recognized by the researchers themselves, who point out the need for additional research on work on digital platforms (Galperin et al., 2018; Randolph & Dewan, 2018; Rosenblat & Stark, 2016).

3. Methodological notes: Qualitative research during confinement

The research whose results are presented in this report had a qualitative nature, taking an ethnographic approach. In the design of its methodology, the contributions made by the aforementioned authors were taken into account, as well as aspects of the problem that have not yet been sufficiently worked out. The authors worked with a qualitative methodology to identify a number of key elements in the working conditions of male and female drivers of digital platforms. This also allowed them to identify particularities in these conditions, framing them in their own context and linking them to a series of external factors (Hernández et al., 2010). Thus, it sought to complement the quantitative research previously developed within the framework of the Future of Work in the Global South project, the results of which constituted a starting point.

For its part, the adoption of an ethnographic approach[6] responded to the interest in considering the point of view of the workers themselves. Its adoption allowed them to recognize aspects of their working conditions that they identify as critical, as well as the representations and speeches they elaborate in this regard. This is especially important considering that quantitative studies show that gender differences between workers in the digital market respond largely to stereotypes and other non-measurable factors (Galperin et al., 2018). Similarly, the use of an ethnographic approach allowed them to understand how study participants considered their working conditions should be (Restrepo, 2016).

Taking into account the importance of the opinions and perspectives of male and female drivers in the research, it was decided to use semi-structured interviews as the main technique for collecting information. This type of interview, which allows them to be open to any type of answer without losing sight of a structure, is ideal for identifying and exploring important elements within previously established work dimensions. It also allows them to identify subjective perceptions and meanings elaborated by the interviewees themselves (Ardèvol et al., 2003).

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[6] Research that adopts an ethnographic approach often puts participant observation at the forefront, through which a link is established with the subject of study. On the other hand, as will be detailed below, due to the restrictions caused by Covid-19, the use of participant observation during the investigation was quite limited. This does not prevent the methodology used in research from being considered ethnographic (Restrepo, 2016).

The semi-structured interview guide designed for research was based on models previously developed within the framework of the Future of Work in the Global South project. In it, the questions were organized into four dimensions of analysis[7]:

1. Characteristics of the informant: Age, applications used, career path on digital platforms, relevance of working with applications in their current income.

2. Working conditions on digital platforms: application process, required supplies for work, characteristics of the working relationship, working hours, non-monetary labor benefits, monetary income, payment methods, communication channels, main complaints and settlement mechanisms, experiences of discrimination, articulation between workers.

3. Representations relating to work with applications: perceived advantages and disadvantages, skills considered necessary to work with applications, job satisfaction, opinion regarding the formality of the work.

4. Gender differences in working with applications: number of women working with applications, unique qualities of male and female drivers, advantages and disadvantages faced by women when working with applications, differences in income by gender received.

As already mentioned, the study population consisted of the male and female drivers of any type of vehicle (cars, motorcycles, bicycles) who have worked or are working to date with any application offering taxi or delivery services. As can be seen in Table 1, a sample of twelve people were selected, who were interviewed between August and September 2020. The selection of these interviewees responded to a non-probabilistic and convenience sampling strategy, which took into account a number of criteria. They worked only with male and female drivers who have been working with applications since at least the beginning of 2020. In this way, efforts were made to understand the working conditions prior to the start of the pandemic and how it transformed them.

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[7] As they are semi-structured interviews, the questions contemplated in the interview guide were not always asked in the order contemplated, giving space for specific additional questions related to what was raised by the interviewee.

Likewise, they only worked with informants who have worked in the city of Lima, where digital platforms are most widely disseminated[8]. Starting from the hypothesis that application drivers constitute a heterogeneous group of people with different working conditions, they were included in similar proportions for men and women; youth and adults[9]; car drivers and motorcyclists.

Table 1: Main characteristics of the interviewees during the investigation

Gender	Age	Type of vehicle	Type of service	Applications used	Start year
Woman	22	Motorcycle	Delivery	Applications R and V	2019
Woman	34	Car	Taxi	Applications B and A	2019
Woman	43	Car	Taxi	Application U	2017
Woman	45	Car	Taxi	Applications B, U, and C	2015
Woman	49	Car	Taxi	Application S	2008
Man	22	Motorcycle	Delivery	Application R	2019
Man	26	Motorcycle	Delivery	Application R	2020
Man	30	Motorcycle	Delivery	Application R	2019
Man	30	Motorcycle	Delivery	Applications R and G	2019
Man	36	Car	Taxi	Application B	2020
Man	47	Car	Taxi	Applications B, U, and E	2015
Man	51	Car	Taxi	Application B	2018
Own production					

In addition, although cluster sampling was not properly performed, it has been preferred to interview drivers who have worked in two specific applications (the applications referred to as "B" and "R")[10]. Both are very popular applications to date, with tens of thousands of "collaborators." While B is one of the oldest and most widely used taxi applications in Lima, R is an application that offers delivery service in several cities around the country. However, taking into account our interest in understanding the

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[8] The sample included people who stopped working with the applications following the pandemic. As shown below, it dramatically affected the income of male and female drivers, as well as increasing their exposure to risk situations. An informant who stopped working with applications in Lima to start doing so in the city of Piura was also included.

[9] For the purpose of the research, those who were up to 30 years old were considered young people.

[10] In order to ensure the anonymity of informants, their names shall not be mentioned in this report. The names of the platforms they work with have been replaced by letters.

working conditions of drivers in their heterogeneity, interviews have also been conducted with collaborators of other applications. In addition, there are several cases where the interviewees have worked on more than one platform.

The sample of people formed in this way is not necessarily representative. However, it helps to facilitate an in-depth analysis of important points related to the working conditions of male and female drivers of digital applications.

As already mentioned, the interviews were conducted during the state of national emergency declared in response to the increase of Covid-19 cases, which posed a challenge and an approach to strategies specific to digital ethnography. The national situation implied significant limitations in the conduct of participant observation, a technique usually associated with ethnographic research (Restrepo, 2016). Due to the inability to perform field work in person, the researcher only interacted face-to-face with drivers in isolated situations, taking on the role of user of the application.

Instead, it was possible to observe the interaction within Facebook groups, which grouped male and female drivers of delivery applications R and G. This observation work took place between September and November 2020, in three groups in which the researcher's participation was approved by an administrator[11]. These groups, like other similar ones, group thousands of people, who constitute a significant proportion of all R and G drivers. They do not constitute official means through which communications are established with the company, but rather are spaces through which experiences and advice related to working with these applications are shared (see section 8). The publications and comments made in these groups reflect the daily experiences of drivers and are therefore mentioned throughout the report. Thus, the observation of interactions between these people through digital media constituted a complementary source of information, which enriches the information obtained through interviews.

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[11] Generally speaking, Facebook groups linked to R and G that were identified during the investigation were closed. Admission of new members is approved by a social network user who is granted the role of administrator. At the beginning of the information collection period, the researcher sent messages to administrators from about a dozen groups, via Facebook Messenger. Through this means, access was requested, previously informing of the characteristics and objectives of the investigation. In just three cases, the administrators read the message and proceeded to admit the investigator into the group. This response was given after a variable number of days, which affected the number of weeks the observation lasted (see Table 2).

Table 2: Characteristics and time of observation during research of Facebook groups related to applications R and G.

No.	Linked platform	Number of members (approximate)	Observation period of groups
1	R	7000[12]	11 weeks
2	G	5000	11 weeks
3	R	13000	10 weeks
Own production			

The situation made it necessary for the recruitment of interviewees to be mostly by digital means. Most of the drivers and taxi drivers interviewed were contacted through a post in a WhatsApp group. A few others were recruited in person during a ride for the researcher. On the other hand, all drivers of delivery applications were recruited through posts in the Facebook groups mentioned above[13].

Similarly, it was necessary that all interviews included in the investigation be carried out by telephone. This was an advantage, as many of the interviewees had free time only during the days and hours of compulsory social immobilization. As will be seen below, in the current circumstances drivers often have to work all day to get the money needed to survive. Also, the fact that interviews were conducted by telephone facilitated the inclusion of informants from different parts of the city.

Upon explicit oral authorization from the informant, telephone interviews were recorded and subsequently transcribed. For each interview, a qualitative report was made, indicating the main points pointed out by each informant.

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[12] This Facebook group was removed prior to the completion of the report in November 2020.

[13] The publications made by the researcher in these groups were answered by people interested in being interviewed, but also by those who distrusted the real interests of the research. The suspicion of these individuals would be related, according to the informants, to their concern to continue working on the R and G platforms, which constitute the only source of income for most of them.

Transcripts and reports were incorporated into a hermeneutical unit of Atlas.ti qualitative analysis software. Using a series of codes related to the above-mentioned four dimensions, it was possible to find a number of elements relevant to the analysis, as well as patterns and differences in what was manifested by the informants. The data obtained in this way was complemented by the review of news and social media posts, establishing a dialogue with the conceptual framework described above.

4. Employers: Start and path of taxi and delivery applications in Peru

In Peru, more and more people and companies find on digital platforms an important source of income. Today, dozens of startups operate in the country, which, through smartphone applications and websites, reach hundreds of thousands of customers in different cities. In fact, it is projected that the application market in Peru will move approximately one hundred million soles in 2020 alone, a fact that is the result of exponential growth (Salas, 2020). The services offered by these companies are very varied, and can be categorized into different areas. The present report analyzes the two types of platforms that are currently most important and disseminated in the Peruvian market, namely taxi applications and delivery applications. Both types of platforms require male and female driver services.

The companies behind the most popular platforms of both categories share a number of features, which is important to bring up. These are companies of foreign origin, which have premises and staff hired in the cities in which they operate. Their business model, considered innovative and even revolutionary by some analysts, makes them intermediaries and managers of the link between users and drivers, who perform the service properly. The intermediation requires the use of smartphone applications and makes use of algorithms whose characteristics are not public knowledge. This business model has been effective in competing in the market with older companies and independent drivers.

These startups are distant from traditional companies not only because of the way they offer the service, but also because of the way they establish a relationship with their workers and the Peruvian State itself. Due to their role as intermediaries and the fact that they do not directly perform the service they offer, the vast majority of them are registered with SUNAT as belonging to areas such as IT solutions or consulting. Therefore, they are not subject to the same laws and taxes as other transport or delivery companies. In fact, to date, its activities have been very poorly regulated by the Peruvian State. As in other parts of the world, drivers are not considered workers of the company, but independent third parties who are affiliated with the platform. This condition and what it implies, which will be detailed below, has been the subject of criticism by civil society agencies and the drivers themselves, who have occasionally sought to organize themselves in defense of their rights. From the Peruvian State, a bill was drafted in 2019 (Dinegro, 2020), and in May 2020 a working group of the Ministry of Labor and Employment Promotion (MTPE) produced a report on the working conditions of drivers (Ministry of Labor and Employment Promotion, 2020). However, these initiatives have not been reflected in substantive changes.

The digital platforms that offer taxi service differ in some important points from those that do the same with delivery. As is the case in other countries (J. Chen, 2018), they work with both taxi drivers and private vehicle drivers of different categories (cars, trucks, vans)[14]. Registered users on these platforms can request a transport service within the city at the same time, choosing from a range of services offered. The application assigns the task to a driver, determining in almost all cases the fee to be paid.

The first platforms of this type to enter the Peruvian market were Beat, Uber[15] and Easy Taxi; all three began operating in Lima in 2014. The popularity of these applications increased rapidly, representing an important competition for independent taxi drivers. This allowed these and other foreign startups to venture into other major cities in the country.

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[14] Unlike what happens with private vehicle drivers, in Lima, formal taxi drivers have to follow a series of provisions dictated by the Urban Transportation Authority (ATU).

[15] The case of Uber stands out, a company with a presence in different countries, whose business model and whose relationships with workers have been widely studied around the world (see, for example, Ávalos & Sofía, 2015; L . Chen et al., 2015; M. K. Chen & Sheldon, 2015; Cramer & Krueger, 2016; Glöss et al., 2016; Goyena, 2019; Hua & Ray, 2018; Kim et al., 2018; Mercado, 2019; Rogers, 2015; Rosenblat & Stark, 2016; Wallsten, 2015).

Previously present taxi companies, which offered taxi service through telephone exchanges, also created their own applications[16].

Today, the popularity of such platforms is undeniable. According to estimates by consulting firm Arellano Marketing, in 2019 they provided about 20% of total taxi rides. However, some of them have suffered reputational crises due to cases of theft and sexual assault to female users by affiliated drivers. This has led to responsible companies being sanctioned by Indecopi for breaching consumer protection regulations (RPP Noticias, 2019). The leading applications in the market would be Beat and Uber, which are the most known, preferred and used by consumers. In addition, its rates are among the lowest in the market (Arellano Marketing, 2019a).

On the other hand, digital delivery platforms work mainly with motorcyclists and cyclists, although they have recently begun to incorporate some drivers of different types of vehicles. The most popular service among the users of these applications is the delivery of food. To carry it out, the companies join forces with a series of "allied" restaurants and chains who offer their dishes in the application. The user, who makes the request by this means, has to pay the platform the cost of the product (which is transferred to the "ally") plus an additional fee, corresponding to the delivery service. The order is assigned to an associate driver, who interacts directly with the "ally" and the customer.

The incursion of these platforms into the Peruvian market is relatively recent. The first distribution application to enter Lima was Glovo at the end of 2017; Rappi and Uber Eats[17] did the same during 2018. The popularity of these and other platforms increased rapidly, a fact that could be related to the continued launch of promotions for users (Arellano Marketing, 2019b) and allowed platforms to start operating in other cities in the country[18].

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[16] This is the case with companies such as Aló Taxi and 3555555 Satelital, which now have their own applications. The use of this platform is still complementary to that of telephone exchanges in some of these cases.

[17] In 2020, following the economic crisis caused by the pandemic, the Uber Eats brand stopped operating in Peru. The delivery business managed by the company was maintained by Cornershop, a supermarket product shipping application (Carrión & Ticona, 2020; Sarmiento, 2020).

[18] To date, these types of platforms operate in the cities of Lima, Arequipa, Chiclayo, Cusco, Ica, Piura, and Trujillo (Sarmiento, 2020).

In parallel, there has been a steady increase in the number of "allied" stores and affiliated drivers. As of May 2020, each of the two most important companies in the category was estimated to have about 3500 "allies" (Sarmiento, 2020).

As already mentioned, this research focuses on the case of one of the most important platforms of each type. Application B has been selected from among those offering taxi services. Owned by a company of European origin, it was one of the first platforms to enter the Peruvian market, rapidly gaining popularity. Currently, its services are among the cheapest on the market, noteworthy for including older vehicles. However, the quality of service has been questioned in the wake of cases of theft and sexual abuse by associated drivers.

For its part, they chose to work with the Application R among the delivery platforms. Of Latin American origin, this company has recently entered the country. Since the beginning of its operations, it managed to recruit hundreds of delivery drivers due to its high pay rates, as well as allowing cyclists to participate. Its explosive growth has been related to its advertising strategy based on numerous promotions. Today, the company has tens of thousands of drivers, spread across the capital and cities such as Lima, Trujillo, Piura, and Arequipa.

5. Drivers: Workers' routes of taxi and delivery applications

Currently, tens of thousands of drivers have found in taxi and delivery applications an important source of income. Unfortunately, there are no official figures that allow us to know the exact number of these workers and their characteristics. Estimates of the number of drivers of delivery applications show steady growth. In May 2019, the two most important platforms in the market (Glovo and Rappi) were estimated to have 9500 active drivers, out of a total of about 14000 registered drivers (Arellano Marketing, 2019b). A year later, the number of drivers had increased to 17000 (Sarmiento, 2020). According to those interviewed in this investigation, this figure would have increased even further during the pandemic.

A study of Glovo drivers carried out by the Peru Platform Observatory in 2019 (Diario La República, 2020) can help characterize, in general terms, drivers of delivery applications. According to this study, almost all Glovo drivers are young men. 60% of them are between 25 and 30 years old. Most of these people have completed higher education, although a significant fraction has not yet completed high school. Delivery applications have represented an alternative to economic income for many Venezuelan citizens. According to this study, 67% of Glovo drivers are of Venezuelan nationality. One element to take into account is that, according to the study, 73% of motorized vehicles have the platform as the sole source of income (Diario La República, 2020)[19].

The five distributors interviewed for this research mostly share the profile presented in the study, despite working on other platforms (see Table 1)[20]. They are all young people between 20 and 30 years old, and only one of the drivers was female. In fact, several of the informants stated that few women worked in the Application R. The presence of a significant number of Venezuelans in this application is confirmed by our interviewees, and is evident in the posts and comments of drivers in Facebook groups.

It is interesting to note that all the interviewees entered the field of home delivery less than two years ago. Three of them said they had previously worked in other types of companies (supermarkets, fast food chains, call centers); they decided to change jobs because application R offered them better pay, as well as flexible hours. The incorporation of these and other workers recently responds to the fact that the presence of these applications in the country is also recent, and is a sign of their rapid growth[21]. On the other hand, as with Glovo workers, almost all interviewees work with a single platform at a time.

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[19] A study conducted in Quito (Hidalgo & Valencia, 2019) shows that the characteristics of Glovo drivers in this city are similar to those they have in Peru.

[20] The same applies to drivers of delivery applications interviewed for other qualitative studies conducted in Peru (Carrión & Ticona, 2020; Dinegro, 2020)

[21] Dinegro (2020) states that while for Venezuelans work on delivery applications constitutes from the outset their only source of income, Peruvian drivers began by complementing this job with others available. Only with the time and difficulty of finding other jobs is that they became dedicated exclusively to applications. It is not possible to say that the Peruvians interviewed in this study have had a similar trajectory.

This constitutes their only source of revenue[22]. While some informants have worked with more than one application, they have usually abandoned one to work on another.

During the investigation it was not possible to find an estimate of drivers working with taxi applications in Peru[23]. However, although the sample of interviewees is not representative, it can help us identify some important features. Unlike drivers of delivery applications, the seven interviewees who work or worked in taxi applications are over 30 years old, and five of them are over 40 years old. They all have Peruvian nationality, a fact that seems to reflect that the presence of Venezuelans on these platforms is considerably lower. As in delivery applications, women represent a minority[24].

The path of these drivers has marked differences from those working in delivery applications. Because taxi platforms have more time on the market, most interviewees have been working on them for more than two years. Many of them have previous experience as taxi drivers or carriers of different types. In fact, among the older interviewees are taxi drivers whose path dates back to the 1990s. These people have not radically changed their occupation, but have entered applications related to activities they previously carried out.

> I've been driving for 28 years. So, I've spent more time working in public transport and then I switched to taxi transport, and I've been happy. So I stayed for a lot longer (...) There are very good customers, so I stayed at that job because I liked it. I had enough for my house and my children, and everything was going well before the pandemic. Because after the pandemic I haven't been able to work due to what has happened (taxi applications driver, 45 years old).

On the other hand, while applications represented the main source of income for some of these pre-pandemic drivers, they were in no case engaged in one of them exclusively.

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[22] On social media, some delivery men offer their services as freelancers. However, none of the interviewees said they had developed this strategy.

[23] Some platforms provide information about the number of drivers registered globally. Beat, for example, indicates on its website that it has over 600 thousand registered drivers in 23 cities, located in 6 different countries.

[24] However, as shown in Table 1, of the seven interviewees, four are women.

This activity was complemented by offering rides to private customers, who requested the taxi service directly from the driver on the street or by telephone. Orders can also come from WhatsApp groups, whose dynamic will be explained later. Likewise, there are several drivers who work with more than one application at the same time, taking rides from the one where the service is requested[25]. In this way, while in all cases taxi service constitutes or constituted the main source of income for respondents, the rides they take during the day come from different sources.

> For some years I have been working with application B and I also have clients who call me to do hourly taxi transport services or to take them somewhere and then pick them up, because my car is a taxi. It has all the taxi requirements, and sometimes I also work on the street, as we say. I work with those 3 services (...) Now the one that is providing me with the most income is the private service with my clients and working on the street, because application B, as a result of the pandemic, has little work, the demand is low and the commission paid is also very high (taxi applications driver, 47 years old).

As can be seen, drivers of taxi applications and drivers of delivery applications make up two groups that, at first glance, are quite different from each other. Interviewees from both groups differ not only because they belong to different age groups, but also because of their career paths. The way digital platforms integrate into their revenue strategies is also different. While delivery application workers concentrate their efforts and workforce on a single application, those who work in taxi applications complement the revenue of these platforms with other types of rides, because the service features they offer allow this. It could be affirmed that, to a certain extent, these drivers are the ones who have greater autonomy compared to digital platforms.

However, drivers of taxi applications and delivery applications share some characteristics. In both groups, women continue to be a minority. It is interesting to note that the differences related to the category of the platform are more relevant at this level than those related to the affiliate's gender. On the other hand, for all those interviewed, the work provided by digital platforms was their main source of income, at least until

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[25] Applications are also a source of potential private clients for a driver.

the start of the social isolation measures taken by the Peruvian government in March 2020. The characteristics of the working relationship they maintained with them, therefore, acquires a fundamental importance. It should be taken into account that practically all drivers have worked with the same applications for months or years, often uninterrupted[26]. This could lead to question the claim that this type of work is temporary, a conception that underlies the term gig economy (Woodcock & Graham, 2020). While each ride can be considered as a service performed independently, in reality many of the drivers look for work with applications to provide them with constant income, significant for their family finances.

6. Digital platforms, face-to-face tasks: Characteristics of the work of taxi and delivery application workers

As mentioned above, when working with one or more digital platforms, drivers acquire the responsibility of carrying out a series of face-to-face tasks. It is these services that are offered to customers in the applications and web pages of the companies, which acquire (at least in theory) the role of intermediaries between users and drivers. In general, the latter must download a different application than the one that clients have, from where they are assigned paid tasks. Depending on the application, the driver may choose to select which tasks to accept and which not.

Of course, the main responsibility of drivers of taxi applications is to take people from one point to another in the city, according to what is indicated by the platform. Although they have the possibility of accepting or rejecting rides offered by the application, they do not always have the freedom to choose where to go[27]. In addition, they must ensure that the trip is pleasant for the user.

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[26] Only one interviewee worked for less than a year with these applications, leaving work later. Even in this case, this activity was its main source of income.

[27] When it entered the market, application B was the only one that allowed drivers to see the user's destination, information that many consider necessary to accept or reject a ride; today, it has become a general practice.

Therefore, drivers have a responsibility to be friendly[28] and keep the vehicle clean. Applications such as S, E, and C require that all registered vehicles undergo a periodic review at the premises of the corresponding company, where it is assessed that they are clean and in good condition. It should be noted that the applications only accept vehicles up to a certain number of years old. While applications such as U accept cars until 2008, application B is the only one on the market that allows car drivers with cars starting from 2000.

Ensuring good customer treatment thus acquires a central importance, a fact that is affirmed by all those interviewed. For most of them, the main quality that an application driver must have is knowing how to be kind to the public, regardless of the circumstances. It is also necessary to know how to keep the vehicle clean, tidy, and in good condition. For some, these qualities would differentiate application drivers from other taxi drivers, who would provide a lower quality service.

> We must also be aware of that. For me it's not a matter of just getting into the car and driving, no. You always have to be aware of everything that happens, aware of what happens inside your vehicle, of what happens outside, it's always good to be aware. So that's what makes the difference in my opinion, between us. Because almost all the people I know have almost the same way of working. And with taxis, everyone complains about the same thing, that the cars are in poor condition, they are dirty and the person who takes you starts arguing with people outside the car, that is, they do not respect the passenger (...) That is why people prefer applications over taking taxis on the street, those that say authorized (taxi applications driver, 43 years old).

Other qualities that drivers should have, according to what some interviewees indicated, are knowing the city and knowing how to handle driving applications, such as Waze. As the longer-running taxi drivers show, the existence of these applications has made the driver's job much easier (as long as the driver knows how to handle them). Even so, it is still necessary to know the city to avoid dangerous areas and thus prevent possible theft.

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[28] In some cases, to provide better customer service, drivers must follow certain service protocols. This is the case of the application S, in which all drivers are required to wear a uniform and load the passenger's suitcases. Until recently, they also had to knock on the users' door and open the vehicle door for them to enter. According to one interviewee, these additional protocols were related to the higher cost of the service and its target audience.

Within this general framework, applications of this type offer several services with different participation requirements. In addition to regular service, there are several platforms that offer low-cost services, the characteristics of which vary. The cheapest service in application B, for example, is the service in which older vehicles (years 2000 to 2008) participate[29]. Platforms also often offer a range of services that are more expensive than regular taxi. One of them is transport in van vehicles, where more people can fit. A luxury service is also often offered, in which only drivers of SUV of specific brands and models can participate. Finally, applications such as C have executive fees for transporting staff from a company.

Drivers who work in delivery applications interact much less with their users. As has been anticipated, they are responsible for picking up or buying a product and transporting it to the customer's home. In applications such as R, drivers are given the ability to accept or reject a ride. However, this freedom is limited by the fact that a rejection has a negative impact on the driver's assessment within the application, which can lead to a lower number of orders being assigned or even to a disabling[30]. When a ride is accepted, the application enables a chat from where the assigned driver can coordinate with the user. Once at their address, the product is delivered following a protocol.

Drivers can fulfill different types of requests. The most frequent, as already mentioned, are those of delivery of prepared meals in restaurants and "allied" chains. In addition, they can collect and transport other types of products, coming from "allied" stores and shopping centers, and perform the delivery service. Application R also offers a range of additional services, in which the driver is also responsible for purchasing the product. This is the case of purchases in unaffiliated stores (called "cravings" by the interviewees) and in supermarkets. If the latter includes a large number of products, the service is performed by car or van drivers, who have recently joined the platform.

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[29] Application U, on the other hand, offered a collective taxi service until before the pandemic, the cost of which was radically lower than that of the regular service.
[30] The assessment mechanisms are further discussed in the next section.

Delivery applications assign drivers some additional obligations, the fulfillment of which goes beyond making single trips. According to one of the interviewees, those who work for the first time with application R must necessarily stay connected for 12 hours in order to be finally admitted. Working a minimum of hours is also a requirement to stay in the application in cities like Piura, where the number of drivers is less than that of Lima[31]. In general terms, and as has been noted above, accepting a certain number of orders per day ends up being a responsibility for drivers, whose non-compliance is severely sanctioned. Also, applications such as R and G require those who work with them to keep their backpacks in good condition, changing them periodically.

In order to comply with these activities and obligations, the interviewees consider that a cyclist or motorcycle driver must have a series of qualities comparable to those indicated by the taxi application drivers. Knowing the streets of Lima is important to be able to deliver orders on time, as well as knowing how to move around areas with high order demand.

> What skills? First, having good eyesight (…) Because if you don't have good eyesight, you'll be having accidents all the time (…) Second, knowing everything, most of Lima,
> right? At least where you are going to be driving, because if you don't know the streets, the map they send won't be of much use. Because sometimes they make you drive around, when you were just two blocks away (delivery applications driver, 22 years old).

It is also important to know in detail how application R works, in order to obtain a greater number of orders and avoid being sanctioned. As is evident in the previous quote, a driver must know what the limitations of the application are. Instead, user-friendly treatment is not a priority, mainly because interaction with the user is limited.

As can be seen, the differences between the drivers mentioned in the previous section are parallel to the heterogeneity of the services they perform, and which are offered by delivery applications. However, it is possible to identify some commonalities. In all cases, it is the drivers who, to a greater or lesser extent, interact directly with users.

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[31] The obligations, activities and dynamics of application R vary slightly depending on the city in Peru where the driver is. This was confirmed by one of the interviewees. Further research could help clarify whether this is the case for other platforms.

Said interaction, which occurs within the framework of the transfer of a person or product, is partly facilitated by the same platform[32].

In order to carry out these activities, drivers have to know how to use the application, but also the streets of Lima[33]. And it is that different digital tools have been developed to facilitate the transport of a driver through the city, which are used by all those who work in the studied applications. These have facilitated the work of taxi drivers and delivery men, compared to what happened in previous decades. However, there are still some problems and incidents on the routes that digital platforms do not help to solve, and that require the knowledge and expertise of the drivers themselves.

In addition, application drivers have to fulfill some responsibilities that properly exceed the services for which they are paid. This happens with the periodic reviews of the taxi drivers' vehicles and the requirement to change the delivery drivers' backpacks from time to time. This type of responsibility implies the existence of a medium or long-term relationship with the platform (which does not necessarily occur in all cases).

7. Working conditions on digital platforms from the workers' point of view

As mentioned above, digital taxi and delivery platforms constitute new and innovative business models, whose organizational structure is far from that maintained by the companies that previously operated in the field. Therefore, the relationship that the platforms establish with their drivers is also notoriously different. In fact, these are not considered as employees of the platform, but as independent workers associated with them. Advocates of this business model claim that this type of relationship gives drivers much more autonomy, as they have the possibility to manage their own time in an optimal way to obtain higher income.

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[32] As in delivery platforms, taxi applications enable a chat so that the driver can communicate with users before picking them up. It is also possible to call the user directly by phone.

[33] Additionally, some drivers pointed out the need to know the proper operation of the vehicle they drive as an essential skill to correctly develop work on digital platforms.

However, in many countries this conceptualization of the employment relationship between drivers and platforms has been severely criticized, and even subjected to legal proceedings. In the United States, for example, Uber lost a lawsuit against drivers who claimed to be recognized as workers; a California state law went in the same direction. A European Union court also ruled that the application provided a transport service, and was not a collaborative digital platform. Likewise, in Spain, the Glovo application has lost several lawsuits in which the recognition of an employment relationship with drivers was required. Although a trial of such proportions has not been carried out in Latin America, there have been significant protests of drivers of delivery applications in Colombia, Argentina, and Mexico. In Peru, in 2019 a parliamentary group unsuccessfully promoted a bill in which all those who provided services for digital platforms were considered as workers (Dinegro, 2020). The claim that drivers are independent workers is severely criticized because it contradicts what can be observed in their working conditions, turning them into "false self-employed workers." In general terms, working conditions would be detrimental to the worker, even putting them in a precarious situation (Carrión & Ticona, 2020; Isaac, 2014).
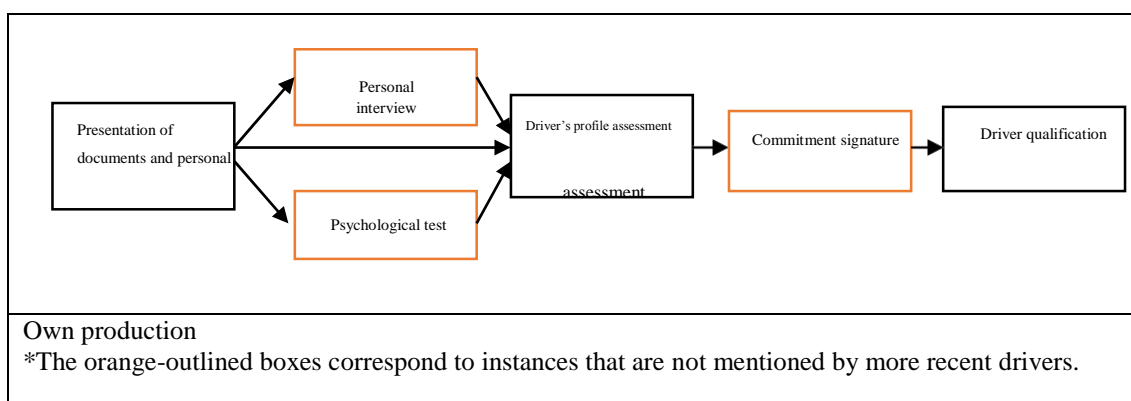
This section analyzes the working conditions of taxi and delivery application drivers in Peru in depth, with a view to better understanding the characteristics of the relationship they have with these platforms. To this end, a series of dimensions considered significant are covered, evaluating the level of autonomy and/or precariousness that workers have in each one of them. The representations that the interviewees elaborate on the actions of the companies are brought up. Both the business model of the platforms in Peru, as well as the characteristics of the relationship they maintain with the drivers, suffer slight variations depending on each case. Therefore, we will start from the reality of applications R and B, and then identify what variations this model suffers in other platforms in the field.

a) Application processes

An element that is little analyzed by the reviewed bibliography is the processes of application, selection, and affiliation of the digital platforms that offer taxi and delivery services. These processes vary slightly depending on each particular application, and have changed significantly over time.

Towards the mid-2010s, those who wanted to work on applications like B (which had only recently entered the market) had to go through a series of evaluations and filters to be selected. First, they had to submit to the platform a series of documents (ID, vehicle ownership card, SOAT, driver's license, electricity or water bills), in addition to providing their personal data (address, cell phone, email). Subsequently, they had to undergo a personal interview and a psychological examination, which took the form of an online questionnaire[34]. After an evaluation of each of the profiles by the platform staff, only some drivers were selected and invited to sign an agreement in person or online, after which they could start working with B.

Graph 1: Process of application and selection of drivers in application B in the mid-2010s

Own production
*The orange-outlined boxes correspond to instances that are not mentioned by more recent drivers.

The application process to other platforms may include some additional steps. For example, the interviewees indicated that application C carried out a physical inspection of the vehicle of each applicant driver, while application E carried out training for those

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[34] The companies had computers in their own premises, which were offered to drivers so that they could take the questionnaires online.

who were selected. Likewise, the fact that the drivers who entered the applications more recently did not have to go through instances such as the personal interview or the signing of an agreement stands out. Some of them reported not remembering having undergone a psychological examination. This fact, which is a sign of the simplification of the application process, seems to reflect a reduction in the selection filters for drivers, a fact that is critically pointed out by those with greater seniority[35].

> With the new ones they are no longer so strict. These last years, these last three or four years, I think that until 2016 they were strict. But for the last three or four years, for the new ones that have entered, the conditions are no longer strict. On the other hand, with us, who were the first, the conditions were very strict. And I was satisfied with the conditions that were strict. But the new ones don't have as many requirements as the ones who started at the beginning (taxi application driver, 47 years old).

However, in recent years an additional filter has also been added. As a result of the reports of theft and harassment against some application drivers, the platforms began to request the list of criminal records of their applicants. To obtain it, each of them had to pay approximately 20 soles.
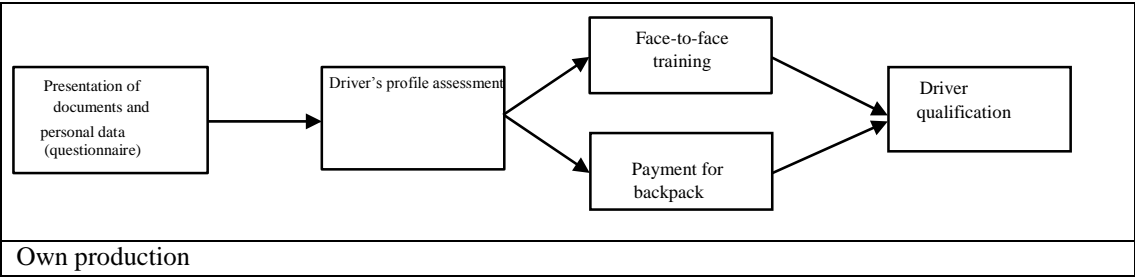
The application process to application R is comparatively simpler. At first, the applicant must fill out a form for the same application, attaching photographs of personal documents (identity document, criminal record) and those related to the vehicle they are going to use (property card, in the case of motorcycles). The admitted drivers received a text message about a month later, in which they were instructed that they had to attend the premises of the company to buy their backpack and receive training. In the latter, which lasts about an hour, the operation of the application, as well as a series of guidelines, protocols and standards to be followed are explained. After receiving the training, the driver can request the activation of their ID to start working with R.

The application process has not changed much in the short time that R and other delivery applications have operated in Peru. However, there are several interviewees

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[35] One of the interviewees linked the reduction of the selection filters with the beginning of a stage of expansion of the applications, which began to recruit more drivers to satisfy the growing demand and obtain a comparative advantage over other platforms.

who point out that in recent months a greater number of applicants are being admitted, who have to wait less time to receive a response. In the words of one interviewee, "right now in Rappi, they are admitting anyone (...), anyone can join. Before, they took the time to analyze everyone, but not anymore" (driver of delivery applications, 22 years old). The perception that new recruits go through a less strict evaluation is common, a fact that would respond to the interests of the company in charge of R.

Graph 2: Application and driver qualification process in application R

Own production

In general terms, the application processes to other important delivery applications in the Peruvian market follow this model. According to what was stated by the interviewees, platforms such as G and V take longer to admit applicants; the same would happen with R in other cities of the country. This fact would be associated with the fact that the number of drivers of these applications increases proportionally to user demand, a fact that would not happen in the case of R in Lima. On the other hand, platform G requires that all its applicants have their own RUC (tax ID). The relationship that drivers maintain with this application has important differences with others on the market, as will be shown later.

As can be seen, the application and admission processes vary according to the category of the platform, presenting greater heterogeneity in the case of taxi applications. These processes only share the requirement of the documents of the vehicle and its driver, including a criminal record certificate[36]. In both types of applications it has been possible to identify a tendency to admit a greater number of drivers in recent years, reducing in some cases the evaluation filters. This may be linked to the rapid growth of

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[36] These requirements are very similar to those that Hidalgo and Valencia (2019) have identified in the Glovo and Uber Eats platforms in Quito, Ecuador.

platforms, which require a greater amount of manpower to meet the growing demand. However, this fact alone does not explain all the changes in the application process. These are criticized and considered arbitrary by some of the interviewees who have been working longer in the application, for whom the criteria for selecting applicants are completely unknown.

b) Contractual bond and labor benefits

One of the most important characteristics of the jobs generated in the framework of the online gig economy is the lack of a long-term contractual bond, which guarantees a stable minimum income for workers. Drivers of taxi applications and delivery, who are understood as associated independent workers, are no exception. While this fact could contribute to the autonomy of workers, since they can stop working on the platform whenever they want, it also contributes to reaffirming a feeling of job insecurity. In addition, it entails the absence of employment benefits such as pension, health insurance or other guarantees. Both are characteristics of a job considered precarious (Carrión & Ticona, 2020).

These conditions are also given in the case of taxi and delivery platforms in Peru. The existing investigations regarding this last group of platforms show that it is "an economic model in which the workers are considered collaborators and in some cases, independent workers, without any type of legal, labor, economic, and social commitment involved." (Dinegro, 2020, p. 126), in which non-salary labor benefits are not offered[37]. Thus, the study carried out by the Observatory of Platforms of Peru shows that only 1% of Glovo workers have some type of labor rights (Diario La República, 2020).

With this in mind, it is not surprising that the majority of those interviewed declare that they have not signed a real contract. Few drivers recall having read and expressed their agreement with the terms and conditions documents, in which the company rules were

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[37] This situation also occurs in other Latin American countries, such as Colombia (Olivero Silva & Crawford-Visbal Livingston, 2018).

indicated or the company was exempted from any type of responsibility in certain circumstances. These documents do not include any type of benefit for the workers.

One detail to keep in mind is that some of the taxi application drivers with the longest time on the platforms remember having signed some documents by hand. On the other hand, those who have entered in the last years of the 2010s have only signed an acceptance of the terms and conditions from the application itself.

> I think so. B, I think, made me sign something (…) With the other applications, that I can recall, I just have to select "I accept" on the mobile or on the computer, I don't remember well, I selected "I accept." There were a lot of clauses and there were even in English, because they said they were foreign companies and there were things in English, so we all selected "I accept" and that is how we have worked (taxi application driver, 47 years old).

The fact that part of the documents were in English raises some doubts about the extent to which drivers are aware of the terms and conditions they sign. More recently, the working group formed by the MTPE indicated that the terms and conditions of delivery applications, which are difficult to understand because they are formal documents, were only available in the cloud for drivers for a period of between 15 and 20 days (Ministerio de Trabajo y Promoción del Empleo, 2020).

On the other hand, and due to the absence of a long-term contract, drivers of both types of applications receive very few non-monetary labor benefits. Especially important is the absence of accident insurance that covers the expenses against any eventuality that the driver or their passengers may face. According to an interviewee, taxi applications U and C used to provide free medical consultation to drivers who exceeded a minimum number of trips in a month. However, this benefit is no longer provided.

The few benefits provided to drivers are mostly promotions in the purchase of a product necessary to offer the service. The interviewees who work on taxi applications pointed out that, until a few months ago, applications such as B gave them discounts to be able to carry out vehicle maintenance (oil change, purchase tires, car wash) or buy new smartphones. In addition, they offered training to drivers at their location. The drivers of application R received from the company only a discount for the purchase of motorcycles. However, they reported that it was not possible to use it due to the lack of response from the authorized dealer.

And R apparently helps in that. They send you a message saying "we have an agreement with this motorcycle dealer. Contact them on behalf of R so they can help you," right? Then, you click the link, it sends you to WhatsApp, the WhatsApp is from a company. It is a motorcycle dealer, you text them as R told you, that is, you write, say hello, introduce yourself and give your identification. It is a scam because, how is R going to tell you to talk to a dealer on their behalf for a motorcycle and the dealer does not respond? I mean, that doesn't work, it's a scam (delivery application driver, 22 years old).

In addition to the lack of non-monetary labor benefits is the fact that digital platforms provide few or none of the supplies necessary to perform the service (see Table 2). These must be paid for by the driver himself, affecting their income and their family's finance. This situation is particularly evident in the case of taxi applications such as B, which do not offer any type of supplies[38].

On the other hand, motorcyclists and cyclists who work on delivery applications have to buy at the end of the application process a series of supplies provided by the platform[39]. The backpack that they must use to carry the products stands out[40] In application R, it must be purchased before activation through a single payment of 130 soles[41]. On the other hand, in G and V the supplies cost a total of 100 soles; this amount remains as the drivers' debt and is being deducted from their income in installments of 20 soles. Backpacks wear out with use and need to be renewed after a few months. While in G and V the renewal is free, in R 130 soles must be paid again. In the latter case, the renewal of the backpack is monitored by company staff, and failure to do so may be grounds for disabling. In this way, participation in R demands a considerable investment on the part of the delivery man, who many times is not in the conditions to face it and has no certainty that he will be able to get it back (Olivero Silva & Crawford-Visbal Livingston, 2018).

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[38] The only exception is the S application, which gives the driver a uniform, photocheck, POS, and cell phone with a data plan for exclusive use to provide taxi service. The case of this application is particular, as it responds to a business model prior to the arrival of digital platforms, starting as a company that offered taxi service through a telephone exchange.

[39] Other supplies mentioned by the interviewees who work with application G are a power bank, a jacket, and a phone holder.

[40] These backpacks have a specific design, which includes the platform colors and logo. Drivers must use these backpacks for work, and may not use another.

[41] Towards mid-2019, the cost of the backpack was 150 soles.

Table 2: Required supplies for the performance of the service provided by the company and by the worker, 2020

Platform	Supplies provided by the company	Supplies provided by the worker
B (taxi)	None	Vehicle, fuel, cell phone with data, SOAT, biosafety implements
U (taxi)	None	Vehicle, fuel, cell phone with data, SOAT, biosafety implements
C (taxi)	None	Vehicle, fuel, cell phone with data, SOAT, biosafety implements
S (taxi)	Cell phone, POS, photocheck, uniform	Vehicle, fuel, cell phone with data, SOAT, biosafety implements
R (delivery)	Backpack, biosafety implements	Vehicle, fuel, cell phone with data, SOAT, cost of backpack (150 soles)
G (delivery)	Backpack, biosafety implements	Vehicle, fuel, cell phone with data, SOAT, cost of backpack (100 soles)
V (delivery)	Backpack	Vehicle, fuel, cell phone with data, SOAT, cost of backpack (100 soles)
Own production		

Thus, the lack of a proper contractual bond between platforms and drivers seems to put the latter in a precarious situation in all cases. On the one hand, there is no explicit mechanism that guarantees its continuity over time. On the other, the non-monetary benefits they receive are minimal, and are not necessarily fully met by the company. To this is added the fact that, being independent workers, they acquire the responsibility of providing practically all the necessary supplies to perform the service, paying for their purchase and maintenance. As can be seen, the "independence" of the drivers ends up playing against them, causing them to have to incur a series of additional expenses from which the company is exempted. The case of application R stands out, which has the least amount of non-salary benefits and in which drivers are required to make continuous payments for the renewal of their supplies.

c) Mechanisms for communication with staff of the application

Understanding the communication mechanisms between drivers and the company plays a crucial role in ensuring acceptable working conditions on digital platforms. In fact, this could be considered a key component to ensure fair management within the online gig economy (Graham et al., 2020).

However, communication on digital platforms that offer delivery and taxi services in Peru is considerably limited. As will be seen throughout this section, after the initial training, drivers make use of a series of communication channels to report and resolve accidents, abuse experiences, application errors and other types of inconveniences that occur during the activities. The platform staff can also contact them to communicate certain decisions made by management or offer them a (limited) right to reply to user complaints. However, many aspects of the operation of the company and the application itself are not communicated to drivers. The lack of knowledge of the mechanisms for valuation, order assignment, and calculation of some rates is noteworthy. Some interviewees also mentioned that they are not made aware of the few benefits provided by the companies. Ignorance of key aspects of the platform's operation can be interpreted as a sign of opacity (Graham et al., 2018) and limiting the freedom of the driver.

In cases where there is communication, the means by which it is carried out are mixed, and they are not always efficient. In the digital platforms that offer the taxi services, drivers have a chat at their disposal in the application, through which they can communicate with the platform's staff. It is also possible to do so by email, by calling a telephone exchange or by going to the company offices[42]. The importance of digital media has grown over time, at the same time that various platforms suggested their drivers to make use of said means[43]

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[42] Towards 2017, application C also had hired coordinators in order to attend concerns and incidents of the drivers. This role disappeared with the growth of the platform and the number of drivers affiliated to it.
[43] The exception occurs again in the case of platform S. The interviewee who belongs to it indicates that the communication is given by telephone.

Table 3: Main communication channels between drivers and staff for applications B and
R and their assessment by the interviewees

Application B		Application R	
Communication means	**General assessment of drivers**	**Communication means**	**General assessment of drivers**
Telephone exchange	Not answering calls	Application chat	The support area takes too much time to answer and does not solve incidents
Application chat	The service is considered effective		
Face-to-face service	The service is considered effective	Contact with supervisor (via WhatsApp, call, or face-to-face)	The service offered by some is considered effective, but others are aggressive towards the driver.
Email	The service is considered effective		
Own production			

According to what was stated to the interviewees, the quality of communication by telephone has decreased in recent years. Towards the mid-2010s, drivers and users communicated through this means. Currently, the telephone exchanges of applications B and U usually do not answer, while those of applications such as C, A, and S do answer queries. On the other hand, the service is considered fast and effective when it is carried out in person, by email and through the application chat. Despite this, there are several interviewees who are not satisfied with the platform's means, considering that the responses have become more unnatural and "robotic." Thus, some testimonies show the value that some adult drivers assign to face-to-face and (especially) telephone communication as more "human" forms of communication.

> That's the issue, what I was saying. Communication should see the way of being less automatized and more human, because they have already made it more mechanized through the application, the chat (...) They should maybe go back to allowing us to communicate by phone or go to an office, so they could help you somehow, help solve the issue, right? (taxi applications driver, 43 years old).

In delivery applications, on the other hand, digital communication channels have always played a central role. In them, the majority of inquiries and claims must be made through the application's own chat, which contacts the driver with the support area.

In application R, in which this area has only Colombian staff, communication through this means is quite inefficient, and the drivers are not satisfied with it. In fact, in most cases the queries made to the support area tend to take time to be answered, despite the fact that in some cases they need to be solved urgently. Similarly, in the case of some incidents, communication may not be friendly and lead to the decision to punish or disable the driver in a way that they consider arbitrary[44]. Examples of this will be provided in the following sections.

Application R also has supervisors hired in Peru. These should fulfill the role of observing the work of the delivery men, helping them solve the incidents that they may experience. A driver can communicate with supervisors by WhatsApp, by phone, or in person. Several of the interviewees indicated that these supervisors helped them solve problems in the application and arbitrary disabling. However, opinions have also been collected that show some of them as arrogant and aggressive people, who discriminate against the driver and do not have the appropriate profile to fulfill their role. Thus, the communication channels accessed by an R driver end up being very limited.

> Support is based in Colombia. Support is not based here, it's not from Peru, it's from Colombia. Support is crap and doesn't work. So, if it does not work, I would say that they teach the supervisors that they have to help us in our issues, in what we need (...) We're really helpless since there is no one to turn to when one has issues, and you have to look for them, also the supervisors so they can help you (delivery application driver, 30 years old).

d) <u>Managing risks and abuse experiences</u>

According to Graham et al. (2020), an essential component of fair work on digital platforms should be the mitigation of the risks that their workers may face. This is especially true in the case of taxi and home delivery applications, whose drivers are

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[44] The situation is different in applications G and V, where communication is usually quick and effective, according to the interviewees.

exposed daily to assaults and accidents when going out on the streets. However, within the framework of a precarious working relationship that provides very few non-monetary benefits to workers, companies do not assume any responsibility for incidents that they may experience (Hua & Ray, 2018). The lack of measures by digital platforms seems to be a recurring fact in Latin America[45]. Thus, for example, most of the cyclists of delivery applications surveyed by Hidalgo and Valencia (2019, p. 31) reported that they had faced violence while carrying out their activities and had not received any road safety information from the platforms.

Similarly, taxi application drivers do not receive any kind of support from the platforms in the event of an accident or harm in any way. In many cases, the company is not directly responsible in case something happens to customers during the ride, this responsibility falling on the drivers themselves. Both have the sole financial support of the vehicle's SOAT.

Some drivers have also been victims of assault inside their vehicles. And the fact is that criminals pretend to be users of the application (often using stolen cell phones) and request a ride, and then assault the driver and steal cash, cell phones, and electronic devices[46]. When this happens, the driver himself must go to the police station to make the corresponding report. The company is not responsible for any of the expenses that the driver has to incur, limiting itself to expressing their support through a statement and suspending the offender's account. Likewise, most platforms do not take any preventive measures against a possible assault[47], nor do they indicate to drivers which areas of the city could be dangerous. The drivers themselves must infer when they are in a dangerous situation and which areas they should avoid.

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[45] On social media, people may find delivery organizations accounts from different countries that report from time to time the occurrence of accidents and thefts, to which the platforms do not take any significant action.

[46] The frequency in which these thefts occur is not the same in all applications and modalities. According to what was stated by some interviewees, the drivers of low-cost services in popular applications such as B and U are the most affected. In contrast, executive or luxury service drivers have a lower risk of being robbed, due to the areas they travel through and because they do not handle cash.

[47] Applications C and S are an exception. Drivers interviewed stated that, faced with a possible assault, they had the opportunity to communicate with the platforms by telephone. The staff who attended them reviewed the profile of the requesting user, identifying whether or not they were suspicious.

This situation is pointed out by several drivers as a problem to be solved by the platforms. Some of them express the lack of support from the platforms, feeling scared to use some applications or to travel at certain times in some areas.

> The disadvantage that I find is in the benefits. If I get sick, I have an accident or something else, the only thing that can help me is the SOAT, nothing else, and my car insurance. But if we get sick or something, we have nothing, that is the only disadvantage. When you work for a company, you get sick, they give you sick leave and you continue receiving your salary,
> right? You go, you have insurance and they take care of you, but we don't, we don't have any of that. That is what I could say, for me it's a disadvantage (taxi applications driver, 43 years old).

Drivers of delivery applications are in an even more precarious situation. In the Facebook groups that group R drivers, there are frequent reports of assaults and robberies of cell phones, cash, and even the vehicles. As in taxi applications, criminals often pose as users and request delivery of orders to a specific place, where they carry out the assault. This situation is exacerbated because many of the newer drivers do not know which areas of the city are dangerous.

The responses to an accident or assault vary depending on the application. In the case of V, for example, the driver can communicate with the platform to request the cancellation of the order without any additional charge or penalty. Dinegro (2020) presents the case of a young Venezuelan who suffered an accident where he lost a leg. Faced with this situation, the company only expressed its solidarity with the delivery man, showing its willingness to provide information to the authorities. In this and other cases of accidents, all recovery costs are borne by the worker himself, who has to make use of his SOAT.

Application R has an emergency number, but it does not answer the calls from drivers who are in risky situations. In fact, there are frequent cases of drivers who suffer assaults and end up being disabled for not having delivered the order. Faced with this fact, it is they themselves who must communicate with a representative of the platform and process the complaint at the police station.

Image 1: Complaint from a driver of application R, who, after being assaulted, was disabled by the platform

Due to the type of activity they carry out, drivers of delivery applications can also go through experiences of abuse and discrimination. This happens due to the hierarchies of race, gender, and citizenship that tend to be reproduced in this type of work (Hua & Ray, 2018). Studies such as the one carried out by Hidalgo and Valencia (2019) show that many delivery application drivers are victims of racist or xenophobic verbal violence by users, "allied" stores, and pedestrians themselves.

In general terms, the drivers interviewed have been victims of some type of aggression by users. This is normally due to the discomfort of the latter for some flaw that they perceive in the service, such as the delay in the ride, the perception that a vehicle is not clean enough (in a taxi service) or that the product received is not properly packaged. In many of these cases, the drivers are not directly responsible for the situation causing the discomfort. The attacks are usually verbal, including the use of threats, insults, and names called to drivers. Some of the interviewees identified these types of expressions as forms of discrimination, through which users disparage drivers due to the work they do[48].

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[48] Interestingly, none of the interviewees claimed to be a victim of racial discrimination or xenophobia, and very few indicated that they knew drivers who had been. This fact draws attention, as other studies show the importance of these forms of discrimination in delivery applications, where a significant group of drivers are Venezuelan (Hidalgo & Valencia, 2019)

In that sense, yes, more than anything [discrimination] comes from the user, many times because they believe that they have certain rights because they pay for the service and they want to treat you as if you were anything, and the truth is that it is little things that are not fair because I believe that we are all the same, not because you have more or less money, you are different from other people (taxi applications driver, 49 years old).

In some cases, the user may even attack physically. Some drivers of taxi applications remember users closing the car door violently, or leaving the vehicle dirty. The interviewees of delivery applications, on the other hand, mention experiences of delivery men being severely beaten.

Once, last year, a colleague from Venezuela had a take-out order from McDonald's (…) McDonald's, due to this new ecological trend, no longer gives bottled soda but uses those little cups (…) the soda was spilling and then my partner came to deliver the order, right? And the customer realizes that the soda is missing a little because it had been spilled. And the customer says "hey, you drank from my soda" and he said "oh, no, no, sir, (…) in any case I'm going to contact McDonald's so they can make better cups." And my partner was already leaving, when the man grabbed the things, gave them to his partner and went over to my partner. He grabbed him by the neck and started hitting him on the back of the neck (…) and then the man's mother came out, right? And my partner, in order to get rid of the man, pushes him, He pushes him and the man stumbles, but nothing happened to him, he just stumbled. And then, the watchman came up after a while and asked: what's wrong? And the man and the woman begin to say, "You come here to disrespect and to top it off you are drunk, you are drunk" (...) And my partner tells me that the man began to tell support that he had been arrogant, that he had thrown the order, and when the man complained, he started hitting him, that is, the delivery man started hitting
him. In other words, he lied to support and after a while, support called him and asked him what had happened and my partner explained to them and support said "ah, okay" and hung up on him. After a while my partner had been disabled (delivery applications driver, 22 years old).

The measures taken by each platform against this type of aggression vary, but in no case are they satisfactory for the driver or result in a sanction for the user. This, on the other hand, can harm the worker directly or indirectly, a fact that the platforms do not mention or end up supporting the user.

In the applications that offer taxi services, drivers can submit their claims to company staff. This staff responds that it "will take into account" the behavior of the user, without directly sanctioning them. Instead, abusive users can harm the driver by giving them a low rating. In application R, there are also possible repercussions of a claim submitted by the aggressor user. As seen in the previous testimony, in these cases the support area communicates directly with the driver to find out their version of events, but does not allow them to know what the other party is complaining about. Normally, this type of process ends up leading to a temporary or permanent disabling of the worker. It is possible to appeal this decision by contacting supervisors, who do not always decide to remove the sanctions[49].

Due to these policies, there are many drivers who perceive that the platform does not give them any kind of support, and that they rather take the side of the user. This is especially true of application R workers, who feel they are treated as if they are completely expendable.

> Mainly in claims, as I told you a little while ago, people think that the way the order arrives is the fault of the delivery man, so they rate you negatively, they rate you and they do not rate the store. So when they give you a bad rating, R disables you or… of course, they don't take your word for it, they believe the customer or the store. So as they prefer... they don't want to lose a customer, so they lose a delivery man and enable another one and that's it (delivery applications driver, 26 years old).

In R, the situation of the delivery men is aggravated because they are also attacked and discriminated by the staff of the "allied" stores and the supervisors themselves. In both cases, bullies discriminate against drivers because of their role as employees.

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[49] In November 2020, the case of a Rappi delivery boy who was verbally assaulted by a user when delivering the product in a bag with a small rip came to the media. The company issued a statement shortly thereafter supporting the complaint and condemning the aggressor's actions. The actions of the company in this case do not coincide with what was expressed by the interviewees regarding the delivery platforms.

Very symbolic in this regard, it turns out that some "allies" prohibit drivers from entering their premises, making them wait outside. The case presented below is the result of this discriminatory prohibition, the breach of which by a delivery man led to him being verbally attacked by the owner of the establishment.

> Restaurants have a habit that they make delivery men wait outside, right? So I did. I understand that the restaurant doesn't have much space sometimes. So, I was waiting for my order and at the same time looking at the products because maybe I would want to buy something, right? (…) And I asked the cashier how much a product cost, right? The cashier was going to answer, but the owner interrupts her and tells me, "sir, are you R?" and I say "yes," "ah, please, delivery men from R should wait outside" and I was surprised, and I told her, I'll wait outside but I want to know how much that costs because maybe I want to buy it and she said "no, no, please, delivery men should wait outside" (…) So I went outside to wait and they called after a minute because the order was ready. I am going to register the order and I say to the lady, "ma'am, I didn't like the way you treated me because I just wanted to know how much that cookie costs and that you don't give me an answer about the cost, it doesn't seem right, it's discrimination." And the woman got upset and started yelling at me, "who do you think you are? If I tell you something, you have to do it because I'm the owner," then I started filming her, and the woman kicked me out and said "no, no, you're not going to take anything from here," and she came closer to me, she didn't push me but she approached me with malicious intent and I was backing away. Right? And she made me back away until she took me out of the store and closed the door (…) and after a while I was disabled and that was a Friday afternoon and R did not have support until Monday. In other words, I lost Friday, Saturday, Sunday, and Monday to work (delivery applications driver, 22 years old).

Also, some supervisors and hired R staff verbally assault drivers. As one interviewee points out, "they treat you like garbage. Because they think they have a position, they have the right to treat you like garbage, they insult you, they leave you. I tell you, they threaten you, they coerce you, if I don't like you, I'll disable you, and all that" (delivery applications driver, 30 years old). Faced with attacks by representatives of "allied" stores, the same procedure is followed as with users, usually reaching the same results. In contrast, there is no established mechanism to report malpractices by higher-ranking staff within R[50].

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[50] One of the interviewees states that the only way to report these acts is by directly contacting the general manager of R in Peru, who is often unavailable to help the delivery men. However, these claims would only result in the staff involved being transferred to another location of the same company, and not an effective sanct

As can be seen, drivers of taxi and delivery applications in Peru are continually exposed to a series of risks, due to the nature of their work. They are also victims of discrimination and aggression, which in some cases becomes physical. Faced with this situation, very few platforms have implemented a prevention mechanism. The support of these is usually also null when a driver suffers an incident. It is he or she who, in addition to not working for a period of time, must carry out the procedures and cover the expenses required. This situation is aggravated in the case of application R, where workers can be sanctioned in an apparently arbitrary way. All of this contributes to a feeling of instability, as all drivers are perceived to be replaceable.

e) <u>Drivers' income</u>

One of the most debated aspects of the business model behind the digital platforms of the online gig economy is the amount of money that workers can actually earn. At this level, digital platforms are characterized by not providing a fixed salary or a base payment to their workers, but by giving them remuneration relative to the number of tasks performed. In many cases, the amount finally obtained depends on factors such as the supply of workforce and the effective demand for it within a platform. According to some experts in economic development, this modality allows many people to have higher incomes than they could obtain in other types of activities, including formal jobs (Graham et al., 2018). However, there is also research that shows how the income of taxi app drivers can be dramatically affected (Chen, 2018). Similarly, in some Latin American countries, the delivery men on applications report that payment rates have been reduced more and more (Olivero Silva & Crawford-Visbal Livingston, 2018).

Algorithms begin to play an important role at this level. Not only do they determine the amount a driver will receive for each trip, but they also include incentives that encourage them to work longer hours. Due to the information asymmetry of many of these platforms, the algorithms are not known to drivers, which takes away their freedom and puts them at risk of unprofitable careers (Chen, 2018; Rosenblat & Stark, 2016).

Among the drivers of digital platforms that offer taxi and home delivery services in Peru, the aspect of work in applications that is most discussed and criticized is the income that each platform can provide[51]. Many of the interviewees started working in them because their earnings were comparatively higher than those they made in other ways. Taxi applications were in high demand, and many customers had become used to using them with some regularity[52]. Therefore, drivers received a greater number of rides through the applications than through other means. Digital delivery platforms, meanwhile, offered drivers high rates and higher pay than they got in their previous jobs.

> I approached [the R drivers] to ask them what it was like, how much they earned, what their schedules were like, all of that. And what they told me was good because… they told me that they earned twice as much as I did. I earned minimum wage (delivery applications driver, 22 years old).

> Well, it's mainly the trend. People ask for the service, as I told you, for comfort and for safety. And, of course, you're wandering, I mean, driving down an avenue and there is nothing, and suddenly the alert sound... the alert of a trip and you only have to go pick someone up, nothing else, and that prevents you from driving around and around. It's a little safer (taxi applications driver, 51 years old).

However, these potential earnings are undercut by a number of factors, the importance of which has grown over the years. One of the most problematic aspects is the process of estimating the payment for each ride. Among those who work with applications that offer taxi service, the percentage of money paid by the user that remains in the hands of the platform is criticized[53].

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[51] This is to be expected, especially taking into account the monetary income that is - along with a supposed flexibility of hours - the only benefit offered by digital platforms to their workers.

[52] As mentioned by one interviewee, until the beginning of the pandemic there were a large number of usual clients of digital platforms such as B. These also offer them a series of advantages, and with time they are used to using them.

[53] Interestingly, the rate estimation mechanisms themselves were not a matter of concern among the interviewees. In contrast, the existing literature on the subject has paid special attention to this component. In Peru, applications such as B calculate the final rate considering the kilometers to be traveled and the minutes that the ride is estimated to take, to which abase rate is added. To this amount a multiplier is added in areas and hours of high demand. Since August 2020, in said application the amounts include cents. It is important to note in this regard that the driver only receives the money corresponding to the ride, while other mobilizations that he has to make are not paid. All these aspects are not problematized by the drivers of platforms that offer the taxi service.

In application B, this fee has become 25% of the amount paid, to which a 10% is added that responds to the concept of "service fee"[54]. The amount is similar in applications such as U and C. This mechanism acquires other characteristics in less known platforms[55].

For those interviewed, the amount withheld by the company is too high. In addition, it is problematic because it has been increasing over the years. Drivers who have spent more time in B indicate that, towards the mid-2010s, the fee was only 11 or 12% of what was paid by the user for each trip. This increase, added to a perceived reduction in the rates that the user must pay, has considerably affected the income of the drivers who work in this and other applications.

> Fees are higher and rates are lower. So that has made the income lower. And even the rates are cheaper than on the street, sometimes when I work on the street, the rates are higher than those that come from the application (...) it affects us because you get used to an income and a budget, and changing it is hard. You have to adjust the budget and you have to make changes to the budget, because you also have to save because the car needs maintenance and other expenses (…) So you have to save to see that, right? (taxi applications driver, 47 years old).

> Taking 25% from us is too much (…) and in the end if you don't do those rides, you don't even see the money from the few you did (…) everyone works all day, so you spend the maximum fuel. But if they don't support us, we as drivers cannot, right now, we're not comfortable working because we don't take anything home (taxi applications driver, 34 years old).

According to those interviewed, digital delivery platforms pay drivers per kilometer traveled from the "ally" store to the point where they meet the user, to which is added what the user gives as a tip[56.]

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[54] The characteristics of this "service fee" are not completely clear, which generates suspicion among drivers. This can be understood as a manifestation of the uncertainty of the platform's rules.

[55] This is the case of application I, where the driver must make a previous payment to receive rides, which is much more comfortable in the long term. Something similar happened with application S, in which drivers had to pay a fixed amount each week. However, with the arrival of the pandemic, the latter began to charge 2 soles per ride, to later retain 20% of what was paid by each user. This change has been criticized by the drivers of the platform, for whom the amount is increasingly high. Finally, a different payment method is given in the case of C's corporate service, where the driver is paid by hours of service (and not by ride).

[56] The largest proportion of interviewees who work with R indicated that they pay 1.20 soles per kilometer traveled. However, others indicated different amounts. On the other hand, tips are not always effectively charged to drivers.

The rate is very low for drivers, a fact that is aggravated by a number of factors. On the one hand, the rate has been reduced over time and with the expansion of the platform. Also, it is problematic that it does not consider the transfer of the driver to the place where he must collect the product, which can be miles away. The time a driver must spend waiting for an order, or the time he spends waiting to be assigned a task, is not considered either. In the case of application R, which does not guarantee a minimum income to its workers, this generates a high variability in income, having the possibility of earning practically nothing in a day of work.

A few years ago, drivers of both types of applications could easily access certain additional incentives and bonuses, through which to increase their income. However, these are increasingly rare. For example, towards the mid-2010s, in B bonuses were awarded for completing a certain number of rides and for recommending the application to other drivers. Currently, many of these bonuses are no longer offered, and most workers cannot access the ones that still exist. R, for its part, has a level system, which allows older drivers to access new types of orders and certain benefits. Nowadays, it is more difficult to access higher levels. Although R continues to offer bonuses, revenue boosters and order increases for those who reach a certain score or number of trips, drivers experience difficulties in the same application to meet the requirements[57]. The fact that monetary incentives are not always accessible generates suspicion among the drivers interviewed, who consider that the platform is acting arbitrarily.

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[57] In social media, there are frequent complaints from drivers to whom the application arbitrarily lowered their rating, stopped sending them orders or failed to deliver the bonus obtained.

Images 2 and 3: Complaints from R drivers through social media related to problems in estimating payment
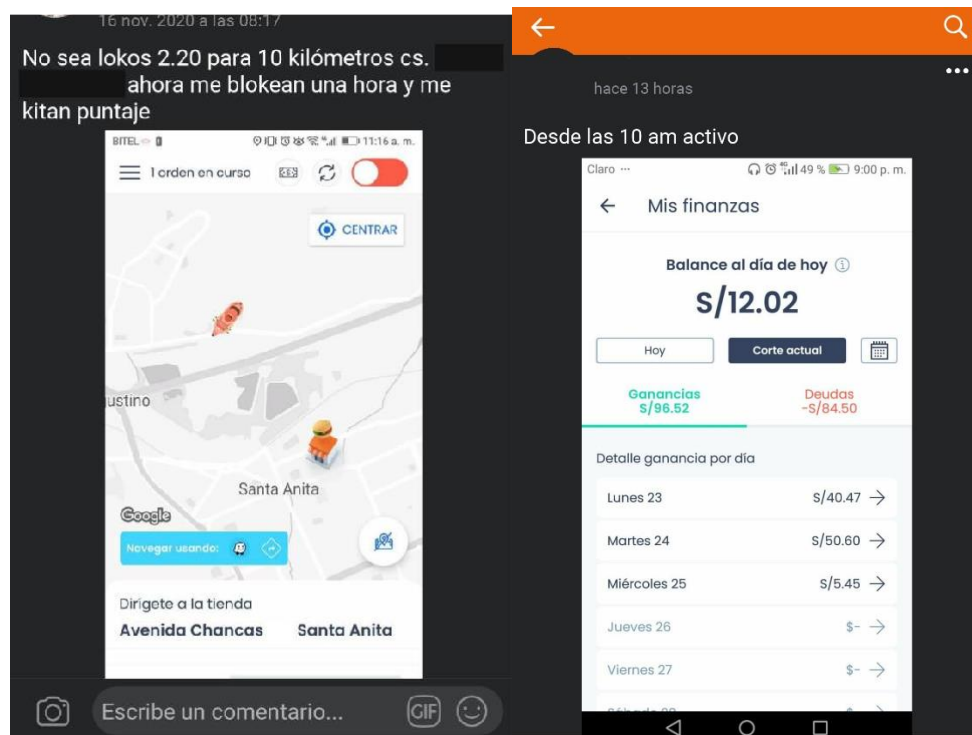
The only benefit they give you is a ride benefit, "we'll charge this amount," and they give you a bonus. Sometimes the bonuses are true, sometimes the bonuses never arrive. It has happened to me that I recommended someone, and they were supposed to give me a bonus, but they never did. They tell you one thing and then they don't give it to you. Those little things make them untrustworthy (taxi applications driver, 45 years old).

In the case of application R, in addition to all the aforementioned, the income of the drivers is affected by the high competition between the delivery men and the debts that they must take on when a user cancels an order that has already been collected, which amounts at the total cost of it. The only way to cancel the debt is to deliver the product to R staff at one of their locations. This policy, which is not found in other delivery applications[58], also makes them lose working hours. In addition, it is considered by them as highly arbitrary.

We have the concern, the annoyance of going to R's office because for whatever reason they canceled an order and the customer is charged. But they put a debt on us for the order (…) G doesn't work like that. If the customer cancels it, the delivery

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[58] In applications G and V, the driver is not charged an amount when the order is canceled. Similarly, the research carried out by Dinegro (2020) shows that Glovo pays drivers 2.5 soles when an order is canceled.

man can either eat it or give it away (…) What does R do with that? They take all the products they have and leave them there, and they eat it or I don't know (driver of delivery applications, 30 years old).

As a result of all these factors, according to the estimates of the interviewees, a driver who offers a regular service in taxi applications can earn between 40 and 200 soles for a full day of work[59], while a delivery person earns between 20 and 120. A driver's income can vary considerably depending on how demanded a service is on a given day, time or place (see, for example, Image 3)[60]. While they can maximize their income by working in hours and areas where the service is highly demanded, they can never fully control these factors. This situation is aggravated because the vast majority of applications do not have mechanisms to ensure a minimum daily payment[61]. Taking into account that it is the drivers themselves who have to bear the expenses for the maintenance of the vehicle, the acquisition of cell phones with a data plan, the purchase of the backpack and their own food; there are several interviewees who indicate that the income does not meet their expectations and sometimes does not allow them to obtain a real profit.

> There are people who do well one day and not very well the next day, and not well the next day, and very well the next day. Because there are times when there is no work all day, and all work arrives at 7 at night, and from 7 to 10 at night you can only earn 30 soles. Now, if you go home with 30 soles, that's what I spend every day. I spend 30, I personally spend 30 soles a day. In the end, it's 12 for gas, plus 10, plus 15 for food. And besides that, a coffee, a soda, cigarettes, you know? (delivery applications driver, 30 years old).

> Driving a taxi has its times, right? There are times when, yes, demand is good and income is higher, it's good, and there are times when income is low and you have to adapt (...) What I have to do is try to do as many trips as possible to earn a little more money. That's it (taxi applications driver, 47 years old).

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[59] On the other hand, one of the interviewees, who has an SUV and offers the highest cost service, indicates that she earned up to 300 soles a day.
[60] This situation is also fostered by the automatic implementation of rate multipliers in high-demand areas.
[61] According to one of the interviewees, an exception would be application G. This would guarantee drivers - who previously select the hours when they are going to connect - that they will receive orders. This guarantees them a minimum stability, although it also reduces the maximum income they can earn.

Faced with this reality, the drivers of both types of applications develop a series of strategies to maximize their income. On the one hand, they try to work a greater number of hours a day, especially at times and places where the demand is highest. They can also rent their accounts to other drivers during hours or days when they are not going to work[62]. Drivers of taxi applications take advantage of digital platforms to get potential clients of their own, where the relationship with the application is no longer needed. As mentioned above, this group of workers can complement their income by making rides for their own clients or for people picked up on the street.

A final aspect to take into account are the mechanisms through which the payment to drivers is made effective on digital platforms. These mechanisms are quite similar on both types of platforms, and depend on the way the customer has paid for the service. When they pay in cash, the driver keeps the money and acquires a debt with the application. If they pay with card, the money goes directly to the company and the driver's debt is reduced; in fact, the company may incur a debt with him.

Most platforms pay their workers the amount they are owed on a weekly basis. In all cases, payment is made by interbank transfer, reaching the drivers' accounts. In B, however, they must have an account in their favor of more than 35 soles to just receive the money, which prevents them from making use of part of their earnings. On the other hand, if the driver's debt with the platform is very high, he must make the corresponding deposit. If the amount owed is too high (30 soles in B and 50 in R) there is a risk of being disabled until the debt is paid. In application R, workers have the possibility of depositing all the money they received in cash, to receive all their earnings by means of a bank transfer. In all these cases, platforms are increasingly choosing to make use of digital media to transfer money[63].

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[62] With the start of quarantine and the implementation of biosecurity protocols, which require the driver to go through an inspection, renting accounts becomes more complicated. However, to this day they continue to offer and search for rented accounts.

[63] For example, the interviewees state that in application R, drivers had to deposit the amount they owed to the company through Kasnet agents. This was complicated, since they do not operate at all hours or in all areas through which drivers travel. Now, instead, R has enabled the option to make payments through Internet Banking. Likewise, this same platform used to deposit the amount to be paid to its drivers in a specific type of card that could only be used at GlobalNet ATMs, which charged a commission of 4 soles for each operation. Now, instead, the company has chosen to make interbank transfers.

As can be seen, there is the possibility that a driver of taxi and delivery applications is relatively well paid. However, in general terms the mechanisms for estimating the payment and the amount it acquires are not satisfactory or beneficial for drivers. The rates stipulated by the platforms have been reduced over time, which progressively reduces the income that they may have. In this way, as in other cases studied, digital platforms dramatically affect the income of workers, to the point that it is much more profitable to perform tasks outside of these.

One point to keep in mind is that drivers' income largely depends on factors that they cannot control. Thus, the final rates are calculated by algorithms that are not completely known by the drivers and that take into account the user's requirements, the dispositions of the company, and the demand for the service at a certain time and place. On the other hand, factors such as the effort of the workers, their expenses, or the trip they have to make to start the service are not considered. Demand is another important factor, which determines the number of tasks finally performed by the driver. Faced with all this, a driver can develop strategies that help them increase their income. Even so, the fact that much of their income depends on external factors that are not completely predictable or known puts drivers in a situation of constant instability and uncertainty.

f) <u>Flexibility of working hours</u>

The flexibility of the working hours of digital platform workers constitutes another critical point in the online gig economy. This is a central component of "autonomy" that does not occur in other types of jobs, where all employees are assigned a fixed job. However, this independence could be limited by a series of factors identified by some specialists, such as work overload and intense supervision of remote work. In addition, digital taxi platforms would carry out a "soft control" of their drivers, suggesting directly or indirectly that they carry out rides on specific days, hours, and places,

through multipliers and messages determined by an algorithm (Rosenblat & Stark, 2016). These control mechanisms and exercise of power relativize and question the independence offered by digital platforms.

The information obtained allows us to affirm that all these control mechanisms are present in the platforms that offer taxi and delivery services in Peru. Certainly, many drivers enjoy greater job flexibility than can be found in formal jobs. In many cases, it is they who ultimately have the final say in deciding when and where to work. This factor played a fundamental role in the decision of several drivers to start working on digital platforms, and it is a factor that some of them still consider to this day.

> Basically, what keeps me going is my being able to manage my time and also being able to take care of other things at home, my children. That is what basically motivated me and it has given me results, it's been good to me, it allows me to have an income, to work and to manage my time and how much I want to earn, because I am the one who, in the end, if I work more, I earn more (…) That is what motivates me, the independence. I've worked many years with schedules, in an office, but I got tired and said "ok, let's find something that no longer ties me to a schedule, to an office" (taxi applications driver, 43 years old).

> Of course, I was obviously looking for something different from what I was doing before, and that is working in delivery. It's completely different, I work my way, whenever I want, without the obligation to be online all day (delivery application driver, 30 years old).

However, in practice there are several factors and control mechanisms that considerably limit this work flexibility. The first is that, due to the low income that a driver receives, the vast majority seek to maximize their income by working a greater number of hours. Thus, they end up working throughout the day, taking breaks only for meals and sleep. In this regard, the interviewees who work in taxi applications indicated that, before the pandemic[64], they worked between 8 and 14 hours a day, and that they knew drivers who worked 15 hours or more. Those who work on digital delivery platforms reported working between 6 and 15 hours a day. The large number of hours that some drivers work in order to earn enough income to cover their daily expenses and income expectations represents a risk to their health and well-being. It is also a clear indicator of labor overexploitation. Of course, having the need to work longer hours to earn enough

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[64] The social isolation measures ordered by the Peruvian government during 2020 radically changed the working hours of drivers, as will be seen later.

income, certainly the possibilities of deciding when *not* to work are limited.

Table 3: Number of hours a day dedicated by interviewees to work with
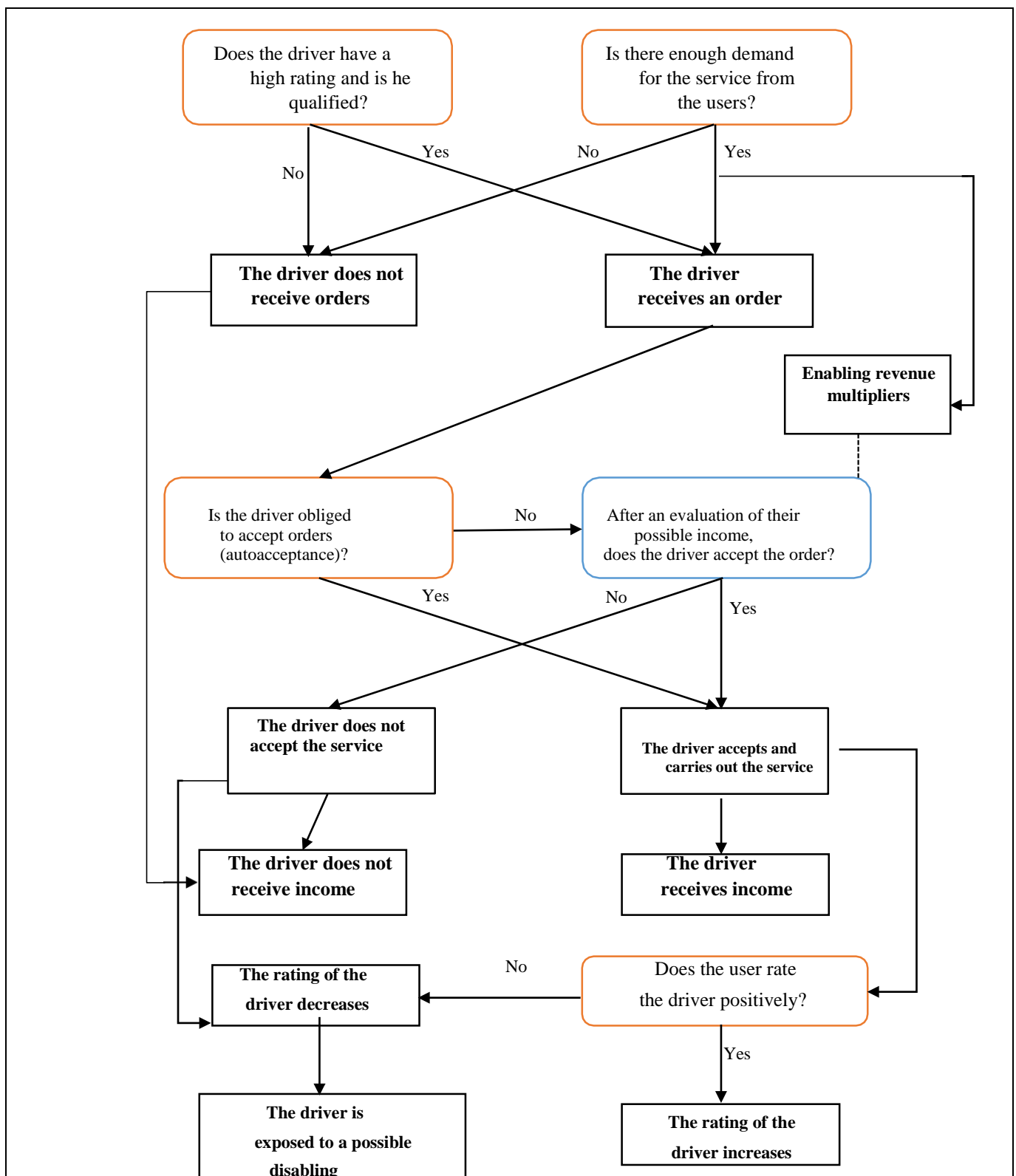applications before the pandemic

Delivery applications		Taxi applications	
No.	Working hours per day (approx.)	No.	Working hours per day (approx.)
1	10 to 12 hours	6	8 to 9 hours
2	9 hours	7	10 hours
3	10 to 12 hours	8	9 hours
4	15 hours (to receive 100 soles)	9	12 to 14 hours
5	6 to 9 hours	10	8 to 12 hours
Own production			

The digital platforms studied also present "soft control" mechanisms (Rosenblat & Stark, 2016), which direct drivers to work at specific hours. In taxi applications such as B and U, the rate multipliers (therefore, income) are frequent when the demand for the service is very high. In addition, some interviewees refer to eventual bonuses that would be granted to those who drive for a greater number of hours.

> I've always worked during the day, never at dawn. Maybe sometimes I worked at dawn to take rides that Beat offered because the amount offered was a little higher, and if you took them, they would offer bonuses, and they gave me those bonuses immediately (...) What happens is that the longer you are online, the more rides they offer. For example, in Cabify, if you're not online and you're taking rides from other apps, they turn off the application (taxi applications driver, 43 years old).

These mechanisms occur more directly in distribution applications, such as R and G. In the latter, the driver must indicate twice a week at what times of the following days he will drive, and must commit to complying with them. In R, although commitments of this type are not established, the number of orders that a driver can receive is drastically reduced in hours that are not the highest demand. Seeing that the income in these hours is minimal, there are several interviewees who prefer to be online when the demand is greater.

Graph 3: Decision making in the assignment, acceptance, and rates of rides. The orange boxes correspond to variables that do not depend on the driver, the blue boxes to decisions made by the driver.

Does the driver have a high rating and is he qualified?

Is there enough demand for the service from the users?

Yes No Yes

No

The driver does not receive orders

The driver receives an order

Enabling revenue multipliers

Is the driver obliged to accept orders (autoacceptance)?

No

After an evaluation of their possible income, does the driver accept the order?

Yes No Yes

The driver does not accept the service

The driver accepts and carries out the service

The driver does not receive income

The driver receives income

No

The rating of the driver decreases

Does the user rate the driver positively?

Yes

The driver is exposed to a possible disabling

The rating of the driver increases

Source: Own production
*In the case of application R, compliance with a series of criteria (acceptance, completion, and time) is added to the positive rating of the user.

The main benefit for me is that I kind of manage my time, although not entirely because if I don't go out and work, I don't make any money, and if I work for just one hour, I don't earn enough, so I have to work during rush hours. Rush hours refer to lunch and dinner (…) If you don't go out at those hours, you're not making money. So saying you can work at any time is not true. No, that's a lie. And there in Lima, well, in Lima, they don't make you stay online, but in Piura, you have to be online, and they even tell you that if you're not online, they'll disable your account (delivery application driver, 22 years old).

In this last quote, a final control mechanism is made manifest that is directly contradicted by the autonomy offered by the application. And, in reality, working with the application for a certain number of hours is mandatory to continue using the platform. This is particularly evident in some situations within delivery applications. As already mentioned, G drivers commit to driving a minimum of hours and newcomers to R must stay connected for 12 hours. In addition, those who work on the latter application in cities like Piura, must stay online for a minimum of hours. The platform coerces them through their supervisors, who warn them that their accounts could be disabled or could bring in new drivers, an action that would reduce the number of orders per driver. Outside of these special cases, in general terms staying offline for a long time can lead to disabling, making it impossible to work with the platform.

They closed my account in V because they were not working anymore, when I logged in, they wouldn't let me and I didn't know why (...) In R, they disabled my account because I wasn't online long enough (delivery applications driver, 22 years old).

The managers of some of the taxi and delivery applications present in Peru point out as an advantage that they allow drivers to obtain additional income during their free time. This statement contrasts with the reality of many workers, who have platforms as their main source of income and give a significant part of their time to obtaining income from them. For them, companies certainly guarantee some level of flexibility in schedules. However, this autonomy is very limited by a series of "soft" and direct control mechanisms that make many of them remain online at certain times of the day.

The driver is - in most cases - the one who ultimately decides when to go online and which rides to accept, and considers his own interests when making decisions about it.

However, as is evident in Graph 3[65,66], this choice is only possible by virtue of a series of factors on which the driver has little or no influence, which he must take into account. It must also be taken into consideration that the decision to reject a ride can have negative consequences for the driver (decrease in rating or disabling), while continued acceptance is encouraged and even rewarded. These factors are decisively influenced by company policies and the level of demand for the application, mediated by a series of algorithms. As a result, it is possible to affirm that digital platforms exercise "soft control" over the choices and behaviors of their drivers. The interviewees are more or less aware of this situation.

Of course, it is possible to make a comparison between these conditions and those of an independent taxi driver. Indeed, the number of rides that a "street" taxi driver performs also depends on a series of factors that he cannot control, among which the level of demand for the service at the time and in the place where he is traveling stand out. However, when working with applications, these conditions not only end up being institutionalized, but are also mediated by digital platforms and their algorithms.

g) <u>Valorization, penalties, and errors in applications</u>

Digital platforms not only exert some control over the working hours of their drivers. Through rating and penalty systems, they also monitor and control other aspects of their behavior towards users and the company itself. These systems, which are largely managed by algorithms previously established in the application, usually make users participate in the monitoring and assessment of drivers (Rosenblat & Stark, 2016).

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[65] Graph 3 mentions the "auto-acceptance" of orders. This term refers to a working mode in application R, which drivers have the possibility of activating or deactivating in their accounts. For those who have auto-acceptance on, R automatically assigns tasks to them. The driver has no possibility of evaluating and rejecting orders, seeing their autonomy reduced even more. Platform R promotes the use of this modality by offering rewards to those who activate auto-acceptance. These drivers gain, for example, access to the "streak" (see footnote 81). However, these benefits have as a counterpart that some of the assigned rides are extremely disadvantageous.

[66] In the case of application R, compliance with a series of standards is added to the user's rating, as we will see in the next section.

However, like other algorithm-driven systems, they are (at least in part) unknown to workers. According to some researchers, it may include ambiguous or arbitrary criteria that do not depend directly on the driver's performance. All this would generate concern among workers, who often do not know how to maintain good ratings (O'Neill, 2018).

As in other cases studied around the world, the platforms that offer taxi and delivery services in Peru have driver ratings systems[67]. The criteria behind these systems are established by the company, managed by an algorithm within the application, and used by the user to rate the performance of each driver. This situation gives the first two actors some power over the performance of the latter, who is under constant observation. The rating systems are relevant for the driver as they affect the income that they will be able to obtain at the end of the day. Thus, a high rating will allow them to access a greater number of rides and additional benefits, while a very low rating may imply a drastic reduction in assigned services or permanent disabling.

In application B and other platforms that offer the taxi service, the performance of the driver in each ride is rated by the user on a scale from 1 to 5. The user can also add additional comments that, in theory, can help to improve the service offered. Although this mechanism was not questioned by the interviewees, certainly the user's rating can respond to criteria that do not depend directly on the driver, such as the time they took to complete the ride.

The rating system is more complex in application R. In this application, drivers have 3 different ratings or "rates," which respond to different criteria (acceptance, order completion, time of order completion). To receive a greater number of orders, it is necessary to have a good rating in the three "rates." This system, in addition to increasing the monitoring to which drivers are subjected, is problematic for those interviewed in several ways. On the one hand, the cancellation or rejection of tasks negatively impacts the driver's rating, reducing their ability to make decisions according to their own criteria.

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[67] In some applications, there are also user rating systems, managed in a similar way.

Both the lack of orders and the delay in the delivery of the product by the "allied" store also reduce acceptance rates and time, being factors over which the driver has no control. This can also be negatively rated by the user as a result of other factors that are not related to the way the service was performed. As a result, R's rating system is considered highly arbitrary. Although some drivers develop more or less effective strategies to increase their "rates," in reality, they have limited control over how they are rated.

> Currently, what's really affecting us is the issue with the acceptance rates that R has. They're giving them according to order completion time and order acceptance (...) That's what affecting us, because, for example, delivery time. While it's true that they start timing delivery time when you're making the order for delivery, the application says you'll receive your order in 45 minutes. But, what's the problem? They're not the only ones making an order. There are more and more. For example, McDonald's is chaos, Popeyes too, Bembos is also chaos because orders come in, time starts running and when we, the drivers, come pick up the order, they say it's not ready yet, that we have to wait 20 minutes, an hour, an hour and a half. And the customer contacts you asking for their order, we send them photos showing we're still waiting, that the order is not ready, and so on. And what's the problem? The ratings. Sometimes the customer doesn't know what they're rating, and they give us a bad rating. They give a bad rating to the store and to us. Time affects us because the rate goes down, the percentage of time acceptance goes down (delivery applications driver, 30 years old).

> I have the choice to get the order when I activate it, when I activate the application to receive an order, but if I, for example, see that it's too far away, we all have a 100% percentage, so they discount the percentage or the lower your rating, because we can't cancel orders when we're online (delivery applications driver, 22 years old).

Additionally, digital platforms may sanction with fines or disabling those who fail to comply with any rule established by the company or who, from the latter's point of view, have a poor performance. Again, these mechanisms are not problematized by any of the interviewees who work on digital platforms that offer taxi services. Many of the suspensions in these respond to one of the reasons mentioned throughout the section (accumulation of large debts with the company, very low ratings, lack of use of the application).

Additionally, the interviewees state that a driver can be blocked for not returning lost objects, for "hacking" the application[68] or when the car does not pass the periodic reviews carried out by the platform. Thus, through the application of sanctions, drivers can avoid certain behaviors that the company considers harmful.

Table 4: Causes of disabling and sanction mentioned by the interviewees

Taxi applications	Delivery applications
- Accumulation of large debts with the company. - Lack of use of the application. - *Very low ratings.* - Vehicle in poor condition. - Lost objects not returned by the user. - "Hacking" of the application.	- Accumulation of large debts with the company. - Lack of use of the application. - *Very low ratings.* - Lack of renewal or maintenance of the backpack. - Cancellation of an ongoing order by the driver. - *Cancellation of an order already purchased by the user (the driver pays the debt).* - *Complaints made by users and/or partner stores.* - *Platform errors.*
Own production	

In application R there are more reasons why a driver can be temporarily disabled. As in digital taxi platforms, this can happen due to accumulating large debts, having a low rating or not going online for the time required. Other causes of disabling, which are more problematic for the interviewees, are the cancellation by the driver of an order in progress, the lack of renewal of the backpack and the complaints made by users and "allied" stores. Depending on their severity, some of these offenses can lead to a permanent suspension. Additionally, and as already mentioned, drivers take on debt with R when the customer cancels an order that has already been picked up.

R's sanctions policy is strongly criticized by some of those interviewed, for various reasons. In the first place, as is the case with ratings and user complaints, the disabling may respond to events for which the responsibility does not lie with the driver. Even when they make their complaint, the supervisors and the support area staff are not empathetic with their situation. On the other hand, some aspects of the penalty policy are unclear to drivers. Taking all this into account, several interviewees consider that the disabling is arbitrary and unfair.

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[68] An interviewee mentioned that some drivers, making use of their computer knowledge, manipulate or "hack" the applications to get rides more frequently.

Rather, it would be a tool used by both supervisors and the company itself to increase their income and threaten or punish any driver whose attitude is problematic[69]. Using the disabling as a form of coercion, individual or collective claims would be avoided.

> That had a sanction at some point, when they want to screw you, you know? When they want to trick you, they say "the customer complained," and whatever, they make some report, a complaint, a complaint from them. That's how they work, that's how we work. That's the way it is (...) I mean, it's not really the sum of reports because reports are only made out of disabling. That is, it is disabled because it has 31 reports and they do not investigate why they are, but rather use it as an excuse to disable it (delivery applications driver, 30 years old).

> Yeah, well, I think that the main thing is that in order for Rappi to make some changes, the most important and essential thing is that Rappi cannot disable you arbitrarily and unilaterally. Why? Because that's why the RT doesn't raise its voice, you know? It's like blackmail (delivery applications driver, 22 years old).

The perception that R disabling is arbitrary is reinforced by the fact that, in many cases, they are due to platform errors. The case of drivers who, after suffering an assault, are disabled for not delivering an order has already been mentioned. In addition, the interviewees mention experiences in which an order in progress was canceled due to an error in the application. It is also possible that a cyclist or motorcyclist is assigned an oversized grocery order, which must be delivered in a vehicle. In both cases, the interviewees were temporarily disabled. Due to the delay in the response of the support area and the supervisors, they ended up losing workdays.

> Two weeks ago, I received a "craving" (...) that day, the application was failing, it won't let me manage the order, the management was done wrong, the app failed, it loaded incorrectly, and the order was canceled. The support team canceled it, and I was disabled due to an app error, I lost three days (...) every time an order has some error, you have to take a screenshot, or they won't believe you and close your account. I mean, I showed my screenshots. And they realized I was right (...) But they didn't give me back the two days I lost, right? (delivery applications driver, 22 years old).

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[69] According to one of the testimonies, some supervisors would use disabling to filter people with whom they or someone close to them has had a conflict. In certain cases, they would also ask suspended drivers for quotas to re-enter the platform. On the other hand, there are several interviewees who consider that the sale and renewal of backpacks has become an important source of income for R, so they would look for reasons to expel people and continually get new staff.

In this way, the systems for qualifying and penalizing drivers of digital taxi and delivery platforms in Peru are also mechanisms through which companies (and, to a lesser extent, users) exercise power over the behavior of the drivers. More than in other types of jobs, the actions of workers are constantly monitored, considerably limiting their autonomy. This system is largely mediated by the algorithms of each application, which take into account criteria previously established by the company. It should be noted that, as in other cases (O'Neill, 2018), the system is not fully known by drivers, and many of its criteria are not directly related to their actions. Drivers can certainly develop strategies to get the most out of rating systems. This usually requires performing the service strictly following the guidelines established by the company. However, it is not possible for them to fully control the variables that could affect a possible sanction or disabling.

The form the rating and penalty systems take varies depending on each platform. In applications that offer taxi service, these control mechanisms exert comparatively less pressure on the drivers, so they are not as problematic or criticized. On the other hand, in application R, temporary or permanent disabling constitutes a constant threat to which drivers are exposed, in which the direct intervention of company staff is constant. Many of the qualification and sanction criteria are arbitrary and do not depend on the quality of the service provided, which leaves drivers in a situation of permanent uncertainty. In addition, the perception (quite well founded) arises that the entire platform system is against them.

8. Collaboration and (lack of) organization among digital platform workers

A key factor in assessing the level of freedom of digital platform workers is their ability to create relationships with each other and drive joint agendas. In the online gig economy, high competition to perform a limited number of available tasks and the lack of communication channels between workers are important factors so that they cannot have a unified voice or get organized in any way (Graham et al., 2018, 2020). Despite this, numerous studies around the world have described drivers who work in organized digital platforms, promoting a joint agenda with greater or lesser success (for the case of taxi application drivers, see, for example, Chen, 2018). In Latin America, Negri (2020) shows how Rappi and Glovo workers in Argentina are able to establish relations of solidarity and collective identity, partly because of their common status as migrants. This has allowed them to begin to mobilize. The situation is different in countries like Ecuador, where few Glovo and Uber Eats drivers have belonged to some type of platform that groups drivers together (Hidalgo & Valencia, 2019).

Unlike the latter case, in the studied platforms it has been possible to identify the presence of solidarity networks among drivers, in which the vast majority of those interviewed participate. In them, face-to-face meetings and conversations are reinforced by the existence of groups on social media (WhatsApp, Facebook), which bring together a considerable number of people.

Drivers of different taxi applications, for example, tend to have lunch together and talk to each other in face-to-face meetings throughout their working day. They also participate in WhatsApp groups where they report traffic and other incidents on the routes, give advice and forward news of interest[70]. Some members of these groups share taxi orders made by their clients, which other drivers can fulfill. In some cases, the interaction on these digital platforms occurs in parallel with face-to-face meetings between drivers to celebrate birthdays or hold raffles.

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[70] The call for interviews in the present study was made through one of these group chats. The success of this call, through which it was possible to interview four female drivers, can be interpreted as a sign of the efficiency of this type of communication channels.

Well, yes, we have a lot of partners that work, in the groups we share I've found partners who work in the same applications (...) All the people I know are in that group (...) The group is made to support us in everything that may happen in the streets, notify us, right? Sometimes to give us advice or encouragement. Always, sometimes, it's a form of communication (taxi applications driver, 43 years old).

Drivers of delivery platforms participate in WhatsApp groups, but also in Facebook groups that bring together thousands of people who work with the application in Peru. In these platforms, orientation is provided to new drivers, doubts about the operation of the application are solved, accidents, thefts, and arbitrary decisions made by the company are reported. In addition, they offer rental accounts and share content of different types related to work in delivery applications and the experiences of the Venezuelan community in Peru. Through these platforms, drivers support each other and establish solidarity networks among themselves, although criticism and the use of offensive words towards some of them are also frequent.

Despite the existence of multiple platforms for interaction and ties of solidarity, the multiple complaints have not led to the formation of trade union organizations, and they have rarely been responded to with collective actions. Just once, in October 2019, hundreds of Glovo drivers participated in a protest against the company's decision to reduce the amount paid per delivery by half (Canal N, 2019). In application R there are also people interested in demonstrating against company policies and forming an organized group, following the example of drivers from other countries. This has not been possible in Lima[71] due to the fact that the group of people is too large and difficult to organize. In addition, the precariousness experienced by the drivers makes several of them oppose any kind of demonstration against the company. There is a fear of missing workdays, of being disabled in retaliation, or that the company cuts staff.

We haven't organized or planned a complaint against the company, because, at least in my case, I didn't say anything. I talked to someone about the matter, and I told myself, what could happen will affect the company, and for better or for worse, that's where you're making a living, so no. We have that fear, and that's why we

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[71] One of the interviewees stated that he was part of a group of people interested in organizing a small union of R workers in Piura, where there are barely a hundred affiliated drivers.

don't want the government involved, because it would affect the company, and it is what it is. It's our source of income, for someone who's on their own, working on their own, it makes us nervous (delivery applications driver, 30 years old).

> What happens? It's hard to organize for a web or something like that, because, you see, there are people who can't afford losing one working day (...) And R knows that, so they take advantage, because whoever doesn't own a motorcycle wants to buy one, and whoever has one, has to pay for it, so they can't leave the job (delivery applications driver, 22 years old).

To date, the drivers of both types of applications do not participate in any way in the decision-making of the company. In some cases, neither this nor their motivations are clearly communicated.

> Before the pandemic, we were making 2 soles per service, which was good for us, but now they're asking that we pay 20 soles or 20% per service, and that's not working for us. They decided 20%, and if we don't like it, we can leave (taxi applications driver, 49 years old).

As can be seen, drivers who participate in digital taxi and delivery platforms participate in solidarity and mutual support networks. These take shape both through physical interactions and through social media, which allow reaching a greater number of people. The latter provide drivers with information that the platform does not provide, and play a role in strategies to maximize revenue. However, the precarious condition of many of these workers is a factor that works against the appearance of organized groups and mobilizations against the measures of the companies.

9. Heterogeneity among workers and differences in working conditions

As has become evident throughout the report, by no means do drivers who work on taxi and delivery applications constitute a homogeneous group of people. They don't just work on platforms whose standards vary, sometimes significantly. In addition, they belong to different age groups, nationalities, genders, and drive different types of vehicles. All these differences constitute factors that generate significant changes in working conditions. Throughout the report, it has been possible to verify that the working conditions of drivers vary, sometimes significantly, depending on the area in which the activity offered by the

digital platform can be classified. As already mentioned, within each of these categories, drivers tend to be of certain nationalities and belong to certain age groups. It is even possible to identify some significant differences in the working conditions offered by platforms in the same category.

The information obtained allows us to identify two additional factors, which are relevant to understand the different working conditions and experiences of digital platform drivers in Peru. These are the gender of the drivers and the type of vehicle that those who work within the same platform drive.

a) Female drivers and gender differences

Gender differences play a relevant role in access to jobs on digital platforms, as well as in the income and working conditions that they provide. The bibliography developed on the subject pays special attention to the way in which women would insert themselves into the new labor market as workers[72]. In this regard, it is stated that the flexibility of work on digital platforms allows more women to access a job, reducing the wage gap between them and men. However, they run the risk of remaining in sectors with low pay and precarious agreements (Galperin et al., 2018; OECD, 2017). A qualitative study carried out within the framework of the FoWiGS project shows the existence of a gender gap between the income of digital platform workers. This would depend on the type of work that women finally have access to, as well as on a series of unclear qualitative factors, among which gender stereotypes stand out. In this sense, digital platforms would reproduce a series of existing concepts in the country or region in which they operate.

It is important to pay attention to how these stereotypes influence workers' work experiences and the risks to which they are exposed.

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[72] On the other hand, the role that women could have as employers (Galperin et al., 2018), the participation of the LGTBIQ+ population in the digital labor market or the gender stereotypes present in men's work has been much less explored.

This is especially true for jobs such as those covered in this report, in which all drivers are exposed to a range of risks on a daily basis without receiving support from platforms. Thus, research such as that of Hidalgo and Valencia (2019) in Ecuador, show that women drivers must face experiences of discrimination and sexual harassment.

In Peru, comparatively few women participate in digital taxi and delivery platforms as drivers[73]. Thus, for example, according to the Observatory of Platforms of Peru, only 17% of the people who work at Glovo identify themselves as women (Diario La República, 2020). Many of the male interviewees also state that few women work in these applications.

The interviewees point out, contrary to what the existing literature suggests, that there is no significant gender gap in income. In their view, income depends more on the number of rides completed and on a fee calculation mechanism that does not discriminate by gender. In theory, both men and women can earn the same, and factors such as the driver's experience are considered more relevant.

> It's the same thing, because whoever drives for more hours, works better, moves around better, knows better, drives for a longer time, has more experience, is the one who makes more money. It doesn't matter if they're male or female (delivery applications driver, 26 years old).

> Mainly the income gap is due to the inexperience of many female drivers (...) But when you have enough experience, you can do better than male drivers (...) For example, my husband is also a driver and I've always done better than him. I've always done better. He would make 100 and I would triple that (taxi applications driver, 43 years old).

In fact, the drivers who work with taxi applications indicated that their status as women give them certain comparative advantages compared to men. For example, there are several users who feel safer when they have a female driver[74], and prefer them to take their sons and daughters[75]. Female drivers can take advantage of this situation to get more private clients, whose relationship is no longer mediated by the application.

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[73] Women can also hold other positions within the company. The case of company R is significant, where there are many female brigade members in charge of supervising that drivers comply with biosafety protocols during the pandemic. According to what was stated by an interviewee, they can impose sanctions on them arbitrarily, protected by the relationships they have with the supervisors. However, in the remainder of the section we will refer only to female drivers.

Mainly it's about us women, because users don't usually trust platforms to send their kids (...) I've seen a lot of people that ask for your number for you to take their kids. It seems that we, as women, are more careful in that sense (taxi applications driver, 45 years old).

From a representation made by the women interviewed, they would have certain attributes that would allow them to offer a better service than men[76]. From their perspective, generally speaking, they would offer a friendlier treatment to clients than most men. Also, they would be more cautious when driving and meticulous in keeping their vehicle clean all the time. On the other hand, several interviewees refer to a feminine "intuition" or "sixth sense," which would allow them to notice a dangerous situation more easily than men.

Maybe we, as women, have an advantage, also in that sixth sense to know someone who got in the car, something is happening, or there's no trust, right? (...) And maybe how we treat people, I feel like we treat people better, that most gentlemen (taxi applications driver, 43 years old).

A woman is more intuitive (...) At first glance, you first see their appearance, their face. You see someone looking shabby, and you think "this is an outlaw." It has happened to me, I see them and I left them because you can tell. Now, even the ones dressed in their best suits are terrible (taxi applications driver, 45 years old).

Among the interviewees who work in delivery applications, these advantages are not mentioned. Only one interviewee mentioned that because she was a woman, she would have received more tips. On the other hand, mentions of the disadvantages they experience are more frequent.

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[74] This fact motivates the existence of some taxi applications only for women, as stated by some interviewees.

[75] For this reason, one of the interviewees stated that female drivers can dedicate themselves to carrying out the school transport service, where they are highly requested.

[76] Men and women discuss these attributes considering gender stereotypes and their own experience as drivers. Thus, they are related both to collective imaginations about women and to some practices that actually occur in the field. It is interesting to note that some men interviewed agreed to recognize these attributes in women.

And it is that, according to male and female interviewees, female drivers of both types of platforms would experience a series of difficulties in the development of their activities. For them, it would be difficult to lift very heavy objects, which would make it difficult to carry out activities such as moving large orders, lifting passenger suitcases, or changing tires on a vehicle. In the case of delivery applications, this situation is aggravated by the fact that many female drivers are cyclists and must carry the order on their backs. On the other hand, there is a general perception that women are more exposed to risky situations than men when traveling at certain times or in certain areas of Lima[77]. This would motivate many drivers to stop working with some applications (or not to work with them at all) and not to drive at dawn, which is more profitable.

> For example, cyclists get tired easier, right? They get tired easier. When I was working, before the pandemic, working late at night, at eleven or twelve, it was a little dangerous, because sometimes they might take you to far away places that may be dangerous, so if it's dangerous for a man, it's even worse for a woman (delivery applications driver, 22 years old).

> And, if conditions were better, I wouldn't leave the applications, but now, when there are so many challenges, it makes you doubt, right? At least for me, as a woman, I would rather have direct contact with them to using applications (...) For a safety matter, mainly (taxi applications driver, 45 years old).

Another difficulty, which has a direct impact on the income of taxi application drivers, is that some users cancel their trips when they know that they will be transported by a woman. And, just as there are users who trust a female driver more, there are those who believe that they do not know how to drive or it will take a long time to reach their destination.

> Discrimination as a woman, yes. Because sometimes users need a ride, and when they see you're a woman, they cancel the ride (...) That's what I've witnessed, it's what I feel, they don't want a female driver (taxi applications driver, 34 years old).

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[77] It would be worth asking whether this perception would have generated the development of "intuition" mechanisms in response to prevent incidents among female drivers.

Added to this are the experiences of aggression that female drivers have suffered because they are women. The female interviewees who work on taxi applications point out that some users complain to the platform or to the drivers themselves because they got a female driver. On the street, other drivers yell at them for allegedly driving badly. Also, delivery women may face users or supervisors who harass them.

> I used to work with light windows, and people would often say "of course you're a woman, this and that," for whatever reason, because I went over, because I stopped, but since I darkened my windows, no one knows I'm a woman and no one says anything (laughs). So, the problem in our country is male dominance, it really is (taxi applications driver, 43 years old).

> I just remembered, we have to show a photo, and for example, it happened to me twice. That, when I was delivering an order, customers would open the door in their underwear (...) It was starting to feel really (...) awkward (delivery applications driver, 22 years old).

Graph 4: Implications of gender differences in working conditions and income of female drivers. The blue-outlined boxes represent situations experienced only by female taxi drivers.

Own production
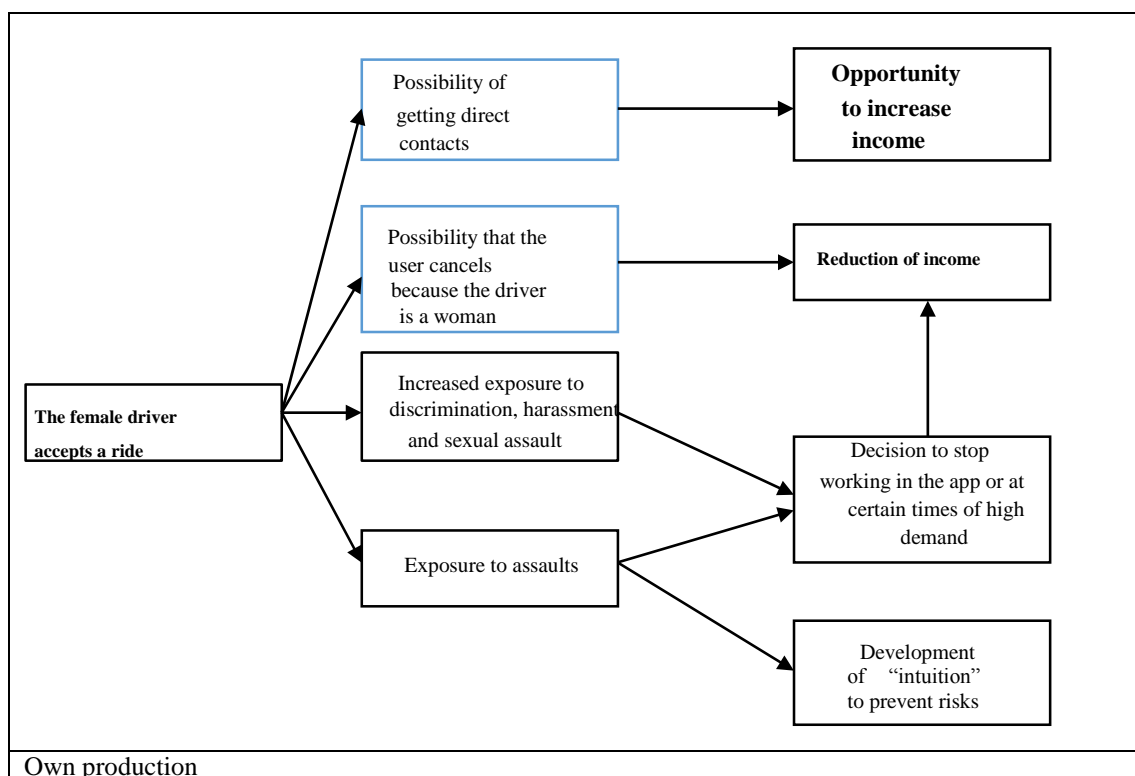
In this way, gender constitutes a dimension that has a significant impact on work on digital taxi and delivery platforms. The female (and male) interviewees do not initially identify a significant gender gap between the income of men and women. However, they do point out a series of factors that make it difficult for the latter to work, related to gender stereotypes and additional risks faced by women in a male-dominant society like Peru's. As can be seen in Graph 4, these factors play an important role in the decision of several women to stop driving at certain times, in certain areas, or with certain applications. Directly or indirectly, they have a negative impact on the income of several drivers. Despite this, they have certain advantages, which they can take advantage of to develop strategies that allow them to increase their income.

b) Differences related to vehicle type

There are frequent cases of applications that admit - under the same modality or as differentiated services - drivers of different types of vehicles, whose acquisition requires a different amount of capital. The type of vehicle driven can influence the working conditions and the remuneration that workers ultimately reach. This has been demonstrated in cases such as Ola Auto in India, where rickshaw drivers lose many more customers than car drivers (O'Neill, 2018). However, differences of this type are rarely addressed in depth, and their importance is not fully clarified.

The information collected allows us to affirm that, both in the digital platforms that offer taxi services and in those of delivery, the type of vehicle that a driver drives has an impact on the income that they can obtain. In the first type of application, the model and year of the vehicle determine the type of service that a driver can offer. In the case of application B, as mentioned in previous sections, drivers who have vehicles from 2000 to 2008 can only offer the lowest cost service. Considering that the rate retained by the company is the same as in the regular service, the profits in this category are significantly lower. Instead, select-model new vehicle and SUV drivers may offer luxury or executive services. Due to their higher cost, these are extremely profitable.

In addition, customers of this type of service usually pay by credit card, which reduces the probability of being victims of an assault.

> The advantage [of comfort service] is the rate (...) It is mainly the fare and secondly the type of customer. The type of customer who, mostly, uses a slightly more expensive service, is a customer, sometimes... can... they tend to be more polite, sometimes they are really rude, but other times they're more trustworthy, you know? As I was telling you at some point, regular service handles a lot of cash, and when they use cash, sometimes it's thieves who steal the money (taxi applications driver, 43 years old).

Delivery applications also establish differences between motorcycles and bicycles. In application R, the latter is not allowed to make long-distance deliveries or Courier services, unless there is no motorcyclist available nearby. The rate is the same for drivers of both types of vehicles, despite the fact that cyclists have to exert more physical effort and take longer to reach their destination. As a result, their income tends to be much lower than that of motorcyclists, who receive the highest paid tasks (for traveling the longest distances) and can make many more trips in a single day. To increase their income, many cyclists decide to buy a motorcycle with their savings or in installments[78].

> The thing is that you get really tired riding your bike, it's exhausting. I used to have a bike that helped me a lot, but I was getting too tired, so I changed to a motorcycle and that helped a lot. First, because you get there faster and you can pick up more orders, so it's more practical (...) Yes, because you complete the order faster and have the chance to receive another order (delivery applications driver, 22 years old).

In this way, the type of vehicle directly influences the income that a driver is able to receive when working on a digital platform. This factor also affects working conditions and the effort that must be made. Generally speaking, platforms tend to better reward drivers whose vehicle (their main means of production) is more expensive. Those who do not have enough capital to invest in it must settle for lower fees, tend to try harder and see their chances of earning a greater amount of income limited.

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[78] The panorama is quite similar to that described by Hidalgo and Valencia (2019) for the Uber Eats and Glovo applications in Ecuador. The authors also indicate that cyclists are more exposed to accidents.

10. Work on applications and Covid-19: Main transformations

The onset of the coronavirus pandemic and the social isolation measures taken by the Government of Peru to contain it have considerably affected the national economy, the jobs and income of millions of Peruvians. Of course, it has also affected numerous digital platforms around the world. However, it is not yet known exactly what the impact of the Covid-19 pandemic has been on the online gig economy and its workers.

A study carried out by the Fairwork Project (FairWork, 2020) with platforms from 23 countries shows how in many cases the gaps between companies and their workers have broadened. The former have mainly sought to maintain their business levels and guarantee the tranquility of their customers. However, actions to guarantee workers' income and safety have been limited. Not only the salary of these was increased by just a few platforms. In addition, access to personal protective equipment and sick pay arrangements offered by the platforms was often difficult. In addition to the lack of representation of workers in decision-making, arbitrary dismissals were added in some cases to those who were asking for better wages and security. As a result, not only did a gap emerge between the discourse and practice of many companies, but workers were burdened with risks and responsibilities (FairWork, 2020).

Unfortunately, the situation of digital platforms that offer taxi and delivery services in Peru is quite similar. In all cases, the start of a strict quarantine in March 2020 meant the temporary suspension of all activities. Its restart two months later occurred with the implementation of a series of biosafety protocols, which drivers are required to comply with until today. They not only saw their monetary income significantly affected, but in most cases they did not receive direct support from the companies.

After the restart of their activities, the digital taxi platforms updated their services to the new normal. B, for example, implemented a parcel transfer service and another for the transfer of health staff and other people who had to move around the city. With quarantine becoming more flexible, these services continued to be offered during the days of mandatory immobilization, while the rest of the days went back to regular services. In addition, the application began to constantly remind users of the biosafety protocols that they had to follow in order to use the service. In this way, from the perspective of B's managers, it was possible to maintain the service offer.

On the other hand, the drivers interviewed point out that the demand for all the applications dropped considerably, and did not reach the levels it had until the beginning of the quarantine. However, the fees were not increased, and the amount of money withheld by the company was not reduced. In fact, applications like S increased the amount[79]. As a result, the income of all drivers dropped dramatically, making working with applications unprofitable.

> With this pandemic, services have dropped, demand has dropped quite a lot. And it seems that in this situation, it's taking longer to get rides, and the application is taking longer to load and send rides. And when I see it's taking too long and it's not sending alerts, I work on the streets or from a known customer, so I log out (taxi applications driver, 47 years old).

The decline in revenue was also favored by the ban on national and international flights and the introduction of a curfew during the early morning hours. Before the pandemic, several interviewees took advantage of these hours, as the demand increased significantly as a result of the departure of flights and the night parties. These restrictions also meant a radical change in the working hours of drivers, who can only travel during the permitted hours. Those who have private cars were also affected by the prohibition of the circulation of this type of vehicle. Those who chose to continue working on taxi applications had to rent authorized taxis, investing part of their income.

On the other hand, the onset of the pandemic increased the risks to which drivers of digital platforms that offer taxi services are exposed. By having contact with a large number of people, they run the risk of catching Covid-19. As one interviewee points out, the vehicle becomes a potential source of contagion, against which each driver must take action.

Despite this situation, none of the digital platform companies have offered any kind of support or assurance. Instead, they have established biosecurity protocols that drivers are required to comply with. These include the use of a face mask and disinfectant, as well as the installation of a divider panel inside the vehicle. Compliance with the protocols has been incorporated into the control mechanisms of applications such as U,

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[79] More information on the amounts withheld by company S can be found in footnote 51.

which daily requires its drivers to take a photo wearing a mask in order to start offering rides. In other applications the control is less strict, and there are vehicles that do not have the corresponding divider panel installed. All the expenses incurred to comply with the biosafety protocols are borne by the driver, due to the lack of support from the companies behind the digital platforms.

Faced with the reduction in demand and the increase in the risks to which they have been exposed, there are several interviewees who have developed other strategies to obtain income. Some of them have begun to prioritize taking rides for private clients and people picked up on the streets, reducing the use of applications. Others, on the other hand, have stopped taking taxis to engage in activities that involve less risk for themselves and their families.

The situation of the drivers of delivery applications varies in some major points. Not only do they have to constantly interact with the users of each platform, but they are often clustered in disinfection centers and high-demand areas. Thus, drivers constantly risk catching Covid-19, and several have come to get sick with this disease. Additionally, many have been forced by some municipalities of Lima to undergo a quick test during their working hours (Sarmiento, 2020).

Faced with these circumstances, digital delivery platforms have developed a series of measures. Application R, for example, has implemented a biosafety protocol, which must be fully complied with by all delivery workers. To do this, they are given a series of supplies called PSE (personal safety equipment), including a bench, disinfectant spray, antibacterial gel, and protective glasses. Also, a series of disinfection centers have been set up in different districts of the capital, where all delivery workers must attend. Compliance with the biosafety protocols in the interaction with "allied" stores is monitored by the brigade members, new staff hired by R.

However, these measures do not represent an effective control of biosafety protocols, and they are not enough to guarantee real worker protection. Thus, it is the delivery person who must bear the costs of renovation and maintenance of the PSE, many of which wear out quickly[80]. Not all drivers attend the centers, and the disinfection carried out in them is also limited.

Among those interviewed there is the perception that the brigade members are not adequately fulfilling their role of verifying compliance with biosafety protocols[81]. Likewise, according to some interviewees, neither R nor the municipalities are adequately monitoring compliance with the biosafety protocols by the "allied" stores, which often fail to comply with them.

> Also the brigades, their only function is that they have to make sure that the person who is in charge of picking up the order is the delivery driver and follows the necessary protocol (...) but there is also a disaster involved, sometimes it happens that restaurants are a disaster, you know? They are not just any restaurants, but the top restaurants, where people with money go (...) and the only time you are going to meet a brigade is when there is a change, no other times (delivery applications driver, 30 years old).

Application R has taken some additional measures in the face of the appearance of Covid-19 cases among delivery workers. These are questioned by the interviewees. On the one hand, the personal data of sick people has been requested, to provide them with support. However, many prefer not to provide their data, given the arbitrariness of R's sanction system and the possibility of being disabled. On the other hand, despite the fact that Covid-19 insurance has been granted to workers, there are a series of obstacles to accessing its benefits. This fact is confirmed by one of the interviewees, who got the disease.

> Right now I heard about 12 people who got infected on Sunday, so I wouldn't know. R sent us a link asking people who got a positive result to fill it, so that R can obviously help them, but it's been only that. Sometimes we tell ourselves that R wants to know who the positive person is in order to block their account, so they won't work anymore. It's a double-edged sword, maybe it is or maybe it's not. Nobody knows (delivery applications driver, 30 years old).

> When the pandemic began, they, through the app, sent one thing, like Covid insurance (...) But it didn't work anyway, because the day I had my accident, I got a positive result for Covid. I entered the clinic with Covid and I had to pay for it, R didn't pay for anything (...) I haven't worked again because of the accident, I'm still at rest (delivery applications driver, 26 years old).

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[80] In fact, one of the interviewees complains that they get chlorinated water to disinfect food instead of water with alcohol.

[81] At another time, one interviewee indicated that the brigades would be more concerned about ensuring the renewal of backpacks than biosafety protocols.

The drivers of application R also saw their income significantly affected as a result of the pandemic. Added to the reduction in demand for the service was the constant increase in delivery drivers recruited by the platform, which generated more competition for fewer orders. R did not develop any measures to guarantee the continuity of income for its drivers; on the contrary, it increased competition between them[82]. In that it differs from applications like G that, on the contrary, seek to guarantee that their drivers receive orders at set times.

Faced with the reduction in their income and the increase in the risks to which they have been exposed, many drivers have tried to find a new job. In the Facebook groups that bring them together, job calls are usually answered by dozens of people. Likewise, there are drivers who have chosen to go to work in G and leave R. However, the number of drivers of the latter application continues to increase, faced with the impossibility of finding a better job in a difficult economic situation[83].

> Well, what motivates me is that it's my only source of income right now. Because of the pandemic, most doors are closed for work now. Although my job is different. I worked as a supervisor, everything related to sales to Spain, for example. But as I told you, due to stress, I left and got into the delivery work. But I'm here because I need it (delivery applications driver, 26 years old).

In this way, in general terms, it is possible to affirm that the precariousness of digital platform drivers has increased since the beginning of the quarantine as a result of the measures taken by the Government of Peru and the companies that own the applications.

These have led to a reduction in demand and in the payment received by drivers, who do not always have alternative sources of income. The constant possibility of stopping work due to contracting Covid-19, of spending days with minimal earnings or, even, of being suspended, increases the instability they face every day.

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[82] Recently, during the writing of this report, R enabled a new bonus mechanism called the "streak." It consists of a multiplier of income and orders granted to those who have activated the automatic acceptance of tasks and a high rate of acceptance, completion, and time. This new mechanism has generated much discomfort among drivers, since the increase in orders to some people is done to the detriment of those delivered to others. The arbitrariness of the application makes it difficult to access these benefits. Thus, the inequality between distributors increases, causing some to receive negligible income per day.

[83] In social media, it is found that there are a few drivers who have managed to take advantage of R's system and maximize their income. There are also people who defend the operation of the application for fear of its possible disappearance.

Faced with these circumstances, the measures taken by digital platforms have been insufficient and ineffective. In many cases, they have been limited to the implementation of biosafety mechanisms and the increase of control mechanisms to guarantee compliance. Paradoxically, in cases - such as application R - in which more measures have been proposed for the prevention and treatment of Covid-19, the access of drivers to these benefits has been very limited. To this is added that many workers must take on additional expenses, without some platform increasing payments. Thus, as in the study carried out by the FairWork Project (2020), the responses of digital platforms to the Covid-19 pandemic have not been favorable for workers, who have shouldered an important part of the payments and risks without being sufficiently protected.

11. Conclusions

Companies that are part of the so-called platform economy, collaborative economy, or online gig economy represent a fairly new business model in the Global South in general, and in Latin America in particular. The same can be said of those digital platforms that offer taxi and delivery services, a segment of the online gig economy that has acquired great importance in Peru. They only entered the Peruvian market in the mid-2010s, quickly positioning themselves thanks to the great reception they achieved among a growing number of users. Although initially they focused their operations in Lima, they have now managed to expand their presence to the country's main cities. In order to meet a growing demand, they access the services of tens of thousands of drivers of different types of vehicles (from bicycles to vans), for whom this work constitutes an important source of income.

The interviews carried out in the framework of this research allow us to better define the nature of the work of drivers in this major segment of the platform economy. It is a new type of work, which can be classified as face-to-face work requested through digital platforms. For various reasons, it is disruptive in the face of previously existing formal work modalities, and even in the face of informal work.

And it is that, in this new type of jobs, the relationship between the driver and the users is mostly mediated by a digital platform, leaving some spaces and moments of direct interaction. Thus, the work is mostly managed by artificial intelligence (algorithms), which follows a series of guidelines and provisions of the owner company.

The work of drivers on digital platforms is also characterized by a relationship of subordination to companies and their algorithms. Within this, they are granted some freedom in the choice of their schedules that are not so usual in formal work. Although the payment, the rating and the suspension respond to the accomplishment of particular tasks, these form part of a relationship in the medium or long term.

Likewise, the present study allows us to affirm that the working conditions of the drivers of taxi and delivery applications that operate in Peru are precarious and lead them to a situation of constant precariousness. In this sense, the panorama is quite similar to that posed by other studies carried out in the country and in Latin America (Carrión & Ticona, 2020; Dinegro, 2020; Hidalgo & Valencia, 2019). Certainly, the platforms guaranteed economic income that was higher than what drivers previously received, giving drivers a certain (and limited) autonomy and flexibility. However, it also subjects them to constant job instability. Not only income is highly variable, due to the lack of mechanisms through which drivers can ensure a minimum daily income. In addition, the threat of suspension or disabling that represents in practice the loss of work is constant. The fact that income and penalties depend largely on criteria that cannot be controlled by a driver increases the instability of their work.

The work of drivers on digital platforms is also precarious due to the lack of access to non-monetary employment benefits. They do not receive insurance, bonuses, pensions, or other guaranteed benefits in a formal job. The platforms do not provide them with the means of production to carry out the service, but only the means by which to get customers. All this represents an investment that must be assumed by each driver. There is also a continuous exposure to accidents, assaults, illnesses, and experiences of discrimination, for which companies do not assume any responsibility or expense. As a result, the income of each driver decreases by a series of expenses that they must bear, and among them there is a feeling of lack of support.

Of course, it is possible to affirm that these working conditions represent an improvement compared to other types of informal or semi-formal work in Peru. The presence of these is something that differentiates this and other countries of the global south (see, for example, Hidalgo & Valencia, 2019) from those of the northern hemisphere. It could also be argued that the working conditions of taxi drivers were already precarious before the arrival of the platforms, and that they have brought together previously dispersed informal workers (Randolph & Dewan, 2018), allowing them to access a greater number of services. However, this does not justify the precariousness of the job offered, nor the lack of economic stability or non-monetary benefits.

The findings of this research also allow us to question the concept of the online gig economy, which has been used to talk about this and other types of jobs in the platform economy (Woodcock & Graham, 2020). This term refers to independent and temporary hiring in which platforms and workers would participate, and which would reduce the performance of a specific task. Certainly, the remuneration is usually referred to a single career, after which it is possible to end the relationship temporarily or permanently. For this reason, and as some promoters of this type of platform point out, it is possible that these are used by temporary workers who wish to obtain income in their free time. However, this report reflects the reality of drivers who dedicate most of the day to these platforms, which represent their main source of income, and with which they have established a relationship in the medium or long term. For them, this type of work is not gig, but is more permanent. This fact, however, is not sufficiently recognized.

It is also possible to question the supposed autonomy of drivers, one of the main benefits identified by the experts who promote this type of platform. Indeed, as already mentioned, the digital platforms studied offer some flexibility in schedules and decision-making capacity, a fact that does not occur in formal jobs.

However, drivers have been subjected to different types of mechanisms to control schedules and behaviors (rating and penalty systems, multipliers, and enhancers). Some of these are mediated and managed by algorithms, leading to a "soft" control of behavior (Rosenblat & Stark, 2016), while others involve a more direct exercise of power.

In this sense, it is key to understand that there are asymmetries in access to information and in decision-making, which show that drivers and companies are not treated as equals. Together, these mechanisms lead to a loss of autonomy for the worker and the emergence of power relations within the framework of the development of their activities. It is possible to speak of a subordination and of "false self-employed workers," especially in the case of those drivers for whom the platforms are their only source of income. Its autonomy is maintained, however, in the obligation to provide the vast majority of means of production.

Likewise, it is possible to affirm that there is an evident asymmetry of power between workers, on the one hand, and staff hired by digital platforms, "allied" stores and customers, on the other. The former have the power to sanction or qualify drivers according to their own criteria. In some cases mentioned by the interviewees, this can lead to drivers being coerced to act against their interests (for example, making payments or desisting from protesting). On the other hand, the users of the application (and the "allied" stores) depend on the income and ratings of both the drivers and the digital platforms themselves. The latter tend to favor them in cases of reports and complaints to drivers.

Despite this, there is agreement with other studies (Chen, 2018; Negri, 2020) in stating that drivers of digital platforms maintain a certain level of freedom. They can develop strategies to circumvent some of their rules, or use them to earn more income. In addition, it is important to consider that their interests are not necessarily opposed to those of the platforms, and that not all of their guidelines are problematized or criticized.

Within this general framework, it is important to distinguish differences within a heterogeneous set of digital platform drivers. This research shows that gender is a relevant factor, constituting a qualitative component that affects the experiences of male and female drivers. Female drivers are subjected to forms of aggression and discrimination that are not experienced by their male counterparts, despite offering the same service as them. They are associated with gender stereotypes and the values of a male-dominant society such as Peru. These experiences, and the emotions they generate in women, do not directly influence their income, which is governed by the same rules as those of men. Instead, they do it indirectly, through the decision that the drivers themselves make not to work with any application, with certain applications, or at certain hours. Still, women

have some opportunities, which they can use to increase their income. Additionally, it is important to take into account the differences in working conditions related to the type of vehicle each driver drives.

The situation of drivers also varies, sometimes significantly, depending on the specific platform they work on. The type of applications in which they participate, in turn, appears to be related to factors such as the worker's age and career path, in addition to the type of vehicle driven. Among drivers of digital platforms that offer taxi service, the most criticized aspects of their working conditions are the lack of non-monetary benefits and the high proportion of payments that are withheld by companies. However, they usually complement this work with other taxi services performed during the day, which gives them greater autonomy from the platform. In contrast, drivers of delivery applications depend more directly on this job, which is their only source of income. In addition, they are subject to greater surveillance and control by the platforms, as well as in a more precarious situation. The case of application R is especially critical in this regard.

Finally, it is important to note that this research does not close any discussion about this sector of the platform economy, but rather allows asking questions to be answered by further research. An issue that has not been sufficiently addressed is the working conditions, motivations, and speeches maintained by the staff of the platforms who interact directly with the drivers (supervisors, support staff, etc.). The relationship between the company and the workers who perform the service that it offers depends largely on these people, who are involved in a different way in the digital economy.

The digital platforms that hire drivers in Peru are, on the other hand, constantly changing. Even during the writing of this report there have been changes in its payment, assessment, and sanction mechanisms that may have generated changes. In general terms, unfortunately, the trend has been towards a growing precariousness of workers, whose income is constantly reduced. However, subsequent research on these applications can help clarify the changes that occur in them over time. Likewise, it would be relevant to create smaller digital platforms, whose operation may differ from that of the applications with the highest demand.

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It aims at understanding the implications of technological change on jobs from a Global South perspective bringing data, knowledge, and policy frameworks to build evidence-based narratives on the future of work in developing countries.

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