Digiwork: Reflections on the scenario of work mediated by digital platforms in Brazil

Digitrab: Reflexões sobre o cenário do trabalho mediado por plataformas digitais no Brasil

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ABSTRACT

Purpose: This article analyzes the Brazilian scenario of work mediated by digital platforms (digiwork).

Originality/value: Digiwork represents an alternative work arrangement to the traditional long-term employment model, with the highest growth rate in recent years. Details of this scenario are still unclear regarding the quantity and diversity of the offered products and services and the number of individuals involved. This article presents information and reflections that contribute to understanding these data in Brazil.

Design/methodology/approach: This is an analytical-exploratory study. Scientific articles were used to discuss technological, political, and socio-economic influences that supported the emergence of digiwork and its effects on the labor market and the workforce. In order to support this discussion, a documental analysis of websites and mobile application software was carried out, allowing for a qualitative-quantitative mapping of Brazil's current digital intermediation platforms.

Findings: More than 100 companies operating in the country were identified as offering 11 types of services in this business, indicating a growing trend. A diversification movement was also observed, absorbing professionals with different kinds of training and schooling levels. Such growth is in line with the political-economic trend of encouraging the loosening of labor relations, which individualizes and informalizes the bonds, emphasizing the need for debate on the regulation of this work arrangement and more research to investigate its repercussions on the worker's health, also considering the heterogeneity present in this new class.

Keywords: alternative work arrangement, digital platforms, gig work, uberization, crowdworking

RESUMO

Objetivo: Este artigo analisa o cenário brasileiro do trabalho mediado por plataformas digitais (digitrab).

Originalidade/valor: O digitrab representa o arranjo laboral alternativo ao modelo de emprego tradicional de longo termo que mais tem crescido nos últimos anos. Entretanto, não conhecemos com clareza esse cenário, nem em termos de quantidade nem de diversidade de produtos e serviços ofertados, muito menos quanto ao volume de indivíduos envolvidos. O presente artigo apresenta informações e reflexões que colaboram para a compreensão desses dados no Brasil.

Design/metodologia/abordagem: Trata-se de um estudo analítico-exploratório. Artigos científicos foram utilizados para discutir as influências tecnológicas, políticas e socioeconômicas que favoreceram a emergência do digitrab e seus efeitos no mundo do trabalho e nos trabalhadores. Para sustentar tal discussão, foi feita uma análise documental de *sites* e aplicativos móveis (apps) que permitiu um mapeamento quali-quantitativo acerca das plataformas digitais de intermediação ativas no Brasil atualmente.

Resultados: Foram identificadas mais de 100 empresas atuantes no país que oferecem 11 tipos de serviços nessa modalidade de negócio, com indicação de tendência de crescimento. Observou-se também um movimento de diversificação, absorvendo profissionais de diferentes tipos de formação e níveis educacionais. Tal crescimento se alinha à tendência político-econômica de incentivo ao afrouxamento das relações de trabalho, que individualiza e informaliza os vínculos, enfatizando a necessidade de debate sobre a regulamentação desse arranjo de trabalho e de mais pesquisas que se debrucem a investigar suas repercussões sobre a saúde do trabalhador, considerando, ainda, a heterogeneidade presente nessa nova classe.

Palavras-chave: arranjo alternativo de trabalho, plataformas digitais, *gig work*, uberização, *crowdworking*

INTRODUCTION

Work arrangements have been changing quickly in recent decades, partly in response to globalization and digitalization. At the same time, such transformations are consistent with the neoliberal agenda that comprises the dismantling of institutions, the weakening of the State power, and the flexibilization of labor laws as necessary factors for the survival of the capitalist system and profitability (Abílio, 2019; Druck, 2011).

The loosening of employment protections characterizes this process, triggering the emergence of alternative forms of linkage between the worker and organization, which distance themselves from the formal, stable, and long-term employment model that, since the first Industrial Revolution, consolidated as the main reference of work arrangement (Barling et al., 2002; Spreitzer et al., 2017). Among these alternative forms, the fastest growing work segment is gig work (casual, contingent, on-demand jobs) (Spreitzer et al., 2017), especially the one mediated by digital platforms, which we shall call "digiwork."

Since it is a recent phenomenon (although exponentially expanding), the lack of scientific production analyzing this work arrangement makes this group of workers underrepresented in this research field (Bergman & Jean, 2016). The existing studies are scattered in the literature adopting different nomenclatures, such as uberization, turkerization, gig economy, gig work, crowdsourcing, crowdworking, and work-on-demand via apps, among others (Bentivi et al., 2020; Schulte et al., 2020).

At its core, digiwork encompasses several characteristics, varying in content (the type of performed task) and the work process (product or service generation, remote or in-person etc.). Generally, it can be defined as a working arrangement typical of a business model that, via an online platform, enables organizations or individuals to access other organizations or individuals to solve problems or to provide services in exchange for payment (Ropponen et al., 2019; Tran & Sokas, 2017). Thus, it involves at least three parties: the digital platform, the final customer/consumer, and the hired worker (Schulte et al., 2020).

The use of the internet for selling services is not new. Still, the emergence of intermediation platforms and apps with an increasingly diversified functional scope has amplified demands, services, and utilities. The mission of these organizations is to disseminate and distribute work, moderating the relationship between consumer and worker (Schulte et al., 2020). From the point of view of the former, the usefulness and speed these services offer

favored their rapid adherence, recently boosted by the Covid-19 pandemic, which, due to social distancing measures, led many people to use virtual resources to access products and services. From the worker's point of view, these platforms emerge as relatively easy means of enabling insertion, permanence, or return to the labor market. Thus, they appear as an increasingly sought-after possibility of livelihood as structural unemployment grows and the supply of formal jobs decreases (Instituto Brasileiro de Geografia e Estatística [IBGE], 2021). Notwithstanding the benefits generated for society, digiwork instigates many controversies since it does not provide guarantees and places the worker in a position of "false entrepreneurship."

Nowadays, despite the feeling that platforms and their workers are everywhere, the overall scenario is still unclear regarding the quantity, diversity of products and services offered, and the number of individuals involved. Our study analyzes the digiwork scenario in Brazil to contribute to understanding this new work arrangement. By mapping the active platforms in the country, the presentation of this scenario contributes to the discussion about how the diversity of these services, combined with the growing number of workers in this arrangement, can weaken the worker-employer relationship. Effectively diversifying the forms of exploitation deteriorates the subject's relationship with their work, preventing it from being a way of making ends meet and providing a meaningful life by contributing to society.

Therefore, we will initially contextualize the emergence of digiwork, highlighting the technological, political, and socioeconomic characteristics that favored its expansion and its implications on the world of work. Then, we will characterize how digiwork currently presents itself within the national scenario based on the evaluation of critical aspects, such as general data from the platforms that support these arrangements, the variety of services offered, and the amount and qualifications of the workers involved. Finally, despite the difficulties in predicting a recent phenomenon and still in its momentum, we will discuss existing trends supporting actions in public management policies, labor law, and general research.

DIGIWORK: EMERGENCE AND MAIN FEATURES

Aiming to understand the macro context from which digiwork emerges, it is essential to analyze the influences and pressures of neoliberal logic on the world of work. Neoliberalism is a historically constructed process that, in addition to being a structural, economic, and ideological tool, is a line of reasoning. According to Ganti (2014), neoliberalism is organized in two

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ways: as a structural force that affects the life possibilities of subjects and as an ideology of governance that shapes subjectivities, radically altering the logic of work and the profile of contemporary societies. Its main tool to accelerate changes in the world of work is the universal principle of competition (Andrade & Ota, 2015; Ganti, 2014), not only of prices but, above all, through innovation, technical or ideological. Under this new mechanism of market regulation, the so-called digital revolution arises (Ganti, 2014; Whitacker, 2018) – also known as Industry 4.0 or Fourth Industrial Revolution. The starting point was in 2011, at the Hannover Fair (Germany), dedicated to developing machines with the ability to perform more complex cognitive tasks, generally related to artificial intelligence (Bentivi et al., 2021).

Amid these evolutions, information and communication technologies (ICTs) were responsible for the increasing informatization in all economic activities at a global level. With the creation of digitalization, a new organization of the world of work was shaped, composed of systems, relationships, and performances focused on connectivity, agility, temporal fluidity, and the decentralization of the organizational and physical environment (Gondim, 2020). As in previous revolutions, the information revolution triggers a paradigm shift in the economic organization imposing new social arrangements and new institutions, changing the general nature of economic activities, employment, work, and society, based on the neoliberal prerogatives (Fernández-Macías, 2018). Consequently, an unlimited number of subjects can be recruited to become intermittent global workers, increasing the precariousness of work (Gondim, 2020; Lima & Bridi, 2019).

Industry 4.0 is supported by a staggering on-demand economy, also known as the gig economy, which encompasses occasional jobs and tasks – via a contract that distances itself from full-time employment – and which has as their main (but not exclusive) medium the digital platforms of startups and mobile applications software (apps) (De Stefano, 2016; Schulte et al., 2020). Within the gig economy, many variations of alternative forms of work have emerged, which have predominantly been classified into two groups according to the International Labor Organization – ILO (Berg et al., 2018; Cavallini, 2018; De Stefano, 2016).

The first arrangement results from the "Turkerization of work[1]", better known as "crowdworking." In this case, the company assumes the role of

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[1] "Turkerization" is a reference to Amazon's Mechanical Turk (MTurk), an intermediation platform launched by Amazon company in 2005 that mediates the virtual relationship between employers and workers who accept to carry out tasks sporadically and without formal affiliation.

connecting the demands of third parties (individuals or companies) to a global workforce, called a "crowd," since it is composed of several "anonymous" workers who decide to accept or not the proposed demands. The work is contracted and performed online and encompasses predominantly cognitive tasks, which can feed artificial intelligence systems (Moreschi et al., 2020). The activities vary significantly regarding complexity, time spent by the worker, and financial return, ranging from clicking on images or labeling them to developing more complex projects – which are very similar to those hired in traditional jobs, such as writing a book or proposing new product ideas (Schulte et al., 2020). Despite this variation, the simplest, segmented, and monotonous tasks, also classified as microtasks (De Stefano, 2016), predominate in this group since they are the result of a process that decomposes work into several smaller parts, which are carried out via intermediation and regrouped to achieve the larger objective (Durward et al., 2020).

In the second group is the arrangement associated with the "work uberization"[2], also called "work by platform" or "work-on-demand-via-app." Unlike crowd work, workers develop their tasks in the "real world," not in the virtual one. Driving vehicles to transport people, delivering products, and performing domestic maintenance or cleaning services are some examples of this group of tasks. On the other hand, as in the first type of arrangement, control over issues related to the time taken to develop the functions and the value received for them is usually the responsibility of the intermediary organizations.

Here, we consider that both arrangements can be classified as digiwork. Despite having particularities, they both cover jobs in which the service is contracted via a technology company, using the internet to connect the demand and supply of work, reaching workers who are available for the task "just in time" and that are compensated according to a "pay-as-you-use" logic (De Stefano, 2016). Having a specific nomenclature to designate this phenomenon can contribute to the advancement of research on the subject, legitimizing the relationship between worker and organization, which often remains in the background. At the same time, discussions are more focused on the business model, the platforms, or the tasks involved, not the work arrangement itself.

Despite the rapid growth of digiwork, it is still difficult to envision the number of workers, especially since, for some individuals, this is a comple-

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[2] "Uberization" is a reference to Uber, a company that provides electronic services in the area of urban private transport; it launched in 2009 and has become an on-demand business model in which the worker works on his own, assuming production costs/service.

mentary and sporadic practice and, for others, as a main source of income. Thus, we face a complex working class with heterogeneous labor processes (Druck, 2011). For Brawley (2017), scientists in the field need to investigate this group of workers she calls "serious gig workers" who recognize digiwork as their full-time job.

Although the keyword used is entrepreneurship, in reality, this new work arrangement functions closer to informality than to the autonomous work of independent professionals. In the current configuration, the so-called "digital inclusion" demands a new worker profile: adaptable, agile, and entrepreneurial (Lundvall, 2017). However, the connotation used in entrepreneurship is quite different from the idea of the innovative entrepreneur, representing the transfer of risks to the workers, who become responsible for themselves, being hired as autonomous service providers without employment relationship and access to social security (Abramides-Brasil & Cardoso, 2019; Bentivi et al., 2020; Gondim, 2020; Lima & Bridi, 2019). This rejection of the employer's status and the transfer of responsibilities were not created by the development of ICTs but were facilitated by them. While data availability could facilitate work regulation, its use can also lead to the opposite, accentuating the lack of limits for labor exploitation and the precariousness of its conditions.

Thus, many of these workers perceive themselves as part-time employees and not entrepreneurs (Ravenelle, 2019). This happens because, despite the supposed flexibility enjoyed by the worker, their classification is lost in a fog that mixes autonomy and subordination. In many cases, it is the platform that dictates the main rules of the business, deciding if and when they will receive demands and even holding the right to deactivate the worker's account whenever they wish (Bentivi et al., 2020; Cavallini, 2018), without the obligation even to justify the reason for the termination of the "contract." For Filgueiras and Antunes (2020), control and exploitation are expanded into the work under the pretext of autonomy. They are the so-called "entrepreneurs of themselves" (Magno & Barbosa, 2011) or "precariats" (Freitas, 2020), who, in an apparent euphemism, are called "partners" by intermediary companies.

In digiwork, the platforms acting as intermediaries must balance the consumer's demand with what the workers offer (Ravenelle, 2019). In addition to occasionally establishing prerequisites for the equipment used in the service provision (such as the year of the car on platforms for transporting people), platforms use algorithms and gamification to encourage employees to work harder and longer.

This "limbo" means that, in practice, the workers do not enjoy the security offered by traditional jobs nor the freedom granted to the entrepreneur, which leads to a diverse set of consequences. There are exceptions, however, as in the case of renting spaces/accommodation platforms, in which the worker dictates the value of their business and sets their own rules. This demonstrates the need to compare the experiences of digiwork workers (herein called digiworkers) in different types of services.

METHOD

In order to understand the scenario of virtual work intermediation platforms operating in Brazil, a survey of these organizations was carried out via documentary research from September 2020 to March 2021, which included different sources, namely: media, internet search websites, social networks, and digital app stores, as well as scientific publications on the subject.

Data collection procedures

The searches were initiated using keywords established from the most well-known digital platforms, using the name of these companies, and the services involved, such as "delivery platform", "people transport platform", and "psychological care platform." Both the immediate results of the adopted keywords and those generated correlatedly by the results were used. For example, through the search for "Uber," in addition to information about this company, other companies in the same field were accessed, which appeared related to the first one. As a result, new platforms were verified and, according to the type of service provided by them, additional keywords were established (e.g., "lawyers", "cleaning"); this process continued until a saturation level was reached – when no more new companies or branches of business were identified to generate further queries.

International platforms that hire Brazilian workers to perform 100% digital services but that are not officially located in Brazil or do not have an interface in Portuguese (as is the case of MTurk) were excluded. Digital platforms were also excluded if their nature of labor intermediation was not explicit, as well as companies about which the minimum necessary information was unavailable (possibly due to being a recent launch or still in the testing phase). Finally, the platforms that were not characterized as labor intermediaries but as sharing communities, such as BlaBlaCar (ride sharing) or Couchsurfing (hosting sharing), were not considered for this mapping.

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Data analysis procedures

Some authors have been attempting to subdivide the broad scope of digital platforms' characteristics to understand this growing market. In Brazil, it is possible to find mappings aimed at collaborative consumption platforms (Cezar et al., 2018; Teixeira & Paraizo, 2020), but these mappings do not necessarily involve labor intermediation, thus differing from our scope.

Abroad, studies were mainly dedicated to grouping and classifying the different tasks of the crowdworking modality (Schulte et al., 2020). In this sense, it is possible to find classifications that include the division of microtasks *versus* innovation tasks or even a more detailed division of platforms that intermediate microtask services, marketplace (e-commerce), design, testing, and innovation. However, Schulte et al. (2020) suggest that such divisions were not evaluated from a practical perspective to ensure that the taxonomy held up, nor did they consider the verification of homogeneity within each category (e.g., identifying whether the microtasks of platform A and platform B resemble).

In this survey, we sought to remedy such gaps by detailing the characteristics of the mapped platforms. Furthermore, it was intended to advance in the categorizations since the studies mentioned above were dedicated to classifying the types of tasks/services provided in one of the digiwork modalities. Thus, two independent researchers checked and organized the following data, based on the spreadsheet containing all the identified companies: 1. general descriptive information (e.g., year of launch) and 2. types and main characteristics of the services provided (e.g., description activities performed, a form of contracting/payment). After consolidating the information, descriptive statistical and categorical content analyses were carried out, following pre-analysis, coding, categorization, and interpretation (Gondim & Bendassolli, 2014).

DIGITAL PLATFORMS IN BRAZIL: GENERAL SCENARIO

In total, 127 platforms were cataloged, 82% of which are Brazilian companies, 4% from the United States, 1.5% from France, 1.5% from Australia, 1.5% from the Netherlands, and 9.5% from Chile, Spain, Argentina, Switzerland, Germany, Belgium, Hong Kong, Israel, Russia, Poland, and Colombia (one platform from each of these countries). Digital platforms were also differentiated according to their nature: multinationals are present in

Brazil and at least one other country, and national, present only in Brazil, possibly covering the entire national territory or specific regions. All foreign platforms (23) are multinationals, and among them, 15 (about 65%) operate throughout the national territory, and four (about 17%) only operate in some regions of Brazil. The remaining four platforms were characterized as intermediating 100% virtual works, in which the territory identification does not apply. Among the 104 Brazilian companies, seven of them (about 7%) expanded their operations to other countries, 53 (50%) operate throughout the national territory, while 42 (about 40%) operate only in some regions of the country. Of the remaining nine platforms, one works only in the virtual territory, and eight did not present information about their acting scope.

The prevalence of national platforms and their nationwide scope of operation signals the importance that this business model has been achieving in Brazil. Regional performance platforms can also reinforce this finding from another perspective, as they constitute a possible indication of embryonic businesses with potential for expansion or businesses planned to meet specific local demands. Notably, some of these platforms – especially delivery services from the Brazilian inland – highlighted in their history that they emerged from the ideas of groups of university students, mainly from public educational institutions.

In order to verify a possible expansion of the creation of digital platforms in the market, we sought to identify the year of launch. This information could only be identified in 103 of the 127 surveyed companies. Among these, 14 were launched in the digital platform model from 2005 to 2010, with the oldest companies in this survey being: Textbroker (2005), AjudaSim (2007), and Italki (2007). From 2011 to 2015, 31 of the identified companies were launched; from 2016 to 2020, the number of platforms launched jumped to 58, as illustrated in Figure 1. Such data indicate a growth trend, which corroborates the argument for expanding this type of organization linked to alternative forms of connecting workers and companies (Bergman & Jean, 2016; Spreitzer et al., 2017).

Figure 1

Year of the launch of digital platforms operating in Brazil

Number of digital platforms launched
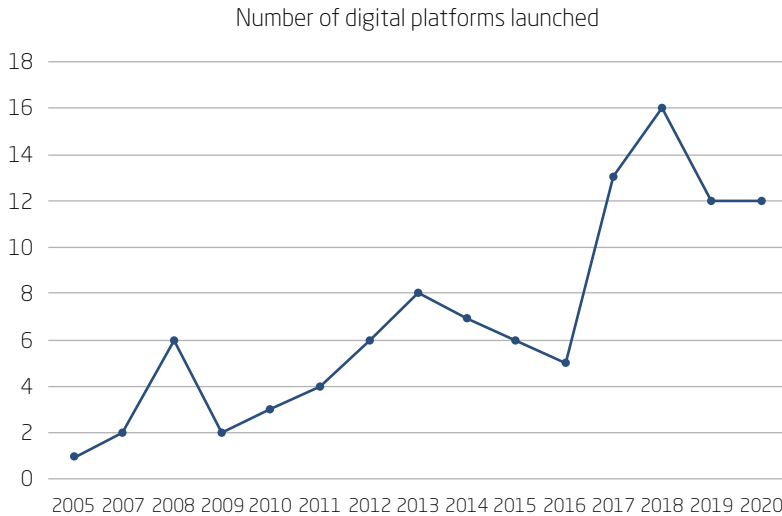
Source: Elaborated by the authors.

Regarding the number of registered professionals, access to this information was difficult since only some companies disclose it on their websites or apps, usually in a summarized way. On the one hand, this difficulty may be due to the reluctance of platforms to present this data transparently and, on the other hand, to the fact that some workers are simultaneously active in several companies, even during the same day (De Stefano, 2016). Moreover, there are cases in which digiwork is a complementary work, not the main, "serious" work (Brawley, 2017; Schulte et al., 2020).

Regarding multinational platforms, some present the data of their operations in Brazil and worldwide (e.g., Uber), while others only present global data (e.g., Workana). At the same time, some do not make it clear whether they are dealing with their international or national operations (e.g., StarOfService). Some companies choose to disclose their size through the number of registered professionals, such as Uber (1 million drivers in Brazil), 99Freelas (800,000 freelancers), GetNinjas (more than 500,000 professionals from different specialties), Workana (about 3 million professionals from different specialties worldwide), Sontra Cargo (50,000 truck drivers), Superprof (300,000 teachers), and Vittude (3,500 psychologists). Others do not reveal this information, disclosing the number of services provided, as is the case, for example, of Zé Delivery (about 1 million deliveries made). Some companies choose to

inform the number of downloads of their apps, such as Lady Driver (more than 1.3 million passenger downloads), iFood (1.5 million per month), and James (more than 1 million). Some platforms also indicate their numbers of users, such as Uber (103 million users worldwide), Rappi (10 million active users), and Dr. Kids (more than 3,000 active customers). Although not standardized, the numbers accessed underline the magnitude of digiwork's participation in the world of work.

TYPES AND MAIN CHARACTERISTICS OF OFFERED SERVICES

As for the services provided, the analysis of the collected data allowed for the identification of 11 categories (Table 1); since there are platforms that work with multiple focuses, three of them were allocated to two categories simultaneously (Giross, iTrust, and Ryd). Platforms that perform services from three or more different niches were assigned in the "Multiservices" category.

We can observe that large companies tend to diversify their services by creating specialized platforms for each area of activity, as is the case of Uber, which currently has a second specific platform for food delivery (UberEats), or 99 App and its delivery service, 99Food. In this sense, there was a tendency for platforms to different group types of professionals according to the service niche they want to reach, as is the case with Dr. Kids, which focuses primarily on pediatricians from different specialties, and Lady Driver, which exclusively connects women (professionals and clients). This trend can be understood as an attempt to gain distinction in such a competitive market developing at high speed. Additionally, it is an alternative provided by a mechanism that allows reaching a large audience, which ends up, in a way, requiring the creation of market niches.

Multiservice platforms, however, coexist alongside specialized platforms, such as the multinationals Workana and Youtaf and the national companies GetNinjas and Sem Patrão. A possible analysis of this phenomenon refers to the ease of searching for different types of service on a single website/application, corroborating the contemporary socioeconomic changes in which agility, ease, and accessibility guide relationships and new companies. Despite resistance or distrust from some spheres of society and traditional companies, technologies and new types of work consolidate a paradigm shift from an economic, social, and behavioral perspective (Lundvall, 2017).

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Table 1

Mapping of digital intermediation platforms in Brazil according to the classification of the type of service provided

Category	Description of services performed by professionals	N (%)	Nature	
			National	Multinational
Product delivery	They deliver food products or goods and carry out freight and cargo using vehicles such as bicycles, motorcycles, cars, or trucks.	25 (19.23%)	99Food; aiqfome; Bee Delivery; Busca cargas; Cargo X; Delivery Much; Fretebras; Giross; James; Loggi; Pede.aí; PX; Quero Delivery; Quero Frete; Ryd; Sontra Cargo; Uber; Yoolo Logística; Zé Delivery	Click Entregas; Cornershop; iFood; Lalamove; Rappi; Uber Eats
Multiservices	Services of different categories, provided by professionals with higher education, medium and technical levels, or events without education, from similar areas or not. Most refer to tasks performed 100% digitally. It also includes services classified as microtasks.	18 (13.85%)	ChamaWill; Crafty; Crowdtask; Freela Jobs; Freeloul; GetNinjas; Helpiel; Just Virtual Real; MO24h; Sem Patrão; Vinteconto	Fiverr; Freelancer. com; StarOfService; Toloka; Workana; Youtaf; Zareklamy
Cleaning or home maintenance	Cleaning and maintenance services for homes or businesses include cleaning, ironing, plumbing, repair, pool cleaning etc.	17 (13.08%)	AjudaSim; Brastop; Broomy; DiariaJet; Diaríssima; Dixx Serviços Domésticos; Domus Serviços Residenciais; Donamaid; Faxina da Hora; FaxinTop; H2Office; iTrust; Me Ajuda Limpeza; Parafuzo; Rose; Triider; UmHelp	-
People transportation	They transport passengers within the same city or on intercity trips carried out by cars or motorcycles.	14 (10.77%)	31Motorista; Agilize Transportes; Bimp; Giross; Lady Driver; Let's Go; Livre; Meu Moto Táxi; Motora; Ryd; Trips	99 App; Cabify; Uber

Table 1 (continuation)

Mapping of digital intermediation platforms in Brazil according to the classification of the type of service provided

Category	Description of services performed by professionals	N (%)	Nature	
			National	Multinational
Health (medicine, psychology, nutrition, physical therapy etc.)	Health care services are offered by professionals with higher education, from different areas, such as medicine, psychology, nutrition, physical therapy, and physical education, among others, through remote or in-person care.	11 (8.46%)	AmparoApp; Doutor ZAZ; Dr. Kids; Fácil Consulta; iSpa; PlenaVi; Unieloo; User fit; Vittude; Zenklub	Psicologia Viva
Education (classes/lessons)	Teachers, tutors, and instructors who teach classes/lessons or accompany students in various disciplines and specialties, including primary, secondary, higher, and language education.	11 (8.46%)	Colmeia; Corujito; EasyClasses; Eduqi; Liber; Profes; Professores de plantão; Shapp	Italki; Preply; Superprof
Entertainment (spaces, products, utensils, and services for events)	Services include spaces such as residences and offices, as well as the rental of utensils, and other artistic services (such as bands, DJs etc.) for parties and events.	10 (7.69%)	Alloca; Busque Músicos; Galera de Eventos; N1Office; Spacevents; Spotz	AirBnb; Regus; Vrbo; WeWork
Production of texts or videos/digital communication/advertising and marketing	Various services involve communication, marketing, advertising, and publicity. It includes the construction of texts, videos, advertising pieces, the assembly of digital media etc.	9 (6.92%)	99Freelas; Contentools; Meu Redator; We Do Logos; WeLancer	99designs; Crowd; Rock Content; Textbroker

(continue)

Table 1 (conclusion)

Mapping of digital intermediation platforms in Brazil according to the classification of the type of service provided

Category	Description of services performed by professionals	N (%)	Nature	
			National	Multinational
Consulting / Advice (law, architecture, engineering etc.)	Consulting and advisory services in specific areas of higher education, such as law, architecture, and engineering, whether for individuals or legal entities.	5 (3.85%)	Advogado Já; Arqdrive; FullFreela; Jusbrasil; Registro Jurídico	-
Domestic support (care of pets, children, elderly etc.)	Various domestic support services involve specialized care for the elderly, activities with animals such as outings and cleaning, or even babysitting for children.	5 (3.85%)	Appnanny; DogHero; iTrust	Babysits; Sitly
Beauty (manicure, hairdressing etc.)	Services in fashion and beauty, such as makeup, manicure, hairdressing etc., at home.	5 (3.85%)	Click Nails; Ella; Singu; SPA at home; TokBeauty	-

Source: Elaborated by the authors.

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The product delivery services segment was the category that presented the most significant number of platforms. This corroborates with the study by Artur and Cardoso (2020), in which they show that platforms offering transportation and delivery services are the most common among work-on-demand that provide in-person services. Note that they are also presented as the most "visible" in everyday life since there are many delivery app workers, and they are everywhere. These platforms are the ones that contain the most significant number of workers and, consequently, are the first to be targeted by mobilizations for rights and working conditions and the first to be involved in lawsuits (Artur & Cardoso, 2020).

They are also among those that most combine characteristics that diffuse the idea of the self-employed worker, promoted as an advantage by alternative labor arrangements. The digiworkers of delivery and passenger transport services generally have little autonomy to manage their own service, in addition to being subjected to long working days, including unproductive hours, in which they are available for tasks, waiting to be called to perform them. Once they accept the demand, they are subject to the rules and norms established by the intermediary company, with little room for adjustments in a universe ruled by urgencies, in which speed is an aspect considered in their performance evaluation. In this sense, they are constantly subject to the two most serious risks to mental health highlighted by Bajwa et al. (2018): platform surveillance and customer/consumer evaluations.

These types of tools allow companies to exercise constant monitoring, making it possible to know when and where workers are connected and perhaps even their customer interactions (Bajwa et al., 2018). Regarding evaluations, the classification that is used under the pretext of establishing trust between workers and clients has perverse effects, as it encourages competition among peers and constant insecurity, including the possibility of being canceled or losing gains without clear justifications on the part of the platforms, in a quick and unilateral deactivation (Ropponen et al., 2019; Tran & Sokas, 2017). This results in demand for very intense emotional labor (De Stefano, 2016), including tolerating possibly inappropriate behavior from clients, which can be mentally exhausting and stressful.

During the Covid-19 pandemic, this class of workers suffered an additional risk since they were included in the list of "essential services," such as transporting people and delivering food; thus, they continued to work *in loco*, leaving them more exposed to the virus (Bentivi et al., 2020). This ended up intensifying a debate about the need for new interpretations regarding the protection of the right to health and safety at work. Although

the Brazilian Federal Constitution imposes, in all areas, the establishment of mechanisms of solidary responsibilities (which, in this case, could be extended to the intermediation platforms), the deregulation hampers access to such rights. It facilitates the concealment of resources that require companies to guarantee decent working conditions (Freitas, 2020).

Following the delivery segment, the multiservice segment stood out. The platforms for intermediate workers who provide various services, predominantly in digital form, also include media focused only on crowdworking microtasks (Schulte et al., 2020). The fact that they focus on virtual activities may explain such proliferation, considering that the risks for the labor intermediary company are significantly reduced when the service provided by the "partner" has little interaction with the customer and is not offered in the "real world."

Remarkably, this category has the advantage of potentially reducing discriminatory behaviors aimed at those who offer the service since the "hiring" takes place virtually, often even anonymously. Additionally, the ability to work online from anywhere (characteristics of some of these services, especially crowdworking) promotes access to work opportunities for people at home due to health problems or disabilities (De Stefano, 2016; Ropponen et al., 2019). Moreover, considering the economic and health crisis intensified by Covid-19, this was an easier way to offer work that met with the government measures to contain contamination.

The third segment most represented by the mapped platforms was cleaning and home maintenance services. Along with the delivery segment, these data indicate the need to reflect on how this type of business has increased among the most vulnerable workers. This type of arrangement possibly favors a bypass from the responsibilities imposed by the recent legal achievements of this class of workers, making it difficult for them to leave the historically imposed conditions of precariousness and informality. It was only in 2013 that a Proposed Amendment to the Constitution known as the *PEC das Domésticas* (Maids' Amendment) was approved, which extends to domestic workers the rights already guaranteed by the Constitution to other professions[3]. Notably, most companies that act as intermediaries for these services are Brazilian, which reflects the adaptation of this globalized business model to the characteristics of the local culture.

Next are the platforms that offer: transport services for people; higher education specialists in Healthcare; specialists in Education; entertainment

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[3]   Retrieved from: https://www12.senado.leg.br/noticias/materias/2013/03/18/entenda-o-que-muda-com-a-pec-das-domesticas

(such as location rental, products/utensils); production of texts, videos, and other digital content; higher-level consulting in areas such as law, architecture, etc.; and, finally, domestic support and beauty care services.

These data show the heterogeneity of the types of work covered by digital platforms, which can be understood as the materialization of neoliberal policies by reaching an unlimited number of workers on an intermittent basis or without employment (Gondim, 2020). They also reinforce the influence of this business model, which imposes an alternative work arrangement to traditional employment for different segments of workers, especially in the context of an economic crisis such as the one triggered by the pandemic.

Markedly, the large number of platforms dedicated exclusively to providing services that require higher educational training allows workers more autonomy to make decisions about their work (Spreitzer et al., 2017). The platform could thus mean an expansion of connection possibilities to a greater variety of customers, especially with the intensification of remote work promoted by the pandemic.

It can be thought that digiwork can also have protective factors over workers' health. Ropponen et al. (2019) suggest that the variety of task content and customer profiles, the possibility of developing new skills, relative autonomy, and schedule flexibility are aspects that can assume this role.

Furthermore, when comparing professionals with higher or lower qualifications, volition has been highlighted as a significant antecedent of health and well-being (Barling et al., 2002; Berger et al., 2019; Spreitzer et al., 2017; Tran & Sokas, 2017). The entry of the worker into the digiwork arrangement by external imposition or due to a perceived lack of alternatives implies a greater risk of deterioration in well-being (e.g., lower levels of life satisfaction and higher levels of anxiety). On the other hand, when the worker chooses to have an employment contract of this nature, such negative effects are minimized (e.g., higher levels of subjective well-being). Workers seem to have a more positive experience when they make alternative work arrangements by choice, allowing for a more flexible professional life in line with their current personal aspirations and needs. In this case, the tendency is that they do not classify their work as precarious (Barling et al., 2002; Spreitzer et al., 2017).

The choice of how to enter the labor market, however, is available only to a small portion of the population and, therefore, it is typical for this positive experience with highly flexible work arrangements – such as digiwork – to be reserved to workers with a high level of expertise/knowledge. According to Spreitzer et al. (2017), workers with a high level of specialization/knowl-

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edge are disputed by companies for their talent; having greater autonomy to decide when, where, and how the work will be performed; and dealing with more enriched content. They may reject activities if the schedule is heavy or when it ceases to be interesting for them. Regarding the less qualified workers, the growing sense of insecurity, exploitation (due to the greater power distance), and difficulty in ensuring a decent financial return is such that the praised flexibility of the arrangement tends to benefit the company more than the worker. Besides, in a context marked by the progressive retraction of opportunities in the formal labor market, such as the Brazilian reality (IBGE, 2021), it is worth reflecting on what can – even for qualified workers – be considered a choice.

The differences between worker profiles, according to the qualification required for the provided service, are extended to the level of autonomy granted to them by the platform regarding financial transactions and the wages obtained. The mapping identified four models of intermediation of values.

The first model is the rarest; the professionals, generally more qualified, present the budget, the client hires the service based on the budgeted amount, and a percentage of the payment received is destined for the platform (e.g., DogHero, 99Freelas). This also happens especially in the entertainment category, when the worker is the owner of the asset being negotiated (e.g., Airbnb). The second is the most common among less specialized services: in addition to charging percentage fees on the transaction, platforms are responsible for determining the value of the service and for passing on the payment to the worker (e.g., Uber, Bee Delivery). There are also platforms that mix the two previous forms, with some specific and personalized services being budgeted by the professionals themselves and others that are simpler, with values previously established by the platform (e.g., Textbroker). Finally, the peculiar model for platforms that provide cargo transport services, and for some multiservice platforms, is for the customer to stipulate the amount to be paid. It is up to the worker to accept the offer or negotiate directly with the user while also being charged fees on top of the amount received (e.g., Busca Cargas and Quero Frete).

We observed, therefore, that the three actors interested in the transaction (platform, customers, and workers) may have different roles concerning the establishment of values, mainly according to the type of service offered and the level of qualification/specialization of the worker involved. Figure 2 illustrates this distribution, emphasizing how the platform assumes a more significant role in services with less demanding worker qualifications.

Figure 2

Control over the pricing to be paid to the worker according to the type of service provided via the platform intermediation
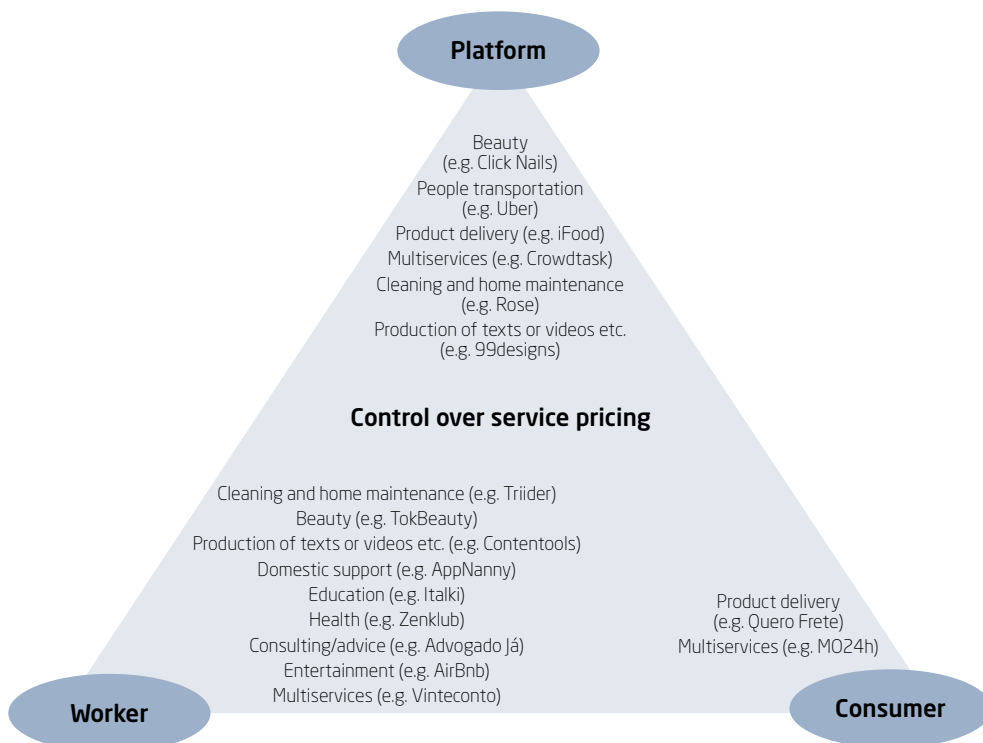
Source: Elaborated by the authors.

According to De Stefano (2016), these models expose the variability of virtual platforms and the power discrepancy between companies and professionals. For the author, although the former are intermediaries of the services provided, they strongly interfere in transactions. Some platforms allow customers to refuse payment if the work is unsatisfactory without any justification for the worker.

FINAL CONSIDERATIONS

This study presents contributions to the understanding of digiwork in Brazil, summarized in three main indicators:

1. growth trend of companies in the sector;
2. progressive and growing adhesion of workers to these companies;
3. diversification of services offered, with progressively more professionals from different areas and training levels inserted in this arrangement.

The growth of these indicators is in line with the political-economic trend of encouraging the loosening of employment protections, which, by individualizing and informalizing the bonds, undermines the possibilities of collective organizations, which are important to ensure and protect the rights of the working class. Although this disarticulation strategy is embedded in work arrangements such as digiwork, workers end up finding ways to group together, creating collectives as a source of instrumental, informational, and emotional social support. However, since part of these actions are also virtual and mediated by platforms, they end up suffering the typical problems of online activism, such as the dispersion of agendas and reduced ability to transpose the demands into the real world. Furthermore, the availability of data from platforms and apps, combined with fierce competition, increases the possibilities for companies to monitor, discourage, or even retaliate against forms of activism. Moreover, the growth of some platforms could also facilitate mergers and acquisitions in some highly fragmented sectors, such as passenger transport services, which, on the one hand, reduce the association options for drivers and, on the other hand, give rise to larger actors, more easily targeted by unions and regulators, if there is political will in this direction (De Stefano, 2016).

There are many controversies regarding the necessity *versus* feasibility of regulation and legal guarantees. This type of arrangement differs from the traditional one, given the flexibility allowed in terms of schedules and scales and the possibility of working on multiple platforms simultaneously, among other aspects. If, on the one side, this would require the creation of specific and intermediate legislation, on the other, some factors need to be considered in this universe of digiwork before proposing further regulation, such as the degree of freedom allowed to the worker in the performance of his service. This would mean that, for a platform to refute the formation of the employment relationship, it would have to establish only a set of minimum instructions, allowing greater autonomy for the worker to perform their tasks (Todolí-Signes, 2017). From the mapping, we identified that only a few platforms currently meet these requirements.

As a counterpoint, it is worth remembering that digiworkers are only part of a much broader spectrum of a workforce that is considered atypical but is becoming typical (Barling et al., 2002; De Stefano, 2016). Thus, the

discussion about mechanisms that reduce their negative impacts and enhance the positive ones cannot take place without considering this broader universe of temporary workers or those who work on demand, at the risk of creating a segmentation of the labor market that is difficult to define. Nevertheless, there are proposals to consider digiworkers as a new category, which would demand a different set of protections. In this case, platforms would be required to bear some costs (reimbursement of expenses necessary to carry out the work, for example) and not others (such as social security and medical expenses in general). The creation of an intermediate category, however, could legitimize precariousness and bring more protection to companies than to the digiworkers themselves, in addition to the risk of pushing formal workers into this category of a "disguised" contract (De Stefano, 2016). For Benach et al. (2002), the most important factor that still limits our understanding of the potential impacts of alternative arrangements on workers is the lack of an integrative social and work model, which can only be achieved with more significant investment in research on the subject.

In addition to debating possible regulation, many advances still need to be made toward a greater understanding of the working conditions of these professionals and the limits and possibilities of actions within the field of Organizational and Work Psychology and People Management in this context. The focus of future studies, as well as any proposal arising from this, needs to be on the ecosystem in which the digiworkers are inserted. Thus, we propose that the adopted approach contemplates not only the public policies but also the policies and practices of people management adopted by the platforms, as well as the health and well-being of the digiworkers themselves, considering them as more vulnerable and more susceptible to risks.

All these conditions can be undermined by specific characteristics of the reality of each worker, especially regarding race, gender, social class, and subjective experiences. We can imagine, for example, that for a middle-class worker living in a reasonably big place and with equipment that he does not need to share with other family members, the transposition of the traditional work context to some jobs mediated by platforms (which do not require in-person meetings) can take place in a less complex way than for someone to whom this is a distant reality. In the same way, women experience more work *versus* family conflicts, a situation that tends to intensify in these conditions of less defined boundaries (Rodrigues et al., 2020). Therefore, the individual perspective of workers must also be prioritized in studies investigating how they perceive working conditions and their respective influences on psychological phenomena (Durward et al., 2020).

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This study did not intend to exhaust the mapping of active platforms because there would not be a safe method to ensure that this was achieved; instead, we based ourselves on search strategies that allowed us to have a broad view of the current scenario. We consider that there is a limitation regarding the generalization of the analyses presented since not all companies in the sector may have been identified. However, the data collected demonstrate the need for further research to continue to focus on understanding digiwork, following the speed of expansion of this work arrangement and of the intermediary companies that sustain it, as well as its impacts on workers.

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