



# FUTURE OF WORK GLOBAL LABOR:

Literature Review—

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## INTRODUCTION AND OVERVIEW

This literature review provides an overview of the global impact of the “platform economy” on work conditions and employment opportunities. We define the platform economy as a two-sided market. Hiring agents operate as employers, submitting work requests that demand attention from a supply of workers aggregated and made available as a labor market through a platform company. In some cases, the hiring agents are individual consumers using platform company services. In other cases, businesses of all sizes turn to platform services as a labor supply. The platform company serves as a broker and intermediary between the two sides of this market, which is driven by internet-enabled “on-demand” requests. Sometimes, the platform company is a neutral party, merely providing a location for demand and supply to meet. Just as often, platform companies play a pivotal role in setting the terms and opportunities for employment.

What we think of as the emerging on-demand platform economy—also called the “on demand” or “sharing” economy—could, potentially, provide work opportunities around the world. Yet, without global oversight and interventions that maximize social welfare for workers and platform businesses alike, the platform economy could exacerbate income inequality. As currently designed, the two-sided market dynamics of the platform economy create some opportunities for more formal employment, particularly in information services and knowledge work. There are two streams of jobs to track in the growing world of data analytics and management, invisible to most consumers. In some cases, the on-demand platform economy allows companies to pay people to do the data labeling and data entry necessary to develop artificial intelligence (AI) found in software that improves customers’ web search queries, spam filtering, and captioning and translation experiences online. In other cases, the platform economy is a mechanism for paying people not to train AI, but to remain “humans in the loop,” performing content review and moderation and providing text-based customer service support when AI fails or cannot compete with the human capacity to respond to customer service demands.

The platform economy also tacitly structures existing informal economies organized around delivering tangible domestic services, from cleaning to childcare, without providing the benefits of formal employment. The platform economy, typically, expands independent-worker status, both through its role in the growth of task-based, project-driven contract information service work and its function in structuring informal, tangible service work. Unfortunately, this also means the expansion of work that comes with no tailored safety nets to secure base pay, sustainable schedules, or opportunities for future, long-term employment.

This literature review will cover the transnational flows of the platform economy, mapping out how labor generated online—and, in the case of information service work, circulated behind the veil of application programming interfaces (APIs) and the internet—can alleviate or exacerbate existing inequalities. Additionally, this review will highlight how the platform economy can facilitate or hamper communication and solidarity amongst workers.

The first section of this literature review considers what we know empirically about the human labor supply chains created by on-demand work and the offline realities that shape the material work conditions of the platform economy. We divide this section into two parts, considering the different categories of task-based work generated by platforms. In the second section, we consider the transparency and opacity of platform labor flows and their impact on workers’ capacity to secure

economic power. The third section deals with the ability of on-demand platform workers to organize and looks at important factors to consider in designing on-demand platforms.

Most of the published academic research to date has focused on the growth of the platform economy in the Global North, or transnational flows of work requests generated in the Global North and filled by laborers in the Global South. There is still little academic literature on “home grown” platforms with local or regional implementations of platform-mediated work. While the concern in the Global North is the “taskification” of work, the disembodiment of workers, and lack of a safety net, in the Global South, the platform economy contends with a different dynamic: high levels of pre-existing informality and poor employment outcomes in the formal economy (Fanggidae et al., 2016). Given that the categories of formal vs. informal employment have never captured how most of the world labors, this new format of structuring work posed by the platform economy poses the question: What do we want employment opportunities to look like and what workers’ rights and protections we should be aiming for? We conclude the review with an overview of suggestions from the literature on constructive ways to shape the platform economy to better serve workers’ well-being. We begin with a brief taxonomy to orient readers to the myriad of terms currently found in the literature.

## TAXONOMY OF TERMS

Because different terms and phrases are sometimes used to mean similar things across different academic fields in the literature, we offer some definitions of key terms below as they are used in this report. These definitions are intended only to clarify meanings in the context of the present report and are not meant as a corrective or challenge to other variations on uses of these terms. We do, however, consistently use the terms *the platform economy* and *on-demand platform work* to describe the focus of this literature review.

**Business process outsourcing (BPO):** Business process outsourcing (BPO) is the contracting of “non-core” business activities and operations—those considered ancillary to returns on investment tied directly to a company’s brand profitability—to a third-party provider. Examples of BPO services include accounting, customer services, and human resources (HR). BPOs are also known as information technology enabled services (ITES) because of their dependency on internet connectivity, shared cloud storage, and distributed database management (Sharma, 2015).

**Gig work:** See platform economy.

**Ghost work:** Labor conditions that fail to see, or intentionally devalue, people’s collective contributions to our economy and society (Gray & Suri, 2019), as it happens when companies or consumers elide or fail to recognize people responding to these platform-driven work requests; on-demand jobs can quickly slip into *ghost work*.

**On-demand platform economy:** We use this term to describe economic activity and employment generated by platforms owned by corporate entities. These platforms profit from creating a two-sided market that uses application programming interfaces (APIs) and the internet to, at least in part, source, schedule, manage, ship, and bill task-based, project-driven work. This framing helps us bucket platform work into tangible services picked up online and delivered offline, as well as information services and knowledge work delivered entirely online (Gray & Suri, 2019). Also called the *peer economy* or *sharing economy*.

- **Online-to-online work:** For digital labor (online-to-online) including crowdwork, platforms such as Amazon Mechanical Turk (MTurk), and freelancing work, such as Upwork or Freelancer.com, which allow for transnational outsourcing of work.
- **Online-to-offline work:** Digitally-mediated physical labor and platform-mediated labor finding, such as driving (e.g. Uber, Ola, Lyft, Didi), delivery work (e.g. Swiggy, FoodPanda, Rappi), or household services (e.g. Dunzo, Housejoy), most of which is performed on a local basis even if the companies cross borders.

**Micro- and macro-tasks:** Some academics make the distinction between discrete task work that is narrowly scoped (e.g., getting paid 5 cents to answer a survey or label an image) and larger freelance projects where the worker is given a broader, less specifically defined task to fill (e.g., building a website). While micro-work platforms, such as Amazon Mechanical Turk (MTurk), typically do not reveal the specific identities of workers on their platforms, macro-work platforms, such as Freelancer.com, allow workers to build more visible worker profiles that highlight the identities and specific experiences of each worker. Also called *digital piecework*, *click work* (pejorative), *collective intelligence*, *crowdwork*, *human computation*, *humans-as-a-service*, *humans-in-the-loop*, and *paid crowdsourcing*.

## I. THE RISE OF THE ON-DEMAND PLATFORM ECONOMY

Scholars Mary L. Gray and Siddharth Suri have recently argued that the platform economy reflects a new world of work that is, at least in part, sourced, scheduled, managed, shipped, and billed through a combination of application programming interfaces (APIs) and the internet. Rather than consider the platform economy a collection of part-time, ad hoc, or niche jobs, they suggest viewing the platform economy as a mechanism for taking full-time work opportunities and converting them into task-based, contract-driven service jobs requested on demand by either a business or consumer soliciting help.

The mechanism of circulating “on-demand work” via APIs and the internet can produce “online-to-offline” jobs, like food delivery and cleaning, as well as “online-to-online” jobs, like data-labeling and content review. In both cases, this work depends on a person fulfilling a task or project request, managed by an internet-enabled platform serving as an intermediary and broker. And, in both cases, the role of a single employer of record providing workplace security is, to date, murky and unregulated.

According to the International Labor Organization, the “formal economy” includes any job with employer contributions such as an office, healthcare, training, and benefits. Anything outside of this definition, including self-employed workers, would be part of the informal economy. In 2016, two billion workers—61 percent of the global labor force—pursued economic activities that were either outside of or insufficiently covered by formal employment arrangements in law or in practice (ILO, 2018a, p. 12), with only a minority of the world organized by the formal economy (Women in Informal Employment: Globalizing and Organizing, 2014). While it is unclear where the platform economy fits in this continuum—or if it operates in this paradigm at all—it is certain that the platform economy depends on a modern fixture of most economic development: the internet.

Only 10 years ago, less than 8 percent of people in low-resourced countries were connected to the internet (ITU, 2016). Now, over 40 percent of the world’s population—nearly three billion people—have internet access. At the same time, after 20 years of trying to close the divide between digital haves and have-nots, it is clear that the mere presence of technology is not enough to level the playing field (Ames, 2019). The persistence of the digital divide and the digital inequalities it produces will become an even more pressing problem if participation in a global platform economy depends on a stable internet connection. This connectivity takes on different meanings and value for people in the Global South now able to access online-to-online information service work and those using smart phones and the internet to tap into platforms for online-to-offline service work. In both cases, workers and employers orient to the platforms as matching services between client and worker. Having established the backdrop of formal and informal economic activity and the importance of the internet to both, we now turn to the specific streams of on-demand work shaping the platform economy.

### ONLINE-TO-ONLINE PLATFORM WORK

The World Bank projects that informally organized, on-demand “online-to-online” labor will grow to a market of \$25 billion a year by 2020. A 2015 research study estimated that, in the U.S. and Europe alone, around 25 million people performed some form of on-demand work online, accepting project-driven tasks from companies that assign, schedule, route, and bill work through websites or mobile apps (Kuek et al., 2015). Based on this data, Gray and Suri predict that, if combined with current trends in the growth of contract staffing and temp agency services, 60 percent of today’s global employment will likely



be converted into some form of on-demand information service work by 2055 (Gray & Suri, 2019, p. 167).

Of course, the practice of labor arbitrage in knowledge work—reducing production costs by hiring cheaper workforces through business process outsourcing (BPO) staff services operated in the Global South—is not new. Some locations around the world have traditionally served as main sources of labor for BPOs in transnational value chains (UNCTAD, 2009). The modern economy of relying on outsourced workers for information and communication services, such as telemarketing, took off in the late 1980s with the global expansion of internet (Bain and Taylor, 2008). By the 1990s, communication technology developments in both phone and digital connection made outsourcing services easier, particularly with India and the Philippines as main providers (Beerepoot & Hendriks, 2013; Bryson, 2007; Kleibert, 2015; Lambregts et al., 2016; Lewin & Couto, 2007; Lewin et al., 2009; Padios, 2018; Sharma, 2015).

During and after the first web bubble bust in New York’s Silicon Alley, Gina Neff (2012) observed a pattern of “venture labor...the explicit expression of entrepreneurial values by non-entrepreneurs” (p. 16). She studied how creative knowledge workers—writers, videographers, programmers and editors—shifted from expressing a desire for full-time employment and clear career trajectories to investing time in building relationships and personal brands, leaving prospects of secure employment in industries, such as marketing and publishing, for risky temp jobs at tech companies. Neff’s “venture laborers” in Silicon Valley had to absorb what we think of as the precarity of on-demand economy—namely, the absorption of transaction costs, from searching and training for work to managing time and payroll, traditionally shouldered by the firm.

The “entrepreneurial values” required of those who perform knowledge work on contract for the broader information economy are also demanded of on-demand workers doing online-to-online platform work by the task. They, like their “macrotask” peers, have to constantly search, “hustle”, navigate, and put together opportunities to work, networks of support, and different income streams outside of formal employment structures. Therefore, it is important to stop thinking of platform labor temp work as a stepping stone to full-time employment, hailing the former as the ideal and the latter as less-than, given that default labor conditions of the platform economy look far more like the employment reality for most of the world: economic activity without the benefits of workplace benefits, salaries, and long-term retention with a single firm.

On-demand platform work, which enables new models of on-demand labor online, is harder to track, measure, regulate, organize, or catalog than traditional labor. A website or mobile app serves as the portal through which jobseekers can search for work find listings posted by those looking for workers to perform a discrete task or complete a larger, short-term project. Unlike online classified ads or job boards, the platforms offer more than just a location to find or post work. Platform companies broker work relationships and maintain reputation systems to classify, categorize, qualify, or rank workers for some work opportunities. A platform’s brand is built on its ability to aggregate enough workers to fulfill any given request for work with the click of a button. The designers of these platforms are not only in charge of navigation of employment opportunities but are also formatting the protocols of how workers and requesters will interact. Some platforms include worker bios, including the national origin of workers, and some strip all identification from workers, assigning them a worker identification number.

As we will see later in this review, each decision can differently affect a worker's opportunities and the importance of offline ties to other resources and workers.

Chew Kuek et al. (2015), for example, estimated that the market for digital work was \$4.4 billion in 2016, and it continues to grow quickly. An index measuring the utilization of digital labor platforms suggests that their use is growing globally at a rate equivalent to 25 percent each year (Kässi & Lehdonvirta, 2016). Graham et al. (2017) found that most of the demand for transnational, online-to-online on-demand work comes from the Global North, while the supply emerges mostly from the Global South. They emphasize the importance of offline geographies to online work: workers as well as requesters are embedded, regulated, and influenced by local norms, policies, languages, and culture. Geography matters, and online negotiations are not a separate, borderless domain. While the former fall under the umbrella of freelancing, and the latter of micro-work, studies have shown that the issues in terms of precarity, organizing, and information-sharing are similar (Wood et al., 2018). These platforms create environments that conduct transactions mostly in English, make payments in one currency, bypass national labor laws, and fail to discuss taxes (Gefen and Carmel, 2008).

Platforms tasks can range from online marketing, tagging of images, usability testing, and research surveys to medical studies (Ranard et al., 2014). Firms distribute tasks through platforms to reduce costs, increase the scale of production, and reach large subject pools quickly. Large firms like Facebook, Google, and Netflix depend on crowdsourcing labor across the globe to curate and moderate content, improve search results, survey potential consumers, and optimize the services they offer to consumers (Kingsley et al., 2015).

Gray and Suri (2019) define "ghost labor" as:

A world in which steady work and salaries are being replaced by a chaotic string of small projects and micropayments, and human bosses are being replaced by automated processes that are programmed to oversee a far-flung workforce of anonymous independent contractors. (p. xxvii)

Paying per project, whether per click, per time cleaning a house, or per car drive, has both benefits and drawbacks for workers. On the one hand, workers have flexibility, a lowered barrier to entry, the ability to choose tasks and work hours to fit their lives, can gain or maintain independence, and can choose their employer. On the other, workers experience precarity, lack of a safety net, issues with algorithms-as-mediators (explained below), lack of regulation and therefore labor protection, lack of a direct authority figure responsible for their dismissal or explaining tasks, and lack of cohesive professional identity. Of course, these advantages and drawbacks shift according to industry and specific platform. The disarticulation of labor is creating an environment where workers are putting together on-demand projects to recreate the work hours, pay rates, and career development associated with full-time employment through various sources of income. Nonetheless, this has been the reality for most workers in the Global South; therefore, the idea of a shift may be more of a re-evaluation of what we consider "full-time employment." This development has given rise to a need to re-evaluate the preference for "formal" labor and the classification of informal or on-demand work as temporary (if it is not), since this distinction or categorization bases how we study, classify, tax, rate, and value labor and those who perform it.

Neither companies, web sites, nor labor advocates have figured out a useful working classification that encompasses all of what these workers believe they are contributing to. Classification has mattered in terms of labor solidarity and union organizing (discussed below), as well as labor identities and transferability of skills. Labor classification, at least in the U.S., emerged in 1930s, and classification as a social measurement activity goes back to biopolitics and the necessary tools of the state in order to regulate and measure populations; it has always been political and social (Star, 2000).

Gray and Suri (2019) asked on-demand platform workers to describe their work. One respondent from the United States said he “worked for a startup in Silicon Valley.” Another U.S. worker said she was self-employed and using ghost work to “build her business skills.” And a third worker, based in India, said that he was “an entrepreneur bringing jobs to his village” (p. 163). The inability to classify their own work hinders the ability to create solidarity, but also keeps workers with the imaginary of hope, of being part of something larger, or of being able to learn some transferable skills. The cultural capital attached to each of those answers is different and dependent on context. Given that, as Gray and Suri (2019) mentioned, only 20 percent work through on-demand platforms as an equivalent of what we think of as full-time job, while 80 percent have other sources of income.

For example, as with the online labor market in general, no one knows the exact number of people who use MTurk, but typically about 2,500 workers are active at a time. Amazon claims 500,000 registered workers. According to researchers, anywhere between 100,000 and 200,000 people are registered (Gray & Suri, p. 11), and 75% of Turkers said they were supplementing another source of income. The future, then, Gray and Suri (2019) argue, will not lie in this false dichotomy between machines or automation replacing humans and their jobs, but rather an understanding of the small tasks and re-definition of work that align them together. They nonetheless posit to us the paradox of automation’s last mile: many of the tasks in Amazon’s Mechanical Turk are thought of as temporary, since they are producing large datasets to train machine learning algorithms. Therefore, the logic behind some of these platforms is that there is no need to think of workers as workers, since these tasks may be performed by machines in the near future. We argue that given the overall shift to this type of work mediated by labor platforms, it is imperative to think through what it will look like: while the tasks are temporary, the workers are not.

Much of online-to-online work is associated with hope: hope of becoming tech-savvy and being able to secure a better job, hope of having the flexibility to start their own business, or hope that this type of labor will be a good addition to a resume. Yet a difficulty in categorizing, organizing, and even quantifying online workers is a lack of common identifiers amongst them. Studies have included college-educated, stay-at-home parents; first-generation college students working 50 hours a week to save money for a wedding; and people, disabled or retired, looking to pad their social security checks. There are also people very low on the socio-economic scale, who are used to being targets of “scams” about online work offered from other countries (Gray & Suri, 2019). Soriano’s study of online labor in the Philippines focused on “skill-makers”: on-demand workers who are already “successful” and become online coaches for those trying to break in (p. 13). Posts and courses include “how to begin as an online freelancer” guides and offer to teach specific skills such as web development and design, social media management, or virtual assistance.

Applying the term “flexibility” to promote platform labor can be misleading. The clear benefits of flexibility are that laborers benefit from choosing which jobs they want, who they want to work for, and

what hours they want to work. Yet having to find the best-paying tasks and bidding and getting to opportunities first causes an “always on” pressure that does not conform with ideas of what flexibility means (Gray & Suri, 2019, p. 77). For example, given that many tasks are coming from Europe and the U.S., Turkers have to work overnight.

Flexibility also assumes that those who have these jobs have the option of picking something else that is more rigid and stable, when this is usually not the case. In addition, flexibility of scheduling and autonomy does not aid in forming transnational or labor solidarity. According to Standing (2014), those in the precariat have “no secure occupational identity” and “no occupational narrative they can give to their lives” as a result of constant movement across available jobs that do not allow full use of their educational qualifications (p. 969).

Given that the work is on-demand, there are different levels of dependency and time spent on, as well as familiarity with, each platform. In Gray and Suri’s study (2019), they found that, “First, most workers try platforms out, do a few tasks, and leave within a week to a month. These workers offer value to the platform because they are counted as part of the potential labor market available for ghost work...second, some workers regularly participate (for less than 10 hours a month)...finally, some workers build up familiarity with a platform and become the core workforce, showing up daily and doing an average of 30 hours of work a week on the platform” (p. 171).

Due to the transnational and constant competition among online-to-online workers, underbidding practices create a race to the bottom. Labor platforms can significantly increase the pool of potential workers available to employers (Beerepoot & Lambregts, 2014). Given worker interchangeability, and not having to comport to local labor laws or market, employers can engage in what is known as “labor arbitrage”: finding or buying labor from where it is cheapest. This can reduce the market power of workers relative to employers, pushing down labor prices. The lack of coordination between workers to set prices in this almost fully “free” market, as well as requesters ability to price the work so that the lowest bidder gets it, means that there will always be workers available to do the work for less compensation.

According to Beerepoot and Lambregts’s study (2014), competition in oDesk makes this more complicated in more complex tasks. They found regular discussion on the message boards about the lack of quality, yet the price “race to the bottom” is a controversial topic amongst freelance workers. They cite a worker:

I’ve complained to oDesk about the site being overrun with amateurs who will work all week for a bag of rice. It’s lowering the bar for us professionals. Any moron with a Dell and a clip art CD can get on here and claim they’re a ‘graphic designer.’ What’s ruining things here is that the employers seem so naive. They know the price of everything, and the value of nothing. Me? I have a 4-year degree, and owned an ad agency for 16 years. I know what things cost, and it’s about value, not price. I cost more rice but you’ll get gravy with that. (p. 246)

Kingsley et al. (2015) demonstrated that the features of the Amazon Mechanical Turk platform that produce market inefficiencies and impact work quality, due to the information asymmetry between workers and requesters, create an uneven power dynamic. They also found that the MTurk platform is a highly concentrated labor market: a few requesters post the overwhelming majority of tasks. The

inability to have a say in rate-setting was a constant issue brought up in many interviews with digital workers (Graham et al. 2017; Gray & Suri 2019; Kingsley, 2015).

The practice of labor arbitrage may be the hardest one to manage in a free market where international labor regulations and standards are incongruous. Given GDP discrepancies, governments support the practices of outsourcing for lower wages because they help the national economy bring in foreign capital, which is often welcome. For example, the Philippine government has used the rhetoric as one of its “neoliberal strategies to bring in much-needed foreign currency inflows” (Rodriguez, 2010). For decades it has continually repeated the discourse of Filipinos as “world class service workers and ‘modern heroes,’” helping drive labor export (Parreñas, 2001), which has included domestic work for richer Asian economies. Soriano and Panaligan (2019) argue that digital platform labor is the new iteration of this trend, except now workers don’t have to leave their loved ones behind.

The Philippines is traditionally one of the largest sites for outsourced labor, particularly because of their large English-speaking population (Abara & Heo, 2013; Errighi et al., 2016). The traditional problems with outsourced work, including night shifts, cramped offices, lack of professional advancement, and daily commutes, make online labor appealing (Errighi, Bodwell, & Khatiwada, 2016; Fabros, 2016; Soriano & Panaligan, 2019, p. 4). This has shifted some of the issues involved in partly physical labor that demanded a strict schedule to the online sphere. The monetary incentives to join are large: the salaries of digital workers place them within the country’s middle class, whose monthly income earnings usually exceed the local minimum wage (Hau, 2017; Soriano & Cabanes, in press). Due to this, and the hype surrounding it, both the government and local news occasionally highlight “success” stories of online work (Soriano & Cabanes, in press, p. 4), making it an appealing alternative to migrant work and remittances that Filipinos are renowned for.

As mentioned earlier, some online work platforms obscure the identity of workers more than others, with drawbacks and benefits to this design decision. Amazon’s Mechanical Turk, for example, keeps the workers anonymous: they are just numbers, with only the reputations accrued on the platform based on the tasks they have performed. Requesters cannot fully see the human they are hiring, and this is on purpose: since the tasks are so small and quick, parsing through resumes or learning names is unnecessary.

The downside to this anonymity is that this allows requesters to not fully understand who is on the other side, what conditions they are working under, or much of their offline work experience. A good example is content moderation for social media platforms, which is done mostly by workers in the Philippines (Roberts, 2016). This is a process most social media users assume to be automated, which obscures the reality of workers behind a technology we utilize every day. Other examples abound, such as image recognition, market research, and image tagging (Gray & Suri, 2019; Martin et al., 2014).

On the other hand, the anonymity may aid those who have been marginalized in traditional work settings. A few studies, including Mark et al. (2018) and Gray and Suri (2019), showed qualitative data about workers who overcame local labor discrimination because they are only seen as a number; workers who have been excluded in local labor (due to pregnancy or disability, for example) can access local and international labor markets. During their ethnographic work, Gray and Suri (2019) interviewed Lakshya, 34, a middle-class former mechanical engineer who was paralyzed from the waist down due to an auto rickshaw accident. He looked for work for at least a year after the accident, but, after much rejection, he turned to online work. Even though it has been illegal in India since the 1990s, “it is not

uncommon for people like Lakshya to feel pushed out of formal employment, as it happens in the U.S.” (p. 115).

Because supplementing the household income with online work is not seen as a contradiction of their duties as wives and mothers, it aids in introducing women into the workplace in situations where they would otherwise not be able to participate. There are two ways of looking at the effects of online work on women. First, we can celebrate on-demand jobs as opportunities to free working women from needing to leave the home to earn an income. The second view sees this work as “perpetuating traditional expectations of women to handle both full-time family obligations and the workload of more formal employment” (Gray, p. 110).

Also in this category of beneficiaries from anonymity lie migrants seeking to work, but not in possession of the appropriate visas or permits (Graham et al., 2018, p. 147); workers unable to complete university degrees, precluding them from traditional employment; or even women who left the workforce for extended periods of time due to childcare and home responsibilities (Gray & Suri, 2019; Galperin; Foong et al., 2018; McDowell, 2015). There are also those who have “aged out” of their jobs, and anonymity online allows for agelessness. Many studies have shown that occasionally, workers are greatly overqualified for the jobs they are performing online (Gray & Suri, 2019; Graham et al., 2018).

The veil of anonymity works differently on each platform. Some websites provide more information about both employers and employees, such as nationality. In their study of Nubelo (now part of Freelancer.com), the largest Spanish-speaking website to find freelance projects delivered online (such as web and graphic design, copywriting, and editing), Galperin and Greppi (2017) found that online labor frictions result “in a significant penalty for foreign job seekers” (p. 50). The study showed that workers based in less-developed Spanish-speaking economies (mostly in Latin America) are 42 percent less likely to win bids posted by employers in Spain, the highest-wage country in the sample. Also, Spanish workers in the sample “command a significant wage premium of about 16 percent over similarly qualified workers based in developing countries” (p. 51).

This bias against international workers has prevailed in different economies and platforms. Lehdonvirta et al. (2014) call this “liability of foreignness;” when studying ODesk, they found that foreign contractors attract less work and are paid less for the same type of work than their domestic competitors (p. 2). The liability of foreignness was more prominent (but not exclusive) to what could be less taskifiable work, including complex communication dealing with established institutions (p. 13). While domestic hiring is advantageous in larger, wealthier countries such as Australia, it is less in countries that hire less, such as Pakistan (p. 14).

Beerepoot and Lambregt (2014) found examples of postings trying to parse potential bids by specifying nationality or gender (p. 247). For example, some project descriptions included wording such as, “This job is not for people from Bangladesh and Pakistan and your bid would be rejected automatically if you are from any one of the mentioned countries,” and, “Business to Business appointment setters needed: with previous calling experience Filipinos are preferred” (p. 247). These are techniques used to parse through the vast amounts of labor offered on many of these websites. This process would have traditionally been performed by an intermediary that would have charged for the process of selecting and pre-screening workers.

Researchers have found that pay inequalities in the workplace are also reflected in the online marketplace. Foong et al. (2018), in their study of women and Upwork in the U.S., found that women continue to ask for lower hourly rates in bidding online. While there is evidence of actual discrimination from employers, in the case studied by Adams and Berg (2017), the anonymity of the website allowed for a gender-neutral hiring marketplace. They found women earn, on average, 82% of what men earn. They concluded that the earnings gap between men and women can largely be explained by the individual characteristics of the worker (crowdworking experience and educational level), and women's responsibilities at home, which affect the way they pursue their online labor. Therefore, even without clear employer discrimination, the disparate distribution of domestic responsibilities by women in households ultimately affects how they work and how much money they can earn.

With on-demand platform work, labor costs are reduced by employers not having to provide benefits such as healthcare, unemployment, and paid leave. This also includes termination and termination packages, since there is no hiring process. By positioning themselves as solely intermediators, liability and risk is shifted to employees. Like venture labor, a lot of time is spent looking for work in addition to actually working. "Joan spent the first six months on MTurk finding her footing. In time she learned that the trick to making decent money was to quickly find doable work and to evaluate the requester offering the job. She noticed that to do that in MTurk, every second counted; a slow internet connection, time spent finding work, or any unplanned downtime was the equivalent of lost income" (Gray & Suri 2019, p. 12). One of the main costs to traditional employers is the training, space, equipment and offices that create comfortable working environments. Transaction costs thus include all the social aspects of work: support, learning and teaching a new skill, feeling like they are "part of something" and not entirely isolated, and corporate culture. Figuring out things such as language, aesthetics, color, and collaboration takes time; by attempting to remove all which they find superfluous in a workspace, they are taking away from the labor in itself.

Workers, as well as requesters, find ways around being managed by algorithms—algorithmic management—thus, platforms sometimes enable re-intermediation and not only disintermediation. Given the vast labor supply, requesters trust recommendations, decide to hire from within a pool of already trusted workers, or find appropriate workers and move their business off the platform. By re-intermediation, we mean that some workers who have accrued good reviews are bumped to the top of algorithmic listings. This allows them to win the bids and then outsource tasks to lower-rated workers for less money (Graham et al., 2017, p. 150). The lower-rated workers could simply be newer users and therefore not have as many reviews, or be less aware of how the system works. For example, Graham et al. (2017) interviewed a woman who noticed that she once applied for a SEO writing task, suggesting a price of \$15 rather than the listed suggestion of \$50 (underbidding is common in this open market). She later discovered that the job went to another digital freelancer who had requested a price of \$23. This contractor subsequently offered the job to her for just \$3.50 (p. 150).

There are various examples of trust developing over time with employers and employees, eventually making the platforms obsolete. Graham et al. (2017, p. 149) interviewed Tran, a Vietnamese software engineer who learned his skills as an employee of a Swiss company and transitioned to platform work. When he found clients that he built a relationship with, he started working directly with them, taking away the platform as the intermediary. His salary went from \$20,000 to \$40,000 a year by eliminating the intermediary; "he explicitly considered himself detached from any unfair practices enacted by foreign companies operating in Vietnam" (p. 149).

## ONLINE-TO-OFFLINE PLATFORM WORK

There is little academic literature on nation-bounded platforms, whether online-to-online or online-to-offline. Some of the main platforms facilitating the online-to-offline services are delivery and mobility services, which use the fact that low-skilled service work is already available and existing in many developing economies. Many of the assumptions about formality, organizing, etc. in academic literature are framed through a “Western” or “Global North” lens (Fanggidae et al., 2016).

In their study of auto-rickshaw drivers, O’Neill and Zade (2016) focus on the case of Ola, conducting an ethnographic study of 66 auto drivers in Bengaluru, India. They argue that drivers value their independence: they have always been independent, and it is one of the reasons they pick this job. Their main concern is, like freelancers or micro-workers, the unpredictability of their income. Ola intervenes by setting incentives; controlling the platform, network, and algorithms; and mediating between drivers and their passengers. Study participants said that it does little to reduce the uncertainty of their day. They cite a driver, Akash, explaining: “If you wait for Ola rides to come in when you are waiting at a particular location...you end up waiting all day without getting either normal or Ola passengers” (2016, p. 26). O’Neill found that Ola therefore “erodes the auto-rickshaw drivers’ independence, whilst not doing much to make their income more predictable.” Drivers maintained some of their independence largely because, as explained earlier, they are piecing different income streams together, as they do not fully depend on the system and prioritize non-Ola passengers over Ola ones.

In a paper about DiDi and Uber drivers in China, Chen (2018) argues that fighting against technologies of surveillance is not new to the sharing economy. In the Chinese case, many of the ride-sharing drivers overlap with taxi drivers. Chen illuminates that the same tension between regulation and taxis due to technologies of control “becomes the interstice of manipulation for taxi-hailing apps.” Even though the services are legal, drivers deploy their precarity to appropriate technologies and “engage in different levels of tactic calculations and political resistance. Taxi-hailing apps have made taxi drivers into data producers, algorithm trainers, and infrastructural labourers, simultaneously” (Chen, 2018, p. 8).

Although not much academic literature exists on these local delivery apps, Rappi, for example, has grown exponentially throughout Latin America, aggregating many services to door-to-door delivery or courier services, including cash withdrawals, grocery shopping, etc. As with Ola and Uber, Rappi benefits from the already-existing massive use of motorcycles in the large Latin American metropolises, which is not a phenomenon in the Global North; Rappi found their business model inspiration in Asia. Further research is required to understand whether working as “Rappitenderos” provides more income, how could it be sustainable, and how to classify this type of labor.

In their study of Gojek in Indonesia, Fanggidae et al. (2016) found that equal amount of non-professional drivers and professional drivers are part of the pool of driver partners. After an attempt to ban it in 2015, the platform was allowed to continue. This trend of contestations between local, existing unions and incoming platforms is another stark difference in the platform economy outside of Western contexts: Uber has been fully banned in Buenos Aires and partially banned in Colombia, Bulgaria, Denmark, Hungary, and some other cities are currently contesting it, mostly because of the strong existing power of taxi unions. Also, according to Fanggidae et al. (2016), firms such as Uber and Gojek provide workers with an alternative to low wages and underemployment in the informal economy, given how informal firms are very small, pay low wages, are relatively unproductive, and serve only local markets (p. 20). They nonetheless argue that this does not preclude the larger firms from improving the



working conditions of their driver partners, or the country from attempting to regulate the companies (p. 17), given that these new jobs are also not providing safety nets for their employees.

## II. THE TRANSPARENCY AND OPACITY OF ON-DEMAND PLATFORM WORK

According to Gray and Suri (2019), who borrow a concept from Meyer (2014), “inadvertent algorithmic cruelty” is a flaw in computational design that can result in a lack of empathy (p. 67). Algorithms do not allow for consideration or understanding of the effects that glitches in systems may cause, such as terminating someone’s source of income without any severance, warning, or backups. Many of these platforms do not have humans directly responsible to workers—someone who they could speak to if anything goes awry. There is little explanation or preparation allowed for the future: a worker may organize a schedule based on a particular requester, and the requester is allowed to alter, delete, or finish a project without notice. Also, workers who have issues with the platform, or with requesters, have to rely on each other to solve them (see below for more about worker cooperation). Every minute or hour that there is a problem is time that workers are not generating income, meaning they brunt the cost of technical malfunctions or misunderstandings.

In the absence of references or even a LinkedIn network, employers rate their workers with simple systems (one to five stars, for example) that we are used to seeing across websites. Since this mechanism is used in a plethora of spaces, from rating a restaurant or a product to an Uber driver or a company outsourcing a design project, many workers feel like they have little control over their online reputations. Also, since there is little negotiation between workers and employers, a misunderstood task could plummet their score with little chance for them to redeem themselves.

The importance of ratings is often unknown to users of these platforms. In their study on Uber drivers in India, Raval and Dourish (2016) found that the lack of awareness by riders about what “rating” means is the biggest factor affecting transactions on the platform. According to one of their respondents, “Most passengers don’t understand Uber rating system. They are led to believe it’s a Yelp style rating. With Uber anything less than 5 stars is a failure” (p. 101). The lack of clear transparency between drivers and riders about criteria and feedback means that an unfair review could get a driver disconnected for reasons they do not understand. Given the subjectivity of the ride (whether the driver talked too much or too little, etc.), the harsh system of an expectation of five stars is another type of algorithmic cruelty within disciplinary, technical actions. “In the absence of any formal communication and training programs...drivers have to assume all responsibility of preparing themselves as independent contractors to maintain their reputation while the number of drivers in a given city increases” (p. 102).

The “black box” of platforms does not allow much room for workers to interrogate the rules of engagement. As platforms are only “facilitators” between employer and employee, when workers have queries, a kink in the program shuts down their accounts, or they think a task is unclear, they have no way of asking for clarification. This, of course, depends on the platform and how much communication it allows between employer and employee. However, there are still many aspects of the platforms themselves that remain hidden, forcing remote online workers to think of workarounds to try to break through the opacity of the platforms.

Since many, if not most, of the platforms want to call themselves mediators between employers and employees, the power is skewed toward the contractors and puts high transaction costs on workers (Graham et al., 2017). Given the claimed neutrality, clarification in terms of tasks is rare in Amazon Mechanical Turk, for example, which often leads to a mismatch between worker and task, or an inability

to get clarification or feedback on the tasks requested. Note that this may be different in project-type platforms such as Freelancer.com.

For example, Gray and Suri (2019) found that three friends work from separate connections, because they are scared if they use the same one their accounts will get suspended. “They didn't know if this was true or simply rumor, but they weren't willing to take the risk—an example of how a lack of clarity leads people to devise complicated workarounds” (p. 134). Workers have subsidized their lack of understanding and knowledge about the legitimacy of employers by discussing them in online forums, Facebook groups, and face-to-face interactions to vet workers who are unfair, do not pay, or are unreliable. The lack of knowledge about their employers shows how the costs of uncertainty shift to the workers, as will be explained in the following section.

### III. THE MYTH OF THE ISOLATED WORKER

The design of on-demand economy platforms, particularly micro-task platforms, is to erase redundancy, inefficiencies, and unnecessary distractions, such as talking and over-explaining. Companies save money on office space, training, providing health benefits, and not paying for time spent chit-chatting in the hallways. Nonetheless, those social realities and needs cannot simply be erased by design, and indeed, they are not. It simply shifts them to other online and offline spaces, usually built and maintained by workers (Irani, 2013).

Studies have shown that offline networks continue to have great influence on how Turkers and freelancers find out about work, how it gets redistributed, and how families incorporate it within their existing offline structures and responsibilities (Gray & Suri, 2019; Wood et al., 2018). For example, in their study of wheelchair users doing online work in China, Ding et al. (2017) found that their respondents used their already existing networks, including social media networks, to find work, as opposed to going to the platforms directly to do so. There are also cases of couples or family members sharing one account in order to better take advantage of accumulated good reviews, accommodate fluctuating schedules, and combine skillsets.

Traditional connections, assumed to be important in a pre-digital labor network, continue online (Ghani et al., 2012). In studying oDesk in India, Ghani et al. (2012) found that connections with the diaspora make a difference. For example, they found that “ethnic Indians in other countries are 32 percent (9 percentage points) more likely to choose a worker in India” (p. 24). Yin et al. (2016, p. 2) and Lehdonvirta (2016) found a similar trend, noting that workers in their studies clustered around nationality. Conversely, there is little to no evidence suggesting that workers cluster around any other variable. Lehdonvirta (2016) concluded that while micro-workers’ networks and internet-based gathering places help shore up workers’ identities, it was unclear whether the deeply atomistic structuring of their work offered much that might support collective action.

Nonetheless, while on-demand platforms often assume isolated workers, workers combat isolation by sharing information online (Gupta et al., 2014; Gray et al., 2016; Lehdonvirta, 2016; Yin et al., 2016; Martin et al., 2014). Yin et al. (2016) detailed the “rich network topology” of communication among MTurk workers, formed of forums and websites containing public or semi-public thread discussions (p. 2). They also share information regarding unfair clients (e.g., those who do not pay or who pay late), lucrative tasks, and best practices (Martin et al., 2014; Gray et al., 2016; Lehdonvirta, 2016). Workers also try to unilaterally regulate labor conditions by negatively highlighting tasks considered too low-paying and “admonish[ing] each other against accepting tasks that would result in hourly earnings below some given minimum wage” (Lehdonvirta, 2016, p. 72).

While some of the transnational, online-to-online workforce share a worksite, as we mentioned, this is rare, and they are often spread out. Given the lack of a clearly demarcated professional stake, workers have a hard time envisioning the possibility of unionizing or fighting for shared interests. “As one worker put it, how would we hold each other accountable for striking?” (Gray & Suri, 2019, p. 137). While there are some examples of successful organizing among offline temporary workers, these have tended to be based on community-level associational power within cities. Traditionally, unions have had shared schedules, professional identity, face-to-face solidarity, and physical ability to stop labor. While there are some examples of successful union organizing among conventional contingent workers, these use community associations within cities; in sectors where jobs are not location-dependent, such as online-

to-online work, associational power would have to exist at the global level for similar strategies to be effective (Silver, 2003).

While transnational workers do not have many visible signs of homogeneity, nor shared spaces in which to demonstrate, drivers, courier, or delivery service workers do. There have been various complaints and demonstrations from Uber drivers in several cities. From the Latin American platforms, Rappi encountered this issue when their delivery couriers went on strike on July 5, 2019 in Bogota to demand getting hired as formal employees and enforcing minimum wage standards (López, 2019). “Rappitenderos,” as they are known in various countries where the company is present, had complaints including how the algorithms distribute labor, their precarity, and their lack of classification as “independent providers” instead of contractors or employees (García, 2018). In Argentina, the service was suspended for safety violations.

Moving in physical spaces allows for the visibility of workers in a way that doesn’t exist online, which can give them more bargaining power, but on the other hand it subjects them to local salaries, standards, and pushback from established, old-guard unions. Uber has received resistance from local regulators and existing unions in several countries. In their study of Uber prohibition and regulation in Taiwan, Chen et al. (2019) found that the existence of regulation lent legitimacy to ride-sharing platforms and drivers (p. 9).

In the case of the regulations of ride-sharing (specifically Uber) in Taiwan, drivers felt legitimized in having access to insurance and bureaucratic processes and in their personal identity as ride-sharers because they were no longer participating in a grey market (p. 10). Other organized labor included strikes by Uber drivers, as well as a letter to Jeff Bezos from Amazon by Mechanical Turk workers, where they aimed to get him to see that MTurk workers are not only actual human beings, “but people who deserve respect, fair treatment, and open communication” (Schwartz, 2015).

Various scholars have suggested consumer action in terms of fair labor standards. Given the activism surrounding fair trade coffee or chocolate, as well as the boycotts of fashion brands that do not practice fair labor standards, there could be a demand for online labor certificates in order to push for standards from each platform. The challenge is the vast variability between types of online labor and the lack of a consumer product to be able to track through the international value chain.

There are some initiatives to transcend borders and aid solidarity across workers. Workers already make use of existing websites such as Reddit, WhatsApp, and Zello to share complaints about potential employers and understanding of tasks and systems. Gray and Suri (2019) found that most of the collaboration for MTurk workers in the U.S. happened in online forums, while it was more popular to find word-of-mouth collaboration in India (p. 125). This could be due to cultural differences, but also the context of Indians having to navigate through many scams promoting online work, so offline ties help in verification of authenticity. Yin et al. (2016) found that close to 90 percent of all communication between micro-workers occurs via forums. In the Turker Nation forum, according to Martin et al. (2014), the largest area is devoted to the “Requesters hall of fame/shame,” meaning the main purpose of this forum is “to find good requesters and avoid bad ones” (p. 228).

Wood et al. (2018), on the other hand, argue that, in contrast to micro-workers, freelancers mostly organize on social media. They argue that re-intermediation in freelancing benefits from social media, where a pool of other workers with suitable skills are easily found. Social media has more identifiers

such as real names, allowing further research on their work background and aiding in forging trust. Freelancer unions were absent from any of the online freelancers they interviewed, and less than three of those whose main income comes from freelancing are in a union (p. 103). They assume that those in unions (about 8 percent) are also in other occupational settings. They stated that their lack of trust or belief in the efficiency of local unions stems from a combination of “pre-existing perceptions of unions, identification with being ‘freelancers’ and ‘entrepreneurs’ and an expectation that the benefits of unionization would not outweigh the risks in terms of job loss and greater taxation” (Wood et al., p. 109).

The understanding of themselves as “freelancers” or “entrepreneurs” encapsulates the cultural issues surrounding organizing: since autonomy has been traditionally allotted to higher wages, there may be little working culture to understand on-demand platform work as something requiring solidarity, rather than following the neoliberal discourse of individualist entrepreneurship, which by definition would reject unionizing. However, in spite of this prevailing rhetoric Workers of the World found that 71 percent of their survey respondents expressed interest in collaboratively raising their wages, versus just 9 percent who did not, with the rest neither agreeing nor disagreeing.

In spite of this, spaces for transnational on-demand platform worker unionization and solidarity have begun to emerge. For example, the website *Turkopticon*, created by academics at UCSD (Irani & Silberman, 2013), aimed to allow workers from Amazon Mechanical Turk to talk to each other, particularly to discuss opinions on the hirers and workarounds needed on the platform. The Fairwork foundation is developing guidelines in order to certify platforms as “decent work,” including fair pay, fair conditions, fair management, contracts, and representation (Graham & Anwar, 2018). Another initiative, *Coworker.org*, describes itself as a laboratory for workers to experiment with power-shifting strategies in the workplace. They provide the digital infrastructure and organizing expertise to help different workers organize and effect change. The National Domestic Workers Alliance (NDWA) utilizes the portal *MyAlia* to ensure benefits for domestic cleaners.

Various scholars, such as Graham et al. (2017), have made suggestions about the creation of a transnational digital workers’ union or trade secretariat. They also suggest Moody’s vision (1997) of transnational “social movement unionism” that calls for loose, but inclusive, alliances between various social movements to campaign on single issues or causes. Nonetheless, these alliances, in their looseness, have previously not been that effective in many existing industries. Even if unionizing did work, the problems facing existing unions, such as resistance from companies or non-union replacements, will always exist. Another example suggested by scholars considers cooperatives, allowing workers to operate as shareholders.

There are parallels between on-demand platform work and historical contingent work. Alkhatib et al. (2017) equate micro-work with historical piecework, which had its origins in astronomy but got its foothold in manual labor. They cite Raynbird’s essay (1847) on piecework, which was written to encapsulate the manual labor of farm work. He contrasts two paradigms: “the chief difference lies between the day-labourer, who receives a certain sum of money. . .for his day’s work, and the task-labourer, whose earnings depend on the quantity of work done” (120) (Levi et al., p. 4600).

The parallels are strong: given its decentralized design and its built-in anonymity, making social relationships will remain difficult. Some workers, as discussed previously, get to know each other online, while many never engage. “Without intervention, worker relationships and collectivism are likely to be

inhibited by this decentralized design.” One option they suggest is to build worker centralizing points into the platform, for example, asking workers to vote on each other’s reputation or allowing groups of workers to collectively reject a task from the platform (p. 4607).

Alkhatib et al. (2017) conclude that piecework history suggests that relationships between workers and employers might be improved if employers engaged in more human management styles. Instead of delegating as many management tasks as possible to an algorithm, it might be possible to build dashboards and other information tools that “empower modern crowd work foremen.” Also, according to piecework literature, considerate human management may resolve tensions (Alkhatib et al., p. 4607).

Beerepoot and Lambregts (2014) found that even though data entry jobs and other low-skill jobs are usually taken by South Asian bidders (they focused their study on oDesk on India and the Philippines), those who are skilled and managed to forge relationships with contractors make very good hourly rates in “relative terms” compared to local salaries. However, they note (and other studies, as mentioned earlier, have as well) that it takes a substantial effort for contractors to get their first jobs, improve ratings, and accrue experience (p. 249). Their statistical analysis “of the wages of U.S., U.K., Indian, and Filipino contractors indicated that Western contractors receive the highest absolute wages but that contractors from developing countries receive the highest relative wages” (p. 252).

## IV. CAN WE DESIGN BETTER?

Even in more professional careers, whether in the Global North or South, companies routinely start all but the most senior executive employees out on contracts; employers have removed the lower and middle rungs of the career ladder and replaced them with temp work (Gray & Suri, p. 95). If the project-based economy is not new, the challenge is not to replicate or worsen the status quo by removing even more social aspects of work, but to think of it as an opportunity to design platforms that serve workers as much as their employers. If we stop treating temporary work as hurdle or as non-work, but rather acknowledge its constant reality, how can we center workers into the design of the platforms?

There is evidence of online labor platforms that are providing exemplary employee or contractor treatment. Gray and Suri (2019) argue that Amara, LeadGenius, and Cloud Factory are good examples of spaces where workers feel valued, supported, and seen. These platforms provide easy-to-access software. In the case of Amara, a video translation service, it needed to be easy enough to first entice volunteers to translate. LeadGenius has forums, offline meetings, and happy hours as well as group projects in order to foster the sociality and culture-building that workers have created (as in, taken into their time and costs) via other platforms. Cloud Factory workers have health benefits. However, none of them are perfect; one of the reasons that LeadGenius went back to hiring people in India was because they could not afford to pay workers the U.S. minimum wage.

Recommendations for design across the board include inducing socialization for workers and reputation systems that can be carried from platform to platform. Other recommendations include what LeadGenius has done to have teams get together to tackle projects; and what they call “scaffolding,” as mentioned earlier, which allows for more experienced workers and new workers to take on tasks together as they arise. Rather than lead people to “individually absorb the costs of orienting to new projects or figure out how to move forward when they got stuck, LeadGenius invested in capturing the value of all the collaboration” (Gray & Suri 2019, p. 150) that others participate in on social media or forums. This approach allows for the quickness usually asked of these platforms, while also permitting teamwork and different skillsets to interact. While reducing the power of the individual rate, it aids hirers with the overwhelming supply of workers they must sift through.

Accurate reputation-building and movability across platforms is key in worker-focused design. Researchers have been working on developing fair ways to rate workers based on peer review and not only the clients’ reviews. Whiting et al. (2017), for example, conducted a two-week experiment where, inspired by historical worker guilds, they designed and implemented online crowd guilds: centralized groups of crowd workers who collectively certify each other’s quality through double-blind peer assessment. They found that crowd guilds “produced reputation signals more strongly correlated with ground-truth worker quality” than the ones available on current crowdworking platforms, and more accurate than in the traditional model (p. 3). These types of studies show how there are alternatives to current rating models which would empower workers to review each other’s work instead of depending solely on client evaluation.

One of the biggest obstacles to understanding this landscape is determining how workers can identify a career path through temporary work, and whether this is even necessary. Yet, in accordance with what has been discussed, the definitions of “career,” “skill,” “craft,” or even professional identity need some rethinking in order to remove some of the hierarchical values embedded in our current classification schemes. According to Beerepoot & Hendricks (2013), similar to the other outsourcing jobs such as call



centers, transcription, or content moderation, platform labor-jobs “involve ‘a narrow job description and offer only limited opportunities for acquisition of knowledge and skills replicable in other professions’ and, crucially, often have poor ‘longer-term employment prospects’” (p. 824).

In the context of skill and capability development, it is also worth noting that many digital workers perform low-skill tasks that do not correspond with their existing skillset, professional background, and expertise. For example, Graham et al. (2017) interviewed Kim-Ly, a Vietnamese woman with a degree in economics and local accounting experience. She performs low-skill data entry tasks online, since she was unable to find digital work that used her specialized skills. They also cite worker William saying, “People [clients] don’t really care what you know. In Kenya you’re given a job: ‘do this.’ You don’t have to put your kind of skills [to use], you do what you’re told.” (p. 152). This type of story is common: someone with a degree that could not find formal employment offline and finds on-demand platform work as an alternative form of income generation. Therefore, focusing on better capturing workers’ skills and reputations could potentially help with matching workers with employers or clients.

We can learn from the parallels in contingent tech workers on visas whose jobs descriptions are, from the beginning, limited. Nationality, race, and ethnicity often get conflated to create some of the barriers to advancement in contract work. Amrute (2016) discusses how Indian IT workers in Berlin get boxed into a particular type of technology work, based mostly on their short-term contract status. Many of the Indian workers believe this is a step to more stable employment or upwards trajectory in Germany. Yet, their visas are structured to ensure a constant rotation of temporary workers structurally barred from climbing the corporate ladder. They have neither the legal status to move further ahead, nor the “social capital” to stay or secure better jobs.

Simultaneously, there are those who partake in the on-demand platform economy in order to subsidize other ambitions that may not be sustainable income yet. With Uber, for example, some drivers choose to advertise or do “micro-branding” with the riders in their cars relating to other employment they may have, such as teaching salsa (Nopoor & Dourish, 2017). This is another instance in which the worker values not the job itself but instead its value as both a source of additional business contacts and extra income that may subsidize other entrepreneurial activities.

As for other support, the push toward entrepreneurial spirit from national governments as part of citizenship and belonging is permeating political discourse. As previously mentioned, the Filipino government is pushing toward promoting the Philippines as a place to source good online labor on a global scale. Traditionally, though, both BPO and labor migration have the support of several institutions that includes protection, welfare, and health benefits while online labor currently does not (Kleibert, 2015).

## CONCLUSION

The rise of the platform economy can aid in more seamless, transnational, or local transactions, but whether this is an economy that will overall benefit service workers remains to be seen. The platform economy structures the informal service sector that dominates so much of offline economic exchange and productivity in the Global South. But it also expands a world of entirely online information services. These services are the engine behind data processing, analytics, and AI advancement. These information services generate significant value held predominantly by the Global North multinationals that initiate the tasks. But there are also streams of information service work, like call centers and financial services before it, that require legions of on-demand workers serving as “humans-as-a-service” (Prassl, 2018).

Studies show that platform workers are not isolated from each other. They collaborate and share information through other venues in order to better understand the online markets in which they move. Studies also agree that these brokering labor platforms move many of the transaction costs from companies to workers: finding and fielding tasks, training, health benefits, socialization, and networking. As access to higher education has expanded globally, it has also qualified more people to participate in knowledge and information service work. Workers in the Global South, particularly those doing online-to-online tasks, are arguably overqualified for the tasks that they currently perform. But long-standing structural inequalities in social capital and xenophobia prevent workers in the Global South with equivalent skills from receiving the rates of their Global North peers. The problem of labor arbitrage perpetuates undercutting labor prices exacerbated by the bidding design of many of these platforms, leading to further exploitation of global workforces. It could be mitigated by creating transnational solidarities, although, as seen in this literature review, traditional organizing models of collective disruption through strikes and work slowdowns will have to be rethought. The platform economy generates a labor market of peers and independent workers distributed around the globe. There is no single professional identity facilitating solidarity. Those participating in online-to-offline services have at least national regulation to contend with, as well as ability to assemble in physical spaces, and so have been more visible in protests and to each other.

Moving forward, we must keep in mind facilitating worker collaboration on the platforms themselves to reduce the transaction costs currently shouldered by workers. Facilitating good working environments where workers can talk, collaborate on projects, and learn from each other are important levers of change. Key to future efforts is recognizing that the platform economy is not niche employment that will disappear with automation, but a re-orientation to employment itself. Therefore, it is in both private and public sector interests to take care of the workers currently involved in these economies. Current classifications of long-term employment vis-à-vis service work, or temporary work, do not aid us in trying to understand or measure this new type of work. We should expect that most people will be piecing various incomes together to attempt to make a living, which has been common in informal employment across developing economies. Yet if this is the direction we are moving in, we need to redefine the conditions of full-time employment and what we expect from these platforms and the governments that are trying to regulate them.

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