

Gig Work/Covid-19 Report

Mohammad Hossein Jarrahi Feb 2021

Executive Summary

Our mixed-methods, exploratory study addresses the challenges and opportunities that characterize gig work during the ongoing Covid-19 pandemic, and makes recommendations for changes to gig work platforms that would help workers better perform their work. In this study, the perspective of workers is foregrounded. We interviewed twenty-nine gig workers who use a variety of platforms (many use multiple platforms) and we analyzed, both quantitatively and qualitatively, the content of several online discussion forums in which gig workers discuss their jobs. Through our interviews and forum analyses, we found that: (a) workers identified eleven core skills necessary to doing, or transitioning into, gig work; (b) there are at least four ways that the Covid-19 pandemic has opened up new opportunities for gig workers; (c) there are at least eight ways that the pandemic has created new challenges for gig workers, which derive from the emergence of sudden market shifts, on the one hand, and the extreme health risk presented by Covid-19, on the other; and (d) there are at least ten changes that gig workers would like to see made to platforms, in order to improve their ability to work effectively and efficiently in the gig economy during the pandemic and concurrent economic downturn. The methods and findings of our study are detailed in five major sections that make up the report, as outlined in the table of contents, and they are summarized in a series of twelve tables inserted throughout. Our study contributes to a greater understanding of gig workers' needs during the time of the pandemic and reveals significant changes that have occurred in the gig economy because of the pandemic.

Table of Contents

Executive Summary	1
1. Defining Gig Work and the Context of the Covid-19 Pandemic	2
1.1 <i>The Centrality of Platforms</i>	2
1.2 <i>Four Types of Gig Work</i>	3
1.3 <i>Benefits and Risks of Gig Work</i>	4
2. Methodology	5
3. Describing the Entry Process into the Gig Workforce	8
3.1 <i>Reasons Why People Enter the Gig Economy</i>	8
3.2 <i>Six General Skills Needed to Transition into Gig Work</i>	9
3.3 <i>Five Gig Literacies Needed to Transition into Gig Work</i>	11
4. Identifying Opportunities and Challenges of Gig Work During the Pandemic	13
4.1 <i>Increased Opportunities Due to the Covid-19 Pandemic</i>	13
4.2 <i>Challenges of Gig Work Continuing from Pre-Pandemic</i>	15
4.3 <i>Workers’ Adaptations to Sudden Market Shifts During the Pandemic</i>	18
4.4 <i>Workers’ Adaptations to Intensified Health Risks During the Pandemic</i>	20
4.5 <i>A ‘New Normal’: Long Term or Permanent Effects of the Pandemic</i>	23
5. Recommending Changes to Platforms During the Pandemic	24
5.1 <i>Changes in the Design of Platform Websites and Apps</i>	24
5.2 <i>Changes in the Conduct of Platform Owners</i>	27
REFERENCES	29

1. Defining Gig Work and the Context of the Covid-19 Pandemic

1.1 The Centrality of Platforms

Since early 2020, the Covid-19 pandemic has led to many brick-and-mortar workplaces shutting down and millions of workers being furloughed or laid off permanently. Consequently, more Americans have turned to gig work to earn an income, and gig-work platforms have seen a surge in their number of users. The term “platform” does not have a singular meaning, and in relation to gig work it refers to any of three entities: (1) the *platform owner*, a corporation that develops digital tools to connect employers/clients and workers in a particular sector of the market economy; (2) the *platform website*, a website managed by such a corporation, where clients and workers can create online profiles and interact; and (3) the *platform app*, a software application that can be operated on a mobile device and used to facilitate a job, task, or other assignment. From this multilayered definition of “platform,” it is obvious that twenty-first-

century gig work involves complex digital tools, namely the websites and apps, and relies on a synergistic relationship between platforms, clients, and workers, with platforms as the intermediary between clients and workers (Dunn 2020). During the pandemic, as more people turn to platform-mediated gig work to earn an income, they will need to develop a broad set of skills to excel at this kind of work. The tension at the core of the gig economy in the current moment, therefore, is that it offers many people the opportunity to make a guaranteed income in difficult times, while also challenging new gig workers to adapt quickly to a uniquely computer-mediated world of work, one in which the nature of the legal and cultural relationships between platforms, clients, and workers is not yet clearly defined. In light of this tension at the core of gig work, this paper reports the results of an exploratory, mixed-methods study that investigated the opportunities and challenges experienced by gig workers during the Covid-19 pandemic so far, and then asked how platforms might respond to workers' concerns in order to make gig work easier and more efficient for all involved.

Table 1. "Platform" may refer to any of three things, either separately or collectively.

3-part Definition of "Platform"	
(1) Platform <i>owner</i>	a corporation that develops digital tools to connect employers/clients and workers in a particular sector of the market economy
(2) Platform <i>website</i>	a website managed by such a corporation, where clients and workers can create online profiles and interact
(3) Platform <i>app</i>	a software application that can be operated on a mobile device and used to facilitate a job or task

1.2 Four Types of Gig Work

Briefly, it is helpful to more carefully define gig work in the context of our study. The platform is central, since gig work is labor that is mediated by platforms. For our study, we categorized gig work into four major types, based on two specific job demands: the level of specialist skill required and whether there is a need to work in-person (versus remotely). Considering skill level, for example, clients can hire workers to complete either simple, discrete tasks or more complex, longer-term projects. Work may involve basic tasks, such as filling out short surveys or delivering food. Other work may involve complex tasks, such as software coding, graphic design, or accounting. Thus, gig work can be high-skilled or low-skilled. Also, gig work may involve jobs that can be done virtually, without client and worker having to physically meet, or it may require that client and worker be in the same location for some amount of time (Kaine and Josserand 2019). Drivers who work on food delivery or transportation platforms such as InstaCart or Lyft are workers who must physically meet their clients. Gig work, in this aspect, ranges from location-dependent to location-independent, depending on where the worker has to go to complete a job. The four resulting categories are *low-skilled location-dependent*, *high-skilled location-dependent*, *low-skilled location-independent*, and *high-skilled location-dependent*. In a study exploring the effects of the pandemic on gig work, this

schematic allows for a nuanced analysis of how workers in different areas of gig work have been affected. For a detailed summary of the four-quadrant schematic, see Table 3 in section 2 below.

1.3 Benefits and Risks of Gig Work

Gig work of any type presents a mix of benefits and risks to all parties in the triadic platform-client-worker relationship. As far as benefits and advantages, clients can hire talent on-demand, and they do not have to extend insurance benefits or sick leave to workers, who are considered independent contractors rather than full-time employees. At the same time, workers have a degree of autonomy in how they do their work and deciding when they work. Finally, the platform profits by taking a fee from the client as well as a percentage of the worker's income from every job undertaken via the platform. Alongside these advantages, each party also commits to certain responsibilities and incurs risks. The greatest risks, by far, are incurred by the worker. The risks that workers take on by participating in the gig economy are reflected in the multidimensional concept of worker precarity, as elaborated below. Risk is also apparent in the requirement that workers must provide their own equipment, such as a personal computer, vehicle, or other item essential to the job. A traditional employee would be provided with company-owned equipment rather than having to use their own personal items, thus reducing the cost to the employee of buying and maintaining expensive equipment. Gig workers, as independent contractors and not full employees, incur this additional risk compared to the traditional employee.

The challenges faced by most gig workers center around two ongoing activities: the acquisition of work-related skills and the management of worker precarity. First, workers must possess both general skills and so-called "gig literacies" unique to doing gig work. Second, workers must find ways to manage factors that impact the precarious nature of most gig work. Gig literacies include skills such as managing an online reputation, maintaining productivity by using on- and off-platform work tools, identifying and avoiding dishonest clients or overly risky jobs, building relationships with clients, and working around platform tools that limit worker autonomy or productivity (Sutherland, Jarrahi, Dunn, and Nelson 2019). Worker precarity is a more nebulous concept that has been defined in multiple ways. One recent study defined precarity as involving six practical dimensions of gig work: income, working time, autonomy at work, job security, social security, and representation/self-advocacy (Kahancová, Meszmann, and Sedláková 2020). Worker precarity increases or decreases as changes occur along these six dimensions. Ideally, workers would have some control over each dimension and adjust each to suit their individual needs and preferences. Realistically, however, workers have very limited control over aspects of precarity, but they are not powerless. Workers exercise agency by strategizing to make their work fit, as much as they can, their specific needs and preferences. Throughout our interviews and analysis of online discussions, we noticed how workers talked about, and dealt with, the need to learn certain skills and manage precarity. Workers' own words guided our study and shaped our final conclusions.

Table 2. Workers must learn (a) specific job-related skills and (b) how to manage their precarious position as gig workers.

Two Major Areas of Challenges for Gig Workers	
Acquiring work-related skills (see sections 3.2, 3.3)	Two kinds of skills: <ul style="list-style-type: none"> • <i>General skills</i> not unique to gig work • <i>Gig literacies</i> specific to gig work
Managing worker precarity (see sections 4.2, 4.3, 4.4)	Six dimensions of worker precarity: <ul style="list-style-type: none"> • income • working time • autonomy at work • job security • social security / social connectedness • representation and self-advocacy

In regard to gig literacies, our results showed that most gig workers acquire gig literacies either through trial-and-error experience or by consulting their peers on online discussion forums and social media. Workers rarely learn gig literacies from platform-provided resources only. Platforms seldom provide meaningful support to help workers learn gig literacies or maintain a strategic, income-maximizing presence on a platform. The lack of platform-provided support has to do with how platforms present themselves as “neutral” intermediaries between worker and client, a somewhat disingenuous self-portrayal which distances the platform from greater responsibility for problems experienced by workers and clients alike (Kaine and Josseland 2019; Vallas and Schor 2020). In regard to worker precarity, workers learn strategies for managing the dimensions of precarity similarly to how they learn gig literacies: through personal experience and peer interaction. Our report ends by recommending ways that platform designs and supports could be changed to help workers learn gig literacies and better manage precarity.

2. Methodology

Based on prior work that has examined digital platforms as an ecology (Sutherland and Jarrahi, 2017), we avoided framing our investigation around particular platforms but rather approached different kinds of work based on two dimensions: skill level, and location dependence. The notion of skill level has been used in the management science and information systems literature as a way of distinguishing work that requires formalized training, communication between worker and client, and creative arbitration and decision making on the part of the worker. Location dependence describes how closely a kind of work is tied to a specific space or spaces. These two dimensions provide us with a four-quadrant typology: Low skilled/location dependent work, high skilled/location dependent work, low skilled/location independent work, and high skilled/location independent work (Table 3). This typology is meant to capture significant distinction in work type that are salient in evaluating the influence of

different technological tools as well as the impact of large-scale economic change. They were also constructed in conversation with prior typologies of gig working provided by Kalleberg and Dunn (2016), and Howcroft and Bergvall-Kåreborn (2019).

The first stage of the study was to apply this typology to different platforms and kinds of gig working, and then to establish ways of sampling along these dimensions. Researchers in the group examined a large number of platforms and categorized the type of work they facilitated based on the typology. The types of work examined were not exhaustive of the type of work done within a certain quadrant, but were selected to be exemplary of that state of working. Most platforms primarily supported work within one of the quadrants, although some platforms, such as Upwork and Fiverr, did support some work across quadrants. Each quadrant had more than one platform within it. Data collection began with forum posts as a way of sensitizing the research group to issues and concerns of different platforms and types of work before developing an interview protocol.

Forums were identified for major platforms in each quadrant and posts were collected from newest towards older posts. As our goal was to examine the effects of the onset of Covid-19 on these spheres of work, posts prior to January of 2020 were not collected, but posts not directly related to the pandemic were collected in order to provide a great depth of coverage of the work practices and concerns of workers on those platforms. Posts were collected until the researchers reached theoretical saturation, when the new posts being collected were not adding thematically novel observations. In this regard the usefulness of forums as starting points varied from quadrant to quadrant. In the low skilled/ location dependent quadrant the variety of platforms and types of work lead to the research team collecting more posts. By contrast, in the higher skilled working situations there were fewer online discussion spaces to draw from, particularly in the case of high skilled location dependent fields of work, which seemed not to use such spaces for discussion around specific platforms. The collected posts were coded by two of the researchers using the qualitative coding software Delve. The codes produced were brought back to the research team and used in producing an interview protocol.

The research team worked to establish contact with workers on major platforms in each quadrant. Platforms were selected for how large and active the community on the platform was and the feasibility of making contact with workers on the platform. Interviewees were selected based on the evidence that they had used at least one platform to conduct work, and they were selected to produce variety along the dimensions of location dependence and skill level. Other platforms in that quadrant were either mostly inactive or there was no feasible way to make contact with workers. Workers from the different platforms were contacted through external channels, either through forums, social media, or through personal websites.

Table 3. The four types of gig work: a schematic that guided our investigation.

Quadrant	Platforms Identified	Platforms Sampled	Threads
Low skill / location dependent	Uber, Lyft, Rover, Wag!, Instacart, Point pickup, Doordash,	Uber, Lyft, Rover, Instacart, Point pickup, Doordash,	73

Low skill / location independent	Amazon Mechanical Turk, Samasource, Crowdfunder, Clickworker	Amazon Mechanical Turk	29
High skill / location dependent	Takelessons, Thumbtack, Lessons.com	Takelessons, Thumbtack	n/a
High skill / location independent	Upwork, Fiverr, 99designs	Upwork	19

Interviews were conducted using remote videoconferencing software Zoom, and ranged from 0.5 to 1.5 hours, with most lasting around an hour. Each participant was compensated for their time with a \$30 Amazon gift card. Interviews were transcribed by a professional transcriptionist, and uploaded into Delve for analysis. The findings presented in this report reflect analysis conducted against both the transcribed interviews and the forum data together.

Table 4. Our final 35 interview participants and their work details.

Summary of Interview Participants		
Key to abbreviations:		
<ul style="list-style-type: none"> • LS/LI = Low-skill / location-independent • LS/LD = Low-skill / location-dependent • HS/LI = High-skill / location-independent • HS/LD = High-skill / location-dependent 		
<i>ID Number</i>	<i>Platform(s) Used</i>	<i>Type of Gig Work</i>
P1	Lyft, Uber	LS/LD
P2	Outschool	HS/LI
P3	DoorDash, GrubHub, Lyft, Uber, UberEats	LS/LD
P4	Fleet, InstaCart, PointsPickup	LS/LD
P5	TakeLessons	HS/LD
P6	DoorDash, GrubHub, Postmates, UberEats	LS/LD
P7	DoorDash, InstaCart, Lyft, Uber	LS/LD
P8	DoorDash, GrubHub, Postmates	LS/LD
P9	Upwork	HS/LI
P10	Upwork	HS/LI
P11	DoorDash	LS/LD
P12	Upwork	HS/LI
P13	Upwork	HS/LI
P14	Upwork	HS/LI
P15	Amazon Mechanical Turk (AMT)	LS/LI
P16	AMT	LS/LI
P17	AMT	LS/LI

P18	AMT	LS/LI
P19	AMT, Upwork	LS/LI and HS/LI
P21	TakeLessons	HS/LD
P22	AMT	LS/LI
P23	AMT	LS/LI
P24	OneForma, Upwork	HS/LI
P28	ThumbTack	HS/LD
P29	Rover	LS/LD
P30	VIP Kids	HS/LI
P31	PointPickup	LS/LD
P34	AMT	LS/LI
P35	TakeLessons, ThumbTack	HS/LD

3. Describing the Entry Process into the Gig Workforce

3.1 *Reasons Why People Enter the Gig Economy*

The Covid-19 pandemic has not changed the two major reasons why people choose to start doing gig work: to earn an income and to have more autonomy and flexibility in their work. The onset of the pandemic has only amplified the need for many American workers to find new ways to earn an income, gig work being one of those ways. Notably, for most workers, the income earned through gig work is a secondary, additional income. Many gig workers have a primary source of income, whether that is a separate non-gig job, another member of the same household who is employed full-time, or, for disabled people, a disability benefit. One worker, a self-described “stay-at-home mom,” noted that her partner works full-time but that her partner’s income alone was not enough to pay for household expenses (P16). Another worker started doing gig work from home, for Amazon Mechanical Turk (mTurk), in 2008 to supplement her husband’s income (P18). She has recently increased her daily hours on mTurk because her husband, a sales representative, lost some work due to the pandemic. A third worker, who is disabled, said gig work “helps to keep the bills paid” and, before the pandemic, provided extra spending money for going out to the movies (P22). Generally, gig work is rarely the sole source of income for a household. However, during the pandemic and concurrent economic downturn, that income is increasingly important for paying off basic household bills.

Besides the need for income, which can be considered a “push” factor, people pursue gig work for the autonomy and flexibility it affords, a “pull” factor. One worker stated: “[T]he flexibility in scheduling is another reason I selected to get into the gig economy” (P7). Another worker, who is unable to work full-time due to health problems, identified flexibility as “really one of the reasons people get into gig work” (P11). For some, gig work fits well around personal responsibilities, too, and allows for a more satisfying personal life. In the words of one online freelance writer: “I make my own hours, I can be home with my family, and I get to be around a lot more than when I was leaving the house at 7:00 and coming home at 7:00” (P10). For those who do more physically demanding work, such as food delivery and ride-sharing, having flexible

hours prevents overworking and exhaustion, as work shifts can be broken up with rest times in between.

3.2 Six General Skills Needed to Transition into Gig Work

According to experienced gig workers, there are six general skills and five gig literacies that people who are transitioning into gig work need to know. It is important for newcomers to all gig platforms to be aware of these skills and literacies. The six general skills include proactive communication, kindness and patience (“people skills”), basic math skills, basic computer skills, ability to judge potential clients’ reputations, and time management skills. Proactive communication with clients is important for several reasons. Workers must let clients know if something occurs that is beyond their control, such as a traffic accident, internet outage, or an order delay at a restaurant. A few food delivery drivers noted, in interviews, that good communication can cause a customer to tip more (P7, P11). During the pandemic, when contactless food delivery is the norm, it is crucial to confirm with a customer, either by text or phone call, that food was actually dropped off at the customer’s door. As one delivery driver put it, “I don’t want to drive off and them be like ‘oh, I didn’t get my food’” (P6). In high-skilled gig work, communication is no less important, as it prevents the worker from being penalized for not meeting the client’s expectations. According to one high-skilled worker, it is essential to listen to a client’s instructions and ask “as many questions as possible in order to get as clear a picture of what they want as possible” (P9). Knowing exactly what the client or customer wants is necessary to complete a job successfully, to the client’s satisfaction.

Among other general skills, kindness and patience, or “people skills,” are indispensable. Many workers share the view that the “biggest skill is to get along with people” (P21). Many low-skilled workers, such as food delivery and ride-share drivers, recognize that “basically, they [clients] want a product or service and you’re a middle man, and they’ll complain to you. You’ve got to be able to fend them off or route them to [a platform’s] customer service” (P3). In addition, in high- and low-skilled work alike, basic math and computer skills are essential. Workers must estimate revenue against expenses for every potential job. Many mTurk users make astute calculations of their pay rate. For example, a 20-cent pay rate for a 10-minute survey represents an hourly rate of \$1.20, well below an acceptable rate for most Americans (P15). Most food delivery drivers, whose work is location-dependent, factor in “money, distance, the place you’re going to, where you’re going to end up. There’s so many different factors” (P11). The wear and tear on a personal vehicle, including fuel costs, can be substantial. For high-skilled workers on Upwork, the platform’s high commission fees are part of the calculation, as reflected in this comment: “So if I want to make like \$40 an hour, I might charge \$60 because... I know they’re going to take a high percentage” (P14). Computer skills are important across all types of gig work, but especially for workers on mTurk and for online instructors. Several mTurk users specified the need to know how to enable special “scripts” or extensions in web browsers, which, when enabled, automatically identify and accept higher-paying tasks (P15, P16, P17, P18). Obviously, for all workers, using platforms means using websites and oftentimes specific apps.

The last two general skills are client judgement and time management skills. To avoid landing a job with an unreasonable or abusive client, workers have a variety of ways to judge a potential client's reputation. One food delivery driver shared a "list of the good and bad restaurants" with a fellow driver (P8). Some mTurk workers use the TurkOpticon browser extension, which displays reviews of clients who post jobs on mTurk and shows "if they have a track record of being real bad" (P17). High-skilled workers on Upwork look out for "red flags," such as rudeness or "a poor attitude" during initial contact (P9; Upwork Reddit, 03/26/2020). Time management is a skill that can be practiced in different ways depending on the type of gig work involved. One food delivery driver using the GrubHub app praised an app feature that lets drivers sign up for certain blocks of time and receive priority over other drivers during those hours (P6). The same driver advised picking up multiple orders, when possible, if those orders had a delivery address in the same area, in order to save time. A few mTurk users chose set hours in which to work, based on when they believed the highest-paying clients were active on the platform (P17, P18). For high-skilled workers dealing with more specialist projects, self-discipline is crucial. As a worker, you have to be "able to adhere to the deadline and also be able to organize so that you can say 'okay, this is when I'm going to be able to deliver'" (P10).

Table 5. Workers must develop six general skills in order to excel at gig work.

Six General Skills Needed in Gig Work		
<i>Skill</i>	<i>Example</i>	<i>Why Important</i>
Proactive communication	<ul style="list-style-type: none"> • Sending updates to client via text, e-mail, or phone call • Asking questions to clarify client needs/wants 	Ensures job is done to client's satisfaction
Kindness and patience / "people skills"	<ul style="list-style-type: none"> • Understanding client's emotional state • Routing client to platform's customer service as needed 	Establishes a positive worker-client relationship; curbs emotional exhaustion
Basic math skills	<ul style="list-style-type: none"> • Calculating revenue minus expenses for jobs 	Determines whether or not a job is worth accepting
Basic computer skills	<ul style="list-style-type: none"> • Using e-mail services and platform apps 	Enables use of platform resources
Ability to judge client reputation	<ul style="list-style-type: none"> • Inferring clients' character and maturity, based on their platform profile and e-mail/phone exchanges 	Prevents workers from taking on abusive clients
Time management skills	<ul style="list-style-type: none"> • Logging work time on paper or in a software program • Balancing work and rest periods 	Ensures enough time is available to complete a job to a high standard

	<ul style="list-style-type: none"> • Knowing when to say ‘no’ to a job, when it may conflict with other responsibilities 	
--	---	--

3.3 *Five Gig Literacies Needed to Transition into Gig Work*

Alongside the six general skills, gig workers must develop five major gig literacies which are unique to doing work mediated by a platform. Gig literacies include evaluating platforms, “multi-apping,” using platform features productively, building a good reputation on a platform, and identifying scammers and dishonest clients. Evaluating platforms is a very individual activity, since different people will have different needs, preferences, and work backgrounds. Upwork, for example, is more suitable for someone who can charge high hourly rates, in order to offset the high commission rate taken up-front by the platform. Amazon mTurk is ideal for people who have very limited blocks of time in which they can work, due to health issues, parenting duties, or other obligations. Ride-sharing or food delivery, which involve driving for long periods of time, best fit those who have keen navigational skills and are able to be away from home for extended periods (P6, P7, P8).

The second gig literacy, multi-apping, refers to using multiple platform apps simultaneously, in order to keep as busy as possible and maximize one’s income. Multi-apping is the norm for many low-skilled gig workers, while high-skilled workers are more likely to use a platform like Upwork in conjunction with a non-platform resource such as a personal website or word-of-mouth business network. Food delivery and ride-share drivers report having GrubHub, DoorDash, UberEats, Uber, and Lyft apps open on their phones at the same time, taking orders from any app as they come up (P3, P11). Similarly, one pet-sitter in an online discussion forum asked advice about using the Rover and Wag apps together in order “to make as much money as possible” (Rover Reddit, 08/16/2020). Clearly, gig workers strategically multi-app so that they can maximize productivity and income.

Maintaining productivity is easier on some apps compared to others, which relates to the third gig literacy: using platform-specific features to aid productivity. Among food delivery apps, DoorDash appears to have the most helpful features, as the app “tells you the final pay, the driving distance, and it provides a little mini map” (P8). InstaCart is more problematic, as it does not indicate whether a certain item is in stock at a client’s preferred store, and does not provide workers with an easy way to update clients when an item is found to be out of stock. Consequently, clients’ expectations are frustrated and that frustration results in a complaint or lower rating for a worker (InstaCart Reddit, 08/20/2020). Productivity is somewhat more easily managed on mTurk, although many mTurk users maligned the false pay rates presented for certain jobs. One worker accepted a job that paid \$1.00 to do a supposedly 8-minute survey, but then a second message appeared saying: “This survey will take approximately 30 minutes to complete” (AMT Reddit, 08/11/2020). Workers will only maintain steady productivity when they have access to jobs that offer fair pay. Otherwise, they will pause work to search for jobs where pay is proportionate to time worked. Upwork’s productivity tools include an optional screen-capture tool that sends periodic snapshots of a worker’s computer screen to a client. This

tool helps some workers but makes others uncomfortable. A hindrance to productivity is Upwork's communication tools, which are limited to client-to-worker messaging. On projects involving multiple workers hired by the same client, worker-to-worker messages must be sent by e-mail or other off-platform tools (P14). On this point, Upwork effectively undermines its own terms of service, which urges workers not to use off-platform tools, though those tools may be necessary to do a job.

Building a reputation and avoiding scams are the last two gig literacies. Reputation on most platforms is determined by a worker's rating and number of jobs completed. On mTurk, having a higher approval rating and a high number of jobs completed "actually allows you to have access to certain hits" that lower-rated, less experienced workers cannot access (P17). Another mTurk worker advised newcomers starting out on the platform to accept low-paying "penny hits," in order "to build up your numbers, because the higher approval rating you have [and] the more that you do, more requesters want to see that" (P18). Low-skilled location-dependent gig work, on the other hand, is not purely about numbers but requires strong communication skills to achieve a high rating. Food delivery drivers, for instance, often advise new drivers to always send updates to customers and to thank them once an order is completed (P3, P8). One driver explained the ratings system on DoorDash, which is similar to other delivery platforms: "[T]hey can evaluate you based on your timeliness, based on your customer service, [and] based on your score from 0 to 5" (P8). Clear, consistent communication is even more critical in high-skilled work. As one Upwork user bluntly stated: "You always ask 'let me know if you're happy with it... let me know if I can make any possible improvements or changes.' That way... you're covering your own ass because... you asked them if there was anything else you could do" (P9). Maintaining a high rating depends on ensuring that a client's instructions were clearly articulated, understood, and followed. Thus, workers transitioning into almost any type of gig work should know that building a good reputation requires developing an open, two-way line of communication with clients.

The final gig literacy that gig workers need to cultivate is the ability to recognize scammers and dishonest clients active on various platforms. Scams look a little different depending on the platform. Food delivery platforms, especially InstaCart, are most prone to scams. A few InstaCart shoppers have complained that customers make false claims that orders were never delivered or were missing items, so that the customer does not have to pay for the orders (P7; InstaCart Reddit, 08/20/2020). One worker alleged that he was kicked off of InstaCart because of false claims. Similarly, a DoorDash worker mentioned "customers falsely reporting food not delivered so they can get it for free," and that scammers posted on social media, "advising other people on how to do it and get away with it" (DoorDash Reddit, 04/08/2020). On mTurk, scammers post jobs that end with "no completion code or like a place to submit... People say they do that on purpose to get free data or whatever, so that's kind of a frustrating thing because you just can't do anything" (P15). Savvy scammers often take to gig work platforms to obtain people's personal information. Even on Upwork, according to one worker, "I've definitely run into some scams... some people that were just like fake, I don't know, they had fake jobs and... it's not like it was anything inappropriate that they wanted me to do, but I found out it was a scam, they just wanted my information." (P14). People transitioning

into gig work, especially during the pandemic and its attendant economic downturn, should be aware that scammers are active on platforms and develop the ability to identify and avoid them.

Table 6. Workers must develop five gig literacies in order to be successful in gig work.

Five Gig Literacies Needed in Gig Work		
<i>Gig Literacy</i>	<i>Example</i>	<i>Why Important</i>
Evaluating platforms	<ul style="list-style-type: none"> Judging whether a particular platform fits your schedule and talents 	Leads workers to use platforms where they can be most successful
Multi-apping	<ul style="list-style-type: none"> Using multiple apps simultaneously 	Allows workers to maximize productivity and income
Using platform features productively	<ul style="list-style-type: none"> Using platform messaging tools, time-trackers, etc. Accepting jobs that clearly advertise fair pay rates 	(same as previous)
Building a good reputation on a platform	<ul style="list-style-type: none"> Accepting lower-paying jobs at first, to build up a reputation Communicating clearly and regularly with clients Requesting positive reviews from clients, once a job is done 	Ensures that a worker maintains a steady workload in the long-term
Identifying scammers on a platform	<ul style="list-style-type: none"> Looking for warning signs that a potential client is being deceptive Avoiding known scammers, who may be outed in online worker forums 	Prevents workers from wasting time or losing income on false jobs

4. Identifying Opportunities and Challenges of Gig Work During the Pandemic

4.1 Increased Opportunities Due to the Covid-19 Pandemic

The Covid-19 pandemic has had a mixed effect on the gig economy. In some areas of gig work, consumer demand for services has increased and opened up space for more workers to become part of the gig economy workforce. Of course, in other areas, demand has diminished, resulting in a net mixed effect overall. Here, the increased opportunities are highlighted. There are four major ways that the pandemic has increased opportunities for people to earn an income by doing gig work. First, gig work is one of few types of work that has remained relatively lucrative and open to newcomers during the pandemic. One low-skilled worker, asked why she

began using food delivery platforms, replied that “This is the only thing that’s been Covid friendly so far” (P7). Similarly, one high-skilled worker started using Upwork because the pandemic had severely limited her other options for employment: “This is definitely something that I started as like a supplemental start to my design career... But with the Covid times, everything got slowed down to a drastic level so I thought, why not just try this platform and see if I could get something” (P12). Although at times gig work can be competitive or low-paying, it does not generally have a high barrier to entry and can be quite lucrative for workers who have well-developed gig literacies.

Second, for some people, the pandemic has led to increased amounts of free time, as stay-at-home orders have reduced most people’s personal and work-related travels. As a result, some people have pursued gig work as a way to keep busy and to make up for reduced income from another, primary job. One worker, whose primary job switched from being on-site to remote because of the pandemic, used her former commuting time to “hop on Amazon Turk” instead (P15). Her mTurk gig supplements income from her primary job. Another worker, a teacher/tutor, described using saved commuting time to schedule online tutoring sessions more closely together, without breaks in between lessons. That way, “I can get a lot more money in a shorter amount of time” (P21). With the commute cut out of their working day, workers can re-organize their work schedules to maximize potential income.

Third, with pandemic-caused travel restrictions in place, people have increasingly turned to food delivery platforms to have food delivered to their homes. Consequently, in many places, the demand for food delivery drivers has increased, opening up this type of low-skilled location-dependent work to more newcomers. One driver described waiting nearly an hour for a single order to be prepared at one restaurant, due to the volume of orders placed “around dinner time” (DoorDash Reddit, 06/05/2020). Other drivers attributed the increase in food delivery orders to the closure of restaurant dining rooms and the widespread cancellation of concerts and sports games (P6, P8). Thus, food delivery is one area of gig work that has experienced an increase in job opportunities because of the pandemic.

Fourth, another specific area of gig work that has seen a rise in job opportunities is teaching and tutoring. Across the United States, numerous school districts have reduced operations, with some districts implementing all-virtual classes. However, school-age children are not the only ones who have driven the demand for more gig-worker teachers. Adults who are stuck indoors during the pandemic have also increasingly turned to online platforms to pick up new skills and hobbies. An art teacher who uses the platform TakeLessons noted that, pre-pandemic, “I only had like two students, and now I’ve got like nine, and they’re really nice...” (P21). Similarly, one music teacher described a recent increase in interested pupils. “After pandemic, I got two more adult students and... I asked them: ‘why do you want to learn the piano?’ And they said ‘oh, after pandemic I have lots of time, so why not learn something?’” (P23). The positive situation of teacher/tutors contrasts with other high-skilled workers, who have generally had a tougher time finding jobs during the pandemic, as described in the next section.

Table 7. *The Covid-19 pandemic has, in some areas, increased opportunities for gig workers.*

Increased Opportunities for Gig Workers During the Pandemic	
<i>Opportunity</i>	<i>Type of Gig Work Most Affected</i>
Gig work remains lucrative and open to newcomers despite the pandemic.	All types
Due to stay-at-home orders, some people have extra free time to do gig work and add to their income.	High-skill / location-independent Low-skill / location-dependent Low-skill / location-independent
More people are using food delivery apps to order groceries and restaurant food, causing a rise in consumer demand.	Low-skill / location-dependent
With many school-age children on reduced schedules and with adults stuck at home, there is increased demand for online teachers and tutors.	High-skill / location-independent High-skill / location-dependent

4.2 Challenges of Gig Work Continuing from Pre-Pandemic

Platforms, of course, existed before the pandemic. So did certain challenges for gig workers which have continued into, and sometimes been exacerbated by, the pandemic. This section highlights the five continuing challenges most discussed by workers in our interviews and in the online forums we analyzed. Challenges include the self-provisioning and maintenance of job-related equipment, the lack of transparency around platform algorithms, the disempowerment of workers in client-worker disputes, the excessive commissions charged to workers by platforms, and the mental and/or physical intensity of some types of gig work. As mentioned above, gig workers, unlike traditional employees, often have to provide their own personal vehicle, computer, or other equipment to do their job. Beyond the platform website and app, the equipment provided by the platform company is minimal. One food delivery driver noted that “all of the platforms in terms of food delivery provide you with a bag, some provide you like a shirt or hat that’s kind of branded... And then from there, some people realize that maybe they should get a drink carrier. They pay out of pocket for that. It’s an expense, it’s a business expense...” (P3). Similarly, speaking about location-dependent gig work in general, another worker commented: “I think there are a lot of hidden costs on the back end: car maintenance, gas” (P8). Post-pandemic, the car-related costs for food delivery drivers has likely risen, as food orders have increased. For mTurk workers and most location-independent workers, equipment costs are less of a burden, since there is no need to buy additional equipment beyond a computer. An exception is teachers, who sometimes have to buy advanced web-cameras, microphones, headphones, or other tools to facilitate remote teaching.

The lack of transparency around platform algorithms is a well-known issue in the gig work community. Algorithms typically determine how workers’ ratings are calculated, which jobs are assigned to a worker, and how much a worker’s net pay is. Yet, platforms rarely provide workers with insight into the content of their algorithms. Thus, the managerial operations of a

platform remain problematically opaque. Many workers, to varying degrees, feel dissatisfied with the information asymmetry that results from platforms' lack of algorithmic transparency. Dissatisfaction appears strongest among low-skilled gig workers. One delivery driver, asked what should be changed about delivery platforms, answered: "Honestly it would be, I guess, a bit more transparency about—cause all of them usually have time estimates and then how they've calculated what they're going to pay you. I think the only thing we could really ask for is a little bit more transparency in those numbers..." (P3). Several low-skilled location-dependent workers expressed a need to know more information about individual orders or clients—information which is usually withheld—so that they can determine whether an order is worth taking or a client is worth picking up (P6, P8, P11). One mTurk worker expressed confusion about the platform's worker rating system, implying that the opaque ratings algorithms on mTurk are illogical and arbitrary (P18). Another mTurk user wished that more information about clients was made available to workers, so that they could more easily avoid abusive clients (P22).

A third challenge that pre-dated the pandemic, but continues to be prevalent, is the relative powerlessness of workers when faced with unfair or abusive clients. In disputes between clients and workers, platforms assume the role of arbitrator but tend to favor the client. This power imbalance is experienced by both low-skilled and high-skilled workers. One InstaCart worker described being conned by scammers, which caused InstaCart to "hit me with a report saying 'oh you have four non-deliveries.' ... I contacted support to try to appeal it but they denied my appeal, and they did not provide any further information in regards to the deliveries. ... [I]t's more so about money, at the end of the day the customers bring in the cash flow, and so they would rather appease the customers" (P7). In this case, the platform withheld information about an order and a client—which relates back to the problem of lack of transparency—and apparently assumed that the client was in the right, not the worker. As this worker says, the platform preferred to "appease the customers" rather than to seriously pursue a worker's complaint. The problem of platforms' bias in favor of clients, when disputes arise, is no different for high-skilled workers. An Upwork user recounted an instance of losing income due to client malpractice. In this case, the worker felt so disempowered that she did not attempt to appeal to the platform administrators. She described her dispute: "I work with a client who has two Upwork accounts and... they were charging me double the fees... I e-mailed him about it and said 'hey, you know I have earned over X amount, like can I have these fees back,' [and] they were like 'there's nothing we can do if there are two different accounts.' So, like, in many ways it's a lot more client friendly than it is freelancer friendly, and that's very frustrating" (P9). In both cases, with the InstaCart and the Upwork worker alike, the inability to gain platform support in disputes with clients led to lost, irrecoverable income. In the distressed economic conditions caused by the pandemic, the impact of lost income becomes multiplied, and worker precarity rises significantly.

A fourth ongoing challenge is the extent to which a platform, as an intermediary, claims a percentage of the profit generated by workers' labor. Workers rarely dispute platforms' claim to a commission, but they do dispute how high that commission can justifiably be set. Exorbitant commission rates appear to be a challenge experienced mostly on platforms used by high-skilled workers. One music teacher, for example, stated that the platform TakeLessons took a 40%

commission from the income generated by her first five lessons, with the percentage decreasing as she taught more lessons. A few Upwork users commented on high commission rates, with one worker saying she felt she had to pass on the cost to clients (P14). Another Upwork user explained that the platform will “take 20% if you earn up to \$500... and then 10% after like \$500.01,” and so on (P9). The same worker stated that the platform has recently begun charging users just to apply to certain jobs. Indeed, our quantitative analysis of the most active Reddit forum for Upwork users revealed a massive rise in payment-related forum posts in early April 2020, when Upwork started to charge \$0.15 for each “connection,” which users redeem to submit proposals. High commission fees drew complaints from a smaller number of low-skilled workers too. For example, one worker who uses Rover echoed the Upwork user quoted above, saying that she felt forced to pass platform fees on to clients: “I’ve started adding on a 20% fee of whatever the receipt is for all food runs and stuff. That way the 20% Rover takes is covered plus some for myself for the effort” (Rover Reddit, 08/15/2020). Inarguably, platforms fulfill a vital role in facilitating gig work, and so they rightfully claim commissions. However, by setting such high commission rates, they also significantly reduce workers’ net income. Furthermore, when workers pass commission charges on to clients, as often happens, the platform indirectly inflates the prices that clients pay.

The fifth continuing challenge for gig workers is the physical and/or mental intensity of gig work, mostly low-skilled types. One ride-share driver cautioned that “you can’t do it tired. You have to have the energy levels to stay safe on the ride. You don’t want to push limits in this job unless you’re fully aware you can handle the hours” (UberPeople forum, 08/13/2020). Another worker, who is active on both ride-share and food delivery platforms, offered this general advice: “[I]f somebody asked me about doing this kind of stuff, I would tell them it’s not a great full time job... It’s a decent part time job... If you can do it full time, I have more respect to you, but I think you would burn out” (P3). Clearly, workers who are location-dependent need to be alert when they are driving around, delivering food and/or passengers to potentially unfamiliar destinations. However, low-skilled location-independent workers can feel strained as well. One mTurk worker noted how filling out surveys for hours “can be challenging at times, but I do try to remind myself to take some breaks, walk away, water my plants, whatever, just so I don’t get overwhelmed” (P18). Periodic “attention checks” are built into many mTurk jobs, to check that the worker is remaining alert, and these checks can be unduly anxiety-inducing, for two reasons: they can be challenging even for alert workers and, if failed, they can cause a worker’s pay to be forfeited.

Table 8. Five challenges that existed prior to the pandemic, and which have continued to affect workers.

Five Challenges of Gig Work Continuing from Pre-Pandemic	
<i>Challenge</i>	<i>Example</i>
Provision of job-related equipment at personal cost	- Workers must provide their own computers, vehicles, shopping bags, and other items, and bear the cost of maintaining these items.

Lack of access to how platform algorithms work	<ul style="list-style-type: none"> - Workers are not told what makes up platform algorithms, nor how algorithms determine which jobs workers receive and how much of a customer’s payment filters through to workers.
Disempowerment of workers in client-worker disputes	<ul style="list-style-type: none"> - Platforms act as arbitrators in disputes and rarely rule in workers’ favor. Clients are privileged, since they bring profit to the platforms.
Excessive commissions charged by platforms	<ul style="list-style-type: none"> - Some platforms take up to 40% off of a worker’s income from a job, as a platform commission fee, particularly on high-skill platforms.
Mental and/or physical intensity of gig work	<ul style="list-style-type: none"> - Some types of gig work require intense concentration for long periods (e.g., online surveys) or driving unfamiliar roads on a tight deadline (e.g., food delivery).

4.3 Workers’ Adaptations to Sudden Market Shifts During the Pandemic

With the onset of the pandemic, there were a couple of immediate ramifications that resulted in new challenges for gig workers. The first was a large-scale shift in supply and demand, as different sectors of the gig economy either grew or fell in public demand. The second was the emergence of an omnipresent new health risk, namely the risk of exposure to Covid-19. In response, gig workers changed their work strategies and practices. Workers adapted to new conditions and constraints. Recent market shifts are a worry for workers. Some services in the gig economy have experienced a drop in demand. Additionally, some platforms have seen an influx of new workers, thus increasing competition in the gig workforce. Particularly in online forums there was a lot of discussion around these market shifts, and workers tried to rationalize whether jobs were better or worse and why. This report did not collect the necessary survey data or statistics to make claims about the nature and extent of actual shifts in different sectors, but we report here the end effects of these shifts as experienced by workers and try to characterize some of the problems they can create on the ground. We also try, in section 4.4, to characterize some of the problems arising from the risk of exposure to Covid-19.

In regard to the flux in demand for gig economy services during the pandemic, high-skilled workers generally reported a decrease while low-skilled workers saw an increase. One freelance writer on Upwork stated that although business was steady in the short-term, “if Covid goes on for a while, I think that it might fall off because people are going to feel financially impacted more” (P10). A different Upwork user, a web designer, said she experienced a steep decline in “the number of interview callers” between the start and middle of 2020 (P12). She attributed the decline in interviews to the influx of new workers looking for web design jobs on Upwork, who have raised the competition. One freelance translator credited her loss of clients to the shutdown of the hospitality industry, which had previously supplied her with numerous translation jobs

(P9). In these three comments, the decline in demand for high-skilled workers can be traced to at least three separate factors: the diminished finances of potential clients, the increased competition for gig economy jobs during the pandemic, and the dramatic fall in leisure- and work-related travel (which has effects beyond just the hospitality industry). An exceptional subset of high-skilled workers is teachers and tutors, who have seen a rise in demand for their services. School-age children need extra instruction, in districts where schools are partly or wholly closed. Additionally, more adults are signing up for online lessons too, to learn new skills or hobbies while stuck at home (P23).

In contrast to most high-skilled workers, most low-skilled workers, particularly those in location-dependent sectors like food delivery and ride-sharing, have seen a rise in demand. As noted in section 3.1 above, since more people are stuck at home during the pandemic, there has been an increased demand for delivery of groceries and of take-out food from restaurants. For restaurant food, delivery is sometimes the only option, in places where local laws dictate limited or no on-site seating. Given the rise in demand for food delivery, many drivers have been vocal about the increased challenges and pressures they face. For example, one InstaCart driver observed of the average customer: “Sadly, I think a lot customers have been so insulated during all this, they don’t realize the circumstances the shoppers deal with out there” (InstaCart Reddit, 08/20/2020). One DoorDash worker perceived a rise in active scammers since the start of the pandemic: “We live in sad times. Some drivers eat customers food, some customers lie about receiving food” (DoorDash Reddit, 04/08/2020). Careful workers take time to document or confirm certain information before completing a delivery, in order to avoid scams or even potential honest mistakes. As one worker stated: “I try to watch and make sure they got their food or text them... because sometimes people get their address wrong or you might make a mistake and... drop it off at the wrong person’s house” (P6). For most people, the pandemic is a constant stressor, and customers who are stressed are likely to be short on kindness and patience. Clearly, food delivery drivers are aware that customers’ emotions are especially volatile during the pandemic, and they take precautions to avoid upsetting customers. Workers’ ratings on the platforms are at risk if they are not careful. Thus, the generalized stress felt by customers is often transferred on to low-skilled location-dependent workers, a challenging emotional loop unlikely to fade before the pandemic passes. In sum, the rise in demand for services in low-skilled sectors of the gig economy is good for business but comes with real challenges to which workers are trying to adapt.

On the other side of the supply-demand equation, as noted above, workers in some sectors have felt the effect of an influx of new workers into the gig economy. The rising supply of new workers is another market shift to which gig workers have tried to adapt. Low-skilled location-independent gig work, which is dominated by mTurk, has probably seen the greatest influx of new workers. At least, in our interviews and forum analysis, mTurk workers were the most vocal about increased competition from new platform users. One mTurk worker “hit a really hard point around March and April... Well, come to find out, because a lot more people are working from home, a lot more people are going MTurk. That’s why I was kind of having that fall in money making there” (P22). Another mTurk user wished that administrators would limit the number of workers on the platform, to reduce competition for jobs (P16). On the primary Reddit forum for

mTurk workers, one member surmised that more people were using mTurk either “on the side” in addition to another job, or, if unemployed, using the platform “all day” (AMT Reddit, 03/23/2020). This user forecasted a decline in available jobs and in pay rates on mTurk. Another worker, commenting later in the year, did in fact report a “super slow” period with “slim pickings” (P18). While these isolated comments are inconclusive, it would not be surprising if more detailed data found a significant correlation between the rise in mTurk users since the pandemic and a slow-down in available jobs for formerly busy workers.

One tentative conclusion that is safe to make, however, is that the pandemic has affected different types of low-skilled workers differently. As noted above, within the low-skilled gig workforce, location-dependent workers are keeping busy but location-independent workers are having a tougher time. Among high-skilled workers, most are facing a slow-down in business with the exception of teachers and tutors. Again, these are rough generalizations based on exploratory research and they await testing by further investigation.

Table 9. Sudden market shifts due to the pandemic have impacted different types of gig workers in different ways.

Challenges Due to Sudden Market Shifts During the Pandemic	
<i>Challenge</i>	<i>Types of Gig Work Most Affected</i>
Potential clients have diminished finances due to the pandemic-driven economic downturn, thus reducing consumer demand for some gig services.	High-skill / location-independent High-skill / location-dependent
Platforms are seeing a rise in number of new users, as many people seek a new source of income during the pandemic, thus increasing competition overall in the gig workforce.	High-skill / location-independent High-skill / location-dependent Low-skill / location-independent
Travel related to work and leisure have both fallen off due to the pandemic, thus reducing commerce in several industries (incl. hospitality, tourism, and related sectors).	High-skill / location-independent Low-skill / location-dependent
Clients’ stress due to being stuck at home has, in many cases, been expressed as negative behavior toward gig workers.	Low-skill / location-dependent

4.4 Workers’ Adaptations to Intensified Health Risks During the Pandemic

In addition to dealing with sudden market shifts, workers are also adapting to intensified health risks during the pandemic. Perhaps most immediately, the health risk has meant taking safety precautions and ensuring social distancing. Since Covid-19 is a public health issue, managing the health risk it poses is impossible for workers to do on their own. The platforms and clients should be essential partners in workers’ health-related adaptive strategies. However, workers often comment on the lack of participation by certain platforms and clients in the partnership role. For example, platform companies do not always provide personal protective equipment (PPE) to workers, although workers feel that platforms should do so. Low-skilled

location-dependent workers, who are especially at risk of exposure to Covid-19, tend to be most vocal when platforms fail to provide PPE. One InstaCart worker acknowledged that “right before the Covid wave... they offered us free masks, free wipes,” but that was “in March and I still haven’t received those items” (P7). Similarly, an Uber driver posted online: “Twice now Uber has offered to send me masks. I dutifully filled out the address (even though Uber already has it), and twice now... nothing is received” (UberPeople forum, 07/17/2020). Nevertheless, when platforms fail to provide PPE, workers purchase their own, treating it like any other piece of equipment they must pay for out-of-pocket. One delivery driver boasted “a whole collection of masks,” not only for his own safety but also to avoid being “a vector towards the people ordering food” (P6). Workers like this one rightly view PPE as a tool to protect public health, not just personal health. When the use of PPE is perceived as a civic duty, the frustration of not receiving quality PPE in a timely manner is compounded for workers.

The other major strategy for reducing risk of exposure to Covid-19, besides using PPE, is practicing social distancing. Here, clients are the crucial partner. Effective social distancing relies on clients, as well as workers, maintaining a safe distance. In our quantitative analysis of Reddit discussion forums for gig workers, we found that location-independent workers are the least concerned about Covid-19, since they do not have to be in close proximity to clients. Among location-dependent workers, restaurant delivery drivers were an exceptional sub-set who can usually enforce social distancing fairly easily. One food delivery driver was satisfied that “drop-offs now are no contact... we’re social distancing so it’s safer for us and the customer” (P6). Most location-dependent gig workers, however, experience constant concern about the difficulty of ensuring social distancing, since they have to share spaces with clients. Workers who use accommodation platforms such as AirBnB and Vrbo are among the most concerned, as are workers who do grocery shopping, ride-sharing, pet-sitting, or caregiving. Interestingly, in one online discussion forum, two ride-share drivers expressed opposite attitudes toward the idea of accepting sick passengers. One driver absolutely refused to transport anyone who might have Covid-19, but another was “not worried about it” as long as the passenger wore a mask and the seats were wiped down between rides (UberPeople forum, 07/12/2020 and 08/12/2020). In part, the second driver’s lack of concern relies on his access to PPE and cleaning supplies. Thus, greater access to PPE not only protects workers’ physical health but also reduces anxiety and promotes mental health.

It is not enough, however, merely to have access to PPE or for workers alone to observe social distancing. Clients must be willing partners, and not all clients are always willing. A ride-share driver recounted a time when a passenger refused to wear a mask, so the driver cancelled the ride, and the would-be passenger left a bad review on the platform (UberPeople forum, 07/31/2020). In summary, workers have adapted to the increased health risk during the pandemic by using PPE and practicing social distancing. However, workers’ personal use of PPE and social distancing has limited effectiveness without the cooperation of platform companies and especially clients. Furthermore, when workers challenge resistant clients, the result can be a negative review on the platform, which can lead to fewer job opportunities and lost income in the future. This represents a unique vulnerability to which workers are exposed because of the pandemic. Managing health risks clearly depends on a cooperative effort of all three parties in

the triadic relationship at the center of the gig economy, and most workers are concerned that they are bearing a disproportionate share of the responsibility in that effort.

Finally, out of all workers, the greatest adaptation challenges are faced by those who have long-term health conditions that pre-date the pandemic and limit when, where, or how much they can work. This sub-set of workers is highly likely to have entered the gig workforce prior to the pandemic, choosing gig work for its flexibility of scheduling. Like others, workers who are chronically ill or disabled face decreased demand for services (in some sectors) and increased competition from the influx of new gig workers during the pandemic. But their already-constrained ability to work, combined with their limited options in choice of employer, means that these workers' continued access to income, food, shelter, and health care is doubly threatened compared to others. Family members of the chronically ill and disabled share in the amplified vulnerability. For example, one Upwork user revealed that her husband required her constant care, due to his mental illness, and that her caretaker role limited her ability to take on certain jobs (P21). Another worker, whose girlfriend has "a compromised immune system," reasoned that "it probably wouldn't have been a good move to keep driving Uber and Lyft during the pandemic" (P1). There was a danger that he might pass Covid-19 from a sick passenger to his immune-compromised girlfriend. As an adaptive response, he switched from doing location-dependent work to doing writing and editing, types of location-independent work, via the platform Medium. For workers who have long-term health problems—and their family members—there is a heightened need to fend off disease and ensure a steady income despite physical limitations. Workers in this sub-set must work especially hard in order to maintain their life and livelihood. For example, one disabled worker who is a food delivery and ride-share driver reported that he relies on income both from gig work and a non-gig, part-time job, and at the same time he is trying to build a career as an entrepreneur (P11). Our research included only a small number of chronically ill or disabled gig workers, but they are a sub-set who merit further study and deserve targeted relief programs due to their magnified vulnerability.

Table 10. *Workers face several challenges due to the risk of exposure to Covid-19 in the course of their work. The ways they have adapted to deal with these challenges are discussed in the text of section 4.4.*

Challenges Due to Intensified Health Risks During the Pandemic	
<i>Challenge</i>	<i>Types of Gig Work Most Affected</i>
Platforms do not always provide PPE to workers, thus increasing health risks to both clients and workers.	Low-skill / location-dependent High-skill / location-dependent
Clients sometimes do not consent to wear PPE or practice social distancing, thus increasing the health risk to workers.	Low-skill / location-dependent
Not all gig workers can easily practice social distancing, given the nature of their job.	Low-skill / location-dependent
Workers with disabilities or chronic health issues are especially vulnerable to the worst effects of Covid-19,	All types

and they must be doubly cautious in undertaking many types of gig work.	
---	--

4.5 A 'New Normal': Long Term or Permanent Effects of the Pandemic

Some discussions with workers indicated that the shifts associated with the pandemic had led to long-term changes in work practice that might remain after the pandemic and quarantine end. In this sense there were some indications of a “new normal” in some specific fields of work. Perhaps the most marked of these more permanent shifts was in the high skill/location dependent quadrant, which saw many people moving from in person to remote modes of working. P26, for instance, had experienced a huge expansion of his music tutoring business after the pandemic began, and had to move all of his tutoring sessions to a virtual mode of instruction. He expressed that after going remote, he realized that conducting sessions virtually meant that he did not have to drive to each session, allowing him to save time as well as gas money. Moreover, it allowed for more fluidity in the way he scheduled participants. If a participant canceled immediately before a session, he could reach out to others who had wanted a spot and offer them the slot at the last minute. This ease of scheduling was something that P28 also mentioned. P23 said that going virtual saved her the time of driving between sessions, and although this did not really enable her to schedule more participants per day, it did allow her time between sessions that she could use to take a break or prepare. Ultimately, P26 said that he intended to continue working remotely, as it had significantly improved the way he was able to teach and manage his business. While some participants had positive experiences with the move to going virtual, this did not have a direct connection to the situation of gig working. The relationship between flexibility, location dependence, and gig work was a complex one that requires further research to unpack, but in examining changes around the pandemic this study sheds some light on the distinctions between these things that are usually conflated. This is perhaps best captured by P9, who had intentionally taken up consulting and teaching on a gig basis in so that she could work remotely. However, with the pandemic she was hopeful that more organizations would be open to hiring full time workers to work in a remote capacity:

...ideally, I'm hoping that like some nonprofits in Chicago will be more used to remote work after this so that I could continue to work from where I am where my rent is a quarter of what is be in Chicago. And, you know, just go to Chicago, you know, one week a month or something like that.

P9 was a gig worker “by choice” and much of what she had wanted in the situation of gig working was being able to work remotely without the added expectations of an office job or the cost of an apartment near her work. If possible, however, she would have preferred the consistency of such an office job. P9 felt that, prior to the pandemic, adopting gig work had been a path towards working remotely. Her new hope for full time remote work suggests one potential permanent change brought on by the pandemic: a breakdown of the association between stable, full time employment, and location dependent office work.

5. Recommending Changes to Platforms During the Pandemic

5.1 *Changes in the Design of Platform Websites and Apps*

Workers in interviews and online discussion forums identified several key changes they would like to see made to platform websites and apps. All of these changes would help workers better manage their precarity, as defined in section 1.3. Two changes desired by workers relate to the preliminary decision-making process, when workers must judge whether they are able and comfortable enough to accept a particular job. First of all, there is a need for in-app tools that let workers set the parameters (e.g., payment, distance, etc.) for what kind of jobs they are willing and able to accept. Low-skilled workers expressed this need most forcefully. One DoorDash driver addressed how he would fix a common frustration with food delivery apps: “I would say put a setting in the app that says ‘don’t accept offers below a certain amount’” (P11). In low-skilled location-dependent sectors, pay rates can be so low that a worker’s net income on a job is either zero or negative, once expenses and platform commissions are deducted. Tips help, when a customer gives one, but they are never guaranteed. One InstaCart worker noted that the platform defaulted to \$2 tips, a negligible amount which made him feel like “a charity” rather than a worker who deserved pay for his dedicated labor (InstaCart Reddit, 08/20/2020). Two other InstaCart workers left the platform altogether because they could never get orders with decent pay. Before leaving, one worker had started “refusing to accept low-wage batches,” and another had decided that “the pay has been so bad that it's not worth my time” (InstaCart Reddit, 08/20/2020). Two mTurk workers, in interviews, advocated for their right to be paid fairly for their labor. One stated: “I know I will always be aggravated when I feel like I am not being paid for my time right, and I’ve lowered my standards” (P17). Another commented that clients on mTurk “are expecting you to work for peanuts, you know. It’s like, yeah, we don’t have an office or anything but still our time is valuable, and you know we deserve to get more than a few bucks an hour” (P18). Fortunately for mTurk workers, unlike those on other platforms, they can work around the lack of in-app tools by downloading web browser extensions that automatically reject jobs below a certain pay point, as some workers proudly do (P15, P17). High-skilled workers are not as concerned about pay, since they can generally command higher pay rates, although commissions deducted by platforms like Upwork keep rising, as noted in section 4.2, and reducing high-skilled workers’ net income.

Second, workers would like to receive more information from the platforms about specific clients and jobs. More information would allow workers to make smarter judgments about accepting or rejecting certain jobs or clients. This concern was shared almost equally by low-skilled and high-skilled workers. Among low-skilled workers, one food delivery and ride-share driver observed that “some of the apps basically show you where you’re picking it up... and where your last stop is. Other apps do not...” (P11). A second food delivery driver was doubtful that platforms would ever be fully transparent: “I don’t think Door Dash or Grub Hub is going to tell you these things, because they ultimately want you to accept every single job that’s coming to the platform...” (P8). Referring to the opaque algorithms that determine pay, a third delivery driver stated: “I think the only thing we could really ask for is a little bit more transparency in those numbers...” (P3). Thus, food delivery workers would like access to a range of information

regarding clients, jobs, and pay algorithms. This information is not currently available to them, and so far platforms have been reluctant to share. Similarly, an mTurk worker stated that “more information about the reputation of the requesters” on the platform would be helpful, since “there are a lot of bad apples... and if you look and you see ‘ah, this person has rejected this many, I’ll probably go ahead and stay away from this’” (P22). The greatest concern among high-skilled workers was the occasional lack of information about clients, which can lead to committing to a dishonest or abusive client (P9, P14).

Third, workers would like to see a significant re-design of platforms’ ratings systems, which are often mis-used by clients and, in their current design, disproportionately penalize workers for anything less than a five-star review. Most dissatisfaction about ratings systems was expressed by low-skilled gig workers. One mTurk user speculated that a single rejection of her work “takes my percentage down to a level where I have to do 200 approved hits to get it back to that percentage it was at” (P18). This critique was echoed by another mTurk worker, who asserted that “every rejection permanently handicaps you, and the more you have, you have to get that many more approved [hits] to counter-set it” (P17). The threat of a single rejection by a client on mTurk, or a single negative review on most other platforms, which can reduce a worker’s access to jobs and income, contributes to worker precarity and worker stress. One Rover worker actually told of an abusive client who tried to blackmail him into accepting a job he at first refused, by threatening to leave a one-star review (Rover Reddit, 08/18/2020). An InstaCart worker, who had mostly positive experiences with customers, noted that platforms’ ratings systems are “even unfair to the customers. Why should you feel like a four-star rating will make it so someone can't work? They shouldn't have to be in a position to decide if they should report missing items or reasonable complaints, or get someone basically fired” (InstaCart Reddit, 08/20/2020). A change in platforms’ ratings systems could, therefore, improve the gig experience for both client and worker.

Fourth, among grocery and restaurant delivery drivers, there is an expressed need for clearer, more detailed in-app forms for customers. Often, customers will fail to provide relevant information about their order or their home address, leading to missing items or delayed delivery. Platforms could re-design in-app forms to make certain information required before an order can be submitted. One driver received an order placed by a boyfriend on behalf of his girlfriend, which led to some confusion: “He did not put his girlfriend’s address into the app correctly. He somehow set it as the school lawn that was on campus, and then her actual address ended up in the apartment box [on the in-app form]... and then I tried to deliver it to her and then she didn’t answer the door and it was also dark, and I’m not sure that the address was even right” (P6). A different driver wished that customers would “include the apartment complex name whenever they placed an order” and to “give more detailed instructions” such as “the gate code” for gated communities (P7). As with ratings systems, a re-design of in-app informational forms would ease gig economy transactions to the benefit of both client and worker. Food delivery, which is perhaps the most robust sector of the gig economy during the pandemic, would be more efficient, with shorter waits for customers and more time for workers to take on more deliveries.

Fifth, workers want to see improved communication tools on platform websites and apps, so that they can more easily contact clients to resolve issues or answer questions. Among high-

skilled workers, one Upwork user remarked: “In Upwork, you can’t talk to other people that I know of. I think you can only talk to whoever hired you” (P14). In one difficult instance, her client had hired several people to work on the same project, and she could not communicate with them on-platform to coordinate work. The team had to use off-platform e-mail to communicate. The availability and effectiveness of communication tools varies across other platforms. One low-skilled worker noted that the Uber app had in-app messaging, but DoorDash did not (P11). From the customer perspective, one InstaCart customer wanted to contact the delivery driver after an order had “a few items missing... but we couldn't see a way to send her a message once the order is closed” (InstaCart Reddit, 08/20/2020). Improved communication tools, if properly used, would result in more accurately fulfilled food orders, in the food delivery sector, and more satisfactorily completed projects, in the high-skilled sectors.

Lastly, numerous workers identified faults with app coding or overall app performance. Low-skilled sectors including food delivery and ride-sharing rely heavily on apps, and so most reports of app failures were concentrated in these sectors. Our quantitative analysis of gig-related online forums revealed regular discussions among low-skilled workers about app crashes or malfunctions. The DoorDash app has experienced several crashes so far in 2020, and some workers joked about the frequency of crashes. The UberEats app crashed once in May, when drivers’ earning of the day was not updated and shown in the app, and it crashed again in August, when drivers did not receive any tips for a couple of days. One InstaCart worker complained bluntly: “The only problem I have with IC is the stupid app. App has glitches. It is freezing, it is slow. There is so many problems. Sometimes I think the app coders are just 10 years old” (InstaCart Reddit, 08/20/2020). One DoorDash driver, in an interview, talked about what happens when an order gets re-assigned from one driver to another: “I think just in general there’s kind of some, maybe, IT programming issues when orders get reassigned. ... I had a... delivery from IHOP... There was a mistake in the customer’s order, so they wanted it remade, and I got the reassignment but the restaurant never got the reassigned order. So basically, it wasted a delivery driver’s time, it wastes about an hour of your time and there’s no compensation for it” (P8). Based on these comments and quantitative analyses, there is a need for platform app developers to constantly re-evaluate app coding and make improvements and fixes when necessary.

Table 11. *Workers recommended six major changes they would like to see in the design of platform apps and websites.*

Six Recommended Changes to Platform Websites and Apps	
<i>Recommendation</i>	<i>Types of Gig Work Most Affected</i>
Provide in-app tools that let workers set the parameters (e.g., payment, distance, etc.) for what kind of jobs they are willing and able to accept.	Low-skill / location-independent Low-skill / location-dependent
Provide more information about specific clients and jobs, so that workers can more easily assess a client’s reputation and a job’s net income.	All types

Re-design platform ratings systems, so that they do not disproportionately penalize workers for anything less than a five-star review or a perfect record.	Low-skill / location-independent Low-skill / location-dependent
Re-design in-app informational forms that customers fill out, so that workers clearly know what customers want and what address to deliver to.	Low-skill / location-dependent
Implement improved in-app or in-website communication tools, so that worker-to-worker and worker-to-client communication is easier.	Low-skill / location-dependent High-skill / location-independent
Regularly review and update app coding, in order to reduce app crashes, glitches, or other malfunctions.	Low-skill / location-dependent

5.2 *Changes in the Conduct of Platform Owners*

In addition to changes in the platform apps and websites, workers identified changes they would like to see in the conduct of platform owners. The corporations behind platforms do not always provide a level of support that workers recognize as adequate or fair. As noted in section 1.3, platform owners tend to emphasize their role as neutral intermediaries in the gig economy, and therefore they may not always perceive themselves as holding responsibility for certain kinds of worker support. Many gig workers, in contrast, see a greater support role for platforms to fulfill. By implementing the four changes summarized here, platforms would begin to fulfill that greater role and to approach an adequate level of support, as judged by workers themselves. The four changes recommended by workers in our study include: providing quality PPE to workers in a timely manner; implementing a robust worker complaint procedure, by which workers can share their concerns about problematic clients, with concrete actions resulting; improving general support and protection of workers against wage exploitation and/or customer abuse; and eliminating excessive platform fees imposed on workers and replacing them with more moderate fees.

The first recommendation, providing quality PPE quickly, follows from workers' concerns about exposure to Covid-19 in the course of their work and about potentially being an unwitting, asymptomatic vector of Covid-19 to clients. These concerns are greatest for location-dependent workers, who must often come into close proximity with clients or customers. In online forums and in our interviews, several workers expressed a need for quality PPE, which some platforms promised to provide but did not actually deliver. For more detailed discussion on this point, see section 4.4.

The second recommendation, implementing better worker complaint procedures, was mentioned most often by mTurk and InstaCart workers. One mTurk worker admitted that he could submit a report to the platform, if his work on a task was unfairly rejected or was uncredited due to a technical glitch, but that these reports rarely resulted in corrective action by the platform (P15). As a consequence, this worker's rating was negatively affected. Another mTurk user shared a similar experience: "[R]ejections on MTurk are strange because the requesters who put up surveys, they don't have to necessarily explain, and it's one of those

things where it hurts us kind of with our numbers” (P17). One Instacart shopper had her tip reduced from \$15 to \$1.86, after a customer became upset over an item that was out-of-stock at the store (Instacart Reddit, 08/20/2020). Expressing her frustration, she wrote: “I wish we could rate customers.” However, there was no apparent process by which she could appeal to the platform, to argue against being penalized for something over which she had no control (i.e., an item being out-of-stock). Similarly, one food delivery driver stated: “Honestly, I would change customer support and how they handle our complaints. I would definitely have tighter restrictions on the customers... and allow the delivery drivers to complain about customers” (P7). The lack of meaningful complaint procedures for workers who encounter problematic clients is also felt by high-skilled workers. One Upwork user, asked what he would change about the platform, answered frankly: “So... finding a way to make sure that, like, if something goes wrong or if a client is shitty or something, like that there’s some sort of protections where they’re not going to try to do something that will screw you” (P9). Existing complaint procedures, where they exist, appear to be little more than formalities and rarely result in concrete action that is helpful to the worker.

The third recommendation, improving general support and protection of workers, overlaps with the second recommendation but is somewhat broader. A frequent comment from workers is that they would like a more responsive “customer service” on most platforms (with the worker being the “customer” here). In an interview, one food delivery driver said that he “noticed that Grub Hub in particular doesn’t have a direct chat for customer service, like if there’s a hiccup of the job... Door Dash has that feature, but you have to contact their chat and it’s a long queue... So maybe just having an easier cancelation policy would be good to implement on Grub Hub and Door Dash” (P8). Although other platforms vary in the kinds of services they facilitate, the need for worker support remains the same. For example, one worker for Rover had to pay out-of-pocket for emergency veterinary expenses during a job, and found it difficult to get reimbursed. In her words, Rover should “allow us to bill the owner for expense reimbursement without having to wait for the owner to confirm the charge (say we submit a receipt or something who knows), yet they don’t. It’s part of the reason I require owners to have a credit card on file with the vet now and all owners sign attorney-proofed paperwork that holds them liable for reimbursement (among other things)” (Rover Reddit, 08/15/2020). For other workers, support means that the platform enforces rules for clients, rules of “basic civility and treating us respectfully” (P18). Support and protection can take many forms, of which only a few are mentioned here, and platforms might benefit by regularly asking workers what kinds of support they would like to receive and responding proactively.

The fourth recommendation, eliminating excessive fees for workers, was most discussed by high-skilled Upwork users, and Upwork seems to have a reputation for having unusually high fees. However, even some platforms centered around low-skilled gig work take a significant percentage of workers’ income on any given job, which makes low-skilled workers highly reliant on generous tips, thus increasing precarity considerably. This situation also means that a reduction or loss in tips, for whatever reason, has an amplified negative effect on low-skilled workers’ earnings for a day, as noted by the Instacart worker featured in the discussion of complaint procedures earlier in this section. Thus, precarity can be extremely volatile for some

workers, easily rising when potential income is lowered due to platform fees, reduction of tips, or any other reason. For more detailed discussion of workers' views on platform fees, see section 4.2.

Table 12. Workers recommended several changes to how platform owners operate, and which would reduce workers' overall precarity.

Four Recommended Changes to the Conduct of Platform Owners	
<i>Recommendation</i>	<i>Types of Gig Work Most Affected</i>
Provide quality PPE to workers in a timely manner.	Low-skill / location-dependent
Improve complaint procedures for workers, so that concrete action can be taken against abusive or otherwise problematic clients.	All types
Implement or improve general platform support services for workers, so that workers can let the platform know when a major problem arises (and come up with a solution).	All types
Eliminate excessive platform fees/commissions for workers and implement moderate fees/commissions.	Low-skill / location-dependent High-skill / location-independent

REFERENCES

- Dunn, M. 2020. Making gigs work: digital platforms, job quality and worker motivations. *New Technology Work and Employment*, 35(2), 232–249.
- Howcroft, D., & Bergvall-Kåreborn, B. (2019). A typology of crowdwork platforms. *Work, Employment and Society*, 33(1), 21-38.
- Kahancová, M., Meszmann, T. T., and Sedláková, M. 2020. Precarization via digitalization? Work arrangements in the on-demand platform economy in Hungary and Slovakia. *Frontiers in Sociology* 5(3), 1-11.
- Kaine, S. and E. Jossierand. 2019. The organization and experience of work in the gig economy. *Journal of Industrial Relations* 61(4), 479-501.
- Kalleberg, A. L., & Dunn, M. (2016). Good jobs, bad jobs in the gig economy. *LERA for Libraries*, 20(1-2).
- Sutherland, W., M.H. Jarrahi, M. Dunn, and S.B. Nelson. 2019. Work Precarity and Gig Literacies in Online Freelancing. *Work, Employment and Society* 34(3), 457-475.
- Sutherland, W., & Jarrahi, M. H. (2017). The gig economy and information infrastructure: The case of the digital nomad community. *Proceedings of the ACM on Human-Computer Interaction*, 1(CSCW), 1-24.
- Vallas, S. and J.B. Schor. 2020. What Do Platforms Do? Understanding the Gig Economy. *Annual Review of Sociology* 46(1), 273-294.