

Towards an understanding of workers' experiences in the global gig economy

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Highlights

- “Gigs” – short-term contracts mediated by digital platform businesses – are increasing, and have the potential to transform the future of work in Canada and globally. The work is precarious – meaning it is temporary, contract-based, low paid, and provides no training, health, or retirement benefits.
- Global and country-level policies have not kept pace with the “gigification” of the labour market. Gig workers are being left behind because they are excluded from existing skills development, health, and social protection policies, which are designed for the traditional labour market.
- Definitions of the gig, “on demand” or “platform labour” economy vary. In this report, we focus on labour platforms (such as Uber or Amazon Mechanical Turk), which mediate work, but exclude capital platforms (such as Airbnb), which facilitate the renting, selling, and buying of assets. We identify ten characteristics of the gig economy through the lens of workers’ experiences. These characteristics relate to where and how work is mediated through platform businesses, the size and structure of these platforms, the nature of the tasks performed, how workers are classified, and who benefits from gig transactions.
- The gig economy involves many actors with different power dynamics between them. Our review identified seven groups of actors – workers, users (or consumers), platform businesses, the industries disrupted, unions, governments, and the general public.
- Measuring the size of the gig economy is challenging because the work is largely invisible and not captured by existing labour market statistics and economic indicators.
- Gig work differs from traditional modalities of work in terms of the employer-employee relationship, especially the lack of accountability from platform businesses around worker protection; the disaggregation of jobs, which enables the outsourcing of microtasks; and, the disaggregation of workers, who remain disconnected from each other.
- Though this profile is changing, gig workers are predominantly young, white, and male, with higher education levels compared to the national average. The literature is generally silent on the experiences of Canadian gig workers.
- Workers participate in the gig economy for extra money and because of its flexibility, though more research is required to assess how well these goals are realized.
- Gig work has major implications for the socioeconomic well-being of workers. We classify their vulnerabilities by the way the platform labour is structured, the precarious nature of the work, and the occupation-based risks arising from how the work is performed.
- Government, private sector, and worker responses to these vulnerabilities all focus on access to benefits as well as employee misclassification and worker information sharing.
- Several knowledge gaps we identified include the need for more research on the different meanings of gig work; the experiences of gig workers and vulnerable subgroups such as women, immigrants, youth, and older workers in Canada; representative national surveys of the gig economy; and studies comparing gig and nongig workers’ experiences of precarious employment.

Executive Summary

Developments in online technology have transformed traditional labour markets by creating opportunities for people and businesses to participate in a larger-than-ever global marketplace for contract labour. Simple manual tasks, transportation, and small “human intelligence tasks,” such as tagging photos or transcribing a podcast, can be contracted out through digital platform businesses that directly connect customers to contractors for a service fee. “Gigs” – short term, one-off employment contracts mediated by platform businesses – have the potential to transform the future of work in Canada and globally.

The platform labour economy has generated opportunities for flexible work and business innovation, but it has also created significant economic, social, and personal challenges for workers. Gig work is precarious, meaning it is often low paid, temporary, provides no health, training, or retirement benefits, and shifts more of the risk of doing business from the employer to the contractor. Precarious work is associated with health and social inequalities (OECD, 2015; PEPSO, 2013), and certain vulnerable groups appear to be overrepresented in the gig economy – for instance young people (millennials) and people on lower incomes (see: Balaram, Warden, & Wallace-Stephens, 2017; Block & Hennessy, 2017). This tension between necessity and opportunity (or push and pull) is reflected in the terminology used to describe gig work. For instance, commentators focused on the benefits to firms and the ideal possibilities refer to this phenomenon as the “sharing,” “collaborative,” or “creative” economy (Botsman, 2013; Kuek et al., 2015; Schor, 2014), while others focused on the potentially negative effects on workers' well-being have labelled it the “gig,” “1099,” or “work on-demand” economy, even characterizing workers as the “precariat” (Block & Hennessy, 2017; Kalamar, 2013; Kenney & Zysman, 2016; Schor, 2016).

The gig economy is small but growing. Statistics Canada finds that between November 2015 and October 2016, 9.5 percent of people 18 and over living in Canada participated in the “sharing economy,” as users or workers (Statistics Canada, 2017). Similarly, a recent survey found that 9 percent of residents to the Greater Toronto Area (GTA) have worked on labour platforms (Block and Hennessy, 2017). These numbers are increasing, and one estimate for the United States suggests that 50 percent of the US workforce will be contractors working through digital platforms by 2020 (Carlton, Korberg, Pike, & Seldon, 2017). This anticipated growth in the gig economy mirrors the overall recent and continuing growth of precarious work. In Toronto, the number of people describing their job as “temporary” grew by 40 percent between 1997 and 2013 (PEPSO, 2013).

In spite of the growing importance of the gig economy – and widespread media coverage of specific platform businesses like Uber and TaskRabbit – there is very little known about these workers' motivations, characteristics, and experiences. This report presents findings from a scoping review of the peer-reviewed and grey literatures in order to assess the state of knowledge on workers' participation and experience in the gig economy globally, and suggests directions for future research. It also characterizes the gig economy, the main actors involved in it, the kinds of vulnerabilities gig workers face, and some responses by governments, the private sector, and workers themselves.

Workers' experiences of the gig economy are important to understand because the platform labour market has several features that distinguish it from other work:

1. The platform model muddies the traditional employer-employee relationship by classifying workers as independent contractors while subjecting them to ambiguous rules and criteria for success.
2. Platform businesses disaggregate jobs into microtasks.
3. Platform businesses disaggregate the workforce, both geographically and socially.

These three disruptions have major implications for the wellbeing of workers in Canada and around the world, which requires forward-looking responses from policymakers, service providers, employers, and workers. Since gig workers share many of the same vulnerabilities as other precarious workers, solutions around retirement planning, benefits access, career and skills development, and worker and consumer protection, are essential to protecting Canadian workers and the health of the Canadian economy.

What Does the Literature Tell Us about Gig Workers?

Who Are the Workers?

The literature reviewed shows that gig workers are predominantly white, urban, male, young (under 35), child free, and single, with education levels higher than the national average. This profile is changing; for instance, more women and older workers are participating, with important participation differences depending on regions and the types of work. Most workers participate part-time – combining gig work with other income streams and working through multiple platform businesses – and turnover is high, especially for young people.

Why Do Gig Work?

The main reason workers give for participating in the gig economy is extra income. A secondary motive in the literature is flexibility and autonomy. Motivations can be divided into “push” (unemployment, under-employment) and “pull” (flexibility, income) factors. For workers in Low-and Middle-income Countries, one key reason cited is higher income wages, because platform businesses have the potential to connect workers whose skills may be underutilized in their local labour markets to global opportunities. There was an overall positive perception of gig work, though authors questioned how well these positive expectations are actually realized.

What Are Their Vulnerabilities?

In both the peer-reviewed and grey literatures, gig worker vulnerabilities can be divided into three overlapping categories:

1. **Platform-based vulnerabilities:** These are the vulnerabilities specific to the way platform labour is structured. The main ones are the ratings systems, culture of surveillance, platform businesses' power to change the rules with no notice (e.g., surge fare on Uber), information asymmetries, insurance gaps, and worker misclassification.
2. **Precarity:** These vulnerabilities relate to the short-term, contingent nature of the work, which may be shared with workers outside of platform businesses. Some vulnerabilities include lack of health insurance, no access to collective bargaining, limited opportunities for career training and promotion, and the need to provide their own tools.
3. **Occupational vulnerabilities:** These are the vulnerabilities specific to the work being performed, which may be shared with those doing similar tasks outside of platforms; they include occupational health risks.



What Supports Have Been Proposed to Address These Vulnerabilities?

Overall, solutions proposed in the peer-reviewed and grey literatures focused on ways workers might access the benefits and supports associated with “conventional” jobs. The kinds of solutions proposed fall into three main categories:

- 1. Government and public sector responses:** These focus on benefits access for workers – particularly solutions like mobile benefits and “flexicurity” – and ensuring workers are classified appropriately.
- 2. Private sector responses:** Some platform businesses have voluntarily addressed the misclassification problem by hiring gig workers as employees; new platforms have been created to provide health insurance for gig workers; and in one case a platform labour company for care workers builds health insurance coverage into user fees.
- 3. Worker-led responses:** Workers have attempted to unionize, created forums and other communities to share information and support, and taken platform businesses to court.

State of Knowledge and Research Gaps

This scoping review shows that research on the effects of the gig economy on the economic and social well-being of its workers is an evolving field of exploration. The reports and articles we found offer only limited empirical data on the experiences of gig workers. The majority ($n=27$ of 38 scholarly articles) focus on the US context, and all but two focus on high-income settings. There is very little on the differences between gig workers on various platform businesses (especially nondriving platforms), workers with different skill sets and sociodemographic backgrounds, regional differences, changing experiences over time, and the way vulnerable groups may experience gig work. In particular, the review captures very little on the specific Canadian context for gig work – for instance, which platforms are operating in Canada, how workers interact with them, and what gig workers' experiences are. In order to address challenges to gig worker well-being, this report suggests a few emerging research directions based on the literature reviewed, including research on the experiences of gig workers (for instance, Canadian workers, workers in the Global South, and vulnerable workers, e.g., women and newcomers); occupational health and safety risks; workers' different experiences of platform firms; and working conditions. Methodological gaps included national representative surveys, qualitative research, and cohort studies as well as work that theorizes the gig economy and considers its ethical implications.



Context

Developments in online technology have expanded opportunities for people around the world to participate in a larger-than-ever marketplace for contract labour. The activities that can now be contracted out using digital platform businesses include simple manual tasks (TaskRabbit, an online marketplace that matches freelance workers with local customers), one-off transportation (Uber, an app that connects drivers to potential passengers), and small “human intelligence” tasks such as tagging photos or transcribing a podcast (Amazon Mechanical Turk, a crowdsourced, online marketplace that connects individuals to businesses for tasks that computers are currently unable to do).

Introduction

Statistics Canada finds that between November 2015 and October 2016, 9.5 percent of people 18 and over living in Canada participated in the “sharing economy” as users or workers (Statistics Canada, 2017). This participation is increasing; in the United States, for instance, one estimate suggests that by 2020, 50 percent of the workforce will be contractors working through digital platforms (Carlton et al., 2017). Another estimate suggests that by 2020 up to 40 percent of the United States labour market could be employed in a contract or contingent arrangement (Bonciu, 2016). The increase is in line with the overall increase in precarious work (Katz & Krueger, 2016; PEPSO, 2015; Pinsof, 2016, p. 352; Robles & McGee, 2016).¹ In Toronto the number of people describing their job as “temporary” grew by 40 percent between 1997 and 2013 (PEPSO, 2013). “Gigs” – short-term, one-off employment contracts – have the potential to transform the future of work in Canada and globally.

This “gigification” of the labour market has generated opportunities for flexible, accessible work and business innovation, but it also creates significant economic, social, and personal challenges for workers. The work is precarious, meaning it is often low paid, temporary, provides no health, training, or retirement benefits, and shifts more of the risk of doing business onto a contractor than in typical employee-employer relationships. Not only are gig workers missing out on standard workplace benefits, many of the existing policies, tools, and institutions that support skills development, retirement planning, worker and consumer protection, and savings are out of sync with their needs.

We adopt the definition of “precarious work” from Ontario’s recent report *The Changing Workplaces Review* by the Ontario Ministry of Labour as work that makes it difficult to earn a “decent income,” does not give workers “decent working conditions,” and that may put workers at risk in “material ways” (Mitchell & Murray, 2017, p. 14). This is in opposition to “decent work,” which the International Labour Organization defines as work that is productive and that provides fair incomes, social protection, opportunities for personal development and social integration, freedom to share concerns and participate in decisions, and equal opportunity (ILO, 2017). In the context of the normalization of precarious work, global policies and efforts to encourage decent work have had limited impact on workers (Johal & Thirgood, 2016). Precarity increases health and social inequalities (OECD, 2015; PEPSO, 2013), with certain vulnerable groups appearing to be overrepresented in the gig economy – for instance young people (millennials) and people on lower incomes (Balaram et al., 2017; Block & Hennessy, 2017; Codagnone et al., 2016; Expert Panel on Youth Employment, 2017; Fox, 2016; Kokalitcheva, 2016; Lamb & Doyle, 2017; McDowell et al., 2009). The precariousness of gig work is also significant given the global nature of gig work.

¹ For an argument that precarious work has not actually increased in Canada, but actually stabilized, see Busby & Muthukumaran (2016).

Current discussions about the gig economy characterize the “sharing economy” as a novel, innovative, and trendy phenomenon (Frenken & Schor, 2017). Headlines like “Rise of the Moonlighters: Why More Canadians Are Taking on Side Jobs and How to Make It Work for You” (Leong, 2016), “‘Tasker’ Movement Championed as Solution to Toronto’s Precarious Work Problem” (Mojtehedzadeh, 2017), and “Empowering Entrepreneurship through the Gig Economy” (Cameron, 2017), along with blog posts like “10 Millennials Share Why and How They Ditched Their Jobs and Joined the Gig Economy” (Robinson, n.d.) are typical. This mainstream narrative has led to potential myths about the gig economy focussing on worker choice, flexibility, freedom, and easy opportunities for cash. It has also helped to perpetuate the idea that gig workers are young, educated, hip millennials. It is not clear how many of these assumptions are substantiated by evidence – especially when it comes to assessing how gig work might shape the experiences of workers. More recently there has been growing media attention to some of the challenges workers are facing, in articles such as “Gig Economy Will One Day Make Us ‘Eat Bitterness’” (Mallick, 2017), “Toronto’s ‘Gig Economy’ Fueled by Young Workers Starved for Choice” (Mojtehedzadeh, 2017) and “How Uber Uses Psychological Tricks to Push Its Drivers’ Buttons” (Schieber, 2017). As a result, this scoping review assesses the state of knowledge of worker participation and experience in the gig economy in Canada and globally.

What Is the Gig Economy?

Definitions

Definitions are controversial and vary significantly (Botsman, 2013; Schor, 2014). The diversity of terminology in use makes it challenging for media commentators to clearly delineate the phenomenon of the gig economy, and shows the attitudinal differences between observers who are gig economy supporters and those who are much more critical of it. For instance, commentators focused on the benefits to firms and the idealist possibilities refer to this phenomenon as the “sharing,” “collaborative,” or “creative” economy (e.g. Kuek et al., 2015), while others focused on the potentially negative effects on workers’ well-being have labelled it the “gig,” “1099,” or “work on-demand” economy, even characterizing workers as the “precariat” (Kenney & Zysman, 2016). Critics of the terminology of “sharing” argue that it is disingenuous and does not reflect the realities of work for pay in digital marketplaces (Block & Hennessy, 2017; Kalamar, 2013; Schor, 2016). These terms also sometimes apply to temporary, short-term contracts outside of digital platform businesses, which are becoming more common (De Stefano, 2016).

We adopt the terms “gig economy,” “platform labour,” and “digital labour markets” because they are the most descriptive of workers’ experiences.² We suggest that the gig economy has ten key characteristics:

1. **Work is mediated by digital, online platform businesses**, like Lyft, Freelancer.com, or TaskRabbit that match workers to customers/users (or supply to demand) (Acevedo, 2016; Cherry, 2016). We adopt the distinction presented in J.P. Morgan’s *The Online Platform Economy: Has Growth Peaked* between **labour platforms**, which match workers with tasks, and **capital platforms**, which connect customers with a form of capital owned by an individual (Farrell & Greig, 2016). As a result, this report does not consider the participants in capital platforms like Airbnb and Etsy.

² The term “gig economy” was first used in this context by journalist Tina Brown (2009).

2. **These platform businesses mediate labour relationships** in order to reduce transaction costs (Schor, 2016). The European Union report *The Future of Work in the "Sharing Economy": Market Efficiency and Equitable Opportunities or Unfair Precarisation* distinguishes between **online labour markets**, where remote delivery of work is possible (e.g., Upwork, Amazon Mechanical Turk), and **mobile labour markets**, which offer local services and require direct interaction (e.g., Uber or Task-Rabbit) (Codagnone et al., 2016). Online labour markets have the potential to employ people anywhere in the world, making them global labour markets (Agrawal, Horton, Lacetera, & Lyons, 2015; Galperin, Viacens, & Greppi, 2015). Platform businesses have four main characteristics: 1) they use information technology to facilitate peer to peer (P2P) transactions, 2) they rely on user-based ratings systems for quality control, 3) they offer workers flexibility around working hours, and 4) they rely on workers to supply tools (Kurin, 2017; Telles, 2016).
3. **The platform businesses that facilitate gig work are "non-employer firms"** (Holtz-Eakin, Gitis, & Rinehart, 2017). They are businesses of various sizes with both local and global presences and generally define themselves as technology companies rather than human resource organizations (for instance, Uber's proper corporate name is Uber Technologies, Inc.). Firms are varied in how hands-on they are at connecting customers to worker; most act as intermediaries providing an online marketplace where customers and workers can connect directly (Kuek et al., 2015).
4. **Customers pay workers by task** (Manika, Lund, Robinson, Mischke, & Deepa, 2016; O'Connor, 2015).
5. **Tasks are often "on demand"** or completed immediately after a customer/client requests the work (Balaram et al., 2017), which has led some commentators to call the phenomenon the "on-demand service economy" (Block & Hennessy, 2017). Tasks are generally very short term and small scale (Anderson, 2016; Barzilay & Ben-David, 2017) – sometimes even called "micro-tasks" because they are simple, broken down into small units – and quick to complete (Aloisi, 2016; De Stefano, 2015; Deng, Joshi, & Gelliers, 2016; Webster, 2016). This is part of what Policy Horizons Canada refers to as the "unbundling of work" from full-time jobs to individual tasks (Policy Horizons Canada, 2016).
6. **Personal and professional time is blurred** as is the boundary between full time and casual work (Policy Horizons Canada, 2016; Schmidt, 2017; Sundararajan, 2016, p. 27).
7. **Workers have only a short-term relationship with their client** (Bonciu, 2016; Manika et al., 2016).
8. **Workers are currently classified as independent contractors** or freelancers in most jurisdictions globally, including Canada (e.g., Johal & Thirgood, 2016). This is both celebrated as a source of autonomy and entrepreneurship (Manika et al., 2016), and criticized as a source of precarity since the risk of doing business is "downloaded" to gig workers (DeBruyne, 2017; van Doorn, 2017).
9. **Gigs may require very different skill levels;** they include professional jobs, creative jobs, administrative jobs, skilled manual or personal services, and driving/delivery services (Balaram et al., 2017; Friedman, 2014; Huws, Spencer, & Joyce, 2016; Leighton, 2016). The World Bank distinguishes between "**microwork**," which requires workers to have basic numeracy and literacy skills, and "**online freelancing**," which is professional outsourcing (Kuek et al., 2015).
10. **Platform businesses are the main beneficiaries of the gig economy.** This is even more apparent as these businesses take up a growing share of certain markets (Frenken & Schor, 2017).

History

The “sharing economy” as a concept gained prominence around 2010 (Sundararajan, 2016, p. 30). The rise of the sharing economy and platform labour is usually associated with the Great Recession of 2008–2011 and the introduction of new austerity measures, an increase in unemployment and underemployment, and rising inequality – all of which created a pool of workers looking for new employment opportunities (Bonciu, 2016; Booth, 2015; van Doorn, 2017, p. 900). It coincided with ideas about how to mobilize underutilized assets (cars that are only driven occasionally, extra bedrooms, spare time) to earn money. These kinds of resources could not easily be put to use in the past, because of the enormous transaction costs involved (Stafford, 2016; Surowiecki, 2013). According to Arun Sundarajan, the development of labour and capital platforms was also facilitated by technological shifts: an increase in the ability and interest in the “rendering of things as information and, in particular, representing that information digitally,” an increase in hardware power (bandwidth, storage, miniaturization of devices), and an increase in programmability (Sundararajan, 2016, pp. 52–54). He argues that these “technological determinants” of the sharing economy led to the digitization of trust and the emergence of a decentralized peer-to-peer network (Sundararajan, 2016, pp. 58–65).

But gig labour has deep roots in other forms of labour organization such as temporary staffing agencies, which normalized just-in-time labour practices (Theodore & Peck, 2013, p. 27; van Doorn, 2017, p. 900). The trend toward task-based work also has antecedents in the “piecework” structure of certain work (matches, garments) in the late 19th and early 20th centuries (Alkhatib, Bernstein, & Levi, 2017). In fact, the US and Canadian governments have tracked the increase in contingent and freelance work from the late 1980s (the 1099 workforce in the United States and the unincorporated self-employed in Canada) (Bahar & Liu, 2015; Polivka, 1996). The innovation of the gig economy is that it is now technology enabled (which changes the scale) and rebranded as a positive, entrepreneurial opportunity (Griswold, 2016). This idealist character is sometimes framed using socially progressive language, and there is a significant literature that connects it to lower consumption levels and a more ecological outlook (Airbnb, 2014; Botsman & Rogers, 2010; for a critique see Slee, 2014). Even these technological innovations have roots in some early online marketplaces such as eBay, which was founded in 1995 to facilitate traditional online buying and selling; Craigslist, created in 1995 as an email service and moved to a website in 1996 as a peer-to-peer marketplace; and Wikipedia, the collaborative, open-source encyclopedia established in 2001 (Sundararajan, 2016, pp. 48–51).



Who Are the Actors?

One of the challenges in understanding the gig economy is identifying who the stakeholders are and the power dynamics between the different groups. Though this review highlights the experiences of workers, we have identified seven main actors:

1. **Workers:** Sometimes called “participants” or “users,” these are the contractors using labour platforms to earn money and are the focus of this report.
2. **Users:** Sometimes called “consumers,” “participants,” “clients,” “requesters,” or “users,” these are the individuals and businesses using the services – such as hiring an Uber driver – provided by gig workers. Concern for gig economy actors is focused on users (consumers) (Koopman, Mitchell, & Thierer, 2014). This is interesting since consumers have been one of the biggest short-term beneficiaries of the gig economy (Holmes & McGuinty, 2015; Johal & Zon, 2015), and since the power imbalance between workers and users favours the users (Policy Horizons Canada, 2016). For instance, most of the literature on discrimination is focused on how customers are discriminated against by gig workers (Ge, Knittel, MacKenzie, & Zoepf, 2016). The majority of consumers for on-demand work in online labour markets are in the United States (representing 52 percent of job vacancies), with 6.3 percent in the UK, 5.9 percent in India, 5.7 percent in Australia, and 5 percent in Canada (Kässi & Lehdonvirta, 2016). Just under half of the demand for workers appears to be driven by small and medium-sized enterprises in the technology industry; the rest is more broadly spread through industries including media and entertainment (20 percent), and manufacturing (13 percent), with financial services, retail, travel, and healthcare making up the remainder (Kuek et al., 2015).
3. **Platform Businesses:** These are the online intermediaries, almost always for-profit, that facilitate gig work by connecting providers/workers (supply) with potential consumers/users (demand) to perform transactions such as performing services or sharing property, skills, or labour (Dolvik & Jesnes, 2017). Platform businesses benefit from information and power asymmetries with consumers/users and workers, and can set the terms for how these two groups interact (Schmidt, 2017; Scholz, 2017). They also compete with each other as well as with “traditional” operators in an industry for workers and users (Kenney & Zysman, 2016). Block and Hennessy found more than 100 platform businesses active in Toronto (Block & Hennessy, 2017).
4. **Industries Being Disrupted:** Perhaps some of the most vocal critics of the gig economy, particularly in Canada, have been the industries they are competing with. Driving companies are a key example; taxi lobbies have been particularly concerned about the effect of Uber on the industry in cities like Toronto (as one taxi driver put it, “Uber has robbed me of a decent living – and more” [Samuel, 2016]).
5. **Unions:** Trade unions and activists with an interest in labour have demonstrated concern about the implications of gig work on precaritization (Dolvik & Jesnes, 2017; see also Appendix 6).
6. **Governments** (regulators, policy makers): Governments at all levels are being called on to regulate the gig economy (both labour practices – see “Results” – and the industries being disrupted by platform businesses [for e.g., van den Steenhoven, Burale, Toyé, & Bure, 2016]). They are also challenged to effectively address the diverse needs of workers through regulation, policy, and other tools.³ Some critics have expressed concern that government regulation is a potential threat to “sharing economy” innovation (Allen & Berg, 2014). In several cases, governments have actually embraced the gig economy. For example, the “Sharing City Seoul” project, using capital and labour platforms, offers significant government support to deal with the challenges of high-density city living (Guerrini, 2014; Sharehub, 2017).

³ For a recent government response, see *Good Work: The Taylor Review of Modern Working Practices* (Taylor, Marsh, Diane, & Broadbent, 2017), an independent review of precarious work, including gig work, in the United Kingdom.

7. Communities and the General Public: The effects of the gig economy on neighbourhoods, cities, and communities are poorly understood. While some point out the positive implications of community building through sharing and less ownership (“asset-light lifestyles,” as Mary Meeker [Copeland, 2012] puts it), and the environmental possibilities, a major part of Uber’s success is that public transport systems around the world are poorly funded and not meeting people’s needs (Booth, 2015; Clewlow & Mishra, 2017; for a Canadian perspective see “Innisfil taps Uber to fill its public transit void” Siekierska, 2017). And (Kässi & Lehdonvirta, 2016; for a conceptualization of the informal economy see ILO, 2002). The implications for connectedness and the formation of new communities are also unclear (Turkle, 2011).

How Big Is the Gig Workforce?

Measuring the size of the gig workforce is challenging. Platforms restrict access to user data (Frenken & Schor, 2017), which means that big-data techniques are not possible (Office of National Statistics [UK], 2016). Much of the work is invisible, and it is unclear how many gig workers actually report their activities (Manika et al., 2016) or pay income tax on their gigs (for an example of concern about gig worker tax compliance in the United Kingdom see Office of Tax Simplification [2016] and Sagan [2015]). Labour market statistics and economic indicators are not well suited to measuring the size of the gig economy because of definitional issues (they measure employment as working for at least an hour in a week or day), their failure to accurately measure the value of digital activities and investments, and the fact that gig workers may not be reporting their earnings. It is particularly challenging to measure gig workers in Low-and Middle-Income Countries (LMICs) because of general tax underreporting and the dominance of the “informal economy,” work that is unprotected or unregulated (Kässi & Lehdonvirta, 2016; for a conceptualization of the informal economy (see ILO, 2002). The online gig economy is also

very transnational; 89 percent of transactions cross national borders (Lehdonvirta, Barnard, Graham, & Hjorth, 2014). The issue of incremental employment or people working multiple jobs and gigs (“multijobbers” per Spiezia & Gierten, 2016) – is particularly hard to measure. The UK Office of National Statistics points out that the relevant economic and labour activities are captured in the GDP and labour market statistics, even if standalone statistics are not available (Office of National Statistics [United Kingdom], 2016).

In spite of these challenges, some recent attempts have begun to demonstrate the extent of digital labour market participation in Canada and elsewhere. According to a 2017 report by the Centre for Policy Alternatives, only 9 percent of people in the Greater Toronto Area (GTA) are working in the gig economy (Block & Hennessy, 2017). The number is based on a survey of over 2000 GTA households and is our first insight into the scale of the phenomenon. This number may be difficult to generalize from; Toronto appears to have higher participation in the gig economy than the Canadian average because it was an early adopter of Uber (Owram, 2014). Looking exclusively at online outsourcing, the World Bank finds that there were 48 million registered workers in 2013, 10 percent of whom were considered “active” (Kuek et al., 2015). In contrast Farrel and Gregg (2016), using J.P. Morgan bank data, found that 1 percent of its customers were participating in gig work (though this obviously excludes nonbank transactions like PayPal and is a cross-section of only one bank’s customers, which may be less useful as more and more young people are banking with newer banks). Huws and Joyce (2016) find that 11 percent of surveyed adults in the United Kingdom earned money through the gig economy. Overall, the gig workforce still appears relatively small in size, especially compared to the overall size of the precarious or “alternative” workforce, which is growing globally (Katz & Krueger, 2016).

Implications

The gig economy is characterized by a number of unprecedented features that deviate from traditional modalities of work in three important ways:

1. The platform model muddies the traditional employer-employee relationship by classifying workers as independent contractors while subjecting them to ambiguous rules and criteria for success.
2. Platform businesses disaggregate jobs into microtasks.
3. Platform businesses disaggregate the workforce, both geographically and socially.

The platform economy is different from other forms of contract work because it is online and borderless, and as such is able to operate and grow at large scale. Although the gig economy currently represents only a small share of the workforce, it is growing rapidly (Policy Horizons Canada, 2016). The complexity, newness, and scale of the gig economy create a number of challenges that have wide-reaching implications for Canadian institutions and decision makers tasked with the responsibility of protecting the health, well-being, and integrity of Canadian workers.

The Employer-Employee Relationship

The question of accountability is key, inasmuch as supports that were traditionally the responsibility of the employer have now been transferred to a workforce that may not be able to maintain those supports for itself. What legal scholars point to as the misclassification of gig workers as independent contractors makes it impossible for workers to make demands on those who run the platform, and makes it equally difficult for government to enforce even minimum protections for workers. The following gaps in protections will need to be filled by either social programs or stricter regulation of platform businesses:

- Platform businesses do not provide benefits to their workers, leaving the gig workers who have no other form of employment without access to benefits such as supplementary health and dental coverage, pensions, disability insurance, and severance (Codagnone et al., 2016; Johal & Thirgood, 2016; Lobel, 2017)
- Platform businesses are not held accountable to protect workers, meaning that workers do not have the protections of minimum wage, workplace safety, and antidiscrimination laws.
- As independent contractors, workers must assume more risk of doing business relative to their employer, and so become more vulnerable to capital losses that they may not be able to shoulder.
- In marketplace platforms, workers have to entice customers, which can lead to a “race to the bottom” in terms of their rates (Graham, Hjorth, & Lehdonvirta, 2017)

Disaggregated Jobs

Platforms enable companies to outsource jobs as series of small-scale microtasks (Aloisi, 2016; Deng et al., 2016). By unbundling jobs, workers are no longer connected to a job from start to finish, minimizing their ownership over tasks and reducing an employer's dependence on the knowledge and skills of its workforce (Policy Horizons Canada, 2016). The disaggregation of jobs through platform businesses can lead to a number of challenges to Canadian workers and the Canadian workforce, including:

- Platforms enable companies to unbundle jobs into a series of tasks that can be performed by any number of gig workers; as a result, workers have less certainty about their employment and shorter time frames for each job, leading to a potentially negative impact on their health and their finances (OECD, 2015; PEPSO, 2013)
- Without access to job development, challenging work, and skills training, more Canadian workers will not accelerate in their skills development, and the quality of the Canadian workforce may suffer (Johal & Thirgood, 2016). Stunted skills development is of particular concern given the proportion of workers who are young and still in the early stages of their careers.

The small scale of the tasks, however, also creates flexibility for workers who are not looking for full-time employment or who wish to structure their day around other priorities. As such, the disaggregated nature of work also leads to more flexibility for workers with obligations that might otherwise exclude them from traditional labour markets, such as caregiving obligations or living with a disability (Carboni, 2016).

Disaggregated Workers

The platform model creates a network for workers to connect with gigs while never providing them with a chance to connect with each other. Gig workforces are by their very nature geographically and socially dispersed, leaving the workers with few anchoring points and communities that they can associate with their work. The outcomes of a disaggregated workforce are twofold, empowering some while alienating others:

- Geographically dispersed workforces allow those living in the Global South to access well-paying online work, such as transcription, translation, or more specialized tasks such as Search Engine Optimization (SEO) writing (Graham et al., 2017)
- Being largely invisible to one another makes it difficult for gig workers to organize (De Stefano, 2015)
- Not having a community of fellow workers can be isolating and alienating for workers who are not participating in the gig economy voluntarily and who therefore do not assume an entrepreneurial identity (Marmot, 2015; Turkle, 2011)

This context for gig work requires flexible solutions from a range of actors, including civil society organizations, governments, and researchers.

Methodology

The state of knowledge of the gig economy is rapidly evolving. Therefore, we conducted a scoping review, which involves a systematic exploration and mapping of which concepts are used in what manner on a broad topic (Arksey & O'Malley, 2005). We searched and assessed both scholarly and grey literature (see: Appendix 1).

Peer-Review Literature

Search Strategy

Medline, Ovid, Scopus, Web of Science, and Proquest were searched for peer-reviewed articles. The electronic search included sources published between January 2000 and July 1, 2017 across all databases (see Appendix 1). The search strategy was developed collaboratively with all authors, with input from an information specialist.

The search focused on four main research questions:

- 1. Who is participating in the gig economy?**
- 2. How does the gig economy shape the social and economic well-being of workers, including Canadians?**
- 3. What are workers' vulnerabilities, including health vulnerabilities?**
- 4. What are the alternatives or supports for workers proposed in Canada, or in other parts of the world, that can be adapted to the Canadian context? These might be policies, programs, or practices from all sectors.**

Three central components of the research questions – the gig economy, workers, and the Canadian context – were combined and guided the search. The search combined focused keyword search terms and Boolean search terms. Keywords were searched, using truncation symbols, when appropriate, to capture comprehensive results. Search terms within each theme were combined with the Boolean operator OR. Themes were combined using the Boolean operator AND. The search terms were: “Sharing econ*” OR “gig econ*”

OR “Uber econ*.” Within those results, we searched “AND Canada AND precari* AND labor AND work* AND work* condition* AND income AND contingent.” The reference sections of these reviewed articles were also used to identify additional articles.

Inclusion/Exclusion Criteria

The articles included in this review all focused on the experiences of individual workers in the gig or platform labour economy. Some population groups were excluded, for instance people participating in so-called capital platforms such as Etsy (who were selling their creations) and Airbnb (who were renting out their assets). We also excluded literature focused on managing workers in the gig economy, the vulnerabilities of companies using gig workers, platform businesses, and people participating in the gig economy as users or consumers.

Only articles directly examining gig workers, their experiences, and ways that participation in the gig economy affects their social and economic well-being and health were included. While the majority of articles were published after 2012, expanding the date range to include work published since 2000 allowed us to be certain we had a full picture of the gig economy. Only English-language literature was included; editorials, proposals, conference abstracts, magazine articles, and news articles were excluded. Two independent reviewers validated the selection of articles for title and abstract screening and for full-text screening, and disagreement was resolved by consensus among collaborating authors.

Data Management and Extraction

EndNote was used to manage the retrieved scholarly references. Covidence was used to screen the results of the academic databases. A data extraction form was developed in Excel, with input from all reviewers and in line with the four research questions. The data extraction form was pilot tested by four of the collaborating authors on a random sample of four articles and revised accordingly.

Grey Literature

Search Strategy

We chose to expand the search to include grey literature for two reasons. First, given the fast pace of change in the gig economy and its relevance to governments, think tanks, and policy makers, it seemed important to consider a broader set of sources. Second, preliminary searches and a review of references in the selected peer-reviewed literature showed that the grey literature was being heavily cited. We used Google Scholar to identify sources.

Using the scholarly search as a foundation, the grey literature search was more narrowly defined because of the enormous amount of grey literature. The search date range was January 1, 2015 – July 1, 2017. In addition, initial pilot searches using an expanded search strategy yielded results that were irrelevant to the study question (economic advantages for companies in the gig economy). For these reasons, we only included literature that used the terms “sharing econ*” or “uber econ*” or “gig econ*” in the title. Searches were restricted to the English language. Searches were also restricted to [PDF] in Google to limit literature to reports. Several reports suggested by expert advisors were included in the final list.

Inclusion/Exclusion Criteria

As with the peer-reviewed literature, only grey literature focused on the experiences of gig workers was included. Works discussing public or private sector responses to the gig economy and those dealing with people selling or renting goods through platform businesses were excluded. Internal briefs, PowerPoint presentations, conference programs, letters, memorandums, websites, blogs, and marketing materials were excluded. Given the scale of the grey literature, the final selection was restricted to empirical reports, based on original research. Two independent reviewers validated the selection of articles for title screening and for full-text screening and disagreement was resolved by consensus involving collaborating authors.

Data Management and Extraction

The grey literature was hand screened and input into Excel. Excel was used to create databases of the grey literature results for screening, using the same data extraction template as the peer-reviewed literature.

Limitations

We acknowledge that some relevant articles may have been omitted, especially since terminology for the “gig” economy is quite diverse. The speed at which new research and perspectives on the gig economy are emerging and the scale of research also means that some more recent relevant articles and reports may have been excluded. Finally, the challenges of searching grey literature, since it is not usually catalogued and keyword searches in Google do not always capture everything (Mahood, Van Eerd, & Irvin, 2014), may have also led to some missed documents.

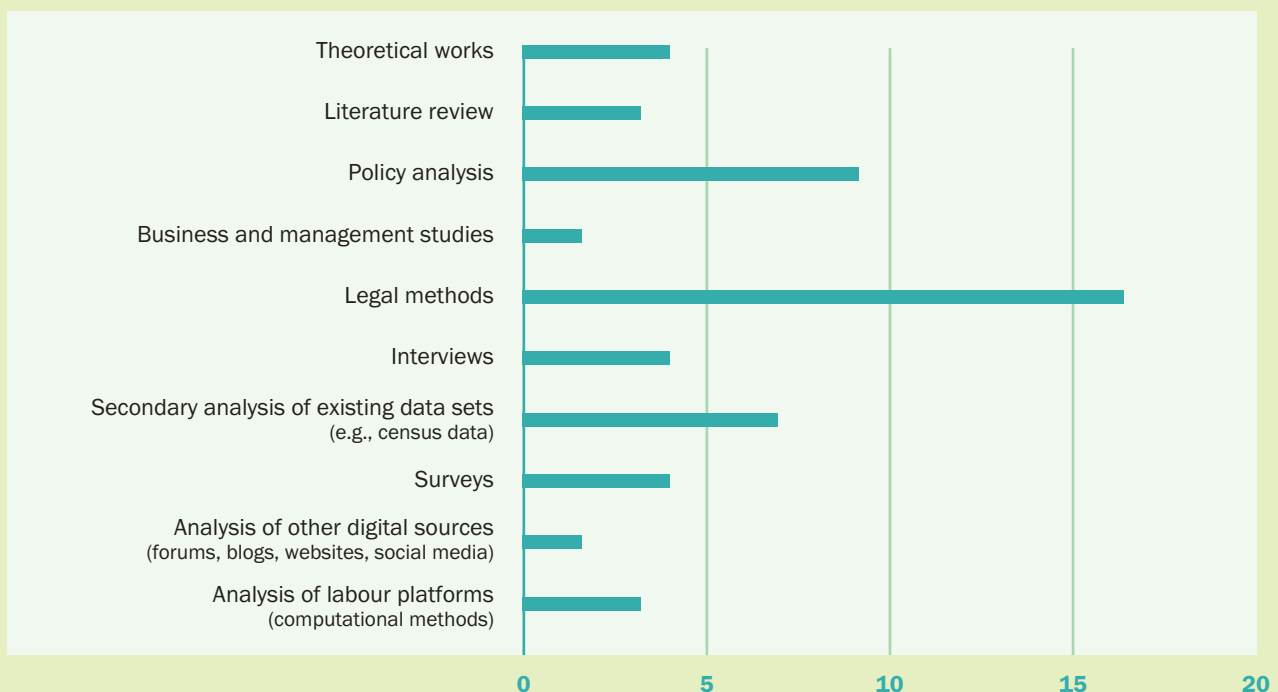
Results

Of the 38 peer-reviewed articles selected for this review (see “Methodology”), only six reported data from primary studies. A broad range of methods was used to gather empirical data, with most papers relying on more than one method (Appendix 2, Figure 1).

The review identified no articles on the experiences of Canadian gig workers. Most articles were written with the US context in mind ($n=22$). This is particularly true of legal review articles ($n=17$), which all address the topic of how gig workers are classified as independent contractors (rather than employees or some third category) in the US (Appendix 3). The eight policy review papers are primarily interested in comparing different national contexts (in Canada, the European Union, and, in particular, the United States) to assess how workers in the platform labour economy are classified.

One article is written from a health perspective (Tran & Sokas, 2017), two from a business and management point of view (Bonciu, 2016; Leighton, 2016), two articles are theoretical engagements with the gig economy (Webster, 2016; Youngdahl, 2016), and the remaining articles are empirical studies and theoretical engagements with the gig economy (Figure 1). This literature primarily focused on individual platform businesses, in particular Uber (see Appendix 4). One striking finding is that even though the peer-reviewed literature search included “Canada” as a search term, we found no peer-reviewed articles looking specifically at the Canadian context for gig workers.

Figure 1: Literature organized by study methodology
(may use multiple methods)



The eleven studies captured by the grey literature search and included in this review all discuss the gig economy in the United States, the United Kingdom, and Europe, with the exception of two studies that covered the Canadian context (see Appendix 3). Only one report, from the EU, referred to platform labour in Low-and Middle-Income Countries (Codagnone et al., 2016). Most reports consider different forms of platform work, with an emphasis on Uber and other driving platform businesses (Appendix 4). In terms of methods, seven reports are based on quantitative survey data, two on qualitative interviews, one is a literature review and analysis of platform businesses, and one is a policy analysis and literature review (see Appendix 2 and Figure 1). Four of the reports were produced by think tanks and policy centres, with the remaining reports produced by businesses, university-based researchers, and government bodies or commissioned by governments.

Who Are the Workers?

The peer-reviewed literature offered few details about the characteristics of workers and demographic trends around gig work. In contrast, the grey literature showed that gig workers are predominantly white (Codagnone et al., 2016, p. 32; Holtz-Eakin et al., 2017), urban (Balaram et al., 2017, p. 16; Farrell & Greig, 2016, p. 7), male (Balaram et al., 2017, p. 16; Holtz-Eakin et al., 2017, p. 16; Manika et al., 2016), young (under 35) (Balaram et al., 2017, p. 17; Codagnone et al., 2016; Farrell & Greig, 2016, p. 10; Huws et al., 2016, p. 37; Manika et al., 2016, p. 11; Schor, 2016, p. 6), child-free, and single (Holtz-Eakin et al., 2017; Johal & Thirgood, 2016, p. 11), with higher education levels than the national average (Balaram et al., 2017, p. 17; Block & Hennessy, 2017; Codagnone et al., 2016, p. 32; Schor, 2016). The few peer-reviewed articles that included worker characteristics found similar patterns, with workers described as young (Bertram, 2016; Tran & Sokas, 2017; Webster, 2016) and educated (Malin & Chandler, 2017). In the grey literature, there are some regional- and platform-based differences in sex and gender – with more women participating in the United States and the United Kingdom and through platform businesses related to microtasks, caregiving, and household work (Balaram et al., 2017; Codagnone et al., 2016, p. 6,31; Huws et al., 2016; Schor, 2016). Scholarly articles focused on microtask platform businesses found higher numbers of women workers participating (Deng et al., 2016; Webster, 2016). Though gig workers tend to be young, more and more older workers are taking on gig work (Holtz-Eakin et al., 2017, p. 14; Manika et al., 2016, p. 20). For instance, one peer-reviewed article found that the average age of surveyed Amazon Turk workers was actually 35 (Deng et al., 2016). Block and Hennessy also found that in the Toronto area, 54 percent of gig workers are “racialized,” (i.e. non-white or “visible minorities”) though 60 percent are born in Canada (Block & Hennessy, 2017). They also find higher numbers of gig workers with children – 51 percent (Block & Hennessy, 2017).

How Does the Gig Economy Shape the Social and Economic Well-Being of Gig Workers?

Why Do Gig Work?

Both the peer-reviewed and grey literatures emphasize that people take on gig work primarily for extra income (Balaram et al., 2017; Bonciu, 2016; Codagnone et al., 2016; Schor, 2016). A secondary reason for participating in the gig economy is flexibility and autonomy (Balaram et al., 2017; Carlton et al., 2017; Manika et al., 2016), though some authors in the grey literature point out the need for more research to support these claims (Balaram et al., 2017, p. 22; Schor, 2016, p. 19). Most motives are divided into “push” and “pull” factors. Push factors include unemployment or underemployment (Bertram, 2016, p. 24; Block & Hennessy, 2017; Coyle, 2017; Tran & Sokas, 2017) and limited opportunities for people with disabilities (Carboni, 2016). Pull factors include higher incomes and flexibility, as well as interaction with customers (Anderson, 2016) and an interest in entrepreneurship (Anderson, 2016; Carboni, 2016; Webster, 2016). For workers in LMICs, one key motivation cited is higher wages, because platform businesses have the potential to connect workers whose skills may be underutilized in their local labour markets with global opportunities (Graham et al., 2017, p. 142). Overall, the grey literature in particular shows remarkably positive relationships for workers with gig work (Block & Hennessy, 2017; Manika et al., 2016, p. 13). However, other reports in the grey literature have questioned how well these benefits are actually realized (Codagnone et al., 2016, p. 37; Huws et al., 2016).

How Do Workers Participate in the Gig Economy?

The main features of worker participation presented in both literatures are that the number of hours worked are very low, with most workers participating part time (Balaram et al., 2017, p. 20; Holtz-Eakin et al., 2017) and combining gig work with other income streams (Balaram et al., 2017, p. 20; Huws et al., 2016; Manika et al., 2016, p. 13; Schor, 2016, p. 22). Platform workers also typically worked on multiple platforms (Huws et al., 2016, p. ii). Carboni gives the example of a woman who works on five different platform businesses (2016, p. 2). Job tenure is short and turnover is quite high (Farrell & Greig, 2016, p. 10). The nature of the work varies between highly skilled services (professional consulting) and low-skilled microtasks (tagging photos), with some gigs exclusively online (Amazon Mechanical Turk) and others involving on-demand tasks (driving for Uber or doing errands through TaskRabbit) (Leighton, 2016; Lobel, 2017; Webster, 2016). Fabo et al. (2017) find that workers in mobile labour markets (Uber, TaskRabbit) tend to earn more than those on online labour markets (Amazon Mechanical Turk).

What Are Their Vulnerabilities?

In both the peer-reviewed and grey literatures, gig worker vulnerabilities can be divided into three overlapping categories:

- 1. Platform-based vulnerabilities:** vulnerabilities specific to the way platform labour is structured;
- 2. Precarity:** vulnerabilities related to the short-term, contingent nature of the work, which may be shared with workers outside of platform businesses;
- 3. Occupational vulnerabilities:** vulnerabilities specific to the work being performed, which may be shared with those doing similar tasks outside of platforms, including occupational health risks.



Platform-Based Vulnerabilities

The literatures reviewed here show that gig workers' social and economic well-being is affected by the way platform businesses are designed and operated in seven key ways. First, the ratings systems used in virtually all platform businesses to establish trust between workers and clients are frequently described as a key source of worry for workers, who sometimes feel punished for factors outside of their control (such as bad traffic in the case of Uber drivers) (Anderson, 2016; De Stefano, 2015; Deng et al., 2016). Ratings also show customer bias and prejudice (De Stefano, 2015). Low ratings mean workers can be "deactivated" (basically, fired) from a platform businesses with no recourse (Anderson, 2016; DeBruyne, 2017; Graham et al., 2017; Kuhn, 2016; Malin & Chandler, 2017; Manika et al., 2016). As a result, workers feel pressure to lower their rates (Graham et al., 2017) or offer freebies (such as water or candy in the case of Uber drivers) (Rosenblat & Stark, 2016). In this context, the need to perform emotional labour for customers (being exceptionally affable, tolerating inappropriate behavior from users etc.) can be taxing and mentally exhausting (Anderson, 2016; De Stefano, 2015). A second vulnerability, closely linked to ratings systems, is the constant surveillance of workers (Aloisi, 2016; Anderson, 2016). One particularly dangerous example of surveillance is the way female drivers have been tracked down by customers using apps and "find my phone" features (Huws et al., 2016, p. 11).

Third, the platform business controls the way work is organized and mediated and, for instance, may change a worker's access to jobs by raising rates (as Uber does with its "surge" fees) at a moment's notice (Rosenblat & Stark, 2016). In fact, gig workers state that dealing with the platform businesses is a challenge (Block & Hennessy, 2017). This is also related to a fourth source of vulnerability: information asymmetry. For instance, freelance workers on certain platform businesses must agree to a rate before knowing what the gig involves (Graham et al., 2017). Fifth, and related to the nature of the work, Davis (2015) and Leighton (2016) find gaps in the insurance coverage of Uber drivers, who are only covered by Uber's insurance when they are carrying passengers and whose personal insurance may not fill the gap (see also Malin & Chandler, 2017). Sixth, the work can be isolating (Webster, 2016); workers may be doing decontextualized "microtasks" for unknown employers, who may be engaging in activities that workers have ethical concerns about (Aloisi, 2016).

Finally, a key source of vulnerability, closely linked to other forms of precarious work, is how gig workers are classified (or as some scholars argue, misclassified [Izvanariu, 2016; Pinsof, 2016]) as independent contractors rather than employees. The majority of the peer-reviewed sources captured in this review ($n=25$: 17 legal arguments and 8 policy reviews) address the issue of how workers on labour platforms should be classified, particularly in the US context where several high-profile legal challenges to platform businesses (*O'Connor v. Uber Technologies, Inc.*, *Cotter v. Lyft, Inc.*, *Vicaino v. Microsoft Corp.*, *FedEx Corp. v. National Labor Relations Board*, *Aslam Farrah v. Uber Technologies, Inc.* [United Kingdom]) are currently under way (see Appendix 2 for a full list of legal studies). Since many benefits (healthcare, pensions) and worker protections (minimum wage, workplace safety, antidiscrimination laws) are connected to employment status and employers, classifying gig workers as contractors means they miss out on these benefits (Bertram, 2016; Cherry & Aloisi, 2016; DeBruyne, 2017; Fabo, Karanovic, & Dukova, 2017; Lobel, 2017; Means & Seiner, 2016; Pinsof, 2016; Stafford, 2016).

Precarity

Gig workers share a number of vulnerabilities with other kinds of precarious workers (Balam et al., 2017; Barzilay et al., 2017; Codagnone et al., 2016). These include the lack of benefits (Carboni, 2016) associated with their employment status; the need to provide their own tools (including computers and cars) (Bertram, 2016; Block & Hennessy, 2017; Huws et al., 2016, p. 11; Kurin, 2017); limited opportunities for training and career growth (Barzilay & Ben-David, 2017; Bertram, 2016); low wages and no job or income security (Acevedo, 2016; Balam et al., 2017; De Stefano, 2015; Fabo et al., 2017; Fleming, 2017); lower wages for women and other forms of gender discrimination (Barzilay & Ben-David, 2017); lack of access to collective bargaining and workers interest groups (Dubal, 2017), which means that they are forced to sue employers when problems arise, which is very expensive (Kurin, 2017); and compliance with taxes, memberships, and the like for independent contractors is challenging and can be expensive (Malin & Chandler, 2017; Pinsof, 2016). Gig workers also share health risks associated with the psychological distress of precarious work (Tran & Sokas, 2017) and lack of health insurance coverage (e.g. Block & Hennessy, 2017; Dubal, 2017, p. 75; Fleming, 2017).

Occupational Vulnerabilities

Finally, gig workers are also susceptible to health and other challenges associated with the kind of work they are performing. Though this received only limited attention in both the grey and peer-reviewed literature, authors identified occupational health risks such as increased risk of traffic accidents (Davis, 2015), the danger of entering unfamiliar houses to clean or provide other services (Block & Hennessy, 2017), and musculoskeletal injuries associated with repetitive tasks – for instance, typing or driving (Tran & Sokas, 2017). These are risks shared with other workers doing similar kinds of labour (Tran & Sokas, 2017).

Responses to Gig Worker Vulnerabilities

Overall, solutions proposed in the peer-reviewed and grey literatures focused on ways workers might access the benefits and supports associated with “conventional” jobs. The kinds of solutions proposed fall into three main categories:

1. Government and public sector responses
2. Private sector responses
3. Worker-led responses

Government and Public Sector Responses

The peer-reviewed legal scholarship was particularly engaged in debates on how gig workers should be classified, especially in the US context, since independent contractors have only limited access to benefits. Proposals ranged from reclassification of contractors as employees (as discussed in “Platform-Based Vulnerabilities”) to classification of gig workers into a new, third category – for instance as dependent contractors (Cherry & Aloisi, 2016; Izvanariu, 2016; Lobel, 2017). Others see the problem in the way benefits systems are designed, based on “traditional” employment models. Many commentators in the peer-reviewed and grey literatures suggested that benefits portability, universal benefits, or a form of “flexicurity” (a social benefits model pioneered in Denmark that allows labour market flexibility) would better align with the actual needs of workers (including precarious workers beyond the gig economy) (Bertram, 2016; Codagnone et al., 2016; Fabo et al., 2017; Friedman, 2014; Johal & Thirgood, 2016; Lobel, 2017). Only one scholarly article reviewed here suggested that any regulation should ensure that platform businesses can stay competitive and keep transaction costs low (Kurin, 2017). One major challenge identified by Graham et al. (2017) is that with a global labour market, regulation is much more challenging. They suggest that the countries hiring the most gig workers lead on regulation, and that there is a need for independent platform labour watchdogs (Graham et al., 2017). Others point out the importance of developing solutions that focus on the needs of all gig workers, not just those using driving apps (Block & Hennessy, 2017).

Private Sector Responses

Overall, there were few private sector solutions proposed in the literatures reviewed here. Some platform businesses have voluntarily addressed the misclassification problem by hiring gig workers as employees, new platforms have been created to provide specialized care or health insurance for gig workers (Aloisi, 2016, pp. 684, 685), and in one case a platform labour company in the United States that hires out care workers charges clients a small amount to cover benefits for workers (Carlton et al., 2017).

Worker-Led Responses

In the peer-reviewed literature, unionization and collective bargaining are a common response to the precarity of gig work (Donini, Forlivesi, Rota, & Tullini, 2017; Dubal, 2017; Graham et al., 2017; Tran & Sokas, 2017; Webster, 2016). Similarly, first aid communities (Aloisi, 2016) and gig worker forums (Anderson, 2016; Rosenblat & Stark, 2016) help workers advocate for gig workers' rights (De Stefano, 2015, p. 23), provide information on needed resources such as health insurance (Friedman, 2014), share tips about clients and platform businesses, and offset the isolation of gig work, (Codagnone et al., 2016). One novel suggestion is that workers should develop worker-run platform cooperatives to compete with platform businesses (Malin & Chandler, 2017). Perhaps the most visible way workers have organized responses to their vulnerabilities is by suing platform businesses and participating in class action lawsuits against platform businesses (Bertram, 2016). The grey literature, likely because of the dominance of policy and government-initiated reports, suggested few worker-led solutions.

Differences between the Peer-Reviewed Literature and Grey Literature

The gig economy is developing very quickly, and the grey literature reviewed here seemed much more reflective to the changing experiences of gig workers and new trends in platform labour than the peer-reviewed literature. The grey literature also had a stronger empirical base, largely through results from large-scale surveys where the intent was to measure the size, scope, and demographic features of the gig economy in various regions of the global north. The peer-reviewed literature, especially articles from social science and communications journals, had more research engaging directly with gig workers themselves (analyses of forums, interviews with workers), which brought out some of the new and unforeseen challenges to workers. In terms of subject matter, in the peer-reviewed literature the legal perspective is quite dominant, as is an analysis of the intersection of technology and organizational management (particularly in some of the literature that was excluded in this review). The grey literature is more focussed on government and private sector responses to the gig economy. The grey literature – especially reports led by private sector organizations like McKinsey Consulting and JP Morgan – was also much more concerned with segmenting the types of online, platform work.

State of Knowledge and Research Gaps

This scoping review of peer-reviewed and grey literatures shows that research on the effects of the gig economy on the economic and social well-being of its workers is an evolving field of exploration. Based on our review of the included peer-review and grey literatures, we suggest a few research gaps (see Figure 2).

The biggest gaps are a lack of studies looking at the lived experiences of gig workers; an understanding of the health and economic impacts of the gig economy, especially on vulnerable groups; and more empirical data in general. Discrimination faced by gig workers is another rich field of inquiry that is addressed only once in depth in the literatures reviewed here (Barzilay & Ben-David, 2017), though a number of reports and articles discuss the issue (Codagnone et al., 2016; De Stefano, 2015; Graham et al., 2017; Kennedy et al., 2017; Lobel, 2017), and the focus is on gender, leaving a clear opening for more research on racial, ethnic, and other forms of discrimination. This review captured only one peer-reviewed article on the gig economy from a health journal (Tran & Sokas, 2017). Several of the articles and reports in this review that focus on gig workers' blog posts or interviews with workers (for instance Anderson, 2016; Deng et al., 2016; Rosenblat & Stark, 2016) referred to the mental health challenges of platform labor. Along with the broader health effects of gig work, this is an important potential area of inquiry.

Geographically, the United States is disproportionately represented, with some work focusing on the European Union and the United Kingdom. Only one article and one report made comparisons with the Global South – making the important point that the global and geographic interplay of this economy is worth exploring (Graham et al., 2017). Canada is not the focus of any one study in the academic literature. In the grey literature the Mowat Center and Centre for Policy Alternatives both produced reports captured in this review (Block & Hennessy, 2017; Johal & Thirgood, 2016), and other organizations have produced policy documents for the Canadian context that were not captured by the literature review (Becker & Rajwani, 2016; Busby & Muthukumaran, 2016; Holmes & McGuinty, 2015; Kaufer, n.d.; van den Steenhoven et al., 2016). However, there is a clear lack of country-specific knowledge in this area and very limited empirical research on the Canadian context.

Figure 2:
**Emerging Substantive and Methodological Research Gaps
in Studies about Gig Workers**

1. Research on the experiences of gig workers in Canada
2. Research on the occupational health and safety risks of gig work, in particular in businesses other than Uber
3. Comparative studies on the experiences of workers undertaking different types of work, working for different platform businesses, and serving national or transnational firms
4. Comparative studies of gig and non-gig workers' experiences of precarious employment
5. Research on how different groups experience gig work, particularly vulnerable groups such as women, immigrants, youth, and older workers
6. Research about working conditions, remuneration and overall experience of workers in the Global South, taking into account the dynamics established between workers, users, and platform businesses situated in the Global North
7. National representative surveys with comparable regional data
8. Cohort studies about the health and social impacts of gig work over time
9. Qualitative research to explore the meanings and experiences of gig work, including professional identity, fragmentation, and downloading risk
10. Studies on ethical principles and the moral implications of the everyday operations of platform businesses and their impact on workers' experiences (e.g. race to the bottom effect)
11. Theorization of gig work as a recent phenomenon, which requires both connections to well-established theories and emergent conceptualizations

Conclusion

While this scoping review moves us closer to an understanding of workers' experiences in the gig economy, it also reveals several empirical absences and conceptual gaps. For instance, only six peer-reviewed papers reported primary empirical results, and no peer-reviewed studies on Canadian gig workers were located; in geographic and disciplinary terms, the United States–Europe publications and legal review articles dominate the field. Internationally, only one article looked directly into the health effects of platform labour, though a number mention health broadly.

Perhaps as a first step to establish scholarship around workers' perspectives, researchers should critically engage with the current conceptual swamp that characterizes the field. Rather than adopting market-driven terminology, it is important to define and problematize language to ask: What is being shared? By whom? What is the “gig” like? Who benefits? What are the consequences for different stakeholders? Conceptual refinement should also challenge the construction of consent around this understudied phenomenon, often perceived as a cultural and economic trend; rather, we propose researchers should “extract political meaning from ...cultural integuments” (Harvey, 2007, p. 40). The risk of working from the perspective of a homogenizing discourse is to render many facets of work and types of workers invisible (Rudman, 2017; Rudman & Aldrich, 2016). For instance, Uber is disproportionately discussed in the literature, more than any other platform; “uberization,” while catchy, oversimplifies the platform business.

Another element required for knowledge production in this field is an explicit acknowledgment of a theoretical and axiological framework. The discourse of choice, revenue “top-ups,” and flexibility has an intrinsic positive value perspective of contribution to society. This may be true for particular segments of the workforce (e.g., part-time students, highly skilled retirees, or persons living with a chronic mental health condition), but not for other groups. Studies addressing the

segmentation of the workforce can greatly enrich our present understanding of ways in which different groups may experience platform labour. Similarly, an implicit neutral-market stance may conceal the downloading of risk and commodification of personal equipment and space as work tools, hiding the nature of work itself (usually described as tasks or rides) (Berg & De Stefano, 2017). Thus, conceptual clarity cannot be achieved in the absence of an explicit axiological perspective to guide theorization.

Studying the experience of workers in the gig economy also requires coupling and disentangling the larger effects of neoliberalism. Even though neoliberalism has increased precarization and deepened the income gap, significantly affecting employment relations and health, many experiences of contingent work in Canada do not coincide with specific circumstances of gig workers (Facey, 2011; Lewchuk & Clarke, 2011; Vosko, 2011). In our classification of workers' vulnerabilities, platform-based vulnerabilities are specific to gig workers, while occupation-related risks are shared with other workers performing similar work. Precarity, however, has some shared elements (e.g., income insecurity) and some exclusive ones. For instance, precarity in the absence of an employer should be explored, in particular in relation to misclassification and unclear employment status (e.g., self-employment, franchise, or employee status). Due to the placelessness of gig work in comparison to much short-term contract employment, the classification of gig workers must be specific to the particular conditions of the platform experience so as to properly address those unique vulnerabilities.

In terms of platform-based vulnerabilities, digitization of (dis)trust and some forms of discrimination are singular to platform labour. Despite the potential for digital labour to eliminate forms of discrimination (e.g. racialization, gender, disabilities) through a certain degree of anonymity, effectively levelling the playing field for marginalized groups, a number of platforms rely on workers having extensive portfolios and personal profiles in order to build trust with platform users. Customer personal preference (or sheer discrimination) is frequently manifested through rating of workers, which can potentially lead to loss in revenue. Given that in the gig economy data is readily available for collection, workers live in a space of digital surveillance. However, researchers and workers do not have access to the big data that individual operations generate. Data is asymmetrically used to exercise power.

Another particularity of some digital work is social isolation and loss of social identity. Turkle (2011, p. 1) states that as a society “we expect more from technology and less from each other,” but behind technological services we utilize there are many completely anonymous workers, working in isolation, in multiple jobs, sometimes for platforms in different countries, lacking social integration and a sense of belonging through an identified profession or form of employment (Graham & Shaw, 2017). As low intermediation costs are adopted by a rising number of services, an increasing number of workers will be offered low paid and insecure and fragmented project work (Robles & McGee, 2016). It is well established in the literature on social determinants of health that insecure work and social isolation greatly impact physical and mental health (Marmot, 2015).

The vast array of work opportunities and vulnerabilities in the gig economy makes it difficult to look for unified responses to face the challenges identified in this review. While activist groups, unions, and consumers in traditional businesses have demanded greater informational transparency around product sources and production networks (e.g., fair trade certification), in the gig economy users do not have mechanisms to pressure platform businesses to offer good work opportunities (Graham & Shaw, 2017). Workers' unclear status, the lack of specific legislation, and the diverse types of work performed pose uncertainties for the future of decent work in Canada (ILO, 2002). For example, in the context of the gig economy, there is an erosion of the separation between private and public spaces, personal and work equipment or insurance, leisure and work hours, making workers provide resources and schedules that are not compensated by businesses hiring for tasks.

However, workers experiencing shared vulnerabilities and advocates for precarious workers have already proposed “expanded mechanisms de-linking employment status and form of employment and access to labour and social protections” (Vosko, 2011, p. 224). Perhaps a platform labour version of this should expand “form of employment” to include “any form of work.” Other alternatives specific to the gig economy suggest the creation of fair work certification and platform cooperatives or workers' groups. Instead of competing individually against each other, such groups can manage projects that integrate workers and combat menial work, in addition to promoting fair remuneration and shared resources for education, health care, or work environment (Graham & Shaw, 2017). These ideas depend, of course, on users and businesses in Canada valuing equity and social justice for all members of society as well as workers in other countries. The challenge that remains is the dominance of the neoliberal imperative of competition for cost reduction associated with the market's persistent lack of responsibility for building healthy communities and societies.

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Appendix 1: PRISMA Chart of Literature Search⁴

Records identified (n=X)

- A. Academic databases (n=3327)
 - a. Scopus (n=248)
 - b. Web of Science (n=73)
 - c. Proquest (n=2475)
 - d. Ovid (n=2)
 - e. Medline (n=529)
- B. Grey Literature (n=379)



Records after duplicates removed (n=1701)

- A. Academic databases (n=1322)
- B. Grey Literature (n=379)



Records analyzed for title or abstract screening (n=150)

- A. Academic databases (n=104)
- B. Grey Literature (n=46)



Records analyzed for full-text screening (n=49)

- A. Academic databases (n=38)
- B. Grey Literature (n=11)



Records included in final study (n=49)

- A. Academic databases (n=38)
- B. Grey Literature (n=11)

⁴ Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group. (2009). Preferred reporting item for systematic reviews and meta-analyses: the PRISMA statement. *PLoS Medicine*, 6(7), e1000097.

Appendix 2: Methodological Approaches to Understanding the Experiences of Gig Workers

Method/Approach	Peer-reviewed Literature	Grey Literature
Analysis of labour platforms (computational methods)	Barzilay & Ben-David, 2017; Graham et al., 2017	Codagnone et al., 2016
Analysis of other digital sources (forums, blogs, websites, social media)	Anderson, 2016; Rosenblat & Stark, 2016	n/a
Surveys	Deng et al., 2016)	Balaram et al., 2017; Block & Hennessy, 2017; Farrell & Greig, 2016; Huws et al., 2016; Manika et al., 2016
Secondary analysis of existing data sets (e.g., Census data)	Bertram, 2016; Fabo et al., 2017; Friedman, 2014	Holtz-eakin et al., 2017; Kennedy et al., 2017; Manika et al., 2016
Interviews	Graham et al., 2017; Malin & Chandler, 2017	Carlton et al., 2017; Schor, 2016
Legal methods	Acevedo, 2016; Aloisi, 2016; Barzilay & Ben-David, 2017; Bertram, 2016; Carboni, 2016; Cherry & Aloisi, 2016; Davis, 2015; Debruyne, 2017; Dubal, 2017; Izvanariu, 2016; Kurin, 2017; Lobel, 2017; Means & Seiner, 2016; Pinsof, 2016; Redfearn iii, 2016; Stafford, 2016; Todoli Signes, 2017b	n/a
Policy analysis	Bertram, 2016; De Stefano, 2015; Donini et al., 2017; Fabo et al., 2017; Friedman, 2014; Leighton, 2016; Nurvala, 2015; Todoli Signes, 2017b	Johal & Thirgood, 2016
Literature review	n/a	Carlton et al., 2017; Codagnone et al., 2016; Manika et al., 2016
Theoretical works	Bonciu, 2016; Tran & Sokas, 2017; Webster, 2016; Youngdahl, 2016	n/a

Appendix 3: Country Focus of Literature Reviewed

Region	Peer-reviewed Literature	Grey Literature
United Kingdom	Coyle, 2017; Fleming, 2017	Balaram et al., 2017; Huws et al., 2016
United States	Acevedo, 2016; Bertram, 2016; Bonciu, 2016; Carboni, 2016; Coyle, 2017; Davis, 2015; DeBruyne, 2017; Deng et al., 2016; Dubal, 2017; Friedman, 2014; Izvanariu, 2016; Kuhn, 2016; Kurin, 2017; Leighton, 2016; Malin & Chandler, 2017; Means & Seiner, 2016; Pinsof, 2016; Redfearn III, 2016; Rosenblat & Stark, 2016; Stafford, 2016; Tran & Sokas, 2017; Youngdahl, 2016	Carlton et al., 2017; Farrell & Greig, 2016; Holtz-Eakin et al., 2017; Manika et al., 2016; Schor, 2016
Canada	Cherry & Aloisi, 2016	Block & Hennessy, 2017; Johal & Thirgood, 2016
European Union	Donini et al., 2017; Fabo et al., 2017; Nurvala, 2015	Codagnone et al., 2016; Huws et al., 2016; Manika et al., 2016
LMICs	Fabo et al., 2017; Graham et al., 2017	n/a
Australia	n/a	Australia: Kennedy et al., 2017

Appendix 4: Platform Businesses Examined in Literature Reviewed

Platform Businesses	Peer-reviewed Literature	Grey Literature
Uber	Acevedo, 2016; Aloisi, 2016; Anderson, 2016; Bertram, 2016; Bonciu, 2016; Carboni, 2016; Cherry & Aloisi, 2016; Coyle, 2017; Davis, 2015; De Stefano, 2015; DeBruyne, 2017; Dubal, 2017; Fleming, 2017; Izvanariu, 2016; Kuhn, 2016; Kurin, 2017; Leighton, 2016; Lobel, 2017; Malin & Chandler, 2017; Means & Seiner, 2016; Pinosof, 2016; Redfearn III, 2016; Rosenblat & Stark, 2016; Todoli Signes, 2017b; Tran & Sokas, 2017; Webster, 2016; Youngdahl, 2016	Balaram et al., 2017; Block & Hennessy, 2017; Carlton et al., 2017; Farrell & Greig, 2016; Holtz-Eakin et al., 2017; Huws et al., 2016; Johal & Thirgood, 2016; Manika et al., 2016
Other Ride-Sharing Businesses (Lyft, etc.)	Acevedo, 2016; Aloisi, 2016; Anderson, 2016; Bertram, 2016; Bonciu, 2016; Carboni, 2016; Cherry & Aloisi, 2016; Coyle, 2017; Davis, 2015; De Stefano, 2015; DeBruyne, 2017; Dubal, 2017; Fleming, 2017; Izvanariu, 2016; Kuhn, 2016; Kurin, 2017; Leighton, 2016; Lobel, 2017; Malin & Chandler, 2017; Means & Seiner, 2016; Pinosof, 2016; Redfearn III, 2016; Rosenblat & Stark, 2016; Todoli Signes, 2017b; Tran & Sokas, 2017; Webster, 2016; Youngdahl, 2016	Block & Hennessy, 2017; Holtz-Eakin et al., 2017; Huws et al., 2016; Johal & Thirgood, 2016; Kennedy et al., 2017; Manika et al., 2016
Deliveroo	Fleming, 2017	(Balaram et al., 2017)
Other Food Delivery	Cherry & Aloisi, 2016; Kurin, 2017; Lobel, 2017; Youngdahl, 2016	Block & Hennessy, 2017; Huws et al., 2016; Kennedy et al., 2017
Amazon Mechanical Turk	Aloisi, 2016; Bertram, 2016; De Stefano, 2015; Deng et al., 2016; Fabo et al., 2017; Graham et al., 2017; Lobel, 2017; Means & Seiner, 2016; Todoli Signes, 2017b; Tran & Sokas, 2017; Webster, 2016	Codagnone et al., 2016; Farrell & Greig, 2016

Appendix 4: Platform Businesses Examined in Literature Reviewed *(continued)*

Platform Businesses	Peer-reviewed Literature	Grey Literature
TaskRabbit	Aloisi, 2016; Cherry & Aloisi, 2016; Fabo et al., 2017; Kurin, 2017; Lobel, 2017; Nurvala, 2015	Carlton et al., 2017; Farrell & Greig, 2016; Manika et al., 2016
Professional Services (Freelancer, Upwork, etc.)	Aloisi, 2016; Donini et al., 2017; Fabo et al., 2017; Leighton, 2016; Lobel, 2017; Means & Seiner, 2016; Webster, 2016	Block & Hennessy, 2017; Codagnone et al., 2016; Manika et al., 2016
Other General Microtask-Based Platform Businesses (Crowdfunder, Crowdsourcing, Clickworker)	Aloisi, 2016; Bertram, 2016; De Stefano, 2015; Deng et al., 2016; Graham et al., 2017; Means & Seiner, 2016	Block & Hennessy, 2017; Huws et al., 2016
Other Platform Businesses	De Stefano, 2015; Donini et al., 2017; Stafford, 2016; Todoli Signes, 2017a; Tran & Sokas, 2017; Youngdahl, 2016	Block & Hennessy, 2017; Carlton et al., 2017; Codagnone et al., 2016; Holtz-Eakin et al., 2017; Kennedy et al., 2017; Manika et al., 2016; Schor, 2016

Appendix 5: Additional Resources

Gig workers and activists are developing many different kinds of communities in response to the challenges of gig work. Groups are forming rapidly and it is impossible to create a comprehensive list of resources for researchers and policy makers on this topic. This preliminary list of groups includes advocacy organizations established by gig workers, forums and blogs created by gig workers to share information and resources, advocacy tools, and emerging platforms and applications responding to specific gig-worker and platform-based vulnerabilities.

Name	Description	Link
GIG WORKER ADVOCACY GROUPS		
App-Based Drivers Association	Teamsters-organized union for Uber and Lyft drivers	http://www.abdaseattle.org/
The Black Car Fund	Provides workers compensation and other benefits to both taxi and rideshare drivers	http://www.nybcf.org/
Independent Drivers Guild	Represents over 45,000 rideshare vehicle drivers in NYC	https://drivingguild.org
Fair Crowd Work	A website made in collaboration by multiple European labour unions that offers ratings of working conditions of different online labour platforms	http://faircrowd.work/
Fight For 15	Advocating for decent work, and worker rights, including drivers on labour platforms	http://15andfairness.org/
Freelancers Union	Provides resources and group benefits to freelance workers	https://www.freelancersunion.org/
Ride-Share Drivers' Association of Australia	An opt-in association that supports drivers on labour platforms in Australia	https://rsdaa.org.au/drivers/
FORUMS AND BLOGS		
Crowdflower Community	15,000-member Facebook group where members share knowledge, organize meetings, and plan events related to the CrowdFlower platform	https://www.fb.com/crowdflower-community/

Appendix 5: Additional Resources (continued)

Name	Description	Link
Mturk Crowd	4,000-member forum for Amazon Mechanical Turk gig workers	http://www.mturkcrowd.com/
Mturk Forum	Forum with 60,000 members, focused on sharing knowledge about contracts and working conditions on Amazon Mechanical Turk	http://www.mturkforum.com/
Mturk Grind	15,000-member forum for Amazon Mechanical Turk gig workers	http://www.mturkgrind.com
Ridester	Resource site for Uber drivers, including tips for passing tests and inspections	https://www.ridester.com
The Rideshare Guy	A multi-authored news blog and podcast for drivers on labour platforms	https://therideshareguy.com
Turker Nation	Amazon Mechanical Turk worker forum with 20,000 members that provides space for real-time chat between workers	http://turkernation.com
Uberpeople	Driver forum with more than 100,000 members from around the world	https://uberpeople.net
APPS/PLATFORMS RESPONDING TO GIG WORKER VULNERABILITIES		
Even	A start-up app company that, for a fee, will offer gig workers “pay protection” that evens out income volatility	https://even.com
Good2go	An app that helps drivers using labour platforms find public bathrooms	https://www.good2go.global
Sherpashare	An app designed to track expenses for workers on driving labour platforms	https://www.sherpashare.com/
The Uber Game	A web game made by the <i>Financial Times</i> that simulates the financial and working conditions of driving for Uber	https://ig.ft.com/uber-game/
MISCELLANEOUS		
Platform.Coop	A consortium that supports cooperatively owned labour platforms and that advocates for “platform cooperativism” (as opposed to “platform capitalism”)	https://platform.coop/