

human relations

Working On My Own: Measuring the Challenges of Gig Work

| | |
|------------------|---|
| Journal: | <i>Human Relations</i> |
| Manuscript ID | HR-2020-0355.R3 |
| Manuscript Type: | Standard Manuscript |
| Keywords: | Contingent workers, Working arrangements, Job insecurity, Identity, Gig work, Gig work challenges, Independent Work, Emotions |
| | |

SCHOLARONE™
Manuscripts

CHALLENGES OF GIG WORK

Working on My Own: Measuring the Challenges of Gig Work

Caza, Brianna B. (contact) – University of North Carolina at Greensboro, USA

(bbcaza@uncg.edu);

Reid, Erin M. – McMaster University, Canada;

Ashford, Susan J. —University of Michigan, USA;

Granger, Steve—University of Calgary, Canada

Abstract

Gig workers commonly face challenges that differ in nature or intensity from those experienced by traditional organizational workers. To better understand and support gig workers, we sought to develop a measure that reliably and validly assesses these challenges. We first define gig work and specify its core characteristics. We then provide an integrated conceptual framework for a measure of six challenges commonly faced by gig workers—viability, organizational, identity, relational, emotional, and career-path uncertainty. We then present five studies: Item generation in Study 1; item reduction, exploratory assessment of the factor structure of these items, and initial tests of convergent validity in Study 2; and in the remaining three studies, we draw from different gig worker populations to accumulate evidence for the convergent, discriminant, and criterion validity of our gig work challenges inventory (GWCI), and present initial tests of the universality of the gig challenges inventory across a range of socio-demographic, job type, and regional factors. Our findings establish the reliability and validity of a gig work challenges

1
2
3 inventory (GWCI) that can aid researchers seeking to better understand the types and impact of
4
5 stressors gig workers face, which in turn can help to inform theory, practice, and public policy.
6

7
8 Keywords: Gig work, Gig work challenges, Job insecurity, Contingent workers, Identity,
9
10 Work arrangements, Independent work, Emotions
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Peer Review Version

Working on My Own: Measuring the Challenges of Gig Work

A large and growing fraction of the workforce, often referred to as “gig workers,” are estimated to account for up to 40 percent of the economy in OECD countries (OECD, 2019). While the term “gig work” may be trending, such work is not new. Artists and musicians, freelance writers, independent consultants, IT professionals, and many others have long made a living from gigs outside formal organizations (e.g., Becker, 1982; Champion, 2019; Harvey, 1967; Friedman, 2014; Menger, 2003). Gig work is as varied as organizational work (Friedman, 2014; Katz and Kruger, 2019; Kuhn, 2016), with some gig workers engaging primarily in lower skilled, task-based work (such as ridesharing or microwork; Guda and Subramanian, 2019; Kost et al., 2018; Veen et al., 2020; Wong et al., 2020) and others engaging in longer-term, knowledge-intensive, and creative work (such as IT consulting, coaching, and graphic design; Kuhn and Galloway, 2019; Kunda et al., 2002). Some gig work is accessed through digital platforms (Connelly et al., 2021), while other gigs are found in more traditional ways, including solicitation, advertising, and networking (Butler and Stoyanova Russell, 2018).

Despite the growing number and variety of gig workers, management scholars have long conducted their research with a particular idea of workers in mind: those who spend their careers working within organizations. Such settings offer many taken-for-granted resources to workers, including a rooted sense of place, a stable work identity, consistent interaction partners who provide support and direction, and even someone else to blame if things go wrong (Ashford et al., 2018). Yet, those who work independently on gigs (Katz and Krueger, 2019; Kuhn, 2016), without a long-term relationship to (and therefore advantages from) a particular organization confront fundamentally different working conditions than do those employed within organizations and, as a result, are likely to have quite different experiences of their work

(Ashford et al., 2018; Spreitzer et al., 2017). Recognizing the increasing extent, variety, and importance of gig work, scholars have called for a deeper examination of these workers' lived experiences and psychological concerns (e.g., Barley et al., 2017; Campion et al., 2020; Connelly and Gallagher, 2006; Kuhn, 2016; Spreitzer et al., 2017).

We answer this call by focusing on important defining characteristics of gig workers' lived experiences: the challenges they face (Ashford et al., 2018). Qualitative research suggests that gig workers face predictable challenges that differ in nature or intensity from those confronted in organizations. In an organization, for example, employees are hired to do an ongoing series of tasks organized into jobs. The worker finishes one task without much concern for where the next one will come from. In contrast, gig workers' tasks are disintermediated and they must bear the full economic risk for their work (Kalleberg, 2000; 2009): it is up to them to find tomorrow's tasks, all while completing those of today. Further, while organizational workers often feel strained by low levels of decision latitude (Karasek, 1979), gig workers often experience a great deal of discretion over what work they take on, as well as how and when they do it (Caza et al., 2018; Petriglieri et al., 2019). Gig workers experience more stress than employees doing the same job within an organization (Madden et al., 2017), suggesting gig workers may face some unique or enhanced challenges.

Given the documented differences between work inside and outside of organizations, it is unlikely that existing measures created to capture work challenges in organizations will fully or accurately describe those faced by gig workers. Further, such measures assume or often make explicit reference to specific structural and relational features of organizational life, such as bosses, workgroups, subordinates, or workplace contexts, which are not necessarily relevant to most gig workers. Scholars require a clear conceptual framework and a measure of the

1
2
3 challenges gig workers face to better understand their work lives and to compare different gig
4
5 workers' experiences in ways that enable the development of theory and practical advice tailored
6
7 specifically to this population. For example, we do not know whether the various challenges that
8
9 gig workers face are experienced to a similar degree, whether workers experience multiple types
10
11 of challenges simultaneously, whether the challenges are experienced similarly across different
12
13 socio-demographic or occupational groups, or how the experience of these challenges correspond
14
15 to people's experiences of job satisfaction, burnout, and thriving.
16
17
18

19
20 To move theory forward and enable scholars to better understand and support gig
21
22 workers, we develop an empirical tool, which we label the Gig Work Challenges Inventory
23
24 (GWCI). We draw on three sources to develop this tool: Ashford et al.'s (2018) framework
25
26 describing the core challenges faced by gig workers, recent research on job quality in the gig
27
28 economy (Goods et al., 2019; Wood et al., 2019), and classic psychological theory describing
29
30 individuals' universal needs for existence, relatedness, and growth (Alderfer, 1972). These
31
32 conceptual foundations highlight: 1) the human needs and structural realities that converge when
33
34 people create a work life out of term-limited project-based work outside organizations, and, 2)
35
36 the challenges gig workers need to overcome if they are to survive and thrive while working this
37
38 way. These challenges include remaining financially viable, staying organized, crafting a clear
39
40 work identity, dealing with an uncertain career path, and coping with relational and emotional
41
42 turbulence. Through five studies conducted with a variety of gig workers including independent
43
44 scientists, rideshare drivers, freelance editors, creative workers, consultants, designers, and
45
46 Mechanical Turk (mTurk) workers, we build on prior theory to better define each of the
47
48 challenges faced by independent workers. We then systematically create, refine, and test the
49
50 psychometric properties and nomological network of a new tool to measure these challenges.
51
52
53
54
55
56
57
58
59
60

1
2
3 This work makes several contributions. First, we advance scholarship on gig workers'
4 experiences by developing and validating the GWCI and exploring its nomological network.
5
6 This tool will be valuable to future scholars interested in examining and tracking gig workers'
7 experiences, studying how they manage common challenges effectively, and exploring how
8 some survive and others thrive in this work realm. The GWCI will also help scholars illuminate
9 potential boundary conditions of theories developed exclusively with organizational contexts in
10 mind. Second, we show the universality of these challenges by analyzing the experiences of gig
11 workers from a variety of countries competing for work on the same digital platform and by
12 including samples of professional and non-professional work, as well as platform- and non-
13 platform-based gig work. Finally, by developing an inventory specifically to assess the
14 challenges of gig work based on foundational theories and the most recent data regarding the
15 nature of gig work, this study addresses methodological concerns about applying or adapting
16 existing measures in contexts for which they were not designed (see for review Cortina et al.,
17 2020; Heggstad et al., 2019).

18 **Literature review and conceptual framework**

19 *What is gig work?*

20
21 Scholars have used many terms to describe people who make a living outside traditional
22 organizations (Kalleberg, 2000), such as contractors (Barley and Kunda, 2006; Cappelli and
23 Keller, 2013), nonstandard workers (Ashford et al., 2007), contingent workers (Allan, 2002;
24 Connelly and Gallagher, 2006), and freelancers (Shevchuk et al., 2019). Following other recent
25 research (e.g., Brawley, 2017; Campion, 2019; Kuhn, 2016; Meijerink and Keegan, 2019;
26 Petriglieri et al., 2019), we adopt the inclusive terms “gig work” and “gig workers.” As a
27 relatively new term (Merriam-Webster added the term gig economy to the dictionary only in
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 2019), we define gig work as externalized paid work organized around “gigs” (i.e., projects or
4
5 tasks) that workers engage in on a term-limited basis without a formal appointment within a
6
7 particular organization.
8
9

10 Central to our definition of gig work are three characteristics: it is 1) task/project-based,
11
12 2) term limited, and 3) positioned outside organizational structures. Gig workers are hired to do
13
14 specific tasks for specific periods of time rather than holding longer-term “jobs” and “roles” that
15
16 contain multiple, ongoing tasks housed within organizations. These defining characteristics mean
17
18 that gig work is compensated on a piecemeal basis and is non-exclusionary as gig workers might
19
20 take on multiple gigs with multiple organizations or markets simultaneously. These criteria are
21
22 inclusive as multiple communities of gig workers share these defining characteristics of
23
24 task/project-based, term-limited, and external work (Stanford, 2017; Katz and Krueger, 2019;
25
26 Kuhn, 2016). Their work, however, varies along several additional (and often interdependent)
27
28 dimensions (See Table 1 for a summary of these differences).
29
30
31
32

33 Some of these dimensions are related to the terms that govern gig work. First, gig work
34
35 differs in its temporal duration. While all gig work is term-limited, microworkers measure their
36
37 gigs in minutes (e.g., Wong et al., 2020), while other gig workers, such as IT contractors, have
38
39 gigs that can last months or years (e.g., Kunda et al., 2004). Second, gig workers differ in how
40
41 they structure their work relationships and the role of technology in that relationship. While
42
43 some recent scholars have used “gig” to refer exclusively to those who complete microtasks
44
45 found via digital platforms (e.g., Ravenelle, 2019; Wood et al., 2019; Duggan et al., 2020), only
46
47 a subset of gig workers use such platforms to facilitate their work. Others find and manage their
48
49 work through personal contacts and networking (Barley et al., 2017; Reilly, 2017), or selling
50
51 directly to the marketplace (such as artisans; Ranganathan, 2018). Thus, the use of digital
52
53
54
55
56
57
58
59
60

platforms to obtain and to govern that work is not a defining feature, but rather one important way that this work varies in the gig population.

Gig work also varies in terms of three factors that shape the work and work experience: workers' autonomy, skill level, and power. Some gig workers have a great deal of freedom to determine how and when they work, while others face more limited autonomy due to the algorithms constructed to control their effort (Ashford et al., 2018; Lehdonvirta, 2018; Veen et al., 2020). Some gig workers bring a high level of skill, which may contribute to that autonomy. Finally, workers' experience of power also varies across the gig economy. Power varies both as perceived power in the form of felt dependence and as market power derived from the number of available workers relative to the jobs being offered (e.g., Wood et al., 2019). Power and skill intersect as skill level, specialization, and uniqueness all affect gig workers' market power (Kuhn and Maleki, 2017), which in turn can impact the wages and favorable treatment a worker can command (Kalleberg, 2011). For example, those whose work is largely platform-based, such as those who drive for ridesharing applications or complete online microtasks (e.g., Aguinis and Lawal, 2013; Wong et al., 2020), tend to have few skills that are viewed as unique and are therefore lower-paid. Others, such as IT consultants and independent scientists, have relatively more unique and valued skills and certifications and enjoy higher wages and fairer treatment as a result (Barley and Kunda, 2006).

INSERT TABLE 1 ABOUT HERE

Thus, while gig work shares certain defining characteristics, gig workers' tasks and work life also varies across several dimensions. Just as organizational workers share many common

1
2
3 challenges despite being in different sectors, industries, and organizations, gig workers also share
4
5 certain common challenges that stem from the defining characteristics and differences that we
6
7 just described. Being able to assess these challenges will enable us to create theories, policies,
8
9 and practices that are tailored to helping different types of gig workers thrive.
10
11

12 *Challenges of work in the gig economy*

13

14
15 We built the GWCI by integrating theoretical insights from a growing number of
16
17 qualitative studies on gig workers' day-to-day experiences (codified in Ashford et al., 2019) with
18
19 ideas from recent scholarship on job quality in the gig economy (e.g., Goods et al., 2019; Wood
20
21 et al., 2019) and classic psychological theory on individuals' universal needs (Alderfer, 1972).
22
23

24 The qualitative studies that ground our inventory range from older explorations of the
25
26 careers of musicians and artists (Becker, 1982; Faulkner, 1983), to more recent studies of IT
27
28 contractors (Lane, 2011; Kunda et al., 2002), fitness professionals (Hughes et al., 2019), stand-up
29
30 comedians (Butler and Stoyanova Russell, 2018), managerial contractors (Anderson and
31
32 Bidwell, 2019), creative workers (Alacovska, 2017; Bennett and Hennekam, 2018), independent
33
34 workers (Petriglieri et al., 2019) and microworkers (Panteli et al., 2020; Wong et al., 2020).
35
36 These studies consistently suggest that gig workers face specific challenges that are rooted in the
37
38 structural experience of working outside a formal organization. For example, while
39
40 organizational workers may struggle to develop and maintain a sense of autonomy and task
41
42 control (Ashforth, 1989; Hackman and Oldham, 1975), many gig workers must carefully manage
43
44 the implications of their autonomy, ranging from prosaic choices about which gigs to take, to
45
46 deeper ones about how to design their work (Petriglieri et al., 2019; Ravenelle, 2019). These
47
48 studies also suggest that while gig workers may face similar categories of challenges as
49
50 organizational populations, the exact nature of these challenges can differ due to the structure of
51
52
53
54
55
56
57
58
59
60

1
2
3 their work. For example, both organizational workers and gig workers experience relational
4 challenges. However, for organizational workers these often concern strained relationships with
5 coworkers while gig workers struggle with loneliness and building a network without regular
6 workmates. Finally, some challenges, such as staying financially viable, may be more acute and
7 consequential for gig workers who lack the predictability of a salary (Tran and Sokas, 2017).
8
9

10
11
12
13
14
15 The challenges suggested by these different qualitative studies also map onto key insights
16 from recent research identifying critical elements of job quality relevant to jobs in the gig
17 economy: economic (e.g., good pay, gainful employment), sociological (e.g., autonomy,
18 identification) and psychological (e.g., enjoyment of work, satisfaction of psychological needs)
19 (e.g., Goods, et al, 2019; Wood et al., 2019). The identified challenges also fit well with classic
20 needs theory that identifies existence, relatedness, and growth as key needs demanding
21 fulfillment (e.g., ERG theory; Alderfer, 1972; Schneider and Alderfer, 1977). Together, we
22 specify six challenges gig workers commonly face (see Appendix for definitions of each
23 challenge).
24
25
26
27
28
29
30
31
32
33
34

35
36 First, gig workers face a well-documented viability challenge, which is consistent with
37 both the job quality literature's emphasis on jobs that provide economic security and ERG
38 theory's emphasis on the criticality of having one's existence needs satisfied. Multiple studies
39 show that gig workers worry about their finances and income stability (e.g., Butler and
40 Stoyanova Russell, 2018; Fleming, 2017; Kuhn and Maleki, 2017). That is, in contrast to
41 employees in organizations who generally have a steady, predictable paycheck, gig workers must
42 carefully manage projects across multiple clients and employers to ensure a continued stream of
43 income reliable enough to meet their living expenses and future goals (e.g., Faulkner, 1983).
44
45
46
47
48
49
50
51
52
53
54 Indeed, despite the flexibility gig work promises, even highly paid gig workers may find lulls
55
56
57
58
59
60

1
2
3 between contracts stressful and manage this stress by taking on extra work to try to safeguard
4
5 against these periods (Evans et al., 2004).
6

7
8 Gig workers face a second existence-related challenge that also aligns with the
9
10 sociological element of job quality: structuring their own work and dealing with the essential
11
12 logistics of conducting that work in an efficient manner without the support of the administrative
13
14 ecosystems that exist in organizations. Without doing so, they fail. For example, professional gig
15
16 workers must think carefully about maintaining supplies, managing billing, client
17
18 communication, and marketing their skills (Bellesia et al., 2019); all tasks that are largely taken
19
20 care of by others, or at least supported, for workers in organizations. Gig workers often find their
21
22 constantly fluctuating workloads to be stressful and to interfere with their nonwork time (Wood
23
24 et al., 2013). Without a stable organizational role with defined hours and pay, those doing
25
26 platform-based gig work, like Uber drivers, must also think carefully about how to adapt to
27
28 changing technology and algorithms, and keeping records to deal with tax complications
29
30 (Lehdonvirta, 2018; Malin and Chandler, 2017). These hurdles can fundamentally challenge gig
31
32 workers' ability to effectively organize their autonomy in ways that meet their existential needs.
33
34
35
36

37
38 Third, gig workers often face significant identity challenges (Caza et al., 2018). They
39
40 lack clear anchors for their sense of self in relation to their work (Bennett and Hennekam, 2018),
41
42 face a near-constant pressure to sell themselves that can threaten their sense of worth and identity
43
44 (Storey et al., 2005), and lack identity-affirming organizational communities (Panteli et al.,
45
46 2020). These identity challenges arise because their work situation threatens gig workers' ability
47
48 to meet relatedness and growth needs (Alderfer, 1972) and they also map onto the sociological
49
50 element of job quality, which emphasizes the importance of identification. Without a defined and
51
52 stable role, gig workers lack access to an identity that is clearly defined and reinforced within an
53
54
55
56
57
58
59
60

1
2
3 organizational setting. This lack of a clear and strong identity can give rise to gnawing questions
4
5 about one's very existence and purpose (Petriglieri et al., 2019). Gig workers must develop their
6
7 own identity and image (Faulkner, 1983; Vallas and Christin, 2018) and ensure that their
8
9 professional identities are flexible and fluid enough to meet different clients' needs (Caza et al.,
10
11 2018; Cross and Swart, 2020).
12
13

14
15 Gig workers face a fourth challenge, career-path uncertainty, or the inability to predict
16
17 what they will do for work in the future. While Ashford and colleagues (2018) discussed career-
18
19 path uncertainty as a precursor to identity challenges, its relevance to individuals' psychological
20
21 existence and growth needs (Alderfer, 1972) and the economic dimension of job quality
22
23 mentioned by Goods et al. (2019) suggest it as a challenge on its own. Careers provide useful
24
25 structure for responsibilities, earnings and rewards, relationships, and future aims (Barley, 1989;
26
27 Hughes, 1958). While in organizations, workers often have a sense of their next career stage and
28
29 prepare for the transition (e.g., Ibarra, 1999), for gig workers such as artists, careers are
30
31 unpredictable, risky, and constructed slowly across multiple projects, relationships and settings
32
33 (Becker, 1984; Faulkner, 1983). The absence of clear structures and repeated bouts of
34
35 unemployment (Rowlands and Handy, 2012) may make career progression especially
36
37 challenging (O'Mahony and Bechky, 2006). Gig workers may struggle to make even short-term
38
39 forecasts about where their work might take them, the competencies they need to advance (Kost
40
41 et al., 2019), and the long-term feasibility of a given path (e.g., Reilly, 2017). Yet, careers and
42
43 career progress are important to these workers. Even micro-laborers using online platforms often
44
45 consider their work to be a career and want it to be meaningful (Kost et al., 2018; Wong et al.,
46
47 2020), making career-path uncertainty an important challenge for gig workers.
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 Fifth, multiple studies have documented emotional challenges faced by gig workers that
4 may differ from those confronted by employees of organizations. Most prominently, the
5
6 variability in their work may provoke intense lows followed quickly by joyful highs (Butler and
7
8 Stoyanova Russell, 2018; Petriglieri et al., 2019). For example, freelance film workers reported
9
10 an addictive dynamic caused by cycling between strong emotional rewards and devastating lows
11
12 in their work lives (Rowlands and Handy, 2012). Research on Uber and Lyft drivers has shown
13
14 that these workers often find their work emotionally taxing (Malin and Chandler, 2017).
15
16 Learning to navigate and manage these emotional swings may be difficult and require significant
17
18 investments in emotional labor (Grandey and Gabriel, 2015). We suspect that people's ability to
19
20 cope with this challenge may seriously impact their ability to find enjoyment in their work, an
21
22 important psychological element of job quality (Goods et al., 2019), most likely because it
23
24 potentially blocks workers' experience of growth (Alderfer, 1972).
25
26
27
28
29

30
31 Finally, gig workers face specific relational challenges. Theory on the psychological
32
33 element of job quality (Goods et al., 2019) and ERG theory's emphasis on workers'
34
35 psychological relatedness needs (Alderfer, 1972) point to the importance of stable and deep
36
37 relationships to individuals as they go about their work. Yet, the independent nature of their
38
39 work and position outside organizational communities means that gig workers tend to lack a
40
41 stable set of colleagues with whom they interact, as well as the routine social interactions that
42
43 occur in certain work settings and at specific times of workdays (e.g., chatting by the coffee
44
45 station) or year (e.g., workplace retreats). Additionally, because their work is temporary, gig
46
47 workers need to manage their client relationships carefully to protect against the pain of leaving
48
49 them when the contract ends (Galais and Moser 2009). Consequently, gig workers may feel
50
51 separate and alone (Kunda et al., 2002). That this is a challenge for gig workers is clearly evident
52
53
54
55
56
57
58
59
60

CHALLENGES OF GIG WORK

1.

1
2
3 in the effort some exert to build community with other workers online (Panteli et al., 2020) or in
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

in the effort some exert to build community with other workers online (Panteli et al., 2020) or in
coworking spaces (Cnossen and Bencherk, 2019; Garrett et al., 2017), and is also supported by
qualitative data on gig workers' lived experiences (Petriglieri, et al., 2019).

Limitations to our current understandings of challenges

Existing studies and relevant theory offer a snapshot of the challenges that gig workers
experience. However, our conceptual understanding of the challenges and their impact remains
limited in ways that inhibit theory-building and restrict practical guidance for these workers.

Holistic understanding of gig work challenges. Because these challenges have been
inductively identified in a piecemeal fashion, we do not yet have a holistic sense of the
challenges gig workers face. For example, we do not know whether gig workers experience all
these challenges simultaneously nor whether all gig workers experience them all to a similar
degree. If future research is to better understand the actual strain that gig workers experience,
researchers need to assess these different sources of challenge simultaneously.

Relationship of challenges to well-being indicators. While it is plausible that these
challenges will have an important relationship with indicators of their psycho-social well-being
(Ozcelik and Barsade, 2018), the direction and nature of these relationships is unclear. For
example, while experiencing gig work as intensely challenging may increase workers' levels of
emotional depletion, it is also possible that individuals who are experiencing depletion might feel
the challenges of gig work more acutely.

We also lack empirical evidence regarding whether and how experiencing the challenges
of gig work might relate to positive well-being indicators such as a sense of thriving (Porath et
al., 2012) and psychological resilience (Smith et al., 2008). Though existing research suggests
that workers are less likely to thrive at work when faced with stressors (Cullen et al., 2018), this

1
2
3 relationship has not yet been investigated in relation to the types of challenges faced by gig
4
5 workers and the contours of the specific context in which the challenges are faced. Further, while
6
7 research suggests that some levels and types of challenge are required to activate resilience, there
8
9 may be a threshold level of challenge that overwhelms people's resilience capacity (Bonanno
10
11 and Diminich, 2013). Perceived work challenges may also impact workers' abilities to find
12
13 meaning or purpose in their work (Rosso et al., 2010), yet the nature of this relationship is
14
15 unclear. Experiencing challenges might intensify people's search for purpose, resulting in
16
17 perceiving one's work as meaningful. Alternatively, challenges may distract people from
18
19 searching for the meaningfulness of their work.
20
21
22

23
24 *Universality of these challenges.* Finally, it is not clear whether the challenges are
25
26 experienced similarly by all types of gig workers. The salience and intensity of particular
27
28 challenges might vary based on people's skill level, personality, demographic social identities
29
30 such as race or social class, or specific occupational features, such as professional status. Further,
31
32 given that online platforms (e.g., Kolabtree, UpWork) enable global competition between
33
34 workers, contextual differences driven by a national social safety net (e.g., public health care)
35
36 and labor market structure may also matter. Depending on individual or contextual
37
38 circumstances, certain challenges may be more important to or disruptive of gig workers' daily
39
40 lives than others. For example, some aspects of people's situations, such as their socioeconomic
41
42 status, are likely to shape their experiences of specific gig work challenges, especially their sense
43
44 of viability (Graham et al., 2017). Yet, other aspects of gig work such as the relational challenges
45
46 may be universally challenging—regardless of individual or contextual factors.
47
48
49

50
51 *Introduction to the Studies*
52
53
54
55
56
57
58
59
60

CHALLENGES OF GIG WORK

1.

To advance theory and inform practice it is necessary to establish a valid inventory to measure the six key challenges identified. Such an inventory is needed to understand systematic variance in the experience of these gig work challenges. Further, given the breadth of existing descriptions of the lived experience of gig work along with these gaps in our understanding of the challenges, the time is ripe for the development and testing of a challenge inventory, which would provide researchers with a valuable tool for understanding the issues summarized above. Such an inventory would equip researchers to move to the next stage of research on gig work challenges: developing novel and useful theory on the antecedents and consequences of these challenges, their interdependencies with other aspects of people's lives, and practical advice for how people can productively cope with these challenges.

Study 1: Development of the Gig Work Challenges Inventory

In Study 1, we develop an inventory measuring each of the six gig work challenges: viability, organizational, identity, emotional, relational, and career-path uncertainty. Conceptualizing these challenges as inherently subjective, we develop a measure that captures individuals' perceptions of the challenges they face, as opposed to an external assessment of their challenges. The primary purpose of Study 1 was to generate an initial pool of items with the secondary goal of slightly reducing this initial pool of items by retaining only the best items. We label the resulting measure the Gig Work Challenges Inventory (GWCI).

1.1 Method

1.1.1 Item generation. Following scale development recommendations (Hinkin, 1995), we began by inductively generating clear conceptual definitions of gig work challenges based on previously published qualitative work (e.g., Bennett and Hennekam, 2018; Caza et al., 2018; Petriglieri et al., 2019), and creating an initial list of items to capture experiences derived from

1
2
3 these definitions. We generated five to seven items for each challenge, following the
4
5 recommendation that initial item pools should contain about twice as many items as desired in
6
7 the final scale (Hinkin, 1998). We wanted the final scale to contain no more than three items for
8
9 each challenge subfactor as we aimed for this inventory to be a valid scale that is also feasible to
10
11 administer in experience sampling studies. When generating the items, we used simple, clear,
12
13 and unambiguous language, and avoided double-barreled questions and jargon (Tourangeau et
14
15 al., 2000). Items were then reviewed and revised by five subject matter experts (SMEs),
16
17 including two gig workers and three researchers studying gig workers. See the online
18
19 supplemental materials for the original items and subfactor definitions generated through this
20
21 process.
22
23
24
25

26 *1.1.2 Procedure and sample.* Eighty naïve respondents recruited from Amazon's mTurk
27
28 evaluated the generated scale items' content adequacy. Participants were paid \$2.00 USD for
29
30 completing the survey. We provided participants the construct definitions of the six challenges.
31
32 We then randomly presented the 36 challenge items and asked participants to assign each item to
33
34 one of the six challenge categories based on its fit with the definition (Hinkin, 1998). Ten of the
35
36 participants failed to correctly answer the attention check questions embedded in the survey, and
37
38 a further 13 reported no experience with gig work resulting in a final sample of 56. Participants
39
40 were 52% male and had an average tenure in their current profession of 10.01 years.
41
42
43
44

45 *1.2 Results*

46
47 We used frequencies to identify the items that had the highest substantive-agreement
48
49 index (i.e., how often the item was correctly categorized) within each of the challenge categories
50
51 (Anderson and Gerbing, 1991; Hinkin, 1998). Overall, all items were categorized into their
52
53 correct subfactor by most participants (average agreement was 70.39% and ranged from 39% to
54
55
56
57
58
59
60

89%), suggesting that the items overall fit their respective definition. We then closely examined any of the items that had relatively lower agreement within each subfactor to determine how it had been categorized and whether there was some content justification for retaining it into the next phase of data reduction through assessment of factor structure. The results of this analysis in conjunction with theoretical assessment of content redundancy for each lower agreed-upon item within subfactors led us to retain 75% of the items. We eliminated two items for viability, relational, and career-path challenges and one item for each of organizational, emotional, and identity challenges. Table S1 in the online supplemental materials summarizes the agreement levels and the retained items.

Study 2: Exploratory factor analysis and validity testing

In a second study, we administered the reduced set of GWCI items from Study 1 to a different set of naïve respondents to assess the underlying factor structure of the items. Exploratory factor analysis is recommended in the early stages of scale development as a conservative strategy for initially eliminating poor performing items (Bauer et al., 2001; Hinkin, 1998; Kelloway, 1995). In this study we also assessed the convergent validity of the inventory subfactors (i.e., challenge dimensions) with relevant constructs.

2.1 Method

2.1.1 Participants. We recruited another sample from Amazon's mTurk to assess the underlying factor structure of the GWCI. Following sample size recommendations for EFAs (Preacher and McCallum, 2002), we recruited 252 participants who all took the 27-item gig challenge items developed in Study 1. We also asked participants to respond to measures of four relevant well-being indicator variables (thriving, depletion, resilience, and loneliness; Ashford et al., 2018) to examine criterion-related validity. Participants were paid \$2.00 USD. The sample

1
2
3 was 49% male and had an average tenure of 7.79 years in their current profession. Ninety-three
4
5 percent of participants identified as independent workers and 25 failed to pass the attention
6
7 checks, reducing the sample to 227 participants.
8
9

10 *2.1.2 Measures.* To assess experiences of gig work challenges, all participants indicated
11 the extent to which they experienced these challenges using the 27 GWCI items on a scale from
12 1 (strongly disagree) to 5 (strongly agree). We then assessed relevant well-being indicators of
13 thriving, depletion, resilience, and loneliness using established measures. We specifically sought
14 measures that assessed state-based well-being constructs because we expect individuals'
15 perceptions of gig challenges to vary depending on various aspects of their job situation. We
16 measured depletion using Lanaj and colleagues' (2016) 5-item scale, which asked participants
17 the extent to which statements such as "I feel drained" captured how they were currently feeling
18 (1: not at all, 5: very much so). We measured thriving with Porath and colleagues' (2012) 10-
19 item scale, which measures the subfactors of both vitality and learning, by asking participants to
20 rate their agreement with statements such as "At work this past week I feel alert and awake" and
21 "At work this past week I have continued to learn" (1: strongly disagree, 5: strongly agree). We
22 measured resilience with Smith and colleagues' (2008) 6-item resilience scale, asking
23 participants to reflect on the extent to which they agreed with statements such as "I usually come
24 through hard times with little trouble" (1: strongly disagree, 5: strongly agree). Finally, we
25 assessed loneliness using Hughes and colleagues' (2004) 3-item loneliness scale which asked
26 respondents how often they felt left out, isolated from others, and lacked companionship over the
27 last week (1: never, 4: often).
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49

50 51 *2.2 Results*

52
53
54
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34

2.2.1 Exploratory factor analysis results. We first ran a maximum likelihood EFA with direct oblimin rotation which showed eight factors with eigenvalues above one. Six factors were theoretically interpretable: a viability factor, an emotional factor, a career-path factor, an organizational factor, a relational factor, and an identity factor. The remaining factors contained a mix of theoretically uninterpretable items, often loading below .4. We then ran the EFA with varimax rotation to identify the highest loading items on each of these components. Our aim was to retain three items of acceptable loadings (above .4, see Costello and Osborne, 2005) for each of the components. This criterion yielded three items each for the emotional, viability, organizational, and career-path challenges; only two items had acceptable loadings on the relational factor. Table S2 in the online supplemental materials shows the results of the EFA analyses and indicates the 17 highest loading items that were retained. Taken together with the first study demonstrating acceptable agreement levels, this analysis with a separate mTurk sample suggests that there is both content adequacy and appropriate factor loadings for our theorized six challenge categories (Hinken, 1995).

35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

2.2.2 Convergent validity testing. See Table 2 for a summary of the means, standard deviations, reliabilities, and correlations between the resulting challenge subfactors and outcome measures for Study 2. We expected the experience of the challenges to show a distinct but moderately positive association with the constructs of depletion and loneliness and a moderately negative association with the constructs of thriving and resilience (Ashford et al., 2018). As predicted, we found that emotional depletion was significantly positively related to each of our challenge subcomponents. The strongest association was with both identity and emotional challenge subcomponent ($r = .34$ and $r = .35$, $p < .001$, respectively), while the weakest association was with the viability challenge ($r = .22$, $p < .001$). We also found that each of the

challenge measures were significantly related to loneliness. The strongest of these relationships was with the relational challenge subfactor ($r = .35, p < .001$), and the weakest association was with the viability challenge subfactor ($r = .21, p = .001$).

Our challenge subfactors were also mostly negatively associated with two positive well-being constructs of resilience and thriving. Specifically, all of the challenge subfactors except the viability challenge subfactor ($r = .10, p = .12$) were significantly negatively associated with resilience ($r_s \geq -.21, p_s < .001$). Five of the six challenge subfactors were also significantly negatively associated with thriving ($r_s \leq -.14, p_s < .03$). Surprisingly, the emotional challenge subfactor was not significantly associated with thriving ($r = -.09, p = .20$). Collectively, these results indicate that the gig work challenges are generally related to, but conceptually distinct from important well-being indicators including depletion, loneliness, resilience, and thriving.

In summary, our exploratory factor analyses show that the six subfactors of the GWCI are empirically distinct from one another. Additionally, we found evidence that these challenges are distinct from, yet still related to measures of depletion, loneliness, thriving, and resilience.

INSERT TABLE 2 ABOUT HERE

Study 3: Confirmatory factor analysis and subgroup analysis

In this study we used confirmatory factor analysis (CFA) to confirm the factor structure of the GWCI, further examined the construct validity of the GWCI by assessing its relationship with the theoretically related constructs of thriving and work meaningfulness (Ashford et al., 2018), and assessed the universality of the challenges through subgroup analyses. We recruited a socioeconomically and demographically diverse sample of independent scientists, a highly

1
2
3 skilled population, who used a third-party platform to connect with clients and companies, and
4
5 bid on specific projects.
6

7 8 *3.1 Method*

9
10 *3.1.1 Participants.* We recruited 542 individuals who worked through this platform.
11
12 Participants responded to the GWCI as the initial step of a larger, longitudinal study. Due to the
13
14 level of involvement required by participants in the entire study and their relative hourly wage,
15
16 participants were provided a \$20.00 USD or \$25.00 CAD gift certificate. Of the recruited
17
18 sample, 476 were currently engaging in independent gig work and were retained in our sample.
19
20 Their average age was 36.6 years, 55% identified as male, and the average tenure in their current
21
22 profession was 10.0 years. Participants were from regions all over the world, including 41.2%
23
24 who reported living in North America, 22.5% in Europe, 16.9% in Asia/Oceania region, 8.3% in
25
26 Africa or the Middle East, and 4.6% in Central or South America. Seventy-one percent of these
27
28 scientists had at least some graduate training, with 49% having earned doctoral degrees.
29
30 Reported income was stratified with approximately 35% earning less than \$20,000 per year, 16%
31
32 earning between \$20,000 and \$34,999, 37% earning between \$35,000 and \$100,000, and
33
34 approximately 8% earning over \$100,000.
35
36
37
38
39

40 *3.1.2 Measures.* Participants completed an online survey containing the 18-item GWCI.
41
42 Seventeen of these items were those that were retained based on the EFA results from Study 2.
43
44 However, because only two of the relational subfactor items met the criteria in the EFA sample,
45
46 we added one new relational item to this survey (“Sometimes I miss being part of a team when
47
48 doing my work”). Participants also completed measures of socio-demographic questions, as well
49
50 as two constructs theorized to be negatively related to the gig work challenges: thriving and work
51
52 meaningfulness. Thriving was again measured with Porath et al.’s (2012) measure, while work
53
54
55
56
57
58
59
60

1
2
3 meaningfulness was assessed on a 5-point scale (1: strongly disagree, 5: strongly agree) with the
4
5 4-item Work and Meaning Inventory (WAMI, Steger et al., 2012). A sample item is “I
6
7 understand how my work contributes to my life’s meaning.” As demonstrated in Table 3, these
8
9 previously validated measures had adequate reliability.
10

11 12 3.2 Results

13
14 3.2.1 *Assessment of the GWCI factor structure.* Means, standard deviations, reliabilities,
15
16 and correlations between Study 3 variables can be found in Table 3. We conducted a CFA on the
17
18 gig work challenges inventory using maximum likelihood estimation in Mplus (Muthén and
19
20 Muthén, 1998-2017). The six-factor model resulted in good model fit (Hu and Bentler, 1999): χ^2
21
22 (120) = 268.81, $p < .001$, comparative fit index (CFI) = .95, root mean square error of
23
24 approximation (RMSEA) = .05, 90% CI (.04, .06), standardized root mean square residual
25
26 (SRMR) = .05 (See Table S3 in the online supplemental materials for factor loadings).
27
28 Importantly, the six-factor model exhibited better model fit when compared to alternative models
29
30 (i.e., those assessing 1-5 subfactor models, χ^2 difference tests ps all $< .001$). Two of the three
31
32 positively worded items that needed to be reverse-scored (one from the viability subscale and
33
34 one from the organizational subscale) had a lower-than-expected loading in the full sample,
35
36 consistent with tests of the psychometric properties of other scales (Harrison and McLaughlin,
37
38 1991). However, following other scholars’ lead, we retained these reverse-scored items for
39
40 subsequent tests because they can help account for response-style bias (Wayne et al., 2019).
41
42
43
44
45
46

47 3.2.2. *Assessment of convergent and discriminant validity.* We next examined convergent
48
49 validity by looking at the relationship between the individual subfactors, as well as an aggregate
50
51 gig work challenges index, with the theoretically informed individual factors of perceived work
52
53 meaningfulness and thriving. As with Study 2, we again anticipated a moderate negative
54
55
56
57
58
59
60

relationship between the gig work challenges and thriving, as well as moderate negative relationship between the challenges and work meaningfulness. Bivariate correlational analyses (see Table 3) revealed that each gig challenge subfactor had a moderate negative association with work meaningfulness ($r_s < -.19, p_s < .001$) and thriving ($r_s < -.17, p_s < .001$) except for the emotional challenge subfactor. It was unrelated to both work meaningfulness ($r = .08, p = .093$) and thriving ($r = -.03, p = .530$). Further, the overall gig work challenges index was found to have a significant negative association with work meaningfulness ($r = -.33, p < .001$) and thriving ($r = -.27, p < .001$).

INSERT TABLE 3 ABOUT HERE

3.2.3. Assessment of universality of gig work challenges. We expected participants from the lower socioeconomic status (SES) group (those making < \$20,000) to perceive higher levels of gig work challenges, especially viability challenges, than those of higher SES. To test the effect of SES on gig work challenges, we conducted a hierarchical multiple linear regression with the percentage of total income from gig work as a covariate. Results revealed that income (as a proxy for SES) was negatively associated with overall gig work challenges ($\beta = -.21, p < .001, 95\% \text{ CI: } -.30, -.12$), such that those with lower income report significantly higher levels of gig work challenges. To further assess the association between SES and gig challenges, we ran a multivariate multiple regression on the subfactors controlling again for percentage of total income earned from gig work. This analysis revealed that income was significantly and negatively related to viability ($\beta = -.26, p < .001, 95\% \text{ CI: } -.35, -.18$), organizational ($\beta = -.17, p < .001, 95\% \text{ CI: } -.27, -.08$), identity ($\beta = -.19, p < .001, 95\% \text{ CI: } -.29, -.10$), and emotional

1
2
3 challenges ($\beta = -.13, p = .008, 95\% \text{ CI: } -.22, -.03$), but not relational ($\beta = -.06, p = .248, 95\% \text{ CI: } -$
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

challenges ($\beta = -.13, p = .008, 95\% \text{ CI: } -.22, -.03$), but not relational ($\beta = -.06, p = .248, 95\% \text{ CI: } -$
.15, .04) or career-path uncertainty challenges ($\beta = -.07, p = .149, 95\% \text{ CI: } -.17, .03$).

We also investigated the universality of the GWCI by exploring potential differences across race and geographical location. We found that there were no differences in the reported overall experience of challenges based on the participant's visible minority status ($t [425] = 1.84, p = .66$). Additionally, our subfactor analysis revealed that there were no significant differences by self-reported racial minority status ($ts < 1.69, ps > .09$). We then tested geographical universality by categorizing participants' countries into five geographic regions: 1) Africa and the Middle East, 2) Asia/Oceania, 3) Central and South America, 4) Europe, 5) North America. We found no significant differences in the general experience of gig work challenges by geographic region ($F [4,464] = 1.20, p = .31$), suggesting that the experiences of gig work challenges were geographically universal. Analysis of geographic differences in the subfactors revealed no differences in the viability, relational, organizational, identity, or career path uncertainty challenges ($Fs < 2.13, ps > .08$), but there was a significant difference among the geographic areas for emotional challenges ($F [4, 463] = 3.65, p = .006$). A Bonferroni adjusted pairwise comparison for emotional challenges revealed the only significant difference was that participants in North America reported fewer emotional challenges than participants in Central and South America ($M = 2.45, SD = 1.08$ and $M = 3.25, SD = 1.07$, respectively).

In summary, the results from Study 3 confirmed the six-factor structure of the GWCI. The study also provided evidence for the concurrent criterion validity of our inventory as the composite challenge inventory was associated with work meaningfulness and thriving. Our analysis of SES demonstrated that lower income gig workers experience higher levels of challenges. Finally, we found evidence for both racial and geographic universality.

Study 4: Convergent and discriminant analysis

In our fourth study, we sought to accomplish three things. First, we examined whether replacing reverse-scored items would further improve the factor structure of the GWCI. Second, we investigated the relationship of gig work challenges with an important job-related construct: job satisfaction. Finally, we sought to establish the measure's discriminant validity by demonstrating its lack of relationship with theoretically unrelated personality constructs.

4.1 Methods

4.1.1 Participants. We recruited 302 individuals through Amazon's mTurk platform. Participants were paid \$2.00 USD for their participation. Their tenure in their current profession was 10.83 years and 55% identified as male. Most participants (89%) reported doing some or all of their work independently, another 8% said that they had previously worked independently. Participants' reported income varied with approximately 10% earning less than \$20,000 per year, 29% earning between \$20,000 and \$39,999, 29% earning between \$40,000 and \$59,999, 15% earning between \$60,000 and \$79,999, and approximately 17% earning over \$80,000.

4.1.2 Measures. Participants completed an online survey containing the same 18-item GWCI used in Study 3. However, because of the reverse scored items' lower performance and scholarly debate about the importance of reverse-scored items and their impact on minimizing some types of errors but promoting others (e.g., Hinkin, 1995; Weijters and Baumgartner, 2012), we also included additional non-reverse-scored challenge items for these subscales (see Table S4 in the online supplemental for the original reverse-scored items).

In this study we also further assessed the convergent and discriminant validity of the subfactors and the overall challenges index with relevant constructs. Therefore, participants also completed a measure of job satisfaction, that we expected to be related to the experience of these

gig work challenges to assess criterion validity, and constructs we expected the challenges not be associated with to assess discriminant validity (e.g., agreeableness, openness to experience, and extraversion). Job satisfaction was measured with Judge and colleagues (1998) 5-item brief job satisfaction measure rated on a 5-point scale (1: strongly disagree, 5: strongly agree). A sample item is “I find real enjoyment in my work.” Personality dimensions were measured using Saucier’s (1994) 20-item mini-marker assessment wherein participants rated the extent to which each in a list of common human traits describes them on a 7-point scale (1: very inaccurate, 7: very accurate). Participants also answered socio-demographic questions. As demonstrated in Table 4, these previously validated measures all had adequate reliability in this sample.

4.2 Results

4.2.1 Assessment of the gig work challenges factor structure. Means, standard deviations, reliabilities, and correlations between Study 4 variables can be found in Table 4. Once again, we conducted a CFA on the GWCI using maximum likelihood estimation in Mplus (Muthén and Muthén, 1998-2017). We tested two different models: one with the original 18 items from Study 3 (including the reverse-scored items), and one with the three reverse-scored items re-worded to be negative (See tables S4 and S5 in the online supplemental materials, respectively). While both six-factor models resulted in good model fit, the model without the reversed-scored items performed better. Specifically, the six-factor model with the original items had adequate fit ($\chi^2 [120] = 302.53, p < .001, CFI = .94, RMSEA = .07, 95\% CI [.06, .08], SRMR = .06$), but the reverse-scored positively worded items still had relatively low loadings on their respective subscales. Findings for the second model suggest that when these items are replaced with similar content that was consistent with the negative valence of the challenges, the revised six-factor model demonstrated markedly improved fit: $\chi^2 (120) = 213.66, p < .001, CFI = .97, RMSEA$

1
2
3 =.05, 95% CI [.04, .06], SRMR =.04 (See Table S5 in the online supplemental material). Going
4 forward, we use the second model of the GWCI.
5
6

7
8 *4.2.2 Assessment of convergent and discriminant validity.* We next examined convergent
9 and discriminant validity. To do so, we assessed the relationship between the challenges with the
10 theoretically informed job-related outcome factor (i.e., job satisfaction), as well as factors that
11 should be unrelated to the challenges (i.e., the personality constructs of agreeableness,
12 extraversion, and openness to experience). Bivariate correlational analyses (see Table 4) revealed
13 that each subfactor had a moderate negative association with job satisfaction ($r_s < -.29, p_s <$
14 $.001$), as did the overall gig work challenges index ($r = -.52, p < .001$). Further, each gig
15 challenge subfactor and the overall gig work challenges index were not significantly related to
16 either extraversion, agreeableness, or openness to experience apart from the organizational
17 challenges subfactor, which had a small positive association with extraversion ($r = .12, p = .038$).
18
19
20
21
22
23
24
25
26
27
28
29
30

31 -----
32
33 INSERT TABLE 4 ABOUT HERE
34 -----
35

36
37 In short, the six-factor structural model without the reverse-scored items showed the best
38 model fit. In addition, the results provided further support for the GWCI's convergent validity
39 with job satisfaction and evidence of discriminant validity with unrelated personality variables.
40
41
42

43 **Study 5: Criterion validity testing with a broader sample**

44

45
46 In our fifth study, we had four goals. First, we sought to finalize the structure of the
47 GWCI using a broader sample of gig workers. Second, we further examined the criterion of our
48 GWCI dimensions by assessing each subfactor's convergent but distinct relationship with a
49 range of conceptually related constructs developed within the organizational context. Third, we
50 sought to assess the incremental criterion validity by comparing the relative effect of the gig
51
52
53
54
55
56
57
58
59
60

work challenge subfactors and their closest organizationally-based constructs in predicting the important psychological well-being indicator of depletion. Fourth, we examined differences between professional and non-professional workers' experiences of gig work challenges.

5.1 Methods

5.1.1 Participants. We recruited 343 individuals from various online gig work forums and professional freelance mailing lists. This strategy allowed us to purposefully sample workers whose gigs tended to be mediated by digital platforms (e.g., uber drivers) as well as those whose gigs were derived from other means such as their professional networks (e.g., freelance editors). These participants reported a variety of job titles across a range of industries. Two independent coders classified open-ended job titles into the broad job type categories of professional (71.4%, N = 245; e.g., editors, programmers), non-professional (12.5%, N = 43; e.g., food delivery drivers), creative workers (12.2%, N = 42; e.g., actors, artists), and other (3.8%, N = 13; e.g., reported being a freelancer without further detail). Inter-rater agreement was high (94.58%) and all disagreements following the initial coding were discussed by the two coders with the goal of reaching a consensus. On the two occasions that a disagreement persisted, a third coder was brought in to help achieve consensus. When participants were asked how they find gigs with the option to "select all that apply," most of the participants reported a combination of sources including their social networks (65.6%, N = 225) and third-party platforms (49.3%, N = 169). The sample was 63.5% female, and reported an average tenure as a gig worker of 15.04 years. The participants self-identified as gig workers with most participants (69.7%) reporting doing all their work independently, while the remaining 30.3% said that they earned some of their income independently. Participants' reported total earnings were as follows: 12% reported less than \$20,000 per year, 19% between \$20,000 and \$39,999, 22.7% between \$40,000 and \$59,999,

1
2
3 17.2% between \$60,000 and \$79,999, 14.6% between \$80,000 and \$99,999, and 14% over
4
5 \$100,000 per year. Participants were provided a \$10.00 USD gift card as remuneration.
6

7
8 *5.1.2 Measures.* Participants completed an online survey containing the 18-item GWCI
9
10 without the reverse-scored items used in the validity testing in Study 4 (see Appendix). In this
11
12 study, we further assessed the discriminant validity of each challenge subfactor by matching each
13
14 one with widely accepted, validated, organization-based constructs. Specifically, the GWCI
15
16 subfactors of viability, organizational, identity, emotional, relational, and career-path uncertainty
17
18 challenges were compared to the respective constructs of financial hardship, role overload, role
19
20 ambiguity, emotional labor, belongingness, and employability. Financial hardship was measured
21
22 with Vinokur and Caplan's (1987) 3-item scale on a 5-point scale (1: not at all, 5: very much so;
23
24 e.g., "how difficult is it for you to live on your total household income right now?"), role
25
26 overload was measured using Beehr et al.'s (1976) 3-item scale assessed on a 5-point scale (1:
27
28 strongly disagree, 5: strongly agree; e.g. "the performance standards on my job are too high."),
29
30 role ambiguity was measured with Rizzo et al.'s (1979) 6-item measure rated on a 7-point scale
31
32 (1: very true, 7: very false; e.g., "I feel certain about how much authority I have."), emotional
33
34 labor was assessed using Brotheridge and Lee's (2003) 14-item scale rated on a 5-point scale (1:
35
36 never, 5: always; e.g., "express particular emotions needed for your job."), belongingness was
37
38 measured using Den Hartog et al.'s (2007) 3-item scale rated on a 5-point scale (1: not at all, 5:
39
40 very much so; e.g., "I don't seem to "connect" with others in the work group" [reverse scored]),
41
42 and employability was measured using Janssens et al.'s (2003) 3-item scale rated on a 5-point
43
44 scale (1: strongly disagree, 5: strongly agree; e.g., "In case I'm dismissed, I'll immediately find a
45
46 job of equal value.").

1
2
3 Finally, we replicated our assessment of convergent validity by measuring depletion and
4 assessed the incremental criterion validity of our gig challenge subfactors by examining their
5 relationship with depletion in the presence of their respective comparison constructs. Depletion
6 was measured using the same 5-item Lanaj et al. (2016) scale as was used in studies 2 and 3. We
7 expect the gig work challenges to be positively associated with depletion above and beyond the
8 matched organizational-based constructs.
9
10
11
12
13
14
15

16 17 *5.2 Results*

18
19 *5.2.1 Assessment of the GWCI Factor Structure.* Means, standard deviations, reliabilities,
20 and correlations between Study 5 variables can be found in Table 5. We again conducted a CFA
21 on the GWCI using maximum likelihood estimation in Mplus (Muthén and Muthén, 1998-2017)
22 to confirm the factor structure of the inventory. The 6-factor model resulted in an excellent
23 model fit ($\chi^2 [120] = 192.65, p < .001, CFI = .98, RMSEA = .04, 95\% CI [.03, .05], SRMR =$
24
25
26
27
28
29
30
31
32
33 .03; see Table S6 in the online supplemental material).

34
35 *5.2.2 Assessment of discriminant validity.* We examined the discriminant validity of each
36 challenge subfactor with previously validated scales assessing similar constructs based in
37 organizations. As demonstrated in Table 5, the correlations between the dimensions of the GWCI
38 and the matched scales are moderate¹ ($r_s = -.57$ to $.50$), which demonstrates that they are similar
39 but distinct (Shaffer et al., 2015). We then further examined discriminant validity by assessing
40 whether each challenge dimension and their respective matched measure loaded onto a single
41
42
43
44
45
46
47
48
49

50
51
52
53
54
55
56
57
58
59
60
¹ We thank an anonymous reviewer for recommending we look at the item-level to further test
discriminant validity. No item-level correlation exceeded an absolute value of .56 and no average
item-level correlation per scale surpassed an absolute value of .34.

factor or separate factors by comparing the fit of the two models for each challenge dimension (see Table S7 in the online supplemental materials). We found in all cases that separate factors provided a better fit to the data than single factors ($\Delta\chi^2 > 32.32, p < .001$), providing evidence for the discriminant validity for each dimension.

INSERT TABLE 5 ABOUT HERE

5.2.3 *Assessment of incremental criterion validity.* To assess whether the challenges explained incremental variance in an important outcome (i.e., depletion) beyond their respective related constructs, we conducted regression analyses. In no case was multicollinearity an issue as the variance inflation factor ranged from 1.08 to 1.48. We also ran relative weights analysis (Johnson, 2000) to assess the relative contribution of each gig challenge subfactor on the outcome of depletion using the relaimpo package in R (Grömping, 2006). Confidence intervals for each relative weights analyses were obtained using 10,000 bootstrap resamples. The results of these analyses revealed that each challenge subfactor explained significant incremental variance (ΔR^2 ranging from .03 to .18, all $p < .001$) and had equivalent (i.e., viability, identity, emotional, and relational challenges) or significantly greater (i.e., organizational and career-uncertainty) relative weights compared to prior-validated related organizational constructs in explaining variance in depletion (see Table S8 in the online supplement).

5.3.4. *Differences in the experience of challenges between professionals and non-professionals.* We next tested whether there were differences in the experience of gig work challenges across the categories of work type: professional (e.g., editor, accountant), non-professional (e.g., delivery driver, tutor), creative (e.g., actor, photographer), and other (e.g.,

1
2
3 general freelancer). Due to a relatively lower number of respondents categorized as non-
4
5 professional, creative, and other, we combined these categories to create a binary category for
6
7 non-professional (0; $N = 98$) and professional (1; $N = 245$). We found a significant difference
8
9 between the two groups with non-professional gig workers reporting higher levels on the overall
10
11 gig work challenges index ($M = 3.21$, $SD = .70$) than professional gig workers ($M = 2.72$, $SD =$
12
13 $.80$), $t [341] = 5.33$, $p < .001$). Additional analyses indicated that non-professional gig workers
14
15 experienced significantly higher challenges for all subfactors ($ts > 2.60$, $ps < .01$) except the
16
17 viability subfactor ($t [343] = .26$, $p = .80$; see Table S9 in online supplemental material).

18
19
20
21
22 5.3.5. *Differences in the experience of challenges between platform vs non-platform*
23
24 *workers*. Finally, we examined whether there were differences in the experience of gig work
25
26 challenges between workers who obtain gigs through third-party platforms ($N = 169$) versus
27
28 those who do not ($N = 174$). We found a significant difference between the two groups with
29
30 platform-based gig workers reporting higher levels on the overall gig work challenges index (M
31
32 $= 2.95$, $SD = .84$) than non-platform-based gig workers ($M = 2.76$, $SD = .75$, $t [341] = 2.07$).
33
34 Additional analyses revealed no significant differences in viability, organizational, identity, or
35
36 relational challenges ($ts < 1.52$, $ps < .05$), but did yield differences in the experience of
37
38 emotional ($t [341] = 2.05$, $p = .042$) and career path-uncertainty challenges ($t [341] = 2.69$, $p =$
39
40 $.008$), with platform workers being higher on both (see Table S10 in online supplemental
41
42 material).
43
44
45

46 47 **Discussion**

48
49 Our central contribution is the development and validation of an inventory that measures
50
51 what the literature to date suggests are the central challenges experienced by gig workers:
52
53 viability, organizational, identity, emotional, relational, and career-path uncertainty. The GWCI,
54
55
56
57
58
59
60

1
2
3 rooted in analysis of recent studies of gig workers' experiences, theory on job quality, and classic
4
5 psychological theory on individuals' needs for existence, relatedness, and growth, is both
6
7 timeless and timely. Some people have always worked outside organizations, but over the last
8
9 two decades, an increasing number of workers have migrated to such work (Friedman, 2014).
10
11 The advent of newer technologies, including the internet and internet-based hiring platforms has
12
13 also amplified the growing "uberization" of work across industries (Duggan et al., 2020;
14
15 Fleming, 2017), lending increased urgency to the need to develop theoretically grounded
16
17 empirical tools to measure gig work experiences. In developing the GWCI, we advance
18
19 scholarship on gig workers by offering clear conceptual definitions of the challenges (see
20
21 Appendix) that have been noted but defined and assessed inconsistently in prior studies. Across
22
23 five studies, we provide cumulative evidence for the GWCI by assessing its item quality, factor
24
25 structure, and nomological network. The conceptual and empirical clarity that we offer on the
26
27 core challenges gig workers face is critical to furthering research. By defining and providing a
28
29 valid, parsimonious inventory of these challenges, we enable future research to better understand
30
31 why gig workers might face different amounts and types of challenges, and to begin to assess
32
33 their impact, mechanisms, and boundary conditions.
34
35
36
37
38
39

40 Taken together, our five studies provide systematic evidence of the content, construct,
41
42 and criterion validity of the GWCI. In Study 1, we demonstrate the content validity of the items.
43
44 In Studies 2 and 3, we explore and confirm the structure of the GWCI. We also show initial
45
46 evidence that each of the six challenge subfactors, and the overall challenges index they form,
47
48 are related to, yet distinct from, the constructs of depletion, loneliness, and resilience (Study 2),
49
50 work meaningfulness (Study 3), as well as thriving at work (studies 2 and 3). In Study 4, we
51
52 improve and offer further confirmation for the six-factor structure of a slightly amended version
53
54
55
56
57
58
59
60

1
2
3 of our measure. We also provide evidence of the GWCI's discriminate validity as it is
4
5 conceptually and empirically unrelated to the personality constructs of extraversion,
6
7 agreeableness, and openness to experience. In Study 5, we finalize the structure of the inventory
8
9 and further demonstrate discriminant and incremental criterion validity. We show that the six
10
11 subfactors explained unique variance in depletion over and above that explained by existing,
12
13 potentially analogous, measures commonly used in studies of organization-based employees,
14
15 measures designed for and written in reference to traditional employment arrangements in
16
17 organizations.
18
19
20

21
22 By examining our inventory with a diverse array of gig workers, we assess the extent to
23
24 which our six foundational challenges are generalizable. Two findings bear on this question.
25
26 First, in our third study, we found no differences in the experience of gig work challenges by
27
28 racial minority status, suggesting a possible bright spot in the gig economy: a more equal playing
29
30 field across demographic differences. Second, our global sample of independent scientists
31
32 demonstrated that gig workers doing comparable tasks around the world find their work similarly
33
34 challenging overall and at the subfactor level (with one exception for the emotional challenge
35
36 subfactor).
37
38
39

40
41 Across our studies, we also offer some initial insights into how the experience of gig
42
43 work challenges varies across income levels, type of work, and source of gig work. These results
44
45 provide initial evidence for some of the individual and contextual factors that may shape the
46
47 experience of these work challenges, setting the stage for future work to further investigate the
48
49 heterogeneity within the "gig worker" labor market. That is, while the experience of challenges
50
51 has been linked to the structural characteristics of gig work, our results also show how these
52
53 structural characteristics are nested within a broader economic context which may change the
54
55
56
57
58
59
60

1
2
3 experience of these structural characteristics and the degree to which they may be perceived as
4
5 challenging. For example, while in general the precarious nature of gig work may lead to identity
6
7 and viability challenges (Ashford et al. 2018), the experience of these challenges are amplified in
8
9 certain contexts.

10
11
12 By analyzing groups of low- and high-income earners in Study 3, we show that overall
13
14 income matters for workers' experiences of the challenges. Even when controlling for gig-
15
16 income dependence, which has been suggested to be a factor shaping gig workers' experiences
17
18 (Kuhn and Maleki, 2017; Vallas and Schor, 2020), those who earned the least overall reported
19
20 higher levels of the challenges than did those who earned the most. Importantly we found that
21
22 low-income gig workers not only reported higher levels of viability challenges, but also all other
23
24 types of challenges as well. Consistent with organizational behavior scholars who have called for
25
26 further research on how the experiences of the working poor contrast with the middle- and
27
28 higher-income workers traditionally studied by management scholars (Leana et al., 2012), our
29
30 findings suggest that scholars examining the gig economy must also keep income in mind as they
31
32 seek to understand the experiences, choices, and behaviors of these workers.
33
34
35
36

37
38 Further, our final study indicated that gig workers doing different types of work do have
39
40 different experiences of gig work challenges. Specifically, we found that professional gig
41
42 workers reported relatively lower levels of challenges than non-professional gig workers on all
43
44 subfactors except viability. These findings provide an important reminder that gig workers are
45
46 not all the same (Barley et al., 2017), and that their different qualifications, specialties, and skills
47
48 are likely to affect their work experiences.
49
50

51
52 Our results suggest that the GWCI offers several methodological advantages. First it
53
54 provides a more complete picture of the range of challenges that gig workers face and is a
55
56
57
58
59
60

1
2
3 parsimonious tool that researchers can use to better understand the interaction between them.

4
5 Previous research has tended to focus on the experience of one or two specific challenges at a
6
7 time. For instance, Bennett and Hennekam's (2018) research on creative industry workers
8
9 examined their career decision-making and identity work, but not how they coped with the
10
11 organizational challenge of managing their own freelance work nor the viability challenge of
12
13 generating sufficient income. Caza and colleagues (2018) studied how workers with multiple
14
15 gigs managed identity, career-path, organizational, and relational challenges, but did not address
16
17 viability or emotional challenges. While such studies were instrumental in identifying specific
18
19 challenges gig workers faced, they only focused on part of the picture. As such, the ways in
20
21 which gig workers cope with multiple challenges simultaneously has been largely unexplored.
22
23
24
25

26 The data show a moderate to strong correlation between the challenges suggesting that
27
28 many gig workers experience these challenges simultaneously. This further suggests that perhaps
29
30 the challenges of gig work, like resources that tend to cluster together (Hobfoll, 2011), may be
31
32 predictable "co-travelers" (pg. 119) – for example, people who experience career-path challenges
33
34 are also likely to experience identity challenges. This parsimonious yet comprehensive tool with
35
36 clear subfactor specificity that has been validated across a broad sample of gig workers will
37
38 allow for researchers to investigate the relationship of these challenges with each other more
39
40 systematically, including which challenges impact others. For example, the findings from our
41
42 third study regarding the impact of income suggest that the viability challenge might drive
43
44 workers' experiences of the other challenges. Alternatively, a worker who feels bogged down
45
46 with different aspects of backroom labor (e.g., billing) might find it more challenging to maintain
47
48 close connections with others than would someone who experiences fewer organizational
49
50 challenges. Taking inspiration from work on burnout (Leiter and Maslach, 2016), future work
51
52
53
54
55
56
57
58
59
60

1
2
3 might investigate whether gig workers have different challenge profiles that are shaped by the
4
5 nature of their work (e.g., the variable elements of gig work in Table 1, such as duration and
6
7 technological platform), as well as their local community and national context.
8
9

10
11 However, there may also be circumstances in which these challenges are less likely to be
12
13 related. For example, the findings from our fifth study highlight differences in the experience of
14
15 gig work challenges between professional and non-professional gig workers, as well as platform
16
17 and non-platform-based gig workers. Future research could investigate how characteristics of
18
19 one's gigs and industry may impact the relationship of the challenges with each other.
20
21 Additionally, using the GWCI, researchers can also assess whether the experiences of these
22
23 challenges have an additive or multiplicative effect on important outcomes. Such buffering
24
25 contextual or personal conditions are important to investigate longitudinally.
26
27

28
29 Our inventory is also responsive to recent critiques regarding the modification of scales
30
31 without further validation (Cortina et al., 2020; Heggstad et al 2019). While it could be argued
32
33 that there are existing scales that measure constructs somewhat analogous to our six challenges
34
35 as they might occur in organizational life, we showed that our challenges are conceptually
36
37 different than those and predict unique variance in participants' level of depletion. Our hope is
38
39 that by developing a valid and reliable inventory aimed directly at understanding gig workers
40
41 experiences, gig work researchers will not need to rely on using scales developed in a different
42
43 context or modifying those scales on an ad hoc basis.
44
45

46
47 Finally, our work adds to the continuing conversation on the use of reverse-scored items
48
49 in psychological self-report measures. While often touted as important to fully capture a
50
51 construct's domain and assess participant attentiveness, reverse-scored items also introduce
52
53 systematic error, reduce validity, and create artificial response factors (Hinkin, 1995) and can
54
55
56
57
58
59
60

1
2
3 increase mis-response as participants misinterpret items (Weihters and Baumgartner, 2012).

4
5 These critiques fit with our experience. Despite attempts to make reverse-scored items work, we
6
7 found they displayed barely satisfactory factor loadings across three different studies. Once these
8
9 items were replaced with items of the same content worded in the same valence as the other
10
11 items, loading issues disappeared. Our findings suggest that at least for short scale measures,
12
13 researchers may be better off using other methods to help deal with inattentiveness (e.g.,
14
15 attention check items).
16
17

18 19 *Limitations and future research directions* 20

21
22 While our studies collectively support the validity and reliability of the gig work
23
24 challenges inventory, our findings should still be considered in light of their limitations, each of
25
26 which suggests directions for future research. First, while diverse, our samples were cross-
27
28 sectional. Such data is useful for developing and validating a measure, but longitudinal data is
29
30 needed to permit greater causal inferences about the dynamics and relationships between the
31
32 different challenges, as well as the outcomes they may predict. We encourage future scholars to
33
34 gather longitudinal data using techniques such as experience sampling methodology to explore
35
36 more deeply how these challenges relate to one another over time and the conditions under
37
38 which challenges reveal themselves, grow more salient, or fade away.
39
40

41
42 Our current analyses of the effect of demographic, geographic, and industry provided
43
44 only an initial blunt look at possible differences among the diverse population of gig workers.
45
46 For example, we sorted countries by region to assess geographic universality. Other differences,
47
48 such as the presence of a social safety net or welfare state programs, a country's level of
49
50 development, the state of the national labor market, and the country's culture may importantly
51
52
53
54
55
56
57
58
59
60

1
2
3 influence the experience of challenges. Future scholars might use larger global samples to assess
4
5 a fuller battery of sociodemographic differences and offer deeper insight into these trends.
6

7
8 Another direction for future research concerns better understanding the impact of
9
10 technological platforms (Kellogg et al., 2020) on workers' experiences of challenges, particularly
11
12 regarding control. Wood and colleagues (2019) point out how platforms and other forms of
13
14 electronic monitoring manage workers' behavior both at the micro level (e.g., assessing
15
16 frequency of workers' keyboard presses, citing Rosenblat and Stark, 2016) and at a more macro
17
18 level (through the rating and reputation systems, such "star" ratings). One important direction for
19
20 future research would be to examine how the technologies that workers use to interact with
21
22 employers influence their experiences of challenges, perhaps by alleviating or exacerbating
23
24 them. For instance, rating systems might exacerbate individuals' experiences of identity
25
26 challenges, or alleviate them, depending on people's performance on these systems.
27
28
29

30
31 Finally, future research should further explore the heterogeneity in the gig worker
32
33 population through a fine-grained analysis of industry, work structure, and other differences,
34
35 such as length of gigs, perceived power, autonomy, skill characteristics, compensation structure,
36
37 and technological mediation of employment. For example, given our findings regarding how
38
39 income matters for workers' experiences of challenges, it may be that gig workers in industries
40
41 where it is common to have a few large, consecutive projects each year (e.g., television), might
42
43 experience more financial anxiety than workers who work on many smaller, simultaneous, less-
44
45 risky projects (e.g., graphic design). Another possibility is that workers in traditional gig work
46
47 fields (e.g., novelists and painters) may experience less identity stress than those in fields that are
48
49 newcomers to gig work (e.g., scientists). Professional designations, skill scarcity, and the source
50
51 of the contract (e.g., digital platforms or social network) might also shape people's experiences
52
53
54
55
56
57
58
59
60

1
2
3 of these challenges. Future research must not only examine generalizability to various types of
4
5 gig workers, but also to those workers who operate in the gray area between gig and traditional
6
7 organizational work such as contingent, remote, and part-time workers. Examining how the
8
9 challenge profiles of certain types of gig workers align with the challenge profiles of other types
10
11 of non-standard work arrangements may help us to better understand and classify different types
12
13 of work arrangements.
14
15

16 17 *Conclusion*

18
19 The significant challenges that gig workers face contrast with the many manifest and
20
21 latent benefits of working in an organization (Jahoda, 1981). Our conceptual framework
22
23 proposing six core challenges, and our empirical efforts to establish the reliability and validity of
24
25 their measurement, provide future scholars with an inventory that they can use to examine a
26
27 variety of antecedents and outcomes, as well as mechanisms and moderators of their effects, and
28
29 to develop clear and comparable pictures of gig workers' experiences. Our hope is that as we
30
31 learn more about the challenges of gig work, researchers and policy makers will be in a better
32
33 position help gig workers thrive in this new world of work.
34
35
36

37 38 **Acknowledgements**

39
40 We would like to express our sincerest gratitude to Editor Amanda Shantz for her guidance
41
42 throughout the review process, as well as to three constructive anonymous reviewers for their
43
44 insightful comments. We would also like to thank Arran Caza and Nick Turner for helpful
45
46 feedback during the development of this manuscript.
47
48

49 50 **Funding**

51
52 This research was made possible by funding received from the **Social Sciences and Humanities**
53
54 **Research Council of Canada** (Insight Grant #435-2018-0485)
55
56
57
58
59
60

References

- Aguinis H and Lawal SO (2013) eLancing: A review and research agenda for bridging the science-practice gap. *Human Resource Management Review* 23(1): 6-17.
- Alacovska A (2017) The gendering power of genres: How female Scandinavian crime fiction writers experience professional authorship. *Organization* 24(3): 377-396.
- Alderfer CP (1972) *Existence, relatedness, and growth: Human needs in organizational settings*. Free Press.
- Allan P (2002) The contingent workforce: challenges and new directions. *American Business Review* 20(2): 103-110.
- Anderson JC and Gerbing DW (1991) Predicting the performance of measures in a confirmatory factor analysis with a pretest assessment of their substantive validates. *Journal of Applied Psychology* 76(5): 732-740.
- Anderson T and Bidwell M (2019) Outside insiders: Understanding the role of contracting in the careers of managerial workers. *Organization Science* 30(5): 1000-1029.
- Ashford SJ, Caza BB and Reid EM (2018) From surviving to thriving in the gig economy: A research agenda for individuals in the new world of work. *Research in Organizational Behavior* 38: 23-41.
- Ashford SJ, George E and Blatt R (2007) Old assumptions, new work: The opportunities and challenges of research on nonstandard employment. *The Academy of Management Annals* 1(1): 65-117.
- Ashforth BE (1989) The experience of powerlessness in organizations. *Organizational Behavior and Human Decision Processes* 43(2): 207-242.

- 1
2
3 Barley SR (1989) Careers, identities, and institutions: The legacy of the Chicago School of
4
5 Sociology. In: MB Arthur, DT Hall and BS Lawrence (eds) Handbook of career theory.
6
7 Cambridge: Cambridge University Press: 41-65.
8
9
10 Barley SR, Bechky BA and Milliken FJ (2017) The changing nature of work: Careers, identities,
11
12 and work lives in the 21st century. *Academy of Management Discoveries* 3(2): 111-115.
13
14
15 Barley SR and Kunda G (2004) *Gurus, hired guns, and warm bodies: Itinerant experts in a*
16
17 *knowledge economy*. Princeton, NJ: Princeton University Press.
18
19
20 Barley SR and Kunda G (2006) Contracting: A new form of professional practice. *Academy of*
21
22 *Management Perspectives* 20(1): 45-66.
23
24
25 Bauer TN, Truxillo DM, Sanchez RJ, Craig JM, Ferrara P and Campion MA (2001) Applicant
26
27 reactions to selection: Development of the selection procedural justice scale
28
29 (SPJS). *Personnel Psychology* 54(2): 387-419.
30
31
32 Becker HS (1982) *Art Worlds*. Berkeley: University of California Press.
33
34
35 Beehr TA, Walsh JT and Taber TD (1976) Relationships of stress to individually and
36
37 organizationally valued states: Higher order needs as moderators. *Journal of Applied*
38
39 *Psychology* 61(1): 61-67.
40
41
42 Bellesia F, Mattarelli E, Bertolotti F and Sobrero M (2019) Platforms as entrepreneurial
43
44 incubators? How online labor markets shape work identity. *Journal of Managerial*
45
46 *Psychology* 34(4): 246-268.
47
48
49 Bennett D and Hennekam S (2018) Self-authorship and creative industries workers' career
50
51 decision-making. *Human Relations* 71(11): 1454-1477.
52
53
54
55
56
57
58
59
60

- 1
2
3 Bonanno GA and Diminich ED (2013) Annual research review: Positive adjustment to adversity
4 trajectories of minimal-impact resilience and emergent resilience. *Journal of Child*
5
6 *Psychology and Psychiatry* 54(4): 378–401.
7
8
9
10 Brawley AM (2017) The big, gig picture: We can't assume the same constructs matter. *Industrial*
11
12 *and Organizational Psychology: Perspectives on Science and Practice* 10: 687-696.
13
14
15 Brotheridge CM and Lee RT (2003) Development and validation of the emotional labour
16
17 scale. *Journal of Occupational and Organizational Psychology* 76(3): 365-379.
18
19
20 Butler N and Stoyanova Russell D (2018) No funny business: Precarious work and emotional
21
22 labour in stand-up comedy. *Human Relations* 71(12): 1666-1686.
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
- Campion ED (2019) The gig economy: An overview and set of recommendations for practice.
SIOP White Paper Series. Retrieved from
<http://www.siop.org/Portals/84/docs/White%20Papers/Gig.pdf?ver=2019-06-04-161253-170>.
- Campion ED, Caza BB and Moss SE (2020) Multiple jobholding: An integrative systematic review and future research agenda. *Journal of Management* 46(1): 165-191.
- Cappelli P and Keller, JR (2013) Classifying work in the new economy. *Academy of Management Review* 38(4): 575–96.
- Caza B, Ashford S, Reid E and McCallum D (2019) Are you ready to go freelance? *Harvard Business Review*, published on May 21, 2019
- Caza BB, Moss S and Vough H (2018) From synchronizing to harmonizing: The process of authenticating multiple work identities. *Administrative Science Quarterly* 63(4): 703-745.
- Connelly CE and Gallagher DG (2006) Independent and dependent contracting: Meaning and implications. *Human Resource Management Review* 16(2): 95-106.

- 1
2
3 Connelly CE, Fieseler C, Černe M, Giessner SR and Wong SI (2021) Working in the digitized
4
5 economy: HRM theory & practice. *Human Resource Management Review* 31(1): 100762.
6
7
8 Cortina JM, Sheng Z, Keener SK, Keeler KR, Grubb LK, Schmitt N, ... and Banks GC (2020)
9
10 From alpha to omega and beyond! A look at the past, present, and (possible) future of
11
12 psychometric soundness in the Journal of Applied Psychology. *Journal of Applied*
13
14 *Psychology*. Online before print: <https://doi.org/10.1037/apl0000815>
15
16
17 Cnossen B and Bencherki N (2019) The role of space in the emergence and endurance of
18
19 organizing: How independent workers and material assemblages constitute
20
21 organizations. *Human Relations* 72(6): 1057-1080.
22
23
24 Costello AB and Osborne J (2005) Best practices in exploratory factor analysis: Four
25
26 recommendations for getting the most from your analysis. *Practical assessment,*
27
28 *research, and evaluation* 10(7): 1-9
29
30
31 Cross D and Swart J (2020) Professional fluidity: Reconceptualising the professional status of
32
33 self-employed neo-professionals. *Organization Studies*. Online before print:
34
35 <https://doi.org/10.1177/0170840620964985>
36
37
38 Cullen KL, Gerbasi A and Chrobot-Mason D (2018) Thriving in central network positions: The
39
40 role of political skill. *Journal of Management* 44(2): 682-706.
41
42
43 Den Hartog DN, De Hoogh AH and Keegan AE (2007) The interactive effects of belongingness
44
45 and charisma on helping and compliance. *Journal of Applied Psychology* 92(4): 1131-39.
46
47
48 Duggan J, Sherman U, Carbery R and McDonnell A (2020) Algorithmic management and
49
50 app-work in the gig economy: A research agenda for employment relations and
51
52 HRM. *Human Resource Management Journal* 30(1): 114-132.
53
54
55
56
57
58
59
60

- 1
2
3 Evans JA, Kunda G and Barley S (2004) Beach Time, Bridge Time, and Billable Hours: The
4
5 Temporal Structure of Technical Contracting. *Administrative Science Quarterly* 49: 1-38.
6
7
8 Faulkner RR (1983) *Music on demand*. New York: Transaction Publishers.
9
10 Fleming P (2017) The human capital hoax: Work, debt and insecurity in the era of
11
12 Uberization. *Organization Studies* 38(5): 691-709.
13
14
15 Friedman G (2014) Workers without employers: Shadow corporations and the rise of the gig
16
17 economy. *Review of Keynesian Economics* 2(2): 171-188.
18
19 Galais N and Moser K (2009) Organizational commitment and the well-being of temporary
20
21 agency workers: A longitudinal study. *Human Relations* 62(4): 589–620
22
23
24 Garrett LE, Spreitzer GM, and Bacevice, PA (2017) Co-constructing a sense of community at
25
26 work: The emergence of community in coworking spaces. *Organization Studies* 38(6):
27
28 821-842.
29
30
31 Goods C, Veen A, and Barratt T (2019) “Is your gig any good?” Analysing job quality in the
32
33 Australian platform-based food-delivery sector. *Journal of Industrial Relations* 61(4):
34
35 502-527.
36
37
38 Graham M, Lehdonvirta V, Wood A, Barnard H, Hjorth I and D Simon P (2017) *The risks and*
39
40 *rewards of online gig work at the global margins*. Oxford Internet Institute.
41
42
43 Grandey AA and Gabriel AS (2015) Emotional labor at a crossroads: Where do we go from
44
45 here? *Annual Review of Organizational Psychology and Organizational Behavior* 2(1):
46
47 323-349.
48
49
50 Grömping U (2006) Relative importance for linear regression in R: the package
51
52 relaimpo. *Journal of Statistical Software* 17(1): 1-27.
53
54
55
56
57
58
59
60

- 1
2
3 Guda H and Subramanian U (2019) Your uber is arriving: Managing on-demand workers
4
5 through surge pricing, forecast communication, and worker incentives. *Management*
6
7 *Science* 65(5): 1995-2014.
8
9
10 Hackman JR and Oldham GR (1975) Development of the job diagnostic survey. *Journal of*
11
12 *Applied Psychology* 60(2): 159-170.
13
14
15 Harrison DA and McLaughlin ME (1991) Exploring the cognitive processes underlying
16
17 responses to self-report instruments: Effects of item content on work attitude measures.
18
19 Paper presented at the annual meeting of the Academy of Management, Miami.
20
21
22 Harvey E (1967) Social change and the jazz musician. *Social Forces* 46(1): 34-42.
23
24 Heggstad ED, Scheaf DJ, Banks GC, Monroe Hausfeld M, Tonidandel S and Williams EB
25
26 (2019) Scale adaptation in organizational science research: A review and best-practice
27
28 recommendations. *Journal of Management* 45(6): 2596-2627.
29
30
31 Hinkin TR (1995) A review of scale development practices in the study of organizations. *Journal*
32
33 *of Management* 21(5): 967-988.
34
35
36 Hinkin TR (1998) A brief tutorial on the development of measures for use in survey
37
38 questionnaires. *Organizational Research Methods* 1(1): 104-121.
39
40
41 Hobfoll SE (2011) Conservation of resource caravans and engaged settings. *Journal of*
42
43 *Occupational and Organizational Psychology* 84(1): 116-122.
44
45
46 Howcroft D and Bergvall-Kareborn B (2019) A typology of crowdwork platforms. *Work,*
47
48 *Employment and Society* 33(1): 21-38.
49
50
51 Hu LT and Bentler PM (1999) Cutoff criteria for fit indexes in covariance structure analysis:
52
53 Conventional criteria versus new alternatives. *Structural Equation Modeling: A*
54
55 *Multidisciplinary Journal* 6(1): 1-55.
56
57
58
59
60

- 1
2
3 Hughes EC (1958) *Men and their work*. Glencoe, IL: Free Press.
4
5 Hughes H, Hockey J and Berry G (2019) Power play: The use of space to control and signify
6
7 power in the workplace. *Culture and Organization* 26(4): 298-314.
8
9
10 Hughes ME, Waite LJ, Hawkey LC and Cacioppo JT (2004) A short scale for measuring
11
12 loneliness in large surveys: Results from two population-based studies. *Research on*
13
14 *Aging* 26(6): 655-672.
15
16
17 Ibarra H (1999) Provisional selves: Experimenting with image and identity in professional
18
19 adaptation. *Administrative Science Quarterly* 44(4): 764-791.
20
21
22 Jahoda M (1981) Work, employment, and unemployment: Values, theories, and approaches in
23
24 social research. *American Psychologist* 36(2): 184-191.
25
26
27 Judge TA, Locke EA, Durham CC and Kluger AN (1998) Dispositional effects on job and life
28
29 satisfaction: The role of core evaluations. *Journal of Applied Psychology* 83(1): 17-34.
30
31
32 Kalleberg AL (2000) Nonstandard employment relations: Part-time, temporary and contract
33
34 work. *Annual Review of Sociology* 26: 341-365.
35
36
37 Kalleberg AL (2009) Precarious work, insecure workers: Employment relations in transition.
38
39 *American Sociological Review* 74(1): 1-22.
40
41
42 Karasek RA (1979) Job demands, job decision latitude, and mental strain: Implications for job
43
44 redesign. *Administrative Science Quarterly* 24(2): 285-308.
45
46
47 Katz LF and Krueger AB (2019) The rise and nature of alternative work arrangements in the
48
49 United States, 1995-2015. *ILR Review* 72(2): 382-416.
50
51
52 Kellogg KC, Valentine MA and Christin A (2020) "Algorithms at work: The new
53
54 contested terrain of control." *Academy of Management Annals* 14(1): 366-410.
55
56
57
58
59
60

1
2
3 Kelloway KE (1995) Structural equation modeling in perspective. *Journal of Organizational*
4
5 *Behavior* 16(3): 215-225

6
7
8 Kost D, Fieseler C and Wong SI (2018) Finding meaning in a hopeless place? The construction
9
10 of meaningfulness in digital microwork. *Computers in Human Behavior* 82: 101-110.

11
12 Kost D, Fieseler C and Wong SI (2019) Boundaryless careers in the gig economy: An
13
14 oxymoron? *Human Resource Management Journal* 30(1): 100-113.

15
16
17 Kuhn KM (2016) The rise of the “gig economy” and implications for understanding work and
18
19 workers. *Industrial and Organizational Psychology* 9(1): 157-162.

20
21
22 Kuhn K and Galloway T (2019) Expanding perspectives on gig work and gig workers. *Journal of*
23
24 *Managerial Psychology* 34(4): 186-191.

25
26
27 Kuhn KM and Maleki A (2017) Micro-entrepreneurs, dependent contractors, and Instasferfs:
28
29 Understanding online labor platform workforces. *Academy of Management Perspectives*
30
31 31(3): 183–200.

32
33
34 Kunda G, Barley SR and Evans J (2002) Why do contractors contract? The experience of highly
35
36 skilled technical professionals in a contingent labor market. *Industrial and Labor*
37
38 *Relations Review* 55(2): 234-261.

39
40
41 Lane CM (2011) *A company of one: Insecurity, independence, and the new world of white-collar*
42
43 *unemployment*. Ithaca, NY: Cornell University Press.

44
45
46 Lanaj K, Johnson R and Wang M (2016) When Lending a Hand Depletes the Will: The Daily
47
48 Costs and Benefits of Helping. *Journal of Applied Psychology*. 101: 1097-1110

49
50
51 Leana, CR, Mittal, V and Stiehl E (2012) Organizational behavior and the working
52
53 poor. *Organization Science* 23(3): 888-906.

- 1
2
3 Leiter MP and Maslach C (2016) Latent burnout profiles: A new approach to understanding
4 the burnout experience. *Burnout Research*, 3(4): 89–100.
5
6
7
8 Lehdonvirta V (2018) Flexibility in the gig economy: Managing time on three online piecework
9 platforms. *New Technology, Work and Employment* 33(1): 13–29
10
11
12 Madden L, Kidder D, Eddleston K, Litzky B and Kellermanns, F (2017) A conservation of
13 resources study of standard and contingent employees. *Personnel Review* 46(3): 644-61.
14
15
16 Malin BJ and Chandler C (2017) Free to work anxiously: Splintering precarity among drivers for
17 Uber and Lyft. *Communication, Culture & Critique* 10(2): 382–400.
18
19
20
21 Meijerink J and Keegan A (2019) Conceptualizing human resource management in the gig
22 economy. *Journal of Managerial Psychology* 34(4): 214–232.
23
24
25
26 Menger PM (2003) Artistic labor markets and careers. *Annual Review of Sociology* 25: 541-574.
27
28
29 Muthén LK and Muthén BO (1998-2017) *Mplus user's guide* (8th Ed.). Los Angeles, CA:
30 Muthén and Muthén.
31
32
33 OECD (2019) *Employment outlook 2019: The future of work*. Paris, FR: OECD Publishing.
34
35
36 O'Mahony S and Bechky B (2006) Stretchwork: Managing the career progression paradox in
37 external labor markets. *Academy of Management Journal* 49(5): 918-941.
38
39
40 Ozcelik H and Barsade SG (2018) No employee an island: Workplace loneliness and job
41 performance. *Academy of Management Journal* 61(6): 2343-2366.
42
43
44 Panteli N, Rapti, A and Scholarios, D (2020) 'If he just knew who we were': Microworkers'
45 emerging bonds of attachment in a fragmented employment relationship. *Work,*
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

- 1
2
3 Petriglieri G, Ashford SJ and Wrzesniewski A (2019) Agony and ecstasy in the gig economy:
4
5 Cultivating holding environments for precarious and personalized work
6
7 identities. *Administrative Science Quarterly* 64(1): 124-170.
8
9
10 Porath C, Spreitzer G, Gibson C and Garnett FG (2012) Thriving at work: Toward its
11
12 measurement, construct validation, and theoretical refinement. *Journal of Organizational*
13
14 *Behavior* 33(2): 250-275.
15
16
17 Preacher KJ and MacCallum RC (2002) Exploratory factor analysis in behavior genetics
18
19 research: Factor recovery with small sample sizes. *Behavior Genetics* 32(2): 153-161.
20
21
22 Ranganathan A (2018) The artisan and his audience: Identification with work and price setting in
23
24 a handicraft cluster in southern India. *Administrative Science Quarterly* 63(3): 637-667.
25
26
27 Ravenelle AJ (2019) “We’re not Uber:” Control, autonomy, and entrepreneurship in the gig
28
29 economy. *Journal of Managerial Psychology* 34(4): 269–285.
30
31
32 Reilly P (2017) The layers of a clown: Career development in cultural production
33
34 industries. *Academy of Management Discoveries* 3(2): 145-164.
35
36
37 Rizzo JR, House RJ and Lirtzman SI (1970) Role conflict and ambiguity in complex
38
39 organizations. *Administrative Science Quarterly* 15(2): 150-163.
40
41
42 Rosso BD, Dekas KH and Wrzesniewski A (2010) On the meaning of work: A theoretical
43
44 integration and review. *Research in Organizational Behavior* 30: 91-127.
45
46
47 Rowlands L and Handy J (2012) An addictive environment: New Zealand film production
48
49 workers’ subjective experiences of project-based labour. *Human Relations* 65(5): 657-
50
51 680.
52
53
54 Saucier G (1994) Mini-Markers: A brief version of Goldberg's unipolar Big-Five
55
56
57
58
59
60 markers. *Journal of Personality Assessment* 63(3): 506-516.

- 1
2
3 Schneider B and Alderfer CP (1973) Three studies of measures of need satisfaction in
4 organizations. *Administrative Science Quarterly* 18(4): 489-505.
5
6
7
8 Shevchuk A, Strebkov D and Davis N (2019) The autonomy paradox: How night work
9 undermines subjective well-being of internet-based freelancers. *ILR Review* 72(1): 75-
10 100.
11
12
13
14 Shaffer J, Degeest D and Li A (2015) Tackling the problem of construct proliferation: A guide to
15 assessing the discriminant validity of conceptually related constructs. *Organizational*
16 *Research Methods* 19(1): 80-110.
17
18
19
20
21 Stanford J (2017) The resurgence of gig work: Historical and theoretical perspectives. *The*
22 *Economic and Labour Relations Review* 28(3): 382-401.
23
24
25
26 Steger MF, Dik BJ and Duffy RD (2012) Measuring meaningful work: The Work and Meaning
27 Inventory (WAMI). *Journal of Career Assessment* 20(3): 322-337.
28
29
30
31 Spreitzer GM, Cameron L and Garrett L (2017) Alternative work arrangements: Two images of
32 the new world of work. *Annual Review of Organizational Psychology and Organizational*
33 *Behavior* 4: 473-499.
34
35
36
37 Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P and Bernard J (2008) The brief
38 resilience scale: Assessing the ability to bounce back. *International Journal of*
39 *Behavioral Medicine* 15: 194-200.
40
41
42
43
44 Storey J, Salaman G, and Platman K (2005) Living with enterprise in an enterprise economy:
45 Freelance and contract workers in the media. *Human Relations* 58(8): 1033-1054.
46
47
48
49 Tourangeau R, Rips LJ and Rasinski K (2000) *The psychology of survey response*. Cambridge,
50 UK: Cambridge University Press.
51
52
53
54
55
56
57
58
59
60

- 1
2
3 Tran M and Sokas, RK (2017) The gig economy and contingent work: An occupational health
4 assessment. *Journal of Occupational and Environmental Medicine* 59(4): e63-e66.
5
6
7
8 Vallas S and Christin A (2018) Work and identity in an era of precarious employment: How
9 workers respond to “personal branding” discourse. *Work and Occupations* 45(1): 3-37.
10
11
12 Vallas S and Schor JB (2020) What do platforms do? Understanding the gig economy. *Annual*
13 *Review of Sociology* 46: 273-294.
14
15
16
17 Veen A, Barratt T and Good, C. (2020) Platform-capital’s ‘app-etite’ for control: A labour
18 process analysis of food-delivery work in Australia. *Work, Employment and Society*,
19 34(3): 388-406.
20
21
22
23
24 Vinokur A and Caplan RA (1987) Attitudes and social support: Determinants of jobseeking
25 behavior and well-being among the unemployed. *Journal of Applied Social Psychology*
26 17: 1007-1024.
27
28
29
30
31 Wayne JH, Matthews R, Odle-Dusseau H and Casper WJ (2019) Fit of role involvement with
32 values: Theoretical, conceptual, and psychometric development of work and family
33 authenticity. *Journal of Vocational Behavior* 115: 1-20.
34
35
36
37
38 Weijters B and Baumgartner H (2012) Misresponse to reversed and negated items in surveys: A
39 review. *Journal of Marketing Research* 49(5): 737-747.
40
41
42
43 Wood AJ, Graham M, Lehdonvirta V and Hjorth I (2019) Good gig, bad gig: Autonomy and
44 algorithmic control in the global gig economy. *Work, Employment and Society*, 33(1): 56-
45 75.
46
47
48
49 Wood S, Michaelides G and Totterdell P (2013) The impact of fluctuating workloads on well
50 being and the mediating role of work–nonwork interference in this relationship. *Journal*
51 *of Occupational Health Psychology* 18(1): 106–119
52
53
54
55
56
57
58
59
60

1
2
3 Wong SI, Fieseler C and Kost D (2020) Digital labourers' proactivity and the venture for
4
5 meaningful work: Fruitful or fruitless? *Journal of Occupational and Organizational*
6
7 *Psychology*. Online before print: <https://doi.org/10.1111/joop.123>
8
9

10 Biographies

11
12 **Brianna Barker Caza** is an Associate Professor of Management in the Bryan School of
13 Business at the University of North Carolina at Greensboro. She received her PhD in
14 Organizational Psychology from the University of Michigan. Brianna's research broadly
15 examines the psychological and relational dynamics that contribute to resilience at work. She is
16 particularly interested in non-traditional work arrangements such as gig work and multiple
17 jobholding. Some of her research has been published in *Administrative Science Quarterly*,
18 *Academy of Management Review*, *Academy of Management Annals*, *Organizational Behavior*
19 *and Human Decision Processes*, and *Research in Organizational Behavior*. Brianna was
20 recognized as one of the 2019 Radar thinkers by Thinkers50. [Email: bbcaza@uncg.edu]
21
22
23

24 **Erin Reid** is an Associate Professor of Human Resources & Management and a University
25 Scholar at McMaster University's DeGroote School of Business. She earned her Ph.D. in
26 sociology and organizational behavior from Harvard University. Erin's research examines how
27 systemic inequality shapes people's work experiences and choices. Her recent work explores
28 how gender, identity, work-family narratives, and cultural notions of purity and pollution
29 intersect in the careers people build. Some of her recent research has been published in
30 *Administrative Science Quarterly*, *Academy of Management Journal*, *Organization Science* and
31 *Academy of Management Annals*. [Email: reidem@mcmaster.ca]
32
33

34 **Susan (Sue) Ashford** is the Michael and Susan Jandernoa Professor of Management and
35 Organizations at the Ross School of Business, University of Michigan, USA. Sue's research
36 interests include leadership and leadership development, job insecurity, and various forms of
37 proactive behaviors in organizations (feedback seeking, issue selling) and outside of
38 organizations in the so-called gig economy. Sue has published widely in various scholarly
39 journals including, *Administrative Science Quarterly*, *Academy of Management Journal*,
40 *Academy of Management Review*, *Journal of Applied Psychology*, and *Annual Review of*
41 *Organizational Psychology and Organizational Behavior*. Her work has been featured in
42 *Harvard Business Review* and on various podcasts including "Work and Life" with Stew
43 Friedman, and HBR's "Ideacast." [Email: sja@umich.edu]
44
45
46

47 **Steve Granger** is a PhD Candidate in Organizational Behaviour at the Haskayne School of
48 Business, University of Calgary. His area of expertise is in occupational health psychology and
49 research methods. His research focuses on the experience of adversity, as well as the individual
50 (e.g., proactivity and resilience) and social processes (e.g., leadership and social support) that
51 help individuals and organizations anticipate, prevent, or adapt to adversity. His work has been
52 published in various journals, including the *Journal of Occupational and Organizational*
53 *Psychology*, *Personality and Social Psychology Review*, *Journal of Safety*
54 *Research*, and *Organizational Dynamics*. [Email: steven.granger@ucalgary.ca].
55
56
57
58
59
60

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Peer Review Version

CHALLENGES OF GIG WORK

5

Table 1. Defining and variable characteristics of gig work

| | Characteristic | Explanation | Example from the Literature |
|--------------------------------------|--|---|--|
| Defining Characteristics of Gig work | Gig work is organized around “gigs” defined as “a job, usually for a specified time.” (Merriam-Webster, 2020) | While traditional organizational work is organized around roles, gig work is organized around tasks or projects. As a result, all of the elements of the work contracts are defined by the task (e.g., the length, delivery mode, and compensation). | As Abraham et al. (2019, p. 357) explain, the entire work arrangement is organized around the gig/project: “A gig worker is not paid a wage or salary, does not have an implicit or explicit contract for a continuing work relationship, and does not have a predictable work schedule or predictable earnings when working.” Rather than being paid a regular, predictable salary with benefits that come with organizational membership (e.g., pensions, sick-days), workers are paid based on the delivery of a product or service (De Stefano, 2016; Goods et al., 2019). |
| | Gig workers are “externalized” labor (Davis-Blake and Uzzi, 1993). | Gig workers are not considered “regular” employees of one particular organization in the legal sense (Lawlor and Wiley, 2017), nor do they identify as insider members of the organization (Ashford et al., 2018; Gleim et al., 2019). | Gig workers are independent in a legal and structural sense (Campion, 2019). As Lawlor and Wiley (2017) explain, “Professionals who are solely liable for their own torts, are not entitled to benefits under the Fair Labor Standards Act and are not protected against discrimination under Title VII, the Age Discrimination in Employment Act and the Americans with Disabilities Act.” |
| | Gig work is term-limited as no gig worker has a “permanent job” (Kalleberg, 2009). | A gig worker’s commitment has a defined endpoint, restricted to either a particular, specified time period or the end of a project. The short-term, temporary, nature of gig work distinguishes it from other work arrangements (Campion et al., 2020). Yet, because what constitutes “short-term” varies, we use the label “term-limited”. | Gig work is characterized as a “type of short-term contract work” (Spreitzer et al., 2017, p. 426). Other scholars have similarly explained that the gig economy is comprised of short-term independent freelance workers (Ashford et al., 2018; Kuhn, 2016). |
| Dimensions of Variance | Duration | The duration of gig work is determined by the nature of the gig or project. It can range from minutes to months to years, depending on the nature and complexity of the task. | Micro-workers complete tasks that take minutes (e.g., Kost et al., 2018); while independent contractors have projects that can extend for years (e.g., Barley and Kunda, 2006) |
| | Compensation | Rather than being paid the regular, predictable wages and benefits (pensions, sick-days) associated with organizational membership, workers are paid based on the delivery of a product or service (De Stefano, 2016; Goods et al., 2019). Therefore compensation is determined on piece-work basis and varies widely. | Berger et al. (2019) point out, even within particular skill types, there is variance: “First, the gig economy—like the conventional labour market—consists of a broad range of segments, of which many are seemingly not comparable. For example, recent estimates suggest that median hourly earnings on Amazon Mechanical Turk are as low as ~\$2 (Hara et al., 2018). In contrast, our findings suggest that the majority of Uber drivers earn above the UK minimum wage.” (2019, p. 28) |
| | Technological Platforms | Some types of gig work are completely organized by internet-based platforms (e.g., Uber). Other types do not involve platforms (e.g., musicians). Other types of gig work use platforms for some aspects of the work | Some gig work is done through direct client relationships without third party intermediaries (e.g., Butler and Stoyanova Russell, 2018; Kunda and Barley, 2006). Other work is mediated by platforms (Duggan et al., 2020; Veen et al., 2020). |

CHALLENGES OF GIG WORK

| | | |
|--------------------|--|--|
| | but not others. For example, some platforms connect customers to clients, but do not organize that work. | |
| Skill level | Gig work differs based on the skill level required to complete the task. Some perform low skilled tasks (e.g., uber), others perform high skilled work (e.g., writers; Spreitzer et al., 2017). | Mechanical Turk work is considered to be “simple and automatized” tasks (Kost et al., 2018) but other gig workers are contracted for their specific honed skills, experience, and particular areas of expertise (Caza et al., 2018). |
| Autonomy | Some gig workers have great freedom to determine aspects of their work (e.g., how and when they work). Others have less freedom in these determinations (Ashford et al., 2018; Lehdonvirta, 2018). | The gig workers Petriglieri et al. (2019) studied had freedom over the work they chose, how they worked, and when they worked. However, other workers find their autonomy curtailed by the platforms through which they access work (Rosenblat, 2018; Veen et al., 2020). |
| Power | Gig workers vary in their power. A more recent literature oriented toward differentiating good and bad independent work has identified various ways in which gig workers feel powerful or powerless (see especially Kalleberg, 2011, Veen et al., 2019). | Barley and Kunda (2004) pointed out that workers’ market power varies based on the uniqueness and value of their skills, experience and education. Woods et al. (2019) also highlighted how gig workers’ power varies based on the number of jobs versus the number of employees (a factor that intersects with skill level where more people can perform those jobs). Regardless of the exact source, the higher the employee’s market power, the higher-quality the job tends to be. |

CHALLENGES OF GIG WORK

5

Table 2. Means, Standard Deviations, Reliabilities, and Correlations Between Study 2 Variables.

| Variable | <i>M</i> | <i>SD</i> | <i>N</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|----------|-----------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 1. Overall challenges index ¹ | 2.70 | .69 | 227 | (.87) | | | | | | | | | | |
| 2. Viability challenges ¹ | 2.86 | .99 | 227 | .70** | (.75) | | | | | | | | | |
| 3. Organizational challenges ¹ | 2.38 | .87 | 227 | .62** | .32** | (.74) | | | | | | | | |
| 4. Identity challenges ¹ | 2.68 | 1.00 | 227 | .78** | .39** | .41** | (.71) | | | | | | | |
| 5. Emotional challenges ¹ | 2.32 | 1.01 | 227 | .68** | .34** | .36** | .53** | (.87) | | | | | | |
| 6. Relational challenges ¹ | 2.81 | 1.13 | 227 | .65** | .34** | .36** | .44** | .30** | (.73) | | | | | |
| 7. Career uncertainty challenges ¹ | 3.17 | 1.08 | 227 | .64** | .43** | .16* | .37** | .20** | .37** | (.82) | | | | |
| 8. Depletion | 2.34 | 1.03 | 227 | .43** | .22** | .26** | .34** | .35** | .27** | .28** | (.90) | | | |
| 9. Loneliness | 2.64 | .86 | 227 | .36** | .21** | .22** | .25** | .25** | .35** | .23** | .34** | (.86) | | |
| 10. Thriving | 3.76 | .83 | 227 | -.30** | -.26** | -.14* | -.23** | -.09 | -.16* | -.32** | -.57** | -.22** | (.89) | |
| 11. Resilience | 3.47 | .91 | 226 | -.37** | -.10 | -.27** | -.29** | -.30** | -.35** | -.21** | -.40** | -.36 | .25** | (.91) |
| 12. Gender ² | .49 | .50 | 226 | -.01 | -.02 | .12 | -.12 | -.06 | .09 | -.01 | -.13 | -.07 | -.01 | .05 |

p* < .05, *p* < .01

Note¹. Overall and subfactor gig challenge mean scores consist of items retained from EFA, with overall challenge index as the mean of all retained items.

Note². Gender 0 = female, 1 = male

Table 3. Means, Standard Deviations, Reliabilities, and Correlations Between Study 3 Variables.

| Variable | <i>M</i> | <i>SD</i> | <i>N</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|--|----------|-----------|----------|--------|--------|--------|--------|-------|--------|--------|-------|-------|--------|-------|-------|------|
| 1. Overall challenges index ¹ | 2.83 | .69 | 476 | (.86) | | | | | | | | | | | | |
| 2. Viability challenges | 3.00 | .92 | 476 | .65** | (.55) | | | | | | | | | | | |
| 3. Organizational challenges | 2.58 | .88 | 476 | .64** | .32** | (.61) | | | | | | | | | | |
| 4. Identity challenges | 2.82 | .99 | 476 | .74** | .48** | .42** | (.60) | | | | | | | | | |
| 5. Emotional challenges | 2.60 | 1.05 | 476 | .66** | .26** | .32** | .36** | (.84) | | | | | | | | |
| 6. Relational challenges | 2.99 | 1.09 | 476 | .67** | .24** | .30** | .36** | .43** | (.79) | | | | | | | |
| 7. Career uncertainty challenges | 3.03 | 1.16 | 476 | .71** | .42** | .33** | .44** | .27** | .35** | (.85) | | | | | | |
| 8. Work meaningfulness | 4.19 | .74 | 477 | -.33** | -.24** | -.20** | -.30** | -.08 | -.19** | -.38** | (.86) | | | | | |
| 9. Thriving | 4.04 | .70 | 476 | -.27** | -.17** | -.24** | -.22** | -.03 | -.18** | -.29** | .60** | (.91) | | | | |
| 10. Age | 36.60 | 9.53 | 475 | -.08 | .05 | -.10* | -.11* | -.04 | -.01 | -.09 | .12** | .03 | - | | | |
| 11. Gender ² | .57 | .50 | 463 | -.11* | -.10* | -.06 | -.10* | -.02 | -.08 | -.10* | .13** | .12** | .10* | - | | |
| 12. Education | 6.58 | .98 | 477 | -.04 | -.06 | -.09 | -.02 | -.04 | .04 | -.01 | -.00 | -.05 | .21** | .08 | - | |
| 13. Income | 2.92 | 1.95 | 473 | -.23** | -.28** | -.17** | -.19** | -.14* | -.07 | .08 | .08 | -.05 | .27** | .12** | .25** | - |
| 14. Minority | .22 | .41 | 427 | .09 | .08 | .05 | .06 | .04 | .06 | .06 | -.01 | -.01 | -.14** | -.01 | -.03 | -.08 |

p* < .05, *p* < .01

Note¹. Overall challenges index is the mean score of all the subfactor challenge items.

Note². Gender 0 = female, 1 = male; Minority 0 = no, 1 = yes.

CHALLENGES OF GIG WORK

Table 4. Means, Standard Deviations, Reliabilities, and Correlations Between Study 4 Variables.

| Variable | <i>M</i> | <i>SD</i> | <i>N</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--|----------|-----------|----------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|------|
| 1. Overall challenges index ¹ | 2.85 | .89 | 302 | (.93) | | | | | | | | | | | |
| 2. Viability challenges | 3.03 | 1.11 | 302 | .80** | (.82) | | | | | | | | | | |
| 3. Organizational challenges | 2.52 | 1.08 | 302 | .79** | .55** | (.82) | | | | | | | | | |
| 4. Identity challenges | 2.88 | 1.14 | 302 | .80** | .56** | .54** | (.82) | | | | | | | | |
| 5. Emotional challenges | 2.72 | 1.18 | 302 | .74** | .50** | .62** | .47** | (.91) | | | | | | | |
| 6. Relational challenges | 2.86 | 1.17 | 302 | .77** | .51** | .55** | .55** | .43** | (.83) | | | | | | |
| 7. Career uncertainty challenges | 3.09 | 1.12 | 302 | .79** | .66** | .48** | .60** | .43** | .55** | (.84) | | | | | |
| 8. Job satisfaction | 3.66 | .88 | 302 | -.52** | -.37** | -.36** | -.49** | -.29** | -.39** | -.52** | (.82) | | | | |
| 9. Extraversion | 4.36 | 1.44 | 302 | .02 | -.03 | .12* | -.04 | .05 | .07 | -.08 | .28** | (.82) | | | |
| 10. Agreeableness | 5.58 | 1.08 | 302 | -.03 | .02 | -.05 | -.03 | -.02 | .00 | -.04 | .39** | .43** | (.85) | | |
| 11. Openness | 5.34 | 1.12 | 302 | .08 | .11 | .07 | .06 | .09 | .01 | .03 | .27** | .34** | .54** | (.76) | |
| 12. Gender ² | .55 | .50 | 302 | .17** | .01 | .18** | .15** | .11 | .27** | .07 | -.16** | .06 | -.15* | -.01 | - |
| 13. Income | 3.09 | 1.42 | 302 | -.20** | -.30** | -.12* | -.14* | -.12* | -.07 | -.21** | .10 | .12* | -.08 | -.09 | .14* |

* $p < .05$, ** $p < .01$ Note¹. Overall challenges index is the mean score of all the subfactor challenge items.Note². Gender 0 = female, 1 = male.

Table 5. Means, Standard Deviations, Reliabilities, and Correlations Between Study 5 Variables

| Variable | <i>M</i> | <i>SD</i> | <i>N</i> | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|--|----------|-----------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|
| 1. Overall challenges index ¹ | 2.86 | .80 | 343 | (.91) | | | | | | | | | | | | | | |
| 2. Viability challenges | 3.26 | 1.02 | 343 | .63** | (.76) | | | | | | | | | | | | | |
| 3. Organizational challenges | 2.95 | 1.03 | 343 | .74** | .43** | (.79) | | | | | | | | | | | | |
| 4. Identity challenges | 2.61 | 1.15 | 343 | .83** | .41** | .53** | (.84) | | | | | | | | | | | |
| 5. Emotional challenges | 2.78 | 1.08 | 343 | .78** | .38** | .50** | .57** | (.84) | | | | | | | | | | |
| 6. Relational challenges | 2.81 | 1.08 | 343 | .68** | .16** | .42** | .53** | .46** | (.82) | | | | | | | | | |
| 7. Career uncertainty challenges | 2.74 | 1.12 | 343 | .79** | .46** | .44** | .63** | .54** | .44** | (.82) | | | | | | | | |
| 8. Financial hardship | 2.93 | 1.11 | 343 | .47** | .47** | .30** | .38** | .40** | .18** | .36** | (.80) | | | | | | | |
| 9. Role overload | 2.80 | .90 | 335 | .48** | .20** | .45** | .44** | .41** | .28** | .34** | .23** | (.44) | | | | | | |
| 10. Role ambiguity | 2.64 | .97 | 343 | .42** | .18** | .28** | .42** | .28** | .25** | .43** | .17** | .37** | (.83) | | | | | |
| 11. Emotional labour | 2.93 | .61 | 342 | .50** | .20** | .36** | .45** | .50** | .33** | .37** | .28** | .30** | .28** | (.80) | | | | |
| 12. Belongingness | 3.30 | 1.02 | 307 | -.57** | -.29** | -.31** | -.54** | -.39** | -.57** | -.44** | -.28** | -.36** | -.44** | -.30** | (.49) | | | |
| 13. Employability | 3.34 | 1.05 | 322 | -.31** | -.32** | -.15** | -.21** | -.26** | -.15** | -.28** | -.20** | -.14* | -.27** | -.17** | .24** | (.57) | | |
| 14. Depletion | 2.63 | 1.05 | 343 | .60** | .34** | .49** | .50** | .48* | .40** | .47** | .30** | .34** | .41** | .43** | -.44** | -.25** | (.89) | |
| 15. Gender ² | .36 | .48 | 337 | .28** | -.03 | .18** | .28** | .25** | .30** | .27** | .06 | .22** | .19** | .21** | -.23** | .05 | .17** | - |
| 16. Income | 3.49 | 1.64 | 341 | .09 | -.18** | -.01 | .14** | .23** | .15** | .06 | -.03 | .13* | -.02 | .18** | -.06 | .15** | .09 | .28** |

* $p < .05$, ** $p < .01$ Note¹. Overall challenge index is the mean score of all the subfactor challenge items.Note². Gender 0 = female, 1 = male.

Appendix
Gig Work Challenges Inventory

Instructions: Working independently can be challenging and exhilarating. We would like to gain an understanding of your experiences of independent work. Please rate how well the following characterize your current feelings about your work. *Scale:* 1 (Not at all) to 5 (Very much so)

Viability challenges: finding enough money to sustain a desired lifestyle, coping with unpredictable work leading to “feast and famine” income cycles, and concern about basic income continuation.

1. I often have no idea where my next dollars will come from.
2. It is hard for me to plan for large expenses as it is difficult to predict what my income will be in any given year.
3. I often can't predict when I will get my next paycheck.

Organizational challenges: constantly needing to deal with the logistics of conducting independent work, attending to “backroom” tasks that are necessary, but not the core tasks of the work, creating routines, and enforcing those routines.

4. I find it difficult to stick to effective routines for handling all the backroom work associated with my job.
5. Sometimes I fall seriously behind on doing the necessary administrative tasks to keep my gig work going.
6. I sometimes feel overwhelmed by all of the different tasks I have to complete in my gig work.

Identity challenges: developing and maintaining a coherent sense of work identity when work varies a lot from day-to-day and client-to-client and people don't understand what you do.

7. I wear so many hats as a gig worker that it is sometimes difficult to have a clear sense of who I am as a worker.
8. It is sometimes difficult to explain to others who I am as a worker.
9. It is difficult to develop a clear sense of who I am in the gig economy.

Emotional challenges: experiencing a high level of emotion during the work week and also a lot of swings between positive and negative emotions.

10. My life as a gig worker can get pretty intense emotionally.
11. Gig work is emotional.
12. In my life as a gig worker, my emotions are all over the place.

Relational challenges: coping with being alone so much of the time and the need to be constantly selling to others to build my “brand.”

13. Gig work is lonely.
14. I feel alone a lot of times in my gig work, separated from mentors and colleagues who might help me.
15. Sometimes I miss being part of a team when doing my work.

Career-path uncertainty challenges: coping with the uncertainty about how a career based on my current work might unfold over the long run.

16. I don't know where my career might go in the future from what I'm doing now as a gig worker.
 17. Where I go from here in my career is very unclear.
 18. I'm not sure what I'm going to be doing for work this time next year.
-