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Gig-workers' motivation: thinking beyond carrots and sticks

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Gig-Workers' Motivation: Thinking Beyond Carrots and Sticks

Abstract

Purpose: High-quality employee motivation can contribute to an organization's long-term success by supporting employees' well-being and performance. Nevertheless, there is a paucity of research concerning how organizations motivate workers in non-traditional work-contexts. In the algocratic context of the gig-economy this article seeks to understand the role that technology can play in motivating workers.

Design/methodology/approach: Drawing on self-determination theory, job-characteristic theory, and enterprise social media research, this conceptual article explores how the architecture of the digital labor platforms underlying the gig-economy (and the characteristics of jobs mediated through these IT artifacts) can impact key antecedents of self-motivation.

Findings: Combining theory and empirical evidence, this article develops a mid-range theory demonstrating how organizations can support the self-motivation of gig-workers through the thoughtful design of their digital labor platforms and the integration of two social media tools (namely, social networking and social badging).

Research implications: This article answers calls for psychologically-based research exploring the consequences of gig-work as well as research studying the impacts of advanced technologies in interaction with work contexts on motivation. In theorizing around a large set of social-contextual variables operating at different levels of analysis, this paper demonstrates that individual-level motivation can be influenced by both task-based and organizational-level factors, in addition to individual-level factors.

Originality/value: The proposed theory provides novel insight into how gig-organizations can leverage widely accessible social media technology to motivate platform workers in the absence of human supervision and support. Theoretical and practical implications are discussed.

Keywords: Gig-economy, digital labor platforms, enterprise social media, gamification, intrinsic motivation, self-determination theory

Paper type: Conceptual paper

1. Introduction

Given evidence that high-quality employee motivation can contribute to an organization's long-term success by supporting employees' well-being and performance, several streams of research and theories have sought to enhance our understanding of employee motivation (Deci et al., 2017). While motivation is a relatively mature field of study, in recent years the application of new information technologies (IT) to organizational design has led to a unique milieu that challenges our understanding of how organizations and managers motivate employees: the gig-economy.

The gig-economy is an emerging labor market wherein organizations engage independent workers for short-term contracts ('gigs') to create virtual[i] jobs, often by connecting workers to customers via a platform-enabled digital marketplace (Jabagi et al., 2018; Spreitzer et al., 2017). The technological foundations underlying these digital marketplaces are often known as digital labor platforms. Insofar as gig-organizations imply detached and distributed workers and entities, the gig-economy embodies "the most radical reinvention of work since the rise of industrialization – a massive shift toward self-employment and self-management in open networks enabled by information technology" (Resch, 2015). Yet in this unique context, where gig-workers lack an official human supervisor, the processes by which organizations can support gig-workers' self-motivation are unknown and under-theorized (Kuhn and Maleki, 2017; Spreitzer et al., 2017).

Drawing on self-determination theory (Deci and Ryan, 2000) and job-design research (e.g., Hackman and Oldham, 1980), this conceptual article explores how the architecture of the digital labor platforms underlying the gig-economy and the characteristics of jobs mediated through these IT artifacts can impact key antecedents of motivation. In doing so, it advances the notion that the operational choices embodied in a gig-organization's digital labor platform will act as critical determining factors of a worker's motivation. Furthermore, this article proposes the integration of enterprise social media (ESM) functionality within these platforms as a means to support and drive workers' motivation. Two social media tools are specifically considered: social networking and social badging.

The remainder of this article is structured accordingly. Firstly, the research context (including key definitions and scope) is introduced, as well as an overview of the challenges in managing work on digital labor platforms. Next, the foundational theories of self-determination theory and job-design research are presented and contextualized within the gig-economy; this discussion is followed by the theoretical development. The article concludes with a review of its limitations and contributions, and a commentary on the need for increased scholarly inquiry into the gig-economy.

2. The gig-economy and digital labor platforms

2.1. Boundary Conditions

Hailed as the 'new economy', the gig-economy is expected to account for more than 40% of the workforce in the United States by 2020 (Gillespie, 2017). Despite growing scholarly interest over recent years, the body of knowledge on the gig-economy remains characterized by definitional ambiguity and a variety of discipline-specific interpretations (Kilhoffer et al., 2017). To support theory-building efforts, the scope of this article is limited to digital labor platforms in the gig-economy that satisfy the following conditions as outlined by Codagnone et al. (2016): (1) function as digital marketplaces for alternative work; (2) where the various services offered are produced primarily using the labor factor (e.g., the produced services are labor-intensive) rather than selling/renting physical goods/assets; (3) where the produced services are exchanged for money; (4) where the matching is digitally-mediated and administered, yet the fulfillment of the service can be virtual or physical; and (5) where the distribution of labor and money is determined by a group of buyers and sellers operating within a price system.

Given these conditions, various platforms do not fall within the boundaries of the theory presented in this article. For example, while the theory includes platforms like Uber and TaskRabbit wherein a labor-intensive service is the primary input, it excludes platforms such as Airbnb wherein the services delivered imply a decisive physical capital or goods component. Moreover, considering the limited understanding of the vast array of existing digital labor platforms, this article adopts a further boundary condition to facilitate theory-building efforts. Specifically, while the gig-economy has been conceptualized by some to include crowd-sourced microwork (e.g., cWork), the theory presented in this article is limited to 'gigs' where the services/tasks are bound to a specific person.

Considering the aforementioned conditions, the digital labor platforms considered in this article can be classified across two key dimensions of work: (1) level of skill (low-skilled vs. high-skilled) and (2) how the services are fulfilled (physically, local vs. virtually, global). **Figure 1** presents this conceptualization which is based on De Groen et al. (2016), and expanded here to include various well-known digital labor platforms. It is important to note that skill refers to the skill performed concerning the service traded, and not the actual skills of the worker fulfilling the task.

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2.2. Managing platform workers through effective platform design

Digital labor marketplaces involve at least three parties: buyers (platform clients), suppliers (independent workers), and the platform provider which serves as an intermediary that coordinates buyers and suppliers. In its role as intermediary, the platform provider is the only

one of the three parties with full access to and control over the data, processes, and rules of the platform (Schmidt, 2017). This is important to recognize because a digital platform's architecture (mechanisms, processes, functionalities, and rules) will determine a host of its properties, including: client-worker interactions; information and power asymmetries; platform workers' autonomy, control, and dependence; operational capacity and efficiency; as well as privacy and data security (Kuhn and Maleki, 2017; Schmidt, 2017). As all of these properties play a role in whether workers and clients will choose and continue to utilize a platform, managing a digital platform is a complex endeavor that is deeply rooted in the architectural design of the platform itself.

The long-term viability of a digital labor platform business model depends heavily on whether the gig-organization can address two key human resource management (HRM) challenges. Firstly, gig-organizations are vulnerable given the relative ease with which workers can leave the platform/organization. A digital labor platform that cannot attract and retain a sufficient number of workers will not be attractive to clients, which threatens the platform's long-term viability (Jabagi et al., 2018). The second challenge facing gig-organizations is the supervision of workers. Through the use of an app or website, the platform provider offers an entirely virtual service where, by virtue of definition, platform gig-workers do not have a formal human supervisor (Kuhn and Maleki, 2017; Schmidt, 2017). In traditional organizations, supervisors are not only tasked with ensuring high quality performance, they are also meant to motivate workers and to provide social support. Yet when work is conducted by independent workers outside of traditional centralized offices and conventional work hours, organizations cannot rely on managerial supervision as a means of coordinating, controlling and motivating workers. Instead, gig-organizations (like other virtual organizations) must rely on gig-workers to self-organize and self-motivate to advance task performance and organizational goals (Wiesenfeld et al., 2001).

Given that self-motivation is positively associated with organizational commitment, employee retention, work effort, persistence, and performance, as well as job involvement and organizational citizenship behavior (Deci et al., 2017; Van den Broeck et al., 2010), organizations that can propel self-motivation within platform workers may directly address the issues of retention and supervision, thereby promoting the long-term sustainability of the platform. Moreover, given the role that a digital platform's architecture plays in a platform worker's experience, gig-organizations have the advantage of leveraging the design of these IT artifacts to support workers' motivation. Considering the importance of self-motivation, the next section introduces self-determination theory (a foundational theory of motivation) and its proposed application within the context of digital labor platforms.

3. Self-Determination Theory and Digital Labor Platforms

Self-determination theory (SDT) is a broad framework for the study of human motivation and personality. According to SDT, motivation can take two primary forms, both of which function differently: intrinsic motivation (i.e., doing something for its own sake – because it is interesting and a source of spontaneous satisfaction) and extrinsic motivation (i.e., doing something for instrumental reasons, such as tangible rewards and recognition) (Gagné and Deci, 2005). Although early interpretations of SDT positioned intrinsic and extrinsic motivations as dichotomous and mutually exclusive, subsequent revisions to the theory have re-conceptualized them as lying on a continuum. In this view, individuals can simultaneously experience both extrinsic and intrinsic motivation in doing their work (ibid.), a phenomenon that is apparent in the gig-economy as well. Specifically, while gig-workers are known to participate in the gig-economy for financial reasons (extrinsic motivation), gig-workers have also been cited as being intrinsically motivated by particular features of the job. For instance, North American Uber and Lyft drivers were found to participate on these platforms for the autonomy it affords one to control their own schedule and the opportunity it provides for social connection (Rosenblat and Hwang, 2016). Similarly, high-skill, on-demand workers cited the flexibility and convenience of such work, as well as opportunities for social interaction, and the validation such work provided of their knowledge and as an expert within their industry (Rockmann and Ballinger, 2017).

While both extrinsic and intrinsic motivation can promote performance gains, leveraging intrinsic motivation and motivators has certain advantages over extrinsic motivation. Firstly, intrinsic motivation has been connected with improved psychological well-being, increases in the extent and quality of effort exertion towards a given task, as well as enhanced creativity and learning outcomes (Gagné and Deci, 2005; Hon, 2012). Secondly, extrinsic motivators such as money do not alter the attitudes that underlie behaviors, nor can they create an enduring commitment to learning or a set of values. Rather, extrinsic motivators only temporarily change what individuals do. The use of extrinsic rewards within the workplace has not only been shown to reduce autonomy, it can also prompt employees to act opportunistically and/or to neglect aspects of their jobs that are not incentivized but that are nonetheless important to organizational functioning (e.g., knowledge sharing and organizational citizenship behaviors) (Deci et al., 2017). Thus, in the context of the self-managed gig-economy, engendering intrinsic motivation within gig-workers should be advantageous for platform firms. As such, delineating the factors that support intrinsic motivation in this unique context is of central importance.

According to SDT, three universal psychological needs are said to motivate the self to initiate behavior, namely the needs for autonomy, competence, and relatedness (Deci and Ryan, 2000). The need for autonomy refers to an individual's inherent desire to experience a sense of choice, volition, and psychological freedom when engaging in an activity. The need for competence concerns an individual's innate need to feel skilled and efficacious with respect to a goal, function, or task in the social or physical world. Finally, the need for relatedness (or sense

of belonging) refers to the desire to be meaningfully connected to others; to feel close to, cared for, and understood by others. According to SDT, the satisfaction of these needs promotes intrinsic motivation and psychological well-being (ibid.).

Through two empirical studies, Rockmann and Ballinger (2017) recently found that to the extent that on-demand work fulfills one's innate psychological needs, on-demand workers will develop intrinsic motivation. While this study supports the possibility of intrinsic motivation in the context of digitally-mediated platform work, the context of their research was limited to high-skill, professional services where workers fulfilled services by telephone and had relatively high-control/autonomy in regards to their work. As demonstrated in Figure 1, this research context was restricted to digital labor platforms in the lower right quadrant (*high-skilled, virtual services*). Yet SDT research has found that levels of intrinsic motivation differ across types of workers (e.g., knowledge-workers vs. regular workers) and the nature of the work itself with respect to complexity or the extent to which it is interesting (Gagné and Deci, 2005). Given that nearly 75% of platforms focus on low- to medium-skilled work (Fabo et al., 2017) and that platform workers' autonomy varies greatly across platforms (Kuhn and Maleki, 2017), Rockmann and Ballinger's findings may lack certain generalizability.

Drawing on various streams of literature including SDT, job-design research, and enterprise social media research (e.g., Archer-Brown and Kietzmann, 2018; Treem and Leonardi, 2012) the following theoretical development seeks to extend Rockmann and Ballinger's (2017) findings in two ways. Firstly, it aims to create a more generalizable model of motivation that can be applied across different platforms in the gig-economy by considering the impact of different types of platform services and taking a more nuanced view of the nature of autonomy within these platforms. Secondly, by exploring the impact of a digital labor platform's architecture and the related job characteristics embodied within these IT artifacts on workers' psychological needs, it provides a framework for platform organizations to understand the mechanisms underlying platform workers' motivation. Moreover, by proposing the integration of social media within these digital labor platforms (as a means to support workers' psychological need fulfillment), the proposed theory demonstrates how gig-organizations can motivate platform workers through the thoughtful design of their digital labor platforms.

4. Towards a Theory of Motivation in Gig-Workers

It is now time to further the theoretical development concerning gig-workers' motivation, based on self-determination theory, job-design research, and enterprise social media research. In its application within the workplace, SDT considers the effect of various "environmental factors (e.g., job design, pay contingencies, managerial styles) on workers' motivations and experiences [to be] largely mediated" by the fulfillment or frustration of these basic needs (Deci et al., 2017, p.22). Specifically, work climates that enable the satisfaction of these universal needs support intrinsic motivation, whereas conditions that thwart the satisfaction of these psychological needs

undermine such motivation (ibid.). Given this mediation effect, workplace contexts have commonly been described and assessed in terms of whether they support or thwart basic needs.

During the last decade, SDT research has been connected with job-design research. One example is job-characteristic theory (Hackman and Oldham, 1980), a theory of motivation that focuses on the impact of five key job characteristics (skill variety, task identity, task significance, feedback, and autonomy) on behavioral and attitudinal employee outcomes. Such research has shown that specific job characteristics at both the organizational-level and task-level can promote needs satisfaction and autonomous motivation. When taken together, these two theories indicate that organizations must provide work environments and jobs that are aligned with employees' needs as a means to attract and retain employees, as well as to promote organizational performance by enhancing employee motivation and well-being within the workplace (Deci et al., 2017; Gagné and Deci, 2005; Humphrey et al., 2007).

Figure 2 shows the core SDT elements considered in this article and conceptualized within the context of the gig-economy.

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In the context of the gig-economy, where platform workers lack an official human supervisor, this article proposes that the digital platform itself can act as a critical determining factor of basic needs support. Specifically, the IT artifact itself can form and convey the workplace context, including the structural and social aspects of the environment, wherein the platform's architecture can either support or thwart workers' basic needs of competence, autonomy, and relatedness. For example, many digital labor platforms mediating virtual professional services are characterized by high levels of surveillance. Upwork, for instance, uses Work Diary, an electronic-monitoring software that allows clients to 'virtually look over-the-shoulders' of gig-workers by taking snapshots of their screens and tracking keystrokes. Although the integration of such software is an operational decision meant to reduce client risk, from a worker's perspective surveillance software is likely to threaten their need for autonomy and negatively impact their intrinsic motivation (Kuhn and Maleki, 2017).

Similarly, this logic can be extended to job characteristics related to internal work motivation and embodied in the design of the platform. For example, in the case of real-time location-based services such as Uber (a low-skill/undifferentiated service that is fulfilled physically and where timing matters) the algorithmic-matching of drivers and riders enabled by dynamic pricing is necessary to ensure efficiency. In this context, although drivers have certain autonomy in work-scheduling (e.g., they can decide when and where to turn on/off the app), Uber drivers are penalized for low acceptance and/or cancellation rates, which can effectively reduce a driver's perceived autonomy (Kuhn and Maleki, 2017). Likewise, the platform's algorithmic matching-mechanism does not allow drivers to set and/or negotiate their own prices,

as this would be inefficient and lead to longer wait times for clients. Consequently, the platform also curtails a worker's decision-making autonomy with respect to the terms and processes of their service. As shall be discussed, job characteristics that are particularly salient to the gig-context include: task and skill variety; job complexity, specialization; autonomy in work-scheduling, work-methods, and decision-making; as well as social support and interaction outside the organization.

Taking the view that the architecture of digital labor platforms and the characteristics of jobs mediated through these IT artifacts can impact intrinsic motivation via the satisfaction of workers' basic needs, sections 4.1 and 4.2 seek to establish the link between various aspects of a platform's architecture and workers' needs support. Following this, section 4.3 proposes the integration of ESM within these platforms in order to support basic psychological need fulfillment across various types of platforms.

4.1. Intrinsic motivation, needs support, and platform-work

Intrinsic motivation is a specific form of autonomous motivation wherein individuals engage in an activity with a full sense of willingness, volition, and choice; it embodies the most self-determined behavior regulation by inherent interest, enjoyment, and satisfaction. According to Deci et al. (2017), employees can be "intrinsically motivated for at least parts of their jobs, if not for all aspects of them" (p. 21). As previously mentioned, the satisfaction of an individual's basic psychological needs promotes autonomous motivation, intrinsic motivation, and psychological well-being. Although the link between need satisfaction and intrinsic motivation are among the most well-established links in SDT research (Deci et al., 2017; Van den Broeck et al., 2010), these phenomena remain underexplored in the novel content of the gig-economy and platform work (Rockmann and Ballinger, 2017). Therefore, while it is expected that the satisfaction of platform workers' needs will be positively related to intrinsic motivation, the relationship requires further testing in the context of platform work. Therefore, it is proposed that:

> ***Proposition 1:*** *The fulfillment of a platform worker's needs for autonomy, competence, and relatedness through their work will be positively related to intrinsic work motivation.*

Moreover, since work contexts that enable the satisfaction of one's psychological needs support intrinsic motivation, SDT suggests that platforms supporting basic needs will relate positively to intrinsic work motivation through a platform worker's needs satisfaction (Deci et al., 2017). Given that a platform's architecture will form the basis of a platform's work context, it is further proposed that:

> ***Proposition 2****: Platform architectures that support basic needs will relate positively to intrinsic work motivation through a platform worker's needs satisfaction.*

Considering that when work contexts promote self-determination, workers will trust the context and be more active in satisfying their own needs (Deci et al., 2017), it is important to understand how, and to what extent, a digital platform can support workers' basic needs.

4.2.1. Autonomy support

Within the research focusing on workplace factors, managerial style, also referred to as interpersonal context, has been shown to play a key role in employees' perception and fulfillment of basic need support (Deci et al., 2017). Numerous studies have shown that autonomy-supportive work contexts and managerial methods will lead to greater satisfaction across all three psychological needs and intrinsic motivation (Baad et al., 2004; Gagné and Deci, 2005). Autonomy supportive work-contexts are indicated by managers: (i) acknowledging employees' perspectives and asking for their viewpoints; (ii) providing rationale when requesting tasks; (iii) offering choices to individuals with regards to how to do aspects of their; (iv) empowering decision-making; and (v) providing positive and/or meaningful feedback (Deci et al., 2017; Humphrey et al. 2007; Van den Broeck et al., 2010).

In the context of digital labor platform work, the last three facilitating factors (iii-v) can be understood via the platform's architecture given that the digital labor platform owners' operational choices will implicitly shape the platform workers' autonomy (Kuhn and Maleki, 2017). Moreover, although acknowledging employees' perspectives may be difficult in a platform context lacking human supervisors, to a certain extent allowing platform workers to rate clients, and to have recourse when they are rated poorly on the platform can be considered as acknowledging employees' perspectives. Drawing on SDT research, recent surveys of platform workers (e.g., Codagnone et al., 2016; Fabo et al., 2017; Wood et al., 2018a,b), as well as Kuhn and Maleki's (2017) conceptual classification of platform workers, it is proposed that a digital labor platform firm's interpersonal context can be either 'autonomy supportive' or 'non-supportive' depending on the presence of the facilitating factors elaborated in **Table 1**.

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It should be noted that while a platform's interpersonal context will be determined by the presence of facilitating factors as embodied in the platform's architecture (mechanisms, processes, functionalities, and rules), the two columns in the table represent 'extremes'. Considering this, it is proposed that:

Proposition 3: *Digital labor platform architectures that are autonomy supportive (based on the presence of the facilitating factors in Table 1) will be positively related to a platform worker's perceived autonomy.*

Before proceeding, it should be noted that the work mediated in autonomy supportive platform contexts is likely to be a type of work characterized by higher task variety, job complexity, and/or specialization such that it cannot be standardized. In this vein, platform contexts providing high decision-making and work-methods autonomy will tend to coincide with medium/high-skill platform work (Figure 1: Quadrants 3 and 4). Conversely, platform work that is standardized, with clearly defined tasks, is more likely to be low-skill work (Figure 1: Quadrants 1 and 2). According to a recent study, platform workers' skills are innately tied to job quality in the gig-economy (Wood et al., 2018b). Workers lacking skills tended to experience insecurity and low incomes, while workers with high skills wielded higher bargaining power, allowing them greater decision-making autonomy compared to lower-skilled workers (Wood et al., 2018b). Considering that such workers may also have low perceived alternatives, platforms mediating low-skilled work may be more likely to be experienced by workers as controlling than platforms mediating high-skilled work (Deci et al., 2017; Kuhn and Maleki, 2017).

4.2.2. Relatedness support

Co-worker support and job social support have been found to be positively linked to intrinsic work motivation, job involvement, and satisfaction (Hon, 2012). Having good relationships at work (both with co-workers and superiors) has been found to intrinsically motivate an employee as it facilitates the process of internalization insofar as individuals tend to accept as their own the values and systems of those to whom they feel, or desire to feel, connected (Gagné and Deci, 2005). Co-worker support has also been found to promote co-workers' confidence, often through instrumental support (Zhou, 2003), and to provide workers with a degree of security to explore all of the benefits of their work. Thus, in addition to promoting feelings of social-connectedness, caring and supportive coworkers make it more likely that employees will feel autonomous and competent in their work, and consequently experience high levels of autonomous motivation (Ryan et al., 1994).

Research suggests that designing work to "allow interdependence among employees and identification with work groups, as well as being respectful and concerned about each employee" may support internalization and intrinsic motivation (Gagné and Deci, 2005, p.355). However, in the context of digitally-mediated platform work wherein limited levels of temporal, administrative, and physical attachment characterize the worker-organization relationship (Spreitzer et al., 2017), platform workers lack opportunities to be 'insiders' and often experience isolation (Wood et al., 2018). In this context, Rockmann and Ballinger (2017) suggested that a worker's need for relatedness might be satisfied through client interactions. While this may be possible, it may not be the case with all platforms as the structural properties of work that shape

workers' opportunities to connect and interact with others varies greatly across digital labor platforms (Grant, 2007). For instance, it is plausible to assume that gig-workers providing physically-fulfilled services (e.g., Uber, TaskRabbit) may be more likely to interact with clients than workers offering virtually-fulfilled services, particularly in the case of microwork (e.g., Upwork, MTurk). Even so, in the context of certain physically-fulfilled services, the "absence of human interaction is considered a selling point for clients – for example, those who wish to have their homes cleaned without the awkwardness of meeting or even talking with the cleaner" (Kuhn and Maleki, 2017, p.185). Similarly, on Fiverr, workers and clients are connected 'anonymously' through the platform and are not supposed to exchange personal contact information – a platform rule designed to ensure that providers and clients do not connect off the platform.

In general, the duration of work, and thus interaction with a client also varies substantially across platforms, as do the frequency and rules of contact. In this regard, a worker's need for relatedness is best supported through job social support from coworkers and supervisors. As evidenced by the collective organization of numerous internet-based communities by online workers, platform workers already seek and employ digital tools (social media chat groups, online forums, etc.) to support each other and share information (Wood et al., 2018a; Yin et al., 2016). For example, Uber drivers have self-organized various local driver groups on Facebook and make use of Zello (a web-based walkie-talkie app) to communicate with other drivers during their shifts. Similarly, Yin et al. (2016) identified a rich network of worker-initiated communication channels such as forums, threads, and social media group discussions among MTurk workers. Although virtual communities have been shown to play a vital role in platform workers' experiences (Wood et al., 2018a), suggesting that platform-hosted forums and chats may be able to support platform workers' needs for relatedness, many platforms offer minimal worker-side services. Nonetheless, it is proposed that:

> ***Proposition 4:*** *Digital labor platforms with social features such as forums and chatting can positively enhance a platform worker's perceived relatedness.*

4.2.3. Competence support

According to SDT, the more competent an individual perceives themselves in an activity, the more intrinsically motivated they will be at that activity (Deci and Ryan, 1985). Experimental studies conducted across various contexts (e.g., education, health, and work) support that specific interpersonal events (e.g., reward structures, communications, and feedback) can support feelings of competence and thus enhance intrinsic motivation (Deci et al., 2017; Ryan and Deci, 2000). Specifically, it has been found that positive feedback (initially referred to as verbal rewards in the SDT literature) can enhance intrinsic motivation, as individuals will enjoy work when it supports feelings of self-esteem (Ryan and Deci, 2000; Van den Broeck et al., 2010). Yet in the context of the gig-economy, platform workers cannot rely on human supervisors for

feedback to support the need for competence. Similarly, much like virtual workers, the existence of a mentor (and other forms of job-social support through which feedback can be received) is unlikely (Rockmann and Ballinger, 2017; Wiesenfeld et al., 2001). While workers providing physical, location-based services may receive positive feedback from clients, the relational architecture of jobs varies greatly across platforms, such that receiving client feedback cannot be guaranteed.

Where algocracy (governance by algorithm) is the prevailing mode of organization used to ensure quality control and matching efficiency (Codagnone et al., 2016), platform workers must rely on the platform to generate the information required to form perceptions of their performance. In general, the primary and sometimes sole source of feedback that platform workers receive is limited to a system of electronic ratings. Specifically, all platform workers are continuously evaluated by electronic client feedback systems, some of which may also include other organization-specific metrics (Kuhn and Maleki, 2017).

While these digital feedback mechanisms may provide an avenue for positive feedback, they may also convey negative feedback in the case of under-performing platform workers, thereby undermining perceptions of competence and intrinsic motivation, leaving people amotivated (Deci et al., 1999). Moreover, due to their implementation, they embody aspects of external rewards, competition, and punishments (all of which, on average, have been found to have negative effects on intrinsic motivation) (Deci et al., 1999, 2001). Specifically, within most digital labor platforms, ratings generally dictate the algorithmic assignment of (or right of access to) work (Kuhn and Maleki, 2017; Wood et al., 2018b). Many platforms provide better access to workers with superior ratings or, at minimum, institute quality filters within their architecture enabling clients to avoid low-performing workers (e.g., MTurk, Upwork, Wonolo). Similarly, certain platforms overtly penalize workers for poor performance metrics by suspending or removing them from the platform. For instance, Uber drivers may have their accounts deactivated for not maintaining a near-perfect passenger rating (Rosenblat and Stark, 2016).

According to SDT, the impact of interpersonal events and structures on intrinsic motivation is contingent upon how the event is interpreted (an event's functional significance) (Deci and Ryan, 2000). Specifically, when events are interpreted as 'informational' (e.g., supporting autonomy and promoting competence) they are considered as indicators of competence, thereby satisfying the need for competence and enhancing intrinsic motivation. Conversely, when events are interpreted as 'controlling' (e.g., pressuring one to think, feel, or act in particular ways), individuals will feel forced to act accordingly, which frustrates their need for autonomy and undermines intrinsic motivation (Deci et al., 1999, 2001; Deci et al., 2017). Research has shown that an event's functional significance is largely dependent on the interpersonal context within which they are implemented and an individual's causality orientations (Deci and Ryan, 1985). Specifically, when rewards are administered in a non-

controlling context, they are less likely to undermine intrinsic motivation and, in some cases, can enhance intrinsic motivation.

Considering these factors, current systems of electronic ratings for platform workers are unlikely to provide support for all workers' needs for competence and to positively enhance intrinsic motivation. Specifically, it can be expected that while positive feedback such as superior ratings may support workers' needs for competence, negative feedback from poor performance ratings will undermine perceptions of competence and are likely to leave people amotivated (Deci et al., 1999; Ryan and Deci, 2000). Furthermore, given that events can be experienced as either 'informational' or 'controlling', even positive feedback from superior ratings can lead to reductions in intrinsic motivation (due to their impact on autonomy) when administered in non-supportive contexts (e.g., tied to a reward such as access to better work assignments) and/or received by control-oriented workers. Therefore, it is proposed that (ceteris paribus):

> ***Proposition 5:*** *Positive feedback (e.g., high ratings) from platform ratings systems will be positively related to perceived competence.*
>
> ***Proposition 6:*** *Platform rating systems that include algorithmic rewards and/or punishment will be perceived as controlling.*
>
> ***Proposition 7:*** *Control-oriented individuals will be more likely to perceive platform ratings systems as controlling than autonomy-oriented individuals.*
>
> ***Proposition 8:*** *Platform rating systems perceived as controlling will be negatively related to perceived autonomy.*

4.3. Enterprise social media enablers of psychological need satisfaction

Enterprise social media (ESM) is defined as an organizational web-based platform that facilitates internally-facing communication, social interaction, and collaboration among users within an enterprise through the creation, sharing, and indexing of content (Leonardi et al., 2013). In recent years, ESM platforms have increasingly been implemented in organizations as tools to enable self-expression, communication, and social interaction among employees, as well as to facilitate the identification of skills and knowledge (Archer-Brown and Kietzmann, 2018; Leonardi et al., 2013). Their ability to promote knowledge-sharing, collaboration, and efficiency have made them central to many organizations' digital transformation strategies (Charki et al., 2018). Although most ESM resemble popular social networking sites such as Facebook or LinkedIn with respect to their look and feel, they also contain a variety of embedded functions not common to external social media platforms such as blogs and wikis as well as features allowing social tagging and document sharing (Leonardi et al., 2013).

As previously elaborated, a digital labor platform's architecture will impact a worker's self-motivation through its ability to satisfy a worker's basic psychological needs. Considering that platform workers lack human interaction with supervisors and colleagues (which may impede the satisfaction of their relatedness and competence needs), the integration of ESM within these platforms is proposed as a means to support these needs and thereby drive workers' motivation. Specifically, two ESM tools are proposed: social networking and social badging. In the context of a digital labor platform these functional ESM tools can be seen as plug-ins that can be integrated within the platform architecture (Baldwin and Woodard, 2008).

4.3.1. Social networking

As previously highlighted, the collective organization of numerous internet-based communities by platform workers suggests that the integration of social networking may be able to support platform workers' needs for relatedness and competence. Social networking tools (or platforms) are those that facilitate the building of a network of contacts in order to exchange various types of content online (Leonardi et al., 2013). Examples of ESM social networking tools include: Yammer, Tibbr, and SocialCast. Both Yammer and Tibbr have user interfaces that are very similar to Facebook, including: personal profiles wherein users can list achievements and professional skills; feeds where users can share and receive status updates and content; opinion expression ('Like') and comment functionalities; and finally pages, as well as 'follow' capabilities. Similar to Facebook, ESM social networking tools allow users to establish connections with others and to form private and/or public groups (Archer-Brown and Kietzmann, 2018; Leonardi et al., 2013; Treem and Leonardi, 2012).

Based on their features, social networking tools can support users' psychological needs for both relatedness and competence. Specifically, status updates provide organizational members with efficient, lightweight opportunities to communicate both social and task-related information to each other thereby providing context awareness for users (Gibbs et al., 2013). Social networking use has also been found to support perceptions of belonging to a larger community (Jackson et al., 2007). Similarly, the sharing of private information among co-workers through ESM has been found to allow newcomers, over time, to cultivate a sense-of-belonging (Leonardi et al., 2013). Finally, social networking has also been found to enhance perceptions of access to new people outside local units, and to promote feelings of similarity and community, even in global teams, across cultures (Archer-Brown and Kietzmann, 2018; Treem and Leonardi, 2012).

Social networks are particularly valuable from a knowledge perspective. Specifically, user profiles make it easier to identify distributed expertise, thereby allowing users to identify sources of instrumental support. Jackson et al. (2007) found that social networking provided users with informational benefits such as obtaining feedback on ideas and assistance on solving problems, even among users with moderate usage levels. Social networks also allow individuals

to discover mentors, particularly when they do not know each other personally (Treem and Leonardi, 2012). Generally speaking, social networks are found to facilitate more frequent dialogue, while their ability to capture and codify information for future use make them valuable knowledge resources that can promote perceived competence by providing users with a repository of information to support or confirm their abilities to perform work tasks. Therefore, it is proposed that the integration of social networking within platforms, which are connected to platform workers' account profiles, can support perceived relatedness and competence, in the absence of physical co-workers and supervisors.

> ***Proposition 9:*** *Platform-enabled social networking will be positively related to a platform worker's perceived relatedness.*
>
> ***Proposition 10:*** *Platform-enabled social networking will be positively related to a platform worker's perceived competence.*

Before proceeding, it is important to note two aspects of social networking that may limit their ability to support perceptions of relatedness and competence. Firstly, while social networking has been found to promote feelings of similarity within organizations, they may also strengthen boundaries between groups making communication, interaction, and identification less efficient and effective (Leonardi and Treem, 2012; Pratt et al., 2000; Van Alstyne and Brynjolfsson, 2005). While forum-based networks initiated by distributed platform workers have been found to be fragmented by platform, worker-nationality, worker-seniority and type of task (Lehdonvirta, 2016; Yin et al., 2016), lending credence to this possibility, little consistent evidence has been found for homophily (i.e., the tendency for people to form ties with people who are similar to themselves) along other characteristics, such as worker age, gender or education (Wood et al., 2018a).

Moreover, recent evidence from a study of micro-workers indicates that the expression of new collective identities among platform workers within online communities tends to be tied to the particular online labor platform that they use (Wood et al., 2018a). This finding suggests that in the context of limited organizational attachment (particularly the lack of physical presence of co-workers and supervisors), goal group identity via the nature of one's work and organizational affiliation may be more salient than social referent groups based on a common characteristic of gender, ethnicity, or race (Pratt et al., 2003). It further implies that digital labor platforms mediating highly differentiated categories of work should consider creating specific forums along these categories. Similarly, both local and global platforms may benefit by organizing around geographic locations to consider language issues.

Secondly, although social media can motivate contribution by enhancing visible feedback to posts, the awareness that others can see what one contributes may impede contribution, particularly among those with low perceptions of psychological safety (Treem and Leonardi, 2012). Moreover, the inherent 'public' visibility of social networking suggests the possibility for

increased surveillance and control by organizations that may also compel people to refrain from communicating as a means to maintain autonomy (Leonardi et al., 2013). Given this issue, the corporate climate within which social networks are implemented is important.

As previously mentioned, autonomy-supportive contexts have been found to promote workers' trust thereby allowing them to be more active and successful in satisfying their own needs (Deci et al., 2017). Yet any organization is likely to be comprised of both autonomy-oriented and control-oriented individuals. Research has found that autonomy-orientation is positively related to self-actualization and satisfying interpersonal relationships, while control-orientation is associated with public consciousness and defensive functioning (e.g., inhibition, withdrawal, and isolation) (Gagné and Deci, 2005). These findings suggest that autonomy-oriented individuals may be more likely to explore and benefit from social networking tools within work contexts than control-oriented individuals. Therefore, it is proposed that:

> ***Proposition 11:*** *The strength of the relationship between platform-enabled social networking and a platform worker's perceived relatedness is positively moderated by the extent to which the platform is autonomy-supportive.*
>
> ***Proposition 12:*** *The relationship between platform-enabled social networking and a platform worker's perceived relatedness is stronger for autonomy-oriented platform workers than for control-oriented workers.*

Given indications that causality orientations and autonomy-supportive climates have additive positive effects on autonomous motivation, and that autonomy-supportive interpersonal contexts have been found to explain substantially more variance in need satisfaction than employees' autonomous orientation (Baard et al., 2004), Propositions 11 and 12 suggest that social networking tools integrated within autonomy-supportive platform contexts are likely to have greater organizational participation than social networking tools integrated within controlling platform contexts by attenuating the moderating effects of control-oriented individuals' participation (Liu et al., 2011).

4.3.2. Social Badging

As previously elaborated, the rating systems common to most digital labor platforms are unlikely to support all workers' needs for competence due to differences in their perceived functional significance, and the fact that not all workers receive high ratings. In this context, social badging is proposed as a means to support workers' needs for competence (as well as other basic psychological needs). Badging is a concept that emerges from gamification, a strategy that focuses on the selective incorporation of design elements characteristic of games in non-game contexts (Deterding et al., 2011). "In the context of social media, badges are 'virtual goods' – digital artifacts that have some visual representation – [that] are awarded to users who complete specific activities" (Antin and Churchill, 2011, p.1). Badges offer opportunities to

recognize and quantify individuals' accomplishments, achievements, and acquired skills. In this way, badges can serve as both credential-building tools as well as feedback tools providing individuals with information regarding their performance (Burgers et al., 2015; Deterding et al., 2011; Sailer et al., 2015). Badging is one of the most widely-used strategies in gamification with applications reaching across a wide range of contexts including social networking sites, education, healthcare, and HRM (McDaniel and Fanfarelli, 2016).

Research suggests that badges can support intrinsic motivation in organizational and educational contexts by satisfying autonomy, competence, and relatedness needs (Aparicio et al., 2012; Seaborn and Fells, 2015; Zichermann and Cunningham, 2011). Specifically, badges communicating appropriately-timed feedback can positively impact an individual's perception of their work skills and efficacy (perceived competence). Moreover, when used as goal-setting devices, badges can bolster perceived autonomy and intrinsic motivation (Antin and Churchill, 2011; Nicholson, 2012; Seaborn and Fells, 2015). Badges can increase positive group identification (through perceptions of similarity) by communicating a set of shared activities that bind a group of users together around shared experience (Antin and Churchill, 2011; Sailer et al., 2017). Employed within organizational social networks, they can increase cooperation and collaboration by enabling co-workers to easily identify colleagues' skills and knowledge. Information seeking via organizational social media has also been found to increase perceptions of 'social presence' (Wolf et al., 2014).

Gamified systems contain many social components common to ESM including: profiles; connections to social networks, peers, and groups; chat and messaging functions. Moreover, such systems also include leaderboards – public displays that rank players according to their relative success against a certain success criterion, thereby promoting motivation via competition (Sailer et al., 2017). Due to their perceived motivational and social benefits, many current ESM have integrated social badging within their systems (Leonardi and Vaast, 2017). For instance, in 2011, Yammer released 'Praise', an app that allows users to reward their colleagues with badges. Through this app, users are able to see all the badges that they, and other co-workers, have earned over time via a recognition tab on their profile pages.

As motivational tools, social badging offers a distinct advantage over the prevailing algorithmic rating systems incorporated within all platforms as a means to ensure trust and quality for clients. Specifically, unlike platform rating systems that can provide both positive and negative feedback, badges necessarily confirm an individual's achievements and symbolize merits (Antin and Churchill, 2011; Sailer et al., 2017; Seaborn and Fells, 2015). In other words, whereas negative platform ratings may undermine workers' competence and autonomy (leaving workers amotivated), badges are not awarded for poor performance. Therefore it is proposed that:

Proposition 13: *Badges will be positively related to perceived competence.*

In order for badging to be successful at motivating attitudinal and behavioral change, a gamified system must consider the situated motivational affordances of its game elements (Deci and Ryan, 2004; Deterding, 2011; Nicholson, 2012). The concept of situated motivational affordance derives from the field of Human-Computer Interaction, and is used to "describe the opportunities to satisfy motivational needs provided by the relation between the features of an artifact and the abilities of a subject in a given situation, comprising of the situation itself (situational affordances) and the artifact in its situation-specific meaning and use (artifactual affordances)" (Deterding, 2011, p. 3). Together with SDT, the concept of situated motivational affordances carries several conditions for the use of gamification in organizational contexts, and particularly algocratic organizations such as digital labor platforms.

Consistent with the current uses of badging in the gig-economy, this article begins by theorizing around badges that are awarded to platform workers algorithmically via points generated from client feedback and/or other organizational metrics. For instance, TaskRabbit rewards workers who have met platform-specified criteria with 'Elite' badges (Kuhn and Maleki, 2017). Similarly, Wonolo provides workers with performance badges that are awarded to 'Wonoloers' upon achievement of a certain number of jobs with high ratings. Although these types of badges can provide workers with feedback regarding their performance, which can positively impact perception of work skills and efficacy, thereby satisfying competence needs (Sailer et al., 2017; Seaborn and Fels, 2015), situated motivational affordances and SDT hold that the actual impact of such badges on a worker's needs satisfaction can only be understood when considered in their greater organizational context (Deterding, 2011).

Given that TaskRabbit's "Elite" badges are displayed on workers' profiles, these badges offer "Elite" workers a competitive advantage by making them more attractive to prospective clients. Similarly, on the Wonolo platform, badges come with cash bonuses and payment rate increases. Accordingly, even if such badges can support competence needs in well-performing workers, insofar as they are likely to be experienced as 'controlling', they will undermine experienced autonomy and intrinsic motivation (Deci et al., 1999, 2001; Deterding, 2011; Nicholson, 2012; Seaborn and Fels, 2015).

Drawing on the SDT and gamification literature, this article proposes that badging systems integrated within digital labor platforms can successfully motivate workers under the following conditions. Firstly, unlike platform ratings systems, participating in badging systems can (and should) be voluntary. According to Nicholson (2012), to ensure that badges are not perceived as controlling, participation in a gamified badging system must be positioned as optional for workers (Sailer et al., 2017). Moreover, they should be free of rewards and punishment so as to avoid negative impacts on autonomy (Deci et al., 1999, 2001). Therefore it is proposed that:

> ***Proposition 14:*** *Badges tied to compulsory programs, rewards, and/or punishments will be perceived as controlling.*

Proposition 15: *Badges perceived as controlling will be negatively related to perceived autonomy.*

Secondly, insofar as externally imposed goals can negatively impact intrinsic motivation, the badging system should be user-centric (Deci et al., 2001; Nicholson, 2012). Specifically, platform workers must be free to choose which badges they will purse; when users are allowed to set, control, and achieve specific goals, badges earned will bolster perceived autonomy (Antin and Churchill, 2011; Seaborn and Fells, 2015). In educational or work contexts where there are certain goals to be met, the gamified system can 'guide' workers in choosing relevant goals that are both meaningful to the user and that meet the needs of the organization (Nicholson, 2012). For instance, badges may be awarded for completing training and/or performance programs based on client feedback and other performance-related metrics. Thus, user-centric badges and goals will be better able to support platform workers' competence (including lower-performing workers) and intrinsic motivation by ensuring that set goals present a sufficient challenge, yet remain attainable (Deterding, 2011; Nicholson, 2012). Therefore, it is proposed that:

Proposition 16: *Badges based on personal goals will be perceived as informational.*

Proposition 17: *Badges perceived as informational will be positively related to perceived autonomy.*

Through the development of Propositions 9 through 17, section 4.3 has proposed the integration of ESM within the architecture of digital labor platforms as a means to support workers' basic psychological needs across various types of platforms. As the gig-economy continues to grow, the theoretical development presented in this article is valuable to both research and practice.

5. Limitations and Implications

Prior to discussing the scholarly and practical implications of this article, two limitations must be addressed. Firstly, beyond recognizing causality orientations, the proposed conceptual model does not consider other distinct characteristics of individuals such as personality and aspirations that are known to affect needs satisfaction and motivation (Deci et al., 2017). Secondly, for the sake of parsimony, this article does not incorporate extrinsic motivation (beyond considering external rewards). Again, given recent interpretations of intrinsic and extrinsic motivations as independent factors (with unique antecedents/outcomes), future work exploring motivation within the gig-economy should consider the dynamics between these types of motivation.

5.1. Research contributions

First and foremost, this article contributes to a small, but growing stream of research on the gig-economy (e.g., Kuhn and Maleki, 2017; Rosenblat and Hwang, 2016; Wood et al., 2018) and offers research contributions to various disciplines including: Industrial and Organizational (I-O), Psychology, Management, and IT. More specifically, through its exploration of self-motivation among detached and distributed gig-workers, this paper answers calls for psychologically-based research exploring the consequences of gig-work (Kuhn and Maleki, 2017). It also answers calls for theorizing on how to motivate workers in non-traditional work-contexts (Wheeler and Buckley, 2001), particularly those without a formal "boss or performance review", as well as the workings of organizational control "outside the realms of traditional organizations" (Spreitzer et al., 2017, p.486). By integrating aspects of Kuhn and Maleki's (2017) conceptual classification of platform workers within the theorization, this paper takes steps in building a cumulative tradition in the study of platform workers. More importantly, it furthers the body of knowledge concerning platform-workers by theorizing across different types of platform work. To date, the majority of gig- and platform-mediated work research has tended to focus on a particular platform (e.g., Uber, Lyft) (cf., Rosenblat and Stark, 2016) or type of work (e.g., skilled, freelance-type work) (cf. Rockmann and Ballinger, 2017).

Secondly, this article also aids in furthering the SDT research agenda. In their recent state-of-the-art appraisal of SDT, Deci et al. (2017) outlined research examining concrete workplace characteristics and managerial behaviors in relation to motivation and work outcomes as an important avenue for future work. They also called for research studying the impacts of advanced technologies in interaction with work contexts. In exploring how the architecture of a digital labor platform conveys critical socio-contextual information, and proposing the integration of ESM within these platforms (as well as elaborating the concrete ESM functions that form workplace context) this conceptual article aids in furthering the SDT research agenda. More specifically, it goes beyond providing conceptual arguments for the integration of ESM by offering tangible examples of existing ESM tools/functionalities that can be used to fulfill workers' basic psychological needs.

The third theoretical contribution was to theorize around a large set of social-contextual variables operating at different levels of analysis. As per Gagné and Deci (2005), "factors such as rewards, choice, positive feedback, and surveillance can be thought of as being parallel to specific job aspects, [while] the interpersonal climate can be thought of as being parallel to the work climate or organization climate" (p.350). By combining SDT, job-design, and ESM research, this article demonstrates how individual-level motivation can be influenced by both task-based and organizational-level factors, in addition to individual-level factors. Thus, the resulting theory underscores the importance of examining social-contextual factors at multiple levels (an approach less common in this stream of work). In doing so, it answers calls for research examining the interaction between job aspects with work climates on intrinsic

motivation, and may lay groundwork for emerging motivational research espousing set-theoretic approaches (Gagné and Deci, 2005).

5.2. Practical contributions

Managing workers in alternative work contexts has long been said to require new communication and information systems, as well as organizational culture change (Wiesenfeld et al., 2001). More recently, Sundararajan (2014) suggested that creating an appropriate 'platform culture' (i.e., shared norms, values, and capabilities among providers) is paramount to the long-term success of gig-organizations as doing so allows these organizations to shape gig-workers' capabilities and to guide their appropriate behaviors. In exploring the relationship between platform job-type characteristics and the operational nature of the platform, this article demonstrates how the integration of ESM within digital labor platforms can create an organizational context that supports platform workers' needs.

As the gig-economy continues to grow, its HRM practices are increasingly coming under public scrutiny, with many dubbing it the 'Precariat' (Jabagi et al., 2018). While many gig-organizations tend to adopt HRM strategies involving 'control practices' (i.e., practices aimed at bolstering organizational efficiency often through external rewards and/or psychological manipulation), research has shown that when motivation is controlled, the resulting extrinsic focus can reduce the range of employees' efforts, and have spillover effects that negatively impact subsequent performance and work engagement (Deci et al., 2017). In proposing the use of ESM as a means to support intrinsic motivation, this article provides practitioners with a concrete, high-commitment HRM strategy that can motivate employees to adopt discretionary behaviors that are aligned with the organization's mission through the integration of the organizations' goals and values within their core self.

Certainly, as algorithmic controls are increasingly adopted within traditional employment relationships, the propositions in this article are likely to be increasingly relevant beyond the context of gig- and platform-work. Moreover, by demonstrating the pivotal role that the design of an IT artifact can play in supporting workers' basic psychological needs, this article suggests an important opportunity for partnership between an organization's IT and human resources management functions in the design of platform systems. As demonstrated, the design of a digital platform (including the integration of ESM) has substantial impacts on workers' experience and must be governed appropriately to ensure the platform's competitiveness and sustainability. For example, where platform workers may be reluctant to contribute to enterprise social networks, participation badges can be used to indoctrinate new users, sustain contribution, and help diversify the participation of siloed users (Antin and Churchill, 2011; Leonardi and Vaast, 2017). Similarly, although badge systems cannot inherently communicate negative feedback, in a gamified system social comparison can demotivate low-performing platform workers; thus, to avoid negative impacts on workers' competence needs, leaderboards should

only show close competitors, or be replaced by performance graphs (visual displays that evaluate a user's own performance over time) (Seaborn and Fels, 2015). Undoubtedly, HRM managers, can and must play a crucial role in both the development and cultural implementation of digital labor platforms and ESM (such as social networking and badging) in order to ensure that they support positive experiences for workers (Charki et al., 2018).

6. Conclusion

Accenture (a global consulting company specializing in technology) identified online labor platforms as a key trend that will drastically transform existing organizational forms and management models by 2022 (Jabagi et al., 2018). From a scholarly viewpoint, the arrival of digital labor platforms prompts unique questions about gig-worker/employer relations and presents many opportunities for behaviorally-oriented organizational researchers to build our scholarly understanding of the increasing number of people participating on these platforms (Kuhn, 2016). Considering its theoretical importance, future inquiry into the phenomena of gig-work and motivation is essential to support both gig-workers and organizational managers. It is the authors' hopes that this article may further promote and enable such research.

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[i] Virtual work is defined as any form of work "whereby individuals work from home, 'on the road', or otherwise outside of traditional centralized offices" (Wiesenfeld et al., 2001, p.213).

Is the service performed high-skill or low-skill?	Is the service fulfilled physically or virtually?	
	Physical *(Local)*	**Virtual (*Global)***
Low skill	▪ Uber, Lyft, Deliveroo *(Transportation and delivery services)* ▪ Taskrabbit, Helpling *(Household and personal services)*	▪ Fancyhands *(Virtual assistant, Clerical and data entry)* ▪ MTurk, Clickworker *(Microwork)*
High skill	▪ Medicast (MD housecalls), GlamSquad, TakeLessons *(Specialized services)*	▪ Freelancer.com, Upwork, Labmate *(Creative and/or technical freelance work)*

Figure 1: Taxonomy of digital platforms labor work-types

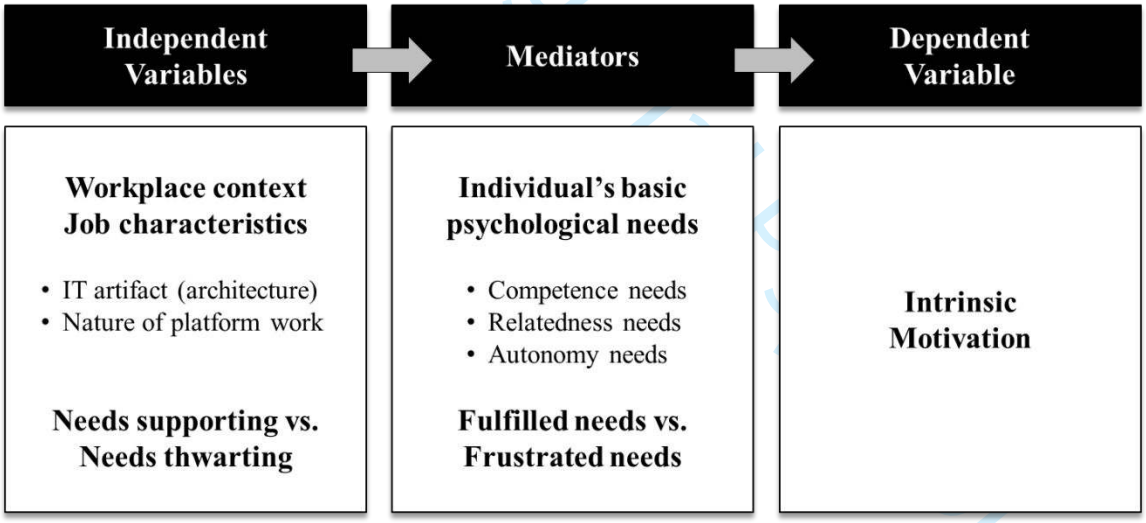

Figure 2: SDT theory model adapted to the gig-work platform context

Platform Context: Autonomy Support	
Supportive	***Non-supportive (Controlling)***
Decision-making autonomy	
• Platform allows workers to choose or compete for more desirable (best 'fit') tasks or projects. • Platform allows workers to decide their own compensation or provides the right to accept/reject pay proposed by the client. • Platform does not penalize a worker for declining/rejecting a job.	• Platform assigns work algorithmically. • Platform controls the pay rate. Control can take the form of pay rates for defined tasks or dynamic (market-based) pricing controlled algorithmically. • Platform penalizes workers for acceptance and/or cancellation rates.
Work-methods autonomy	
• Platform leaves workers significant choice in the methods and processes they use to conduct their work. • Workers are (at least not involuntarily) subjected to surveillance via platform enabled monitoring mechanisms.	• Workers perform standardized tasks as defined (and priced) by the platform. The work process is micromanaged. • Non-proximate monitoring mechanisms are used to monitor work progress and process.
Feedback and acknowledging perspectives	
• Platform provides workers with positive feedback (derived from platform-based rating and reputation systems) for good performance. • When client feedback ratings and/or other sources of evaluation fall below a certain threshold, platform provides constructive feedback on how to address the problem. • Platform allows workers to rate clients (e.g., Uber) and/or offers recourse for perceived unfair ratings/poor treatment by clients. • Platform performance assessment algorithms consider whether a client's feedback rating was unfair and adjusts the worker's score accordingly (e.g., Upwork) (Kuhn and Maleki, 2017).	• Platform does not provide workers with positive feedback (derived from platform-based rating and reputation systems) for good performance. • Platform does not provide workers with constructive feedback on how to address the problem sub-par performance metrics. • Platform-based rating and reputation systems unilaterally penalize workers when ratings and/or other metrics fall below a certain threshold. Penalties can range from deactivation, loss of access to jobs, etc. • Platform does not allow workers to rate clients (e.g., mTurk) and/or does not provide recourse for perceived unfair ratings/poor treatment by clients.

Table 1: Facilitating factors of autonomy supportive/non-supportive contexts in digital labor platforms