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Controlled by the algorithm, coached by the crowd – how HRM activities take shape on digital work platforms in the gig economy

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ABSTRACT

An increasing number of workers turn to digital platforms – such as Fiverr, Freelancer, and Upwork – as an alternative to traditional work arrangements. Digital platforms govern how gig workers join, move through, and leave platforms – often with the help of self-learning algorithms. While digital platforms and algorithms take on HRM practices, we know little about how HRM activities unfold on digital work platforms in the gig economy. The study therefore aims to understand how HRM activities apply to and take shape on digital platforms by studying worker perceptions. We combine supervised text analysis with an in-depth qualitative content analysis, relying on 12'924 scraped comments from an online forum of workers on Upwork. We outline five conversations on HRM practices that pertain to *access and mobility, training and development, scoring and feedback, appraisal and control* and *platform literacy and support*. Based on these findings, we build five propositions about how digital work platforms employ HRM activities. Our paper contributes to recent work on HRM on digital platforms by (1) developing a new mixed-methods approach that illustrates how the content of HRM practices may differ from traditional organizations, (2) highlighting the changing role of actors in creating HRM practices by introducing the concept of 'crowd-created' HRM practices, and (3) conceptualizing how digital platforms employ a 'hybrid HRM approach'.

KEYWORDS

Algorithmic management;
human resource management;
HRM practices;
worker perceptions;
digital work platforms;
gig economy

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Introduction

Recent years have seen the rise of the so-called ‘gig economy’, where an increasing number of workers find jobs on digital platforms, such as Fiverr, Freelancer or Upwork (Kässi & Lehdonvirta, 2018; Schroeder et al., 2021). These platforms have garnered much interest among scholars from different fields since the working arrangement on these platforms blurs the boundary between freelancing and traditional jobs (Duggan et al., 2020) and relies on outsourcing classic managerial tasks to algorithms (Kellogg et al., 2020). One area that is especially affected by such changes is the relation between workers and the organization (Duggan et al., 2020; Meijerink & Keegan, 2019). Recent research points towards digital platforms changing classic employment relations, as they do not recognize workers as employees, yet carry out human resource management (HRM) practices, such as selection, development, appraisal, compensation, job design and workforce planning (Meijerink & Keegan, 2019). This paradoxical working arrangement, in which workers are not employees, but are still managed by platforms through algorithms, challenges HRM research built upon clearly regulated employee relations (Duggan et al., 2020). Recent work has tried to make sense of these challenges. For instance, Schroeder et al. (2021) explore to which extent existing ideas of work design change on digital platforms, Duggan et al. (2020) and McGaughey (2018) seek to understand the use of algorithms as HRM tools, while Connelly et al. (2021), Kuhn and Maleki (2017), and Meijerink and Keegan (2019) explore how the new context of digital platforms transforms HRM activities.

While these studies provide important insights into the changing nature of HRM activities employed by digital platforms in the gig economy, we know little about the perspective of workers and how they perceive HRM activities employed by digital platforms. Such worker perceptions are critical to understand how workers make sense of HRM activities and behave accordingly (Wang et al., 2020). Given how platforms employ HRM activities through algorithms without human managers and traditional employee relations (Duggan et al., 2020; Kellogg et al., 2020), it is crucial to investigate how workers experience and live HRM in this new context (Duggan et al., 2020; Meijerink & Keegan, 2019; Wang et al., 2020). Thus, the purpose of this article is to *investigate gig worker perceptions of HRM practices to understand how the context of digital work platforms shapes traditional HRM activities*.

Following this purpose, we investigate how HRM practices surrounding the domains ‘*people flow*’, ‘*appraisal and rewards*’, and ‘*employment relations*’ take shape on digital work platforms that are part of the gig economy (Bamberger et al., 2014; Beijer et al., 2021; Sun et al., 2007; Wang et al., 2020). To this end, we employ a new methodological

framework through which we analyze 12'293 comments from an online community of digital workers from Upwork, a typical digital work platform. The methodology combines a quantitative theory-driven approach with a qualitative inductive approach that puts gig workers and their perspective in focus. First, we employ supervised text analysis to identify relevant conversation clusters based on a conceptually derived dictionary of HRM key terms. Second, we engage in inductive qualitative coding of these conversation clusters to better understand the shapes that HRM takes on digital work platforms. Our findings outline five conversations among gig workers, which lend insight into perceived HRM practices on digital work platforms. Building on these findings, we develop five propositions that enrich our understanding of HRM activities employed by digital platforms.

Our study makes three contributions to the nascent literature of HRM on digital platforms. *First*, by developing a new mixed-methods approach, we investigate worker perceptions of the platform's HRM practices, providing one of the first empirical accounts of how gig workers perceive the HRM activities conducted by digital work platforms. In doing so, we tease out how the HRM practices of training and development, selection as well as job design unfold when employed by digital platforms. We thus contribute to existing conceptual work on the form and content of HRM practices employed by digital platforms in the gig economy (Connelly et al., 2021; Duggan et al., 2020; Leicht-Deobald et al., 2019). *Second*, we contribute to the literature on HRM implementation (Trullen, Bos-Nehles, & Valverde, 2020; van Mierlo et al., 2018) and its nascent insights into the HRM of digital work platforms (Meijerink & Keegan, 2019; Schroeder et al., 2021) by drawing out how workers 'crowd-create' HRM practices through peer support and informal mentoring (Ragins & Kram, 2007). *Third*, we conceptualize how one exemplary platform (Upwork) employs a 'hybrid HRM approach' that blends elements from a control-based and a high-performance approaches to HRM (Batt & Colvin, 2011; Guthrie, 2001), thus outlining how HRM activities may take shape when employed by digital platforms .

Theoretical background

Digital work platforms as a new working arrangement

Digital work platforms, such as Upwork or Fiverr, provide an increasingly common workplace for millions of workers – programmers, designers, writers and many more – worldwide (Kässi & Lehdonvirta, 2018). These new forms of digitally mediated work (Barley et al., 2017) present workers at the same time with a high degree of flexibility and autonomy, while simultaneously shifting the power balance away from the workers due to new forms of control and surveillance (Bucher et al., 2021;

Duggan et al., 2020; Kellogg et al., 2020; Wood et al., 2019). Accordingly, digital work platforms challenge classic notions of the relations between workers and the organization in two major ways (Friedman, 2014; Gandini, 2019). First, work on digital platforms transcends classic employee relations as digital platforms do not recognize their workers as employees (Duggan et al., 2020; Meijerink & Keegan, 2019). Instead, workers are considered *entrepreneurs*, *freelance contractors* or *independent professionals* (Upwork, 2019; Fiverr, 2020), and platforms position themselves as ‘neutral’ marketplaces that mediate transactions between clients and workers (Duggan et al., 2020; Kuhn & Maleki, 2017; Meijerink & Keegan, 2019). Despite platforms distancing themselves from a traditional employment relation, they still seek to impose measures of control on workers to ensure proper work assignment and performance management (Bucher et al., 2021; Duggan et al., 2020). As a result, workers often compare themselves to employees (Petriglieri et al., 2019), and several court rulings were given in favor of workers gaining employment status (Duggan et al., 2020). Second, workers are often guided and controlled by automated decision-making or ‘algorithms’ (Kuhn & Maleki, 2017), which “automate [...] HR-related duties and functions traditionally undertaken by human managers” (Duggan et al., 2020: 116). Kellogg et al. (2020) highlight that such algorithmic management goes beyond traditional organizational control in several ways. Algorithmic management is generally used to direct workers through *restricting* and *recommending* behavior, to evaluate workers through *recording* and *rating* behavior, and to discipline workers through threatening *replacement* or promising *reward* (Kellogg et al., 2020). Accordingly, algorithmic management is considered “more comprehensive, instantaneous, interactive and opaque” than traditional means of control (Kellogg et al., 2020: 396).

A growing body of research has started investigating how these new working arrangements affect how HRM activities take shape on digital work platforms. Kuhn and Maleki (2017: 183) observe that “many platform firms are tasked with workers’ recruitment, selection, evaluation, and retention, even if some of these traditional management functions are performed by automated algorithms.” Meijerink and Keegan (2019) provide an ecosystem perspective on HRM to outline the multilateral exchanges between client, worker, and platform, highlighting that all three parties take a role in initiating, implementing, and receiving HRM activities. Schroeder et al. (2021) further investigate how classic work design may change in new work arrangements, Duggan et al. (2020), as well as Kost et al. (2020), scrutinize the training and development that platforms provide and Leicht-Deobald et al. (2019) problematize the implications of algorithm-based decision making for the personal integrity of workers. However, these new insights are just starting to

touch upon a much larger transformation of HRM (Duggan et al., 2020; Meijerink & Keegan, 2019). To better understand how the context of digital work platforms may shape HRM, it is crucial to investigate the role of workers, who now operate outside traditional working arrangements. Their perceptions and activities are critical in understanding how HRM activities are organized on digital work platforms (Duggan et al., 2020; Kuhn & Maleki, 2017).

How HRM activities take shape on digital work platforms

In the past decade, research on the organization of HRM activities has moved from a focus on individual practices towards an understanding of HRM as a multilevel system (Boon et al., 2019; Jiang, Lepak, Han, et al., 2012; Renkema et al., 2017), investigating in particular the interplay of individual elements and how they provide additive, substitutive, or synergetic effects (Boon et al., 2019; Jiang, Lepak, Han, et al., 2012; Subramony, 2009). These HRM activities affect individual, team, and organizational outcomes, such as job and unit performance or employee wellbeing (Den Hartog et al., 2013; Kowalski & Loretto, 2017). To understand how HRM as a set of activities may take shape in the context of digital platforms, we rely on the common depiction of HRM activities encompassing the levels of an overarching HRM *philosophy*, formal HRM *policies*, actual HRM *practices*, (Jackson et al., 2014; Jiang, Lepak, Hu, et al., 2012; Renkema et al., 2017), as well as the *processes* of how such activities are implemented and perceived in the organization (Bondarouk et al., 2018; Trullen et al., 2020; Wang et al., 2020).

Structuring the HRM activities are overarching *HRM philosophies*, “which specify the values that inform an organization’s management approach” (Jackson et al., 2014: 3). In outlining HRM philosophies, research often refers to two archetypes; first, a traditional control-based perspective, in which the objective of the HRM activities are to maximize performance through control, providing little autonomy to the employee (Batt & Colvin, 2011; Guthrie, 2001). Second, it refers to a high-performance perspective focusing on turning employees into self-managing, self-driven, autonomous problem-solvers (Batt & Colvin, 2011; Guthrie, 2001; Jiang, Lepak, Hu, et al., 2012). However, digital platforms may fall outside this binary distinction because they provide both a flexible work arrangement characteristic of a high-performance approach (Wood et al., 2019), while at the same time applying strict algorithmic control (Duggan et al., 2020). Therefore, researchers speculate that digital platforms employ unique and distinct philosophies, such as operating through an ecosystem (Meijerink & Keegan, 2019).

HRM policies translate into actual *HRM practices*, “which are the daily enactment of HR philosophies and policies” (Jackson et al., 2014: 3). HRM policies and practices are ordered and bundled into broader policy domains¹ (Bamberger et al., 2014; Jiang, Lepak, Han, et al., 2012; Sun et al., 2007). Here, we follow a commonly-used framing (Bamberger et al., 2014; Den Hartog et al., 2013; Sun et al., 2007) that bundles HRM policies and practices into *people flow*, *appraisal and rewards* as well as *employment relations*. *People flow* refers to how actors enter, move around in, and leave organizations (Bamberger et al., 2014), and encompasses HRM practices pertaining to staffing, training and development, internal mobility, and job security. *Appraisal and rewards* refer to how work in organizations is evaluated and rewarded, and how this is communicated. Here, performance measurement and its feedback are at the centre (Bamberger et al., 2014). Last, *employment relation* refers to how jobs are designed in the organization and how the participation of workers can be ensured (Sun et al., 2007). While recent contributions indicate that digital work platforms perform certain HRM practices, we lack insights into how workers perceive such practices in light of the changed employment relation and platforms’ use of algorithmic management (Duggan et al., 2020).

Last, technological and social *processes* focus on how “HRM policies, and practices are established, modified and terminated” (Jackson et al., 2014: 3f.). Traditionally, this process of implementation of HRM activities was seen as unfolding through a design, implementation, and experience stage (Bowen & Ostroff, 2004; Jackson et al., 2014; Trullen et al., 2020), usually occurring within the ‘HR triad’ between HRM professionals, line managers, and employees (Jackson et al., 2014). Current research, however, suggests that employees and line managers increasingly create HRM practices together (Bos-Nehles & Meijerink, 2018), making workers more active in the HRM implementation process. How such implementation processes unfold in the context of the digital work platforms is a compelling question that could shed light on the role of different actors. For example, Meijerink and Keegan (2019) propose that clients play a key role in delivering training and development.

As the context of the digital work platforms challenges our understanding of traditional HRM activities and their underlying processes, the question of how HRM activities are employed by digital platforms becomes key. To answer this, we build upon gig worker perceptions of HRM practices (Wang et al., 2020) on a digital work platform (Upwork). Thereby, we aim to draw inferences about HRM activities employed by digital work platforms and their underlying philosophy to better understand the implications of such transformation for gig workers.

Research context

Digital work platforms, also termed ‘remote staffing marketplaces’ (Kuhn, 2016) or ‘freelance contracting platforms’ (Bucher et al., 2019), act as intermediaries, connecting freelance workers, such as programmers, graphic designers or copywriters, with clients on a global scale. To investigate how theory on traditional HRM activities applies to and takes shape when employed by digital work platforms in the gig economy, we chose the platform Upwork, which as one of the largest digital work platforms represents a typical case. Upwork (formerly Elance/oDesk) is active in 180 countries, facilitating roughly three million freelance jobs a year, which amount to a total of 1.8 billion USD (Pofeldt, 2018; Upwork, 2018). The platform employs *machine learning algorithms* that process “detailed and dynamic information, including skills provided by freelancers, feedback and success indicators of freelancers and clients” to shape “trusted, convenient, and effective user experiences” for workers and clients (Upwork, 2018: 3). Furthermore, Upwork relies on “specific pattern-matching algorithms” to either detect unusual behavior or to predict future behavior (Upwork, 2018: 6) on the platform. Thus, in order to be able to “operate at scale”, Upwork has digitalized several core processes including the acceptance and rejection of candidate profiles onto the platform: “Upon registration, our machine learning algorithms assess a freelancer’s potential to be successful on our platform based on the current supply and demand in addition to the skills in the freelancer’s profile” (Upwork, 2018: 6). Workers who pass this algorithmic review are granted access to the platform and will be able to bid on gigs and send out proposals. Furthermore, the algorithm also provides a numerical job success score (JSS) as a compound measure of worker performance.

Methodology

To gain insights into worker perceptions in the context of digital work platforms, we draw on a novel dataset and methodology that allow to capture and analyze conversations among gig workers. The current study relies on the collection, clustering and qualitative coding of a large corpus of scraped worker comments from an online community of gig workers. In the following, we will explain the process of (1) collecting comments from an online community, (2) applying a self-developed dictionary to identify relevant comments, (3) clustering the relevant comments into topics that are often discussed together, as well as (4) coding and (5) interpreting of comment clusters (see [Figure 1](#)).

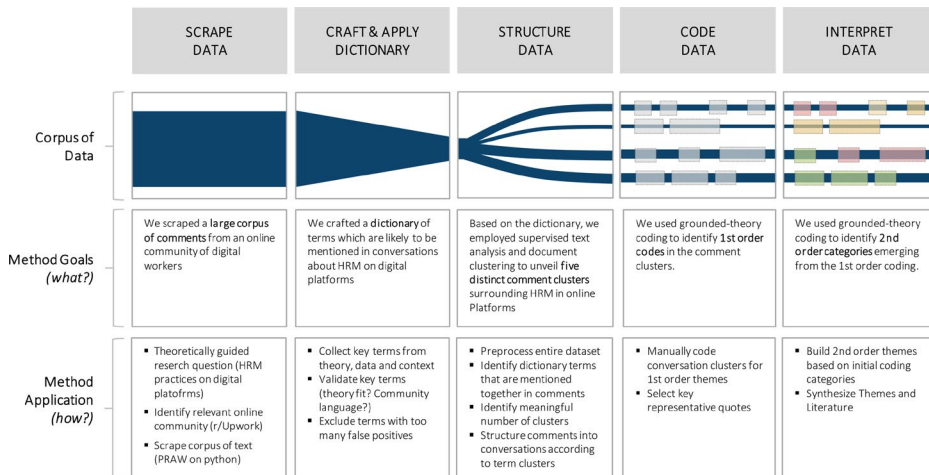


Figure 1. Methodological steps to collect, cluster and code comments.

Research design – analyzing worker conversations about HRM practices

Scrape data: collecting comments from an online community

To gain an in-depth understanding of how workers perceive and make sense of HRM on digital platforms, we gathered data from a large online community of workers on Upwork (r/upwork on Reddit). The online community is independent of Upwork and largely functions as a digital social space where workers anonymously share stories, ask questions, and provide peer-feedback, tips, and guidance. The main reason for choosing a third-party forum was that the official Upwork forum restricts critical conversations between workers. According to Upwork's community guidelines, users of the official forum are not allowed to criticize the platform, to share warning letters or to talk about sanctioned or banned users². While the reddit forum is also moderated (e.g. users cannot advertise their own services), it is a more neutral space that allows for discussion of positive as well as negative aspects of the platform work experience. As of May 2019, the Reddit community had 6'900 subscribed members. We used a self-developed script within the Python Reddit API Wrapper (PRAW) - a python package that allows for simple access to reddit's API³ - to scrape the 1'000 most recent discussion threads from the online community, which returned 12'293 posts encompassing over six months from October 22nd 2018 until May 5th 2019. These comments build a representative dataset of the online community in line with other studies relying on similar data and methods (c.f. Levina & Vaast, 2015; Vaast, Safadi, Lapointe & Negoita, 2017).

By looking into several months of data, we exclude radical, short-term events, e.g. policy changes, that would distort the data towards one particular subject. Thereby, we gain a more realistic depiction of the

everyday subjects discussed in the community. Some of the posts ($n=202$) only contained a thread-title, without the text in the actual text section, and were excluded for the following filtering and structuring. This resulted in a final record of 12'091 posts from a total of 1'311 authors, with an average word count of 49,61 words per post (Chandra & Varanasi, 2015; Reddit, 2018).

Craft dictionary: identify relevant comments

In order to identify the relevant text within the large corpus of data, we developed a list of key terms, activities, and features (in the following: 'dictionary') that are likely to be mentioned in conversations about HRM on digital platforms. In the absence of a standardized dictionary for the HRM activities in focus, we decided to develop a custom dictionary for HRM on digital work platforms. For the creation and validation of the dictionary, we followed Humphrey and Wang's (2018) suggested method of theoretical dictionary development. However, instead of following either a solely theory-driven deductive approach or a solely data-driven inductive approach, our approach combines the two: Initially, we derived dictionary categories as well as an initial word-list from the literature (Bamberger et al., 2014; Sun et al., 2007). Then, we complemented and validated the dictionary based on the context and the data. Accordingly, we derived our terms in three steps.

We first collected key terms related to the policy domains: *people flow, appraisal and rewards* as well as *employment relations* (Bamberger et al., 2014; Sun et al., 2007). We relied on these three domains since studies on worker perceptions' often bundle together practices and policies into these three domains (Boon et al., 2019; Ho & Kuvaas, 2020; Wang et al., 2020). These domains then contain distinct practices. For example, when describing people flow, Bamberger et al. (2014) mention *selection, development, staffing, promotion* or *support* as likely terms to be mentioned when discussing people flow. Second, we conducted a systematic walk-through analysis (Light et al., 2018) of the platform to additionally capture platform-specific HRM activities, terms and features. In the course of this walk-through, two of the authors assumed a user's position and systematically and forensically stepped through the various stages of the Upwork platform, mimicking a prototypical user flow and collecting instances of HRM. We created a client account to gain an in-depth understanding of the platform processes. For example, the platform does not use the word *staffing*, but instead uses terms like *approving, accepting* user profiles to the platform. Furthermore, instead of traditional performance measures, the platform uses the term JSS [job success score] to gauge worker success. Third and last, in order to obtain a more realistic and complete list of HRM terms that also reflected

the language of the online community, we read a subset of 200 randomly selected comments to identify alternate phrasings of key terms. For example, in conversations about staffing, workers were additionally using the more colloquial terms *hired*, *fired*, *rejected*, *banned*, *booted* or *suspended*, which we added to the dictionary (for more detail see Appendix 1). Through conducting this process, we arrived at 110 terms that were used to structure the data (see Table 1). By applying the dictionary to filter the data (only retaining comments that contained one of the 110 HRM dictionary terms), we managed to reduce the 12'091 comments by 59%, resulting in 4'981 relevant comments that each mentioned at least one of the dictionary terms related to HRM.

Structure data: unveiling comment clusters

To unveil underlying structures within the scraped comments, we conducted a supervised document clustering analysis (combining text analysis, Louvain clustering and network visualization) based on HRM key terms. Here, we were not just interested in (1) which HRM terms were mentioned how often, but also in (2) the likelihood of specific HRM terms to appear together in the same comments and thus what relationship the terms from the created dictionary have to each other. We utilized R to visualize which HRM terms often appeared together in the same comments (for details, see Appendix 2 and Appendix 3). The resulting network structure (Figure 2) reveals a color-coded overview of five comment clusters or, as we refer to here, *conversations* surrounding HRM on digital work platforms, indicated by the different shades in Figure 2. For instance, the terms *appeal*, *ban*, *fire*, *hire* or *select* often appear in the same comments, thus indicating a conversation surrounding these terms. Figure 3 emphasizes how the conversations relate to the HRM dictionary, further revealing how our clusters relate to the theoretically derived policy domains of *people flow*, *appraisal and rewards* as well as *employee relations*. In the following, we decided to qualitatively code each of these conversations (i.e. comments containing HRM terms of each cluster), since worker perceptions of digital work platforms are not well theorized (Duggan et al., 2020) and require in-depth understanding that is best facilitated through qualitative analysis (Wang et al., 2020).

Code and interpret data: HRM activities on digital work platforms

Having derived a data structure of five key conversations, we conducted a qualitative analysis to create theoretical categories from the material (Miles et al., 2014). Our qualitative analysis was done in three steps. First, we openly coded comments in each conversation. These codes remain close to the data and were usually short and descriptive (e.g.

Table 1. Key terms of HRM on digital work platforms (Dictionary).

HRM Policy Domains	HR Practices	Dictionary Term	HRM Policy Domains	HR Practices	Dictionary Term
People Flow	<i>Staffing</i>	appeal	Appraisal & Reward	<i>Appraisal</i>	evaluate
		application			feedback
		banned			job success score
		deploy			judgement
		fire			performance
		hire			rising talent score
		hiring			top rated
		recruit		<i>Rewards</i>	badge
		rejection			benefit
		report		earning	
		restore		equal	
		select		equity	
		staff		fixed	
		suspended		incentive	
		warn		payment	
	<i>Training</i>	ability		punish	
		beginner		recognition	
		capability		reward	
		capable		valued	
		certification		variable	
		competence		algorithm	
		customer service	Employment Relation	<i>Job Design</i>	automatically
		develop			break
		educate		communication	
		english skills		connects	
		help me		coordinate	
		intermediary		discipline	
		language skills		JSS	
		learn		keystroke	
		learn to		monitoring	
		learning to		negotiate	
		native		Platform	
		novice		profile picture	
		proficient		relationship	
		skill		renegotiate	
		skillset		robot	
		support		screenshot	
		teach		supervision	
		test		surveillance	
		training		track	
		tutorial		tracker	
	<i>Mobility</i>	advance		video	
		build		advice	
		career		attachment	
		junior		chat	
		progress		citizen	
		promote		commitment	
		senior		community	
	<i>Job Security</i>	pension		dialogue	
		replace		discussion	
		safe		forum	
		separation		protect	
		sick		question	
		turnover		upworker	
				worker	

“unfair suspension” or “suspended without explanation”) and rooted in the phrases of the informants (Miles et al., 2014). While the coding follows an inductive logic, it was, in line with best qualitative practice

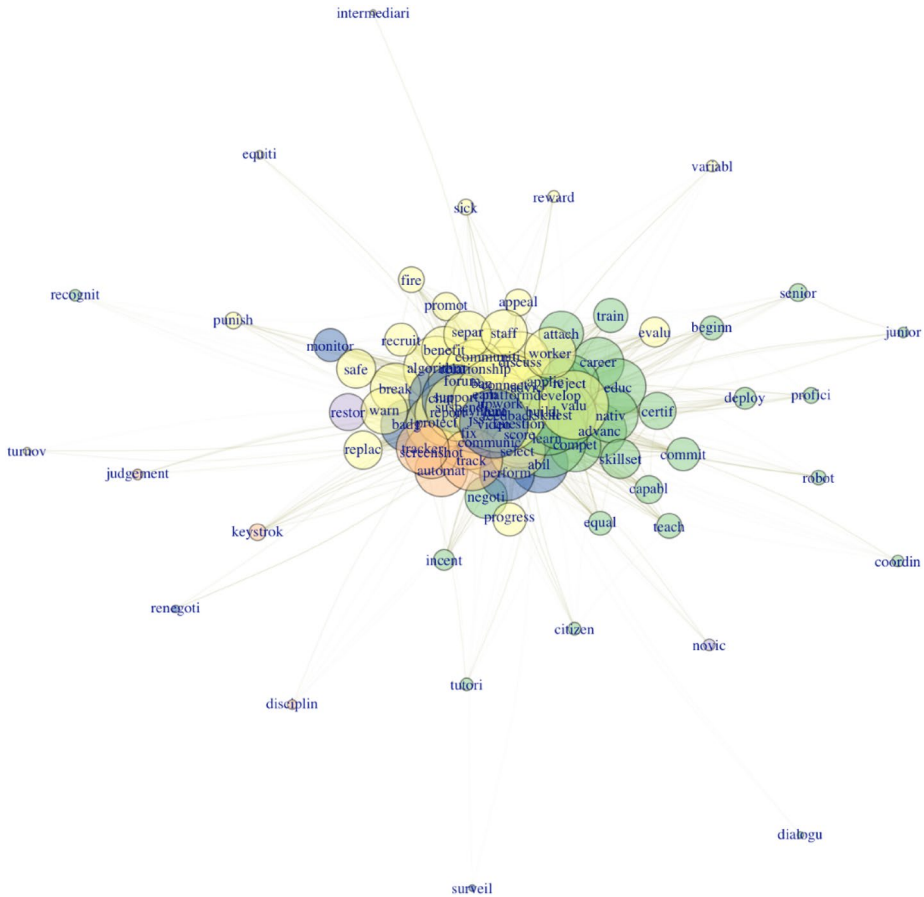


Figure 2. Clusters of identified conversations surrounding HRM activities.

Mapping Comment Clusters onto HRM Practices



Figure 3. Relationships between key conversations and HRM activities.

(Suddaby, 2006), informed by our reading of the HRM literature. Second, we linked codes together to create themes related to each cluster, thereby further structuring the data, this time within the clusters (e.g. unexplained or unjustified suspensions). We present these themes of HRM on digital platforms in our findings section (Appendix 4). To convey the conversation and tone of the workers, we retained grammatical errors, colloquialisms and even swear words in the quotes. Finally, we relate the five conversations to the broader streams of HRM

and literature on digital work platforms (Bamberger et al., 2014; Duggan et al., 2020; Leicht-Deobald et al., 2019). To verify these steps, each author tested their codes against the others' to strengthen the confirmability of the analysis (Lincoln & Guba, 1985). Next, based on the unveiled themes in these five conversations, we develop five propositions in our discussion section that relate to current work on HRM on digital work platforms (Duggan et al., 2020; Kellogg et al., 2020; Leicht-Deobald et al., 2019; Meijerink & Keegan, 2019) and the broader stream of research on HRM from a worker perspective (Jiang, Lepak, Han, et al., 2012; Meijerink et al., 2016; Wang et al., 2020).

Empirical findings – five conversations about HRM on digital work platforms

Conversation 1: dealing with the 'bouncer' – negotiating access and mobility

The first identified conversation centers on aspects of *access and mobility*. A significant part of this first cluster of threads circles around the perceived randomness with which workers are allowed to *enter the platform* and also includes hermeneutics on how best to pass the 'the bouncer' and get onto the platform. It is not uncommon that workers try to submit their profile multiple times, only for it to be rejected by the platform – or by 'the algorithm' respectively. The following comment showcases the perceived randomness of – and ultimately resignation towards – an admission decision:

"I had submitted my profile probably over 50 times now, and they just kept rejecting me with their "over 10'000 freelancers with my skill" email."

Many of the issues arise from the way that the algorithm governs how workers gain *access to relevant gigs*. For instance, it is often unclear why the algorithm suggests particular jobs to some workers but not others – despite similar skillsets. Further, in order to find new clients, workers must send out job proposals. Yet, if workers send too many of these proposals, their accounts may be suspended. As the following comment illustrates, there is no clarity with respect to what constitutes 'too many proposals':

"I got banned for applying to too many proposals. I made my account last week and decided to apply to proposals that i feel i can handle. The other day i logged in and my account was suspended. There was no reason, or email or anything about why it was suspended."

Workers, therefore, share their worries about being able to *maintain a continuous presence* on the platform. Especially unwarned and sudden suspensions which may threaten the livelihood of workers and are often

discussed in this conversation. This was especially alarming if the decision was being perceived as inscrutable or unjustified and thus unfair.

“I woke up yesterday to my account being suspended. I didn’t receive any emails about it before or after the fact, and all the customer support links just redirect after a few seconds to my job feed.... I have no idea what i did wrong. Any suggestions would be welcome, thanks!”

Conversation 2: coached by the crowd – providing training and development

The second conversation centers on *training and development*, which takes place primarily within the crowd of workers. Here, it is often more tenured workers who offer advice or comments to new or prospective entrants – but also experts within particular fields who lend support to beginners. Workers discuss how they can improve their *self-presentation*, and the crowd functions as a kind of sounding-board where workers can share their profiles and receive feedback and advice. For instance, the crowd discusses how to position a worker’s person, skills, and experiences favorably to gain access to relevant gigs. This quote shows an exemplary answer to a common question on how to improve one’s proposal:

“Your profile looks good to me overall. Two things: 1. Do you need a specialized “Front-End Development” profile? [...] 2. You need a new profile picture. Your current picture says “keyboardist in 80’s music video” more than “reliable IT professional.””

Another theme of this conversation concerns *figuring out a ‘niche’* where workers can apply their skills and expertise in a competitive manner. As this comment highlights, specializations are increasingly fluid, and the crowd is a valuable resource to help plot one’s own development path:

“I’ve been freelance writing for the past two years, and it’s getting harder and harder to find steady clients with reasonable pay. I’m a pretty good self-learner, so I’m wondering, what other skills can I add to maybe hop onto a different freelancing market?”

Our findings further show that this ‘crowd-coaching’ encompasses *pricing strategies*. Here, workers offer advice to peers with respect to dealing with demanding clients and avoiding exploitation or scams. In particular, the crowd often discusses how to arrive at an adequate hourly wage: setting the initial rate too high may prevent clients from hiring a worker, setting it to low may attract exploitative clients and devalue one’s skill and work. This is a typical excerpt of such a collective estimation of an appropriate hourly wage:

“Right off the bat, your hourly rate is too low. You’re a full stack engineer, not a receptionist! If I were out to hire an engineer and I saw a \$25 hourly rate, I would immediately think you weren’t worth your salt. Your skillset is worth at LEAST \$60/hr.”

Last, the conversations also provide *coping and encouragement* as an important emotional outlet. Workers often come to vent and receive consolation and encouragement in the face of struggles and setbacks. Here, it is common to find threads about workers starting their “Tuesday vent time” because they were “ghosted” by a client. This comment shows how constructive feedback and emotional encouragement often go hand-in-hand in the conversation on training and development:

“Damn, that’s a well laid out profile. I’m sorry you aren’t having luck, man, it is rough out there for web developers right now. For what it’s worth, your first sentence is a little wonky.”

The conversation about training and development is an important mechanism in transferring knowledge and best-practices among workers and allowing individuals to ‘learn the ropes.’ Given frequent changes in platform design and rules, such crowd-coaching activities are vital for more tenured workers as well.

Conversation 3: Deciphering the performance rating – scoring and feedback

The third conversation deals primarily with algorithmically facilitated *scoring and feedback mechanisms* on the platform. Shared in these threads is the belief that the JSS score is a less than ideal way to appraise worker performance. Workers share *confusion and anger* towards an opaque scoring and feedback system, which is succinctly captured in this comment:

“The algorithm they use to rate clients and freelancers is a dumpster fire. I have no idea why they made such a simple system so complicated. [...] If it’s bad it should be bad. If it’s good it should be good.”

The dissatisfaction with the JSS score originates from two points; first, the system focuses less on the actual performance, such as the quality of the work delivered or on how satisfied the client was. Instead, the JSS takes into consideration several other non-work-related factors, such as whether feedback was given at all or how long contracts were kept open. Second, the core of the dissatisfaction stems from not actually knowing what it is that is being evaluated:

“There are three great mysteries in the world: 1] Stonehenge 2] Pyramids 3] JSS”

As a counterstrategy, the crowd thus engages in a collective sharing of heuristics and experiences in order to *reverse engineer the system* and to better understand how and why they are being rated the way they are. The following quotes are examples of such heuristics, which are often fiercely discussed within the crowd:

“Based on my own experience and conversations with other freelancers it takes a few months of inactivity before they start hurting your JSS.”

“What is publicly known is that closed contracts without money earned, as well as inactive (for more than 2 months) contracts will hurt your JSS.”

Many threads focus on how to *work with the system* and avoid bad scores and their impact on the JSS: Indeed, there was surprisingly little notion about how to improve work or even client satisfaction. Several workers even recommended to refund clients to avoid a negative score, despite the work being of potentially high quality. Thus, workers often discuss when and under which circumstances it is time to *“cut their losses”* to protect their JSS score.

Conversation 4: Working under surveillance – appraisal and control

The fourth conversation centers on *appraisal and control* exerted by the platform. The conversation illuminates the reality of *working under continuous surveillance* on the platform. For instance, the platform utilizes a feature called ‘work diary’, which records keystrokes, takes regular snapshots of a worker’s computer screen and can even take pictures through the worker’s webcam. Such elements of tracking and control – although technically optional – are becoming the norm, and workers feel increasingly obliged to adopt them:

“All of my clients are cool people and definitely wouldn’t have cared, but I don’t want it to ever seem like I’m billing them for time when I’m screwing around. I usually just have lofi hip-hop on Youtube [...]. I’ll wait until after a screenshot and pop over to another playlist real quick.”

The common issue workers face here is that they operate outside of traditional organizational work set-ups and thus are only paid for hours actually spent working or – as one worker puts it – *“wiggling their keyboard”*. Bathroom breaks, lunch breaks or time spent reflecting on the best way to approach a task are not being reimbursed.

“[...] traditional workers don’t have 8 nonstop hours of productivity everyday. In most cases, they’re still getting paid for bathroom/coffee breaks, time spent chatting with coworkers, etc. For us, we only get paid for time spent being productive, so an 8-hour workday is much more mentally exhausting.”

Another strand of the conversation serves as an outlet to share *fears and anxieties* evoked by the perceived omnipresent yet often opaque features of surveillance and control on the platform. Chief among these is the – at times almost paranoid – fear of being caught in a misbehavior and subsequently suspended from the platform. According to the numerous recurring “*horror stories*” workers share within the crowd, such misbehaviors might include innocuous infractions such as complaining to the official platform support channels, using certain forbidden words in the chat feature or logging onto the platform from a different country whilst traveling.

“I myself am weary of typing words like “google hangout” or “paypal” in the message center [...] I’m sure it raises a flag so a ‘human’ can review the interaction and determine if you’re in violation of the terms. It’s paranoid, but it’s what it’s and Upwork makes you behave like that.”

Workers have found various ways to *maintain personal boundaries* with and around digital surveillance. Here, they use the crowd to collectively gauge which measures might be appropriate and acceptable. In particular, workers discuss their availability to client requests, the structuring of their workday and schedule and their reluctance or readiness to share personal information. These discourses often take on the shape of reaffirming each other’s rights to set boundaries:

“You’re an independent contractor, so you get to choose your hours and terms. Screw clients who can’t work with you on what works best for both of you.”

Conversation 5: calling into the void – platform literacy and support

The last conversation encompasses discourses about *platform literacy and support*. Workers often find Upwork to be *unresponsive* when addressing official support channels for help, explanation or conflict resolution. Here, they may contact either a “*non-human*” layer of support in the form of forums or chat-bots, or (often after multiple failed interactions with the non-human layer) they may try to contact a human support layer. To gain the necessary support, the crowd of workers engages in *DIY support*. Workers support each other to be better informed about how the platform works and how the respective support layers have to be addressed in order to avoid lengthy processes so that issues can be quickly resolved by the platform. At the same time, problems are frequently relegated to a lack of platform literacy. After a commenter complained about being scammed by a client and the platform not being able to support, another worker answered in the following manner:

“[Your situation] is not called being Upworked. That’s called not bothering to learn how a platform works before using it, which often results in being taken advantage of”

Many workers describe their experiences in dealing with both human and non-human support layer to be frustrating. Workers complain that this layer of support was *unhelpful in resolving an issue* or that they are being stuck with *“some anonymous customer support person [who] might decide there just isn’t a big enough market for you.”* Further, several workers share stories of how their interventions ended up making matters with the platform worse for them. As a worker describes their frustration:

“UpWork instantly suspends me...At this point I just want my hard earned money and my existing clients to get the work I already finished. I tried calling, emailing, live chat, twitter... Nobody on upwork cares at all...”

How HRM activities take shape on digital work platforms

Based on worker perceptions of HRM practices (Wang et al., 2020), we outline five conversations illustrating how the context of digital work platforms shapes HRM activities. By contrasting these worker conversations with current thinking about HRM (Bamberger et al., 2014; Jiang, Lepak, Han, et al., 2012) and contemporary theorizing on HRM on digital work platforms (Duggan et al., 2020; Meijerink & Keegan, 2019), we develop propositions that enrich our understanding of HRM on digital work platforms.

Crowd-created training and development

Our first insight is that training and development are implemented in a different fashion on the digital platform than in traditional organizations. The second conversation shows how workers provide training and development among themselves. For instance, workers improve each other’s self-presentation, help identify profitable niches, mentor inexperienced workers, and provide support and encouragement to each other. In addition, the fifth conversation draws out how workers provide *DIY support* to each other in the absence of a support structure on Upwork.

These insights contrast with how training and development is delivered in traditional organizations. Here, training and development practices are designed by HRM specialists and implemented by line managers (Renkema et al., 2017; Trullen et al., 2020). Recent work highlights that workers take a central role in implementing and shaping HRM practices (Keegan & den Hartog, 2019; Meijerink et al., 2016). For instance, workers take an active role in influencing the performance appraisal

they receive (Keegan & den Hartog, 2019). Our findings indicate that on Upwork, this active role is even more present and vital. Here, training and development is outsourced to workers who create such HRM practices among themselves without support from Upwork or line managers. This leads us to following proposition:

Proposition 1a: *Training and development on digital work platforms is predominantly created by the crowd of workers*

Our proposition provides new insights into the question of how HRM activities are intended and implemented (Nishii & Wright, 2008; Piening et al., 2014) on a digital work platform. Extant research on HRM in traditional organizations highlights that implementation processes usually unfold in a top-down manner through the interplay between several organizational actors (van Mierlo et al., 2018), such as line managers (Sikora & Ferris, 2014), HRM professionals (Jackson et al., 2014), and employees (Meijerink et al., 2016). Research on HRM on digital work platforms has also reiterated this point, arguing that platforms and clients take on roles similar to HRM specialists and line managers (Meijerink & Keegan, 2019). Our findings paint a different picture, showing that workers are not just recipients or ‘consumers’ of HRM practices (Meijerink et al., 2016), but are actively involved in creating and *implementing* HRM practices. Our findings indicate that HRM practices, such as ‘crowd-created’ training and development, come into being even without being explicitly intended by Upwork. We accordingly see ‘crowd-created’ HRM practices as those instigated and implemented by a crowd of workers without the involvement of other pertinent organizational actors. Such ‘crowd-created’ HRM practices of training and development resemble informal mentoring and peer-support between experienced and inexperienced workers (Ragins & Kram, 2007), which is found in traditional organizations, too. Our findings around ‘crowd-created’ HRM practices may, therefore, have implications for the interplay between actors in traditional organizations (Trullen et al., 2020; van Mierlo et al., 2018) and shift the focus toward bottom-up processes in HRM implementation research (van Mierlo et al., 2018).

While our findings thus indicate that the *provision* of training and development may differ on digital work platforms, such as Upwork, they also indicate that the *content* of training and development is different. In traditional organizations, the purpose of training is usually to improve the knowledge and skills of workers with the aim of higher job performance (Jiang, Lepak, Han, et al., 2012). Yet, the third and fifth conversations indicate that workers on Upwork also coach each other with regards to maintaining access on the platform or securing a high-performance evaluation (JSS score). For example, workers would

share their experiences and assumptions about the JSS system, here illustrated by a worker proposing that it “*takes a few months of inactivity before they start hurting your JSS*”. In other examples, workers would substitute lacking support by the platform with their own ‘crowd-created’ ‘DIY’ support. This content is directly related to maneuvering Upwork and its norms, thus transcending ability-based training (Bamberger et al., 2014). This leads us to propose the following:

Proposition 1b: *Training and development on digital work platforms not only focuses on building workers’ abilities for task performance, but also on ‘platform literacy’, i.e., how to navigate the online marketplace, remain on the platform, and acquire profitable gigs.*

We attribute this development to the lack of classic organizational socialization processes on Upwork (Bauer et al., 2007; Griffin et al., 2000; Meijerink & Keegan, 2019). Organizational socialization is seen as a key element in HRM, as HRM has to “send signals to employees that allow them to understand the desired and appropriate responses and form a collective sense of what is expected” (Bowen & Ostroff, 2004: 204). Yet, digital work platforms, such as Upwork, often intentionally obscure the responses they seek from workers and leave it to workers themselves to form a collective sense of what is expected of them (Bucher et al., 2021; Burrell, 2016; Fieseler et al., 2019). The lack of socialization is perhaps best exemplified by workers being left in doubt about what is it expected of them, as one worker noted: “*There are three great mysteries in the world: 1] Stonehenge 2] Pyramids 3] JSS*”. The consequence of this lack of socialization and opacity is that workers lack safe holding environments providing them with routines, rules, norms, expectations and values (Petriglieri et al., 2019). Our proposition thus opens for future research to critically engage with how HRM works on digital work platforms without traditional organizational socialization.

Algorithmic management as an additional selection mechanism

We further shed light on how selection practices unfold on digital work platforms. Our findings in the first conversation highlight how workers are forced to continuously negotiate access to the platform. Here, they are subject to a ‘dual selection’ process: workers are *both* continuously selected by the algorithm with respect to platform access, and they are selected by clients for gigs. Only if workers manage to consistently and continuously pass both algorithmic and client selection will they be able to participate successfully on the platform.

In installing this dual selection process, digital work platforms differ from traditional organizations, in which both selection processes are arranged sequentially, i.e. workers are first selected based on their profile,

and afterwards evaluated based on their job performance (Bamberger et al., 2014). On Upwork, these processes happen simultaneously but may be disconnected from each other. In several of the conversations, workers complain that they might be ‘fired’ by the algorithm irrespective of the client-worker relationship; as one worker remarked: “*Most of the times, the suspension is based on the freaking algorithm’s will*”. In the words of Gandini (2019), the algorithm becomes an ‘invisible managerial figure’ that workers must deal with constantly *while* also successfully applying for gigs and maintaining a professional relationship with clients. As such, workers have to serve two masters – the client and the algorithm. This leads us to propose the following:

Proposition 2a: *In using algorithmic management, digital work platforms install a permanent, latent selection mechanism that supplements momentary and apparent selection by clients and pushes workers to fulfill both algorithm- and client-centric goals.*

In traditional organizations, HRM specialists may design selection mechanisms, such as aptitude tests (Batt & Colvin, 2011), which play a role in employee onboarding. Otherwise, selection and performance appraisal is often devolved to line managers who interact with workers on a daily basis (Kehoe & Han, 2020; Trullen et al., 2020). As a result, workers can build a reciprocal relationship with a manager close to them (Bos-Nehles & Meijerink, 2018).

In contrast, platforms employ algorithmic management as an additional, invisible managerial figure that acts in the background of the client-worker relationship. Here, previous research has noted that this form of algorithmic management reduces worker agency and increases precarity (Curchod, Patriotta, Cohen & Neysen, 2020). Not only do workers face dual selection mechanisms, they may also face an implicit coalition between platforms and clients. Platforms, such as Upwork, let clients provide feedback that is invisible to the workers, but visible to the algorithm. This provides the platform with ‘secret data’ on workers, while clients covertly can punish workers (Curchod *et al.*, 2020). This contrasts with the depiction of the classic HR triad, in which HRM specialists, managers and workers are (near) equal partners, and workers often play a co-creative role (Jackson et al., 2014; Meijerink et al., 2016). Our findings indicate that within the context of Upwork, there is a much larger power asymmetry between workers on the one hand as well as the platform and clients on the other hand (Curchod *et al.*, 2020).

Our findings further indicate that such a dual selection mechanism may shift the goals that workers pursue. As the third conversation outlines, the uncertainty around algorithmic evaluation mechanisms forces workers to constantly unpack this system of selection and find ways to work with it or to manipulate it in their favor. While workers care about

their job performance, our findings indicate that they are, ultimately, more worried about maintaining a favorable JSS score, since this affects their ability to remain on the platform. Workers can negotiate with clients to convince them to provide better feedback and are even given ‘perks’⁴ to remove some client feedback, but they have few means to contend with the algorithm. As one worker outlines: “*When you get suspended, there is a microscopic chance that a human will be available to logically deal with your case and make a decision to revive it. Thus, if you get suspended, you get suspended. End of story.*” For this reason, we propose the following:

Proposition 2b: *The additional layer of algorithmic management on digital work platforms shifts worker focus from pleasing the client toward satisfying the algorithm and its control system.*

This proposition outlines how the reliance on algorithmic management for appraisal and rewards changes the nature of how workers perceive their goals. Our proposition builds on extant research (Kellogg et al., 2020) that emphasizes how opacity and increased surveillance of algorithmic management change worker behavior. Here, we further outline a specific shift; a turn in attention away from actual client-directed work towards the algorithm and surveillance in themselves. This shift illustrates an issue with applying algorithmic management to control workers. While control systems ensure the functioning of the organization, there is always a risk that “such systems can become a burden rather than a motivational tool, with the potential for deleterious effects on employee relations” (Bamberger et al., 2014: 103). Indeed, the shift of focus toward the algorithm’s rating system likely turns control as a *means* to foster high performance into an *end* by itself (Bromley & Powell, 2012). Future research should thus explore this form of decoupling with respect to algorithmic management, both in terms of digital platforms and traditional organizations who increasingly employ algorithmic management.

The hybrid nature of digital work platform’s HRM philosophies

Our findings and the two sets of propositions developed above portray a paradox relating to the underlying HRM philosophy on Upwork. Traditionally, the HRM literature assumes that organizations follow a binary set of HRM philosophies, falling along the spectrum of control-based vs. high-performance approaches (Batt & Colvin, 2011; Guthrie, 2001). Yet, our findings indicate that Upwork seemingly does not fit this binary distinction between philosophies. On the one hand, workers are left to their own devices, having to ‘crowd-create’ HRM practices around training and development. On the other hand, workers are also subjected to increased surveillance and control, as platforms

employ a layer of algorithmic management that supplements control and management through clients. Accordingly, instead of falling on either side, platforms seem to combine elements of both philosophies by simultaneously wanting workers to be autonomous, committed to perform training and development on their own and able to design their own job, while also employing algorithmic control in a way that resembles Taylorism (Duggan et al., 2020). In order to make sense of this, we propose the following:

Proposition 3: *Digital work platforms employ a 'hybrid HRM approach', i.e., an approach that blends philosophies and practices from a control-based approach and a high-performance approach to HRM systems.*

Our proposition brings together disparate findings arguing that platforms either provide close controls of workers' activities, e.g. by dictating Uber drivers to pick up certain clients and take certain routes (Rosenblat & Stark, 2016), or provide flexibility and autonomy that traditional organizations do not (Lehdonvirta, 2018; Wood et al., 2019). While these studies focus on *either* side of a hybrid HRM approach, our propositions outline that HRM on digital work platforms likely include *both* increased control and autonomy simultaneously.

The conceptualization of HRM on digital platforms as following a hybrid philosophy challenges core tenets of HRM and the interplay of their elements (Jiang, Lepak, Han, et al., 2012; Subramony, 2009). First, HRM research in traditional organizations outlines how core philosophies are turned into intention (i.e. policies) and implementation (i.e. practices) (Jackson et al., 2014; Ren & Jackson, 2020). An important goal is consistency between policy and practices to avoid decoupling (Bowen & Ostroff, 2004; Bromley & Powell, 2012). Hence, traditional organizations often rely clearly on one philosophy for the same group of workers (Lepak & Snell, 1999), encompassing respective policies and practices, to ensure consistency. Yet, we know little about how the consistency of an HRM strategy is affected when contradicting elements are intentionally blended. This provides an interesting avenue for future research as many traditional organizations integrate algorithms and Big Data analytics into high-performance work systems, creating the foundation for such a hybrid strategy (Angrave et al., 2016).

Second, how workers cope with a hybrid HRM approach has implications for the broader literature on job-crafting. Typically, job crafting concerns how workers can grasp opportunities to change tasks and boundaries of their jobs to increase meaning and improve work identity (Wrzesniewski and Dutton, 2001). Our findings highlight, however, that workers seem to craft their job not as an opportunity for perceived improvement, but as a necessity to deal with the contradictions of the

hybrid HRM activities. As such, we encourage research to investigate the implications of such necessity-driven job crafting (Bailey et al., 2017; Rudolph et al., 2017). Third, as extant research highlights, HRM practices and policies unfold their full potential and positive impact on individual and organizational outcomes when there is an internal fit between them, allowing for synergistic effects and ‘powerful connections’ (Banks & Kepes, 2015; Delery & Shaw, 2001). In light of this thinking, there is a question to which extent such a hybrid approach produces ‘powerful connections’ or rather ‘deadly combinations’ when workers “fail to make sense of it in a coherent, consistent and unified way” (Wang et al., 2020: 146). In particular, it will be important for future research to investigate the sustainability of such a strategy for both workers and platforms (Duggan et al., 2020).

Contributions and conclusion

Theoretical contributions

Building upon our findings and propositions, we make three contributions to the growing understanding of how HRM activities apply to and take shape when employed by digital work platforms. *First*, the article builds upon a new methodology combining supervised text analysis, document clustering with inductive, in-depth qualitative analysis to analyze conversations among gig workers from Upwork in an online community. Building on this novel methodology, we capture worker perceptions of HRM practices (Wang et al., 2020) and illustrate how the content of such HRM practices takes shape when employed by digital work platforms. More to the point, we show how workers perceive training and development, selection and job design in ways that differ from extant research on such practices in traditional organizations (Boon et al., 2019; Wang et al., 2020). By outlining how workers crowd-create practices, such as training and development, we add empirical insights on how HRM processes pertaining to how practices are established and modified by workers (Jackson et al., 2014) unfold in the context of digital work platforms (Connelly et al., 2021; Duggan et al., 2020; Kuhn & Maleki, 2017; Leicht-Deobald et al., 2019; Meijerink & Keegan, 2019; Schroeder et al., 2021).

Second, we contribute to the understanding of HRM implementation on digital work platforms by outlining how workers ‘crowd-create’ HRM practices. Our findings illustrate how the implementation of HRM practices on digital work platforms shifts towards the crowd of workers, who use online communities, such as Reddit, to provide training and development to each other. We thus add to the current debate on HRM implementation processes and the role of multiple actors and contexts

by drawing out the importance of understanding dynamics among the crowd of workers (Bondarouk et al., 2018; Piening et al., 2014; van Mierlo et al., 2018). While traditionally, HRM research has argued that HRM practices “travel along a one-way street that is designed in the HRM department and aligned with the strategy, and applied top-down to achieve outcomes” (van Mierlo et al., 2018: 3027), our study outlines the importance of bottom-up processes on digital work platforms in the gig economy. Such shift may help understand how organization can, for instance, better fit HRM practices to increasingly complex contexts and needs, or how workers may further help create mutual gains by actively partaking in the implementation and design of practices (Glover et al., 2014). Further, our findings problematize the role of power asymmetries on digital work platforms (Bucher et al., 2021). While a certain level of information asymmetry is inherent in the platform’s role as an intermediary between client and worker (Meijerink & Keegan, 2019), our findings indicate that greater power asymmetries may hamper such a multi-lateral ecosystem and may, accordingly, present an important boundary condition in establishing a mutually dependent ecosystem. Taking into account not only the platform’s power over workers and clients, but also the clients’ power over workers, our findings indicate that workers may simply have too little power for there to be an equitable ecosystem. Consequently, we propose that theory on HRM implementation in the gig economy needs to pay more attention to the role of workers and power asymmetries to uncover how “intermediary platform firms serve the creation of value for *all actors* versus the creation of value primarily for the intermediary firm” (Meijerink & Keegan, 2019: 25). For instance, a closer look at how platform design may influence power asymmetries may provide novel insights.

Last, we conceptualize how HRM activities employed by digital work platforms in the gig economy take a hybrid form that blends elements from the control-based and high performance work system (Batt & Colvin, 2011; Guthrie, 2001). While this finding may seem surprising at first glance, it provides integration for extant research indicating elements of control-based and high performance HRM approaches. For instance, research has noted that digital platforms decrease worker freedom through algorithmic management (Duggan et al., 2020; Kuhn & Maleki, 2017), yet also provide flexible and autonomous jobs (Wood et al., 2019). Our study casts light on this contradictory design by investigating worker perceptions, which illustrate that worker perceive conflicting demands of control and freedom. Thus, we allow for a nuanced perspective where we can understand digital platforms as being on a spectrum between control-based and high-performance approaches to HRM, rather than being either or.

Limitations and future research implications

While our study extends current research on HRM on digital work platforms, it is not without limitations. First, our findings build on the context of the digital work platform Upwork. While Upwork represents a typical case, the diversity of gig work settings (Duggan et al., 2020) means that our findings may not be easily generalized to other platforms. Second, as a qualitative study focusing on worker perceptions, we are limited in making strong claims with respect to outcomes of HRM activities, such as organizational performance of the platforms, job performance or worker well-being. Furthermore, focusing on worker perceptions limits our understanding of HRM policies, as worker perceptions are not suited for capturing an organization's intentions and goals (Boon et al., 2019). Last, our method, while offering a powerful way to collect, structure and code large sets of text-based data, comes with limitations: Much of the analysis – and especially the filtering of the data – depends on the quality of the self-developed dictionary. Here, applying the same dictionary to other platforms would be beneficial to test its robustness.

Our study and its limitations lay the foundation for future work on HRM on digital work platforms as well as future research into how the use of algorithms changes HRM. First, we encourage future research to delve into the heterogeneity of working arrangements and technologies on digital work platforms within the gig economy (Duggan et al., 2020; Kuhn & Maleki, 2017; Wood et al., 2019). While extant research outlines that the tension between flexibility and control unfold in different types of digital work platforms (Möhlmann et al., 2020; Veen et al., 2020), future research could investigate how it may unfold differently between work platforms built upon onsite work, such as Uber, and purely digitally mediated platforms, such as Upwork. Physical aspects of gig work may enable workers to create different HRM practices and may thus provide new insights into gig workers 'pacify' algorithms (Bucher et al., 2021). Therefore, we encourage future research that compares different platforms types. Second, although we are unable to make clear inferences concerning the intended HRM policies of Upwork (Nishii & Wright, 2008; Trullen et al., 2020), our study indicates that Upwork's HRM policies and how it intends to increase the ability, motivation, or opportunity of gig workers may differ from traditional organizations. We therefore encourage future research to engage with the HRM policies of gig work platforms, e.g. by interviewing representatives of platforms. Last, we encourage future research to investigate worker outcomes, such as job performance and satisfaction (Den Hartog et al., 2013). Moreover, future research could combine our second suggestion of investigating policies with our third suggestion to investigate outcomes (Bowen & Ostroff, 2004).

Conclusion

Based on a supervised text analysis and document clustering as well as an inductive and in-depth qualitative analysis of worker comments from an online community, we outline five conversations on how gig workers perceive HRM practices on digital work platforms in the gig economy. These conversations provide compelling insights into HRM activities in the context of Upwork, a digital work platform, and encompass a broad range of topics, such as *access and mobility*, *training and development*, *scoring and feedback*, *appraisal and control* as well as *platform literacy and support*. Building on these conversations, we develop five propositions outlining how HRM activities take shape on digital work platforms. In doing so, we contribute to the undertheorized phenomenon of HRM in the gig economy (Duggan et al., 2020).

Our study suggests that digital platforms, exemplified here by Upwork, may employ a hybrid form of HRM that blends elements from traditional control-based and high-performance approaches. We propose that this hybridity is achieved through combining algorithmic management with alternative employment relations. As more and more organizations employ algorithms to monitor workers (Angrave et al., 2016) and employ workers through alternative arrangements (Katz & Krueger, 2019), it is a compelling question whether the HRM transformation taking place on digital work platforms in the gig economy concerns not just digital work platforms but employment relations and HRM at large. We hope that our study can serve as a foundation for future work to critically engage with the transformation of work taking place across contemporary organizations.

Notes

1. Bamberger et al. (2014) and Sun et al. (2007) use the term “subsystem”, whereas Jiang, Lepak, Han, et al. (2012) use the term “Policy Domain”, both encompassing the idea of policies and practices being bundled. In the following, we use the term ‘HRM policy domain’ to avoid confusion between the concepts of policy domain and subsystem.
2. Excerpt from Upwork’s Community guidelines: “The following are violations that may result in immediate post removal, warning, board sanction and/or suspension from the site: [...] Posting deliberately disruptive and negative statements about Upwork. [...] Discussing or reposting deleted posts or warning letters or discussion of sanctioned or no longer registered members.” (last edited Feb 10th 2020: <https://community.upwork.com/t5/Announcements/Upwork-Community-Guidelines/m-p/259905>)
3. PRAW documentation: <https://praw.readthedocs.io/en/latest/>
4. Perks are earned advantages that workers obtain by earning ‘talent badges’, i.e. rewards for good performance. One of these perks is being able to remove instances of bad client feedback.

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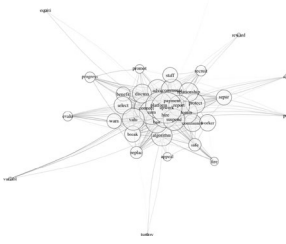
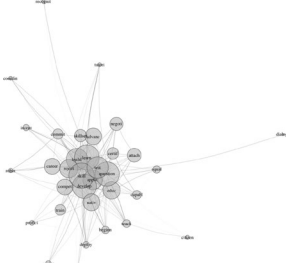
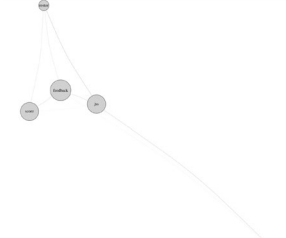
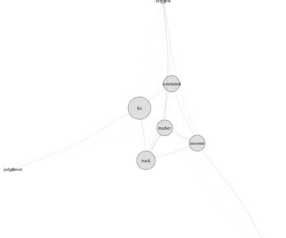
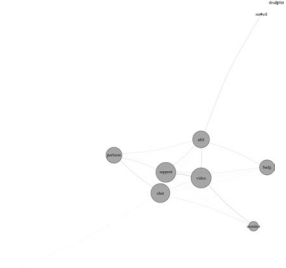
Appendix 1: Reliability in the dictionary-crafting process

The terms derived from theory, platform and user comments were collected by two authors independently before being consolidated into one dictionary. There were no disagreements with respect to the overall categories. However, there was some discussion with respect to very specific terms like *scam*, *equity* or *deployment*, which were finally excluded due to a lack of direct relevance to an HRM practice. This process yielded 141 terms related to HRM practices. We slightly reduced this list by eliminating redundant words to their stem (e.g. *teach*, *teacher* and *teaching* were reduced to *teach*). The remaining list of 110 terms was used as a dictionary to structure the data in the subsequent step (see Table 1). For further analysis, we applied the dictionary to the full dataset, only retaining comments that contained at least one of the 110 HRM terms. Dictionary terms that yielded too many 'false positives' (comments which were unrelated to HRM) were excluded from this step.

Appendix 2: Text processing and visualization

Text processing and visualization were performed in R over six steps: *First*, the comments were transferred into the data structure of a corpus using the "tm" - text mining package (Feinerer & Hornik, 2018). *Second*, we preprocessed both the comments and the dictionary by converting all text into lower case, deleting punctuation and numbers as well as reducing all words to their stems (e.g. *reject*, *rejected* and *rejection* were all reduced to one word stem 'reject*'). *Third*, the dictionary was applied to the text content, resulting in a $12'091 \times 110$ Document-Term-Matrix (DTM) that renders transparent which comment contained which HRM term from the dictionary. *Fourth*, to analyze how the dictionary terms relate to each other, a Term-Term-Matrix (TTM) was created. Here, the DTM was transposed once and multiplied by itself, resulting in a 110×110 matrix indicating the frequency with which an HRM term occurs with another HRM term in the same comment. *Fifth*, based on the structure and the elements of the TTM, we created a node- and edge list. The nodes in the network correspond to the HRM terms from the dictionary. The thickness of the edge represents the connection strength of the two nodes, respectively the value of the two words in the TTM. By way of 'cleaning up' the resulting network structure, we removed isolated nodes and loops in line with best practice (Luke, 2015). *Finally*, all nodes were sorted into groups with the use of Louvain-clustering, which is a common method of community detection (Blondel et al., 2008; Held et al., 2016). Here, the number of clusters is determined through an optimization procedure that maximizes network modularity. This represents an unsupervised approach, where cluster size and cluster membership of the nodes are determined purely statistically (De Meo et al., 2011). The resulting network structure (Figure 2) reveals a color-coded overview of five comment clusters or, as we refer to here, *conversations* surrounding HRM on digital work platforms. The network structure shows in particular how closely interlinked the conversational clusters are, indicating that HRM conversations, although distinct, remain closely related. Figure 3 shows each HRM conversation cluster individually and Appendix 3 emphasizes how the conversations relate to the HRM dictionary, further revealing how our clusters relate to the theoretically derived policy domains of *people flow*, *appraisal and rewards* as well as *employee relations*. In the following, each of these conversations was coded qualitatively.

Appendix 3: Sub-Clusters of identified conversations surrounding HRM activities

Identified Key Conversations	Louvain Clustering of filter stems	Sub-Clustering
<p>Access and Mobility</p>	<p><i>advic, algorithm, appeal, ban, benefit, break, communic, communiti, connect, discuss, earn, equiti, evalu, fire, forum, hire, intermediari, payment, platform, progress, promot, protect, punish, recruit, relationship, replac, report, reward, safe, select, separ, sick, staff, suspend, turnov, upwork, valu, variabl, warn, worker</i></p>	
<p>Training and Development</p>	<p><i>advanc, applic, attach, Beginn, build, capabl, career, certif, citizen, commit, compet, coordin, deploy, develop, dialogu, educ, equal, incent, junior, learn, nativ, negoti, profici, question, recognit, reject, robot, senior, skill, skillset, teach, test, train, tutori</i></p>	
<p>Scoring and Feedback</p>	<p><i>feedback, jss, novic, restor, score</i></p>	
<p>Appraisal and Control</p>	<p><i>automat, disciplin, fix, judgement, keystrok, screenshot, track, tracker</i></p>	
<p>Platform Literacy and Support</p>	<p><i>abil, badg, chat, monitor, perform, renegoti, support, surveil, video</i></p>	



Appendix 4: Conversation themes and sample quotes of workers' conversations

Conversation 1	Keywords	Conversation Theme	Sample Quote
Access and mobility	<p>advic, algorithm, appeal, ban, benefit, break, communic, communiti, connect, discuss, earn, equiti, evalu, fire, forum, hire, intermediari, payment, platform, progress, promot, protect, punish, recruit, relationship, replac, report, reward, safe, select, separ, sick, staff, suspend, turnmov, upwork, valu, variabl, warn, worker</p>	<p>Gaining access to the platform</p> <p>Landing gigs</p>	<p>Upwork is really picky about who can get into the platform, and Chinese or other foreign devs usually have a hard time.</p> <p>In May of 2018, Upwork was still letting people in pretty much automatically. Over the past several months, rejection has become the norm.</p> <p>Hello, I've been working as a web application developer freelancer for quite some years, and have been trying to get into upwork for the past year at least. I had submitted my profile probably over 50 times now, and they just kept rejecting me with their "over 10'000 freelancers with my skill" email. However, today i opened the website, and i seemed to be approved, i don't even remember submitting my profile again after they declined me the last time (about a week ago), i didn't receive any notification email about my account being approved. [...]</p> <p>here's some weird algorithm in place that intuitively(whatever) decides which jobs are a better fit for you depending on how you respond to the invitations.</p> <p>Upwork never said how many is too many, so you can't assume it's 30 proposals. It would be good to know or get some sort of notification that you're close to getting suspended, but not sure what you could do even then.</p> <p>I got banned for applying to too many proposals. I made my account last week and decided to apply to proposals that i feel i can handle. The other day i logged in and my account was suspended. There was no reason, or email or anything about why it was suspended. I am pretty disappointed by this turn of events. There is no official information about applying for too many proposals.</p> <p>"[...] Even _if_ i sent 13 proposals in one day, what's the problem? and if its a problem, why suspend my account? why not warn me?"</p> <p>"I woke up yesterday to my account being suspended. I didn't receive any emails about it before or after the fact, and all the customer support links just redirect after a few seconds to my job feed...."</p> <p>I have no idea what i did wrong. Any suggestions would be welcome, thanks!"</p> <p>"Most of the times, the suspension is based on a freaking algorithm's will. [...].When you get suspended, there is a microscopic chance that a human will be available to logically deal with your case and make a decision to revive it. Thus, if you get suspended, you get suspended. End of story."</p> <p>Just got a bs email from upwork, stating they've changed my profile settings to private because "i havent been working on upwork lately". This means no clients will be able to search for my profile, but they say they'll change my status to public "once i start earning on upwork again." And right under this, a big plug for joining upwork's Freelancer Plus paid program to keep my profile public. Granted I don't do a ton of work on there anymore, but wtf I have an active contract on there right now with a milestone paid in the last 2 weeks! Anyone know anything about the criteria they're using to hide profiles</p>
		<p>Unjustified or unexplained suspensions</p>	

Conversation 2	Keywords	Conversation Theme	Sample Quote
Training and development	<p>advanc, applic, attach, beginn, build, capabl, career, certifi, citizen, commit, compet, coordin, deploy, develop, dialogu, educ, equal, incent, junior, learn, nativ, negoti, profici, questio, recognit, reject, robot, senior, skill, skillset, teach, test, train, tutori</p>	<p>Improving Self-Presentation</p> <p>Figuring out your niche</p> <p>Developing pricing strategies</p> <p>Coping and encouragement</p>	<p>Your profile overview needs work. It looks like a wall of text so most clients won't read it. When a client sees the list of proposals they see the first couple lines. You need a stronger and more interesting beginning.</p> <p>"You need a new profile picture. You current picture says "keyboardist in 80's music video" more than "reliable IT professional."</p> <p>"Hello Friends, I'm currently starting my career as freelancer on the Upwork platform and **I'd like to receive some critique from you about how I could improve my profile"</p> <p>"[your proposal] doesn't look 100% professional to my untrained eye. Use your portfolio for your absolutely best work"</p> <p>There are over 7000 WordPress developers on Upwork. Next, start winnowing that down by their Filters stats i.e. over 100 hours, range of earnings, and other status filters. , I have no idea how anyone could make a living making WordPress sites anywhere with those numbers. I'm not sure what your specialty is but this could help you decide.</p> <p>To be more competitive, I've been considering getting some certifications in proofing and editing from various US editing societies. I know getting more education is always a good thing intrinsically, but is it worth it from a jobs perspective? Do you think it would help me win more contracts? I've been freelance writing for the past two years, and it's getting harder and harder to find steady clients with reasonable pay. I'm a pretty good self-learner, so I'm wondering, what other skills can I add to maybe hop onto a different freelancing market?</p> <p>Right off the bat, your hourly rate is too low. You're a full stack engineer, not a receptionist! If I were out to hire an engineer and I saw a \$25 hourly rate, I would immediately think you weren't worth your salt. Your skillset is worth at LEAST \$60/hr.</p> <p>I'm brand new to Upwork, but I put my skill level at an intermediate with \$40.00. Think I should put it lower?</p> <p>Can you please help me how much i can charge for each hour of video i process ? I started at \$60, then one of my agency clients (outside Upwork) told me I was way too cheap.</p> <p>Decided to start raising my rate by \$10 every two weeks until I had a week with fewer billable hours than the week before, at which point I'd lower it by \$5 and keep it there. I'm at \$80 now and still haven't had a week with fewer hours than the previous week. I'll achieve "Top Rated" in a week, so I'll raise my rate again to \$90 and end the experiment</p> <p>Damn, that's a well laid out profile. I'm sorry you aren't having luck, man, it is rough out there for web developers right now. For what it's worth, your first sentence is a little wonky.</p> <p>Tuesday vent time. I've hit a patch of flakey clients and I can't wait for it to end (please tell me it will). I haven't had this many people just up and disappear in 8 years of online freelancing, and I've worked with much pickier and moodier clients back in my cheaper days.</p> <p>Don't give up. Work on other platforms, build up your reputation, and re-apply in a couple of months. Thanks so much, that's really helpful. And I'm so happy to hear you like my work!</p>



Conversation 3	Keywords	Conversation Theme	Sample Quote
Scoring and feedback	feedback, jss, novice, restor, score	<p>Raging against the System</p>	<p>"There are three great mysteries in the world: 1] Stonehenge 2] Pyramids 3] JSS" "Rising Talent [status] will help you get hired, but they choose who to give it to so arbitrarily. It could be based on the school you went to, or the city you live in, or any random attribute." "The algorithm they use to rate clients and freelancers is a dumpster fire. I have no idea why they made such a simple system so complicated. As another person stated, it's usually because of the private feedback score, which makes no sense to me." "Private feedback impacts the JSS more. In the unlikely event that her feedback brings my JSS below 95% at the next update, I'll just use my perk to remove the feedback... Don't remove that feedback unless it knocks your JSS way down. 4.8 is a good score." "No, do not ask for feedback. "No feedback" doesn't hurt your JSS unless it becomes a pattern, so one time won't hurt you. If you ask for feedback, you're unlikely to get five-star feedback, and that will make your percentage go down." Based on my own experience and conversations with other freelancers it takes a few months of inactivity before they start hurting your JSS. It seems like pretty much anyone who has never set a client's house on fire is top rated on Upwork unless they're brand new After I submitted the article, the client just closed the contract and left 3 stars, essentially saying "the work was good but it took an absurdly long time to write". My question is, how do I prevent this from happening again? Should I not be logging researching, editing, and finalizing/formatting time?" That 4.8 can drop your JSS pretty fast. If you don't need the cash it may not be a big deal. But if you do, then it's worth it to reach out again and offer revisions. Or you could even offer a refund if they weren't completely satisfied (if you're a risk taker!). I as well have had big contracts on Upwork with clients that initially has asked to work outside of Upwork. So I only report the ones that are stupid enough to ask in the Upwork chat.</p>
		<p>Figuring out the System</p>	
		<p>Working with the System</p>	

Conversation 4	Keywords	Conversation Theme	Sample Quote
Appraisal and control	<p>automat, disciplin, fix, judgement, keystrok, screenshot, track, tracker</p>	<p>Working under Surveillance</p>	<p>"The time tracker takes screenshots randomly every 5-10 minutes once you start it up, so I usually locate the project that I'm working on, start the tracker and then open the project. While I'm working, I keep only work related programs open....while I'm on the clock. That way your client won't see your grocery lists..."</p> <p>"I've been paranoid about this too! All of my clients are cool people and definitely wouldn't have cared, but I don't want it to ever seem like I'm billing them for time when I'm screwing around. I usually just have lofi hip-hop on Youtube, but if there are too many lyrics, I have to change it (I'm a proofreader, so I can't hear words while I'm trying to read words). I'll wait until after a screenshot and pop over to another playlist real quick."</p> <p>I access Upwork exclusively via VPN whether in the US or out. I have never had tracker problems. Zero.</p> <p>Leaving the time tracker OFF entirely until :08, then turning it on and getting a screenshot before the :10 will get you credit for the entire block of ten minutes. [...] Also note that if you don't wiggle your mouse or type keys during the block, the time tracker will automatically "not submit" that 10 minute block.</p> <p>Fear and Loathing</p> <p>I panicked that my JSS would take a hit. But guess what....nothing happened. I suspect the client gave me a good rating in the 'would you recommend this FL' or whatever the metric is in the client feedback. If the client is happy with your work, they might have given you a good private feedback. So, it will probably come to nothing.</p> <p>Yeah, I screwed it up (starting with working for them), but the Upwork Godz have me all paranoid about kissing client's butts. I just want to ensure that I've done what I can, as far as damage control.</p> <p>I myself am weary of typing words like "google hangout" or "paypal" in the message center [...] I'm sure it raises a flag so a 'human' can review the interaction and determine if you're in violation of the terms. It's paranoid, but it's what it's and Upwork makes you behave like that.</p> <p>This kind of delusional fearmongering is not helpful. A year or so ago, I got a 4.1. It dropped my JSS from 99 to 98 and affected my life not at all.</p> <p>You're an independent contractor, so you get to choose your hours and terms. Screw clients who can't work with you on what works best for both of you."</p> <p>Messages I received come in to me at 4 am (EST). Is there a way to combat this, is this some sort of prime time in this work? Should I rearrange my sleeping schedule?</p> <p>For example, him telling you you have an hour to contact him back during the proposal stage would be an instant no from me - it shows right off the bat that he's not respecting your time or seeing you as a fellow professional.</p>
		<p>Designing work Boundaries</p>	



Conversation 5 Platform literacy and support	Keywords <i>abil, bady, chat, monitor, perform, renegoti, support, surveil, video</i>	Conversation Theme Unresponsive platform	Sample Quote UpWork instantly suspends me...At this point I just want my hard earned money and my existing clients to get the work I already finished. I tried calling, emailing, live chat, twitter... Nobody on upwork cares at all... The one issue you might face is that some anonymous customer support person might decide there just isn't a big enough market for you. Apparently, if I don't override a request within 14 days, the freelancer automatically gets my escrow money, whether he provides a service or not. I tried escalating this as high as I could go, Maria L of the Upwork Executive Escalations Team, but she has denied all my requests for refund and subsequently now suspended my account and right to talk to customer service. It really sounds like you haven't taken the time to learn to use Upwork. Do that before you accept more work. Awesome. I'm happy I asked here, not the Upwork customer service.. Truly appreciate it! They are more concerned about the freelancers who may be taking clients off platform... or those spamming clients by applying for jobs they are not qualified to do. Saying that, I don't trust Upwork's automated responses and there human support is often slow to react....Keep good records by communicating within Upwork as much as possible and clearly say no if a client suggests circumvention or any other TOS violation. I'd post this on the forum as well - you might get more attention there from the Upwork staff mods. Same here, their support is ignoring the problem. Try social media or upper management. Upwork support is questionable and was much more adequate when they were smaller (odesk). I don't see how UpWork wins by suspending freelancers who make money for the site because of a simple misunderstanding and lack of due diligence. What annoys me the most is how I've defended UpWork when I see other freelancers complaining about them. Their customer service couldn't possibly this inept?
		DIY Support	
		Unhelpful support	