DISCUSSION PAPER

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Two to Tango? Psychological Contract Breach in Online Labor Markets

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Psychological Contract Breach in Online Labor Markets

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Abstract

Despite some advantages over traditional (offline) labor markets – such as lower search costs, better matching and improved monitoring – online labor markets (OLMs) have not taken off as initially expected. In this paper, we study the factors that limit perceived project success on OLMs. Using psychological contract theory, we theorize how common OLM features including contracts with virtual monitoring, multi-freelancer projects, and simultaneous projects by a client trigger the perception of psychological contract breach among OLM participants and reduce perceived project success for both participants. We test these hypotheses using an extensive dataset with more than 143,000 transactions on the world's largest freelancing platform, *Upwork*, and find that – contrary to predictions from agency theory – projects equipped with strict freelancer monitoring (hourly-pay contracts) and projects enabling peer comparison (multi-freelancer projects or multiple simultaneous projects), lead to lower perceived project success both from the freelancer's and the client's perspective. Our work implies that transactions on online labor markets should not be viewed solely as agency relations, and that some features that supposedly reduce agency costs and improve efficiency on OLMs come at the cost of triggering the perception of psychological contract breach.

1 Introduction

The emergence of the gig economy and online labor platforms was supposed to unlock several advantages of these new forms of work: improved flexibility and autonomy for workers and lower costs and access to a larger labor pool for firms. However, despite early enthusiasm (Katz and Krueger, 2016), the growth of gig work has stagnated (Bureau of Labor Statistics, 2018; OECD, 2019) and platforms and their participants are involved in several controversies.[1] One such controversy revolves around the status of gig workers: Are they employees or independent contractors? As a U.S. federal judge described, gig workers "don't seem much like employees," but "don't seem much like independent contractors either."[2]

This ambiguity looms large on online labor markets (OLMs), markets designed to outsource tasks that used to be performed by employees. We argue that the differing perceptions on contractual terms lead to diverging expectations of both parties involved in a transaction (Chen and Horton, 2016): Clients view freelancers as independent contractors with no obligations beyond the legal contract, while freelancers have an employee-like mindset with corresponding expectations.[3] Taking a psychological contract perspective (Rousseau, 1998), we posit that certain OLM features amplify these incongruent perceptions, which then lead to a breach of the psychological contract and to lower (project) success perceived by client and freelancers.[4] Specifically, strict (technology-enabled) monitoring, i.e. virtual monitoring and peer comparisons, can trigger resentment by freelancers and cause complex project dynamics, which in turn leads to disappointment by clients.

We build a novel dataset with more than 143,000 transactions on the world's largest freelancing platform, *Upwork* and complement our analysis with anecdotal evidence. We find support for our general hypothesis that increased monitoring is associated with lower perceived success by both client and freelancer. This is at odds with an agency view on OLMs, which predicts that better

monitoring of the agents (freelancer) by the principal (client) on spot market transactions leads to improved outcomes because agency problems are reduced.

We make four contributions. First, we show how insights from an agency framework – i.e. the link between monitoring, peer comparison and project success – cannot explain the peculiarities of OLM projects because partners enter conflicting psychological contracts. By taking a *bilateral* perspective, we further extend work that chiefly focuses on one parties' concerns. Second, we show how OLM features can harm project outcomes and thus platforms because both parties are dissatisfied. Third, we add to psychological contract theory by extending it to OLMs to study the role of *intermediaries* in shaping psychological contracts. Most prior work focuses on organizational settings and how supervisors affect employees' psychological contracts. Finally, we add to emerging research on employers' psychological contracts.

2. BACKGROUND
2.1 Online Labor Markets
Online labor market platforms (OLMs) such as Amazon Mechanical Turk (MTurk), Upwork, Fiverr, and Freelancer.com all facilitate the allocation of labor across global economies (Agrawal et al., 2015). OLMs are markets "where labor is exchanged for money, the product of that labor is delivered over a wire and the allocation of labor and money is determined by a collection of buyers and sellers operating within a price system" (Horton, 2010, p. 516). We study spot markets for tasks, a particularly powerful new way of accomplishing work online (Horton, 2010).

OLMs differ from traditional (offline) labor markets in several ways. First, work takes place online rather than by physically collocated workers (Chen and Horton, 2016). This enables transactions by geographically remote suppliers (Agrawal et al., 2015). Second, the service is an experience good, i.e. the value of the service is often difficult to assess without purchasing and consuming it

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(Kokkodis and Ipeirotis, 2016). Third, as archiving digital transactions is easy, OLMs provide more standardized and complete information on applicants (Agrawal et al., 2016), e.g. their history, skills, and ongoing progress of commissioned work. Advanced communication and information technologies grant almost real-time access to the worker and her progress. Fourth, workers can work for multiple employers simultaneously, so that OLMs are characterized by many-to-many connections, some lasting only a few minutes (Felstiner, 2011). Fifth, most OLMs broker highly heterogeneous tasks, enabling workers to cover diverse task categories and tasks with different skill levels (Kokkodis and Ipeirotis, 2016). Employers are flexible in which tasks to outsource and how to specify the job (e.g. contract type, engagement level, skills required, hiring multiple workers). Finally, global digital workers differ in their motivation, education, and background (Manyika et al., 2016).

2.2. Work Processes on Upwork

Upwork was founded in April 2014 following a merger between oDesk and Elance, and was named Upwork in May 2015. It facilitates transactions in 70+ task categories, ranging from administrative support and graphic design to software and web development. Upwork freelancers are earning more than $1bn annually and cover over 5,000 skills (Upwork, 2019a). Upwork encourages high-value, ongoing work (Pofeldt, 2016) like developing an online marketing strategy, porting an Android app from an iOS app and adding features to an existing (Web or Mobile) app.[5]

To post projects on Upwork, clients register by providing contact details and basic information. Clients can then post any number of jobs and hire as many freelancers as they like, in general and for a single project. Postings include a task description, the client's location, the type of contract offered (fixed price or hourly-pay), and other job features. For fixed-price projects, clients must specify outcome, budget and deadline. Both parties negotiate a bid for the full project or break it

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down into milestones. The freelancer submits the deliverable and the client reviews it, approves the milestone and releases funds after approval. For hourly-pay projects, clients give the expected number of weeks and hours per week to complete the project. These contracts offer a (technology-enabled) virtual monitoring system ("Work Diary"), which tracks time and records completed work. The work diary counts keystrokes and takes six screenshots per hour of the freelancer's desktop, enabling the verification of work progress and billable hours. There is also a webcam option, taking images after the freelancer has turned on the webcam. While all platforms offer both contract types, only Upwork offers a virtual monitoring system and supports payment protection.

Freelancers register by giving contact details, name and location as well as setting up a profile page. Profiles are very detailed and include a description of skills, education, work experience outside the platform, skill test scores, certifications, agency affiliation, portfolio items, platform work history and feedback scores. Freelancers apply by submitting cover letters and bids. Clients can interview and negotiate with applicants before hiring. When hiring multiple freelancers for single projects, clients send separate job offers and outline the terms of each contract, which can deviate from the original job posting.

Freelancers complete tasks remotely. Submission of deliverables and payments are via Upwork, which charges a fee. After completion, both client and freelancer evaluate the project with a score from 1 to 5 on a number of process- and outcome-related criteria.

3 Agency Perspectives on Online Labor Markets

Most prior work on online transactions (Mishra et al. 1998; Singh and Sirdeshmukh, 2000) takes an agency perspective to observe "transactional arrangements between self-interested parties with incongruent goals in the presence of uncertainty" (Pavlou, Huigang, Yajiong, 2007, p. 106). A principal (*client*) hires an agent (*freelancer*) to complete an imperfectly contractible task. The self-

interested freelancer will shirk if feasible. The better observable and less uncertain a task, the less severe the agency problems between principal and agent. Uncertainty arises if both parties "know different things" (Stiglitz, 2002, p. 470). As agents know more about their abilities and intended actions (Zajac and Westphal, 1994), they can act opportunistically ex-ante *(adverse selection)* or ex-post *(moral hazard)* and reduce clients' project success, but increase their own utility.

(Ex-ante) *adverse selection* refers to the purposeful "misrepresentation of ability" (Eisenhardt, 1989, p. 61) by workers. The worker has private information about her true quality (Akerlof, 1970) and employers cannot easily discriminate high- from low-quality workers (Wilson, 1980). On OLMs, adverse selection concerns exist given the digital nature of relationships, and clients may hire workers based on more or less informative worker characteristics (Agrawal et al., 2016; Hong and Pavlou, 2017; Kanat, Hong and Raghu, 2018; Kokkodis and Ipeirotis, 2016; Leung, 2014, Leung, 2017; Pallais, 2014; Stanton and Thomas, 2016). To tackle these issues, OLMs invest in information systems to provide detailed work and pay histories, review scores for each completed task, skill tests and alike to assess worker quality.

(Ex-post) *moral hazard* occurs after the client hires a worker who may not exert the agreed-upon effort (Jensen and Meckling, 1976). This problem arises if the client cannot perfectly monitor worker behavior. Related work on OLMs has not found conclusive results on the role financial incentives for micro tasks to overcome moral hazard (Mason and Watts, 2010; Shaw, Horton, and Chen, 2011; Yin and Chen, 2015). Some studies find that steeper financial incentives increase the quantity of work by participants (Mason and Watts, 2010), while other work finds that incentives do not improve performance (Ho et al., 2015). OLM platforms use design features such as virtual monitoring systems to monitor progress. Many-to-many connections on OLMs can also reduce opportunism by creating competition among agents. Further, freelancers need high ratings to

ensure future employability and often depend on online income (Manyika et al., 2016), which weakens their incentive to shirk. The above suggest that agency problems are mitigated on OLMs given extensive (ex-ante) information, detailed (ex-post) monitoring and severe reputational losses from negative evaluations. Put differently, the agency perspective predicts information-facilitating features of OLMs to improve project success, at least from a client's perspective.

4 Theoretical Framework

4.1 A Psychological Contract Perspective on Online Labor Markets

Occasionally, freelancers and clients perceive projects as failures. An agency framework may explain the clients' perspective through agents' (freelancers') shirking behavior. However, the zero-sum nature of the agency framework may not accommodate project outcomes perceived as poor *both* by freelancers and clients. Thus, a more complex dynamics might be at play. Building on psychological contract theory (Rousseau, 1995; Koh et al., 2004; Yan et al., 2002), we identify three key reasons to explain poor outcomes (i.e. low perceived success by both parties) on OLMs.

First, agency theory frames low transaction success merely as a violation of an explicit contract. Studying contractual violations generally requires an assessment of whether it was "contrary to the principles of the relation in which it occurs" (Macneil, 1981, p. 1024), i.e. behavior inconsistent with some prior contract. However, this contract can be explicit (formal) or implicit (Wathne and Heide, 2000). Research suggests that formal contracts often play a limited role in transactions (Macaulay, 1963). That is because contracts also have a (mostly unwritten) psychological component (Macneil, 1980), referring to "the perception of an exchange agreement between oneself and another party" (Rousseau, 1989, p. 665). Psychological contracts deal with the perceived reciprocal obligations beyond those explicitly described in legal terms. They include beliefs about behavioral norms of desirable or appropriate behavior (Rousseau, 1989; Hart and

Moore, 1999; Heide and John 1992; Wilson, 1980). The concept of psychological contracts "has proved useful for understanding employment relations, since many of their important aspects are based on perceptions: most employment relations are implicit or at least not written, and thus parties may have different understandings about them" (Kalleberg and Rogues, 2000, p. 316–317).

On OLMs, many important aspects of online relations are likely to remain unwritten. Contrary to traditional employment relationships, freelancers and clients interact with two parties: Platforms and the direct contract partner. However, communication about obligations is limited with both. In direct contractual relationships (client-freelancer), brief job postings guide the formal standardized contracts and specify the required task and the price, but not what appropriate behavior is. Further, communication takes place via chats or phone calls, which makes rich communication and clarification of expectations and obligations harder. Transaction partners have no formal contract with the platform, which only charges a transaction fee. However, platforms make implicit promises to each party and shape clients' and freelancers' expectations about appropriate behavior. This creates potential for diverging expectations by freelancer and client.

Second, agency theory assumes a mutual and complete understanding of the relationship, i.e. both view the exchange relationship solely as an economic transaction. However, prior work (Morrison and Robinson, 1993; Tsui et al., 1997; Yan et al., 2002) recognizes that involved parties can hold divergent understandings of the relationship. These diverging opinions about contractual obligations will then lead to a perceived breach of the contract, i.e. the perception that "the contract partner has failed to meet one or more obligations within one's psychological contract in a manner commensurate with one's contributions" (Morrison and Robinson, 1997, p. 230). Perceptions of contractual violation thus rely on one party's interpretations of the other's behavior, making

interparty verification difficult (Yan et al., 2002). One party will think the other behaves contrary to the contract when the behavior departs from its expectations about the other (Macaulay, 1963).

As mentioned before, on OLMs, communication about contractual obligations beyond the economic exchange is limited, increasing the likelihood of divergent perceptions (Pavlou and Gefen, 2005). Further, the legal status of workers is ambiguous, i.e. it is not clear whether a sales or an employment contract is formed. However, both imply different obligations beyond the economic transaction. Relatedly, OLMs are comparably underregulated and novel to most participants. As such, there are no established social norms about these novel work arrangements. Moreover, geographically dispersed and culturally distinct participants on OLMs could intensify divergence in expectations between parties. This divergence can lead to perceived contractual breach in situations that reveal these different expectations and both sides view the other party as acting contrary to their (implied) psychological contract.

Prior research highlights that diverging expectations harm the success of the exchange relationship (Robinson and Rousseau 1994; Tsui et al., 1997). Negative reactions can range from minor frustration to feelings of betrayal arising from the belief that the other party has purposely broken its work-related promises (Morrison and Robinson, 1997). This can start a negative dynamic as employees may reduce performance to pay back opportunism (Hekman, Bigley, Steensma, and Hereford, 2009; Robinson, Kraatz, and Rousseau, 1994).

Parties on OLMs rate various dimensions of the project after completion. This is useful to detect a breach of psychological contracts as both parties rate subjectively whether its expectations on the transaction have been met. Parties rate each other not only on outcome criteria (skill and quality) but also on process dimensions (availability, deadlines, communication, and cooperation). These dimensions are mostly not explicitly defined in the contract, for example what constitutes an

appropriate amount and quality (or style) of communication. Hence, ex-ante expectations become very important when both parties rate each other after project completion. Both parties will enter the relationship with priors about appropriate behavior shaped by past (offline) relationships and the platform's promises. The reciprocal ratings shed light on whether a transaction was tilted in one party's favor (if one rating is high and the other low), or if the breach of psychological contract led to a general decline in transaction climate (so that both parties give a low rating).

Finally, the agency perspective only focuses on the role of *agent* (mis-)behavior in transactions (Yan et al., 2002). This understates the role of principal misbehavior and lack of commitment in shaping perceived success of the agent and eventually her performance (Pavlou and Gefen, 2005; Koh et al., 2004). Both freelancer and client shape outcomes in OLMs and lack of commitment and opportunistic behavior by clients are common on OLM platforms (e.g. cancelling without paying the freelancer for part-completed work, or excessive monitoring). We therefore go beyond standard agency theory to explain perceived transaction success.

In sum, we argue that poor ratings are the result of diverging perceived obligations in a relationship and consequently a perceived breach of the psychological contract by contract partners. We ask which situations are more prone to conjure up conflicts over what constitutes appropriate behavior. Participants will view each other in the light of their expectations, which will shape outcomes.

4.2 Freelancers' and Clients' Psychological Contracts

"Spot markets" for tasks suggest that relationships between parties are purely transactional (Chen and Horton, 2016) and characterized by careful measurement of what is exchanged and no expectation of cooperation outside the scope of the economic exchange (Yan et al., 2002). Yet, even workers for micro tasks form wage reference points and react negatively to proposed wage cuts by quitting for fairness reasons, much like an employee would (Chen and Horton, 2016).

4.2.1 Freelancer Psychological Perspective: Employment Contract

Many online freelancers are former employees or simultaneously employed at a company (Agrawal et al., 2015; Manyika et al., 2016), which makes it difficult to switch between "mindsets". An employee mindset generally assumes a certain (often country-specific) degree of employment protection (OECD, 1999). For example, firms usually cannot lay off employees without further notice and have to pay a minimum wage. While online workers know that they do not enjoy the same protection, this serves as a reference point.

Further, OLM platforms trigger expectations and shape a worker's psychological contract. Freelancers main motivations to enter OLM platforms are autonomy and flexibility (Pajarinen et al., 2018; Manyika et al., 2016) and to earn supplemental income, build reputation, gain experience, and attract customers (Pajarinen et al., 2018). This creates expectations about client behavior: Respecting their autonomy and flexibility, and some supervision or feedback to facilitate learning. Platforms attract workers with a taste for autonomy and flexibility, which highlights the role of platforms in shaping the psychological contract of workers. For example, Upwork states that workers "enjoy freedom and flexibility to find jobs online" (Upwork, 2019a).

4.2.2 Client Psychological Perspective: External Sales Contract

Clients participate in OLMs to gain flexibility by hiring workers on demand to meet short-term organizational needs, much like external sales contractors. To clients, flexibility means realizing cost savings by building a virtual workforce, requiring less physical infrastructure and supervision. This implies low commitment towards workers because contracts can be terminated at will. They also have limited incentives to provide training and development given that contracts are usually one-off and clients have multiple alternatives available. Anecdotal evidence supports the argument that clients view the relationship as transactional and impersonal. One client described freelancers

simply as a resource: *"it's difficult to find the exact resource, the level of skill you need. […] Another difficulty is if […] I have a deadline of […] 1st June and the resource gets sick on 25th May just before the delivery"*. Another client saw the benefit of OLMs in providing multiple low-cost options: *"It's also very cheap and quick, I have a lot of options on a very low budget."*

Second, clients are price-sensitive and likely to act opportunistically, as seen in the following quote by a client: *"But online labor markets are very cheap, a lot of people are already there and want to work for you. If I didn't like the work from the freelancer I can give him a bad review. I don't need to pay monthly salary, if I have work to do I can outsource it for a small amount of money and make good profit."* Further, clients are often individuals or small firms (Agrawal et al., 2015) which might be especially price-sensitive. This may affect clients' behavior towards freelancers.

Third, clients in OLMs tend to have bargaining power over workers for several reasons, further shaping their behavior: (i) workers do not enjoy employment protection. (ii) on OLMs' multiple workers from different countries bid for the same jobs. This puts price pressure on freelancers but also increases the importance of keeping a pristine rating. (iii) most workers come from emerging economies (Agrawal et al., 2015) and depend on their online income. Early termination of a contract is more harmful for them than for their (developed country) clients. This can create a situation in which freelancers tolerate clients' misbehavior. (iv) the fragmentation of the online workforce leads to weak structural power (Wood et al., 2019) and it is hard to develop, operate, and monitor collectively regulated systems to ensure fair and equal treatment. It is also difficult to develop a sense of shared identity to enable collective action (Guest, 2004).

These arguments suggest that perceptions may differ, and clients may behave unacceptably from the perspective of freelancers. To deepen our understanding of client behavior, we collected freelancer comments for one hundred randomly selected reviews for projects with low scores given

to clients on Upwork. We accessed freelancer profiles working in different fields, ranging from software development to graphic design. Since projects often receive maximum ratings on digital marketplaces (Agrawal et al., 2015), we defined low scores as ratings below 5. *Table 1* gives examples of client behavior deemed inappropriate by freelancers.

--- Insert Table 1 about here. ---

This anecdotal evidence indicates that freelancers periodically perceive clients' behavior socially unacceptable (if not downright illegal) because clients take an employment contract perspective. However, the behavior would not be considered unacceptable in an external sales context. There are also nuances: Whereas complaints about non-responsiveness indicate mild violations, accusing a client of treating freelancers "like servants and not employees" suggests a severe breach.

5 Hypotheses

We hypothesize that certain factors are more likely to reveal the divergent expectations between freelancers and clients. There are three contractual features that clients can use when outsourcing projects to OLMs that affect monitoring intensity and ex-post behavior: The contract type, the number of freelancers (one or multiple) hired on a given project, and the number of parallel projects (one or multiple) outsourced at the same time. We hypothesize their respective impact on psychological contract breach and ultimately the success perceived by both clients and freelancers.

5.1 Contract Type (H1)

OLMs support two types of formal contracts with implications for monitoring and control: Fixed-price and hourly-pay contracts (see Section 2.2). However, and unlike the offline context, hourly-pay projects guarantee payments if freelancers log into a virtual monitoring system that tracks billable time, records completed work and lets clients review it. Agency theory would suggest that virtual monitoring systems reduce shirking opportunities through increased monitoring quality and

ultimately higher agent (freelancer) effort. However, hourly-pay contracts and especially their accompanying monitoring system may also trigger client behavior considered unacceptable by the freelancer, thus violating freelancers' psychological contract.

First, in hourly-pay contracts working time and pace are largely determined by client demands. As a freelancer remarks, "*she [the client] would send work anytime she wants, [she] doesn't want to know if you're busy*" (Wood et al., 2019, p. 67). Hence, freelancers regularly work late at night, particularly because they often work in different time zones (Agrawal et al., 2015). Freelancers also perceive intense levels of surveillance (*Table 1*): "*he closely monitored every cent I was being paid and I frequently got reprimands from him about even the slightest 10 minutes that he didn't agree with. It just felt like he was being excessive with the monitoring of the hours.*" In a pure sales contract, this may seem appropriate as clients hire a resource to be available on demand. Hence, clients will closely monitor the number of hours reported and only want to pay for time directly attributable to task completion. However, for non-standardized (knowledge) and complex tasks, determining how much time goes into solving a problem is difficult. Both parties may think the other cheats or misrepresents the true state of the project. Freelancers will perceive intense monitoring as a psychological contract breach, leaving them dissatisfied in hourly-pay contracts.

Second, clients can terminate hourly-pay contracts more easily than fixed price contracts. Workers frequently report that contracts are terminated without prior notice. Terminating a sales contract is considered acceptable (Chen and Horton, 2016) and clients have little incentive (and no obligation) to explain why they ended the contract. If they are not happy, they will simply end the contract and give a low rating rather than trying to resolve the issue with the current freelancer. However, in classical employment contracts premature contract termination is a contractual breach: clients have "promised" that workers can work a certain number of hours and spontaneous termination is

considered illegitimate and unfair (see *Table 1*). For example, one freelancer reports that he has *"[...] mixed feelings. The project has been stopped in the middle without a word of explanation"*.

Third, in hourly contracts, consensus about the outcome is reached gradually. This renders the procedural dimension more important, which is often ill-specified in online contracts. Further, parties are matched on a task-skill level, not based on personality and preferences, which matters more if communication is more frequent. Hourly-pay contracts also make changing requirements and outcome specifications by clients more likely, as illustrated in this quote: *"Scope was poorly defined and there were many change requests affecting the development schedule."* Here again, what may be acceptable in a sales relationship is considered unacceptable from a freelancer's perspective: *"The only job I've ever "not completed," ever, and that's simply due to the requirements always changing (a.k.a. scope creep)."*

H1a: Hourly-pay contracts are negatively related with success perceived by the freelancer.

From an agency view, improved monitoring should yield better results for clients. From a psychological contract lens however, it may trigger counterproductive freelancer behavior.

First, monitoring may frustrate workers valuing autonomy and flexibility. While reducing information asymmetries between partners, this may lead to more rather than less opportunism (John, 1984; Murry and Heide, 1998; Wathne and Heide, 2000). Indeed, surveillance is positively related to opportunism of the other party involved (Crosno and Dahlstrom, 2008) and freelancers may try to circumvent the system (Wood et al., 2019). Hourly-pay contracts may also lead to disagreements over the actual number of hours worked or necessary to complete a task, triggering a negative spiraling down effect (Tekleab and Taylor, 2003). Relatedly, if the freelancer does not meet client demands (e.g. working late, adapting to changing requirements), the client will

consider this a violation of the sales contract. She then has limited incentive to clarify the issue but will rather provide a bad review and end the relationship.

Second, the pressure induced by these monitoring technologies might also lead to less risky and consequently less innovative and creative solutions. To avoid clients reneging on the number of hours paid, freelancers may pursue safe solutions as innovative solutions need more time and are more likely to fail. This also points to the limits of monitoring and control. Agency theory assumes that more monitoring is always better because there is a clear effort-outcome relationship so that monitoring helps detect shirking. However, for complex and nonstandard knowledge tasks, this might not be the case. In that sense, virtual monitoring gives the false promise of providing full transparency and visibility of actions, enabling a level of control on workers not available offline.

H1b: Hourly-pay contracts are negatively related with success perceived by the client.

5.2 Multi-Freelancer Project (H2)

On OLMs, clients can hire multiple freelancers for a single task by specifying subcontracts. This can be used to split the workload (complements) or to generate different solutions to a given problem (substitutes). This can increase freelancer effort as a result of competition among agents which reduces agency concerns (Baggs and De Bettignies, 2007). Having multiple freelancers also gives the client information about work progress and outcomes from more than one source, creating a benchmark for easier monitoring. Despite the potential benefits from a transactional perspective, from a psychological contract perspective, hiring multiple freelancers can be counterproductive for several reasons.

First, the less-than-full commitment of the client to the freelancer might result in lower support to accomplish the task. The client may not be willing to undertake effort to provide resources for success. For example, if a client uses an OLM to experiment, she will aim at keeping ex-post costs

low to balance the cost of hiring multiple freelancers. Feedback by the client will be limited to comparing (competing) outcomes and picking the best solution. Similarly, clients running multi-freelancer projects will split their attention and time between freelancers, which can lower availability and responsiveness. Clients may also pitch freelancers against each other to negotiate lower wages by framing it as a "test project" which may lead to a bigger follow-up project. The freelancer might feel betrayed by this because she worked almost for free. This all makes for less satisfactory collaboration from the perspective of an employee-minded freelancer, especially as freelancers can observe on client's profiles if she has hired other freelancers.[6]

Second, if the client uses competition to put pressure on freelancers, this can cause stress and be perceived as violation of the promise of autonomous and flexible work. Clients can overstate the progress of other freelancers to speed up completion and use their bargaining power to broaden project demands. For example, clients may threaten to give bad reviews (*Table 1*): *"She was saying that she will give bad reviews if I will not share my way [of working] with her."*

Third, hiring multiple freelancers increases the likelihood of early contract termination for some of the freelancers. If the freelancer and outcome is not needed anymore or if another freelancer performs better, the client can end the contract. Early termination violates the psychological contract of the freelancer, causing feelings of betrayal and leading to poor ratings.

H2a: Multi-freelancer projects are negatively related with success perceived by the freelancer.

Hiring multiple freelancers for the same task will facilitate comparisons. Without a reference point, it is more difficult to assess whether the time needed to accomplish a task and the resulting quality is appropriate. Through the reference point, at least one freelancer will underperform in the eyes of the client. This tournament situation will trigger perceptions of shirking by one of the parties

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involved. Unfavorable ratings for freelancers are thus more likely because clients can justify a poor rating more easily if a clear and salient benchmark exists (e.g. provided solution faster, with better quality, faster communication). The advantage of OLMs from a client (and transactional) perspective is the ability to compare two workers but do not have to keep both. Thus, they will not tolerate long "onboarding" periods of freelancers. A blog entry of a client[7] illustrates the dynamics of multiple freelancers on one project: "*And I wonder to myself: If you had hired more than one person, you would have noticed after a few days that some developers were making progress on the project, and one of the developers was just making excuses and costing you money.*"

Another reason why multiple freelancers can mean lower ratings for freelancers is the increased complexity of monitoring and managing multiple freelancers. Different working styles may lead to diverging solutions that cannot be easily integrated. A client reported that managing projects and freelancers in OLMs is often more effort than expected: "*[…] I would budget a lot more time because I think it actually takes a lot more time to deal with a freelancer than expected. It takes a lot more of time on my part to train them and to explain my expectations and to kind of go back and forth.*" (Labor) spot markets suggest that tasks are outsourced with minimal collaboration or communication. Unexpected coordination needs may then lead to lower freelancer ratings.

Relatedly, if clients use competition to put pressure on freelancers, they might trigger a negative spiraling-down effect and receive unsatisfactory outcomes. If freelancers see that other freelancers work on the same project, they might reciprocate this perceived misbehavior with lower effort or even terminate the contract themselves. Again, from an employment perspective, freelancers will perceive this as contractual breach. From a sales perspective, many-to-many relationships are an integral feature of spot markets and should not matter when evaluating the other party's behavior. *H2b: Multi-freelancer projects are negatively related with success perceived by the client.*

5.3 Multi-Project Client (H3)

Many-to-many connections enable clients to outsource multiple projects to multiple freelancers simultaneously. Similar to multi-freelancer situations, this can increase monitoring quality because clients observe work progress from more than one source. At the same time, multiple projects may mean that clients outsource more narrow projects to specialized freelancers, a benefit of spot markets. These projects then require less coordination because the task-skill match is better. However, we argue again that from a psychological contract perspective, multiple projects run by the same client can result in lower project ratings because they amplify diverging expectations.

Outsourcing multiple projects means that clients manage multiple contracts for projects with different task scopes. As attention is a scarce resource, handling multiple projects may lower monitoring quality (Schweitzer, Ho, Zhang, 2016). If freelancers adopt a transactional perspective, they can shirk more easily, i.e. exert less effort for the same reward. However, from an employment perspective, the unavailability and unresponsiveness of clients creates an unsatisfactory work setting. This clearly matters to freelancers: *"It was difficult to get a hold of him [the client] at times and I could have used more direction on occasion"*. Another freelancer states that the client *"[…] needs to be more vocal and work on his communication. Also, provide more clear directives, better training, and development"*. Freelancers who see themselves as employees therefore consider training and development a duty of clients and a key motivator for OLM participation. However, clients taking a sales perspective will feel overburdened by this. In multitasking situations, this is exacerbated because clients split their attention across multiple freelancers, leaving less support for any given freelancer. Client multitasking may also slow down payment, approval, and finalizing the contract so that funds can be released and ratings provided.

If projects are interdependent, clients may change project requirements if something unexpected happens in one of them. Freelancers may consider this unacceptable as it leads to increased effort.

Another reason why unresponsiveness can leave freelancers dissatisfied is that online freelancers often work in social isolation (Daniel, Di Domenico, Nunan, 2018) and a level of communication with the client may be an important element of their working life. Thus, they may reach out more frequently to clients and be dissatisfied if this is not reciprocated. Moreover, freelancers want to ascertain that what they do is in line with what clients expect to ensure a high feedback score.

H3a: Projects run by multi-project clients are negatively related with success perceived by the freelancer.

Client multitasking will result in a lower level of attention for each freelancer, which lowers the intensity and commitment of the relationship with freelancers. Low commitment can increase client misbehavior through ending a project if another (better) option is available, and clients may be more likely to provide poor ratings and end the relationship without explanation.

Relatedly, multitasking creates a situation in which clients can compare freelancers with each other. Although task requirements and outcomes differ among projects, clients can compare freelancers on a process dimension. Again, this might lead to less favorable ratings because clients will for example consider it shirking if a freelancer takes longer to respond than others.

If clients run multiple projects because they split a broader project in multiple narrow subtasks and outsource it to specialized freelancers, they may resent freelancers still asking for directions and training. However, even in narrowly defined knowledge tasks some aspects remain unclear and require supervision, which clients may read as incompetence. This will not only violate their psychological contract (limited collaboration beyond the economic relationship) but also increase

transaction costs in the form of time and resources spent. Relatedly, if projects are interdependent and a problem in one project affects others, social complexity may increase to an extent not expected by clients who hoped to reduce transaction costs by finding a better task-skill match. For example, integrating all projects becomes more complicated and requires some coordination (Kretschmer and Puranam, 2008). This might matter especially in multi-project settings.

Finally, if the client is unresponsive, the negative spiraling-down effect identified above may follow. Freelancers become frustrated and unwilling to go the extra mile. Instead, they reciprocate with "safe" solutions to complete the task quickly and end the unsatisfactory relationship.

H3b: Projects run by multi-project clients are negatively related with success perceived by the client.

Figure 1 gives an overview of our hypotheses. They are bidirectional and tested separately – that is, a monitoring feature could have the expected negative effect on freelancer ratings, but not client ratings, or vice versa. We test all monitoring features separately as they affect the monitoring relationship in different ways, and our results will shed light on their relative importance to clients and freelancers. The underlying driver of our hypotheses is that freelancers and clients perceive OLM contracts differently. While clients believe they are entering a (spot) sales contract, freelancers consider a project an employment contract with an implicit expectation of a relational contract accompanying the explicit contract. This mismatch in expectations can have negative implications of monitoring features that would improve outcomes in a standard agency setting.

--- Insert Figure 1 about here. ---

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6. Data and Methods

6.1 Sample

We use an extensive and novel transaction-level data from the platform Upwork to test our hypotheses. Our dataset was obtained through Upwork's developer API and includes data on 255,393 freelancers with a minimum of one job. Due to missing data on covariates and because we wanted to construct a symmetric panel that includes transactions rated by both freelancer and client, our final sample is a panel with 143,435 transactions, covering 49,253 freelancers and 76,103 clients. The starting dates of the projects in the sample are between 03/2006 and 10/2017.

6.2 Variables

Dependent variable. We use two dependent variables: *Success Perceived by Freelancer* (score received by the *freelancer* regarding the project dimensions) and *Success Perceived by Client* (score received by the *client* regarding the project dimensions). Both measures of project success refer to the average total feedback score a project was rated by the each party based on six dimensions, each ranging from 1 (worst) to 5 (best): Skills, quality, availability, deadlines, communication, and cooperation.[8] The average feedback score takes into account all possible ways in which a project falls short of expectations. Projects are considered unique, one-off endeavors consisting of a large number of varied and interdependent activities intended to achieve a desired end result (Larson and Gray, 2013; Gido and Clements, 2012). As Upwork enables fairly complex projects, evaluating project success depends on more than assessing objective output quality. Given the ratings are subjective assessments of the working relationship, they are useful to capture perceived psychological contract breach in our context. If everything is as expected, the other party will receive the highest rating. If there are unexpected shortcomings, they will be penalized. Importantly, the Upwork feedback system is double-blind. The user cannot see the feedback

provided until they have left feedback themselves, or until the 14-day feedback period expires. Then, the feedback becomes visible (Upwork, 2019b).

Independent variables. *Contract type* (H1a/b) is a binary variable with value 1 indicating an hourly-pay contract and 0 a fixed-price contract. For H2a/b (*MultiFreelancers*), we use a binary variable equal to 1 if the project involves more than one freelancer. Most projects with multiple freelancers on *Upwork* use two freelancers. For our *ClientMultiTasking* variable (H3a/b), we use a binary variable equal to 1 if the client runs other projects while running the focal project.

Control variables. We control for several project characteristics, subsumed under common controls used in both models, and additional freelancer and client characteristics.

Common controls. We use job description length (*DescriptionLength*) as proxy for project complexity because it requires more words to describe the task, but it may also proxy better job specification. We use the log number of characters of the project description written by the hiring client. We further control for task complexity with the log count of the skills attached to a job posting (*NumberRequiredSkills*). The variable *CategoryPay* measures the average hourly pay in USD in the focal task category to capture task heterogeneity between job categories. We also control for the number of applicants (*NumberApplicants*), i.e. the log number of freelancers who applied for the focal project, as a larger pool of applicants can affect the quality of freelancers. Finally, our binary variable *DifferentCountry* captures cross-country collaborations, which may indicate language and cultural barriers, and is 1 if freelancer and client are in different countries.

Freelancer controls. To control for adverse selection issues, we include several important signals in hiring decisions (Agrawal et al., 2016). We use prior freelancer success, i.e. the average total feedback score achieved by the freelancer before the focal project and shown on freelancers'

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profiles (*PriorSuccessFreelancer*). We control for *TestSuccess*, operationalized as the average percentile result achieved in completed online skill tests on *Upwork*. We integrate online experience (*ExperienceFreelancer*), referring to the (log) number of prior projects conducted by the freelancer. We also include three offline factors. First, *tertiary education*, a dummy equal to 1 if the freelancer reports having undergraduate, graduate, or PhD education. Second, *CurrentOfflineProjects* captures parallel offline employment and is the log number of a freelancer's reported offline projects while working on the focal project. Third, we control for *OfflineExperience*, measured as the log number of years since the freelancer's first reported offline experience. This also proxies for freelancer age. Finally, we control for the use of an agency (*AgencyUsed*) because clients and freelancers then often do not communicate directly. In addition, agencies might attract different types of freelancers. The variable is 1 if the freelancer is represented by an agency (Stanton and Thomas, 2016).

Employer controls. When using client success as our dependent variable, we include two client controls. First, *PriorSuccessClients* is the average total feedback score achieved by the client before the focal project visible on clients' profiles. Second, client overall experience (*ExperienceClient*) is the log number of prior online projects managed by the client.

6.3 Analysis

We estimate a fixed-effect OLS model. When using *Success Perceived by Client* as a dependent variable, we use client fixed-effects to account for time-invariant client characteristics that might affect overall feedback ratings, such as country of origin, rating behavior towards freelancers as well as unobserved heterogeneity across clients. Conversely, when using *Success Perceived by Freelancer* as a dependent variable, we use freelancer fixed-effects to capture unobserved freelancer heterogeneity and prior rating behavior.[9]

7 Results

7.1 Descriptives

Table 2 gives descriptives and *Table 3* pairwise correlations for all variables in our sample.

--- Insert Tables 2 and 3 about here. ---

All success variables (two main outcome variables *Success Perceived by Freelancer* and *Success Perceived by Client* and control variables *PriorSuccessFreelancer* and *PriorSuccessClient*) are highly skewed toward positive ratings, i.e. 5-star ratings, with mean values ranging from 4.83 (*Success Perceived by Client*) to 4.87 (*Success Perceived by Freelancer*). This is common to marketplaces with reputation systems (Kokkodis and Ipereitos, 2016; Hu, Zhang, and Pavlou, 2009) because users receiving low feedback scores cannot get hired (freelancers) or commission a project (clients) again, so they exit (Jerath, Fader, and Hardie, 2011). Hence, most active users have high feedback scores. Fixed-pay contracts are used more often (67%) than hourly-pay contracts (33%). 80% of projects use a single freelancer, and 82% of clients run multiple projects simultaneously. Although correlations are significant given the high number of observations, they are modest in absolute terms. Even our two outcome variables are only correlated at .37, suggesting that projects rated highly by one party need not be rated equally highly by the other.

Table 4 reports the regression results of our freelancer-level fixed-effects OLS model for *Success Perceived by Freelancer*, i.e. the project-level ratings provided by freelancers. We add our independent variables separately in columns 1 to 3 and jointly in column 4.

--- Insert Table 4 about here. ---

We find support for all our freelancer-based hypotheses (column 4). H1a is supported as freelancers under hourly-pay projects perceive success to be lower (β=-0.021, p<0.001). H2a predicted that multi-freelancer projects generate lower success perceived by freelancers, and our

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results support this (β=-0.063, p<0.001). Finally, H3a receives support as freelancers rate multi-tasking client projects lower than where a client runs a single project (β=-0.014, p<0.001).

The counterpart to the success perceived by freelancer regressions is a client-level fixed-effects OLS model estimating success perceived by clients. *Table 5* reports the regression results for *Success Perceived by Client*, i.e. the project-level ratings provided by clients . Models 1-3 show the results for each independent variable (contract type, multi-agent project, multi-tasking client) separately. Model 4 shows the full model, including all independent variables.

--- Insert Table 5 about here. ---

In H1b, we predicted that hourly-pay projects (equipped with virtual monitoring) are perceived as less successful by clients, which is supported by our results (β=-0.094, p<0.001). This implies that, starting from the (unconditional) mean rating of 4.83, hourly-pay contracts are rated .094 lower by clients – about 18% of a standard deviation. In a project involving multiple freelancers (H2b), the success score provided by clients is .055 lower (11% of a standard deviation) than for single-freelancer projects (β=-0.055, p<0.001). For H3b, we find that multitasking clients do not significantly perceive project success less than clients with a single freelancer (β=0.006, p>0.05).

These findings, in addition to being one of the first to study ratings issued by freelancers for clients, have an interesting implication. The notion that freelancers, notably ones that chose an OLM to take advantage of greater flexibility, dislike client behaviors triggered by monitoring features and therefore rate their experience more critically borne out by the strong support for hypotheses H1a, H2a, and H3a. However, our empirical support of H1b and H2b – specifically, projects with hourly-pay contracts and projects involving multiple freelancers working on the same project – suggests that clients also tend to provide lower ratings in such situations. This can have several reasons – they may perceive the freelancer's behavior as inappropriate or inadequate from a sales

perspective and are more likely to behave in ways contrary to the freelancer's psychological contract, triggering instead of reducing freelancer opportunism (i.e. negative spiraling down). This is in direct contrast with agency theory, which predicts that better monitoring capabilities help the principal (the client in our setting) cut down shirking and thus achieve unambiguously better results. This ignores the incongruent perceptions of the relationship and principal opportunism resulting from these monitoring devices. Indeed, our results indicate that freelancer and client expect different things from an OLM project and therefore react unexpectedly for the other party.

8 Discussion and Conclusion

We discuss our findings along several lines. First, we discuss the magnitudes of our estimates, taking advantage of the fact that they all refer to dummy variables, making them comparable across independent variables and across contract partners, clients and freelancers. Second, we discuss our results jointly to derive implications for work on OLMs in general.

Comparison of coefficient magnitudes. Our estimates are directly comparable because they all refer to a switch to a scenario in which monitoring becomes less costly and/or more effective through one of the three features. Referring to the results from *Table 5*, we find that clients do not rate the project lower when running multiple projects. This is likely to be the result of two counteracting effects. On the one hand, monitoring may be more intense because there is a reference group, and satisfaction may decrease as a result of that. On the other hand, if multiple projects indicate that a larger project has been split into several different subtasks (i.e. complementary, which we cannot observe) outsourced to specialized freelancers, this may also work well in many instances. From a client's sales perspective, satisfaction increases because narrow subtasks and better task-skill match increase performance but decrease coordination needs. For example, one client in an interview states that this works well for her: *"What I've found out is that the larger the project and*

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the longer it is, the more can go wrong in that time. I used to kind of give someone a projects and say, "Can you build this website for me?" Now I break it down into small chunks and I tend to give each of those chunks to a specialist. So I have someone to do the wire framing, someone to write the copy." This is very much in the spirit of spot markets for tasks and might thus be in accordance with their expectation. Turning to the significant coefficients in *Table 5*, we find that the coefficient on hourly pay is about 70% higher (the difference is highly significant) than on multiple freelancers and constitutes almost 20% of a standard deviation. That is, a switch to an hourly-pay contract leads to worse ratings than using multiple freelancers for the same project. This might indicate that the negative processual implications of an hourly-pay contract go beyond the mere monitoring implications of having a benchmark.

In *Table 4*, all three coefficients of interest are significant, with *MultipleFreelancers* more than three times the magnitude of the other two coefficients and reflecting 14% of a standard deviation. This suggests that freelancers perceive the biggest violation of their psychological employment contract if other freelancers are hired "as competitors" to do the same job. While a switch to hourly-pay contracts is also perceived negatively, it represents a transparent change in the contract conditions. Similarly, working for a client with multiple ongoing projects may lower responsiveness, but is perceived less negatively than pitching freelancers against each other. This further suggests that there is a mismatch between expectations: A client moving towards a more transactional model of using OLMs is likely to alienate freelancers who expect a more developmental and collaborative working relationship.

The downside of virtual monitoring. Our results jointly suggest that counterintuitively all parties suffer from improved virtual monitoring features. There are some nuances – freelancers are rated lower especially in hourly-pay contracts, while clients are rated most negatively if they employ

multiple freelancers – but the general upshot is that monitoring technologies, broadly interpreted, do not improve contractual outcomes on both sides as predicted by agency theory, but carry negative consequences for both sides. The fact that both contractual parties are rated more negatively also permits two further conclusions: First, the transactional atmosphere deteriorates – one party does not appear to find better ways of taking advantage of the other (this would lead to negative outcomes on one side but not the other), but both client and freelancer rate the project less positively. Second, and relatedly, there seem to be actual behavioral consequences of increased monitoring by the client. If monitoring would simply lead to worse working conditions for freelancers, clients should be equally satisfied as with less monitoring, if not more. However, the decrease in their ratings suggests that freelancers behave differently, for example by making outsourcing tasks via OLMs more onerous for clients, or by starting a "downward spiral" of less discretionary (i.e. uncontracted and monitored) effort that was implicitly expected by the client. As suggested by prior work (Dutta, Bergen, John, 1994; Wathne and Heide, 2000), establishing a tolerance for opportunistic behavior may then be more promising than striving for complete elimination. In fact, the latter has been, either explicitly or implicitly, suggested by prior work on OLM relationships. Conversely, our results suggest that instead of eliminating agent opportunism, it exacerbates the problem and leads to value destruction instead of creation. Some anecdotal evidence points to this, but an in-depth study of these ex-post dynamics would hold some promise.

Status of gig workers. We argue that perceived opportunism of both parties stems from diverging expectations about gig workers' status, accompanied by poor communication. Answering the question of the "right" status of OLM workers is beyond the scope of our study. However, the answer would depend on the type and time dimension of a project or work relationships (Chen and Horton, 2016). For some projects an employment contract would be more appropriate (e.g. long-

term virtual assistant) while for others a sales contract is preferable (e.g. translation jobs). The challenge will be to foster workers' rights while ensuring flexibility for both sides, one of the key benefits of technology-enabled platform work. This is in line with prior work proposing an intermediate classification of platform workers (Hagiu and Wright, 2019). Our results also highlight that even if workers had a clear legal status, parties' psychological contracts may still differ. Clients can still misbehave due to the anonymity of the digital environment and freelancers can still perceive themselves as employees to either the client or the platform. Hence, the discussion surrounding gig workers' status goes beyond regulations and court cases. One solution may be to provide more information on work preferences beyond the pure economic transaction. So far, matching takes place only on a task-skill level. Integrating OLM profiles with information from other platforms such as LinkedIn or providing ID verification may curb misbehavior (as anonymity is lifted). Together with richer communication channels, this may lead to a more trusted working environment and more aligned perceptions.

Psychological contract theory. We contribute to psychological contract theory in several ways. First, we are not aware of other work examining the role of a third-party intermediary in shaping psychological contracts. Whereas prior work in online contexts only considers generalizations to other sellers in the community (Pavlou and Gefen, 2005) or how colleagues can influence psychological contract fulfillment (Ho and Levesque, 2005), we study how platforms shape behavior and evaluations of its participants; not only through the features they implement but also with their public pledges to workers. Future research can build on this observation and study how individuals solve potential tensions arising from psychological contracts with multiple parties. Second, we add to emerging research on employer's psychological contracts (Pavlou and Gefen, 2005; Tekleab and Taylor, 2003). Whereas prior work focuses on employees' perceptions of

psychological contract fulfillment, we suggest that employers also form expectations and perceptions about contractual obligations. Due to their bilateral feedback systems, OLMs are an ideal context to study both parties' concerns and perceptions of breach. Finally, we extend psychological contract theory to OLMs, a setting intended to support transactional and short-term transactions, and show the importance of these contracts in governing online work.

Tables and Figures

Table 1: Anecdotal Evidence

Written reviews of projects rated with less than 5 stars from a freelancer perspective

Sudden contract termination without explanation

- "After completing 2 out of 5 parts of the task, he ended the contract without any reason.[…]"
- "He will ask you several things, and if you follow it or not in the mid the contract will be ended. He definitely wants to you to work ALMOST Free."
- "The overall experience with client was good. But the contract ended without any discussion or reason."
- "he just got invisible for at least a month then ended the contract without saying anything"
- "I've got mixed feelings. The project has been stopped in the middle without a word of explanation"

Changing requirements

- "Scope was poorly defined and there were many change requests affecting the development schedule. There were other red flags, but I ignored them because I was eager for this challenging and unusual project. Lesson learned - I will pay more attention to the warning signs before accepting an offer in the future"
- "In many ways, Gene was a great client, and given the correct circumstances I'd have no trouble working with him again. It's the only job I've ever "not completed," ever, and that's simply due to the requirements always changing (a.k.a. scope creep.)"
- "This client keeps increasing the work other than what is mentioned in the contract, and finally when it comes to pay, he pays you half the amount then what was agreed. I did his job completed, better than what he has asked for but he asked me to work, when I asked for proper amount, he ended the contract with less money approved, one time kind of cheap client. Do not expect more."

Undersupply (i.e. nonresponsiveness, low support, unavailability)

- "It was ok to work with Daniel, but he should treat the designer more responsibility. I was asked to create a logo for a magazine and make few resizes of this logo. After I`ve sent files to Daniel, he stopped to communicate with me. He did not close the contract for about three weeks and did not respond to my messages at all."

- "There were frequent issues of communication and understanding. They tried, but I still didn't understand entirely what was expected of me, which could have equally been my fault. There is also a great lack of internal communication and awareness of what systems are in place. They were very relaxed and accommodating though, which I appreciated."

- "I enjoyed working with Tom. He was quick to approve milestones and send me the information I needed. It was difficult to get a hold of him at times and I could have used more direction on occasion."

- "He needs to be more vocal and work on his communication. Also, provide more clear directives, better training, and development"

- "at the end he stopped talking so i ended the contract!"

- "I was surprised to learn that Ray ended the contract without giving me a heads up. We just had a team meeting and even scheduled another for next week. Moving forward, while Ray is a great guy, I just feel that there are a lot of gaps that need to be filled in order to carry out the responsibilities of a helpdesk manager effectively. An employer cannot give just one sample on how things should be done and leave his staff on his/her own to do the job. Ray has been patient in answering my questions though but when an answer needs to be addressed immediately he mostly unresponsive. It is understandable that the reason why he hired someone is to get some workload off of his plate but if this happens during the early stages after a staff has been hired, someone else should be there to answer questions. I have worked as a helpdesk manager for 2 big companies and am very much familiar with how the business works. I would have loved to grow with Raydan but a lot in the area of training, process and technology (tools) need to be addressed. I would have loved to work for Ray for the long haul but I guess for him this it was just a trial and error, hoping that it would immediately work from Day 1 without much training and effective delegation."

Exploitation / Excessive control and monitoring

- "This is the rudest person I have work with on my entire life here in Upwork. He will say nothing good even if you completed the job well done. He will treat you as his servant and not his employee. And he doesn't care about anyone. He only cares for himself.[…]"

- "Everything was going good and when I have made good traffic on her website she wanted me to share my way of working. She was saying that she will give bad reviews if I will not share my way with her."

- "Good client. If only every requirement would have been communicated upfront, like week-end work. I would never have accepted to work on week-ends, for this hourly rate"

- "he closely monitored every cent I was being paid and I frequently got reprimands from him about even the slightest 10 minutes that he didn't agree with. It just felt like he was being excessive with the monitoring of the hours."

Table 2: Descriptive Statistics

Variable Name	Mean	Std. Dev.	Min	Max
Dependent Variables				
Success Perceived by Client	4.83	0.51	1	5
Success Perceived by Freelancer	4.87	0.53	1	5
Independent Variables				
H1: HourlyPay	0.33	0.47	0	1
H2: MultFreelancers	0.20	0.40	0	1
H3: EmployerMultTasking	0.78	0.42	0	1
Common Controls				
DescriptionLength	6.00	0.90	0	8.91
NumberRequiredSkills	0.92	0.67	0	3.91
CategoryPay	14.48	5.12	3.93	68.36
NumberApplicants	2.95	1.09	0	8.64
DifferentCountries	0.89	0.31	0	1
Freelancer Controls				
PriorSuccessFreelancer	4.84	0.24	1	5
TestSuccess	0.68	0.20	0	1
TertiaryEducation	0.73	0.44	0	1
ExperienceFreelancer	1.45	0.82	0	3.95
AgencyUsed	0.11	0.31	0	1
FreelancerMultTasking	0.81	0.39	0	1
CurrentOfflineProject	0.49	0.42	0	2.77
OfflineExperience	1.78	0.72	0	4.37
Client Controls				
PriorSuccessClient	4.85	0.36	1	5
ExperienceClient	1.88	1.03	0	3.91

Note: The number of observations for all variables is 143,435.

Table 3: Pairwise correlations

Variable Name		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Dependent Variables																				
Success Perceived by Client	1	1.00																		
Success Perceived by Freelancer	2	0.37	1.00																	
Independent Variables																				
H1: HourlyPay	3	-0.13	-0.08	1.00																
H2: MultFreelancers	4	-0.07	-0.07	0.10	1.00															
H3: ClientMultiProject	5	-0.01	-0.03	0.05	0.16	1.00														
Common Controls																				
DescriptionLength	6	-0.05	-0.02	0.05	0.10	0.01	1.00													
NumberRequiredSkills	7	-0.05	-0.04	0.05	0.10	0.01	0.19	1.00												
CategoryPay	8	0.06	0.04	-0.12	-0.13	-0.04	-0.03	0.00	1.00											
NumberApplicants	9	-0.02	-0.03	0.11	0.29	0.03	-0.02	0.14	-0.15	1.00										
DifferentCountries	10	-0.03	-0.01	0.05	-0.01	0.01	-0.02	-0.02	-0.08	0.02	1.00									
Freelancer Controls																				
PriorSuccessFreelancer	11	0.15	0.09	-0.14	-0.04	-0.02	-0.03	-0.01	0.09	0.03	-0.04	1.00								
TestSuccess	12	0.02	0.01	0.03	-0.03	0.00	0.00	0.01	0.02	0.02	-0.01	0.05	1.00							
TertiaryEducation	13	-0.03	-0.02	0.05	0.01	0.00	0.01	0.01	-0.01	0.00	0.04	-0.05	0.05	1.00						
ExperienceFreelancer	14	0.00	0.00	-0.06	0.00	-0.01	-0.03	0.06	0.02	0.07	0.03	-0.02	0.07	0.00	1.00					
AgencyUsed	15	-0.08	-0.04	0.14	-0.04	0.00	0.01	0.01	0.01	-0.03	0.06	-0.15	0.02	0.04	-0.03	1.00				
FreelancerMultTasking	16	-0.04	-0.02	0.07	0.02	0.02	0.02	0.02	-0.04	0.02	0.01	-0.06	0.03	0.02	0.28	0.02	1.00			
CurrentOfflineProject	17	0.01	0.01	-0.02	-0.01	0.00	0.00	0.00	0.06	-0.02	-0.07	0.02	0.04	0.04	0.01	0.03	0.00	1.00		
OfflineExperience	18	0.01	0.00	0.01	0.02	0.00	0.01	0.06	0.04	0.07	-0.09	0.00	0.06	0.02	0.14	-0.02	0.04	0.10	1.00	
Client Controls																				
PriorSuccessClient	19	0.08	0.09	-0.05	-0.02	-0.04	0.01	-0.02	0.02	0.00	-0.01	0.05	0.01	-0.01	0.01	-0.02	-0.01	0.00	0.01	1.00
ExperienceClient	20	0.05	-0.01	0.00	0.01	0.22	-0.02	0.00	0.03	0.04	0.02	0.02	0.02	-0.01	0.05	-0.01	0.00	-0.01	0.02	-0.01

Table 4: Regression results for *Success Perceived by Freelancer*

|	(1)	(2)	(3)	(4)
Dependent Variable: *Success Perceived by Freelancer*				
Independent Variables				
H1a: HourlyPay	-0.026***			-0.021***
	(0.005)			(0.005)
H2a: MultFreelancers		-0.066***		-0.063***
		(0.006)		(0.006)
H3a: ClientMultProjects			-0.021***	-0.014***
			(0.004)	(0.004)
Common Controls				
DescriptionLength	-0.003	-0.001	-0.003	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)
NumberRequiredSkills	-0.020***	-0.019***	-0.020***	-0.019***
	(0.003)	(0.003)	(0.003)	(0.003)
CategoryPay	0.001	0.001	0.001	0.001
	(0.001)	(0.001)	(0.001)	(0.001)
NumberApplicants	-0.014***	-0.009***	-0.015***	-0.008***
	(0.002)	(0.002)	(0.002)	(0.002)
DifferentCountries	-0.005	-0.005	-0.005	-0.004
	(0.007)	(0.007)	(0.007)	(0.007)
Client Controls				
PriorSuccessClient	0.102***	0.102***	0.102***	0.101***
	(0.007)	(0.007)	(0.007)	(0.007)
ExperienceClient	-0.005**	-0.004**	-0.003	-0.003
	(0.002)	(0.002)	(0.002)	(0.002)
Number of Observations	143,435	143,435	143,435	143,435
Number of Freelancers	49,253	49,253	49,253	49,253
R^2 (within)	0.007	0.009	0.007	0.009
R^2 (between)	0.020	0.019	0.015	0.023
R^2 (overall)	0.014	0.014	0.011	0.016

Notes: Fixed-effect OLS point estimates with fixed effects at the level of the freelancer. Standard errors in parentheses are clustered at the level of the freelancer. A constant is included but not reported. Asterisks denote significance levels (* $p<0.05$, ** $p<0.01$, *** $p<0.001$).

Table 5: Regression results for *Success Perceived by Client*

	(1)	(2)	(3)	(4)
	Dependent Variable: *Success Perceived by Client*			
Independent Variables				
H1b: HourlyPay	-0.097***			-0.094***
	(0.006)			(0.006)
H2b: MultFreelancers		-0.059***		-0.055***
		(0.007)		(0.007)
H3b: ClientMultProjects			0.001	0.006
			(0.006)	(0.006)
Common Controls				
DescriptionLength	-0.027***	-0.026***	-0.028***	-0.026***
	(0.003)	(0.003)	(0.003)	(0.003)
NumberRequiredSkills	-0.014***	-0.016***	-0.017***	-0.013***
	(0.004)	(0.004)	(0.004)	(0.004)
CategoryPay	0.003***	0.003***	0.003***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)
NumberApplicants	-0.006**	-0.005*	-0.009***	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)
DifferentCountries	-0.020**	-0.023***	-0.022***	-0.021**
	(0.007)	(0.007)	(0.007)	(0.007)
Freelancer Controls				
PriorSuccessFreelancer	0.223***	0.231***	0.233***	0.221***
	(0.011)	(0.011)	(0.011)	(0.011)
TestSuccess	0.040***	0.035***	0.036***	0.038***
	(0.009)	(0.009)	(0.009)	(0.009)
TertiaryEducation	-0.010*	-0.012**	-0.012**	-0.010*
	(0.004)	(0.004)	(0.004)	(0.004)
ExperienceFreelancer	-0.003	-0.001	-0.001	-0.003
	(0.003)	(0.003)	(0.003)	(0.003)
AgencyUsed	-0.076***	-0.086***	-0.085***	-0.077***
	(0.008)	(0.008)	(0.008)	(0.008)
FreelancerMultTasking	-0.017***	-0.021***	-0.021***	-0.017***
	(0.004)	(0.005)	(0.005)	(0.004)
CurrentOfflineProject	0.001	0.002	0.002	0.001
	(0.005)	(0.005)	(0.005)	(0.005)
OfflineExperience	0.010***	0.009**	0.009**	0.010***
	(0.003)	(0.003)	(0.003)	(0.003)
Number of Observations	143,435	143,435	143,435	143,435
Number of Clients	76,103	76,103	76,103	76,103
R² (within)	0.028	0.024	0.023	0.029
R² (between)	0.046	0.040	0.037	0.049
R² (overall)	0.042	0.036	0.033	0.043

Notes: Fixed-effect OLS point estimates with fixed effects at the level of the hiring client. Standard errors in parentheses are clustered at the level of the client. A constant is included but not reported. Asterisks denote significance levels (* $p<0.05$, ** $p<0.01$, *** $p<0.001$).

Figure 1: Empirical Model
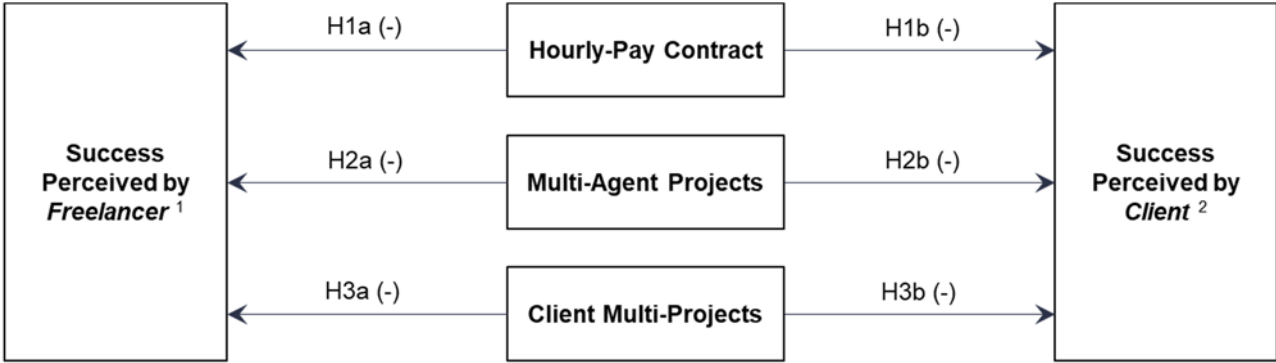
[1] **Success Perceived by Freelancer:** Freelancer rates client
[2] **Success Perceived by Client:** Client rates freelancer

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Notes

[1] See e.g.: Carson (2017): https://www.businessinsider.de/uber-is-considering-leaving-seattle-if-drivers-join-unions-2017-3?r=UK; The Local (2017): https://www.thelocal.de/20170518/foodora-and-deliveroo-couriers-protest-working-conditions-in-berlin

[2] Mondon (2015): https://nextcity.org/daily/entry/uber-lyft-drivers-contractors-employees-jury-case

[3] We use the terms *client* for firms hiring workers on OLMs and *freelancer* for workers completing tasks on OLMs in line with industry usage.

[4] We refer to perceived project success as *perceived success* throughout the paper. Prior studies on psychological contracts (Yan et al., 2002; Koh et al., 2004) use the same terminology, i.e. success as an outcome variable.

[5] For comparison, common micro-tasks on MTurk are identifying text in images (to train image recognizing systems), capturing movie screenshots, transcribing audio files, or completing academic surveys.

[6] Privacy settings generally allow setting profiles private. However, transactions in our final sample only include public profiles so that parallel projects are indeed transparent.

[7] https://community.upwork.com/t5/Clients/The-problem-with-quot-hire-multiple-freelancers-for-a-small-test/td-p/207699

[8] The category-specific scores are strongly correlated with each other, which makes intuitive sense. For example, if a user is unresponsive, the assessment of her skills is likely to suffer as well.

[9] We also considered using a hybrid model as proposed by Certo et al. (2017) to separate between- and within-effects. However, we have decided to keep the fixed effects model because 1), our existing empirical model is already fairly complex, (2) we do not theoretically distinguish within- from between-effects, and (3) the differences for the hypothesized variables are negligible.

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