How Much Do Platform Workers Value Reviews? An Experimental Method

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Abstract

Previous qualitative work has documented that platform workers place an immense importance on their reputation due to the use of algorithmic management by online labor platforms. We provide a general experimental method, which can be used across platforms and time, for numerically quantifying the intensity with which platform workers experience reputation system-based algorithmic management. Our method works via an experiment where workers choose between a monetary bonus or a positive review. We demonstrate this method by measuring the value that freelancers assigned to positive feedback on Upwork in June 2020. The median freelancer in our sample valued a single positive review at $49 USD. We also find that less experienced freelancers valued a positive review more highly than those with more experience. Qualitative data collected during the experiment indicates that many freelancers considered issues related to reputation system-based algorithmic management while choosing between the monetary reward and the positive review.

Introduction

The last twenty years has seen the rise of online labor platforms focusing on types of work as varied as microtasks (e.g. MTurk), transportation (e.g. Uber and Lyft), food delivery (e.g. DoorDash), and freelance work (e.g. Upwork and Freelancer.com). These platforms generally operate as two-sided markets, in which the platform manages the relationship between the requester, who creates the task/job, and the worker, who completes the task/job.

Given the distributed nature of these markets, and in order to reduce costs, many online platforms engage in "algorithmic management" (Lee et al. 2015; Rosenblat and Stark 2016), i.e., the practice of controlling the behavior of workers through the strategic use of information symmetry, reputation systems, behavioral nudges, and opaque ranking and matching algorithms (Griesbach et al. 2019).[1]

In recent years, a fast-growing and substantial literature has emerged that focuses on the issues associated with algorithmic management (Lee et al. 2015; Rosenblat and Stark 2016; Möhlmann and Zalmanson 2017; Wood et al. 2018).

Online reputation systems are a key component of the algorithmic management systems currently used by many online labor platforms to exert control over their workforce. Ratings and reviews left by requesters are aggregated into reputation scores. This reputational information is often displayed to would-be requesters, used as an input by platform search ranking algorithms, and/or used as an input by the algorithms that match workers to requesters and tasks. All of these mechanisms have an effect on the way that tasks are distributed across the population of workers, and consequently impact how much a worker can earn. The flow of feedback data from previous clients into user interfaces, search algorithms, and ranking algorithms, which in turn affects which freelancers get matched to which clients (if any at all) is perhaps one of the most salient types of algorithmic management.

There are a number of qualitative studies that specifically report on the importance platform laborers place on managing their reputations. For example, in the context of Upwork, clients (who create the tasks) provide feedback in the form of ratings and reviews to the freelancers (who complete the tasks) they hired. This feedback information is not only displayed to would-be future clients, but is likely also used as an input to Upwork's search, ranking, and matching algorithms (Jarrahi et al. 2020). Sutherland et al. (2020) show that maintaining a strong reputation in the face of the plat-

[1]Jarrahi et al. (2020) have recently advanced the concept of "platformic management," which is distinct from algorithmic management and argues that platform algorithms are just one part of an overall managerial structure that includes a platform's features, policies, and norms of use. We find this concept compelling, however, refer to algorithmic management through the paper as it is, at the time of writing, a more commonly cited concept. Although reputation systems are typically not themselves algorithmic in nature, much of the literature on algorithmic management considers online reputation systems a tool for algorithmic management.

form's opaque reputation systems is a key source of precarity among Upwork freelancers. In the context of ridesharing platforms such as Uber and Lyft, passengers provide ratings of their drivers, which the platform then uses to assign future rides to drivers. However, drivers are left to guess how to obtain and maintain a high-quality reputation, because there is no consistent basis by which riders are evaluating their performance (Rosenblat and Stark 2016). Griesbach et al. (2019) reports that food delivery workers on both DoorDash and Postmates were troubled by platform policies under which they would be deactivated or removed from the platforms if their reputation score fell below certain thresholds. Across of all these platforms, a worker's reputation has a direct impact on whether they can work, with whom they're matched, and on their future earnings.

Although existing research has established that online labor market workers place a great deal of importance on online reputation, the fact that almost all of this work is qualitative makes it difficult to understand how the importance of online reputation to workers varies from platform to platform, or how its importance evolves over time in response to changes to online market conditions, offline market conditions, and/or platform design. Our key contribution in this work is building on and extending the research on algorithmic management, and in particular, the research on algorithmic management through online reputation systems, by developing a method that can produce numeric measurements of the value platform laborers assign to online reputation. This valuation is a measure of the intensity with which workers experience reputation system-based algorithmic control.

Willingness to accept (WTA) is defined as the monetary compensation that would be required in order for a person to forfeit a particular item. Our measure of how much workers value online reputation is the WTA that they assign to a single positive review. In order to estimate workers' WTA for a positive review, we ask: how much, in terms of US dollars, do workers on the platform need to be paid in order to forgo a single 5-star rating with positive text? To answer this question, we conduct a behavioral experiment in which, after completing a recruitment task, platform workers are given the non-hypothetical choice between a positive review and a monetary reward randomly chosen from a predetermined set of values. Analysis of the resulting data allows us to trace out the demand curve and estimate the median valuation for a single positive review.[2] In contrast to qualitative methods, this approach can be used to compare cross-platform and longitudinal estimates of the intensity with which platform workers experience reputation system-based algorithmic management.

As a second contribution, we demonstrate our method by measuring the value of reputation on Upwork, an online labor market for macrotasks, as of June 2020. We analyze data from a sample of 520 Upwork freelancers who were given the non-hypothetical choice between a 5-star rating with a positive textual review, or a monetary bonus that was randomly chosen from a set of values ranging from $25 USD to $175 USD. We estimate that the median valuation of a 5-star rating and review among Upwork freelancers in our sample, which is a stratified sample consisting of customer support workers (average hourly rate = $12.70 USD) and graphic designers (average hourly rate = $23.30 USD), is $49 USD. Surprisingly, even when offered a $175 USD bonus, 32% of freelancers chose to receive a 5-star rating instead. We further show that the value that Upwork freelancers assigned to a positive review was moderated by the amount of experience they had on the platform; the median valuation of a positive review among experienced freelancers was $30.65 USD lower than that of less experienced freelancers.

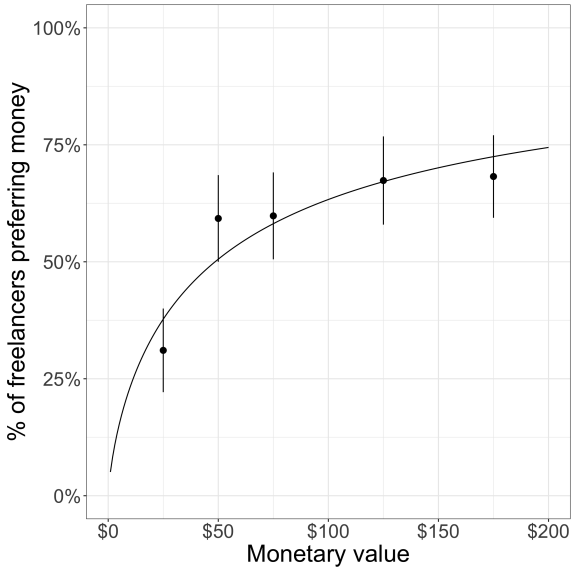

Figure 1: The estimated demand curve for a positive review across our entire sample. Points depict the proportion of freelancers choosing a monetary bonus at each discrete dollar amount, and error bars depict 95% confidence intervals. The curve shows the estimated demand curve for a positive review based on our data.

We complement our quantitative analyses, which precisely measure the value that Upwork freelancers in our sample assigned to a positive review in June 2020, with qualitative analysis of the voluntary, freeform choice explanations provided by about half of the freelancers in our sample. Our qualitative analyses confirm that reputation system-based algorithmic management is a major factor that freelancers consider while navigating the trade-off between short-term profit (from the monetary bonus) and increased long-term earnings (from the positive review). Furthermore, a substantial fraction of freelancers who chose the monetary bonus did so due to COVID-19-related financial hardship, highlighting the way in which the value that online laborers assign to online reputation and the intensity with which they perceive reputation system-based algorithmic control may fluctuate over time.

[2]The demand curve for an item measures the percentage of people that would purchase that particular good at every possible price.

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