Rating Working Conditions in Digital Labor Platforms

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Abstract. With funding from IG Metall (the German Metalworkers' Union) and the Austrian Chamber of Labour, the authors have prototyped a method for rating working conditions on digital labor platforms (e.g., Amazon Mechanical Turk, Uber) and built a website (http://faircrowd.work) for displaying these ratings. This paper describes the rating method in the context of broader cross-sectoral efforts to safeguard worker rights and build worker power in digital labor platforms.

Digital labor platforms and the future of worker rights

International interest in safeguarding worker rights and building worker power in digital labor platforms such as Amazon Mechanical Turk, Uber, 99designs, and Upwork has grown in recent years. Uber, in particular, has become a legal battleground and a constant presence in discussions of "the future of work." Responses to the company's aggressive expansion have included protests, strikes, boycotts, lawsuits, and judicial reviews in Europe and the US (e.g. Chrisafis 2016; Osborne 2016; Hickey 2016; Snelson 2016; Garden City Group 2016 [O'Connor v. Uber, US employment misclassification lawsuit]; Siddiqui 2017; Court of Justice of the European Union 2017). In 2016, former US National Labor Relations Board Chair Wilma Liebman noted that digital labor platforms have "triggered a conversation in the US that we really should have had for the past few decades" about the growth in "alternative" work arrangements. These workers, she noted, often work a series of short "gigs" (or multiple "gigs"

simultaneously), may earn more precarious incomes than "traditional" workers (see also e.g. Berg 2016), and are often required to accept that they will be classified as self-employed persons rather than employees (see e.g. Amazon Mechanical Turk 2014, especially Sec. 3a). As a result, these workers are excluded, sometimes unfairly, from many rights and benefits afforded to employees, including minimum wage; paid sick leave, vacation, and parental leave; overtime pay; protection from unfair dismissal; compensation in event of work-related illness or injury; employer contributions to health insurance and retirement; and the right to organize and collectively negotiate with employers or platform operators for improved rights and working conditions (Liebman 2016; De Stefano 2016b). If digital labor platforms continue to grow, many rights won by the labor movement through centuries of struggle may be lost (e.g. Benner, ed., 2015; Austrian Chamber of Labour et al. 2016). Because declining worker power is linked to increasing economic inequality (see e.g. Jaumotte and Buitron 2015; Economic Policy Institute 2012)—and because inequality may threaten democracy (see e.g. Houle 2009)—questions of workers' rights and worker power in digital labor platforms raise concerns about the future of democratic institutions in an age of increasingly technologically mediated labor relations (see also Ostrom 2000).

Rating working conditions

In 2015, Vanessa Barth, Christiane Benner and colleagues at the German Metalworkers' Union launched FairCrowdWork.org, a platform intended to let workers on digital labor platforms review various aspects of working conditions in the platforms they worked on. Although the platform launch attracted a great deal of interest from media, policy makers, and other trade unionists, the platform faced two major challenges. First, it was impossible—at scale—to verify that every user submitting a review for a particular platform had actually worked on that platform. Second—like the initial design of Turkopticon (see e.g. Irani and Silberman 2013), by which it was inspired—FairCrowdWork.org asked workers to rate platforms by assigning "star ratings" to different aspects of their experiences on the platform (e.g., pay, communication, tasks). However, as Silberman and Irani (2016) wrote seven years' after Turkopticon's launch, the ambiguity of a "one star" versus "five star" rating for (for example) "pay" for a diverse user base (e.g., casual workers versus workers relying on platform income to meet basic needs; or workers in rich versus poor countries) risks turning ratings into sites of goodwill-destroying arguments. Thus, we took the "lessons from Turkopticon" (Silberman and Irani 2016) and used them to redesign FairCrowdWork.org (see http://faircrowd.work). The new rating scheme retains the original "dimensions" (pay, tasks, communication, evaluation, and technology), but the method for calculating the ratings is changed. The current

design produces six ratings on a 1- to 5-star scale (with "half-star" ratings possible): one for each "dimension" and an overall rating computed from a weighted average of the "dimension" ratings.[1] The "dimension" ratings are computed based on responses to a detailed survey of workers' experiences, with multiple questions that correspond to each dimension (i.e., there is a set of questions about pay, another about tasks, another about communication, etc.). Survey respondents are recruited directly through the platform being reviewed, so there is no need to check that a user reviewing a platform has worked on the platform. This addresses the first problem. The second problem, ambiguity of ratings, is addressed by asking workers *concrete questions about their experiences* instead of asking them for ratings. We designed a process to transform answers to these questions into ratings (see appendices).

Realizing worker rights and building worker power: research, organizing, and regulation

Our rating scheme fits into a broad landscape of efforts among computing researchers, policy makers, social scientists, legal scholars, and trade unionists to understand the scope and nature of digital labor platforms, and to safeguard worker rights and build worker power. We end this paper with a rough review of this work with the aim of supporting further cross-sectoral collaboration.

While research within HCI, CSCW, and human computation on digital labor platforms began with a primarily managerial view, focusing on reducing cost and/or increasing speed, reliability, quality, or the kinds of tasks that can be outsourced to digital labor platforms (see Silberman and Irani 2016, notes 67-69, pp. 525-6 for a list up to 2015), a growing body of computing research going back at least to 2010 (e.g., Silberman et al. 2010a, 2010b; Bederson and Quinn 2011) explores questions of worker rights and power, worker-client relations, and responsible platform design and operation. At least as early as 2013, computing researchers were developing software to support platform workers in finding good work (e.g., Irani and Silberman 2013, 2014, 2016; Bragg et al. 2013; Callison-Burch 2014; Hanrahan et al. 2015); studying workers' experiences (e.g., Lease et al. 2013; Martin et al. 2014, 2016; Gupta et al. 2014; Raval and Dourish 2016; Gadiraju et al. 2016); and articulating criteria for desirable platform work (e.g. O'Neill and Martin 2013; Kittur et al. 2013; Sarasua and Thimm 2014; LaPlante and Silberman 2015). Recent work explores worker ownership and governance of forums (e.g. LaPlante and Silberman 2016) and platforms (Gaikwad et al. 2015, 2016, 2017; Sriraman et al. 2016; Whiting et al. 2017a, 2017b).

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[1] In IG Metall's 2016 survey of 600 German crowd workers (unpublished), respondents said that pay was more important than all other aspects, so pay is weighted more than the other aspect ratings.

Digital labor platforms received a major increase in attention from policy makers, legal scholars, and unionists in Europe and the US in 2015-16. The EU-funded European Foundation for the Improvement of Living and Working Conditions (Eurofound), for example, published a report on "new forms of employment" with a chapter on "crowd employment" (Mandl et al. 2015) and a study of legal issues around Uber in Europe (Adam et al. 2016)—and as of May 2017 is planning a report for the European Parliament on labor platforms. International Labour Organization (ILO) researchers Janine Berg, Valerio De Stefano, and Uma Amara Rani have conducted empirical and legal studies (e.g., Berg 2016; De Stefano 2016a, 2016b) and hosted several international meetings on the topic (ILO 2015; KLI/ILO INWORK 2016). In April 2016, staff from nine unions and worker organizations met in Frankfurt to discuss digital labor platforms. One result of this meeting was the "Frankfurt Paper on Platform Based Work" (Austrian Chamber of Labour et al. 2016),[2] which calls for collaboration between workers, platforms, unions, and policy makers to ensure that digital labor platforms comply with relevant laws; that workers' employment status is correct; that workers have the right to organize and negotiate collective agreements with platforms; that workers receive at least minimum wage; and that workers have access to social protection and dispute resolution processes (IG Metall 2016). The Danish Trade Union Confederation held a followup meeting in February 2017. The principles articulated in the "Frankfurt Paper" have been concretized in a set of "fifteen criteria for a fairer gig economy" addressing employment status, pay, task instructions, evaluation, burden of risk, communication, support for psychologically risky work, transparency, representation, dismissal protection, and portability of work history data (Silberman, forthcoming). In a 2017 meeting at the German Ministry for Labor and Social Affairs (BMBF), BMBF Division Head for Tax and Fiscal Policy Gabriele Weinhold noted that while regulatory strategies to date have focused on employment law, some of the criteria could be regulated through contract law. And unions in the UK, the US, Austria, Germany, and elsewhere are organizing platform workers (e.g. Osborne and Farrell 2016; Booth 2017; Der Standard 2017; Lee 2017; IG Metall 2017).

As computing researchers working with trade unions in a cross-sectoral network to safeguard worker rights and build worker power in digital labor platforms, we pose four questions to the other workshop participants: What other work with these aims is underway? How can we support this work? How can we enable more computing researchers to do this kind of work? And how can we work together to sustain the conditions for international, interdisciplinary, cross-sectoral work that makes significant contributions to safeguarding worker rights and building worker power in a world of digital labor platforms?

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2   The first author on this paper was also lead author and coordinator of the "Frankfurt Paper."

Disclaimer

This paper describes and is informed by ongoing work at IG Metall, but it was not approved or reviewed by the organization, nor does it reflect any official organizational position.

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Appendix A: Digital Labor Platform Working Conditions Survey

Notes: Demographic questions such as gender, age, country of residence, native language, and citizenship, and "meta" questions asking the respondents for comments about the survey questions are omitted here. *Platform* is replaced automatically with the name of the platform the respondent was recruited through.

General Experience on *Platform*

How long have you worked on/for *Platform*?
- Less than 1 month
- 1-5 months
- 6-11 months
- 1-3 years
- More than 3 years

How much longer do you want to work on/for *Platform*?
- Indefinitely
- Until I find another job
- Until I finish school
- Other _____

Why do you work on/for *Platform*?

_____

_____

How often is the work you do while working on/for *Platform*...? (one per row)

	Never	Less than half the time	About half the time	More than half the time	Always	I don't know
meaningful						
physically dangerous or harmful						
interesting						
demeaning or psychologically harmful						
satisfying						
ethically questionable						
fun						

Last week, how many hours did you spend working on/for *Platform* in total? Please include time spent actively looking for work, waiting for work to appear, and communicating with other works (e.g., reading and replying to forum posts, chatting about work on/for *Platform*, etc.).

_____

Was last week a typical week for you?
- No
- Yes

[If answered "No" to previous]
In a typical week, how many hours did you spend working on/for *Platform* in total? Please include time spent actively looking for work, waiting for work to appear, and communicating with other works (e.g., reading and replying to forum posts, chatting about work on/for *Platform*, etc.).

_____

You said that you {spend/spent} {hours} working {in a typical week/last week}. Of those hours, how many are spent:
_____ actively working on tasks or jobs
_____ looking for work or waiting for work to appear
_____ communicating with workers (including forums, chat, etc.)

Are there any penalties for declining jobs or tasks on *Platform*?
- No
- Yes
- It's complicated _____

Does *Platform* assign you a schedule or are you required to work certain hours or times on/for *Platform*?
- No
- Yes
- It's complicated _____

Do *Platform* operators or clients/customers tell you *how to do your work* (for example, specify a particular route for driving/biking, specify which tools or software you must use to complete a task, etc.)?
- No
- Yes
- It's complicated _____

Thinking generally about your experiences working on/for *Platform*, do you *feel in control* of your work?
- No
- Yes
- It's complicated _____

While working on/for *Platform*, do you earn qualifications that give you access to more highly-paid (or otherwise better) work?
- No
- Yes
- I don't know

[If answered "Yes" to previous]
On *Platform*, do you understand what is required for you to earn certain qualifications?
- No
- Yes

Pay on *Platform*

Note: The worker is asked to specify a currency with which to answer the following questions. In this exposition we assume the user has selected EUR (€).

Last week, how much money did you make working on/for *Platform* (in €)? Please include any tips/bonuses and delivery fees if applicable.

_____

Was last week a typical week for you?
- No
- Yes

[If answered "No" to previous]
In a typical week, how much money do you make working on/for *Platform* (in €)? Please include any tips/bonuses and delivery fees if applicable.

_____

Have you ever received *tips or bonuses* for your work on/for *Platform*?
- No
- Yes

[If answered "Yes" to previous]
{Last week/In a typical week}, how much money {did/do} you earn from tips or bonuses on *Platform*?

_____

[For platforms with base hourly wages]
According to your contract with *Platform*, what is your *base hourly wage* (in €)?
_____ [may be 0]

[For delivery platforms]
According to your contract with *Platform*, how much additional money do you earn *per delivery*, not including tips (in €)?
_____ [may be 0]

Which of the following statements best describes the income you earn from working on/for *Platform*?
- It is essential for meeting my basic needs.
- It is an important component of my budget, but not essential.
- It is nice to have, but I could live comfortably without it.

When do you usually get paid for work completed on/for *Platform*?
- Within 48 hours
- Within 5 working days
- Within 10 working days
- Within 1 month
- It usually takes more than 1 month to get paid
- I have never been paid
- I don't know

Have you ever done work on/for *Platform* for which you did *not* get paid?
- No
- Yes

[If answered "Yes" to previous]
About how often are you *not* paid for you work on *Platform*?
- It has only happened once or twice. I am almost always paid for my work.
- It happens for *less than half* of the work I do.
- It happens for *about half* of the work I do.
- It happens for *more than half* of the work I do.
- It happens for *all* of the work I do. I have never been paid for my work

[If answered "Yes" to "Have you ever done work for which you did not get paid?"]
Please describe what happened/happens:

_____

_____

Do you have any other jobs or do you work on/for any other apps or platforms?
- No
- Yes

[If answered "Yes" to previous]
Please list all of your other jobs, including other apps or platforms you work on/for:

_____

_____

[If answered "Yes" to "Do you have other jobs?"]
Last week, how much did you earn from all of this other work combined (in €)?

_____

[If answered "Yes" to "Do you have other jobs?"]
Was last week a typical week for you in terms of how much money you made from work *outside of* Platform*?*
- No
- Yes

[If answered "Yes" to "Do you have other jobs?" and "No" to previous]
In a typical week, how much do you earn from all of this other work combined (in €)?

_____

Do you receive any kind of government assistance (for example, BAföG/Studienbeihilfe, Arbeitslosengeld, social security, WIC, SNAP/food stamps, etc.)?
- No
- Yes
- Prefer not to answer

Communication on *Platform*

I. Communication with *Platform* management

Does *Platform* management communicate platform/app changes, new policies, and other relevant information to you?
- No
- Yes, but only some of the time
- Yes, always

Have you ever asked *Platform* management a question?
- No, but I know how to
- Yes
- I do not know how, but I think it is possible
- It is not possible

[If answered "Yes" to previous]
How often does *Platform* management answer your questions?
- Never
- Less than half of the time
- About half of the time
- More than half of the time
- Always

[If answered "Yes" to "Have you asked management a question?" and anything other than "Never" to previous]
When *Platform* management responds to your questions, how often are their answers...?

	Never	Less than half the time	About half the time	More than half the time	Always	I don't know
prompt						
respectful						
useful						

II. Communicating with *Platform* customers/clients

Have you ever communicated with *Platform* customers/clients (including asking questions)?
- No, but I know how to
- Yes
- I do not know how, but I think it is possible
- It is not possible

[If answered "Yes" to previous]
How often do *Platform* customers/clients respond to your work-related questions or other communications?
- Never
- Less than half of the time
- About half of the time
- More than half of the time
- Always

[If answered "Yes" to "Have you communicated with customers?" and anything other than "Never" to previous]
When *Platform* customers/clients respond to your questions, how often are their answers...?

	Never	Less than half the time	About half the time	More than half the time	Always	I don't know
prompt						
respectful						
useful						

III. Communicating with other *Platform* workers

Have you ever communicated with other *Platform* workers through the official *Platform* site/app (e.g., official forums, chat)?
- No, but I know how to
- Yes
- I do not know how, but I think it is possible
- It is not possible

[If answered "Yes" to previous]
How often are worker communications in *Platform* forums, chat, or other *official* venues...?

	Never	Less than half the time	About half the time	More than half the time	Always	I don't know
respectful						
useful						
enjoyable						

Have you ever communicated with other *Platform* workers *outside* of official *Platform* venues (e.g., on Facebook, on a private forum, etc.)?
- No, but I know how to
- Yes
- I do not know how, but I think it is possible
- It is not possible

[If answered "Yes" to previous]
How or where can you communicate with other *Platform* workers outside of the official *Platform* site/app?

_____

_____

[If answered "Yes" to "Have you communicated with other workers outside the official site/app?"]
How often are worker communications in *unofficial* venues...?

	Never	Less than half the time	About half the time	More than half the time	Always	I don't know
respectful						
useful						
enjoyable						

Reviews, Ratings, and Feedback

Can you give feedback about *Platform* customers/clients to *Platform* operators/management?
- No
- Yes, through the app/website
- Yes, through some other means
- I don't know

[If answered "Yes, through some other means" to previous]
How can you give feedback about *Platform* customers/clients to *Platform* operators/management?

_____

_____

Can you give feedback about *Platform* customers/clients to other workers?
- No
- Yes, through the app/website
- Yes, through some other means
- I don't know

[If answered "Yes, through some other means" to previous]
How can you give feedback about *Platform* customers/clients to other workers?

_____

_____

Do you use other workers' feedback about *Platform* customers/clients to make choices about whether to accept a particular task or jobs?
- No
- Yes

[If answered "Yes" to previous]
How do you find out about other workers' feedback about *Platform* customers/clients?

_____

_____

Do you have access to information about *Platform* customer/client history on the platform (e.g., payment history, evaluations) *through the official* Platform *interface?*
- No
- Yes
- I don't know

[If answered "Yes" to previous]
Do you use this official customer/client history information to make choices about whether to accept a particular task or job?
- No
- Yes

Can customers/clients review, rate, or evaluate your work?
- No
- Yes
- I don't know

[If answered "Yes" to previous]
How do customers/clients review, rate, or evaluate your work?
- Through the app or website
- In person
- Other _____

[If answered "Yes" to "Can customers/clients evaluate your work?"]
How often would you say that customer/client reviews, ratings, or evaluations are...?

	Never	Less than half the time	About half the time	More than half the time	Always	I don't know
prompt						
respectful						
useful						
fair						

[If answered "Yes" to "Can customers/clients evaluate your work?"]
Do customers/clients have to give good reasons for leaving negative ratings or evaluations?
- No
- Yes
- I don't know

[If answered "Yes" to "Can customers/clients evaluate your work?"]
On *Platform*, can you contest ratings or evaluations of your work that you think are wrong or unfair *through official* Platform *channels?*
- No
- Yes
- I don't know

[If answered "Yes" to previous]
If you contest a wrong or unfair evaluation through official channels on *Platform*, how often do platform operators take you seriously?
- Never
- Less than half of the time
- About half of the time
- More than half of the time
- Always

[If answered "Yes" to "Can customers/clients evaluate your work?"]
On *Platform*, can you contest ratings or evaluations of your work that you think are wrong or unfair *through non-official channels* (for example, by attempting to contact customers/clients directly)?
- No
- Yes
- I don't know

[If answered "Yes" to previous]

How can you contest unfair or wrong ratings or evaluations outside of official platform channels? Have these methods been successful for you?

_____

_____

Technology

Would you describe the technology (e.g., website, app) on *Platform* as *reliable*?
- No
- Yes
- It's complicated _____

Would you describe the technology (e.g., website, app) on *Platform* as *user-friendly*?
- No
- Yes
- It's complicated _____

Would you describe the technology (e.g., website, app) on *Platform* as *fast*?
- No
- Yes
- It's complicated _____

Likes and Dislikes

In general, what do you like about working on/for *Platform*?

_____

_____

In general, what do you *not* like about working on/for *Platform*? What problems do you have? What would you change?

_____

_____

Appendix B: Calculating Platform Ratings from the Responses to the Working Conditions Survey

There are six ratings in all: an overall rating and five "aspect" ratings. The "aspect" ratings are pay, communication, evaluation, tasks, and technology.

The overall rating is a weighted average of the five aspect ratings. Specifically, the pay rating is weighted twice as heavily as the other aspect ratings. The overall rating R is calculated as follows:

R = (2P + C + E + K + T) / 6

where P is the pay rating, C is the communication rating, E is the evaluation rating, K is the tasks rating, and T is the technology rating.

Pay rating. The pay rating is based on the median hourly wage reported by survey respondents. Table B.I. describes the pay rating for a range of median hourly wages.

Table B.I. Pay ratings corresponding to median hourly wages.

Median hourly wage	Pay rating
less than € 2,50 per hour	0,5 stars
€ 2,50 to € 4,99 per hour	1 star
€ 5,00 to € 7,49 per hour	1,5 stars
€ 7,50 to € 9,99 per hour	2 stars
€ 10,00 to € 12,49 per hour	2,5 stars
€ 12,50 to € 14,99 per hour	3 stars
€ 15,00 to € 17,49 per hour	3,5 stars
€ 17,50 to € 19,99 per hour	4 stars
€ 20,00 to € 24,99 per hour	4,5 stars
€ 25,00 or more per hour	5 stars

Communication rating. The communication rating is a simple average of three "sub-ratings": communication with management, communication with clients, and communication with other workers.

If half or more of workers say that communication with management is "not possible," or that management "never" responds to their communications, the "communication with management" sub-rating is 1 star. Otherwise, it is the simple average of the responses from workers to two questions:

- "How often does management answer your questions?" and
- the three-part array question "When management responds to your questions, how often are their answers...?"

In all cases, "Never" answers are coded as 1 star, "Always" as 5 stars, and the answers in between as the numbers in between. Specifically, all answers are

added together and divided by 4*N*, where *N* is the number of workers responding to the survey on this paltform.

The "communication with clients" sub-rating is calculated with roughly the same scheme as the "communication with management" sub-rating. Specifically, if half or more of workers say that communication with clients is "not possible," or that clients "never" respond to their communications, the "communication with clients" sub-rating is 1 star. Otherwise, it is the simple average of workers to "How often to clients respond?" and the following three-part array question.

Similar to the previous two sub-ratings, if half or more of workers say that communication with other workers *through official channels* is not possible, this sub-rating is 1 star. Otherwise, it is the average of the answers to the three-part array question about worker communication *in official channels*.

Evaluation rating. If half or more workers say that clients *cannot* evaluate workers' work, or half or more of the answers from workers to the four-part array question "How often would you say that clients' reviews, ratings, or evaluations are...?" are "I don't know," then there is no evaluation rating. In this case the evaluation rating is not displayed as 0 stars but as the text "N/A" or similar. In this case the overall rating is calculated as:

R = (2P + C + K + T) / 5

Otherwise, the evaluation rating is calculated in five steps. First, a "base" evaluation rating is calculated. It is the simple average of the answers from workers to the four-part array question "How often would you say that clients' reviews, ratings, or evaluations are...?" "Never" is coded as 1 star and "Always" as 5 stars. Then:

- If workers cannot give feedback about clients to management (i.e., if more than half of workers reply "no" to the question "Can you give feedback about clients to management?"), one star is deducted.
- If clients to not have to give good reasons for leaving negative ratings (i.e., if more than half of workers reply "no" to the question "Do clients have to give good reasons for leaving negative ratings?"), one star is deducted.
- If more than half of workers answer the question "If you contest a wrong evaluation through official channels, how often are you taken seriously?" with "Never" or "Less than half the time," one star is deducted.
- If the rating is less than zero, it is set to zero.

Tasks rating. The tasks rating is the simple average of the responses from workers to the eight-part array question "How often is the work you do...?" "Positive" sub-questions ("meaningful," "interesting," "satisfying," and "fun") are coded with "Never" as 1 star and "Always" as 5 stars. The other, "negative" sub-questions use the reverse coding ("Never" is 5 stars).

Technology rating. The technology rating is the simple average of the responses from workers to the three technology questions ("Would you describe the technology as...?"). "Yes" is coded as 5 stars, "It's complicated" as 3 stars, and "No" as 1 star.