



Gender differences in preferences for flexible work hours: Experimental evidence from an online freelancing platform^{☆,☆☆,★}

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ARTICLE INFO

JEL classification:

J22
O14
J16
L86

Keywords:

Workplace flexibility
Online freelancing jobs
Female labor force participation

ABSTRACT

We conducted an experiment on a major international online freelancing platform to examine how increased flexibility in daily work hours affects female participation. We post identical job advertisements (for 320 jobs) covering a wide range of tasks (80 distinct tasks) that differ only in flexibility and the wage offered. Comparing the numbers of applicants for these jobs, we find that, while both men and women prefer flexibility, the elasticity of response for women is twice that for men. Flexible jobs attracted 24% more women and 12% more men than inflexible ones. Importantly, these increases did not compromise the quality of the applications. In contrast, there is suggestive evidence that flexible jobs attracted higher-quality female candidates. Our findings have significant implications for understanding gender disparities in labor market outcomes and for shaping equity-focused policies of organizations.

1. Introduction

Women are more likely to work in jobs that offer flexible schedules, are part-time, or involve shorter commutes (Booth and Van Ours, 2013; Le Barbanchon et al., 2021; Meekes and Hassink, 2022). For example, as shown in Figure A1, female respondents the American Working Conditions Survey (AWCS) were 15 percent less likely to be working in jobs that did not provide flexibility in choosing work hours. Do these types of sorting indicate that female labor supply responds more to these non-pecuniary benefits than men?

The answer to this question has significant implications. First, gender differences in preferences for non-pecuniary benefits could contribute to the gender wage gap (Petrangolo, 2019; Humphries et al., 2024). Women may place a higher value on benefits such as flexible schedules, partly due to social norms around household responsibilities. Flexible schedules could allow women to balance work and household duties more effectively (Sullivan, 2019).¹ Consequently, men and women may sort into different job types based on non-pecuniary benefits, and firms might offer lower wages for jobs that provide flexibility to offset the cost of providing this benefit (Penner et al., 2022). Second,

[☆] This article is part of a Special issue entitled: 'Non-monetary Aspects of Work' published in Labour Economics.

^{☆☆} We acknowledge financial support from Asian Development Bank Institute Grant R2135-1 and a Bentley University FAC grant. Yuwen Meng, Ananya Vhavle, and Tejaswini Vondivillu provided exceptional research assistance. The study has benefited from valuable feedback from Simon Chang, Daniel Suryadarma, Edwin Ip, and conference and seminar participants at the Advances with Field Experiments (AFE) Conference at the University of Chicago (2022), ADB Workshop on 'The Social and Economic Impact of Online Commerce on Women', the Australian Development Economics Workshop (2022), the Australian Gender Economics Workshop (2022), the Royal Economic Society Annual Conference (2023), AWAE Conference (2023), University of Adelaide, University of Southern California, and the University of Western Australia. All remaining errors are our own. For the purpose of open access, the authors have applied a "Creative Attribution (CC BY) licence to any Author Accepted Manuscript version arising". The authors are listed alphabetically.

[★] Study Pre-Registration: The trial was registered prior to data collection on the American Economic Association RCT Registry.

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¹ Other factors, such as differences in competitiveness, risk tolerance, negotiation tendencies, the impact of gender stereotype on belief updation, beliefs of a gender dominated occupation may also influence wage determination (Croson and Gneezy, 2009; Azmat and Petrangolo, 2014; Exley and Kessler, 2019; Coffman et al., 2024; Delfino, 2024). These differences could arise from personality traits shaped by social norms or institutions (e.g., varying competitiveness in matrilineal versus patrilineal societies) or even evolutionary factors. We remain agnostic about the origins of these differences.

the limited availability of non-pecuniary benefits could deter women from entering the formal labor force, exacerbating the gender employment gap. Female labor force participation remains low in many developing countries, particularly in Asia, even after accounting for economic development and educational attainment. Labor market frictions that limit the provision of benefits preferred by women contribute to this disparity (Gupta, 1993; Macpherson and Hirsch, 1995; DeLeire and Levy, 2004; Grazier and Sloane, 2008; Kleinjans, 2009; Borker, 2018). Third, the past decade has witnessed an increase in flexible work arrangements, driven by factors such as technological advancements, labor laws, and the experimentation required by COVID-19. Gender differences in elasticity of the labor supply to flexible work arrangements have important implications for workforce composition and diversity. Firms and policymakers who aim to adapt effectively to these changes must understand gender-specific responses to such arrangements (Cook et al., 2021; Gottlieb et al., 2021).²

Despite the far-reaching implications, answering this question is empirically challenging. We only observe the equilibrium gender distribution of employees and the final package of pecuniary and non-pecuniary benefits that workers receive. Several observed and unobserved demand- and supply-side factors play a role in determining the equilibrium. For example, while a higher share of women employed in flexible, low-paying desk jobs relative to less flexible, high-paying construction jobs may reflect gender-based sorting, it could also be attributed to higher male productivity in physically demanding, brawn-intensive roles. Thus, an observed association between non-pecuniary benefits and female employment across firms, industries, or sectors does not necessarily indicate that women respond more to these benefits than men.³ Another complication in identifying the labor supply response to a specific non-pecuniary benefit, like schedule flexibility, using observed real-world job choices is that jobs typically vary along several dimensions of non-pecuniary benefits. Jobs that offer schedule flexibility may also have lower travel requirements or could have offices located in safer neighborhoods.⁴ These overlapping (often unobservable) attributes make it even more challenging to isolate gender differences in preferences for a particular non-pecuniary benefit from observed job choices (Mas and Pallais, 2017; Wiswall and Zafar, 2018; Wasserman, 2019; Adams-Prassl, 2020; He et al., 2021).

In this study, we address these empirical challenges using a natural field experiment that focuses on a specific non-pecuniary benefit—flexibility in choosing work hours during the day.⁵ The experiment was conducted on a major online freelancing platform and involved

posting four otherwise identical job advertisements for each of 80 distinct tasks (representative of typical tasks on the platform) that differed only in terms of flexibility and the wage offered.⁶ Flexible jobs (“high-flexibility”) allowed the freelancer applicants to choose any two-hour window during the day on a pre-specified date to complete the task. Inflexible jobs (“low-flexibility”) required the work to be completed during a pre-specified two-hour period of our choosing on a pre-specified date. The jobs also differed in the wage offered. A “high-wage” job posting offered a lump-sum one-time payment of USD 40 and a “low-wage” job posting offered a lump-sum one-time fee of USD 30. In total, we made 320 job postings for 80 distinct tasks.⁷ We collected information about the number of male and female applicants for each of the job postings as well as several applicant-level characteristics. Since the different job postings for each task varied only along the dimension of flexibility or the wage offered, we can attribute any difference between male and female application numbers (and composition) to these dimensions of pecuniary and non-pecuniary benefits.

Running a natural field experiment on an online freelancing platform offers several key advantages. Compared to observational studies, it provides greater control by allowing us to exogenously vary parameters of interest, which enhances our ability to identify causal effects. At the same time, since our ads represent real jobs requiring participants to perform tasks they typically undertake on the platform for comparable wages, their choices are likely to be more natural and generalizable to real-world labor markets than those observed in lab experiments with similar or even greater levels of control. Unlike lab or field experiments that often rely on student or convenience samples, our setting is also more representative of the actual composition of the online freelancing labor market. Finally, since participants were unaware they were part of an experiment until it concluded, our design avoids the self-selection and demand effects common in lab and many field experiments where subjects must consent beforehand and know they are being observed.

We received more than 11000 applications from over 150 countries for the jobs we posted. Flexible jobs attracted more applications from both men and women, indicating that flexibility is valued by both genders. However, the elasticity of the response to flexibility differed by gender. Compared to inflexible jobs, flexible jobs resulted in a 24% increase in female applicants, compared to a 12% increase in male applicants. This suggests that a larger proportion of women on the platform viewed flexibility as a binding constraint. Furthermore, flexibility improved gender diversity in the applicant pool, leading to a 1.5% increase in the proportion of female applicants. Flexible jobs were 3 percent more likely to attract women who self-reported an hourly wage rate on the platform that was higher than the rate we offered, indicating willingness to give up higher wage for flexibility. Furthermore, for a limited sample of applicants for whom we have data, we document a strong association between the applicant-reported hourly wage rate and the job success rate on the platform. This provides suggestive evidence that a higher self-reported wage also serves as a proxy for worker quality, implying that flexible jobs attracted higher-quality female applicants. For male applicants, we find no evidence that the quality of applications was different for flexible jobs. In addition, women were more likely to put additional effort into applying for flexible jobs. Compared to inflexible jobs, women were more likely to

² Some research suggests that increased flexibility might unintentionally reinforce existing gender norms (Lott and Chung, 2016; Chung, 2019). For example, while men can use flexible arrangements to increase work and earnings, women can face increased expectations to perform more household responsibilities.

³ An alternative is to compare the distribution of gender between roles that offer flexibility and those that do not for the same firm and the occupation type in an observational dataset. However, such firm-occupation type fixed effects would not be able to capture several unobserved factors like gendered preferences of the employer and nuanced differences in job descriptions such as frequency of client meeting, travel requirements, and managerial responsibility, the preferences for which may also vary across gender (Goldin, 2021).

⁴ One alternative to experimental data is to use application information from observational datasets based on representative samples. Such datasets are rare; an exception is Lochner and Merkl (2025), which combines job-level flexibility requirements with application data from a sample of employers in Germany. However, the measure of flexibility in this study is a composite index of employer-driven flexibility, rather than isolating specific dimensions such as work-hour flexibility. Moreover, the timing of hiring into jobs that offer particular flexibility packages may be endogenous, potentially affecting the number of applications observed.

⁵ For a description of natural field experiments, see List (2007), Al-Ubaydli and List (2012, 2015).

⁶ These tasks spanned various activities, including proofreading, writing, and coding.

⁷ The four job postings for each task were published, on average, around the same time of the day on the same day of the week but in different weeks, using the same user account. For instance, the four versions of a proofreading task were posted on consecutive Tuesdays around 10 AM from the same account. Tasks were randomized across days of the week and user accounts. The posting order of the four job variations for each task was also randomized. Each posting remained open for about one day, after which one applicant was hired at random to complete the task, and the promised wage was paid.

apply earlier and include previous work samples when applying for flexible positions.

Our findings contribute to the literature on gender differences in preferences for non-pecuniary benefits in the labor market. Previous studies have highlighted the importance of non-pecuniary benefits for women using non-experimental methods (Goldin and Katz, 2011; Flabbi and Moro, 2012; Bronson, 2014; Goldin, 2014; Sullivan and To, 2014; Lavetti and Schmutte, 2016; Sorkin, 2018). However, as discussed earlier, these studies face challenges in disentangling the response to flexibility from other unobserved characteristics of workers, firms, and jobs.⁸ Furthermore, they often fail to isolate the impact of a specific non-pecuniary benefit. Our experimental design addresses these limitations.⁹ Recent studies that have used experiments to elicit stated preferences (and willingness to pay) for various job characteristics reach similar finding—women have a higher willingness to pay for non-pecuniary job benefits like flexibility (Mas and Pallais, 2017; Maestas et al., 2018; Wiswall and Zafar, 2018). Wiswall and Zafar (2018) use a sample of students from a top US university and find that women are willing to trade higher salaries for greater job stability and flexibility. Maestas et al. (2018), using data from the American Working Conditions Survey, show that women have a stronger preference for jobs that are physically less demanding and those that offer more paid leave. These studies validate that the stated preferences reflect the true underlying preferences by looking at the match between the stated preferences and the real job attributes. However, even when stated preferences align with real job attributes, they do not account for the actual choice set of jobs available to respondents. This choice set may be influenced by other supply-side factors, leaving concerns about the incentive compatibility of stated preferences unresolved.

We add to this literature by focusing on workers' revealed preferences for flexibility. In this, our study complements (He et al., 2021), who conducted a similar field experiment by posting job advertisements for regular full-time positions in the IT sector on a Chinese job board. Their findings indicate that married women exhibit a stronger preference for flexible jobs compared to married men. But our study also differs from He et al. (2021) in important ways. First, flexible work hours in full-time employment can influence promotions and career progression, particularly for women (Goldin, 2014). Such potential costs of choosing flexible hours may discourage applicants, especially women, from responding to job advertisements that offer flexibility in a regular full-time position. In contrast, in our gig economy setting, there are no such career penalties for selecting flexible work hours. Second, a preference for flexible hours in regular office jobs could reflect other factors, such as a distaste for commuting during specific times. Commute-related costs may vary by gender and location, potentially confounding observed preferences for flexibility. In our online freelancing context, where work is entirely remote, preferences for flexibility are unaffected by differential commuting costs. Finally, He et al. (2021) focus on a specific job type within a single sector. Preferences for flexibility may vary across sectors, as workers with different preferences could self-select into industries that align with their needs. Consequently, the extent to which experimentally introduced flexibility generates an effect may depend on the sector. Our experiment spans a broad range of job types, making our findings more generalizable.

Our study is closely related to a recent literature that attempts to understand the demand for flexibility in the gig economy. Chen et al. (2020) use random experimental variation in surge pricing for Uber rides to estimate the variation in the elasticity of the labor supply of

Uber drivers at different times of the day. Combining a natural field experiment and structural estimation to recover preference parameters, they find that female Uber drivers place a higher value on the ability to adjust their work schedules in response to unexpected shocks. Similarly, Angrist et al. (2021) conduct a natural field experiment offering a randomly selected group of Uber drivers the option of a fixed-rent lease instead of sharing a percentage of their ride fares. They find that drivers prefer revenue-sharing to avoid the obligation to drive during specific times or for a fixed duration that is required to recover the fixed rent. Chen et al. (2019, 2021) analyze variations in labor supply elasticity at different times of the day, conditional on the expected wage, to infer that reservation wages fluctuate throughout the day, reflecting a valuation for flexibility. Their findings indicate that female drivers, in particular, exhibit a higher valuation for flexibility. Our findings complement these studies but also differ from them in several key respects. Unlike prior research that focuses on Uber drivers in the U.S., our study examines online freelancers across the globe. Furthermore, in the context of Uber, the reluctance to work during specific hours may stem from changes in unobservable job characteristics across these hours that may differently impact men and women. For example, women may have greater safety concerns for driving at night. In our experiment, all tasks are performed online, ensuring that job characteristics—and their associated costs—remain constant across both flexible and non-flexible postings.

Finally, our study contributes to the growing multidisciplinary literature on the gig economy, particularly the freelance labor market online (Stanton and Thomas, 2016, 2020; Cook et al., 2021; Stanton and Thomas, 2021). In general, these studies note that there is only limited data on freelance workers online. We add to this literature by collecting a rich set of data on applicants and their applications. In addition, we also focus on the role that flexibility may play in limiting the participation of women in online labor markets.¹⁰

2. Experimental design and data collection

We conducted our experiment on one of the largest online freelance labor market platforms, which attracts clients and freelancers from around the world. Typically, a client posts a description of their job requirements that mentions the fee that they are offering. The client may invite specific freelancers to apply or post the job publicly for any freelancer interested in applying. Freelancers who are interested have to submit an application, which usually includes a cover letter, their proposed wage (often a counteroffer), and additional details, such as relevant past experience that demonstrates their competence and interest in the job. The client then selects one or more freelancers to perform the job by sending a contract specifying the agreed number of hours, the payment (either fixed or hourly), and a deadline for completing the work. At this point, the chosen freelancer can accept the contract, negotiate the terms, or reject the offer. All communications between clients and freelancers occur through the platform's built-in messaging service. The platform's rules prohibit the exchange of private contact information.

¹⁰ A crucial aspect of the online freelance labor market is that it allows workers to choose jobs that best match their constraints and requirements. This affords workers greater flexibility in choosing their work schedule. However, a significant number of online jobs include a strict deadline (see Table A4). Although workers have the option to choose between jobs, these strict deadlines limit the ability of workers to allocate their work flexibly between different times on the same day. This lack of flexibility could be a factor that limits female participation in the online labor market, both in terms of job intensity and entry. Moreover, if women value flexibility in online jobs, they might be willing to accept lower wages in exchange for greater flexibility. Despite this, empirical evidence regarding women's preference for job flexibility in the online labor market has been limited, a gap that this study seeks to address.

⁸ For an interdisciplinary review of this topic, see Chung and Van der Lippe (2020).

⁹ Broadly, our findings also relate to the extensive literature on gender differences in attributes such as risk preferences and competitiveness, which have implications for labor market outcomes (Croson and Gneezy, 2009; Azmat and Petrongolo, 2014; Exley and Kessler, 2019).

Our experiment involves posting several jobs on this platform as clients and studying the responses we receive from freelancers. Specifically, we post four variations (“jobs”) for each of 80 distinct tasks (see Table A1), covering a wide range of typical jobs on the platform. Our job advertisements closely resemble those commonly posted by clients. Since there are four variations for each of the 80 tasks, the experiment consists of 320 **job postings**. These jobs vary in terms of the fee offered and the flexibility in choosing work hours during the day. The “high-wage” jobs offered USD 40 for two hours of work (USD 20 per hour), while the “low-wage” jobs offered USD 30 for the same duration.¹¹ These wage points correspond to the distribution of wage offers on the platform. Figure A2 plots the cumulative distribution function of hourly wage offers (from clients) in more than 60,000 jobs in the same categories as we posted. The “low-wage” jobs (15 USD per hour) correspond to approximately the 25th percentile of the wage offer distribution, while the “high-wage” jobs (20 USD per hour) correspond to the median wage. This setup allows us to estimate the impact of flexibility at two different points of the wage distribution.¹²

A “high-flexibility” (or just “flexible”) job in this experiment allowed the applicant to choose any two-hour window during the day on a pre-specified date to complete the task. In choosing the fixed work hour requirement of the “low-flexibility” jobs, we mimic the real-world job requirements. Using the American Community Survey, we found that around 60% of the workers arrive at work between 6 AM and 10 AM, with the largest fraction of workers arriving between 7 AM and 8 AM (See Figure A3).¹³ This suggests that most workplaces have work hours that start between 6 AM and 10 AM.¹⁴ Thus, the policy-relevant question is to study elasticity of labor supply to jobs that allow flexibility of schedule (start time) that is different from the typical start time in workplaces. Based on this observation, the “low-flexibility” (or just “inflexible”) job in our experiment required the applicant to start the job at 8 AM in their local time on a prespecified date and finish it by the next two hours. Thus, the four types of jobs were (1) **Low-wage, low-flexibility**, (2) **High-wage, low-flexibility** (3) **Low-wage, high-flexibility** (4) **High-wage, high-flexibility**.

It was important to ensure that the freelancers understood that they could not work outside the specified (low-flex) or chosen (high-flex) two-hour work window. We took several steps to make sure that applicants understood these requirements before applying. First, the job postings contained information about expectations, such as the skill requirements and the time it would take to complete the job, but did not reveal any details that would have allowed the applicants to work on the job in advance. The job postings specified that the details required to finish the job would be shared at the start of the specified or chosen two-hour window. Second, for each job posting, we added a mandatory screening question. As a response to this question, each applicant was required to enter the pre-specified two-hour (in the case

of a low flexible job) or their chosen two-hour (in the case of a high flexible job) work window before they could start the application. This ensured that the work hour requirements were salient. Finally, the text of the job advertisement clearly specified the work hour requirements (see example in Table A2), and made it clear that the freelancer has to contact us virtually at 8 AM to get further details about the job.¹⁵ It is important to note that once they started working, both flexible and inflexible postings required that the task be completed in two hours. Thus, the four variants of jobs for a task required the same skill set and the same amount of time commitment. The only differences were the flexibility in choosing work hours or the fee.¹⁶

We used five different client accounts for posting the advertisements and hiring freelancers for the 320 jobs. We randomly assigned each of the 80 tasks to one of the five accounts and to one of the days of the week. All four jobs for a task were posted from the same account on the same day of the week and, on average, around the same time of the day, but in different weeks. The order in which the four jobs were posted for a task was randomized for each task. The title, the skills required, and other attributes were the same across the four job postings for a task. Table A2 provides an example. This was to ensure that the four job postings for a task appeared the same across all other observed and unobserved dimensions. For example, translation from English to Spanish was assigned to be posted on Tuesdays from the client account number 1. We started by posting one of the variants (randomly chosen) of the translation job on a Tuesday, and posted the remaining variant (order randomly chosen) on the next three Tuesdays.¹⁷ We closed the job ads one day after the job posting, at which point we hired a random applicant from the pool of applicants to complete the job. The chosen applicant was paid the promised wage. All jobs were to be performed two days after the posting. For example, a high-flexibility job posted on a Monday required the applicant to complete the job on a Wednesday at their chosen time. This also holds for the low flexible job, except that it required that the job be completed at the pre-specified time on a Wednesday. The job postings did not mention that these jobs were part of an experiment. Therefore, applicants applied for these jobs in a natural environment that they would otherwise have faced, not knowing the purpose of the experiment, which makes this a natural field experiment (Al-Ubaydli and List, 2012, 2015). The jobs were posted on all days of the week for four weeks in November and December 2021.¹⁸

¹⁵ A few flexible job postings (18 tasks) offered the freelancer the option of choosing from five two-hours contiguous slots beginning at 8 am. However, the job text was the same for a specific task in flexible posts and high-wage and low-wage.

¹⁶ It was crucial to keep the text across these four job postings as similar as possible (Abraham et al., 2024; Marinescu and Wolthoff, 2020). The text of the posting between the flexible and inflexible jobs (for a given task) was identical except for the one sentence that specified the nature of flexibility. Even in that sentence, we never explicitly use the word flexibility. All the other attributes that a client would have to specify in a job posting (like the title, the wage, per-hour or fixed wage, short-term or long-term and open to applicants worldwide or to a select country) were identical. As discussed before, all jobs also had a screening question. They were also posted from the same account in the same day of the week and, on average, around the same time of the day. Thus, the algorithms that the platform uses to list jobs in a specific order (either personalized or general) are extremely unlikely to differentiate between these four types of jobs. Although we do not have details about the platform's exact listing algorithm, it is unlikely that the visibility of job ads would vary between these two job types.

¹⁷ The posting order of jobs within a task was random. For some tasks, the flexible job was posted in the first week. For others, the inflexible job was posted in the first week. Thus, the effect of flexibility would not be confounded by any week-specific effect like holidays and other calendar month effects.

¹⁸ One concern could be that men and women view different jobs on the platform. This could be because of the filters they set or the algorithm of the platform. However, our jobs were identical in every other aspect except the

¹¹ All job posting clearly specify that the job can be finished in two hours. Admittedly, the ideal experiment would involve posting jobs that have varying durations (for a given task and flexibility) to understand the mediating role of job duration. However, with a limited budget, a shorter duration allowed us to post a greater number of jobs.

¹² The ideal experiment would involve measuring the elasticity of flexibility at different points in the wage distribution. However, budgetary limitations would have implied fewer job postings for each specific wage, increasing the risk of low power to detect economically significant effects.

¹³ Women arrive marginally later than men. See Figure A4.

¹⁴ Furthermore, 8–10 AM is also the time when many parents take their children to school, making flexibility during these hours especially valuable. Using time-use surveys from 15 countries, Figure A5 plots the share of respondents who report accompanying their children to and from school at different times of day, separately for men and women. The figure shows clear peaks around 8 AM and again around 4 PM. Women are more likely than men to accompany children to school, and accordingly, the gender gap in this activity also peaks at these times.

The data we use for our analysis are the number of applications as well as the information from the applicant profiles and applications. Applicants do not state their gender on their profile or the application.¹⁹ We infer the gender of the applicant from the profile picture used in the profile. The platform verifies the identity of the freelancer against identity documents, like a passport, driver's license, or national ID, to ensure that the money goes into the correct freelancer's account, and no freelancer can operate more than one account on the platform. The platform withholds payments until the name and photograph of the freelancer on the platform match their identity documents. This makes the pictures a reliable source of information. We manually classify applicants as male, female, or gender uncertain, using their profile pictures.²⁰

The setting of an online labor market such as ours offers several advantages for studying preference for work hour flexibility. First, in regular jobs, choosing to apply for flexible hours may be confounded by other considerations apart from a preference for such jobs. There may be benefits in signaling availability (or showcasing the work to the manager) for promotions and other career concerns. Moreover, regular jobs often require commuting, and sorting into flexible jobs could in fact be an aversion to commute at specified times of the day. Such aspects are absent in our setting. Further, inflexibility in work is quite common in online freelance jobs. To illustrate this, we extracted the job text for over 64,000 jobs posted on the platform. These jobs were in the same job categories in which we posted our experiment job ads. Table A4 presents our finding on how common it is for job ads to feature certain keywords (like time/day and deadline) that could potentially imply some inflexibility in work hours.²¹ At least 20 percent of job postings had some mention of a time/day, 27 percent had a mention of some form of deadline, and 29 percent has mentioned some meeting requirements. The numbers are similar in both fixed-payment and hourly-payment jobs, indicating freelancers often come across job descriptions that have some inflexibility in work hours. Second, freelancers from all over the world actively seek jobs in these online labor markets. Our sample consisted of applicants from more than 150 countries. In Figure A6, we document the distribution

one line about the work hours requirements. It is extremely unlikely that the filters set or the algorithm would pick on that one-line difference so as to show the posting at different rates to male and female freelancers.

¹⁹ We could, in principle, have asked applicants to report their gender at the time of responding to the posting. However, applicants could have seen this as a signal of gender discrimination. Such a perverse signal might have disincentivized women applicants. Another reason we avoided any questions or requirements around gender is because job postings on the platform rarely ask applicants to report their gender. Doing so would have made our posts stand out and could have affected the response rates.

²⁰ Members of the research team manually classified the gender of the applicant. Since the same person classified applicants for all jobs (flexible, inflexible, high wage, low wage) for each task, any person-specific bias is likely to similarly affect both flexible and inflexible jobs. An algorithm could have been used to infer the gender from the names of the applicants (Blevins and Mullen, 2015). Although such algorithms work well for names from Western countries, such as the US and the UK, they are not as accurate at predicting gender from names of applicants from a range of countries as wide as the one that we observed in our experiment. In addition, the accuracy of such algorithms depends on the size of the sample they are trained on. Since we had a manageable number of applicants, we believe that manual classification is less prone to errors than other methods. To rule out the possibility that the research team may have had unconscious bias when inferring gender, we had two external research assistants reclassify the applicants for 72 jobs, chosen randomly, as *male*, *female*, and *gender unclear*. Of the 2824 applicants they classified, only 45 applicants (1.6%) were classified as having a gender different from what was initially entered. Moreover, this mismatch was not different for inflexible jobs and flexible jobs.

²¹ We acknowledge that the inflexibility that these keywords imply may not all be of the type of inflexibility that we offered.

of our applicants across countries of the world. Figure A7 repeats the exercise using data from the Online Labor Index (Stephany et al., 2021), the largest source of public data on the gig economy compiled by the Online Labour Observatory (OLI).²² The comparison of the country of work distribution that we observe in our sample is quite close to the distribution observed in all online freelance labor markets as compiled by the OLI. As our applicants come from a range of diverse cultural and institutional contexts, this setting allows us to draw more general conclusions. Third, our setting allows us to examine applicants from a range of distinct tasks that vary significantly in the skill set required. The skills one chooses to acquire and the preference for flexibility could be correlated. Since the jobs in our experiment require diverse skills, this allows us to draw more general inferences about the preference for flexibility.

It is equally important to acknowledge some limitations of our experimental setting for providing externally valid (outside the setting of online labor markets) conclusions (List, 2020). A key unknown in this setting is the relation between preference for flexibility and the decision to sort into this market. One possibility is that the inherent flexibility (shorter contract, ability to do multiple jobs at the same time, online work from home) of jobs in online labor markets attracts workers who have a higher preference for all kinds of flexibility, including flexible work. If that were the case, our estimates of elasticity for flexibility may be an over-estimate of such an elasticity for the larger population of workers from across the world. If so, our estimates could be interpreted as an upper bound of the population estimate of the elasticity of labor supply from flexibility. In addition, the relationship between preference for flexibility and the decision to sort into this market could also vary across gender. For example, if tech-savvy females (compared to males) are more likely to choose online work because of discrimination (or other supply side constraints) in the brick-mortar labor market, and tech-savvy individuals like flexibility more than others, our results may also be an over-estimate of the gender difference in response to flexibility.²³

Yet, since online labor markets already offer several other types of flexibility, the marginal benefit of flexibility in choosing work hours that we offer could also be lower. If that is true, the elasticity of labor supply to flexible work hours that we measure would be lower than what we would observe in other settings. Further, the benefits (and the costs) of flexible working hours for a one-time two-hour job are likely to be different from flexible work hours in a full-time job. On one hand, this benefit could mean more for a one-time two-hour job if the cost of re-adjusting the schedule is high in the short run. In that case, the demand for flexibility would be higher in one-time jobs. On the other hand, if cost of adjusting one's schedule is low for a one-time job compared to a full-time daily job, the demand for flexibility would be lower in one-time jobs compared to full time jobs.

It is also important to point out that our experiment can only speak about one kind of flexibility—the flexibility in choosing work hours. There are several other types of flexibility in the labor market, like some choice in the nature of the work performed, the nature of the contract (freelance vs fixed wage), and the location of work. Our experimental setting (freelance labor market) provides these types of flexibility to all applicants and then studies the demand of flexible working hours. The experimental setting and the results do not allow us to infer the relationship between the flexibility that we provide and the demand and the willingness to pay for these other kinds of flexibility (Adams-Prassl et al., 2023).

²² The Online Labor Observatory is a collaborative network of researchers and policy makers at the International Labour Organisation and the Oxford Internet Institute at the University of Oxford.

²³ However, this challenge is not unique to our setting. Any experiment that focuses on any sector (doctors, tech-workers, call-center workers) would face a similar challenge as entry into every sector is driven by individual characteristics that may be related to preference for flexibility.

Table 1
Summary statistics.

	Females		Males		Difference in means
	N	Mean	N	Mean	
	All jobs				
Counteroffer	4011	34.68	8005	33.91	0.77***
Wage offered – Counteroffer	4011	0.84	8005	1.39	−0.55***
Underbid	4020	0.12	8036	0.16	−0.04***
Overbid	4020	0.02	8036	0.02	0.00
Position percentile	4020	52.33	8036	50.98	1.35**
Cover letter length	3836	417.18	7780	398.31	18.87
Share providing a work sample	4020	0.17	8036	0.17	0.00
Total prior contracts	4020	5.50	8036	7.20	−1.70**
Total prior contracted hours	4020	15.32	8036	14.31	1.01*
Total prior earnings	4020	926.88	8036	895.51	31.37
	Inflexible jobs				
Counteroffer	1763	34.83	3768	34.02	0.81***
Wage offered – Counteroffer	1763	0.91	3768	1.31	−0.41**
Underbid	1766	0.11	3787	0.15	−0.04***
Overbid	1766	0.01	3787	0.02	−0.01**
Position percentile	1766	52.79	3787	50.97	1.83**
Cover letter length	1600	430.67	3554	398.8	31.86**
Share providing a work sample	1766	0.15	3787	0.16	−0.01
Total prior contracts	1766	5.34	3787	8.34	−3.00**
Total prior contracted hours	1766	16.79	3787	14.92	1.87
Total prior earnings	1766	1072.48	3787	1055.6	16.88
	Flexible jobs				
Counteroffer	2248	34.56	4237	33.82	0.74***
Wage offered – Counteroffer	2248	0.79	4237	1.46	−0.68***
Underbid	2254	0.12	4249	0.16	−0.04***
Overbid	2254	0.02	4249	0.02	0.01
Position percentile	2254	51.97	4249	50.98	0.98
Cover letter length	2236	407.53	4226	397.89	9.64
Share providing a work sample	2254	0.18	4249	0.17	0.01
Total prior contracts	2254	5.61	4249	6.18	−0.57
Total prior contracted hours	2254	14.16	4249	13.76	0.41
Total prior earnings	2254	812.79	4249	752.83	59.97

Notes: ***, **, and * indicate that the difference in the means of a variable between the two groups, male and female applicants, is significant at 1%, 5%, and 10%, respectively. Position percentile is the application's chronological position, in percentile terms, among all applications for the job, with the first percentile indicating that it was the first application received for the job. A negative (positive) difference between the wage offered and the counteroffer made by an applicant implies that the freelancer's counteroffer was higher (lower) than the proposed wage. 'Underbid' is an indicator variable that takes the value '1' when wage offered – counteroffer > 0, '0' otherwise. 'Overbid' takes the value '1' when wage offered – counteroffer < 0, '0' otherwise.

Finally, it is important to point out a few challenges that our experimental design poses for inferring elasticity (and gender differences in elasticity) of labor supply to flexible working hours. One possibility is that workers may infer other unobserved employer characteristics (like politeness) from flexible job offers and female workers may prefer those unobserved employer characteristics more than male workers, explaining the gender difference in applications. We cannot rule out this possibility. However, the policy relevant question from an employer's perspective is the effect of offering flexibility. Our experiment captures this effect and can be thought of as estimating an Intent-to-Treat effect. Another concern is that for the purposes of this experiment, we close the job for applications one day after the posting. One possibility is that women take more time to respond to inflexible applications (perhaps they need time to find an alternative arrangement for household work), generating the gender difference in the response that we observe. We cannot rule out this possibility. However, a large amount of applications to jobs on this platform occurs in the first 24 h, partly addressing this concern.

3. Empirical specification

The primary aim of our empirical exercise is to understand the causal effect of flexibility in choosing work hours on the number of applications. For this, we estimate the following specification:

$$Y_{jt} = \alpha + \beta \text{Flexible}_{jt} + \gamma_t + \epsilon_{jt} \quad (1)$$

where subscript t denotes task, each of them has four matched jobs denoted by j . Y_{jt} is one of these dependent variables of interest for job posting j of task t —the number of all applicants, of male applicants, of female applicants, and the share of female applicants. Flexible_{jt} takes a value of '1' if the job posting allows the freelancers to choose their work hours, '0' otherwise. γ_j denotes task fixed effects. ϵ_{jt} is the error term.

The main coefficient of interest is β . Since for every flexible job posting, we have an otherwise identical job posting that only differs in the flexibility of choosing the work hours, β captures the causal effect of flexibility on the labor supply. Because of our interest in understanding the gender difference in demand for flexibility, we estimate β separately for male and female applicants. A higher β (as a percentage of the average number of male or female applicants) will indicate a higher elasticity of labor supply in response to flexibility.

To compare the marginal effects of flexibility between high and low wages and the trade-off between wages and flexibility, we estimated the effects of each type of job posting.

$$Y_{jt} = \alpha + \beta_1 \text{HWLF}_{jt} + \beta_2 \text{LWHF}_{jt} + \beta_3 \text{HWHF}_{jt} + \gamma_t + \epsilon_{jt} \quad (2)$$

where Y_{jt} is one of these dependent variables of interest for job posting j of task t —the total number of all applicants, of male applicants, of female applicants, and the share of female applicants. HWLF_{jt} is an dummy variable indicating that a job has a high wage but no greater flexibility than a low-wage-low-flexibility job. LWHF_{jt} and HWHF_{jt}

Table 2
The impact of flexibility on the number of applicants.

	(1)	(2)	(3)	(4)
	Total	# Male	# Female	% Female
Flexible Job	5.98*** (1.44)	2.92*** (0.90)	3.01*** (0.74)	1.47* (0.80)
Task FE	✓	✓	✓	✓
Mean of DV	37.79	25.19	12.51	28.29
Control mean of DV	34.71	23.67	10.98	27.37
Observations	319	319	319	319

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors reported in parentheses. Of the 320 jobs posted, one did not have any applicants. A flexible job was one where the freelancers could choose any two-hour window during which they wanted to work on the pre-specified date. The omitted category comprises inflexible jobs that required freelancers to complete the task at a designated time (8 am to 10 am) on a pre-specified date.

indicate a low-wage but high degree of flexibility and a high wage as well as a high degree of flexibility, respectively. γ_i denotes task fixed effects. ϵ_{jt}^s is the error term. Since we have two wage offers and difference in flexibility for each wage offer, we can compare the marginal effects of flexibility at higher and lower wages. The marginal effect of flexibility at lower wages is given by β_2^s and the marginal effect of flexibility at higher wages is given by $\beta_3^s - \beta_2^s$. We can also infer the willingness to trade off flexibility and wage. To do this, we will need to compare the response to an increase in wage (β_1^s) and the response to the provision of flexibility (β_2^s).

4. Results

Table 1 presents a summary of the characteristics of the applicants to our job postings. Women make up only one-third of all applicants. This is despite the fact that our job postings covered a wide range of tasks (80 distinct tasks) that included both female-dominated tasks, such as translation and proofreading, and male-dominated tasks, such as financial consulting and coding. The Online Labor Observatory at the University of Oxford tracks projects across major online labor market platforms (including our platform) from across the world. Their estimates suggest that women make up 39 percent of the whole of the workforce in online labor markets (Stephany et al., 2021). As discussed above, we also compare the country-wise distribution of our applicants to the distribution information from the Online Labor Observatory in Figure A6 and Figure A7. We find that the distribution of country profiles in our data closely matches that from the Online Labor Observatory. Both these comparisons indicate that our sample from the experiment is representative of the gender composition and country profiles of online labor markets. Some other takeaways from the summary statistics are that female applicants (i) are less likely to make a counteroffer that is lower than the offered wage, (ii) write marginally longer cover letters and, (iii) are less experienced.

Did allowing freelancers the flexibility to set their work hours lead to more job applications? Table 2 reports the findings for our primary outcome of interest, the number of applications. As column 1 shows, jobs that offered flexibility attracted more applications compared to jobs that did not. On average, flexible jobs received 5.98 more applicants than inflexible jobs. Comparing this effect of flexibility to the average number of applications per job, this is about a 15.8 percent increase in the number of applications.

Was the effect of flexibility different across gender? Columns 2 and 3 of Table 2 present the effect of offering flexibility on the number of male and female applications, respectively. Compared to inflexible jobs, flexible jobs attracted 2.92 more male applicants and 3.01 more female applicants. While the estimated effect magnitudes are similar

for males and females, the percentage change (estimated effect relative to the average number of applicants per job) is significantly larger for females. Only one-third of all applicants were women. Compared to the average number of female applicants, an increase of three applicants translates to a 24 percent rise in the number of female applicants. For males, it translates to a 12 percent increase.²⁴ Thus, of the pool of workers on the platform, a larger proportion of women respond to flexibility than men. We interpret this as the flexibility-elasticity of the labor supply being twice as high for women than for men. Adams-Prassl (2020) finds that women in online freelance labor markets earn less because they need flexible schedules (breaks between tasks) to balance childcare responsibilities. Our experimental findings of a more widespread preference for flexibility among women than men complements (Adams-Prassl, 2020).²⁵

In Table A13, we study the heterogeneity in response to flexibility across different job categories. Some of the jobs that we posted, like music tutorials, naturally require an online video meeting on the platform. One possibility is that women are averse to meeting during the fixed slot that we provided. This is because a video meeting does not allow breaks or multi-tasking childcare and working the job. Thus they may respond more to the flexible job posting for such jobs that naturally require a meeting. The results from the top panel of Table A13 show that we do not find any differential impact of flexibility on applications for jobs that would naturally require a meeting compared to jobs that do not naturally require a meeting.²⁶ Some of the tasks (for all four job variants) were posted on a weekend and the rest on weekdays. One possibility is that women access the platform and search for jobs with differing intensity across the days of the week. However, in the bottom panel of Table A13 we find no differences in the effect flexibility on job applicant count across jobs that were posted on weekdays and on weekends either for males or for females.

Did flexibility in choosing work hours lead to a more gender-diverse workforce? Since women had higher flexibility-elasticity compared to men, flexible jobs could have led to a more gender-diverse workforce. Our results from Table 2 (and Table 3, discussed below) suggest that this was indeed the case. Column 4 of Table 2 suggests that flexible jobs led to a 1.5 percentage point rise in the share of female applicants, amounting to a 5 percent improvement over the average share of women applicants.²⁷ Column 4 of Table 3 reports similar results. High-flexibility jobs led to a 3 percentage points increase in the proportion

²⁴ Our results are robust to controlling for whether the job offered a high wage and estimating the semi-elasticities instead of the slope. See Table A9, Table A10, and Table A11. In addition, Table A11 shows that using a Poisson pseudo maximum likelihood (PPML) to account for zero applications does not affect the findings. We did not pre-specify the PPML specification in our pre-analysis plan because we did not anticipate zero applications. Our findings are also robust to controlling for the order in which the four jobs within a task were posted. The results are reported in Table A14. This implies that our results are not driven by week specific effects like holidays.

²⁵ One concern regarding this interpretation could be that women on this platform may work more often as part-time freelancers than men. As a result, men may apply to jobs even if it does not offer flexibility. In contrast, since women work only part time, they may be more selective and choose to apply only to jobs that offer flexibility. If this were case, the female applicants in flexible jobs would have less experience on the platform compared to men. In Table A12, we test this possibility. Though flexible jobs attract marginally less experienced workers in terms of the number of prior contracts and prior earnings on the platform, the impact is in fact smaller for women than men. Therefore, it appears that the gender difference in applications is not driven by gender difference in likelihood of working part time.

²⁶ Another concern could be that in jobs that require a meeting, workers might feel they need to choose a convenient time for the client to maximize the chances of getting a job. The fact that we do not find a difference between jobs that require a meeting and those that do not alleviates this concern.

²⁷ For the columns where the dependent variable is “% Female”, there is a slight difference between the specification we included in our pre-analysis plan and the specification we use. Specifically, we weight these regressions by the

of female applicants (at a lower wage), a 10.4 percent rise over the average share of women applicants. These results have implications for employers and policymakers interested in improving gender diversity in the online labor market. Using changes in the maximum work limit in medical residency in the US, Wasserman (2019) shows that, relative to men, female participation increases in subfields that limit the maximum work time. Our results complement this finding. Drawing experimental data from a wide range of fields, we find that schedule flexibility, like the flexibility to limit the number of working hours, narrows the gender gap in participation.

How did the effect of flexibility compare at higher and lower wages? Table 3 presents the findings. Compared to men, the effects of flexibility were higher for women at all wages. Next, the effects of flexibility for men were similar at lower and higher wages ($\beta_2^{male} = 2.92$ compared to $\beta_3^{male} - \beta_1^{male} = 2.89$). For women, the effect of flexibility was slightly higher at lower wages, but the difference between the sizes of the effects at the two wages is statistically insignificant ($\beta_3^{female} - \beta_1^{female} = 2.38$ at the higher wage and $\beta_2^{female} = 3.63$ at the lower wage). A related question is whether there were gender differences in willingness to trade off higher wages for flexibility. To answer this question, we compare the change in the number of applicants in response to higher flexibility as opposed to higher wages. The results in Table 3 show that both men and women had a similar willingness to trade off higher wages and flexibility. For males, the effect of providing flexibility in choosing work hours and 10 USD rise in the fee offered was similar ($\beta_1^{male} = 3.06$, $\beta_2^{male} = 2.92$). For women too, providing flexibility and a higher fee had similar effects ($\beta_1^{female} = 3.25$, $\beta_2^{female} = 3.63$). In percentage terms, this translates into a 12.2 percent increase in the number of male applicants in response to a ten-dollar increase in the wage as opposed to an 11.6 percent rise in response to flexibility. For women, a similar 10 USD rise in wages led to a 26 percent rise in the number of female applications and a 29 percent rise in applications when offered flexibility.²⁸ What might generate these findings? One potential situation that can give rise to these findings is when there is sufficient heterogeneity, among both males and females, in preference for pecuniary and non-pecuniary benefits, and applicants are reluctant to substitute one for the other. For example, if some applicants have strong preferences for flexibility and apply to both high- and low-wage jobs as long as they are flexible, and similar share of applicants apply only to high-wage jobs regardless of flexibility, we will find no gender difference in the trade-off between higher wages and flexibility.

Did flexible jobs attract better candidates? Given the varied nature of the tasks, it is not possible to systematically measure productivity in this experiment. We use applicant self-reported hourly rate as a proxy of productivity and find that flexible jobs attracted potentially more

total number of applicants in each of these jobs. This is because the jobs for which we receive a high number of applications/applicants, like proofreading and translation, are the typical services traded on the platform. An increase in the share of females in these jobs, therefore, implies a higher increase in the absolute number of female applicants than an equal increase in the share of females in jobs providing services that are not traded as frequently. Our results are similar even if we do not weight the observations.

²⁸ In contrast, using stated preference experiments on a representative sample of US labor force, Maestas et al. (2018) finds that respondents are willing to give up 9 percent of their earning to have flexibility to set their own schedule. Similarly, Wiswall and Zafar (2018) finds that respondents from a major university in the US are willing to give up 5 percent of the salary to have the option of working part-time hours. More recently, using results from a stated preference experiment on a representative sample of Spanish population, Curull-Sentís et al. (2025) finds that respondents are willing to give up 30 percent of their wages for not having no flexibility in choosing work hours. All three studies find that women have a stronger preference for flexibility. However, unlike in stated preference approach, our experiment do not estimate willingness to pay. We estimate elasticity of job applications in response to flexibility and wage.

Table 3

The impact of wage and flexibility on the number of applicants.

	(1)	(2)	(3)	(4)
	Applicants			
	Total	# Male	# Female	% Female
High-wage, low-flexibility	6.31*** (1.96)	3.06*** (1.18)	3.25*** (1.05)	3.42*** (1.10)
Low-wage, high-flexibility	6.60*** (1.88)	2.92** (1.09)	3.63*** (1.04)	2.95*** (1.01)
High-wage, high-flexibility	11.63*** (1.97)	5.95*** (1.24)	5.63*** (1.02)	3.67*** (1.12)
Task FE	✓	✓	✓	✓
p-value [$H_0 : \beta_1 = \beta_2$]	0.88	0.91	0.71	0.67
p-value [$H_0 : \beta_1 + \beta_2 = \beta_3$]	0.64	0.99	0.38	0.09
Mean of DV	37.79	25.19	12.51	28.29
Control mean of DV	31.55	22.14	9.35	26.80
Observations	319	319	319	319

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors reported in parentheses. Of the 320 jobs posted, one did not have any applicants. A high-wage, low-flexibility job offered a fixed wage of USD 40 and required the freelancers to complete the task at a designated time (8 am to 10 am) on a pre-specified date. A low-wage, high-flexibility job offered a wage of USD 30 but allowed the freelancers to choose any two-hour window during which they wanted to work on the pre-specified date. A high-wage, high-flexibility job offered USD 40 and allowed the freelancers to choose any two-hour window on the pre-specified date.

productive female applicants.²⁹ Freelancers typically mention an hourly fee that they charge for the jobs they perform on the platform. This rate is non-binding and freelancers can accept or make a counteroffer to the fee offered by the job in their application. Freelancers do not have an incentive to over-report this fee because clients sometimes invite freelancers to apply for a job and may use the self-reported fee to screen candidates. This provides candidates an incentive to not over-report their hourly fee. The self-reported hourly fee can be interpreted as the outside option, where a higher fee reflects higher productivity. In fact, in Table A5, we find a strong positive association between the self-reported hourly fee (as well as if the hourly fee is higher than the fee we offered) and freelancers' job success rate on the platform for a sub-sample of applicants for whom we have job-success rate.

As reported in Table 4 (and in Table A6 for the job-success rate sub-sample), female applicants' self-reported hourly fee rate was 5 percent higher in flexible jobs than inflexible jobs. Flexible jobs were also 12.5 percent more likely to attract female applicants that have hourly fee higher than the hourly fee that we offered. We do not find similar results for males. In Table A7, we compare the effect of flexibility and the effect of a higher fee on the quality of applicants. For low-wage jobs, an increase in flexibility alone attracts better female but not male candidates, though these effects are statistically insignificant. For inflexible jobs, an increase in wage alone attracts higher-quality male, but not female, candidates. This implies that high flexibility draws better quality female candidates than a higher wage and the reverse is true for males.

In Table A8, we estimate the impact on number of applicants who had a per hour reservation wage higher than 15 USD—the wage that we offered for our low wage jobs. As before, we interpret this as the elasticity of getting high quality applicants. For low-flexibility job, a 5 USD per hour (a total of 10 USD for two hours) increase in wages leads to a 22.8 percent increase in high-quality male applicants and a 23.19 percent increase in high-quality female applicants. Similarly, providing only flexibility at low wages increases the number of high-quality male applicants by 13.3 percent and female applicants by 43.19 percent. Thus the ratio of wage and flexibility elasticity for men and women

²⁹ This outcome variable was not pre-specified in the pre-analysis plan.

Table 4
Association between job characteristics and hourly rate of applicant freelancers.

	(1) Indicator(Hourly rate > Fee offered)	(2)	(3)	(4) Ln(Hourly rate)	(5)	(6)
	All	Male	Female	All	Male	Female
Flexible Job	0.01 (0.01)	−0.00 (0.01)	0.03** (0.01)	0.01 (0.01)	−0.02 (0.01)	0.05*** (0.02)
High-wage Job	−0.12*** (0.01)	−0.11*** (0.01)	−0.15*** (0.01)	0.02* (0.01)	0.04** (0.01)	−0.01 (0.02)
Task FE	✓	✓	✓	✓	✓	✓
Mean of DV	0.27	0.28	0.26	2.54	2.54	2.54
Control mean of DV	0.26	0.28	0.24	2.54	2.55	2.50
Observations	12,056	8,036	3,989	11,966	7,978	3,958

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors, clustered at the job level, are reported in parentheses. The outcome variable in the first three columns is an dummy variable that indicates whether the rate mentioned on the applicant's public profile is higher than the hourly fee we offered for the job that the freelancer applied for. The dependent variable in the last three columns is the natural log of the hourly rate of the freelancer. A flexible job was one where the freelancers could choose any two-hour window during which they wanted to work on the pre-specified date. The omitted category comprises inflexible jobs that required freelancers to complete the task at a designated time (8 am to 10 am) on a pre-specified date.

are 1.71 and 0.54. This further reinforces the finding that compared to wage elasticity, flexibility elasticity is higher for better-quality females but the opposite is true for males.

Do women put more effort into applications for flexible jobs? Although we do not have a direct measure of effort, we look at several indirect measures that indicate effort and willingness to get these jobs. First, we examine how quickly applicants apply to our job advertisement. For this, we rank all applicants by their position in the applicant queue. Since all job advertisements were open for applications for the same amount of time, we can compare the proportion of female applicants among “early” applicants in flexible and inflexible jobs. “Early” application would imply greater eagerness to apply.³⁰ Table 5 reports the effect of providing flexibility on the proportion of female applicants among “early” applicants. For flexible jobs, we find a higher proportion of women among the first 25th and 50th percentiles of applicants. Note that the effect in the 25th percentile is significantly higher than the effect of flexibility on the total share of female applicants (1.47) reported in Table 2. Changes in the share of women among the first 10th and 75th percentiles are statistically indistinguishable from the overall increase in the share of female applicants. This suggests that women are not only more responsive to flexible jobs on the extensive margin, but also respond by applying more quickly than men.³¹

Second, we look at whether the applicant attached a previous work sample to their application to indicate their ability or expertise to complete the job, and the length of their cover letter written as a part of their application. Attaching a work sample takes effort and time and also indicates the willingness of the applicant to signal their quality to the employer. The length of the cover letter may also signal effort. The findings, reported in Table 6, show that compared to an inflexible job, men are no more likely to attach a work sample or write longer cover letters in response to a flexible job. Women, in comparison, are more likely to attach a work sample when applying for a flexible job, indicating an increased effort. Women also write shorter cover letters for applications to flexible jobs. The results seem to suggest that women put more effort into some dimensions of the application.

³⁰ Please note that the applicants were not aware that the job application would close one day after posting. The job posting did not mention any deadline for applying. However, it mentioned the specific date on which the work had to be performed. Although the job date is an implicit deadline, we closed the job posting before that date.

³¹ It is important to emphasize that we do not observe the exact time of these applications. We only observe applicants ordered by the time of the application. Thus, it is possible that both men and women take longer (in absolute terms) to apply for these flexible jobs. But, compared to men, women respond faster.

Table 5
The impact of flexibility on the positions of the freelancers' applications.

	(1)	(2)	(3)	(4)
	10	% female in the first 25	50	75
	%iles of application positions			
Flexible Job	0.83 (2.87)	4.61*** (1.70)	2.27** (1.00)	1.45 (0.94)
Task FE	✓	✓	✓	✓
p -value [$H_0 : \beta = 1.47$]	0.78	0.04	0.45	0.98
Mean of DV	21.04	24.99	26.49	27.00
Control mean of DV	21.56	23.45	25.36	26.17
Observations	319	319	319	319

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors reported in parentheses. The outcome variable is the application's chronological position, in percentile terms, among all applications for the job, with the first percentile indicating that it was the first application received for the job. A flexible job was one where the freelancers could choose any two-hour window during which they wanted to work on the pre-specified date. The omitted category comprises inflexible jobs that required freelancers to complete the task at a designated time (8 am to 10 am) on a pre-specified date. The number of total applicants is more than the sum of male and female applicants because we could not deduce the gender of a few applicants from their profile pictures and names. All job-level observations are weighted by the total number of applicants for each job.

The effect on the length of the cover letter is not straightforward to interpret. Perhaps women partially offset the increased effort required for attaching samples by writing shorter cover letters. Or, they spend more time writing more concise and precise letters. However, it is important to note that the results may also reflect differences in the composition of applicants rather than their efforts. It is possible that marginal applicants to flexible jobs are of higher quality and thus provide a better application package.

Third, we look at counteroffers made by applicants. Although we specified the fee in the job posting, applicants could still make a counteroffer in their applications. If applicants have a high valuation of flexible jobs, they may attempt to undercut other applicants by making lower counteroffers. However, it is important to note that counteroffers do not affect the job requirements that appear as non-negotiable in the job posting. We report our findings on counteroffers made by applicants in Table 7. Less than two percent of the candidates overbid and around 14 percent of the candidates underbid. An interesting pattern that emerges is that men were more likely to underbid than women, regardless of flexibility. We further explore this in Table A3. As per column (1) of Table A3, women were four percentage points, or 29 percent, less likely to underbid. In the columns that follow, we

Table 6
Cover letter length and work samples.

	(1)	(2)	(3)	(4)	(5)	(6)
	Cover letter length			Work sample provided		
	All applicants	Males	Females	All applicants	Males	Females
Flexible Job	−11.34 (7.61)	−2.55 (8.75)	−29.79** (12.86)	0.01 (0.01)	0.01 (0.01)	0.03** (0.01)
Task FE	✓	✓	✓	✓	✓	✓
Mean of DV	404.54	398.31	418.16	0.17	0.17	0.17
Control mean of DV	408.70	398.80	431.25	0.16	0.16	0.15
Observations	11,616	7,780	3,806	12,056	8,036	3,989

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors, clustered at the task level, are reported in parentheses. ‘Cover letter length’ is the number of characters in an applicant’s cover letter, including spaces. ‘Work sample provided’ is an indicator variable that takes a value of ‘1’ if the applicant attached at least one work sample with their application, ‘0’ otherwise. A flexible job was one where the freelancers could choose any two-hour window during which they wanted to work on the pre-specified date. The omitted category comprises inflexible jobs that required freelancers to complete the task at a designated time (8 am to 10 am) on a pre-specified date. The number of total applicants is more than the sum of male and female applicants because we could not deduce the gender of a few applicants from their profile pictures and names.

control for other characteristics of the task, job, and the applicant. The association between gender and underbidding persists, suggesting that the less underbidding from females is potentially a reflection of a female applicants’ lower willingness to negotiate. A large literature has documented that men are more likely to negotiate wage offers than women (see [Hernandez-Arenaz and Iriberry \(2019\)](#) for a review of the literature). For example, [Leibbrandt and List \(2015\)](#) finds that women are less willing to negotiate if the job postings do not explicitly mention the possibility of negotiation, which is the case in our setting. Our results provide a new insight from online labor markets—men are more likely to negotiate in either direction, including *undercutting* wages to secure a job. [Dreber et al. \(2022\)](#) finds that men and women differ on what constitutes a reasonable request of salary. Since our jobs explicitly mention the fee, all applicants might see it as the reference point for a reasonable fee. But while men might be willing to negotiate around this reference point, women might not be as willing. We cannot rule out other reasons like social costs, confidence, self-evaluation of relative quality as an explanation behind less frequent under-cutting by women. This is distinct from the results in [Table 7](#), which indicate that there was no difference in underbidding behavior in response to flexible jobs across men and women.

A key question is why women prefer flexibility. Our experiment does not allow us to directly provide an answer to this question. However, understanding the differences in effects across countries may provide an insight to this question.³² One reason why women might prefer flexibility could be that it allows them to manage time-sensitive childcare responsibilities. If so, the value of flexibility is likely to be higher for women who have more children. We do not know the number of children our applicants have. However, a coarse proxy is the average fertility rate of the country of the applicant. In Panel A of [Table 8](#), we study the difference in the effect of flexibility across countries of high and low fertility rates. We do not find any significant differences in effect for women (relative to the mean) across countries of high and low fertility. For men, the elasticity is slightly higher in low-fertility countries. How do we explain these results? One possibility is that the time commitments for childcare responsibilities are fixed costs and do not vary by the number of children. For example, the time commitment to cook or to take children to school may not vary significantly by the number of children. However, it is important to keep in mind that such country-level averages are coarse measures and our results could reflect this coarseness more than any mechanism.

Does the lack of flexibility limit female labor force participation in the brick-and-mortar market? Again, our results cannot directly speak to this, a comparison of the effect of flexibility on applicants from

countries of low and high female labor force participation rates can provide some insights. In Panel B of [Table 8](#), we present the results separately for countries of high and low female labor force participation rates. The effect of flexibility (relative to the mean) is higher for women in low female labor force participation countries. The results for men do not differ across these countries. This could indicate a higher demand for flexible jobs in these countries and that the limited availability of such jobs in the brick-and-mortar market is one of the drivers of low female labor force participation. As a result, when flexible jobs become available, the response is large. But it is important to bear in mind that all of our applicants are existing workers on the platform and the reasons for their high response to flexibility may be different from the reasons that stop women from participating in the labor market at the extensive margin.

In Panels C and D of [Table 8](#), we present additional cross-country differences in the effect of flexibility. We find that the effect of flexibility does not vary across poor and rich countries, as measured by per capita GDP, for either genders. Per capita GDP is a good predictor of many observable country characteristics, such as the availability of regular jobs, social welfare, and gender norms. Though this does not provide us a specific mechanism that explains the preference for flexibility, it does suggest the idea that differences in preferences for flexibility are unlikely to be explained by factors for which per capita GDP serves as a good proxy. It is also worth pointing out that per capita GDP is a coarse measure of the social conditions that our applicants may face. Lastly, we do not find differences in the effect of flexibility across Asian and non-Asian countries. This suggests that our results are not entirely driven by countries like India, Pakistan and Bangladesh, which have a large participation in the online labor market.

5. Discussion and conclusion

Our study inquires whether workers value non-pecuniary benefits like flexibility and does this valuation differ by gender. The answer to this question has important implications. In light of the ever-evolving nature of the workplace, it is important for firms to know the demand for various non-pecuniary benefits. In addition, any potential gender difference in the valuation of these non-pecuniary benefits could help explain gender inequalities in the labor market and design policies to counteract them.

Despite its importance, there are several empirical challenges that make it a difficult question to answer. Observational data does not allow disentangling preference for various non-pecuniary benefits from other worker-, job-, and firm-specific unobserved factors. In addition, several non-pecuniary benefits are offered at the same time, making it challenging to isolate the effect of a specific non-pecuniary benefit, such as flexibility in choosing the work time. Although studies using stated

³² This heterogeneity analysis was not pre-specified in the pre-analysis plan.

Table 7
The impact of flexibility on the freelancers' proposed bids.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Wage offered – Counteroffer			Underbid			Overbid		
	All	Male	Female	All	Male	Female	All	Male	Female
Flexible Job	0.05 (0.13)	0.14 (0.16)	−0.14 (0.18)	0.01** (0.01)	0.02* (0.01)	0.01 (0.01)	0.00 (0.00)	−0.00 (0.00)	0.01*** (0.00)
Task FE	✓	✓	✓	✓	✓	✓	✓	✓	✓
Mean of DV	1.21	1.39	0.83	0.14	0.15	0.11	0.02	0.02	0.02
Control mean of DV	1.18	1.31	0.91	0.13	0.15	0.11	0.02	0.02	0.01
Observations	12,016	8,005	3,981	12,016	8,005	3,981	12,016	8,005	3,981

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Robust standard errors, clustered at the job posting level, are reported in parentheses. A negative (positive) difference between the wage offered and the counteroffer implies that the freelancer's counteroffer was higher (lower) than the proposed wage. 'Underbid' is an indicator variable that takes the value '1' when wage offered – counteroffer > 0 , '0' otherwise. 'Overbid' takes the value '1' when wage offered – counteroffer < 0 , '0' otherwise. A flexible job was one where the freelancers could choose any two-hour window during which they wanted to work on the pre-specified date. The omitted category comprises inflexible jobs that required freelancers to complete the task at a designated time (8 am to 10 am) on a pre-specified date. The number of total applicants is more than the sum of male and female applicants because we could not deduce the gender of a few applicants from their profile pictures and names.

Table 8
Heterogeneity in the impact of flexibility.

	Applicants							
	Total	# Male	# Female	% Female	Total	# Male	# Female	% Female
Panel A	Applicants from high-TFR countries				Applicants from low-TFR countries			
Flexible job	2.40*** (0.78)	1.08** (0.53)	1.29*** (0.39)	2.78* (1.54)	3.66*** (0.94)	1.91*** (0.58)	1.73*** (0.49)	0.43 (1.09)
Task FE	✓	✓	✓	✓	✓	✓	✓	✓
Mean of DV	17.06	11.43	5.59	26.65	21.16	14.02	7.09	29.09
Control mean of DV	15.64	10.74	4.88	24.78	19.38	13.10	6.24	29.36
Observations	307	307	307	307	315	315	315	315
Panel B	Applicants from low-FLFP countries				Applicants from high-FLFP countries			
Flexible job	3.02*** (0.84)	1.68*** (0.61)	1.34*** (0.36)	1.17 (1.20)	3.14*** (0.89)	1.38*** (0.49)	1.71*** (0.55)	2.50* (1.45)
Task FE	✓	✓	✓	✓	✓	✓	✓	✓
Mean of DV	19.20	14.47	4.69	22.06	19.07	11.02	8.01	32.56
Control mean of DV	17.65	13.60	4.01	21.49	17.38	10.25	7.10	31.09
Observations	311	311	311	311	311	311	311	311
Panel C	Applicants from low-GDP pc countries				Applicants from high-GDP pc countries			
Flexible job	4.30*** (1.14)	2.06*** (0.74)	2.21*** (0.56)	1.57* (0.93)	1.78*** (0.51)	0.92*** (0.35)	0.84*** (0.29)	2.92 (2.13)
Task FE	✓	✓	✓	✓	✓	✓	✓	✓
Mean of DV	28.70	19.76	8.88	26.57	9.71	5.76	3.92	33.73
Control mean of DV	26.40	18.62	7.74	26.11	8.92	5.36	3.54	31.09
Observations	316	316	316	316	292	292	292	292
Panel D	Applicants from Asia				Applicants from outside Asia			
Flexible job	3.53*** (1.01)	1.76*** (0.67)	1.75*** (0.48)	0.86 (1.42)	2.52*** (0.71)	1.21*** (0.45)	1.28*** (0.41)	3.62** (1.56)
Task FE	✓	✓	✓	✓	✓	✓	✓	✓
Mean of DV	21.52	15.00	6.47	26.53	16.57	10.36	6.16	30.17
Control mean of DV	19.69	14.06	5.59	26.35	15.18	9.68	5.47	27.66
Observations	311	311	311	311	313	313	313	313

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. A flexible job was one where the freelancers could choose any two-hour window during which they wanted to work on the pre-specified date. The omitted category comprises inflexible jobs that required freelancers to complete the task at a designated time (8 am to 10 am) on a pre-specified date. Countries are grouped into high- and low-TFR/FLFP/GDP categories by splitting them at the mean value using information from the World Development Indicators.

preferences overcome these problems, stated preferences are often not incentive-compatible.

We overcome these challenges using an experiment. We posted matched pairs of jobs on a major online freelance labor market platform that differed only in the flexibility in choosing work hours. Since these jobs were identical along all attributes except flexibility, any difference in the number of applications for these jobs must have been the result of a preference for flexibility. We find that flexible jobs attracted more applications. Although true for both men and women, the percentage effects were twice as large for women. Flexible jobs led to a 24 percent rise in the number of female applicants and a 12 percent rise in the number of male applicants. Overall, the results suggest that workers indeed value flexibility and that the demand is higher for women than for men.

It is important to interpret our results keeping in view the limitations of the experiment. First, while our results are internally valid, we cannot speak to whether they would hold in a general population that includes the brick-and-mortar labor market. It is possible that workers in freelance labor markets prefer flexibility more than workers in the brick-and-mortar labor market and the experiment overstates the demand for flexibility. It is also possible that since freelance labor markets already offer a high degree of flexibility, the marginal valuation for flexibility is lower in this market. Again, since the contracts in the freelance labor market are short-term, workers may care less about flexibility. On the other hand, since the contracts are short-term, the benefits from giving up flexibility are also less. Second, our results cannot speak to the underlying reason behind the gender difference in the demand for flexibility. It is likely that women prefer flexibility to satisfy the demands on their time, which may be driven by norms, social environment, and other legal and cultural institutions. Though we explore some of these avenues, our findings on this question are inconclusive. Thus, we remain agnostic about the sources of gender differences in preferences for flexibility. Third, our findings pertain to a specific type of flexibility and the preferences for other types of flexibility may be different. For example, our experiment does not speak to the gender differences in the preference for work from home. Fourth, our results should not be interpreted as willingness-to-pay estimates for flexibility as we do not observe how the same freelancer responds to an array of wage and flexibility options. Finally, our experiment speaks only to the demand side. Firms may face costs of providing flexibility, for example through reduced productivity, which we do not estimate. That said, three aspects of our findings are informative for firms when considering the potential benefits of flexibility: (1) firms can attract at least as many employees by offering a USD 10 wage increase (over 30 percent) as by offering flexibility; (2) the quality of applicants to flexible jobs is at least as high as for high-wage jobs, as measured by reservation wages; and (3) flexibility is more effective than higher wages in attracting both a larger number and higher quality of women applicants.

Our experiment and the findings carry important implications for policies aimed at increasing female labor force participation. The preference for non-pecuniary benefits, such as flexibility, is somewhat ignored in policy discussions that aim to increase female labor force participation. These discussions tend to focus on issues like the development of skills, access to finance, social norms and networks, education, and the organization of the family. Our findings suggest that limited availability of non-pecuniary benefits, like flexibility, could be an important barrier to the participation of women in the labor market and policies, and moving forward, policy discussions should aim to address it.

If the lack of flexibility is indeed an explanation, what can policymakers do? Assuming that firms are aware of these differences in preferences but find it costly to provide these non-pecuniary benefits, policymakers could provide incentives, such as tax breaks or cheap credit, to firms that provide benefits like flexible working hours. Further, innovations in technology that reduce search costs and promote

the gig economy may open up possibilities for jobs that provide flexibility and thus encourage the participation of women in the labor market. For firms that are unaware of worker preferences and want to hire more females, mere information about these preference may motivate them to invest in providing more non-pecuniary benefits.

CRedit authorship contribution statement

Rakesh Banerjee: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Tushar Bharati:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Adnan M.S. Fakir:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Yiwei Qian:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Naveen Sunder:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Appendix A. Supplementary data

Supplementary material related to this article can be found online at <https://doi.org/10.1016/j.labeco.2025.102813>.

Data availability

Data will be made available on request.

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