Watched, but Moving: Platformization of Beauty Work and Its Gendered Mechanisms of Control

IRA ANJALI ANWAR, Independent Researcher, India
JOYOJEET PAL, Microsoft Research, India
JULIE HUI, University of Michigan, USA

Women gig workers face unique challenges in on-demand platforms as gendered aspects of class, caste, and labor participation intersect with moments of control experienced on the job. Through in-depth interviews with 19 beauty workers on on-demand home service platforms, we explore how the platformization of informal beauty work in India has ruptured dominant socio-cultural structures of control that have traditionally shaped women's mobility and access to work. This paper maps the ways in which women beauty gig workers experience and are impacted by algorithmic and bureaucratic management practices prevalent in the gig economy, in the context of home service platforms in Bangalore. We find that platform control impacts lives in myriad ways, beyond the conditions of work. Women workers negotiate their identities and sense of agency through the visibility afforded by platform control mechanisms. Yet, despite these subversions, being on a platform does not fundamentally change the socio-cultural logic that restricts women's lives in India. These mechanisms work to entrench power asymmetries between customers and workers, as well as maintain them between the platform and the worker.

CCS Concepts: • **Human-centered computing → Empirical studies in HCI**.

Additional Key Words and Phrases: Gig work; Control; Surveillance; India; Global South; Labor; Gender

ACM Reference Format:
Ira Anjali Anwar, Joyojeet Pal, and Julie Hui. 2020. Watched, but Moving: Platformization of Beauty Work and Its Gendered Mechanisms of Control. *Proc. ACM Hum.-Comput. Interact.* 4, CSCW3, Article 250 (December 2020), 20 pages. https://doi.org/10.1145/3432949

1 INTRODUCTION

Surveillance and control concerns have emerged as key issues in the discourse around gig work [7, 38]. As many gig workers access work through app-based platforms, they are exposed to extractive data collection practices, which, in large parts are opaque [36]. Since gig workers are typically categorized as independent contractors, they lack legal labor protections [13, 44], allowing platforms to surveil and control workers in ways that increase productivity, often at the cost of worker agency and well-being [62]. For instance, food delivery platforms, like Instacart, track worker location and speed to shorten customer wait times at the cost of worker safety [23], while ridesharing platforms, like Uber, have been known to immediately block workers based on single negative reviews without opportunity for explanation [48].

Even as the privacy threats of emerging technologies are widely discussed by stakeholders at the global level [52, 65], much recent scholarship and public debate has focused on the inadequacy

Authors' addresses: Ira Anjali Anwar, Independent Researcher, Bengaluru, India, ira.2499@gmail.com; Joyojeet Pal, Microsoft Research, Bengaluru, India, Joyojeet.Pal@microsoft.com; Julie Hui, University of Michigan, Ann Arbor, USA, juliehui@umich.edu.

2573-0142/2020/12-ART250
https://doi.org/10.1145/3432949

of these responses in dealing with particular socio-cultural and economic concerns [15], and their situation within the institutional and cultural logics in parts of the Global South [6, 45]. Furthermore, research examining the nature and impact of worker surveillance in the gig economy largely looks at male dominated occupations like ridesharing and delivery work [8, 47]. Cultural and gendered dimensions of surveillance [32] are reproduced in the world of work [59], which makes it critical to understand how these platforms are collecting and using data on women workers.

Digitally enabled data collection practices in the gig economy intersect with existing social, familial, and cultural norms, as well as economic and political conditions in which workers are situated [5, 55]. In India, women still manage the majority of household and childcare duties, and many are expected to travel with male supervision, which limits opportunities for employment [53]. The experience of surveillance in the gig economy for women in India needs to be situated in this context, taking into account the various ways in which women are already subject to scrutiny by different actors like families, society, and the state [32, 33, 53].

We held in-depth interviews with 19 women beauty workers engaged in full-time gig work to address the following question: *How do women working in the gig economy identify and negotiate both explicit and implicit forms of control?* We define control as obtaining desired behavior by directing, evaluating, and disciplining worker activities [17, 57]. We study this in the context of Bangalore, India where women beauty work in the gig economy is on the rise. Given Bangalore's development as a digital startup hub [2], the city has witnessed the birth of multiple gig platforms, including one of the homeservice apps we study. Beauty gig work platforms have experienced significant growth over the last years and are continuing to recruit heavily (at least prior to COVID-19 lockdowns). These platforms advertise the promise of higher pay and greater flexibility compared to salon work [6], where the majority of women beauty gig workers were previously employed. Unlike crowd work where there is no direct contact with requesters [28], beauty workers must work directly with customers in their homes, which allows for the oppressive scrutiny ingrained in India's long history of informal paid domestic labor [20, 24, 46]. Unlike ridesharing and delivery work, beauty gig work is performed primarily in private locations, away from the security afforded by public spaces.

Few have studied how the individualized and distributed nature of gig work may reproduce the experiences of workplace surveillance and control, and how women gig workers negotiate these measures in their everyday lives. We find that the experience of algorithmic and bureaucratic control shaped by class and caste hierarchies [43] depart from other forms of surveillance women workers are subject to by various social actors (family members, customers, salon managers, etc.) in the context of India's largely informal service sector. Rather than these sources of control being additive and reinforcing of each other, our findings unveil how beauty workers use platform control to negotiate entrenched patriarchal, casteist, and classist relationships within their own families, as well as with customers. However, even as beauty workers exercise their agency in subverting control relations through these mechanisms, platform control does not structurally change the socio-cultural logic that restricts women's lives in India.

2 RELATED WORK

2.1 State of Gig Work

The rapid penetration of gig work across global labor markets has led to the interrogation of how the technological mediation of work shapes employment relationships. Defined as "an economic system that uses online platforms to digitally connect workers, or individual service providers," the gig economy positions digital labor platforms as third party intermediaries that function merely as aggregators of demand and supply [16]. The gig economy covers a variety of types of work,

including crowd work [25], freelance work [34, 56], and on-demand work via apps [13, 22]. As more of the gig economy has moved to mobile-based apps offering a range of services, a significant amount of research has examined how platforms control minimum quality standards of service in the selection and management of the workforce [4, 11, 13].

While work on labor processes on on-demand platforms uncovers how algorithmic control reshapes power relations between firms and workers [31, 44], it largely focuses on gig platforms in the western context. Researchers situated in the Global South argue that socio-economic trends such as the persistence of informality [6, 55], class inequality [27, 35], and hierarchies in the dignity of labor [46] frame the differential experience of algorithmic control by workers in these contexts. Recently, there has been direct action in addressing the institutional shortcomings of regulating gig work through initiatives that have attempted to build systems to rank gig work platforms across metrics such as fair pay, contracts, management, and representation [22].

Recent scholarship has shown how gig work platforms are altering labor practices [38], raising contentious issues around the (mis)classification of workers [16, 44], rising precarity of work [62], and subsequent loss of labor protections [13]. In particular, studies have illustrated how algorithmic management on these platforms shape labor relations, producing information asymmetries in on-demand apps like Uber and Instacart [23, 48], while exerting significant control over their workforce [38, 62]. It is critical to examine these equations in the context of how the nature of work and labor markets inform the ways in which algorithmic management shapes working conditions, and in the process, trigger tensions with existing gender norms and patriarchal structures.

2.2 Control in the Workplace

We explore control in the gig economy through management literature on rational control, defined as obtaining desired behavior by directing, evaluating, and disciplining worker activities [17, 57]. Traditionally, managers have relied on technical and bureaucratic control to optimize labor output and economic efficiency [30]. Technical control reflects the use of organizational technologies embedded in the physical facets of production instead of direct supervision, such as the automation of production processes through assembly lines [30]. Bureaucratic control reflects the firm's organizational structure, and is exercised through a system of rules, procedures, and roles to guide worker behavior such as company policies [17]. Bureaucratic control involves evaluation through human supervision, direct observation, and metrics for assessing work performance [21, 30, 60].

The notion of algorithmic control was introduced as a new form of rational disciplining where platforms use technical capabilities of algorithmic systems to observe and shape worker behavior [30]. This restructuring of control through algorithmic systems in the gig economy produces information and power asymmetries that enable platforms to control workers while simultaneously obfuscating this control process [48]. They define algorithmic control along '6 R's': using algorithms to direct workers by restricting and recommending, evaluate workers by recording and rating, and discipline workers by replacing and rewarding [30]. Algorithmic control offers a new lens by which technologies are utilized to monitor, manage and control on-demand workers [16, 48]. These aspects of algorithmic control systems allow on-demand platforms to sidestep various social, legal, and economic obligations that frame employment relations [16]; creating ambiguity around the classification of gig workers as employees [16, 38]. In doing so, algorithmic control systems enhance older forms of organizational control between employers and workers [30].

2.3 Gendering Control and unpacking Care Work dynamics in India

We find that gendered patterns of surveillance and control are critical in framing this differential experience of on-demand women workers in India. Indian care economy is heavily gendered, with women often engaged in frontline, low waged service work including paid domestic labor,

and customer-facing roles in malls, restaurants and salons [9, 37]. The gig economy reproduces occupational segregation along gender lines [10, 27], and indeed, ride hailing and delivery gig work is mainly done by men. Most studies on on-demand platforms, including those in the Global South, primarily focus on male dominated platforms such as Uber. Women workers are concentrated on home service platforms, such as UrbanClap, HouseJoy, BookMyBai, etc., where they perform tasks, such as domestic help, care work, and beauty services [46].

Indian labor markets already have a low, and declining, participation of women in the paid labor force, with less than 25% of the country's female population employed or looking to work [41]. The burden of unpaid care responsibilities constrains women's access to paid work [33, 39]. Indian women spend an average of 6 hours on household chores and caring for family members compared to men's average of 36 minutes [18]. Patriarchal norms, enforced through family and community, control and restrict women's access to work, and social and physical mobility [53] – almost 60% of Indian women aged between 15 and 49 are not allowed to go to public spaces alone, such as the market, or go outside the community [33]. Construction of women as vulnerable in public spaces [40, 61] not only enables the scrutiny and discriminatory control that women are subject to under the guise of safety concerns [49], but also pushes women to reluctantly accept social and familial forms of surveillance and control as their only panacea against the possibilities of violence [40, 49].

International development organizations often position digital labor platforms and their stated promise of flexibility as a solution to balance women's care responsibilities alongside paid work [1]. This perspective is both countered on practical grounds of the valuation of the kinds of care work women are steered to, which remain low pay, unregulated, and lacking political and legal protection [24, 42, 59], but also work to reproduce such care labor within hegemonic and patriarchal control systems [33]. Paid domestic work in particular, performed in the privacy of employers homes, has struggled with the 'invisibility' of labor [14, 59]. 'Professionalism' afforded by home service platforms aims to bring more dignity to the care work and aid women gig workers tackle customer expectations and demands. Platforms nonetheless expect workers to behave like 'entrepreneurs' – i.e. prioritizing customer satisfaction and constantly maintaining good reviews that subsequently secure repeat work [46]. We seek to probe further, exploring how algorithmic control mechanisms and shifting spatial dynamics reconfigure power relations between workers and customers in the context of home services. We examine whether these dynamics reflect, mitigate or entrench existing inequalities along the lines of gender, caste, and class that shape labor relations in India.

3 METHODS

3.1 Participants

We performed interviews with beauty workers affiliated with two of the primary home service platforms in Bangalore, India. For safeguarding the anonymity of respondents, these platforms are referred to as HomeServers (11 participants) and Househelp (8 participants). Participants were aged between 21 and 45, and had spent 6 months- 3 years in platform work, while their overall work experience ranged from 6 to 20 years. All but two who had worked in sales had only ever worked in the beauty industry. 13 participants were local to Bangalore, while 6 were migrants - 4 from the Northeast, and 2 from neighboring Tamil Nadu. Three participants had run their own salons. Four participants had completed their undergraduate degree, six others had finished high school or had some college education, while the rest did not finish high school. Seven respondents had children, and twelve were married. Two respondents were single parents.

3.2 Data Collection

We approached participants by hiring beauty services, typically manicures and pedicures, through the HomeServers and HouseHelp apps for 700 INR, which was paid in full by the researcher either in cash or through the app as per the beauty worker's preference. Of the total payment made to the beauty workers, 30% went towards the platform commission. The services were booked at least three hours in advance, and interview requests were made over the phone at least an hour prior to the service, where we explained that we were researchers aiming to document women beauty workers' experiences on home service platforms. We expressed that the appointment will still be kept even if the beauty worker refused to be interviewed. Further, we conveyed that they did not need to perform the beauty service, that the payment would be made anyways even if they withdrew. Two of the participants engaged in the interview process without performing the service, and the other 17 beauty workers preferred to conduct the service while the interview was ongoing.

Once the beauty workers agreed and arrived for the service, we asked their permission to record the interviews. One participant preferred not be recorded and two others asked to stop the recording mid-interview, so we took notes instead. The other interviews were recorded and transcribed. Given the heterogeneity of Bangalore's working population, the interviews were conducted in different languages; two in English, two in Kannada, and the rest were in Hindi. All recordings were transcribed into English. Interviews lasted 55-110 minutes.

Our initial interview protocol included questions on workers' salon experiences, daily work after joining the platform, domestic chores, travel, engagement with customers, workplace conversations and exchanges with managers and colleagues, and other general questions about daily social, economic, and cultural lives. We conducted the initial round of interviews with 4 people, through which we identified patterns around platform control and its relation to women's mobility, and familial and customer relations. The rest of the interviews focused on gendered experiences of surveillance and control as a result of participation in the gig economy.

3.3 Context

We define home service platforms as apps that mediate service labor that is performed in the customer's home. Both HomeServer and HouseHelp offer a range of homeservices, including personal care services such as massages, beauty (waxing, facials, manicures, pedicures), and makeup; as well as cleaning and maintenance services (plumbing, repairs, etc). Workers underwent extensive background checks by the platform, including identity, police, and address verification. Customers only had to share their name and contact information (email and mobile number) to register on the platform. Both platforms also deployed reputation and rating systems, which allowed customers to rate and review workers based on metrics of hygiene, professionalism, on-time arrival, and overall experience. While HomeServers has recently introduced procedures for workers to rate customers, HouseHelp does not have that option.

3.4 Analysis

In the initial round of open coding [50], we identified broad themes around gendered dimensions of on-demand beauty work, such as women's socio-economic and physical mobility, safety concerns, and agency in relation to other social actors. We found that platform control mechanisms shaped these aspects of women's experiences of gig work, and at this point decided to focus the paper on the theme of control. We asked, How do on-demand beauty workers *identify* and *negotiate* explicit and implicit forms of control? We then referred to literature on control in gig work and the workplace in general. We initially decided to focus on algorithmic mechanisms of control [30], given the gig work nature of on-demand beauty work. Through this round of analysis, we performed provisional

coding, which begins with an initial list of codes generated from related work suggesting what might be found in the data, and also allows for the addition of new codes [50]. To understand how beauty workers *identify* experienced forms of control, we coded the data according to the six R's of algorithmic control: recommending and restricting, recording and rating, and rewarding and replacing [30]. During this process, we also identified the importance of non-algorithmic control in the form of bureaucratic control to beauty worker experiences. To understand how beauty workers *negotiate* these experiences of control, we performed a separate round of open coding to identify ways in which workers responded to, legitimized, and/or leveraged the control being experienced. This formed the second main section of our findings. Throughout this process, two researchers worked together to review initial transcripts for the first round of coding. Then one researcher performed an initial set of coding for the second and third rounds, checking in regularly with the other researcher to check themes and establish agreement. Once agreement was established on the definition and range of codes, one researcher then finished coding the rest of the data.

4 FINDINGS

From the platform's onboarding process to day-to-day management, we document the various ways in which beauty workers experience control from both platforms and customers. We map these instances according to established mechanisms of control [30]. In the first section, we identify that beauty workers experience app-based control via algorithmic management– recommending and restricting, rating and recording, and rewarding and replacing. We also identified various instances of bureaucratic control through human supervision. In the second section, we describe how beauty workers use these forms of platform control to negotiate surveillance practices they encounter in other aspects of their work and life. Together, our findings illustrate how platform and customer scrutiny impact the working conditions and overall well-being of on-demand beauty workers.

4.1 Mechanisms of Control

Gig work is controlled through supervisory bureaucratic scrutiny layered over three affordances of the platform - through task recommendation, through the recording and evaluation of work, and through incentivizing work. Each of these operates simultaneously, at different levels, helping define and maintain the worker's relationship with work and platform alike.

4.1.1 Algorithmic Recommending and Restricting. Platforms market themselves more as matching infrastructure rather than providing a service through their employees. Gig work platforms perform algorithmic recommending by matching open tasks (e.g. request for a manicure) to a provider (beauty worker) within a limited radius. While app-based gig work platforms market themselves to workers as flexible, at the heart of these platforms is customer satisfaction, which is operationalized as optimizing the service experience for the customer at the cost of restricting worker actions.

Both platforms alert beauty workers about incoming tasks on an ongoing basis, allowing workers to accept or reject them based on their availability and willingness. Platforms monitor workers acceptance rates, the expectation being that each individual will complete 3-4 tasks per day. Furthermore, while neither platforms technically forbids workers from cancelling on customers, once workers have accepted a task, platforms heavily restrict workers' abilities to cancel through monetary penalties on HomeServers, and depreciating ratings on HouseHelp. Workers experience these restrictive processes as a 'choiceless choice', where they only consider cancellation in emergencies.

Beauty workers are drawn to these platforms for the income, but also as a way to access a wider and potentially dedicated customer base. Despite restrictions on direct solicitation and incentives based on targets, which repeat customers help maintain, some workers establish direct relationships with customers to avoid paying platform commission. In general, workers comply:

Table 1. Mechanisms of Control in Platform-based Beauty Work

Mechanism	Definition	Examples
Algorithmic Recommending and Restricting	Using algorithms to suggest certain actions and prohibiting others [30]	• Platform assigns workers to tasks and customers • Workers cannot contest unfair ratings • Workers cannot exchange contact information with customers
Algorithmic Recording and Rating	Evaluating workers by monitoring, aggregating, and reporting performance [30]	• Customers rate workers on a 5-point scale • Tracking task completion through GPS and OTPs • Monitoring all text and phone communication with client
Algorithmic Rewarding and Replacing	Disciplining workers by rapidly or automatically firing underperforming workers, and rewarding those in good standing [30]	• Performing a certain number of jobs and maintaining a certain rating leads to "Gold Status" • Maintaining a certain rating level contributes to "Gold Status" • Removing workers when targets are not met • Threshold rating for removing workers
(Non-algorithmic) Bureaucratic Evaluation	Evaluating workers through organizational rules and procedures, often implemented by direct human supervision [17]	• Trainers scrutinize worker performance during in-person exams and re-training procedures • Surprise field checks by managers • Extensive background data collection before hiring • Managers and trainers monitor beauty workers in the field through regular calls and messages • Customers scrutinize/discipline workers in-person

> *Some people will call directly. Your service is too good, can you please come directly. Give me your personal number, I will call you. So we say, 'no ma'am you can book in app only.' Because if we go directly means we do not meet our target. -P5*

While entrepreneurialism is central to the gig economy discourse, it is restricted within the strict confines of the platform itself [26, 46]. Workers are encouraged to keep all customer communication in the platform and rely on the platform for future booking recommendations. Any sharing of personal contact directly with customers can lead to being banned from a platform.

Furthermore, platforms restrict workers' abilities to review customers. HouseHelp does not allow beauty workers to rate customers at all. HomeServers has only recently initiated ratings and reviews for customers by beauty workers. Yet, beauty workers ratings for customers seem to carry little weight as participants described instances where they were matched back with customers they rated poorly. Reviews by beauty workers don't serve to offer customers' feedback, nor do they help other beauty workers in selecting which customers to serve.

4.1.2 Algorithmic Rating and Recording. As the success of on demand platforms hinges primarily on customer satisfaction, platforms surveil and control quality of work through algorithmic rating

and recording. Given the work involves going from location to location, unpredictable factors such as traffic or apartment security determine success with platform timing expectations. Both platforms have GPS movement tracking and require a selfie and OTP–a unique number assigned to that location–once the worker arrives at a customer's location. If HomeServers beauty workers are late for their task, they are automatically penalized by the platform through a dynamic penalty system that charges roughly 10 INR for each 10 min delay.

To meet these demands, workers must plan ahead to maintain the perfect timing, usually ending up early at location - the surplus time for which is unpaid labor. P4 describes how the timing of each work day is contingent on multiple external factors:

> *Two to three hours are spent on one job. After that, we have already accepted [our next job], so what we do then is we collect all our things, put it in the bag, we book a cab to go for the service. One to two hours can be spent [traveling]. Sometimes you get a cab, sometimes you don't, sometimes the cab cancels, so that causes a bit of trouble. . . .If we get any [free time] we eat food. Sometimes it doesn't work out and we wait until we get home to eat. [After work] it takes us about 2 hours to travel home, there's a lot of traffic.*

Participants expressed that the time frame set by platforms for each task was inadequate to deliver satisfactory services. Access to transportation, customer mood, clarity of the address, and setup and cleanup time, all combine to make timings unpredictable.

The power asymmetry between customers and workers is accentuated by the emphasis on customer reviews and ratings. While workers must get recurrent 5 stars to improve ratings, a single bad rating can ruin their overall average. Aside from the difficulty of constantly maintaining a high average, the review and rating process is also opaque. Beauty workers on both HomeServers and HouseHelp cannot see their individual ratings and reviews. Only customers, once matched with a beautician, can view the beautician's past ratings and reviews. P3 highlight how this lack of transparency prevents platforms from confirming whether the ratings are in fact a fair assessment.

> *Only we know why they gave their review, and the customer knows. And the reviews they put. They may not all be true right? Not every customer will say the truth.*

P19 from HouseHelp believes that the app records all interactions with the customer, from phone calls and messages (via the app) to in-person conversations during the service if the app is on. While the platform has not verified this claim, the platforms state that conversations between the worker and customer are reviewed in case of disputes. Beauticians from both platforms report that platform managers have warned that the platform is 'always in the know' about whatever happens, but it is unclear which conversations they are referring to and how they make these judgements.

4.1.3 Algorithmic Rewarding and Replacing. Both HomeServers and HouseHelp penalize workers who do not complete the minimum number of tasks decided by the platform. In effect, work that is marketed as flexible is instead subject to many of the characteristics of traditional employment without the same benefits or protections. Through an enforced target system, the quantity of work performed is surveilled and controlled through algorithmic rewarding and replacing. For instance, beauty workers in HomeServers are required to complete a minimum of 30 tasks every month. Participants like P6 reported that the inability to meet targets results in the removal from the app without prior warning.

> *So many targets, even the people who are earning 50-60k, they have also been removed. Whoever has not reached the target, all those people (are removed). People will also say you need luck. They are removed like that only. In our app you can see [how many jobs are completed]. So if they do not do them, they are blocked automatically.*

P6 explained that workers who choose longer-form tasks, such as a combination of multiple services, are held to the same target system. Longer tasks pay more at one location, which allows financial productivity despite less travel. The target system depends essentially on a flexible personal schedule to be able to plan and buffer time, so it is challenging for women with domestic and care responsibilities. Despite the discourse of greater flexibility in gig work, P14, a young mother, highlights how the target systems favor some kinds of flexibility, penalizing others:

> *Before, as much as I wanted, that's how much I'd work. I used to take more leaves. Now, they've put a minimum. They also get more business. Thirty jobs minimum...Kids are there no? If health is not good, sometimes they'll be sick for 8 days and if we have to go out somewhere, with kids is no.*

Participants from both platforms noted that whenever they took leave over a day or two, they received phone calls from their managers to enquire after why they were on leave, and when they'd be coming back.

In addition to the minimum target requirement, HomeServers has also introduced a 'Gold Status' incentive system, awarded to workers who complete over 60 jobs per month and maintain a 4.8 or above average rating. This rating system provides various benefits, like opportunities to take out loans through HomeServers, and an extension of the helpline access. P7, a HomeServers worker with Gold Status, described how before having Gold Status she did not understand why the helpline was often unresponsive and even penalized her for "abusing" (calling often) the helpline system. Only after her status upgrade did she learn that non-Gold Status members are limited to 8-10 calls, while those with Gold Status are given up to 40 helpline calls per month.

Target requirements pose undue pressures on beauty workers to extend themselves beyond the usual demands of gig work– increasing the number of gigs per day involves transitioning in and out of jobs, as well as the difficult logistics of getting around Bangalore, which has some of the worst traffic in the world [12]. The efficiencies of productivity and convenience thus benefit the customer and platform alike by relaying these tasks to the worker. Due to the uneven, gendered distribution of care responsibilities, these controls can prevent women, particularly those with limited childcare support and free time, from accessing employment on such gig platforms.

4.1.4 Bureaucratic Evaluation. In addition to algorithmic control, we found that beauty workers also experienced significant bureaucratic control through the hiring and training processes from the platform, and through customer surveillance. These examples of non-algorithmic control highlight the weight of in-person control in shaping the experiences of on-demand beauty workers.

Hiring and Training. To prepare, and more importantly, standardize a large population of beauty workers to meet customer demands, HomeServers and HouseHelp have rigorous hiring and training processes which set the expectations around customer relations and professionalism. In doing so, the training process frames the image of 'the ideal worker'– resilient in their politeness and professionalism, constantly adaptable to the needs of customers, and always presentable in appearance. Much of the surveillance and control mechanisms in place focus on maintaining these performance standards through collection of personal data and bureaucratic control. The hiring process begins with an interview which involves skill testing and a complete background check, including house and police verification. Incidentally, background checks are not mandatory for the customers.

While all beauty workers on home service apps have a minimum of 3-5 years of experience as required by the platforms, they undergo a rigorous training process before they join the active platform-based workforce. Poor ratings and reviews land beauty workers in retraining or exclusion from the platform. Retraining sessions can be harsh, since they focus on "fixing" a service provider.

> *There is one [trainer], she is very bossy, made me cry a lot. [One customer] put a bad review, so because of that it was a very bad experience. That time, I left work for 15-20 days [to be retrained]. -P3*

Workers are trained to provide a standardized experience - all beauty workers wear the same uniform with the company logos, use the same hair or body care products purchased via the platform, and conduct the services in the same manner. This formalization of presentation and performance [46] intends to shape beauty workers into an identifiable image of the platform. This also underlines the gendered dimensions at play in the beauty industry - highlighting the 'feminine' traits of a trained worker in terms of their appearance and subservience.

Customer Surveillance. Once beauty workers are inside the customers' home, the platform recedes as the dominant source of surveillance for the duration of the service, and customers assert direct measures of surveillance and control over workers. Various beauty workers express that the in-home nature of gig beauty work has further entrenched the power disparity between customers and beauty workers. Being in their own physical space gives the customer and service provider a different relationship with the setting of the service, as opposed to a public environment like a salon. P7 described an instance when a customer made her wait for hours before her scheduled service. Despite registering a complaint through the helpline, she did not really receive any support in handling the situation.

> *One client made me wait so much- 6:30pm she had one facial only, but she started the facial at 10:45pm. She said, 'Please, no one is there. I have to drop my family at the railway station. Please wait for me, I'll be back in one hour, by 7;30.' Ok fine, but she didn't come then. Then I said, 'ma'am it's getting late, and I'm getting calls from home.' She said, 'please please wait for me, I'm just coming soon.' She had paid already, so what else could I do. I called the helpline. They said, 'ma'am its your choice, you can cancel or complete the job.' Ok, I had already waited for so long, I stayed. You know what the client said? Thank you, you for waiting so long? No, nothing like that! They said, 'just because it's late, don't do a hasty job, do it properly.' I was getting so angry!*

The platforms' cancellation policies are skewed against beauty workers, affording customers more control over the situation. Platforms are generous with cancellation policies for customers, allowing cancellations without penalizing them since it helps retain and expand the customer base. However a cancellation by a worker has cost (HomeServers) and rating (HouseHelp) repercussions. This power imbalance impacts beauty workers in their ability to make targets, manage travel expenditure, as well as wasting their time.

For the beautician, the governing artifact is the app-assigned rating. The stress of maintaining customer satisfaction and high ratings translates to beauty workers accepting unreasonable treatment by customers. There are parallels between the ways in which people treat household help and service providers, which are reinforced in implicit and explicit ways. For instance, platform workers are typically expected to leave their footwear outside the threshold of a home (whereas guests would usually leave their footwear past the entrance of the home, or keep it on). Other examples of caste and class divides include workers being expected to bring their own portable stools to sit on, sitting on the floor, not asking for drinking water, and not using the bathroom. The caste and class gaze through which customers examine and evaluate beauty workers also comes across in the way they speak to beauty workers.

> *There are also those [customers] who, even though they aren't that rich, don't give us any respect at all. 'You people don't have any hygiene, you come from poor backgrounds, you come from slum areas.' They say stuff like this. -P2*

Similarly, while beauty workers are trained to clean the space they use to perform the service, many reported interactions with customers who demanded that beauty workers clean much more than they were required to, such as sweeping the entire room/apartment. This kind of behavior and expectations of home service workers is deeply linked to the class and caste hierarchies that shape labor relations in the Indian beauty and domestic service industries. Domestic work in India, the bulk of which is performed by women from lower castes, suffers from exploitative working conditions [9, 37], is largely unorganized, and is structurally excluded from access to labor protection and regulation [42]. We find that in certain instances, customers using on-demand platforms in India reflect a similar attitude, reproducing this power dynamic in the context of home services.

4.2 Negotiating Control

Research evaluating the impact of algorithmic management tools in the gig economy highlights how gig workers weigh the opportunity cost of control on a daily basis–in task selection, engagement with the platform, and so forth. We examine how beauty workers negotiate their experience of control by comparing and contrasting their experiences with platform work to other aspects of their lives. Despite the negative experiences outlined in the previous section, beauty workers negotiated, and in many ways legitimized these experiences, by expressing preferences for algorithmic control mechanisms. These mechanisms were seen as more fair than in-person management, and in some ways helped them overcome patriarchal structures, negotiate customer disputes, and learn new career skills.

4.2.1 Pushing Back Against Patriarchal Structures. Some of the primary barriers to accessing work are patriarchal expectations governing women, including control over their physical movements and what roles they are allowed to play in society. Women are expected to stay home, manage the household, and not travel without male family accompaniment, for both safety and modesty reasons. In effect, the new ability to perform work around the city for paid beauty gigs was seen by many women gig workers as a significant shift towards achieving greater personal freedom.

Many of the beauty workers expressed that their families were initially concerned about their safety when traveling to different locations and entering strangers' homes. Workers described using examples of platform surveillance to prove that someone was keeping track of them for their safety. For example, when asked how she convinced her parents to join HomeServers, P7 described the platform's methods of surveillance as a form of security:

> *My family was scared, so I told them, 'Look there's good security here. For starting job and ending they ask for OTP, then if something happens, if there's a problem, there are people for us.' Even then for one month they were observing, saying 'don't do it, go somewhere else.' But once I started earning nicely, since then they said, 'ok it's good.'*

Beauty workers are expected to provide a one time password (OTP) to the platform whenever they arrive at a job. The OTP feature lets the platform know when beauty workers begin and end their job, so they can place them in real time. Participants also reported receiving calls from managers if they did not begin their task at the scheduled time. While some perceived this as micro-management, others interpreted it as an extra check on their safety. Beauty workers expressed that their families were more comfortable with them travelling to different areas and working in strangers' homes because they trusted the platform to monitor them at all times.

Workers seemed to derive newfound confidence and freedom through the presence of the platform gaze as an omnipresent safety monitor. Many participants reported not having stepped outside their neighbourhood until they joined homeservice platforms. Platform work requires them to go to different neighborhoods, demanding them to venture out of their comfort zones. P4

describes how knowing that the platform is constantly aware of her movements affords her a sense of confidence.

> *On the app we learn how to be and talk, how to have 'dareness'...We don't know the area. What will we do if something happens? This is how girls think ma'am. 90% of girls, they are always working carefully ma'am. So because of that, we need to have at least a little bit of dareness, because we have worked on HouseHelp for so long, shouldn't be scared like this. By dareness I mean like how we came here [to the customers home]...If in this much time the service is not over, then they [the platform] will know.*

Other participants also discussed how their families have become more lenient with their movements, after they joined on-demand platforms. P7 discusses how her family no longer scrutinizes her work timing, as they would when she worked at the salon.

> *So earlier, they used to call around 8pm and ask 'where are you? whats going on?' Now, even if it goes to 11pm-12am, no one asks anything. They know I'm working.*

We trace this relaxation of familial control to the reassurance enabled by platform surveillance. Patriarchal norms restricting women's access to work are shaped by various conditions, complex combinations of women's safety concerns mingled with the need to control their public visibility and independence. The real threat of violence against women, combined with restrictive patriarchal norms contribute to women's low participation in the Indian workforce. We find that workers legitimize platform surveillance and control by convincing themselves and their family that these mechanisms afford a greater sense of safety.

4.2.2 Managing Customer Relationships. Even as workers experienced the platform's helpline policies and responses as inadequate and structurally biased towards customers, platform surveillance is still viewed as a neutral gaze when managing customer relations. Beauty workers see platform surveillance as not only working to maintain professional standards, but also standardizing workplace expectations by setting fixed prices and overseeing timings. For example, P5 discusses how customers try and subvert these fixed standards by asking beauty workers to work for them outside the platform.

> *They will ask for a discount. 'HomeServers is giving this much no? If I'm calling directly, you can give some discount?' But, then they will not like the service that time. 'You have to do little more here, you have to do little more here.'*

Getting into direct transactional relationships can be also be tricky because the worker is then dependent on a direct negotiation with a customer. In these cases, beauty workers can turn these customers away by citing that it is against company policy to take on clients outside the platform. Beauty workers also rely on company policies to reject potentially unsafe working conditions. While workers are told that they don't have to service men, the platform does not identify and turn away male clients. P17 described how she uses the company helpline to deal with situations of unexpected male customers.

> *I will not go inside until I see the females. This bad experience happened. One person books it for their mother. He says, 'its a surprise, I booked for my mom.' I made him understand company policy–until we talk to the client, we are not supposed to come to take the service. I tried to make him understand, but still he's requesting me, 'please come, please come.' And I said no I cannot. Please cancel this thing. And I called the helpline and told this happened and they also said don't go.*

Access to a helpline in these situations helps beauty workers feel that platforms have their best interests in mind. Yet, women beauty workers have to individually confirm with each customer on

their own, and platforms do not seem to take any action against male customers who regularly make appointments for supposedly women customers.

Even though the platform surveillance infrastructure affords more power to customers (through ratings, etc.), it still maintains a veneer of neutrality in their mediation of the customer-worker disputes. For instance, P7 has worked on HomeServers for over a year and has managed to keep her average rating above 4.8 for this period. She described a recent incident where a customer accused her of stealing perfume from her house.

> *Perfume went missing, but they [Homeservers] handled it really well. But they blocked my profile for 8 days, because they had to confirm whether I'm lying or the client is lying…Last I said, 'Ok sir, alright you don't even trust me this much.' Like this, I sent such a long message. After that they checked properly. Where all and how I've worked...After that I got a call from my team, 'Your issue has been cleared, we've checked. Now, for 11 months you have been with us nicely, not even one complaint against you. You should start your work again,' then they unblocked me...Homeservers is very good ma'am. Other people will get feedback like this, and if something like this happens, they'll say it's a problem and fire you only. But HomeServers wasn't like that. They called me back nicely.*

Though HomeServers did not inform P7 that she would be blocked, she perceived her treatment by the platform as 'fair'. She expressed that she was grateful that HomeServers eventually cleared her name and she was allowed to go back to work. She explained that in other workplace scenarios, managers would likely have fired her on the spot without verifying the allegations against her and giving her the opportunity to defend herself.

However, not all workers express this sense of trust with the platform's judgement. Others have described instances when customers gave them unfair reviews due to conditions out of their control, yet the platforms did not allow them to dispute the rating. While the platform deploys extensive data collection meant to scrutinize workers, they collect little information from customers. This disparity between the treatment of workers and clients indicates the reinforcement of power imbalances in gig work. Some beauty workers are under the impression that clients are also vetted before being allowed to access the platforms services, though this is not the case. In the case of minor disagreements, workers express that the platform has the means to verify the claims against them by reviewing the customer and worker perspectives, and taking into account consistent work history. But, in most instances, platforms do not invest in this process for minor offences.

4.2.3 Improvement from In-person Surveillance in Salon Work. All participants had worked in salons for at least 3-5 years prior to joining platform work. Unpacking beauty workers motivation to try out app based work, Raval and Pal position the platform as the 'anti salon' [46]. Even though platforms restrict flexibility through targets and micro-management, platform beauty workers preferred the perceived flexibility of platform work over their previous salon experiences. P5, a young mother, found the physical surveillance through constant human supervision in salons as far more oppressive.

> *Because when we want we can work [on the platform]. There is no owner. Nobody telling you have to definitely do this today and you have to. In the parlour, the closing time is 8pm. If a customer comes in [at 8pm] and says, 'Oh I have to, urgent please.' We have to do it. [Once] my baby had a hernia operation when he was one. Then I took leave for 25 days [from Homeservers]. I got a call from HomeServers, I told them my baby had an operation. 'Ok,' they said, 'try doing 1-2 orders' [a day], and then left it. They didn't torture much. But in the parlor, if I leave for more than a day or two, they would cut my salary.*

Salons typically demand 10-12 hour shifts, and mostly rely on human supervisors. These supervisors have significantly more control over workers' schedule and movement, sometimes even removing worker phones at the beginning of the day to restrict all external communication with friends and family. Participants also highlight how the complete reliance on physical managers to assess beauty workers can lead to preferential treatment. For instance, P7 described how in the salon, she had to appease the manager.

> *Sometimes there can be partiality at the salon. Here [on HomeServers] they don't see that. If you're doing good work, then they'll support you, like that they give hope. The feedback [from HomeServers] is also good. They watch us nicely. Salon it's not like that, whoever they are fond of, only those people will get support. That has happened with me. 'No sir, I didn't do that.' 'Quiet, just watch your work.' Here they don't talk like that. If sir [platform manager] says something, then I say, 'ok I'll check.' If it's my fault, then nicely he will scold me, 'your fault only, why what happened?' he'll ask. If it's not my fault, 'ok ma'am, we're with you on your side, don't get stressed.'*

Unlike physical management, platforms are seen as more impartial and only take into consideration what beauty workers see as less biased measures of performance, like arriving to jobs on time, completing jobs on time, and higher customer ratings. In effect, these acts of platform surveillance are interpreted as a means of fairness rather than oppression when compared to salon work.

4.2.4 Opportunity for Upskilling. While the training period draws on heavy bureaucratic evaluation through the monitoring of performance and dress, many beauty workers expressed this process to be helpful nonetheless. The training period relies mainly on human supervision, with the trainers monitoring and working with beauty workers to professionalize their services according to the platforms standards, akin to a short professional beauty course. P5 discussed how, aside from being able to keep up with current industry knowledge, the scrutiny of their behavior during training also helped them improve their communication skills.

> *It's like I learned more ma'am, like how I have to talk to customers, in what time I have to talk, how customer is there, how customer thinks, how they feel, if they are angry or moody. So, we have to check that and we have to talk. If we talk directly, they will scold.*

After the training period, each batch forms a Whatsapp group with their trainers. When asked how they perceived having a manager present in their online conversations with peers, workers expressed that it was useful to be in contact with someone more experienced. The Whatsapp group is used for various reasons– beauty workers clarify doubts about products and processes, trainers check up on the workers in their team (particularly on HouseHelp), and they also regularly share information and videos on new products and services, as well as promotional offers. In effect, it allows managers to remotely monitor beauty workers on a regular basis, while also sharing curated information.

In the absence of salon-based supervisors, the brunt of managing customers falls largely on individual beauty workers. Platforms present cost effective yet professional facilities for beauty workers to develop service-specific and interpersonal skills on a regular basis. Access to training facilities and industry knowledge allows workers to keep updating their skill set, as well as encouraging their career progression. Beauty workers contextualized the scrutiny they are subject to as an important step to improving their skill set.

5 DISCUSSION

Our study highlights the contours of control aimed at women beauty workers in the gig economy, enforced through a mix of algorithmic and bureaucratic structures. We find that beauty workers use

these mechanisms of control to negotiate entrenched patriarchal, casteist and classist relationships with family and customers. Ultimately, this does not change the logic of patriarchal norms, nor the class, caste and, gender disparities that govern women's independence and access to work [54]. Rather, platform control works to subordinate other social institutions, such as the family, and in some ways, reproduces its position at the top of the social hierarchy [63].

In the algorithmic governmentality experienced by workers, we see forms of 'participatory surveillance,' where the controlled subjects, like beauty workers, are at once subject to disciplining, but also leverage and re-appropriate monitoring technologies for purposes of agency and empowerment [3]. Previous examples of workers enacting strategies of control through technology include marking their status as busy on digital platforms [58] and withholding information in crowd work tasks [51]. We expand on this literature by discussing this activity in the context of beauty work, specifically how workers leverage platform-enacted control to negotiate their position with family and customer relations in an ecosystem that heavily disciplines women's behaviors and actions. As we find here, in many instances, the visibility of women beauty workers offered them "opportunities to take action, seek information, and communicate" [3]. They actively utilized this visibility to enact control by furthering their socio-economic mobility. Yet we find that women's bodies and actions continue to be surveilled, only now, under the economic logic of gig platforms.

5.1 Negotiating Familial Control Through Platform Surveillance

The impact of control mechanisms exercised by home service platforms like HomeServers and HouseHelp is not limited to the employment relationship between workers and the platform. In a bid to access socio-economic mobility, through education and work opportunities, Indian women navigate multiple sources of socio-cultural control [32], from the formal institutions and public spaces they seek to inhabit [53], to their families and communities [33]. By painting women as vulnerable in public places, families inhibit women's freedom of movement [40, 61]. This translates to limiting women's work options [29], with many participants noting how, before working with these platforms, they could only work in salons close to their homes.

As our study illustrates, beauty workers on home service platforms employ the platforms' alleged promise of increased safety through algorithmic control to subvert familial surveillance and control [33, 40]. Participants discussed how, after joining the home service platform, their world grew from the boundaries of their home and immediate community to various other neighbourhoods of Bangalore. Familial actors only loosened their grip over women family members when they were given the assurance that women's behavior and movements would be monitored even in their absence by the home service platforms [33]. The abstraction of technologically-mediated safety was thus employed as a proxy for the male-supervised access to the otherwise constricted public spaces.

Both apps have introduced S.O.S. buttons in cases of emergency. Yet, it is the constant scrutiny of women's movements through algorithmic recording, such as GPS enabled location coordinates and selfies at the beginning of work, through which women were able to defend safety concerns to their family. Similar to findings on service work platforms, this negotiation of familial control through platform mechanisms highlights another example of worker agency in using facets of pervasive technologies for reasons other than their intended use [3, 58].

It is not so much that platform work mitigates the control of women's bodies, rather it works to displace familial actors in certain moments. For instance, the burden of unpaid care labor that women perform is a product of patriarchal hegemony enforced through familial control practices [33]. Like other emerging studies of app-based work in India [6], we find that while in some cases the higher earnings afforded by platform work help in easing demands around women's unpaid care labor, it does not challenge the conditions that shape domestic responsibilities. In particular,

mothers and married beauty workers noted waking up as early as 5 am to complete their household chores before embarking on their app-based services, spending anywhere between 6-10 hours daily at work in addition to performing home chores like cooking and cleaning. The flexibility afforded by gig platforms can then facilitate and reinforce gendered patterns of labor, stretching women's efforts between paid and unpaid care work.

5.2 Negotiating Customer Control

Our study examines how aspects of formalization facilitate the re-enactment of workers' identities [3] through tropes of professionalism [46]. For instance, participants reported that when customers tried to bargain with them about the cost of the service, an attempt to devalue their work, workers politely referred them to company policy and the pre-set service rates given on the app. Furthermore, workers also utilized algorithmic restricting functions to limit their interactions with customers, declining requests for their personal contact numbers by citing platform restrictions.

The molding of the 'professional' worker is produced through implicit control mechanisms that are designed to fulfill customer expectations [19]. Bureaucratic control, experienced through the training process and daily moments of human supervision (e.g., calls and messages from managers), direct women beauty workers in their presentation (e.g., compulsory uniforms) and engagement with customers (e.g., emphasis on soft skills, politeness) to be professional service providers. As we see in Raval's research on women gig workers in India, platforms aim to create entrepreneurial subjects who must invest in these various forms of emotional labor to transcend issues of status and work precarity in a quest for legitimacy as professionals [46].

Given the regulatory lacunae in relation to gig platforms, both the platforms we studied were not pressured by law to enforce fair employment relations [59]. Algorithmic rating structures privilege customer power over workers' agency: both platforms place emphasis on the maintenance of high ratings through algorithmic rewarding and replacing mechanisms [30]. Similar research on care workers in the U.S. context has pointed out how the nature of platform-initiated formalization (record keeping of wages, documenting workers performance through ratings, etc.) enhances workers' vulnerability in relation to the platform and customers [59]. Further, we find that HomeServers does not place any value on beauty workers' rating for customers, while HouseHelp does not offer this functionality at all. Algorithmic control functions then enable platform companies and customers to evaluate and discipline workers, but prevent workers from doing the same.

We find that the shift from a commercial monitored working space (the salon) to the private sphere of the customer's home recreates tensions that have traditionally shaped the working conditions of paid household help, typically performed by women from lower class and caste communities [20, 43]. Caste legacies in Indian society associate purity and hygiene with upper caste bodies, in opposition to lower caste identities which are constructed as 'dirty' and 'impure' [14, 64]. We noted how customers called beauty workers 'dirty' and 'unhygienic' as attempts to assert their caste superiority and subsequent power over workers. Moreover, in emphasizing hygiene as a metric to evaluate beauty workers, algorithmic rating systems entrench caste disparities that frame control relations. Participants pointed out that in their previous work experiences, these tensions were mediated by salon managers, and the public environment of the salon space prevented customers from treating beauty workers as servants. Rather, in the context of home service platforms, power structures associated with traditional, paid domestic work relations shape customers' behavior and perception towards platform-based beauty workers, from evaluating worker's dress and speech, to demeanour. In reaction, beauty workers have to demonstrate various kinds of inferiority [14], and oftentimes, these assumptions were enacted in the extra work they were expected to do, which included cleaning the entire apartment in addition to performing their beauty tasks.

Both the workers and customers understood implicitly that if they refused to perform extra work, or transgressed certain caste lines such as using bathrooms, touching utensils, seating without the appropriate assent from the customer, it would impact their ratings. Thus, the shift in spatial dynamics of work, alongside the asymmetric rating systems, allow customers "to serve as middle managers," who in large part control beauty workers' access to work opportunities [59]. While the emphasis on image and behavior encourages beauty workers to renegotiate their identity through the trope of professionalism [46], we find that algorithmic and non-algorithmic control mechanisms ultimately work to prioritize the customer experience over worker well-being.

6 LIMITATIONS

Performing our interviews in Bangalore has its advantages for the richness of class, caste, and ethnic issues that impact these services in a large metropolitan area. But, our sample also limits generalizability as our goal is to provide an in-depth understanding of the experiences of on-demand beauty workers in a specific setting. The larger themes that we discuss around gender, class, and caste could inform our understanding of women in gig work in the larger context of workplace control. The policies and control mechanisms of platforms in other parts of the world could lead to very different impressions of control, and we welcome further research with workers on different platforms to compare and contrast. Due to the COVID-19 lockdown, our interview data collection was cut short as people were encouraged to not hire on-demand beauty workers for health reasons.

7 CONCLUSION

This work shows how women service workers in India are under constant scrutiny from multiple sources. A range of social actors, from their families and communities, to employers and customers, monitor and discipline their bodies, behaviour, and actions. This study explores how the platformization of beauty services through the emergence of home service apps reconfigures women beauty workers' experiences of control with not only the platform, but with other social structures as well. We document and unpack how women beauty gig workers identify and make sense of moments of control experienced on the job. But we also show how workers have agency, and that they actively leverage platform control functions to negotiate modes of familial and customer control. In this, our work pushes the limits of critical questions that will occupy us in examining the changing world of work. Platforms, even if built in a universalizing mode to behave the same for workers around the world, cannot be studied in isolation from the gendered, cultural, and class realities of the settings where they are used.

ACKNOWLEDGMENTS

The authors would like to thank all the participants for sharing their experiences with us. We thank Microsoft Research India for logistical support with the project. We also thank Neena Satija and the anonymous reviewers for their time and helpful comments in improving this paper.

REFERENCES

[1] 2019. World Development Report: The Changing Nature of Work.
[2] Deepak Adhana. 2016. Start-UP India, Stand-UP India: India turning into a Start-UP HUB by prospering entrepreneurial culture. International Journal in Management and Social Science 4 (2016).
[3] Anders Albrechtslund and Louise Nørgaard Glud. 2010. Empowering residents: A theoretical framework for negotiating surveillance technologies. Surveillance & Society 8, 2 (2010), 235–250.
[4] Antonio Aloisi. 2015. Commoditized workers: Case study research on labor law issues arising from a set of on-demand/gig economy platforms. Comp. Lab. L. & Pol'y J. 37 (2015), 653.
[5] Urvashi Aneja, Vikram Mathur, and Ira Anjali Anwar. 2018. Emerging technologies and the future of work in India. (2018).

[6] Urvashi Aneja and Aishwarya Shridhar. 2018. Worker Wellbeing on Digital Work Platforms in India: A Study of Ola Cabs UrbanClap in New Delhi.

[7] Michel Anteby and Curtis K Chan. 2018. A self-fulfilling cycle of coercive surveillance: Workers' invisibility practices and managerial justification. Organization Science 29, 2 (2018), 247–263.

[8] Callum Cant. 2019. Riding for Deliveroo: resistance in the new economy. John Wiley & Sons.

[9] Julien Cayla and Kushagra Bhatnagar. 2017. Language and power in India's "new services". Journal of Business Research 72 (2017), 189–198.

[10] Brendan Churchill and Lyn Craig. 2019. Gender in the gig economy: Men and women using digital platforms to secure work in Australia. Journal of Sociology 55, 4 (2019), 741–761.

[11] Emanuele Dagnino. 2016. Labour and Labour Law in the time of the on-demand economy. Labour and labour law in the time of the on-demand economy (2016), 43–65.

[12] Alex Davies. 2019. The World's Most Traffic-Choked Cities, Ranked. https://www.wired.com/story/worlds-most-traffic-choked-cities-ranked/

[13] Valerio De Stefano. 2015. The rise of the just-in-time workforce: On-demand work, crowdwork, and labor protection in the gig-economy. Comp. Lab. L. & Pol'y J. 37 (2015), 471.

[14] Sara Dickey and Kathleen M Adams. 2000. Introduction: Negotiating homes, hegemonies, identities, and politics. Home and hegemony: Domestic service and identity politics in South and Southeast Asia (2000), 1–29.

[15] Paul Dourish and Ken Anderson. 2006. Collective information practice: Exploring privacy and security as social and cultural phenomena. Human-computer interaction 21, 3 (2006), 319–342.

[16] James Duggan, Ultan Sherman, Ronan Carbery, and Anthony McDonnell. 2019. Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. Human Resource Management Journal (2019).

[17] Richard Edwards. 1982. Contested terrain: The transformation of the workplace in the twentieth century. (1982).

[18] Gaëlle Ferrant, Luca Maria Pesando, and Keiko Nowacka. 2014. Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes. Boulogne Billancourt: OECD Development Center (2014).

[19] Valérie Fournier. 1999. The appeal to 'professionalism'as a disciplinary mechanism. The sociological review 47, 2 (1999), 280–307.

[20] Kathinka Frøystad. 2003. Master-servant relations and the domestic reproduction of caste in Northern India. Ethnos 68, 1 (2003), 73–94.

[21] Vijay Govindarajan. 1988. A contingency approach to strategy implementation at the business-unit level: integrating administrative mechanisms with strategy. Academy of management Journal 31, 4 (1988), 828–853.

[22] Mark Graham, Jamie Woodcock, Richard Heeks, Paul Mungai, Jean-Paul Van Belle, Darcy du Toit, Sandra Fredman, Abigal Osiki, Anri van der Spuy, and Six M Silberman. 2020. The Fairwork Foundation: Strategies for improving platform work in a global context. Geoforum (2020).

[23] Kathleen Griesbach, Adam Reich, Luke Elliott-Negri, and Ruth Milkman. 2019. Algorithmic Control in Platform Food Delivery Work. Socius 5 (2019), 2378023119870041.

[24] Shalini Grover, Thomas Chambers, and Patricia Jeffery. 2018. Portraits of Women's Paid Domestic-Care Labour: Ethnographic Studies from Globalizing India. Journal of South Asian Development 13, 2 (2018), 123–140.

[25] Debra Howcroft and Birgitta Bergvall-Kåreborn. 2019. A typology of crowdwork platforms. Work, Employment and Society 33, 1 (2019), 21–38.

[26] Julie Hui, Kentaro Toyama, Joyojeet Pal, and Tawanna Dillahunt. 2018. Making a Living My Way: Necessity-driven Entrepreneurship in Resource-Constrained Communities. Proceedings of the ACM on Human-Computer Interaction 2, CSCW (2018), 1–24.

[27] Abigail Hunt and Emma Samman. 2019. Gender and the Gig Economy: Critical Steps for Evidence-based Policy'. London: Overseas Development Institute. https://www. odi. org/publications/11272-gender-and-gig-economycritical-steps-evidence-based-policy (2019).

[28] Lilly Irani. 2015. Difference and dependence among digital workers: The case of Amazon Mechanical Turk. South Atlantic Quarterly 114, 1 (2015), 225–234.

[29] Paula Kantor. 2002. Female mobility in India: the influence of seclusion norms on economic outcomes. International Development Planning Review 24, 2 (2002), 145–159.

[30] Katherine C Kellogg, Melissa A Valentine, and Angele Christin. 2020. Algorithms at work: The new contested terrain of control. Academy of Management Annals 14, 1 (2020), 366–410.

[31] Eliscia Kinder, Mohammad Hossein Jarrahi, and Will Sutherland. 2019. Gig Platforms, Tensions, Alliances and Ecosystems: An Actor-Network Perspective. Proceedings of the ACM on Human-Computer Interaction 3, CSCW (2019), 1–26.

[32] Anja Kovacs. [n.d.]. Reading Surveillance through a Gendered Lens: Some Theory.

[33] Kavita Krishnan. 2018. gendered discipline in globalising India. Feminist Review 119, 1 (2018), 72–88.

[34] Kristine M Kuhn. 2016. The rise of the "gig economy" and implications for understanding work and workers. Industrial and Organizational Psychology 9, 1 (2016), 157–162.
[35] Neha Kumar, Nassim Jafarinaimi, and Mehrab Bin Morshed. 2018. Uber in Bangladesh: The Tangled Web of mobility and justice. Proceedings of the ACM on Human-Computer Interaction 2, CSCW (2018), 1–21.
[36] Deborah Lupton. 2016. The diverse domains of quantified selves: self-tracking modes and dataveillance. Economy and Society 45, 1 (2016), 101–122.
[37] Saikat Maitra and Srabani Maitra. 2018. Producing the Aesthetic Self: An Analysis of Aesthetic Skill and Labour in the Organized Retail Industries in India. Journal of South Asian Development 13, 3 (2018), 337–357.
[38] Alexandra Mateescu and Aiha Ngyuen. 2019. Algorithmic Management in the Workplace.
[39] Santosh Mehrotra and Sharmistha Sinha. 2019. Towards higher female work participation in India: what can be done? (2019).
[40] Torin Monahan. 2009. Dreams of control at a distance: Gender, surveillance, and social control. Cultural Studies? Critical Methodologies 9, 2 (2009), 286–305.
[41] Sirisha C Naidu. 2016. Domestic labour and female labour force participation. Education 6, 7.6 (2016), 7–2.
[42] Martin Oelz, Uma Rani, et al. 2015. Domestic work, wages, and gender equality: Lessons from developing countries. ILO.
[43] Parvati Raghuram. 2001. Caste and gender in the organisation of paid domestic work in India. Work, Employment and Society 15, 3 (2001), 607–617.
[44] Uma Rani and Marianne Furrer. 2020. Digital labour platforms and new forms of flexible work in developing countries: Algorithmic management of work and workers. Competition & Change (2020), 1024529420905187.
[45] Aayush Rathi, Ambika Tandon, and Pallavi Bedi. 2019. Comments to the United Nations Human Rights Commission Report on Gender and Privacy.
[46] Noopur Raval and Joyojeet Pal. 2019. Making a" Pro":'Professionalism'after Platforms in Beauty-work. Proceedings of the ACM on Human-Computer Interaction 3, CSCW (2019), 1–17.
[47] Alex Rosenblat. 2018. Uberland: How algorithms are rewriting the rules of work. Univ of California Press.
[48] Alex Rosenblat and Luke Stark. 2016. Algorithmic labor and information asymmetries: A case study of Uber's drivers. International Journal of Communication 10 (2016), 27.
[49] Srila Roy. 2016. Breaking the cage. Dissent 63, 4 (2016), 74–83.
[50] Johnny Saldaña. 2015. The coding manual for qualitative researchers. Sage.
[51] Shruti Sannon and Dan Cosley. 2019. Privacy, Power, and Invisible Labor on Amazon Mechanical Turk. In Proceedings of the 2019 CHI Conference on Human Factors in Computing Systems. 1–12.
[52] Jacob Silverman. 2017. Privacy under surveillance capitalism. Social Research: An International Quarterly 84, 1 (2017), 147–164.
[53] Lekha Subaiya and Reeve Vanneman. 2016. The Multi-dimensionality of Development and Gender Empowerment: Women's Decision-Making and Mobility in India.
[54] Sharifa Sultana, François Guimbretière, Phoebe Sengers, and Nicola Dell. 2018. Design within a patriarchal society: Opportunities and challenges in designing for rural women in bangladesh. In Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems. 1–13.
[55] Aditi Surie and Jyothi Koduganti. 2016. The emerging nature of work in platform economy companies in Bengaluru, India: The case of Uber and Ola Cab drivers. E-Journal of International and Comparative Labour Studies 5, 3 (2016).
[56] Will Sutherland and Mohammad Hossein Jarrahi. 2017. The gig economy and information infrastructure: The case of the digital nomad community. Proceedings of the ACM on Human-Computer Interaction 1, CSCW (2017), 1–24.
[57] Frederick Winslow Taylor. 1911. The principles of scientific management. Harper & brothers.
[58] Julia Ticona. 2015. Strategies of control: workers' use of ICTs to shape knowledge and service work. Information, Communication & Society 18, 5 (2015), 509–523.
[59] Julia Ticona and Alexandra Mateescu. 2018. Trusted strangers: Carework platforms' cultural entrepreneurship in the on-demand economy. New Media & Society 20, 11 (2018), 4384–4404.
[60] Richard F Vancil. 1982. Implementing strategy: The role of top management. Division of Research, Harvard Business School.
[61] Jennifer K Wesely and Emily Gaarder. 2004. The gendered "nature" of the urban outdoors: Women negotiating fear of violence. Gender & Society 18, 5 (2004), 645–663.
[62] Alex J Wood, Mark Graham, Vili Lehdonvirta, and Isis Hjorth. 2019. Good gig, bad gig: autonomy and algorithmic control in the global gig economy. Work, Employment and Society 33, 1 (2019), 56–75.
[63] David Murakami Wood and Torin Monahan. 2019. Platform surveillance. Surveillance & Society 17, 1/2 (2019), 1–6.
[64] Suraj Yengde. [n.d.]. Apartheid in Fancy Dress.
[65] Shoshana Zuboff. 2019. The age of surveillance capitalism: The fight for a human future at the new frontier of power. Profile Books.

Received June 2020; accepted July 2020.