Old Logics, New Technologies: Producing a Managed Workforce on On-Demand Service Platforms

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ABSTRACT

We examine how two prominent food delivery platforms in India, Swiggy and Zomato, produce a managed digital workforce using a combination of algorithmic control and traditional labor management strategies. Our findings draw from interviews conducted with 13 food delivery workers and a critical discourse analysis of news media coverage. We found that the two platforms combine piece wage restructuring, granular datafication practices, and the use of benevolent language as neoliberal social control mechanisms. We find that this combination of technological governance and strategic managerial practices is a mutually constitutive method of control that restructures labor processes, extracts workers' compliance and consent, and prevents work disruption. We show that contemporary platform companies draw from strategies that have historically been deployed in industrial labor management. By examining how older and newer regimes of social control and exploitation are strategically intertwined in contemporary platform design, we contribute a historically situated understanding of platform labor that moves beyond dualistic interpretations of "traditional" labor management practices and more recent algorithmic modes of control. Our findings contribute to recent debates in tech labor and algorithmic control by examining how contemporary conditions of precarious work reactivate certain past forms of control and in doing so normalize extreme overwork, exhaustion, speedups, and injuries.

CCS CONCEPTS

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

KEYWORDS

digital labor, managed workforce, gig work, food delivery, piecework

1 INTRODUCTION

When Kamal woke up one morning in late July, 2020 at his home in old Bhopal, Madhya Pradesh, he had no inkling of the distressing news he was to receive that day. Although it has been two months into the pandemic, Kamal couldn't help but wonder at how drastically the world had changed around him. Last month, his entire neighborhood was locked down for 21 days because of a CoVID positive case found in the area. This meant that he was unable to report for work, or to buy groceries and other essentials. Despite these difficulties, Kamal was glad that unlike others who got laid off from their jobs during the pandemic, he still had a job. Throughout the pandemic, Kamal had continued to work as a food delivery worker with Zomato, one of the two leading food delivery startups in India. While continuing to work meant risking his health and wellbeing and that of his family members, he was glad that he at least had this option. There was also a certain pride associated with providing essential food delivery services during the pandemic and Kamal liked being called an 'essential worker'. But at the same time, he was disappointed in Zomato for doing the bare minimum in ensuring the safety of their food delivery workers.

As Kamal was finishing his morning chores and getting ready for his work, he received a call from his Zomato Team Leader, whom he referred to as "TL Sir" and who was responsible for overseeing and managing Zomato delivery workers in the area. Since the beginning of that conversation, Kamal could sense that this was not a routine check-in call. As the conversation progressed, Kamal grew concerned about what the Team Leader was trying to convey to him. Zomato was changing his pay structure, drastically reducing the rate per order from Rs 25 (USD 0.34) to Rs 15 (USD 0.20). In addition to this, Zomato was retracting several existing incentives and adding new ones. To Kamal, it was immediately evident that this new pay structure required him to do 3-4 extra deliveries for each level of incentive. However, the Team Leader tried convincing Kamal that the new pay structure was better than the last one. And also that irrespective of the pay structure, the basic principle of food delivery work remains the same - the more you work, the more you earn. As Kamal raised his voice to protest this change, he was informed that the decision was already finalized by the "central office" and that the change would be implemented in the next two weeks. With limited control over the situation, Kamal thought of his family that was dependent on his income and the last two months' rent that was still due because he was unable to report for work. Given that he already works for 12-14 hours everyday to make ends meet, he wondered what putting in extra time would entail? [1]

Kamal's experience was not an isolated incident. In the summer of 2020, amidst the ongoing CoVID crisis, approximately 470,000

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[1] Reconstruction based on interviews with Kamal and other food delivery workers during the summer of 2020

food delivery workers, contracted by India's two food delivery giants Zomato and Swiggy [43, 56], received similar phone calls or simply a notification on their app informing them about the reduced pay structure. While Zomato had been implementing some of these changes gradually since 2019, in June 2020, Swiggy suddenly announced a reduction of workers' order fee by 133% (From Rs 35 to Rs 15/USD0.49 to USD 0.20) [1].

Within a few days, workers' shared experiences of disbelief, bewilderment, and betrayal morphed into a dispersed nationwide strike of app-based food delivery workers to protest these changes. Protests were carried out across major Indian cities like New Delhi, Mumbai, Bangalore, Chennai, and Hyderabad but the organizing also spread to smaller cities like Jaipur, Bhopal, Raipur, and Nagpur. For a week in June 2020, both Zomato and Swiggy workers across the country organized pickets and small sit outs at prominent city locations or outside their local Zomato/Swiggy offices, logged out of their apps, and refused to labor. While the peaceful protests gathered significant media attention, they came to a sudden halt after a week when the protesting workers found that their work IDs were being blocked by the two food delivery platforms, meaning that they would no longer be able to work. A 'faceless' app-based boss coupled with the fear of unemployment in an already precarious and unprecedented time meant that the workers had limited bargaining power and were forced to resume work without much negotiation.

The experiences of Kamal and the food delivery workers who participated in the strike reveal how efforts of collective resistance, organizing, and agency are stifled by ongoing and increasing conditions of precarity and control that force workers to return to unfair and unsafe labor environments. Yet, the nationwide strike also demonstrates that, even in the face of such precarious working conditions, food delivery workers continue to organize, protest, and refuse to labor. In this paper, we examine the intertwined labor management strategies used by two food delivery platforms in India, Swiggy and Zomato, and analyze how those strategies force workers to endure conditions of extreme overwork and exhaustion despite their dissatisfaction and attempts to protest and resist. We conducted in-depth interviews with 13 food delivery workers in India and a discourse analysis of 82 news articles to better understand both the management strategies used by these two major food delivery platforms and workers' responses to those strategies. By analyzing workers' experiences of labor management processes in tandem with the popular discourse on platform labor, we contribute a multifaceted study on contemporary gig work in India and show how rapidly growing platforms within this specific context extract worker compliance and normalize overwork.

Our analysis builds upon prior work that has shown the connections between gig work and more traditional 20th century labor management strategies such as Taylorist scientific management and kaizen production practices of continuous improvement [11, 18, 20, 30, 65]. Our study uniquely expands upon this existing research by examining how the confluence of technological and social control operate within the context of on-demand service work in India. By conducting a sociomaterial analysis of the two food delivery platforms during the CoIVD-19 pandemic, our findings highlight how the confluence of certain kinds of technological

decision making and strategic managerial practices reconfigures management to control workers during a time of crisis.

The findings from our study contribute to a historically situated understanding of on-demand service platforms that moves beyond dualistic interpretations of traditional labor management practices and modern mechanisms of technological control as two distinct methods of labor exploitation [11, 20]. Rather than a mirroring of shop floor management, on-demand service platforms restructure work through a *combination* of algorithmic control and traditional neoliberal social control mechanisms. Importantly, examining the distinctive confluence of modern mechanisms of technological control and traditional labor management practices sheds light on the structural processes that produce precarious work environments where individualism is valued and extreme exhaustion, speedups, and injuries are normalized.

2 RELATED WORK

We situate this study in the growing HCI literature on platform labor and studies of labor management in industrial sociology, anthropology, and feminist and postcolonial labor studies.

2.1 Automation of Labor Management

A growing body of work in CSCW research and HCI broadly has done the important work of shifting the focus from a techno-optimistic narrative of the gig-economy to the exploitative labor management regime of crowd work and on-demand service platforms. This line of scholarship has highlighted the data driven and algorithmic management strategies [e.g., 35] that have (re)shaped the labor process of on-demand service work including work assignment, communication, task completions, and constant monitoring of workers [e.g., 5, 9, 31, 53]. Studies of algorithmic management have identified acute datafication and surveillance, lack of transparency and accountability of algorithmic systems, penalties based on realtime data responsiveness, and bias and discrimination of the automated systems as issues that contribute to workers' exploitation and vulnerabilities [30, 39]. Other studies of digital labor have also importantly shown the many ways in which workers exercise their agency by resisting and responding to specific forms of algorithmic surveillance and management they are subjected to [13, 16, 58, 64].

An algorithm or Artificial Intelligence (AI) centered understanding of these new business logics has unpacked the technological arrangement of work as creating new modes of labor exploitation. These works spotlight the information and power asymmetries produced by data-driven automation as the new way of exerting power and control in producing a managed labor force [53, 63, 67]. This is an important caveat as such non-transparent, opaque, faceless algorithmic systems that lack accountability along with limitations of geographical co-location pose new forms of challenges to labor resistance and organization.

While the scale of automation made possible by technological advances may seem new, prior work has connected the contemporary managerial strategy to automate and atomize work to older strategies of labor management. Alkhatib and colleagues [18] historically ground piecework in on-demand service work and allude to similarities of trends like work decomposition, distribution, and

payment with popular work arrangements from the 20th century. Through a high level analysis of historical case studies of piecework, they argue that the contemporary arrangement of on-demand gig work can learn from the historical instantiation of piecework to avoid worker exploitation in the future. Similarly, in their thorough review of interdisciplinary research, Kellogg and colleagues [30] theorize that algorithmic control at work primarily operates through the "6 Rs". *Restricting and recommending* to direct workers, *recording and rating* to evaluate workers, and *replacing and rewarding* to discipline workers. This scholarship broadly highlights how contemporary algorithmic control uses a combination of technical control (use of organizational technologies for direct supervision), bureaucratic control (organization's formal procedures of rules), and rational control (appealing to workers' self-interests) to obtain desired behavior from workers and outline important future research agenda.

While the two studies mentioned above point to social control tactics of algorithmically managed work more generally, Veen and colleagues [65] through their analysis of food delivery platfroms in Australia, draw upon labor process theory to interrogate the "multifaceted and more than algorithmic management" of the platforms which they define as a process with three distinct traits: 1) constantly surveilling workers, 2) constraining workers' choice through information asymmetry, and 3) obfuscating the nature of workers' performance evaluation [65, p. 388]. All three of these characteristics are a combination of technological and non-technological managerial strategies, or what they define as "more than algorithmic management", that together lead to (re)organization of work that further adds to workers' precarities. At this point, it is important to note another important research by Kusk and Bossen [34] with Scandinavian food delivery workers or 'couriers'. Their work challenges the dominant understanding of algorithmic management as being despotic, controlling, or exploitative. Kusk and Bossen show that algorithmic management of food delivery work can be *lenient* as well. However, in making this claim the authors stressed on the importance of the role that existing contexts such as local labor market realities and policies play in how workers experience platform based algorithmic management. While workers' experience seems fairly positive in the Scandinavian case, Kusk and Bossen advocate for a balanced approach to study algorithmic management of on-demand service platforms which also takes into account other social factors like local labor market conditions, societal structure, and existing labor protection policies.

In addition to these important scholarly contributions, we align with a body of work that highlights how algorithmic mechanisms of control are but one part of larger contemporary neoliberal capitalist despotism at play. In this regard, our work is adjacent to arguments put forward by Christain Fuchs [20], Ursula Huws [23], and Allesandro Delfanti [11] who reposition theories of values and labor process traditions (like Marxism, Operismo) and assert that digital capitalism relies on traditional forms of capitalist accumulation and neoliberal despotism that is further augmented by new technical rationalities.

2.2 Neoliberal Techniques of Labor Management

One of the most influential theories of workflow management for improving productivity and worker efficiency has been Scientific Management or Taylorism. Frederick Winslow Taylor introduced the principles of *Scientific Management* in the late 1800s with manufacturing industries where he devised strategies and principles of monitoring workers by breaking down their workflow tasks into standard measurable bits [59]. Driven by the objectives of attaining productivity and efficiency, he introduced new measures to standardize work through decomposition and deskilling [10, 46]. A damaging effect of this restructuring was a significant loss of workers' autonomy and bargaining power. While Taylorism as a management theory was mostly outmoded by the 1930's, ideas like profit maximization, efficiency, rationality, usability, productivity, monetary benefits continued on in future modern management regimes. For example, theories of advanced capitalism such as Fordism and *kaizen*[2] or lean production continued to be driven by Taylorist rationales of standardization, productivity, efficiency, and usability [32, 40, 62, 66].

With the onset of globalization, management regimes underwent a neoliberal restructuring of economic relations along with a larger shift in governance practices. Sociologist Nikolas Rose [51, 52] proclaims that a major change of neoliberal governance was a shift from the *a priori* social political thought to the construction of subjects as individual units of governance. The language of globalization used the rhetoric of freedom and liberty and positioned individuals as personally responsible for their own well-being and welfare. In this new regime, the workers are entrepreneurial individuals who uphold neoliberal values of liberty and freedom as opposed to belonging to a social class [e.g., 22, 37, 44]. Thus, the neoliberal restructuring of economic relations shifted labor management processes from a top-down Taylorist approach to a form of control that employs the language of self-development to individuate workers and make them feel personally responsible for ensuring productivity and efficiency. Ultimately, the promise of self-development and individual responsibility enables a form of control that appears bottom-up, participatory, and even voluntary [7, 17, 51].

Furthermore, by instrumentalizing the rhetoric of freedom and individualism, neoliberal labor managerial processes depart from a Hegelian 'master and slave' narrative of exercising absolute control by blurring the boundaries between exploitation and compliance. The role of capital now is not a direct (but no less violent) form of power rooted in mobilizing workers' feelings and hopes by cultivating promises of happiness, the good life, and a better future [36, 38]. Industrial sociologists have extensively studied how this neoliberal social control over workers advances the proletarization of work itself, way beyond the shop floor and seeping into other corners of people's lives [6, 19].

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[2]Kaizen is a Sino-Japanese term that means "change for better" or "improvement". It is now a management strategy employed in assembly line work and supply chain management that aims at continuous improvement without generating any waste. Kaizen was first practiced in Japan and was pioneered by Toyota Motor Corporation. Based on the Kaizen ideology, Toyota corporation developed a set of 14 principles for lean management that eliminates waste in the production cycle.

In our research with food delivery workers in India, we are particularly interested in understanding how workers who perform platform labor end up complying, often ambivalently so, with the neoliberal logic of meritocracy by monitoring their own productivity and efficiency. To do this, we draw from the in-depth analysis of the shopfloor piece-rate system and labor (re)organization by sociologist Michael Burawoy in his 1978 book titled *"Manufacturing Consent: Changes in the Labor Process Under Monopoly Capitalism"* [7]. Through ethnographic engagement, Burawoy studies how the specific organization and operation of the piece rate system becomes akin to a 'game' for the workers. Here Burawoy's use of the term "game" takes on a political function and digresses from game's usual connotations with fun, frolic, and recreation. Rather by using 'game' as an organizing analytic, Burawoy implies the fabrication of a 'challenge' by management that generates eagerness and willingness among the workers to continue to work. Burawoy identifies that the workers are driven by varying motivations (economic and psychological) to participate in the piece-rate system and this motivation makes workers active agents in ensuring productivity and efficiency on the shopfloor.

However, this is not to say that the workers are not aware of their own labor exploitation by management. Instead the specific restructuring organizes the shop floor culture and reorders worker interactions in a way that disperses hierarchical conflicts with the management, and reduces their collective bargaining power significantly by individuating the workers. What this system produces is *a form of exploitation that does not look like exploitation.* Contrary to the promise of work flexibility and autonomy of workers, the reality of the piece-rate system in Burawoy's factories atomized and individuated the workers, weakening their associational power. As we discuss in our findings later, similar patterns of worker interactions and breach of the promise of flexibility and autonomy surface in our research with food delivery workers. Burawoy's work provides us with the analytical tools to understand that more than exploitation, it is the piece-work's 'game' that sustains Taylorist objectives of productivity and efficiency especially during a time when top-down management strategies like Taylorism were said to be in decline - like in the case of algorithmically mediated food delivery work.

3 METHODS

Our findings draw from semi structured interviews conducted with 13 food delivery workers in India based in different cities and a critical discourse analysis of news media coverage related to the two prominent food delivery platforms, Zomato and Swiggy.

3.1 Critical Discourse Analysis

Critical discourse analysis (CDA) focuses on the relationship between discourse and other social elements such as power, beliefs, and values [15]. To guide our analysis, we used Fairclough's three-dimensional framework for studying the relationship between discursive events (micro-level), discursive practices (meso-level), and social structures (macro-level) [29]. At the micro-level, we analyzed online news media articles as discursive events and focused on reports related to the rapid changes taking place in the online food delivery space in India during the pandemic. We collected the news

articles using Google Keywords alerts and focused on news related to Zomato and Swiggy. Authors' decision to focus on two different companies as opposed to one was motivated by factors like: the two companies offer the same service fundamentally, compete on offers, deliver from the same restaurants, and most importantly for this research - many delivery workers work with both of these platforms and are impacted by changes made on either of the platforms. Additionally, because of their prominent market share and sizable operational area in India, Zomato and Swiggy dominate the online food delivery space in India and set precedents for the market. Zomato operates in 556 Indian cities [2] and Swiggy in 500+ Indian cities [24].

The first author received daily email alerts between April 5th, 2020 to May 31st, 2020 related to the following English keywords: "Zomato+India", "Swiggy, Food delivery executive+India", "Food delivery boy+India". The alerts yielded approximately 448 total English language news articles. To scope this data, we chose to include news articles from three national dailies - Outlook India, The Economic Times (ET), and Livemint. We chose these three publications because of their wide readership, journalistic practices, and consistent reporting on food delivery platforms. After this purposive sampling, our final corpus of news articles included 82 news articles. The breakdown of these articles can be found in Table 1. The goal of the micro-level discourse analysis was to gain insights on the content, vocabulary, and use of rhetorical devices in the news articles. Given that the focus of this study was to assess the shifting managerial strategies of the two platforms by studying the changes made by them, the authors included news articles that discussed 1). news about the changes made to the food delivery platforms that specifically affected the workers, like changes to the piece rate system and incentive structure, 2). news coverage about worker's protests and negotiations with the food delivery companies, 3). food delivery platforms' response to workers' strikes. We specifically analyzed news and journalistic avenues because they provided us current and up-to-date contextual information about the platforms. Given COVID-19 restrictions on in-person research, we used the analysis of news media to gain contextual information that could inform the design of the interview protocol and participant interactions. For instance, analysis of the news media helped the first author develop interview questions that focused on recent reported changes to the pay rate structure. While the majority of our findings focus on participant interviews, we also include data from the news media analysis when the data is closely linked to a topic or perspective shared by participants in an interview such as when workers described being labeled "essential workers" by the platform discourse in the news media. We excluded news articles that focused on platform earnings, performance, and fundraising efforts. While news about their financial status is important, it was outside the scope of our study.

At the meso-level, we further analyzed the 82 news articles by considering how the discourse was produced and disseminated. This included conducting further research on the three national dailies to understand their audience reach, target audiences, regional specificity, journalistic reputation, and coverage consistency. The goal of the meso-level discourse analysis was to understand how national news on food delivery platforms circulated in India. At the macro-level, we analyzed discourse related to the broader

social and political context of platform labor and longer histories of labor management in India. To do this, we engaged with prior work on labor management, labor automation, and worker organizing in HCI, sociology, anthropology. The goal of this level of analysis was to integrate insights across the three levels (micro, meso, and macro) to develop a deeper understanding of the relationship between the discourse under examination and sociomaterial realities described by the food delivery workers who were interviewed.

3.2 In-Depth interviews

3.2.1 Interviews Participants: Between May - August 2020, the interview participants were recruited through a small labor collective based in Bhopal, Madhya Pradesh and through YouTube. The labor collective played a crucial role in during the recruitment phase but did not play any role in the study design, data collection, or analysis of this the research. Interviewees recruited through YouTube uploaded regular content about food delivery work and were seen as leaders in the field. The YouTube channel was a way for these leaders to share their experiences of working with Zomato or Swiggy and sharing advice about navigating the system with their subscribers. The first 3 interviewees recruited through the labor collective referred us to other additional workers in their areas. A skew towards food delivery workers from Bhopal is a reflection of the snowball recruitment process.

At this stage, it is important to note that the labor collective's support to this research project was motivated by their ongoing efforts to visibilize the more subtle ways in which food delivery platforms' design contributes to workers' issues. We highlight some of these lesser noticeable strategies of labor control and management in our findings below. During the initial discussions with the first author, the labor collective communicated that analysis from this study will help them in planning their interventions and advocacy efforts with the food delivery platforms. Further, the findings will also help the labor collective in explaining to the workers how platforms' design contributes to existing work discrepancies they experience. Based on these initial conversations, the authors agreed to share research analysis and the final research paper with the labor collective to aid their advocacy efforts.

All the interviewees identified as men. A possible explanation for this is how food delivery work maps along the lines of gendered division of labor in India where men are dominant in areas of work that require staying outside the home for a longer duration of time and (as we show later) being in a state of constant ready-ness on their motorbikes. Despite presenting itself as an attractive opportunity, food delivery work remains highly gendered, dominated by young men, as it dictates societal norms around who can meet the demands of the work and succeed.

Out of 13 interview participants, 10 participants worked with Zomato and 3 participants worked with Swiggy. However, 6 participants informed us that they switched between Zomato and Swiggy and during the course of the research we learnt that app-switching is a common practice among food delivery workers.

Recruitment of interview participants turned out to be especially challenging a task for various reasons that includes 1) inability to conduct in-person research due to the ongoing COVID crisis, 2)

workers' limited access to technological tools for remote interviewing and, 3) workers' suspicion that the interviewer was a platform employee assessing their response and feedback. It was for these reasons that the first author maintained contacts with 9 of the interview participants for follow-up interviews and clarification till December 2020. Four such follow-up conversations were held with each of the nine participants after major announcements by the two food delivery platforms, or workers' protest response, or for the purpose of clarification. These conversation lasted between 20-40 minutes each and as described in the data analysis section below, similar to the main interviews - these were recorded, translated and transcribed, and coded by the first author.

We have used pseudonyms in this paper to protect workers' identities.

3.2.2 Data Collection: This study was reviewed by a university human subjects research unit and approved as an exempt study. Given the workers' precarious positions, the research participants faced potential reputational and financial harms from speaking honestly about their experiences and working conditions. In order to mitigate these risks, we developed an informed consent process in which the first author discussed potential harms with participants, highlighted the option to speak off the record during interviews, and solicited feedback in determining what might be potentially identifying for purposes of anonymization. All research participants were reimbursed Rs 500 for each hour of participation in the research study. This amount was arrived at to adequately compensate for worker's wage loss for half a day and cost of internet for WhatsApp calls.

The first author conducted, translated, and transcribed the interviews. All interviews were recorded and conducted via WhatsApp audio calls because the workers lacked access to devices like computers and tablets for video conferencing and WhatsApp was their preferred method of communication. All interviews were conducted in Hindi and lasted approximately 60 minutes. Interview questions covered the following main areas: 1) description of workers' overall work experience and of platforms' managerial practices, including details of what a typical work day looks like and the kind of regular interactions they have with platforms 2) description of changes made to their pay structure and incentives by the two platforms, 3) a detailed description of their work experience after the change in pay structure, including details about change in overall income, algorithmic work allocation, changes in daily work time, changes in interaction with the platform. Following each interview, the interview protocol was iteratively refined to reflect most pertinent issues and concerns of food delivery work. An example of this is modifying the interview protocol to include an inquiry about their experience of algorithmic allocation of order after the first two interviewees pointed to observing a change in algorithmic order allocation based on workers' different pay structures.

After the first round of interviews, the first author engaged in follow-up conversations with 9 of the participants that ranged from 15-30 minutes and occurred via WhatsApp - a mode of communication that was integral to these workers' daily lives. The informal follow-up interviews mainly occurred after major events and changes in the online food delivery space in India, such as the nation wide strikes in August 2020 and major statements issued by

Table 1: Breakdown of 82 news articles analyzed from three national dailies - Outlook India, The Economic Times (ET), and Livemint

Month	Publications			Total
	Outlook India	Economic Times (ET)	Livemint	
April, 2020	13	31	10	54
May, 2020	6	14	8	28

Table 2: Details of research participants interviewed with a breakdown of the food delivery platform they worked for, their work experience, and their location of work

Participant (pseudonyms)	Food Delivery Platform	Work Experience	Location
Rajesh	Swiggy	2 years	Kolkata, West Bengal
Shahid	Zomato	1.5 years	Bhopal, Madhya Pradesh
Ramesh	Zomato	2 years	Bhopal, Madhya Pradesh
Ashu	Zomato	2.5 years	Bhopal, Madhya Pradesh
Akash	Zomato	2 months	Jind, Haryana
Rahul	Swiggy	1.5 years	Bhopal, Madhya Pradesh
Prashant	Zomato and Swiggy	3 years	Kolkata, West Bengal
Mehmet	Zomato	2.5 years	Bhopal, Madhya Pradesh
Afshan	Zomato	2 years	Bhopal, Madhya Pradesh
Kalim	Zomato	1 year 10 months	Bhopal, Madhya Pradesh
Arno	Zomato and Swiggy	1.5 years	Bhopal, Madhya Pradesh
Farhan	Zomato	2 years	Bhopal, Madhya Pradesh
Bhanu	Swiggy	3-4 months	Navi Mumbai, Maharashtra

the two food delivery platforms following the strikes. By maintaining communication with the participants, the first author was able to collect data across time that captured the participants' evolving perspectives on the shifting nature of digital labor.

3.3 Data Analysis

The first author was responsible for coding the interview data, follow-up conversations, and the final corpus of news articles using an open-coding process that included developing descriptive codes and memoing. Grounded theory analysis [41] was employed to analyze the interviews, news reports, and memos. Interview transcripts were coded twice. In the first round of coding, an open coding method was used where the codes emerged from the data (for example, "work experiences", "work time", "order allocation", "social control", "algorithmic management", "Team Leader"). In the next round of coding these primary themes were coalesced thematically (for example, "Discontent", "Work restructuring", "Challenges", "Sensemaking"). The interpretive claims in this paper are based on these agreed upon themes that arose inductively from the data and also agreed upon understanding of key concepts such as piece rate system, game, precarity, etc. After application of the codes, all authors conducted thematic analysis as a collaborative process. In addition to analyzing the interview themes, the authors also conducted a cross-thematic analysis that compared insights from the critical discourse analysis and interviews. The agreed upon themes were used to create the interpretive claims presented in this paper. At the end of data analysis, research insights were presented to the labor collective that helped the first author during the recruitment phase.

3.4 Positionality Statement

The research team included a graduate student and faculty members from a United States based educational institution. All the authors identify as women. The first author was primarily responsible for data collection and initial analysis. She is a graduate student and an Indian national with experience in feminist methods and analysis through long term engagement with feminist human rights organizations in India. This work background helped her establish contact with different labor organizers and collectives based in India during the recruitment phase of the research. While the first author is a cultural insider, she belongs to an upper class and caste background. And while there is a clear difference between the positionality of the first author and the participants in terms of their class, it is difficult to discern any caste difference without having adequate discussion about it with the participants. Most participants of this research identified as Muslims which is a reflection of the ethnic makeup of the working class in the city of Bhopal where majority of the participants hail from. During the interviews, it took the participants a while to trust the first author possibly due to her class background. Participants expressed fears of the first author being a company representative but reaching out to them through a known and trusted labor collective they were associated with helped mitigate those trust issues. The second and third authors played a crucial role in the data analysis and writing phase. They are both faculty members based in the United States. Given the cultural context of the study, they both identify as cultural outsiders and were mindful of how knowledge claims were produced in the study. For example, they were sensitive to power dynamics

between co-authors and open to learning from participants' experiences. They both also have experience conducting collaborative research in HCI that examines the complex relationships between race, gender, geopolitics, and technology.

4 FINDINGS

In this section, we first interrogate the promise of flexibility, freedom, and independence made by the platforms when they were first introduced. Next, we do an in-depth analysis of the specific changes made to the workers' piece rate system during the pandemic and how those changes exacerbated workers' precarities and intensified work during a historical moment of global crisis. Lastly, we analyze how the food delivery platforms strategically used benevolent language to discipline workers, extract compliance, and control the discourse surrounding the dangers of working during the pandemic.

4.1 The Promise of Flexibility, Freedom, and Independence

As the first few food delivery apps in India, Swiggy and Zomato were tasked with trying to recruit and hire delivery workers to create their fleet. In the beginning, both the food delivery platforms offered high pay and created a rewarding incentive structure to lure workers. This proved to be an advantageous strategy for the two food delivery platforms given the reality of the surplus labor condition of India's labor market. Economist Kalyan Sanyal [55] ascribes India's labor surplus to the postcolonial capitalist development process and describes the result as a "need economy" that is characterized by the "surplus labor" population or the "reserve army."

The "reserve army" are people who reside on the margins of capitalist development in India but are surrounded by signs and symbols of globalization and modernization and are awaiting the realization of the promise to eventually be absorbed in the economy by the trickle down effect of capitalist development [28, 54]. Sanyal & Bhattacharya [55] call this process 'labor exclusion' - which is a form of dispossession without proletarianization, where in the hopes of future high paying jobs, workers often opt for "voluntary unemployment" [54] or 'hang around' and do "timepass" by taking gigs and temporary jobs in the sub-economy or the informal sector [28]. Shahid, who has been working as a food delivery worker with Zomato for a year, explains why he joined the platform in the first place:

> "I had joined because I wasn't getting any appropriate job. Also, Zomato was offering good money at the time and not a lot of hard work was involved."

Contemporary food delivery work in India illustrates how people are rendered to become surplus workers. It had a low barrier to entry, promised (at first) a high paying job, and lured workers by being associated with a reputed tech company. Ramesh, who has been working with Zomato for the last 2 years gives the following reasoning for joining food delivery work:

> "I joined Zomato because I did not have any job at that time and Zomato had just launched. I also found out that it was possible to earn more [as compared to

the previous job] without putting in too much effort and time. In the beginning, we used to get Rs 35 [USD 0.49] for completing every order and on top of that we used to earn milestones [incentives]... That used to be a lot and we used to earn more by putting in a small amount of time."

Food delivery work appeared as especially lucrative for the educated, urban, "surplus labor" population who are tech savvy but were either unemployed or underemployed in the informal sector. Specifically, labor exclusion played an important role in the recruitment drive of food delivery workers. We found that prior to joining food delivery work, the workers were either voluntarily unemployed, managing small businesses and shops under strict supervision of the owners, working as skilled mechanics, or answering calls as low paying call center employees for local Business Process Outsourcing (BPO) firms. In all of these roles, workers were offered small payments that were much below the value of their labor and/or were bound by informal negotiations and terms of employment. Furthermore, the workers were always under strict supervision and had little to no flexibility or freedom in defining their work or leisure time.

In contrast to these jobs, app based food delivery work seemed like a much more lucrative option that promised higher pay, no constant in-person supervision of leisure time, and flexible working hours. These jobs were offered by reputed startups and promised pay that was higher than entry level government jobs, seemingly giving workers a chance at upward mobility [50].

Food delivery work also seemed pretty straightforward. Workers received an order on an app, which was collected from the restaurant, and then delivered to the customer at a specified location. The entire process of food delivery work was also digitally mediated in real time through an app. The workers, in theory, could log-in and log-out of the app at any time they wanted and cancel orders as per their convenience. The workers were also paid on the basis of piecework, they were reimbursed and incentivized according to the number of orders they completed in a day. Therefore, based on personal income goals they could, in theory, decide the number of orders they wanted to complete and earn a suitable income.

The vision of work being offered by food delivery platforms in India thus appeared to offer a very specific form of flexibility, freedom, and independence to the workers. Given this context, food delivery work was never just a stopgap arrangement for the workers. It was in some sense, the realization of the promise of finally being included in the capitalist development process.

4.1.1 Overwork as a Precondition for Economic Gain. Rahul - a 26 year old food delivery worker from Bhopal who had been working with Zomato for 1.5 years - casually stated during the interview that his average daily work time was 15 hours. Rahul shared that he did not think that 15 hours of daily labor was overwork. He instead saw overwork as an *opportunity* to be *more* productive and earn more. Rahul's views on overwork aligned with the very promise of opportunity to earn *more* and upward mobility that was sold to him at the time of his recruitment. Rahul explained:

> "... at that time [recruitment] it was told to us that you will be paid for the number of hours that you put in. If you put in more hours then you will earn more,

if you put in a lesser number of hours then you will earn less."

For Rahul, the longer work hours translated into a higher probability of him being allocated orders which meant higher daily income. These beliefs illustrate the allure of a piece-rate system as a form of seemingly voluntary control that links workers' economic livelihood to an ever increasing extraction of labor.

In the case of Zomato and Swiggy, the allure of the piece-rate system is closely tied to the possibility of making extra income beyond the Rs 35 (0.50 USD) workers receive as a base pay for every order delivery. Workers also had the possibility to make extra money if they were able to meet specific daily delivery targets or what the workers described as *milestones*. The milestones and associated incentives were ascending in order and had an upper limit. For instance, upon completing 10 orders, workers would receive an additional incentive of Rs 150 (USD 2.14). This meant that the more milestones workers achieved in a day, the higher their daily income was. Therefore, workers approached the work not in terms of delivering a specific number of orders but in terms of meeting these milestones. According to our participants' interview responses, deciding which daily milestone to achieve was a personal negotiation based on one's needs, family requirements, expenses, and socio-economic standing. Workers set up their own personal daily milestones and were able to earn anything between Rs 35,000 to Rs 50,000 (USD 500 to 715) per month which was a high jump from their older jobs.

Given this structure, the workers reported that the primary factor that drove the work process was meeting these daily milestones. The time they spent working and strategizing about daily milestones was a secondary concern. Overwork was thus built into this specific form of incentive-based piece-rate system. Achieving daily targets became a game where workers adopted different strategies to manipulate this work arrangement. Workers described how each day felt like a new and all-consuming chase that shaped worker interactions and simultaneously created an individuated workforce.

The process of individuation was apparent when Akash, a 28 year old Swiggy delivery worker from Jind, Haryana was questioned about workplace friendships. He expressed how conversations with other (stranger) food delivery workers mostly revolved around finding out other's order completion status:

"There is barely any time to make friends.. Yes, if we meet someone at a restaurant then we sometimes ask them things like - how many orders did you complete today?.."

In studying the changes to shop floor culture and management in 1975, Burawoy [7] noticed a similar trend of overwork and individualism among the workers. He found that workers behaved not as members of a historicized social class but as individuals responsible for their own welfare, who took it upon themselves to overproduce and overwork. Individuation of workers, weakening of workers' associational power, dispersion of hierarchical conflict, and workers' compliance are also features of food delivery work. It is for these reasons that exploitation in food delivery work appeared self-driven and voluntary and thus was a non-issue for the workers.

The seemingly self-driven nature of the work allowed the workers to perceive overwork as a 'game,' which Burawoy [7] describes as the fabrication of a 'challenge' by management that generates eagerness and willingness among the workers to continue to work. Food delivery workers willingly put in additional work hours as they would often find the 'game' of achieving targets to be exciting and financially rewarding. For instance, Shahid, one of Zomato's food delivery workers from Bhopal who had been working with the platform for a year justified his long working hours as voluntary and a reprieve from 'boredom'.

"Work wasn't much.. The company never forced us to work this much but I would put in those many hours on my own. The company asks for only 12 hrs of work. I used to do it for myself because I wasn't able to do anything else with my time at home and I used to get very bored. There I used to spend my time well and also earn for it."

In Shahid's case, overwork was a respite from his otherwise "boring" schedule and was even voluntary. He also justifies it by explaining how he is complicit in his own overwork and that the platform company has nothing to do with creating this structure that normalizes overwork. We find that it was exactly the lure of freedom, flexibility, and independence promised by the food delivery platforms that made workers temporarily tolerate situations of overwork and overproduction.

However, tolerating overwork does not mean that the workers are not aware of their own labor exploitation by management. The interviewees in our study reported using strategies to gain more for their labor. For example, wanting to meet their daily delivery quotas, workers employed strategies to trick the system. This included trying out different locations assumed to be algorithmically allotted a higher number of orders, speed driving to complete as many orders as possible during peak delivery hours, and working well beyond midnight to secure sufficient orders for the next day's target chase. Yet, in order to succeed (and win the game), all these strategies required workers to be in a state of constant ready-ness – on their bikes and constantly on call. Thus, what goes unnoticed in this all-consuming chase is that this form of work structure exacerbates feelings of anxiety, inviduates workers, and also paradoxically increases the time that goes unremunerated [14].

4.2 Producing Precarity: Normalizing Speedups, Injury, and Conflicts Through Piece Rate System

Given the precarious work conditions many food delivery workers faced in their previous jobs, the lure of flexible hours, higher pay, and corporate recognition initially made food delivery work appear attractive. However, things changed drastically in the summer of 2020 when both Swiggy and Zomato reduced workers' overall pay structure. While Zomato's base pay came down to Rs 12 (USD 0.16) per order (from Rs 25 or USD 0.34), Swiggy's dipped to Rs 15 (USD 0.20) per order. This change was abrupt as some workers only received a notification on their app about the pay change and some others were informed of this change by their local hub managers. No public statements were made about this change by the two platforms until the workers went on a strike to protest

this wage change in August 2020. The overall pay structure also became highly complex when the incentive structure changed from a 'number of orders' model (where workers were incentivized on the number of orders they deliver in a day) to the 'earnings model', where they were now incentivized on their total earnings - thus forcing them to deliver more orders at longer distances [49]. In the following subsections, we discuss how these changes to the piece-rate system functioned as managerial strategies that reorganized work to ensure non-disruption and worker compliance.

4.2.1 Extracting Compliance Through Performative Service Work. Workers on Zomato first experienced a change in payment structure in the second half of 2019 when their base pay was reduced from Rs 35 (USD 0.47) per order to Rs 25 (USD 0.34) per order. However, there remained a possibility of earning an additional Rs 5 (USD 0.067) by ensuring a five star customer rating. While this particular change might seem small, it brought a shift in how the work was structured in two significant ways. First, as we show below, the focus on the five star customer rating created a service expectation that made the burden of producing emotional, affective, and un-compensated physical labor associated with platform work solely the workers' responsibility. Customer's only human interaction in this automated service provision was with the delivery workers who were in-turn rated and assessed by the customers for the kind of service they received. Customers' highly personal service expectation became the basis for rating delivery workers who engaged in performative service work like greeting the customers, detecting their mood, and pacifying conflicts.

For example in the quote below, Farhan, a college student and a part-time delivery worker with Swiggy complained that he sometimes *had* to climb several flights of stairs to deliver food in apartment buildings at the customer's request that left him exhausted.

> "... suppose if the app shows an address for the ground floor but if the customer asks us to bring the food to the top floor then we have to deliver the food there. We do not say no to the customers or argue with them for anything, because the customers give us a rating. We make sure that the customer gets the food in time. We're never rude to the customer. All of this feedback reaches the company [food delivery platforms]. That is how the company is able to monitor the quality of our work and we get our incentive."

Farhan feared that if he did not comply with the customer's request then he would lose out on the five star rating and also the incentive of Rs 5 (USD 0.067). In order to earn that extra Rs 5, workers now had to perform uncompensated service labor that reflected the platforms' professed ethos of care and service.

Second, similar to other platform work [53], managerial roles of evaluating workers shifted to the customers who rated the workers as per their own subjective interpretation of what constitutes good service. Not unlike the strategies of shop floor management that Burawoy [7] describes, the workers became increasingly isolated and began operating as individuals driven by their individualized ratings and productivity. Many of the workers we interviewed began "chasing speed," which they described as a combination of reducing their individual delivery times and increasing their number of deliveries per day. Shahid, a Zomato worker in Bhopal,

explained how the changed pay rate system and reduced income materialized to in his day-to-day work:

> "For us we have to focus on speed now. The sooner we are able to deliver, the more we will be able to earn. Otherwise, we will miss out on the incentive."

A "focus on speed" also meant additional labor and taking on risks such as violating traffic rules, figuring out shorter routes, and driving at a speed that increases the likelihood of accidents. In a report on shop floor safety in India, S. Dhara [12] analyzes how un-unionized temporary or contract workers, in the socio-political reality of high unemployment, are forced to take life threatening risks in industrial work where employers have zero liability. Since injury is a low-probability event, shop floor workers foster an attitude of "today's wage is more important that tomorrow's good health" [12, p.198]. We observed very similar dynamics for the food delivery workers we worked with. Afshan, a 24 year old Zomato delivery worker, told us that if he required 2-3 more orders to achieve a target and earn incentive, then he would meet that target "*come what may.*"

> "Suppose if I have one order remaining to meet the target, then I have to complete it at any cost... come what may.."

This "*cost*" Afshan mentions, is often risking one's life by speeding up on the busy city streets or rushing from one restaurant to the other in the hopes of getting an order. Recognizing some of these dangers associated with the job; Rajesh, who works with Zomato in Kolkata, suggested that factory work was a much better option as compared to food delivery work. In the quote below, he asserts how high-risk food delivery work is and how it involves taking life threatening risks especially when navigating Kolkata's busy traffic during the monsoons to ensure timely order completion.

> "In a factory the work hours are smaller by at least 4 hours and here there is forever a risk to your life... it rains so much in Kolkata and the situation of roads is so bad here that bike accidents are fairly common here.."

The two quotes above demonstrate that through changes in pay structure and taking advantage of existing precarities of the labor market, platforms extract normative compliance by making health and wellbeing an individual issue and inability to meet the daily piece-rate quota a personal failure.

4.2.2 Fragmenting Worker Solidarity Through Moralized Narratives of Labor Performance. Over the following months in 2019, Zomato also introduced a reduced pay structure for "newly" employed delivery workers. While the "older" delivery workers (those who had been working with the platforms since 2018 or early 2019) were still on the previous pay structure of Rs 25 (USD 0.34) per order, the new workers were put on a revised rate of Rs 15 (USD 0.20) per order. According to the interviewees, this change was implemented overnight and no explanation was offered by the platform. This information asymmetry, of not knowing what triggered the change, impacted the overall work arrangement and shifted workers' relationships with each other and with the platform.

When it was observed that the new pay rate was not being uniformly applied to all workers, several folk theories began circulating in the worker networks. According to the interviewees who worked for Zomato, the pay structure changed not only for the new delivery workers but also for those who do not give *"proper log-in time"* on the app. This category also included workers who regularly canceled orders or who were reported by the customers for bad behavior or other delivery related issues. According to this theory, only those workers who did not log into the app for at least 12 hours per day or who took various 'leaves' (ie. did not log-in on the app for at least 6 days in a week) were shifted to the new reduced pay structure.

This explanation was used to justify why the pay structure for the more 'disciplined' and 'hardworking' delivery workers didn't change. This logic, by extension, implied a moralistic judgment of the 'lazy worker' or 'slacker,' i.e. a worker who did not actively participate in playing the 'game'. In the quote below, Ashu, who had been working with Zomato since the food delivery service was launched in Bhopal, reflects on the information asymmetry generated by the platforms.

> "... no reasoning was given to us.. but it was noticed that for those [workers] whom it [the pay structure] was changed, they were either not working properly or were not giving proper log-in time. No one really told me this directly but I think this is what it is. Those delivery workers who have been giving a proper log in time and have been working regularly since the beginning - their rate card was not changed. In fact, nothing happened to their rate card at all!"

Since this new form of pay reduction was unprecedented, workers relied on collective sensemaking to understand why the companies might have reduced the pay rate for some workers and not for everyone. The opaqueness of the uneven pay deduction led to fragmentation among the workers and gave rise to the 'lazy' vs 'hardworking' worker narrative thus making it a worker problem rather than platform's.

The reduced piece-rate wage was thus seen as a punishment by the workers for violating the rules of the game. In this manner, the consent to labor in the pursuit of profit was reestablished and reinforced by the platforms through a form of social control. From past research we know that management does and will exploit these divisions to discipline workers and gain control over the labor process [19]. Algorithmic management or technology itself had a limited role to play in this manufacture of consent.

4.2.3 Algorithmic Management: Disciplining Workers Through the Datafication of Labor.
In industrial labor management, datafication and data capture of workers' productivity has played a crucial role in securing workers' extra efforts and labor. In Taylorism or scientific management, time and motion studies captured workers efficiency and productivity for precise regulation of work. Similarly, in the case of food delivery platforms, measuring workers' activities at a granular level is designed as inherent to the underlying technology. Prashant, who regularly app switches between Zomato and Swiggy and has three years of work experience, explains that workers are aware of this data capture as a form of direct control and precise work regulation:

> ".. the company knows it all because they [platform] keeps a track of everyone's movements and the use of the app".

The constant control of workers through granular data capture counters the platforms' promises of flexibility, independence, and freedom from traditional work routines. Information theorist Philip Agre [3], differentiates between two forms of information tracking: surveillance and capture. As per Agre [3], capture is as a more active process of information management aimed at reorganization of work. In the case of food delivery platforms we see the information management regime of capture play a role in disciplining workers along with ensuring efficiency and productivity in the workflow. 'Capture' thus (re)organizes work in the service of the capital ensuring a control over the work process.

Even though the platforms promised the freedom to work at will, the workers unfailingly logged into the app everyday at a specific time, refrained from canceling orders, and taking any 'leaves' from work. According to the interviewees, they were aware that failing to log on for more than a few days in a row would result in 'check-in' calls from the local platform supervisor or Team Leader threatening a suspension of their work ID. Workers also reported similar supervisory calls if they canceled order deliveries. While this knowledge of being tracked was used by the workers for creative workarounds to trick the system, it also aided in extracting their compliance to work. The interviewees reported an active capturing of worker activities through algorithmic modalities that simultaneously disciplined them and also measured their efficiency and productivity. Ironically, the algorithmic management of food delivery work turned out to be exactly the opposite of freedom, independence, and flexibility that motivated workers to join the platform in the first place.

4.2.4 Use of Algorithmic Processes to Create Competitiveness Through Information Discrepancy.
At the time the pay structure was changed, the two platforms also expanded their fleet of delivery workers by recruiting new workers on the lower piece-rate wage. Simultaneously, the platforms also retracted various promotional offers that were initially used to motivate customers to place orders. According to Mehmet, a Zomato delivery worker from Bhopal who had been working since January 2019, a combination of these two factors resulted in an overall drop in the number of orders, especially in smaller cities like Bhopal:

> "In these parts [indicating smaller cities], what happens is that people are used to the offers and discounts... Zomato stopped offering discounts to the customers because of which the sale dropped and the orders also dropped for us."

The workers experienced an imbalance in demand and supply of food delivery services and noticed that their overall wait time, in between the two orders, had increased significantly (in some cases up to several hours). Additionally, the workers noticed a discrepancy in the algorithmic order allotment. According to their observations, the algorithm assigned orders to those workers first who were on the lower piece-rate system. The workers who continued to be on the older piece-rate system (with the higher base pay) noticed that at times they would only receive orders during the peak delivery

hours (lunch and dinner time) or receive orders only for longer delivery distances.

In order to confirm their suspicion, workers on the higher piece-rate began experimenting with the order allocation system by deliberately waiting to receive orders alongside workers on the lower piece-rate system. Through their experiment, the workers found that they would not receive an order until all the other workers on a lower piece-rate wage had been assigned an order first. However at times, this logic failed as well. Zomato delivery workers Kalim, Farhan, and Rahul observed that even if they were the only ones waiting outside a restaurant, they would still not be allotted an order. As evident from quotes by Kalim and Rahul below, it seemed that the algorithm favored those workers on the lower piece-rate wage over everyone else, even if it meant that the former had to travel longer distances to pick up orders.

> "Till the time the server [order allocation system/algorithm] doesn't find someone who is on the lower rate card [piece-rate wage] than us, till then that order will keep waiting at the server. If the server is not able to find anyone else, only then will we get the order. This has been going on for the last year now but has become more frequent recently."

> "Interviewer: Suppose if 6 riders are waiting outside a restaurant then whom do you think will receive the order first?
> Rahul: …ever since the rate card [pay structure] has changed, we have noticed that the person who receives the lowest amount of money as per the rate card will be allocated the order first…. This is probably because of the profit-making motives of the company."

While both Zomato and Swiggy explain their order allocation process on public blogs [21, 47], which is a complicated mix of "deep tech", "deep learning architecture", and complex mathematical equations that solve foreseeable problems, it remains an insufficient explanation for workers' experiences on the ground. As we see above, the limited understanding of the order allocation process emerges from workers' reverse engineering practices. The information asymmetry created by the platform about order allocation results in frustration, especially among the older workers who were on the unrevised piece-rate system. The effect was that older workers began discriminating against the newer ones on the lower piece-rate by not including them in their groups, asking them to leave a location where they had been waiting for orders, use of sarcastic language, not sharing tips and tricks of manipulating the algorithmic work processes, etc. While the workers did understand that this was a deliberate information asymmetry created by the platforms, it nonetheless resulted in lateral frictions among the worker community.

In industrial work, Burawoy [7] referred to such lateral frictions on the shopfloor, that were a result of the conflict between the workers' desire for productive activities and the "deliberate obstructionism" created by the industrial management, as "dispersion of conflict" [7, p. 65]. Such conflict manufactured by the management plays out as competitiveness among the workers. As we show, food delivery platforms, through a combination of algorithmic tools

and management created information discrepancy, induced a high sense of insecurity and wage loss for the workers. The information discrepancy leading to competitiveness among the food delivery workers, is both a combination of food delivery platforms' authoritarian chase for profit, productivity, and efficiency made possible by a concealed and complicated algorithmic architecture.

## 4.3 The Benevolent Patron: Social Regulation of Work

In addition to labor management strategies such as piece-rate systems and algorithmic tools, our analysis of the news articles found that the platforms utilized a rhetoric of benevolence to shape the work culture and generate 'good feelings' among the workers in order to further extract labor. For example, interviews with executives from Swiggy and Zomato covered in news media shows that both platforms have refrained from calling their delivery workers "workers." Instead Swiggy calls its delivery workers "Delivery Executives" and Zomato calls its workers "Delivery Partners." This interesting choice of language is strategic as it serves two main functions. One, use of such terminologies helps evade labor laws by establishing workers as independent contractors, whose job security, health, or general wellbeing is not the platform's responsibility. Second is a more political function, where the use of language ascribes a certain kind of corporate role to the workers. It is a managerial tactic that makes the workers feel like they 'belong' or are part of the high-tech organization without actually having any control or autonomy over their work. Researchers have shown how the use of such language gives an illusion of belonging and control and point to classic Silicon Valley management tropes that use the language of entrepreneurialism, flexibility, and creativity to manage high-tech labor [26, 61].

In our analysis, we find that calling delivery workers 'executives' and 'partner' constituted a strategy deployed by platform companies to extend tropes of familiarity and belonging to non-tech sites of production. The use of such language created a sense of belonging to the tech platform via the sense of a flattened, decentralized managerial structure. The use of benevolent language to extract compliance and work is not uncommon in industrial labor management practices. In their analysis of how gender and caste dynamics changed with the neoliberal restructuring of the factories in Tamil Nadu, Rahul [48] found that factory supervisors encouraged workers to address them as "Amma" (mother) and "Appa" (father) which was a change from the previous use of addressing personnel by their managerial roles earlier like "Factory Manager Sir". This shift to benevolent patronage constructed new forms of hegemonic practices in the neoliberal factory regime that created a 'cultural infrastructure' [61] that ensures non-disruption of work and increased endurance on part of the workers.

We see this political use of benevolent language being employed at different stages in the food delivery work process. As reported in news at the time, this was especially true for the communications sent out to the workers informing them about their wage change, who were informed either through push notifications or via phone calls. In these communications, a language of 'decisions made in good faith' and 'for the ultimate benefit of the workers' was used to convince them to continue to work. Workers' pre-existing

precarious conditions of work and hopes of higher earnings were constantly leveraged through these communications.

This use of language evokes benevolence that instrumentalizes workers' vulnerabilities and does the work of justifying discriminatory and exploitative practices. This was especially true during the pandemic when the workers were deemed "essential workers." In order to show appreciation for their workers in April 2020, Zomato changed the map icon that tracks delivery workers live location and progress during order completion to resemble the popular renditions of a superhero [45]. The icon resembled a tiny person flying across the map in the app wearing a red cape with white Z (for Zomato) printed on the back (Refer Image 1). Similarly, Swiggy dedicated a music video to commemorate its delivery workers' hard work and service during the pandemic [8]. The rhetorical and visual positioning of the workers as superheroes during the pandemic linked their labor to pride and sacrifice made in the service of the nation which surfaces an interesting question: what purpose do these gestures and language serve in the functioning of these food delivery platforms?
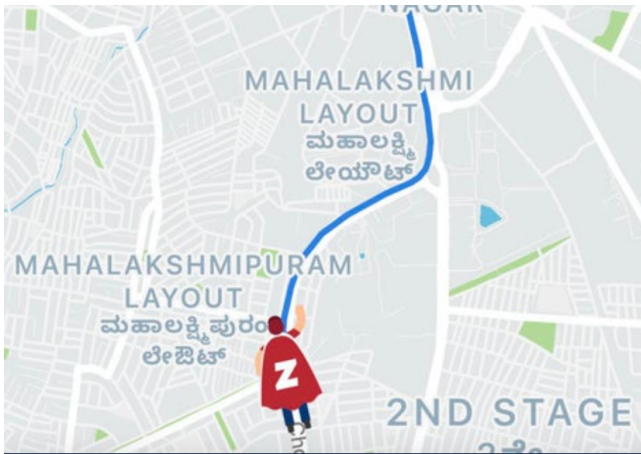
Figure 1: Image 1: Icon depicting Zomato delivery worker as a superhero on the app's delivery tracking page

Doing an analysis of the essential worker narrative, Kumar [33] analyzes that the rhetoric boils down to exercising power. Kumar unpacks the use and playout of the "essential worker" narrative in the global garment industry and adjacent fields and analyzes that instead of increasing workers bargaining power, the rhetoric became "a way to push people back into work" but without the use of force or violence. Instead, the companies played on workers' desires to motivate them to continue to labor even during this unprecedented time. We see a similar use of rhetoric by the food delivery platforms where calling workers "essential workers" was akin to a propaganda tool to leverage the power of liberalism and discipline them into non-disruption of work. Also, in India "essential work" was a legally endorsed category for services that were allowed to operate during the pandemic. Hence, essential work was not a recognition of workers' vulnerabilities as much as it was a necessity to ensure productivity.

The rhetoric of 'essential workers' was a form of "rational control" at play where platforms appealed to workers' self-interests

and desires for capital [30]. Previous research has shown how the use of language and tropes of conveying belonging, care, and noble sacrifice has been used by contemporary gig work platforms to deploy certain kinds of power technologies [57]. These tactics are not specific to food delivery work or even to platform work but is a common management tool employed across different work sectors and does the microwork of sustaining "joyful optimism and celebrations of creativity" [25, p. 736]. Therefore, while on one hand the workers are made visible for the essential functions they serve in the pandemic, their precarities and working conditions get invisibilized by the benevolent and optimistic narrative of the same rhetoric.

In summary, platforms extract compliance from workers in five significant ways. First, using traditional 20th century management strategies like phased changes in piece-rate wages that tied workers' economic livelihoods to performative customer service work. Second, through a complex and opaque incentive structure that fragments worker solidarity using moralized narratives of 'lazy' and 'hardworking' individuals. Third, through the use of algorithmic control that turned work processes into datafied and granular actions that could be captured and used to surveil and discipline workers. Fourth, through the creation of information asymmetry using algorithmic tools that produced conflict between workers earning wages via different piece-rates. Fifth, through the use of rhetorical devices such as benevolent language and phrases like "essential workers" to ensure compliance and prevent work disruption. Our findings show how this production of precarity and manufacturing of consent has resulted in intensification of work, normalization of exploitation, and direct control over workers that legitimizes overwork, speedups, and injury.

5 DISCUSSION AND FUTURE WORK

This paper challenges a still pervasive imagination of "newer" digitally-mediated forms of labor exploitation and control and "older" forms of labor management. We have argued and shown that rather than a mirroring of shop floor management or algorithmic labor control strategies, on-demand service platforms restructure work through a *combination* of the two. In that regard, our work builds on and extends important scholarship that highlights algorithmic systems as "contested systems of control" [30, p. 396] that use multiple forms of control strategies to secure worker compliance. We have shown that these controls take the form of technological and non-technological tactics to reorganize work and is akin to what Veen and colleagues [65] define as the "multifaceted and *more* than algorithmic management" of on-demand service platforms.

In addition to highlighting how a hybrid managerial structure combines algorithmic management and traditional labor control strategies, we further argue that focusing on the algorithmic management of on-demand service platforms alone risks creating an all-too narrow picture of what motivates workers to continue to labor in extremely precarious conditions. We have shown in this paper, for instance, how crucial earlier modes of social and managerial forms of control were key to motivating workers by promising higher pay, flexibility, and freedom. We highlight that gig work is reorganized not only through algorithmically-enabled affordances,

such as acute datafication and surveillance of workers, but also by the complex piece-rate system, information asymmetry, and other traditional managerial tactics such as the political use of benevolent language. We have shown how traditional labor management practices and the technical (re)organization of service work function in a mutually constitutive relationship that establishes control over the labor process.

Our research contributes to the field of HCI by outlining how this form of control depoliticizes, individuates, and isolates the workers by dehistoricizing the social class they belong to. This makes exploitation in food delivery work appear self-driven and voluntary, more intense, harder to notice, and therefore difficult to resist. These findings have important significance for developing future interventions in HCI research. First, our findings show that even in the face of an adverse crisis, workers' continue to protest and resist hybrid managerial platforms. HCI researchers can take a more active role in supporting the actions that the workers are already undertaking - both inside and outside the platform - by designing auxiliary or sister activist platforms. An example of such an intervention is *Turkopticon* [27], which is "an activist system" created in response to the popular human computation platform Amazon Mechanical Turk that relies on and exploits worker invisibility. Turkoptiocon actively support workers' agency and mutual aid efforts by providing workers with tools to make worker-employer relationship visible and call the employers to account. Second, we argue that there is a danger in viewing issues like algorithmic control as "new" problems that we do not know how to address. Our analysis shows that these seemingly new problems utilize traditional managerial strategies that labor activists have protested against for decades. Instead of treating these issues as new problems, HCI researchers can learn from the strategies used by labor activists and work to translate them into more egalitarian design approaches. Lastly, our findings show that while changes to the workers' pay structure results in financial harm, it also has dangerous implications for workers' physical safety. In addition to earning less for their labor, workers risk serious bodily injury and psychological stress. These financial, physical, and psychological harms often remain as unaddressed worker grievances. HCI researchers can support workers in seeking redress for these grievances by designing reporting structures that open communication channels between workers, managers, and workplace advocates.

While we advocate for a hybrid managerial mechanism, we want to acknowledge that contemporary crowd and gig work is certainly different from the mechanic shop floor and sweatshops in terms of limitations of geographic co-location, state protections, legal unionization, and labor market organization. On-demand service work like ride hailing and food delivery work are specific because of their algorithmic management, their data driven decision making, and granular monitoring of workers' moves. In this work arrangement, workers are often unaware of the factors that go into order allocation, change in ratings, order procurement, or even who makes these decisions - thus further chipping away at worker autonomy over the work process. Importantly, we emphasize how workers retain (albeit limited) agency in the work process; the combination of information asymmetry and opaque algorithmic management create gaps that allow workers to 'game' the system, a form of circumscribed resistance that is however becoming increasingly difficult. Our underlying aim here has been to visiblize and politicize the capitalist relations that undergirds the design and labor management practices of on-demand service platforms. We highlight, that the technological system through its hybrid managerial mechanisms has introduced challenges that would require new strategies for resistance and solidarity building.

5.1 Conclusion

With this paper, we hope to contribute to the ongoing efforts in HCI and allied fields that advocate for theoretical and methodological grounding in historical processes of technological production and use to center how earlier forms of injustices and forms of discipline and punish, are reanimated and vicariously produced via contemporary technology production and use [4]. We have shown, for instance, how it was the very promise of better pay and a future of the good life that made workers endure overwork and even increasingly exploitative structures in their presence. Worker solidarity and resistance were undermined through processes of depoliticization that framed workers as economic agents competing with one another over piece meal pay undermining solidarity and collective agency. Familiar forms of resistance such as strike and refusal of work no longer work in this context as management turns to other sites and bodies of extraction.

What we have shown in this paper is a form of worker control and management that enrolls people in the production of value via their dreams and hopes of better futures. The workers we interviewed, however, were by no means clueless about this process of extraction, but actively spoke to their own vulnerabilities and exploitation, despite their continuous self-exploitation and overwork. It is in these moments of reckoning and reflection, we argue, that we can find gaps in the seemingly smooth operations of capital's reach [e.g., 36, 42, 60]. If we attend to these moments of partial reckoning and the complicit acts of hopeful dreaming that hardly ever look like countercultural ideal types, we could perhaps begin to reinvision what solidarity might look like in the highly compromised worlds of platform labor and technology mediated work and control. If attend to the human choices that undermine certain workers' rights and create the conditions of overwork and self-exploitation we have described in this paper, we might begin to envision a shift from *designing* for better tech work to considering and *advocating* for worker rights and justice.

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