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Gig Worker Response to Algorithmic and Other Management Practices in India: A Study of Drivers from Ride-Hailing Platforms

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Abstract

The body of research on gig workers, their lived experiences and their strategies to adapt to gig work has grown steadily in the past decade. However, few studies provide depth and detail on ways in which the social, cultural, political, and economic context within which gig platforms operate impacts the experiences, perceptions and reactions of workers, with particular lacunae around experiences of workers in the global South. We take an exploratory and analytical approach to examine the lived experiences of workers and the role of such contextual factors in India's ride-hailing sector. Deriving an initial conceptual framework from existing literature, we draw upon both primary and secondary data to refine it further through the identification of additional constructs and overarching factors that shape driver experiences.

We find that an extended ecosystem view of the gig economy and socio-economic parameters such as the Indian labour market are crucial overarching contextual factors that influence management processes as well as worker experiences. In addition, driver tenure and socio-economic background as well as evolution of their psychological contract with the platform organisation over time are some of the constructs that have a profound impact on their lived experiences. We use our results and analysis to provide a future research agenda for those studying the gig economy with the aim of promoting rich, multi-perspective, cross-cutting studies that can account for the heterogeneous socio-economic and cultural environment within which gig economies operate. Our findings are also essential for policymakers, regulatory bodies, governments, and the gig organisations themselves to ensure that they collaboratively make the right choices for the growth of a sustainable gig economy that provides value for communities, workers, clients, and users along with the platform organizations.

A. Introduction

Growth of the gig economy in the past decade has invoked both intense public debate as well as academic discussions on its opportunities and pitfalls. Supporters from a neoliberal economic school of thought have referred to it as the "sharing" economy while critics identify it as an exemplar of hyper-capitalism in which platform owners use technology to obscure the exploitative nature of the business model (Pasquale, 2016; Frenken and Schor, 2019). The formulation of these contending narratives is incomplete without considering the effects of socio-economic and cultural factors that can vary significantly by geography (Woodcock and Graham, 2019).

For example, some studies from India illustrate the positive effects of the gig economy, emphasising themes of opportunity, flexibility and reduction in urban unemployment (Bhattacharya and Raghuvanshi, 2018; Athique and Parthasarathi, 2020). This is in direct opposition to the popular characterisation of the gig economy as a manifestation of an increasing trend towards precarity (Kalleberg, 2011, 2018; Hewison and Kalleberg, 2013; Kalleberg and Vallas, 2018). This indicates a need for studies that deeply examine how the platformisation of short-term work is reshaping the nature of work and the perceptions of gig workers (Spletzer *et al.*, 2018), within a specific geography, taking into account its socio-economic and cultural environment.

The research reported here adopts such a context-specific lens, focusing on India, and systematically examines the perceptions of workers on management practices (algorithmic and human) as well as the activities that gig workers engage in to resist, mitigate issues, or develop workarounds to management controls. This is accomplished through semi-structured interviews, conducted with drivers from two leading ride-hailing services in India, Uber, and Ola within the city radius of Kolkata in West Bengal. We have also collected secondary data from content such as news articles and reports, to combine multiple sources of data for triangulation (Denzin, 2006, 2009). The final objective of this research is to develop a conceptual framework from the responses of the interview participants and align it with the contribution of contextual themes.

In the next section, we provide a critical literature review centred around management practices of gig platforms, the perception of gig workers in relation with these processes, and their response or counteraction to such processes, and identify the knowledge gap that has inspired this research. We follow this up with subsequent sections outlining the research design and analysing all findings from interviews and secondary data. The final section summarises our key learnings, along with a brief discussion on the limitations of our research. We conclude with recommendations on a broader future research agenda with respect to gig workers and management in gig platforms.

B. Literature Review

This section presents a discussion of management practices including algorithmic management within the gig economy as well a comparative examination of how this is manifested in countries of the global South.

B1. Gig economy – management practices

Fragmentation in app-based gig work leads to less permanent jobs and low commitment between gig workers and platforms (Benach *et al.*, 2014). This affects the journey of the worker with respect to critical management processes from onboarding to payments and incentives. Additionally, unique features of human resource management (HRM) practices in gig platforms such as HRM in the absence of an employment contract (Meijerink and Keegan, 2019) and HRM through algorithms and dispersed HRM functions (Duggan *et al.*, 2019) profoundly affect employment relations, work allocation processes and performance management of gig workers (Duggan *et al.*, 2019). Amongst the different types of gig work, app work specifically deserves special attention as unlike in crowdwork or cloudwork, it is the algorithm and not the customer or requester, which identifies and assigns labour amongst individuals. Fragmentation is also more visible in app-work as workers are compensated only for the time in which they are productive.

The myriad ways in which app-based platforms control the performance of workers vary from behavioural nudges to constant surveillance and calculation of performance metrics through consumer ratings. The latter are critical as they play a vital role in determining remuneration and penalisation or deactivation due to low ratings. The amount of compensation received is determined through a cheap, standardised, and mostly automated process as algorithms calculate and adjust pay rates based on surge prices, performance ratings and acceptance rates (Rosenblat and Stark, 2016; Parth and Bathini, 2021), without any opportunity for drivers to negotiate. This assumes that driver negotiations entail operational inefficiency. The expectations of the gig worker such as higher control over their compensation or insurance which is a construct of traditional employment (Pant and Majumder, 2022), are in conflict with the intentions of platform organisations in implementing algorithmic management practices. The next section addresses this disparity between how platform organisations assume their management processes should be interpreted and how workers perceive them.

B2. Worker perceptions of gig management practices

The existence of HR practices in gig platforms and their close conceptual link with gig contracts indicates that despite the apparent absence of an employment relationship, there exists a psychological contract that is nuanced, layered, and complex (Duggan *et al.*, 2020). A psychological contract is a worker's "beliefs about the reciprocal obligations between them and their organization" (Morrison and Robinson, 1997) and therefore, entails that the employee, or in this case the gig worker, expects a "fair deal" from the platform organization. Platform work transfers the majority of the risk of work as well as the responsibility for worker relations onto the individual worker, heightening the expectation of fairness (Friedman, 2014; Duggan *et al.*, 2020; Vallas and Schor, 2020) along with autonomy, legitimacy, stability, professional support, and motivation (Raval and Dourish, 2016; Möhlmann and Henfridsson, 2019; Wiener, Cram and Benlian, 2020). The application

of psychological contract theory to study the way workers perceive and react to the divergence between such expectations of fairness and actual management processes, both directly (Shanahan and Smith, 2021) as well as indirectly (discussed in the next section), is evident in literature originating from both the global North and South, but at different times.

B2.1. Gig worker perceptions at a generalised level

Rosenblat and Stark's (2016) seminal work on the ways in which drivers perceive algorithmic management, is rooted in power and information asymmetries imposed by the platform that creates inequality in the working relationship. This leads to "potential psychological contract breach" which is also examined in later works such as that of Ravenelle (2019) who demonstrates worker perception of reduction in entrepreneurial freedom arising due to managerial assumptions based on which algorithms are designed in gig platforms. Ethos of information asymmetry and perceived reduction in autonomy are also visible in work from research by Lee *et al.* (2015) in which drivers stated that more information would empower them to make more informed decisions on ride acceptance and surge pricing.

The assumption of a psychological contract by gig workers and its effects on worker perceptions, attitudes and behaviour is also described in work conducted in the global South. However, two factors have a significant impact on the way perceptions are shaped in the global South. The first is temporality with respect to the introduction and operation of app-based gig work in different countries. For instance, Uber was first tested in the United States in 2009-2010 while it had a staggered launch in India, from 2013-14. The second factor is the variance of socio-economic contexts by geography. Socio-economic and cultural factors have been demonstrated since long to be determinants of worker participation, beliefs, and outcomes in the labour market (Austen, 2000). The importance of individual assumptions and beliefs in shaping worker perceptions of their relationship with employers has also been demonstrated in earlier studies on psychological contract theory (Rousseau, 1989; Conway and Briner, 2005). An examination of literature on gig worker experiences originating from countries in the global South, such as India, reflects a combination of these two findings.

For example, research from India in the period 2015-2018, argues that almost 90% of the labour market in India comprises the informal sector, shaping driver background and mindset which are aligned with those of blue-collar workers, rather than an independent contractors (Surie and Koduganti, 2016; Bhattacharya and Raghuvanshi, 2018). Platform economy companies, they state, have been instrumental in bringing efficiency in these unorganised markets. They point out that drivers also apply a long-term view to factors such as the assurance of payments and income, due to this unique socio-economic and cultural context, fostered by pervious informal markets.

Psychological contracts are dynamic in nature and evolve over four phases in time, from the creation phase to the repair phase which, in turn, impacts the perceptions and coping mechanisms of workers (Conway and Briner, 2005; Tomprou, Rousseau and Hansen, 2015). Gig work and worker research originating from India from 2016 till present paints a picture of this evolution and validates that time plays a critical role in the trajectory of worker perceptions. Early days of work with the gig platform are characterised by high incentives

and more attention from the organisation, resulting in positive perceptions. This is also evident in the difference in concurrent accounts from the global North vs. the South with workers from the latter reporting more positive experiences in general. though these perceptions slope downward with time as both their pay and contact with the organisation decrease.

B2.2. Micro perceptions of gig workers – how do they differ?

Examining work originating from India on gig worker experiences from around 2018, some variance is observed in researcher tone and research questions being investigated. Surie's work in 2018, for instance, questions the position of Ola and Uber drivers as being suspended in a dichotomy between entrepreneurship and exploited employment (Surie, 2018). Another study questions the legitimacy and fairness of payment methods for drivers (Kameswaran and Hulikal Muralidhar, 2019) as the app and algorithm fail to account for situational nuances such as disabled passengers or the reluctance of drivers to accept digital payments due to delayed reconciliation with their bank accounts.

In the meantime, starting from 2020 till the present, research in developed countries has expanded on the narratives of entrepreneurship vs employment hinging on the psychological contract that drivers perceive with their gig organisations. A study from Australia, based on interviews with last mile food delivery workers, demonstrates that workers perceive decreased autonomy in gig work due to fragmentation, isolation from fellow workers and reduced existence of trade unions (Barratt, Goods and Veen, 2020). Another study, of Uber drivers, reported feelings of hopelessness and resignation amongst drivers, arising mostly due to the "unforgiving" nature of algorithms (Walker, Fleming and Berti, 2021) which reduced their power and autonomy, subjected them to constant control and socially isolated them from their fellow workers, making collective action further from reality.

Studies from countries in the global South like India also demonstrate a similar temporal trend. The beginning of their engagement is usually marked with suspicion, mostly due to exposure to a previously unknown form of work and management. After settling into a temporary phase of satisfaction where rewards meet expectations, a downward trend is seen. They start drawing correlations between algorithms, information asymmetry and the micro-management strategies executed by the app. Drivers reported dissatisfaction with opaque pricing and unfairness with respect to work assignment and grievance redressal. They perceived precarity in their daily operations and a lack of control over their own time and resources, indicating a lack of autonomy and flexibility (Sivarajan, Varma and Reshmi, 2021). They also questioned the true economic value of payments as earning their desired amount of incentive required them to work 10-12 hours per day, six days a week (Raval, 2020) .

Comparing the variance in the perceptions of workers with the growth of the gig economy in the global North vs South, common elements can be identified. Firstly, the trajectory of worker experience across different platforms appears to follow a common temporal pattern which is influenced by the maturation of the gig organisation and the worker's tenure within it. Secondly, the body of literature from both the global North and South sometimes reflects this path but is more polarised in the magnification of the particular value-based premise on

which their research is built (positive vs negative, hybrid or dissonant). Finally, contextual factors such as labour market characteristics, histories of informal work, regulation, and the relative strength of labour laws, create systematic and often divergent differences between accounts of worker experiences from the global South vs. the North. The inevitable consequence of this is reflected in the response patterns of workers to either mitigate or cope with the points of contention.

B3. Gig worker responses to platform management

Researchers have used different approaches and models to analyse gig worker responses or reactions to management practices, particularly, algorithmic management. Möhlmann and Zalmanson (2018) proposed categorising driver responses into three segments – resisting the system, switching the system, or gaming the system (Möhlmann and Zalmanson, 2018) Gaming is a common practice and has been reported not only in developed markets such as the United States but also amongst Didi drivers in China or Gojek drivers in Indonesia (Chen, 2018; Panimbang, 2021). Resisting the system is done either individually or collectively. Switching the system or "multi mapping" is common in cities such as New York where Uber must compete with other similar ride-hailing platforms such as Lyft or Juno.

However, this model is somewhat unidimensional in its approach as all the segments refer to aberrant actions, albeit at different levels. Cameron (2020), and Cameron and Rahman 2022), in contrast, demonstrate that three different actions are possible based on whether the worker perceives an alliance or an antagonistic relationship with the organisation – compliance, engagement and deviance. Drivers use compliance tactics such as responding to surges to maximise incentives or maintaining high acceptance rates when they interpret an alliance with the platform. Engagement actions such as the use of heat maps or support forums to chase profitable surges by choice, are the result of viewing algorithms as tools in a relationship that must be strategically maintained as an alliance. Deviance tactics include forced selection of riders already in the vehicle or deliberate inflation of surges.

Other models such as the one from Katz (2004) has its origins in labour theory and proposes two other forms of action: resilience, and reworking, along with overt resistance. Reworking refers to efforts from workers to improve their working conditions while continuing to operate within existing social relations, such as gaming and switching. Resilience is more connected with extremely adverse socio-economic circumstances and often observed in the global South where workers are surrounded by constraints and can perform only small actions to cope with or mitigate existing circumstances. Newer response models such as that of Gill (2019), recently used to analyse driver posts on online forums (Pregenzer, Remus and Wiener, 2021), view reaction or response to management control as a variable along the spectrum that ranges from compatibility to suffering (Gill, 2019). Among the categories comprising Gill's model, blending is similar to compliance while bridging, like engagement, includes responses to certain forms of control that are more fulfilling than others. Actions such as gaming and switching are cited as examples of distancing in Gill's model while separating is a high-intensity resistance activity and includes collective action or active voicing of allegations to the management or in public.

Despite the emergence of such categorisation and analysis frameworks, research on it in the global South continues to be relatively nascent. Only recently have researchers begun

highlighting the trajectories of individual workers, their lived experiences, and actions as valuable sources of insights.

B3.1. Worker response and action in the global South

All the models or frameworks described in the previous section possess some commonalities, but their universality cannot be claimed given that contextual and environmental factors did not vary significantly amongst countries such as the USA or UK, where such studies were conducted. The existing sparse body of research on this topic from the global South is centred around cloudwork or online gig work for which data is more easily available, and participants can be interviewed online. Worker reactions tend to be skewed towards resistance or deviance, as demonstrated by earlier studies conducted in South-east Asian or African countries (Wood *et al.*, 2019; Anwar and Graham, 2020). Recent research conducted in Cape Town, South Africa, is contextually closer to that of app-based physical gig work as it examines the lived experiences and coping mechanisms of domestic workers or of ride-hailing drivers with Uber and Bolt (Lesala Khethisa, Tsibolane and Van Belle, 2020; Mpofu *et al.*, 2020). The former adapts Folk's theory of cognitive stress to analyse situational factors and coping strategies of the workers and outcomes. The latter uses an inductive approach to assess what Uber or Bolt drivers perceive as risk and their mitigation strategies, categorizing them as being platform-initiated, driver-initiated or driver group-initiated. Autonomy is not the primary concern as workers perceive that gig work affords them more autonomy than their previous informal work. They do perceive income to be a risk as they find a significant disparity between their effort and the final income they get.

Most risk mitigation actions mentioned in interviews are initiated by individual drivers or driver groups such as the refusal of drivers from Ola and Uber in India to turn on air conditioners due to rising fuel prices and high commission percentages post-COVID. These actions started individually but developed into a group response (Ghosh, 2022). However, such actions are not directly documented in literature but present in the form of indirect evidence such as high worker churn in gig platforms or reports of numerous strikes held by Ola and Uber driver unions. Research that does exist on the lived experiences and active responses of drivers in countries such as India, Indonesia or Brazil typically follows two streams of inquiry. In one, the emphasis is on the opportunities that the platform provides and the attempt of drivers to coexist with platform control and management practices. Their argument rests on the premise that comparatively, such ride-hailing platforms lead to a formalisation of work that results in regular work and income (Sehrawat *et al.*, 2021). The counterview also exists which considers the precarity of work, labour markets characterised by high supply, under and unemployment and the socio-cultural context but identifies evidence of dissent between platforms and organisations (Sivarajan, Varma and Reshmi, 2021). It focuses completely on the lived experience of the worker but emphasises on the role of contextual factors in breaching the psychological contract with which the workers associate themselves. Some of the resulting actions are documented but are not categorised or analysed further; hence potentially forming part of a larger research agenda.

B4. Summarising the dimensions of worker experiences

B4.1. Summary and knowledge gap identification

Distinct observations can be made through such multi-disciplinary work on gig workers, each of which results in a knowledge gap that this research aims to fill.

Firstly, there exists an incongruence between the interpretations of worker perceptions and actions between studies originating from countries such as the USA and UK vs those from more developing or transitional countries such as India. Secondly, the feasibility of applying psychological contract theory in gig work worldwide (Shanahan and Smith, 2021; Sivarajan, Varma and Reshmi, 2021), individualisation of work experiences in platforms using algorithms and various modes of operation in different geographies (Duggan *et al.*, 2019), suggest the importance of socio-economic as well as cultural context in shaping worker experiences and perceptions that influence action. Finally, in research from the global South, the complete arc of the worker's journey and experiences, if covered, are descriptive and inconclusive with regards to constructs for characterising them.

Therefore, there is a polarity between research viewpoints on the gig economy that are currently skewed towards either willing compliance due to the benefits of platform capitalism or ultimate convergence with the platform when viewed in a temporal context. In addition, limitations in terms of driver backgrounds, diversity in socio-cultural environments and communication challenges (Raval, 2020) have all led to a body of work on this topic that is still nascent and requires further analysis and exploration.

B4.2. Research objectives

Considering the knowledge gaps identified in the previous section, our research aims to accomplish the following objectives:

1. To arrive at a basic conceptual framework for understanding and analysing the perceptions and responses of gig workers
2. To use this framework for conducting two case studies exploring gig worker experiences and reactions in Kolkata, India
3. To illuminate trends and patterns in the lived experiences of gig workers using the findings from the case studies and theoretical arguments.

Synthesising the discussions from the literature review, we arrive at the following constructs which constitute the initial conceptual framework to guide the direction of the case studies (shown in Figure 1). Management processes are implemented by platform organisations that are perceived in various ways by workers. This leads to workers experiencing varying levels of alignment or lack thereof with management-based controls and processes along a spectrum ranging between compatibility and suffering. At different levels of this spectrum, they exhibit a set of reactions as illustrated on the right side of Figure 1.

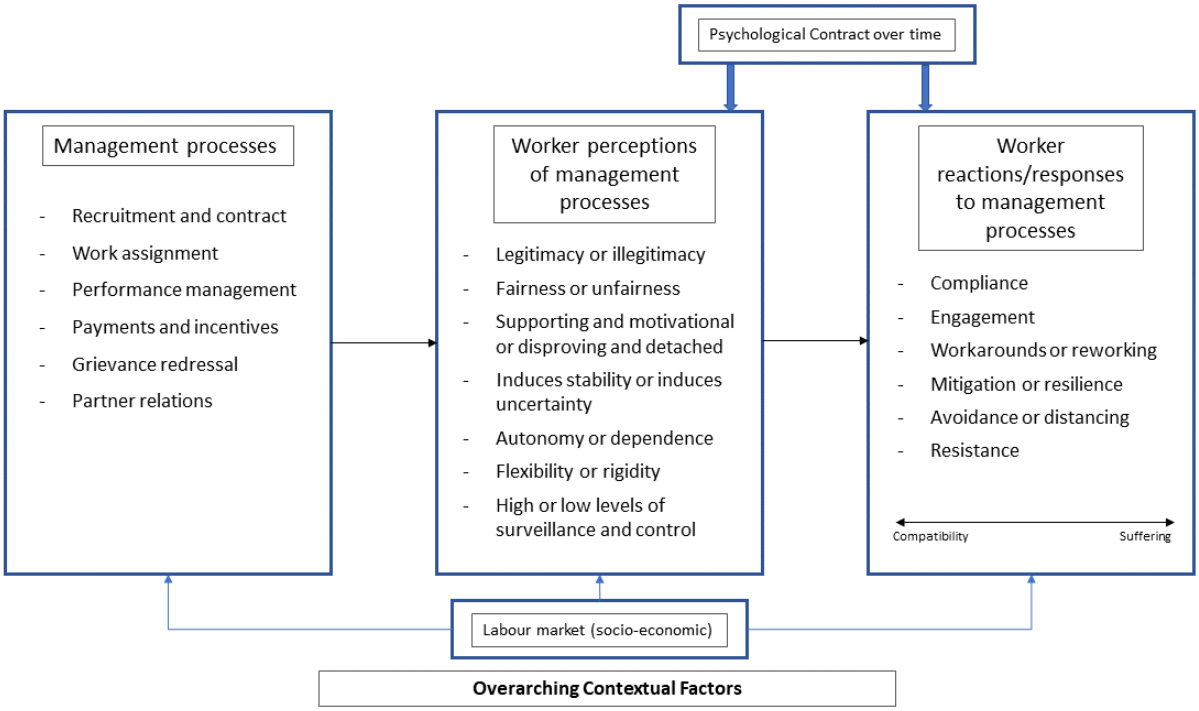

Figure 1: Conceptual Framework for Analysis of Gig Worker Perceptions and Reactions

C. Methodology

In selecting a methodology to address the research objectives, we consider three primary requirements:

- Direct interaction with gig workers
- The collection and examination of data within the normal operating environment of ride-hailing drivers (Stake, 1995; Yin, 2014).
- Inclusion of issues of value (to drivers), power (balance or asymmetry) and local detail that are pertinent to policymaking and regulatory action.

Considering the above criteria, our research is based on qualitative analysis and uses the case study as a research strategy (Stake, 1995). Our methodology is inspired by Eisenhardt's approach (Eisenhardt, 1989) that presents a roadmap for inductively building theory from case studies, shown in Figure 2. Our own approach, while not strictly inductive, does incorporate elements from Eisenhardt's method such as the initial definition of research objectives and establishment of some initial variables that may not comprise a part of the final framework or theory that is built from the data (Eisenhardt, 1989, 2021; Eisenhardt and Graebner, 2007). We follow a stepped or iterative process in which we used literature to inductively build the framework which we then used as the foundation for data collection.

The research objectives for this study were outlined above. For *a priori* constructs, we followed a hybrid approach that entails the building and utilisation of a conceptual framework with constructs (but without defining relationships between them) as a starting point (Miles and Huberman, 1994). Some initial assumptions are required to define the constructs for which we used findings from extant literature. We assume the gig platform as

an ecosystem (Meijerink and Keegan, 2019) to account for the presence of HRM-like processes. We also acknowledge the existence of a psychological contract between gig workers and their platform organisations (Duggan *et al.*, 2019; Ravenelle, 2019; Sivarajan, Varma and Reshmi, 2021; Pant and Majumder, 2022).

Step	Activity	Reason
Getting Started	Definition of research question	Focuses efforts
	Possibly a priori constructs	Provides better grounding of construct measures
	Neither theory nor hypotheses	Retains theoretical flexibility
Selecting Cases	Specified population	Constrains extraneous variation and sharpens external validity
	Theoretical, not random, sampling	Focuses efforts on theoretically useful cases—i.e., those that replicate or extend theory by filling conceptual categories
Crafting Instruments and Protocols	Multiple data collection methods	Strengthens grounding of theory by triangulation of evidence
	Qualitative and quantitative data combined	Synergistic view of evidence
	Multiple investigators	Fosters divergent perspectives and strengthens grounding
Entering the Field	Overlap data collection and analysis, including field notes	Speeds analyses and reveals helpful adjustments to data collection
	Flexible and opportunistic data collection methods	Allows investigators to take advantage of emergent themes and unique case features
Analyzing Data	Within-case analysis	Gains familiarity with data and preliminary theory generation
	Cross-case pattern search using divergent techniques	Forces investigators to look beyond initial impressions and see evidence thru multiple lenses
Shaping Hypotheses	Iterative tabulation of evidence for each construct	Sharpens construct definition, validity, and measurability
	Replication, not sampling, logic across cases	Confirms, extends, and sharpens theory
	Search evidence for "why" behind relationships	Builds internal validity
Enfolding Literature	Comparison with conflicting literature	Builds internal validity, raises theoretical level, and sharpens construct definitions
	Comparison with similar literature	Sharpens generalizability, improves construct definition, and raises theoretical level
Reaching Closure	Theoretical saturation when possible	Ends process when marginal improvement becomes small

Figure 2: Process of Building Theory from Case Study Research (Eisenhardt, 1989)

The population in consideration for case selection is relatively small as the ride-sharing market in India was a duopoly until 2021. The driver ecosystems of Uber and Ola, the two primary ride-hailing platforms in India, are sufficient as the objects of our research as they share both similarities and differences in terms of the antecedents that influenced their origin and subsequent usage in India. The unit of analysis with each of the two platform ecosystem case studies is a driver and equal numbers of drivers are recruited from each platform. Keeping in mind the short duration of this study, we started with purposive sampling that gradually extended to snowball sampling where participants meet certain criteria such as service with Uber or Ola for more than two years.

We have used two kinds of data collection sources in this study. Primary data has been collected from drivers using semi-structured interviews. Secondary data has been used from reports, news articles and forum posts, with the understanding that except for reports, the remaining data is highly subjective and dependent on the opinions of the individuals

providing it. Eisenhardt also recommends the combined use of qualitative and quantitative data (Eisenhardt, 1989). In our case, due to time constraints, the minimal quantitative information derived from the stated secondary data has only been used to assess the strengths and weaknesses of the inferences that emerge from qualitative data (Paré and Elam, 1997).

Questions pertaining to the *a priori* identified constructs in Figure 1 were included in the interview schedule. Prospective participants were identified either through Facebook Groups such as Uber/Ola Drivers/Partners (India), Ola Uber Kolkata Group and Uber Ola Owners Kolkata or during rides. They were provided an information sheet and had 24 hours to decide whether they wished to participate in the research following which they were taken through a consent form, before the actual interview.

This research uses both primary and secondary data to allow for triangulation of data sources (Denzin, 2006, 2009). Primary data was collected from 14 Ola and Uber drivers over a ten-day period through interviews conducted either face to face during the drivers' hours of operation or over the telephone (see Table 1). Field notes were maintained in a research notebook to allow for the frequent overlap of data collection and analysis which is common in the Eisenhardt approach to theory-building (Eisenhardt, 1989). Field notes were further transcribed into structured interview accounts in which we entered reflective remarks directly to facilitate analysis and give a tangible form to our perceptions and thoughts (Strauss and Corbin, 1990). Table 1 also contains specific attributes for each driver such as their tenure with Ola and Uber, ownership status of the vehicle, number of EMIs (estimated monthly instalment) left, tenure with other new apps such as inDriver and occupational background prior to their work with Ola and Uber. This data was supplemented with 15 sources of secondary data collected from news articles and forum posts published across India from June 2014 till July 2022.

Analysis of data was accomplished using within-case analysis and cross-case analysis (Eisenhardt, 1989; Eisenhardt and Graebner, 2007). A description of the data is accompanied with granular analysis according to the conceptual framework in Figure 1, combining findings from primary and secondary data. This also includes cross-case analysis in which we used the categories and dimensions derived from within-case analysis to identify cross-case patterns.

Analysis of the data at a granular level consists of categorical aggregation in the form of detailed analyses of the combined data for themes (Stake, 1995; Creswell and Poth, 2018). This is followed by the final step of naturalistic generalisation to interpret the dominant themes and patterns to arrive at a framework or structure to inform further research (Asmussen and Creswell, 2013).

The results of analysis are further enriched through replication logic (Eisenhardt, 1989, 2021) or comparison of this emerging framework to evidence from each of the platform ecosystem cases to assess the strength or weakness of its fit with data from the drivers and secondary data. This step is useful for sharpening the generalizability and accuracy of the emergent framework or theory. The next step involves the consideration of a broad range of related research on platform management practices, gig worker perceptions and reactions

in developing economies to compare with the emergent framework for either alignment or conflict. Analysis of both sides is necessary to ensure that confidence in the reliability and generalizability of the framework is validated and strengthened.

Driver	Ola Tenure (in yrs.)	Uber Tenure (in yrs.)	Other Apps (in months)	Vehicles	Ownership	EMIs Left (months)	Background
P1	8	7	3	2	Owned	16	Yellow Taxi
P2	8	8	1	1	Owned	9	Yellow Taxi
P3	7	6.5	3	1	Owned	8	Agriculture
P4	6	7	3	1	Leased	8	Travel Company & Personal Chauffeur
P5	7	5	3	2	Leased	18	Security guard
P6	6	5	2	1	Owned	10	Yellow Taxi
P7	7	6.5	1	1	Leased	9	Yellow Taxi
P8	7.5	7	NA	1	Owned	10	Travel Company
P9	5	7	1	3	Owned	24	Micro-business
P10	8	6	NA	1	Leased	9	Logistics
P11	7	6	2	2	Owned	14	Yellow Taxi
P12	7	7.5	NA	1	Owned	8	Corporate driving gigs
P13	3	3	3	1	Owned	28	Travel Company
P14	2.5	3	3	1	Leased	28	Logistics

Table 1: List of Interview Participants (Ola and Uber Drivers)

The final step involves reaching closure or stopping the addition of cases and further iteration between data and theory. This is done when the next iteration or case does not result in incremental knowledge being added to the emergent framework.

D. Analysis and Findings

We analyse the findings with respect to the three pillars of the conceptual framework provided in Figure 1—management processes and practices of Ola and Uber in India (Kolkata), the perceptions of drivers regarding these processes, and the ways in which they react to them. We also examine the role of the two overarching factors – the labour market and the psychological contract – mentioned in Figure 1 with the understanding that these may or may not be part of the final conceptual framework derived from the results.

D1. Management processes

The management processes and practices of Ola and Uber show several points of similarity in primary and secondary data despite the fact that the former is a domestic organisation as opposed to the latter which is an international company. As an example, the primary distinguishing characteristic of management processes implemented by Uber in India vs. other countries is the relatively higher presence of human interaction and oversight, which is more similar to Ola than to its own organisations in the global North. In the pre-pandemic era, they both operated through their headquarters in Bangalore along with satellite offices in other cities where they were present. Interview participants mentioned that they visited these offices frequently for both technical and non-technical issues pertaining to device malfunctions, payments, or grievance redressal. Post-pandemic, although many such satellite offices have been subject to closure, as a cost-cutting measure, some human oversight continues to exist.

Another distinguishing characteristic is the use of incentive-based marketing tactics for initial recruitment and its subsequent correlations with the trajectory of payments and incentives and partner relations. Both companies first built massive workforces and fleets of cabs so used incentives and low commissions as hooks, knowing this was an improvement over the previous precarious situation of drivers. However, both companies had to turn their focus towards profitability and monetisation once their venture funds reached the point of depletion towards the end of 2016 (Balachandran, 2017). This led to management policies aimed at reducing worker income and increasing organisational income through increased commission percentages and dropped incentives. By this time, a large segment of the drivers was dependent on the platform for their livelihoods and also financially constrained due to the automotive loans they had taken to purchase vehicles. This precluded any chances of their discontinuing with the platform. Consequently, partner relations of both companies also started deteriorating with reports of state-wide or nation-wide strikes called by driver unions since 2017 (Bhatia, 2017).

According to statements from the interviewees, Uber and Ola initially marketed themselves as technology platforms with the “lure” of freelancing or micro-entrepreneurship that would help them make at least five times what they were making in their existing mode of work. However, given the antecedents of drivers in informal or unorganized markets, they were not familiar with complex agreements. Two interviewees hailing from white-collar backgrounds stated that they had read the terms and conditions but never came across any indication that the payments, incentives or working conditions would change so drastically over time.

Hence, the choice of drivers to get recruited into the gig platforms was influenced by persuasive marketing and incentivization rather than awareness of the terms and conditions of their contracts or judicious accounting of future costs. The above practices and their interpretation by drivers indicate that Ola and Uber were aware of the significant role of geography and the corresponding socio-economic environment and utilized their knowledge to set up their management processes in India.

D2. Worker perceptions of management processes

The roots of disintegration of partner relations in Ola and Uber, mentioned in the previous section can be traced through a temporal view of the perceptions of drivers regarding the organisations, their management policies, and their own position within the ride-hailing ecosystem. Revisiting the constructs of the initial conceptual framework that we proposed in Figure 1, we find that the ones that feature prominently in driver perceptions revolve around fairness, motivation, support, and autonomy. They do not address legitimacy separately, stating their awareness of the nature of gig work that does not follow the tenets of standard employment and is therefore not regulated enough by the government to make legitimacy a feasible attribute. We discuss this further towards the end when we describe findings from this study that cannot be categorized within the constructs in the initial framework.

D2.1. Fairness

The disparity between the expectations of the drivers interviewed, as opposed to the reality has been viewed by drivers, first and foremost, as a breach of the psychological contract that they assumed existed between them and the gig organisation. Drivers trace their first perceptions of this to late 2016 when Ola and Uber implemented major transformations in the payment and incentive policies. According to ten of the fourteen drivers participating in interviews, they initially perceived Ola and Uber as opportunities that enabled them to set goals for wealth accumulation which was something they could not aspire to in their previous jobs. However, since September 2016, according to interview participants, commissions increased from almost 0% to 20%, then 25% in 2017 and finally reached 30%-33% since 2019. Drivers find it unfair that both companies promised monthly incomes ranging from 100,000-125,000 INR per month when competing mutually to recruit the maximum number of drivers but retracted on these promises within a couple of years when their purpose was served (Barik, 2021). Drivers recognize the power asymmetry created by such a situation and hence, are consistently requesting intervention from third parties such as the central or state governments so that regulatory actions are taken to ensure that risk is equally distributed between the platform organisations and the driver partners.

Drivers also perceive that without bearing the costs of vehicle ownership such as petrol, insurance, car repairs, accidents, climate hazards, physical hazards, and loan repayments or associated risks such as accidents and injuries, ride-hailing organizations make much higher income for a product that functions, in the words of participant P11, “like a broker”. Two of the drivers interviewed revealed the amount they make per kilometre, stating that while Ola and Uber charge a customer as much as 25-26 INR/km, they end up earning only 10-11 INR/km. As Ola and Uber control almost all aspects of the transaction, particularly payment calculation, drivers have demands such as more control over pricing. This stance adopted by drivers is also evident in the accounts of strikes held since 2017 (Aadeetya, 2017; Bhatia,

2017; Wangchuk, 2018). In the past, they also protested against customer retention strategies introduced by Ola and Uber such as UberPOOL or OlaShare, citing information asymmetry in the way fares are calculated and reduced fares. Protests regarding the unfairness of leasing or financing schemes from Ola and Uber have also surfaced post-COVID. Drivers could not operate normally during lockdowns, leading to reduced business but received moratoriums of only two to four months on their loans after each COVID wave. This led to tremendous financial pressure for them as they end up paying almost 50% of their income in monthly repayments, according to five interview participants . There have also been other issues post-COVID such as no easing of commissions despite rising fuel prices which led to protests from driver unions in several cities including Kolkata, Delhi, and Mumbai (Ghosh, 2022).

D2.2. Support and motivation

The previous section indicates the growing demotivation and disenchantment of drivers—however, it appears that they perceive negligible support from management in this aspect. On a relative scale, some drivers have perceived Uber to be less detached. One of the drivers stated that during the lockdown and post-COVID periods, Uber called him once every week and gave him a nominal surplus package due to his long tenure with them. However, he also commented that when he got infected with COVID, neither Uber nor Ola provided him any assistance, despite the adversity of circumstances and the risks he took for them in providing rides for COVID patients.

In contrast, Ola has been perceived by drivers as detached, starting from the time they changed the policies on payments and incentives. Many of the drivers interviewed stated that Ola officials rarely come in front of the media during strikes and negotiatory discussions are not encouraged. This is also evident in news articles published during strikes (Balachandran, 2017). Drivers also perceived a complete lack of support from Ola during lockdown and post-COVID days, when other than the moratorium on their EMIs (monthly repayments), they received neither moral nor financial support but did receive directives on duty hours.

Overall, drivers find both organisations to be more detached and apathetic in the post-COVID period starting from March 2022. Ola and Uber have lifted some restrictions such as stringent requirements for high performance ratings or the compulsion to accept rides. However, grievance redressal and partner relations are given minimal priority with a decrease in human oversight. Drivers now feel not only demotivated but also unheard, as neither Ola nor Uber show any interest in listening to their demands or resolving their issues.

D2.3. Autonomy

Autonomy and flexibility for drivers were the marketing highlights of campaigns launched by both Ola and Uber in India. However, the drivers interviewed raised several points with respect to which they feel more dependent on the platforms and also perceive either a lack or a loss of autonomy in their daily operations.

The primary factors that drivers almost unanimously state as responsible for loss of autonomy and dependence on the Ola or Uber platforms are financial constraints and non-

transferrable skills. Out of the 14 drivers interviewed, 10 took loans from public or private banks to buy vehicles, for which they are still paying monthly EMIs ranging from 13,000-20,000 INR. They cannot think of quitting the platform as this is their only source of income and they have neither the skills for any other jobs nor alternative driving gigs that would pay more than Ola or Uber. Others that were in different occupations earlier such as agriculture, sold or mortgaged their assets, particularly land, to buy vehicles and build the future that they thought would be possible by working with Uber or Ola.

D2.4. Additional Findings

A few findings on driver perceptions that encompassed constructs aside from those included in the original conceptual framework of Figure 1, also emerged in this study.

The first overarching finding on driver perceptions is that their view of Ola and Uber includes the ecosystem within which they operate, in which the driver risks the most and gains the least. Drivers estimate this ecosystem to have four players—the two organisations, state governments and the central government. They evince an adversarial relationship, full of mistrust and betrayal, not with a particular organisation but towards this entire ecosystem in which they find that Ola, Uber, and the state governments work as a consortium for mutual benefits. Even though a bill for social security pertaining to gig workers has been passed by the central government, there is no movement on implementation of it in states. Regulations set by the Ministry of Transport on surge pricing caps or limits on the number of hours of work for drivers are rarely followed. According to the drivers, the absence of any regulatory measures from the state governments indicates their apathy towards drivers and alliance with Ola and Uber.

Drivers also feel hopelessness and resignation that they attach to the business model itself and the failure of state governments to reinstate regulatory actions from the beginning. Time has been a critical factor in shaping the evolution of this perception. Initially, the platform and the organisation were the causes of concern as drivers associated the management processes with them. Today, drivers ascertain that their circumstances are a product of failure of the business models of Ola and Uber to serve their partners and the avoidance of state governments in implementing the regulatory policies issued by the central government.

The despair of drivers is intensified by feelings of being trapped and struggling within the ride-hailing ecosystem from which they do not see any option to exit. Most of the drivers working with Ola or Uber were either yellow taxi drivers, worked in the informal sector as a chauffeur or were in a different occupation altogether such as agriculture. Out of the fourteen interview participants, twelve came from driving backgrounds. They expressed concern regarding the non-transferability of their skills and a total absence of any management policies from Uber or Ola for career development. This clearly indicates the presence of a dichotomy where drivers regard their gig work as a form of micro-entrepreneurship but also look for support from the platform organisations in certain areas such as professional development. Unlike the segment of the educated workforce that joined Ola or Uber, ride-hailing is the primary source of income for these drivers. Hence, between their need to provide for their families and the EMIs that they must pay towards

the acquisition of their vehicles, these drivers find themselves trapped in a "financial labyrinth."

D3. Worker reactions to management processes

It is evident through the findings in the previous section that most drivers are tied to the platforms due to financial obligations and lack of alternate skills. Hence, their only alternative is to continue working while responding when required to make their working conditions more tolerable, as described below.

D3.1. Compliance

Driver actions indicating compliance follow the complete trajectory from compatibility to suffering. Compliance during the initial days of joining was driven by inspiration and hope induced by recruitment campaigns which created a temporary sense of alignment between the organisations and drivers. Compliance at present is an outcome of resignation, hopelessness, and an effort to survive, rather than thrive. Many of the drivers interviewed stated that in their initial years of work from 2014-2016, they used to chase surges and accept every ride even if it was at the end of their shift. Ever since the changes in payments, drivers see no benefit in trying to work more than 12 hours by subjecting themselves to physical and mental exhaustion for negligible extra earnings. Drivers also display this type of resigned compliance through other actions such as doing the emotional labour required to avoid conflicts with customers and refraining from joining strikes called by driver unions. One of the drivers interviewed described an incident in which he narrowly escaped being hit by the passengers when he requested some compensation for dropping them two kilometres away from their specified location. Although he felt his action was justified, he still apologized to the passengers to defuse the conflict. A specific example of compliance is also visible amongst Uber drivers who, despite high fuel prices, have started turning on the air conditioners due to orders from management, ending two months of protest in which they operated without turning them on.

D3.2. Engagement

Examining driver reactions and responses since their engagement with Uber or Ola, we found that engagement reactions were more common from 2016-2019, after incentives were dropped and commission percentages became higher. Post-pandemic, drivers rarely try such actions as their understanding of the business model has increased. For example, since late 2016, drivers stopped blindly chasing surges and started referring to local support groups, networks, and tools to verify first whether a surge would be profitable before chasing it. One of the interview participants mentioned a WhatsApp group that driver unions have formed since October 2016 in which they continually update traffic conditions and their own locations through pictures and location sharing. Another form of engagement in the early days of Ola and Uber was vehicle upgradation by many drivers, based on the belief that bigger vehicles get longer rides with higher fares such as inter-city trips. One driver stated that one inter-city trip was equivalent to at least four in-city trips in terms of income and was also physically and mentally less exhausting. So many increased their loans for this purpose but are now struggling to pay the EMIs.

D3.3. Workarounds or reworking

Drivers resorted to individual workarounds in the form of small and specific actions since they started facing adverse working conditions in 2016. One such action, referred to as "switching" or working in multiple apps is common amongst drivers in India since 2016 as it enables them to access more pieces of such fragmented gig work. Eleven interview participants work not only with Ola or Uber but have also registered with a third app called inDriver which is a new entrant in the Indian market. This indicates a cynicism from drivers towards the business models of platform organizations.

Drivers also perceive an unspoken collaboration between Uber, Ola, and the state governments, enabling each organisation to charge higher surge prices for half a month. In response, drivers identify this pattern and communicate it internally within their networks so that their fellow drivers can also prioritize one app at a time and maximize their earnings. Some drivers have gone a step further and identified routes such as between the railway station and airport that always show surge prices and operate only on these routes. Another tactic that drivers have started putting in practice since March 2022 is the use of unofficial methods to recover high fuel costs such as negotiating for some extra fare with customers who provide incorrect pick-up or drop-off locations. Drivers also try to bypass delays from Uber or Ola in reconciliation of online payments to their bank accounts by negotiating with the customer before the ride to select cash as their mode of payment in the app.

D3.4. Mitigation or resilience

Mitigatory actions or resilience, are common amongst most drivers in India, given the scarcity in their previous socio-economic circumstances.

Five of the interview participants mentioned that while they had started being selective about which surges to chase in the pre-COVID era, they completely ignore surges nowadays and accept the corresponding loss incurred in income, if it requires actions that push the limits of their physical and mental health. Such actions may include taking an extra trip towards the end of the shift, working more than 12 hours, or traveling in hazardous conditions such as natural disasters—drivers have stopped making such compromises.

Almost all the drivers interviewed as well as those mentioned in news articles attribute whatever resolve they have now in terms of risk mitigation to their unions and the corresponding officials who are also fellow drivers. They show complete loyalty towards these unions, prioritising them over Ola and Uber, and participate in collective actions (such as not turning on air conditioners), to maintain solidarity with this support system.

D3.5. Avoidance or distancing

Avoidance actions are common amongst drivers that are Uber or Ola "veterans" and have been working with both organisations since more than five years. Seven interview participants stated that they are adept at gaming the Ola and Uber apps to reflect their GPS locations in such a way that they can avoid being assigned rides that they do not want to accept. They also have methods of setting up the app that is running higher surge prices to override the other one so that they do not have to accept rides at lower rates. Three of the interview participants also talked about how they apply this to surge situations by gaming the GPS to show their presence in their desired and verified surge location before they

reach it so that they are assigned rides at surge prices. Another avoidance tactic that has cropped up in recent times, particularly after the increase in fuel prices in 2022, is direct negotiation with customers to cancel the booked trip but take it at a slightly reduced price without using the app. This enables drivers to earn the entire fare for the trip without paying any commission to Uber or Ola. Another trend that is common amongst drivers in Kolkata, where all 14 participants were interviewed, is the pattern of their work with inDriver. At least eight of the 14 interview participants do maximum trips for inDriver each day but continue to run Uber and Ola as background apps in their mobiles to keep their registrations active.

D3.6. Resistance

Resistance was the first line of response from Uber and Ola drivers to drastic changes in management practices, particularly payments and incentives. All fourteen interview participants have participated in at least five to six strikes throughout their tenure with Uber and Ola. Driver unions such as IFAT (Indian Federation of App-based Transport Workers) and OUT (Ola, Uber and TaxiForSure) are recognized by the government and have strongly connected local chapters across all states in India where Ola and Uber operate. Strikes from 2017-19 mostly consisted of two-three days of non-operation followed by negotiatory dialogues between union officials and Ola or Uber management officials.

The next level of resistive action which has gained momentum post-COVID is silent non-cooperation with respect to specific actions such as not turning on the air conditioners as a sign of protest against lack of compensatory mechanisms from Ola or Uber for high fuel prices. The most extreme form of resistive action from drivers has also taken the form of violence when drivers have collectively attacked Ola or Uber offices. The general secretary of the IFAT Kolkata chapter stated two such instances when groups of drivers broke into Ola and Uber offices. Post-COVID, such extreme actions have stopped completely, and have been replaced with neutral non-cooperation.

D3.7. Additional Findings

A critical finding on driver responses or reactions to management processes relates to the relationship between the tenure and background of the driver and the range of responses they exhibit. Out of the 14 interview participants, 12 had long tenures (5-10 years) with Ola and Uber, eight worked previously as taxi drivers or in the informal driving sector with travel companies and six came from different occupational backgrounds. The participants with long tenures all participated in protests during the initial days of demanding lower commission rates and higher incentives. Over time, their exposure to the gig economy ecosystem has exponentially increased their understanding of the roles of players such as state governments and driver unions. After a long tenure with Ola or Uber, no driver shows a specific reaction. The eight interview participants from the informal driving or yellow taxi sectors show a mixture of reactions comprising primarily of resilience, reworking, distancing, and resistance with the latter gradually decreasing in intensity. Their rationale is that as they are trapped in financial obligations and do not possess any other skills, they must continue working with these two organizations while reacting from time to time to protect their own wellbeing. The six participants from different occupational backgrounds had a different story to convey—despite the fact that five of them also have long tenures with Ola and Uber

they are gradually preparing to separate themselves from the system and return to other occupations such as agriculture, logistics or small businesses.

A second trend that is evident in driver responses and reactions is the difference in style, intensity, and weightage of different reactions post-COVID, as compared to the pre-COVID phase. Driver reactions from 2016-19 were characterized by periods of demonstrative resistance followed by individual actions to either maximize earnings or wilfully "tricking" the system to extract more gains, indicating a gradual erosion of any loyalty towards the platform organisations. The post-COVID era is characterised by recognition of intractable situations and deliberate selection of reaction type based on the amount of manoeuvrability available. An example of this is the silent resistance of drivers against fuel prices by turning off the air conditioner, knowing that customers would still use Ola and Uber due to their dependence on these modes of transport. However, once Ola and Uber management provided ultimatums, drivers recognized the inflexibility of the situation and despite their unwillingness, complied with the directives.

E. Discussion and Future Recommendations

E1. Conclusions

We divide the discussion of the results and its contribution in addressing the research objectives into three parts—perceptions of Ola and Uber drivers to management practices, responses to the same and a reframing of the conceptual framework from Figure 1 including those additional findings that were validated in the previous sections.

E1.1. Perceptions of drivers: Self-identity and critical management processes

In relation to the identification of those management processes to which the workers assign high priority, the findings show a clear dominance with respect to payments and incentives, the presence of human oversight, partner relations efforts, and grievance redressal policies. Another aspect that has gained prominence recently is crisis management an example of which is found in how each organisation managed the COVID scenario and continues to manage the post-COVID phase.

A few striking observations from these driver interviews are imperative in understanding the foundation of their perceptions. Firstly, driver perceptions are directed towards the organisation and its management, rather than towards algorithmic management. This may be attributed to the presence of human management and oversight in the earlier days of operation of both Ola and Uber. Secondly, it is also evident that drivers do not think of themselves as employees but as micro-entrepreneurs bearing maximum risk but getting minimum rewards.

E1.2. Perceptions of drivers: Mistrust, betrayal, and entrapment

Drivers associate unilateral decision-making with Ola and Uber, a factor that also breached the psychological contract that they assumed existed between them and the organizations. In addition, their beliefs, and assumptions, shaped by their socio-economic and cultural environments, play a significant role in determining what they consider as fair, flexible, and essential. Their initial perceptions were imbued with trust and hopefulness which enhanced

the feelings of betrayal and prompted them to examine other gaps such as weak partner relations and unresponsive grievance redressal systems. Perceptions of lack of support and motivation, unfairness and uncertainty heightened post-COVID once face-to-face interaction with management dropped completely and drivers were left on their own. Their work is a cage for many of them where they are obliged to stay because of financial obligations and lack of feasible alternatives. Drivers with longer tenures in Ola and Uber continue to have the same perceptions but develop a more rational understanding of their own boundaries, allowing them to achieve a semblance of work-life integration.

E1.3. Responses or reactions of drivers: Time, background, and tenure

Driver responses also display a distinct pattern over time as well as dependence on certain intrinsic parameters such as the socio-economic background or antecedents of the driver involved, tenure of the driver with both organisations and phase (pre-COVID vs. post-COVID).

Seven drivers with long tenures and backgrounds in informal driving show specific patterns in their reactions over time, due to their financial circumstances and their profound experience of Ola and Uber management over the years. Their initial compliance towards Uber and Ola management practices due to high income and incentives was followed by resistance and eventually all other forms of reactions from reworking to separation as soon as misalignment and suffering set in with changes in policies for payments and incentives. However, five drivers from other occupational backgrounds, despite perceptions of mistrust, betrayal and hopelessness, have chosen to follow a different path and intend to gradually separate from Ola and Uber to other forms of work once their debts are paid. The post-COVID phase has been marked by an increase in actions such as direct negotiation with customers or silent protests followed by compliance with respect to rising fuel prices. This indicates keen situational understanding and awareness of the ecosystem in which Uber and Ola operate, enabling drivers to apply different combinations of reactions in varying intensities.

E1.4. Comparing with existing literature

The trajectory of perceptions of Ola and Uber drivers shows striking similarity with the one proposed by Sivarajan *et al.* in their study of Uber drivers in Mumbai (Sivarajan, Varma and Reshmi, 2021) with the exception that the interviewed drivers were not suspicious about Uber and Ola in the beginning. They are also aligned with the Fairwork Foundation's report on the Indian gig economy where Ola and Uber have received overall scores of zero (Fairwork, 2021). These findings also contradict to an extent, existing research that emphasises the formalisation provided by the gig economy in the informal sector, creating income opportunities for drivers. Researchers have also studied the experiences of drivers or the impact of algorithmic management using other frames of reference such as HCI or strategic labour management (Parth and Bathini, 2021; Sehrawat *et al.*, 2021). However, there is a paucity of work on the nuances and evolution of driver perceptions that further justifies the purpose of this research.

The analysis of findings does not indicate any higher prevalence towards any of the types of reactions but does illustrate the diversity in reaction or response types that cannot be contained within a single model or concept such as legitimacy (Wiener, Cram and Benlian,

2020) or labour agency (Katz, 2004). Reactions and responses consist of combinations of categories from multiple models (Katz, 2004; Gill, 2019; Cameron, 2020). A noticeable factor in these driver reactions that distinguishes them from their counterparts in the global North is the object at the receiving end of their reactions which at present, is the entire gig work ecosystem comprising of both the organisations and the state governments.

E1.5. Revised conceptual framework

Earlier, a preliminary conceptual framework was developed on worker perceptions of management processes in ride-hailing platforms as well as their reactions to them. The findings from data (both primary and secondary) and analysis demonstrated the value and significance of the framework but also led to the discovery of additional factors, pertinent to the original research questions, elucidated in Table 2. These factors are combined with the original conceptual framework to build a more comprehensive version, as illustrated in Figure 3. This version includes the overarching factors that influence the three main constructs—management processes, worker perceptions of these processes, and their resulting responses or reactions. It also includes additional perceptions discovered through the earlier analysis of findings, and accounts for additional parameters that should be considered while analysing worker perceptions as well as reactions.

Construct-Based Findings for Conceptual Framework		
Primary Construct	**Finding**	**Inference**
Worker Perceptions	• Recruitment with promises of a high income (~1.25l INR/month) • At present—high commissions and no incentives but EMIs have to be paid and daily survival ensured despite high inflation and rising fuel prices • Result—drivers must continue to work with Ola/Uber to fulfil their financial obligations. The alternatives are either more precarious or require skills that they do not have.	Feelings of being trapped and struggling in a labyrinth or a system from which there is no immediate exit for them.
	• The promises during recruitment that created their initial trust and alignment with the business models of Ola and Uber have been broken. • There was no way for drivers of pre-empting such scenarios	Feelings of mistrust towards and betrayal from the organisations that they trusted and joined, taking on financial and personal risks.
	Such situations could have been regulated with the timely intervention of state governments, their choices could have ensured that stakeholders captured at least that value from the economy that is "legitimately" theirs.	Hopelessness and resignation towards the entire gig economy ecosystem, extending beyond organisations to state and central governments.
Worker Actions	Drivers started with resistance, moved on to combine it with engagement and reworking and finally also added mitigation and avoidance, with the latter two showing a sharp increase since the COVID phase.	Reactions and responses show a definite trajectory over time (viewed from the beginnings of Ola and Uber in India till the present)
	• Drivers from yellow taxi or informal driving backgrounds have started adapting their reactions to a contextual understanding of the situation • Drivers with higher tenure in Ola and Uber also show the same trend. • Drivers with occupational alternatives prepare to leave the system	Intensity weightage of reactions are varied according to context in case of drivers with higher tenure and yellow taxi/informal driving backgrounds Separation is also a reaction form
Overarching Findings		
Management processes, worker perceptions and worker actions all show distinct patterns over time		
All three constructs show variance in the pre-COVID vs post-COVID phases.		
Drivers adopt an ecosystem view respect to management processes as well as their own perceptions and reactions		
Additional parameters for worker perceptions and reactions		
The evolution of the psychological contract over time is the most critical factor in the trajectory of driver perceptions and reactions		
Socio-economic background of drivers determines their journey in gig work and consequently, both perceptions and reactions		
Cultural environment of drivers shapes their beliefs and assumptions which influence their perceptions and reactions		
Tenure of the driver with Ola or Uber imbues resignation in perceptions and reactions followed by realization and maturity		
Competing players in the market give the drivers more options, thereby easing both their frustration and intensity of reactions.		

Table 2: Summary of Additional Findings

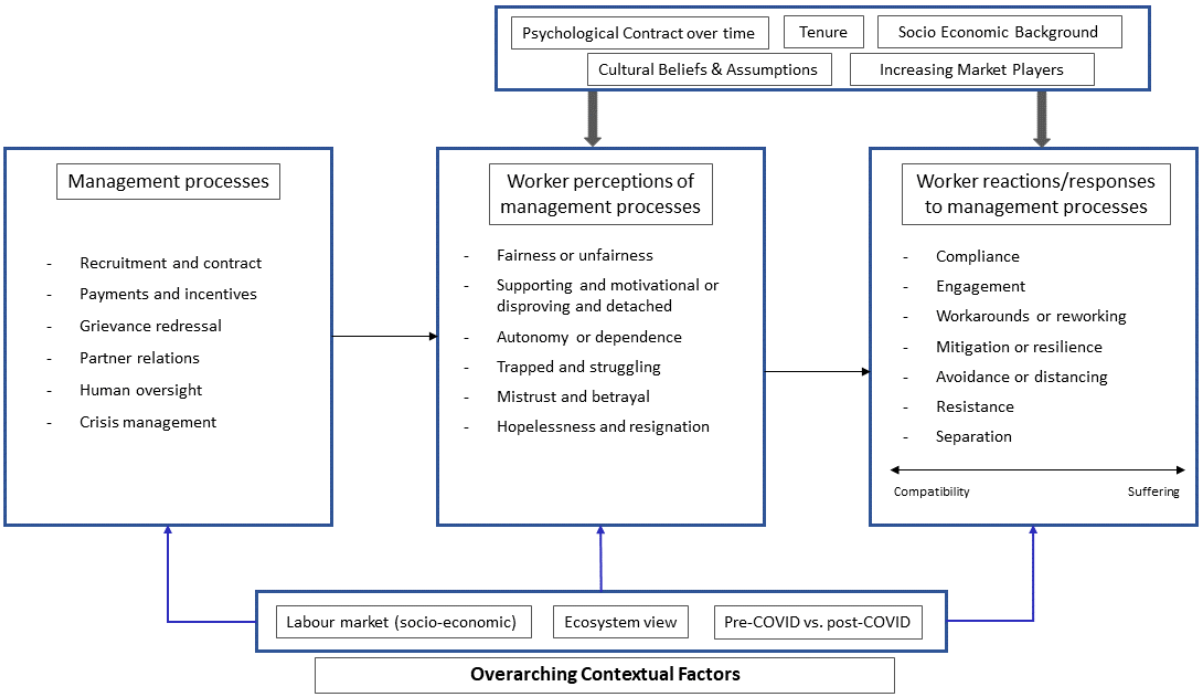

Figure 3: Revised Conceptual Framework for Analysis of Gig Worker Perceptions and Reactions

E2. Recommendations

Driver perceptions and responses present a rich source of information and in some cases, implications for a diverse range of players that are connected directly or indirectly to the gig work ecosystem.

The first implication is for independent labour research institutes such as India's Institute of Labour Economics as well as academic researchers. They can use this information to design their future research agendas and also get more granular information on the lived experiences of workers to understand their requirements and refine the policies for decent work, customising them by region to strike a balance between fairness and feasibility.

The second implication is for central government divisions such as the Indian Ministry for Road Transport and Highways that issued regulations in 2020 which are rarely followed at the state level. This necessitates greater monitoring and liaising between the central and state government units to ensure execution of the rules on the ground and applications of the lessons learned from Ola and Uber to new gig organisations.

The profound scepticism of drivers towards the platform business model, their current state of indifference and their response to every management process is a signal to Uber and Ola of the unsustainability of their current operational strategy. These organisations can benefit by increasing their communication with drivers as well as reinstating some human management and oversight instead of operating as a remote digital intermediary.

Finally, there is also an implication for customers as they occupy a considerably powerful position in this ecosystem. By being more informed about the constraints faced by drivers,

they can provide essential feedback for organisations like Ola and Uber to ensure both customer satisfaction and driver retention within their platforms.

E3. Limitations of current research

There are caveats and limitations that should be considered while evaluating the generalisability of the results and their application in understanding the workers of the gig economy in India. The first limitation is with respect to industrial scope as this study is limited to the ride-hailing sector of the gig economy in India. The findings are pertinent to this sector and only partially generalisable within the broader context of the gig economy which comprises of several other sectors such as delivery of food and groceries, cleaning, and beauty services.

The second limitation is the sample size of primary data. The current sample of 14 drivers has revealed rich findings on their perceptions and actions. However, the sample is relatively small and it would benefit from a broader set of data-gathering in order to provide justifications for the inclusion of additional findings within the broader context of the conceptual framework or to validate the relationships between the constructs and variables.

The remaining limitations are with respect to available literature, and sample coverage. Paucity of sufficient literature covering granular elements of driver perceptions and reactions from India, has limited the support of strong theoretical arguments to validate the findings. Fieldwork, therefore, becomes an imperative aspect of studying the lived experiences of gig workers in India, to discover the theoretical implications of a hybrid management structure that includes both algorithms and human beings. This study includes such field data but due to time constraints, is not able to cover all segments of drivers, described in greater detail in the next section. However, this study provides a conceptual framework with pertinent constructs and variables to guide data collection for qualitative research on a larger scale.

E4. Future research

The limitations in the previous section also constitute opportunities for future research. Methodologically, a larger sample size with at least 30 drivers, theoretical sampling, and the use of grounded theory (Strauss and Corbin, 1990, 1994) as the analytical approach can bring more rigor in terms of theoretical saturation. It would also be instrumental in defining the relationships between the constructs which would complete the conceptual framework and enable the framing of hypotheses that can be tested further using deductive methods.

Generalisability of the findings from primary and secondary data can be expanded by adopting either horizontal or vertical approaches to enhance the dimensionality of the research. Vertical expansion can be achieved through deeper investigation of the ride-hailing sector of the gig economy by including cross-cutting themes such as perspectives from customers, driver associations, platforms, researchers, departments in state and central ministries as well as factors like gender distribution, level of experience, age, and former occupational background. The horizontal approach can involve the examination of management processes, worker perceptions and reactions across different sectors such as food delivery, grocery delivery, beauty, and cleaning services. Comparison and contrast between these findings can lead to the identification of a common set of propositions for

the gig economy in a broader context. Such propositions can be used to inform policymakers, regulators, and platform organisations to shape the gig economy in a way that makes it equitable for all the players involved.

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