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Algorithmic Wage-Setting and Perceived Distributive (In)Justice in the Gig and Hybrid Workforce: A Conceptual Framework

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Abstract

Digital platforms and traditional companies are increasingly employing algorithmic systems to set wages for workers based on their behavior and performance, as well as on live data from the marketplace, rather than on a fixed or negotiated wage system. While such systems can be presented as efficient and responsive, this paper suggests that they can inadvertently create a sense of distributive injustice by creating a challenge to knowing, comparing and challenging pay. Based on the concepts of Equity Theory, Organizational Justice Theory and recent research on algorithmic wage-setting, the paper proposes a conceptual framework that connects four main characteristics (calculation opacity, wage variability, individualized pay differentiation, and limited wage voice) to perceived inequity, outcome unfairness, and procedural unfairness. They are hypothesized to affect employee and organizational outcomes such as time-based stress, intentions to turnover and switch platforms, withdrawal of effort, and collective mobilization. A framework also describes wage-calculation transparency, income diversification, regulatory wage floors, sharing information about wages with peers, occupational context and algorithmic literacy as factors that can either exacerbate or dampen these relationships. Eight propositions are tested and are advanced as guidelines for future empirical research. The framework is also expanded to cover hybrid jobs and full-time positions, where rewards systems are increasingly based on AI and dynamic bonuses, as well as on a semi-algorithmic basis. The paper ends by highlighting trust, transparency, fairness and retention as key elements of governance.

Keywords: algorithmic wage-setting; distributive justice; equity theory; gig economy; algorithmic management; pay transparency; procedural justice; hybrid workforce

1 Introduction

Platforms are increasingly determining worker pay for a specific job based not on a simple fixed price, but on an anonymous and unpredictable algorithm that includes workers' location, acceptance and performance ratings, and the real-time supply and demand for the job (Dubal,

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2023). The first sites of this shift were the ride-hail, delivery, and freelance platforms, but the rationale of measuring compensation by algorithm based on granular behavioral data instead of a human administrator, is being used in traditional, salaried roles via dynamic bonus systems and AI-scored performance pay (Duggan et al., 2020, 2023; Lee et al., 2015; Parent-Rocheleau & Parker, 2022). Employers and platforms refer to this as part of a "rationalization of compensation" that brings pay more in line with real market conditions and individual output than a predetermined pay rate ever could (Teachout, 2023).

Dubal's (2023) ethnographic study of ride-hail and delivery workers calls this resulting action algorithmic wage discrimination, as platforms leverage the fine-grained data of its individual workers to calculate a variable, unpredictable and highly personalized pay for the same work done at the same time with the same skill. Following a parallel taxonomy of five ways that algorithms personalize wages, extreme surveillance-based productivity pays, gamified incentive and demerit systems, behavioral pricing based on lifestyle data, and demand-based dynamic pricing, teachout (2023) suggests that these mechanisms will likely extend from gig work into the formal employment arena. Other research on platform work also confirms algorithmic control, pay uncertainty and limited worker autonomy (Griesbach et al., 2019; Veen et al., 2020; Wood et al., 2019).

This paper maintains that efficiency properties of algorithmic wage-setting do not hold up an assumption that classical theories of pay fairness rely on: that a worker can observe what other people in similar positions are paid and evaluate the ratio of their inputs to their outputs to that of their other, similar, workers (Adams, 1965). According to Equity Theory, working people make comparisons between their pay and the pay of others, not on an absolute basis, but on a relative basis; the feeling of inequity, whether it occurs because they are underpaid or because they have no basis for comparison, results in psychological tension and reactions designed to restore equity (Adams, 1965). Empirical studies on pay comparison and pay disparities also indicate that information on relative pay can have important consequences for job satisfaction, morale, and effort (Breza et al., 2018; Card et al., 2012). Such algorithmic wage-setting systems that charge the same job for various workers at various times deny the comparison on which this evaluative process relies (Dubal, 2023).

This transition is made meaningful by the direct empirical evidence that has been found of relation between algorithmic compensation and worker strain. Higher levels of exposure to algorithmic compensation were associated with higher time-based stress and lower perceptions of procedural justice, with algorithmic transparency as a moderating effect that indicates that the negative effects were not necessarily driven by algorithmic compensation per se, but were strongly influenced by the level of transparency of the algorithm's logic to the worker (Semujanga & Parent-Rocheleau, 2024). This can be demonstrated with complementary evidence from the Uber drivers themselves, which reveals the interface's information and power asymmetries as key to Uber's structuration of control over workers' earnings expectations via maps that determine surge prices, worker messages that predict earnings, and opaque incentive structures that drivers cannot independently verify (Rosenblat & Stark, 2016). Other studies on opaqueness of algorithmic evaluation and platform dependence reveal comparable power asymmetries, limited agency of workers and their lack of access to remedies (Curchod et al., 2020; Cutolo & Kenney, 2021; Rahman, 2021; Wiener et al., 2023).

This paper has three contributions. Primarily, it combines three theories into a unified perspective: the Equity Theory (Adams, 1965), Organizational Justice Theory (Colquitt, 2001), and the recent literature on algorithmic wage-setting (Dubal, 2023; Teachout, 2023) to develop an explanation of how algorithmic compensation systems create a sense of injustice. Second, it outlines ‘moderating conditions', ‘transparency around wage calculation', ‘income diversification', ‘regulatory wage

floors', 'sharing information about wages with peers' and 'the context of the job', as well as 'algorithm literacy', which helps decide whether algorithmic wage-setting leads to perceived injustice or is significantly mitigated by institutional design (Semujanga & Parent-Rocheleau, 2024; Bujold et al., 2022). Third, it lays out eight testable propositions and extends the platform gig labour framework to hybrid salaries and algorithmic and semi-algorithmic compensation tools are increasingly integrated into everyday performance management systems (Parent-Rocheleau & Parker, 2022).

The rest of the paper summarizes the three theories, discusses the conceptualization, the research gap that this conceptualization fills, extends the argument to hybrid work, and concludes by discussing implications for theory and practice, limitations, and a conclusion.

Figure 1. Conceptual Framework of Algorithmic Wage-Setting and Perceived Distributive Injustice

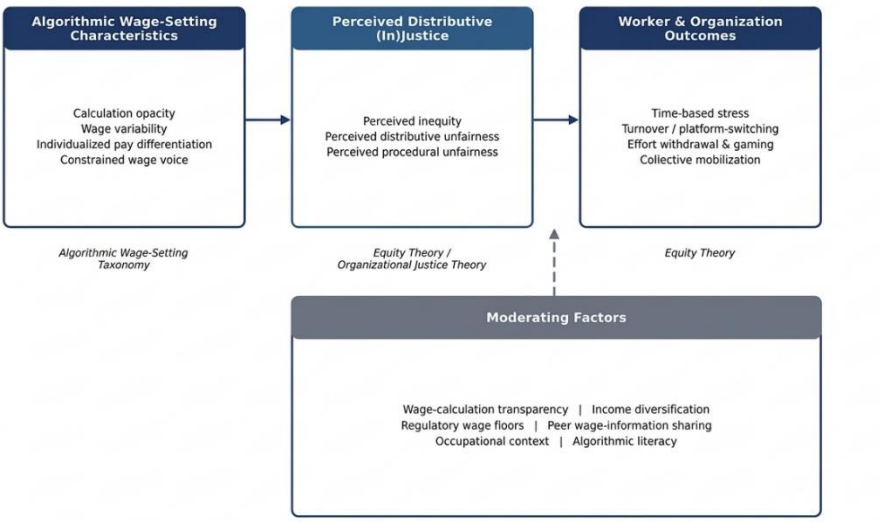

Figure 1. The framework traces a path from algorithmic wage-setting characteristics, through perceived distributive (in)justice, to worker- and organization-level outcomes, with six factors moderating the strength of these relationships.

2 Theoretical Foundations

The framework combines three theories: Equity Theory (Adams, 1965), Organizational Justice Theory (Colquitt, 2001), and the new taxonomy of algorithmic wage-setting mechanisms (Dubal, 2023; Teachout, 2023). The two traditions shed different light on the worker's appraisal of algorithmically determined wages, and these two traditions are needed to explain why algorithmic wage-setting is perceived as unfair despite its statistical effectiveness (Rosenblat & Stark, 2016). This is also aligned with recent literature, which reframes algorithmic management as a multi-dimensional control system that has implications for both worker autonomy and fairness and wellbeing (Kadolkar et al., 2025).

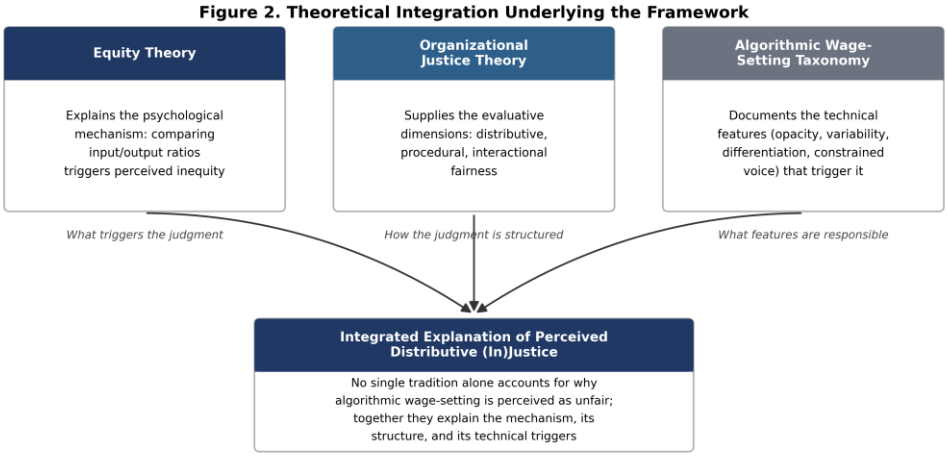

Figure 2. Theoretical integration underlying the framework: each tradition contributes a distinct, necessary piece of the explanation.

2.1 Equity Theory

Adams (1965) also proposed Equity Theory, which suggests that people assess their own exchanges by comparing their ratio of inputs (effort, skill, time) to their outputs (pay, recognition) in the exchange relationship with a relevant comparison other's ratio of inputs and outputs. When the person feels underpaid or when he/she feels overpaid compared to this comparison, there is psychological tension which leads to behaviour to bring back equity; decrease in effort; demands for a pay rise; or leaving the relationship (Adams, 1965). Perceived justice also has been found to be related to organizational consequences affecting employee attitudes and behaviors in meta-analytic studies of organizational justice research (Cohen-Charash & Spector, 2001; Colquitt et al., 2001).

The first part of Adams' (1965) model assumes that the comparison itself is observable, meaning that the worker can identify a relevant comparison other and estimate its inputs and outcomes with reasonable accuracy. Hourly, salary, or piece-rate wages are typically found to meet this condition since wages are predetermined, publically known in a workplace, or at least consistent enough over a period of time that they can be deduced from employees' disclosures. Evidence on the influence of peers' wage information indicates that measurable wage comparisons may have an impact on workers' perceptions of their jobs (Card et al., 2012).

This precondition is directly disrupted in the case of algorithmic wage-setting. Pay is calculated based on a proprietary blend of location, timing, acceptance history and demand signals—that is, two workers doing the same "work" can be paid different wages without either one of them knowing how much the other receives or being able to figure out why they are paid differently. (Dubal, 2023) This paper considers the ensuing equity comparison the theoretical mechanism by which the nature of the algorithm in wage-setting relates to perceived distributive injustice.

2.2 Organizational Justice Theory

The outcome-focused logic of Equity Theory is expanded upon by Organizational Justice Theory as developed by Colquitt (2001) which highlights three aspects of justice, including distributive, procedural and interactional justice, which are perceived as the fairness of the outcome of a

decision, the perceived fairness of the process by which a decision is reached, and the perceived respect and adequacy of explanation accompanying a decision. Colquitt (2001) confirmed these dimensions with confirmatory factor analyses and found them to be empirically separate and that each had unique predictive power of attitudes and behaviors in the downstream context. The uniqueness and utility of distributive, procedural and interactional justice have been bolstered by other syntheses (Cropanzano et al., 2007; Cohen-Charash & Spector, 2001, Colquitt et al., 2001).

In the field of compensation, this means that workers' perceptions of fairness in their pay depends not only on how much they receive (distributive justice), but on whether the process that was used to calculate their pay was transparent and consistent (procedural justice) and whether they were treated with respect and given adequate explanation when questioning it (interactional justice) (Colquitt, 2001). Decisions made by algorithmically managed truck drivers correlate with a sense of transparency of the algorithms they use—higher perceived transparency of algorithmic systems leads to higher perceived distributive and procedural justice, and higher perceived justice leads to lower turnover intention—providing empirical evidence for how the transparency of a compensation-adjacent algorithm influences justice perceptions through an empirically traceable pathway (Bujold et al., 2022).

This trend is confirmed by direct compensation data. In a large sample of gig workers, findings showed exposure to algorithmic compensation to be linked to lower perceived procedural justice and higher time-based stress, and algorithmic transparency to moderate this relationship, suggesting a link between algorithmic pay-setting and worker strain is mediated by perceived procedural justice and not just the favorability of the wage itself (Semujanga & Parent-Rocheleau, 2024). This paper focuses on perceived distributive and procedural injustice as the core aspects of the mediating construct proposed below, in addition to perceived inequity. The importance of process fairness in algorithmic management (Nagtegaal, 2021) is further highlighted by the fact that such algorithmic managerial decisions have the potential to impact on procedural-justice perceptions beyond the work setting at the platform.

2.3 Algorithmic Wage-Setting: An Emerging Taxonomy

There is now a legal and organisational literature, which has rapidly expanded, that tracks the specific ways in which algorithms determine worker pay, and which is differentiated from a claim of opacity. Dubal (2023) characterizes the wages set based on productivity analysis as wages set from a behavioural signal of productivity, whereas other behavioural signals, such as supply and demand, also factor into the wage setting process, the former as the wages being set as a “gamble” pay for the same effort varies in unpredictable ways that workers cannot anticipate or challenge. The importance of ratings, digital surveillance, rules of the platforms and data-driven control in shaping job quality, precarity and autonomy of workers is also reported in broader research on gig-work (Anwar & Graham, 2021; Gandini, 2019; Goods et al., 2019; Shapiro, 2018).

Teachout (2023) provides an alternative classification of five types of algorithmic personalized wage systems: extreme Taylorism, in which increased surveillance drives measured productivity; gamification, where psychological incentives drive the completion of tasks; behavioral pricing, where wages are linked to behaviour (e.g., fitness-tracker usage); dynamic pricing, where wages vary according to real-time demand; and experimentation, where firms test wage structures to determine which yields the greatest output at the lowest cost. In addition to their efficiency rationale, these mechanisms have democratic implications, as teachout (2023) points out, because they can exacerbate economic and racial disparities, undermine solidarity among workers by making it difficult for them to compare notes on wages, and can reduce the wage algorithmically if they raise concerns about wages.

This literature provides the words that were used on the antecedent side of the framework that is developed here. The taxonomies of Dubal (2023) and Teachout (2023) identify the technical

aspects of algorithmic wage-setting (i.e., opacity, variability, personalization, and constrained voice) that can account for the experience of injustice as described by the two theories. There is also evidence of the opacity, steering towards behaviour and bounded agency of workers that is characteristic of algorithmic management that is found in algorithmic scores, in app-based HRM control and in algorithmically bounded choice (Bellesia et al., 2023; Cameron, 2024; Duggan et al., 2020, 2023).

3 Methodological Approach to Framework Development

This paper adopts the format of a conceptual and theory-building paper in organizational behavior and labor studies, so it does not test the hypotheses against new data, but rather it draws on existing theory in a synthesis of new theory for a testable set of hypotheses on the proposed mediating construct (perceived distributive (in)justice under algorithmic wage-setting) and its antecedents, outcomes, and moderators. The framework has been developed through integrative review of three streams of literature that have developed more or less concurrently: equity and organizational justice theory, which has its roots in the work of Adams (1965) and later extended by Colquitt (2001); legal and sociological literature on algorithmic wage-setting, which has its roots in Rosenblat and Stark (2016), formalized by Dubal (2023) and Teachout (2023); and organizational behaviour literature on algorithmic management more broadly, in which compensation is treated as one of several formative functions algorithms now perform, with the broad literature extended by Kellogg et al. (2020), Möhlmann et al. (2021) and Parent-Rocheleau and Parker (2022).

The constructs were selected based on two criteria: first, they must be based on a theory from at least one foundational tradition (Adams, 1965; Colquitt, 2001; Dubal, 2023) to ensure that the constructs would be relevant to and testable with other researchers who were studying real algorithmic compensation systems and not purely hypothetical ones (Semujanga & Parent-Rocheleau, 2024; Bujold et al., 2022; Rosenblat & Stark, 2016). The resulting framework includes four antecedents, three dimensions of injustice, four outcomes, and six moderators that were selected to be comprehensive and tractable for future empirical research.

4 A Conceptual Framework of Algorithmic Wage-Setting and Perceived Distributive Injustice

Building on the three traditions reviewed above, this paper proposes a framework organized around four linked constructs: algorithmic wage-setting characteristics as antecedents (Dubal, 2023; Teachout, 2023); perceived distributive (in)justice, comprising perceived inequity, distributive unfairness, and procedural unfairness (Adams, 1965; Colquitt, 2001); worker- and organization-level outcomes, comprising time-based stress, turnover and platform-switching intention, effort withdrawal, and collective mobilization (Semujanga & Parent-Rocheleau, 2024; Rosenblat & Stark, 2016); and moderating factors that condition the strength of these relationships (Bujold et al., 2022). The framework is summarized in Figure 1 and in the propositions that follow.

4.1 Antecedents: Algorithmic Wage-Setting Characteristics

Calculation opacity refers to the degree to which the inputs and logic used to compute a worker's pay are unavailable or unintelligible to that worker (Dubal, 2023). Ride-hail and delivery platforms typically disclose a final payment amount without disclosing the underlying formula, leaving workers unable to verify whether a given payment reflects the terms they believe they agreed to (Rosenblat & Stark, 2016). Opaque and changing algorithmic evaluations can also leave workers uncertain about how to improve outcomes or challenge adverse decisions (Bellesia et al., 2023; Curchod et al., 2020; Rahman, 2021; Wiener et al., 2023).

Wage variability refers to the extent to which pay for comparable tasks fluctuates across time, location, or worker, driven by dynamic pricing, demand signals, or behavioral experimentation (Teachout, 2023). Variability of this kind is functionally distinct from ordinary market-rate fluctuation because it is personalized to the individual worker rather than uniformly applied to a

labor market (Dubal, 2023). Studies of platform food-delivery and global gig work similarly show that algorithmic control can coexist with unstable working conditions and limited predictability over work outcomes (Goods et al., 2019; Wood et al., 2019).

Individualized pay differentiation refers to the extent to which the algorithm sets different pay for different workers performing comparable work at comparable times, based on inferred behavioral or demographic signals (Dubal, 2023). Teachout's (2023) taxonomy of behavioral pricing and experimentation describes specific mechanisms by which such differentiation is generated and sustained.

Constrained wage voice refers to the extent to which a worker has a channel to question, contest, or renegotiate an algorithmically calculated wage (Parent-Rocheleau & Parker, 2022). Dubal (2023) documents that raising concerns about pay can itself function as a behavioral signal that lowers a worker's subsequent algorithmically calculated wage, effectively discouraging the exercise of voice. Research on resistance in gig work likewise shows that opportunities to contest platform decisions are shaped by when and how algorithmic control is exercised (Cameron & Rahman, 2022).

4.2 Perceived Distributive (In)Justice

Perceived distributive injustice is believed to be created by these antecedents in the following three dimensions: those from Equity Theory and those from Organizational Justice Theory.

Perceived inequity is when a worker believes his input-output ratio is less favourable than that of another worker in a similar job, or that there's no other worker they can compare it to (Adams, 1965). Since algorithmic wage-setting is not based on an observation that can be compared to another worker, a worker can feel a sense of inequity without having a specific worker to compare with (Dubal, 2023).

Perceived distributive unfairness is the worker's perception that the wage one receives for a certain amount of labor is insufficient for the labor (Colquitt, 2001). This judgment remains challenging to stabilize because the same work can be paid for differently in each instance, due to the algorithmic wage variability and/or the behavioral pricing mechanisms (Teachout, 2023). Pay-inequality and peer-pay studies provide evidence of the general idea that relative compensation differences can impact morale and job evaluations (Breza et al., 2018; Card et al., 2012).

Perceived procedural unfairness in wage determination is a worker's evaluation of the wage determination process as being opaque, unpredictable, or uncorrectable (Colquitt, 2001). Evidence directly links this dimension to algorithmic compensation exposure, such that increased exposure is associated with lower perceived procedural justice for gig workers, with some part of this association mitigated when the algorithmic compensation system is perceived as transparent (Semujanga & Parent-Rocheleau, 2024). Some experimental results show that algorithmic managerial decisions that are perceived as less fair or less legitimate by employees can negatively influence procedural-justice perceptions (Nagtegaal, 2021).

4.3 Worker- and Organization-Level Outcomes

Once perceived distributive injustice is created it is proposed to spread to four outcomes that are presented, directly or by close analogy, in the literature of algorithmic-compensation and algorithmic-management.

The most direct found outcome is time-based stress, which was positively associated with algorithmic compensation exposure among a large sample of gig workers, and partially moderated by algorithmic transparency (Semujanga & Parent-Rocheleau, 2024).

As predicted by the Equity Theory (Adams, 1965) that suggests that one of the common reactions

to perceived inequity is to exit, perceived distributive injustice is expected to increase turnover and move towards platform switching.Theoretically, one of the most common reactions to perceived inequity is to leave (as predicted by the Equity Theory; Adams, 1965), and so should be the increase in turnover and platform switching intention when the perceived inequity is distributive. In addition, a body of evidence from meta-analysis has been gathered to support this proposition, giving it a wider empirical basis, as it relates to withdrawal- and retention-relevant outcomes (Cohen-Charash & Spector, 2001; Colquitt et al., 2001).

Theorised to grow as workers cannot verify or challenge their wages, and instead try to game the inputs an opaque algorithm is thought to reward, algorithmically set wages are described by workers as a form of gambling, one that must be played rather than one that can be won through simple effort (Dubal, 2023). The same strategic adaptation, arbitrage, and resistance to opaque or restrictive algorithmic systems are found in studies of crowdworkers and platform workers (Bellesia et al., 2023; Cameron, 2024; Cameron & Rahman, 2022; Shapiro, 2018).

Collective mobilization and regulatory contestation are hypothesized to increase with the extent and durability of the perceived distributive injustice, as evidenced by worker organizing and legal challenges against algorithmic wage-setting practices, as well as scholarly proposals to non-waive legal restrictions on it (Dubal, 2023; Teachout, 2023). Empirical research on courier organizing and digitally-mediated mutual aid demonstrates how solidarity and collective resistance can be generated by platform workers in the face of algorithmic control (Tassinari & Maccarrone, 2020; Yu et al., 2022).

4.4 Moderating Factors

The framework identifies six factors that can mitigate whether the characteristics of algorithms in wage-setting lead to perceived distributive injustice and whether that perceived injustice leads to adverse outcomes.

Wage calculation transparency is the provision of an intelligible explanation of how workers wages are calculated. Lower time-based stress and higher perceived procedural justice among gig workers are directly related to transparency of algorithmic compensation systems (Semujanga & Parent-Rocheleau, 2024), while higher perceived justice and lower turnover intention are predicted in other algorithmically managed occupations (Bujold et al., 2022). Research also indicates that opaque algorithmic assessment is to workers as a fundamental factor in their reactions and adaptation (Bellesia et al., 2023; Rahman, 2021).

Income diversity is a measure of a worker's reliance on one algorithmically managed income source or having other income sources/exit options. Möhlmann et al. (2021) consider the availability of exit options to be at the core of the experience of algorithmic control as structure versus domination, which in turn has direct implications for the experience of acutely perceived wage injustice. Limited options also suggest that gig workers' vulnerability to platform control is increased (Anwar & Graham, 2021; Cutolo & Kenney, 2021).

Regulatory wage floors are guarantees of a minimum wage or algorithmic-transparency requirements, which limit the extent to which algorithmic wage-setting can deviate from a predictable baseline. Non-waivable restrictions of this type have been explicitly suggested as a remedy in legal scholarship on algorithmic wage discrimination, which assumes that disclosure is not enough to rectify the information and power imbalance (Dubal, 2023).

Peer wage-information sharing is the degree to which workers are able to combine information about their wages in order to make the comparisons that would otherwise be blocked by individualized algorithmic wages. In fact, evidence from Uber drivers demonstrates that information asymmetries created in the interface of Uber are central to their ability to structure control over the workers, suggesting that peer information sharing is directly counterweighting

this form of control (Rosenblat & Stark, 2016). In more general terms, a finding that exposure to peer salary information alters job evaluations provides support for the importance of wage information sharing for comparisons to equity (Card et al., 2012).

Occupational context is whether algorithmic wage-setting is used in gig or platform-mediated work, or whether it is used in conventional, salaried work in conjunction with algorithmic bonus payments or incentive payments. Algorithmic control works differently for workers with more or less baseline employment security and pay predictability (Parent-Rocheleau & Parker, 2022). An analysis of cross-context studies of platform work also indicates that autonomy, vulnerability, and job quality are shaped by institution and job quality, rather than by algorithmic control (Anwar & Graham, 2021; Goods et al., 2019; Wood et al., 2019).

Algorithmic literacy is a worker's ability to comprehend how an algorithmic compensation system produces output. Where workers can't understand the signals, they are being sent, it is thought that they will be less inclined to match their effort with the pay-maximizing behavior, reinforcing the perception of a gamble rather than a reward that comes with algorithmically-determined wages (Dubal 2023). Empowering algorithmic literacy as an individual-level condition has been supported by crowdworker research of actively interpreting algorithmic scores and acquiring practical knowledge of how to manage them (Bellesia et al., 2023).

Table 1 summarizes the eight propositions that follow from this framework, linking each construct pairing to its theoretical foundation.

Table 1

Propositions Linking the Constructs of the Framework

#	Proposition	Primary Theoretical Basis
P1	Calculation opacity is positively associated with workers' perceived inequity.	Equity Theory
P2	Wage variability is positively associated with perceived distributive unfairness.	Equity Theory; Organizational Justice Theory
P3	Constrained wage voice is positively associated with perceived procedural unfairness in wage determination.	Organizational Justice Theory
P4	Perceived distributive injustice is positively associated with time-based stress.	Equity Theory
P5	Perceived distributive injustice is positively associated with turnover and platform-switching intention.	Equity Theory; Organizational Justice Theory
P6	Wage-calculation transparency and regulatory wage floors weaken the negative relationship between algorithmic wage-setting and worker outcomes.	Algorithmic Wage-Setting Taxonomy
P7	Peer wage-information sharing is negatively associated with perceived inequity under algorithmic wage-setting.	Equity Theory
P8	Perceived distributive injustice is positively associated with collective mobilization and regulatory contestation.	Algorithmic Wage-Setting Taxonomy; Equity Theory

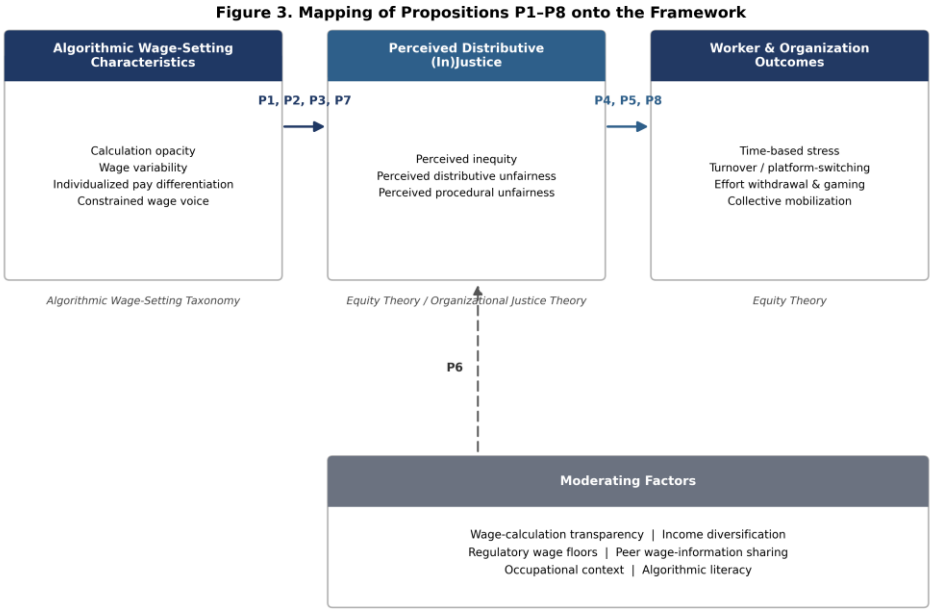

Figure 3. Mapping of Propositions P1–P8 onto the framework pathways summarized in Figure 1.

Table 2

Summary of Framework Constructs

Framework Component	Elements
Antecedents	Calculation opacity; wage variability; individualized pay differentiation; constrained wage voice
Perceived distributive (in)justice	Perceived inequity; perceived distributive unfairness; perceived procedural unfairness in wage determination
Worker- and organization-level outcomes	Time-based stress; turnover and platform-switching intention; effort withdrawal and strategic gaming; collective mobilization
Moderating factors	Wage-calculation transparency; income diversification; regulatory wage floors; peer wage-information sharing; occupational context; algorithmic literacy

4.5 Research Gap

The recent work has spurred new insights into how algorithmic wage-setting works (Dubal, 2023; Teachout, 2023), the information asymmetry that underpins algorithmic wage-setting (Rosenblat & Stark, 2016), and the direct relationship between algorithmic wage-setting and stress and procedural justice perceptions among gig workers (Semujanga & Parent-Rocheleau, 2024). The case for integrative models of algorithmic-management was further reinforced by recent systematic review evidence revealing that research on algorithmic-management continues to be spread across various mechanisms, worker outcomes and theoretical perspectives (Kadolkar et al., 2025). What is missing is a systematic description of the phenomenon of algorithmic wage-setting as an injustice grounded in existing organizational justice theory, instead of a new vocabulary that is specific to platform labor. The richness of the literature that documents the practice and its consequences is valuable, but is not formally tied to the decades of research in organizational behavior in equity and justice that might lead to testable and generalizable propositions (Adams,

1965; Colquitt, 2001).

This break plays a crucial role for three reasons. First, although it is clear that algorithmic wage-setting research has grown within the labor law and platform-studies traditions, the extension of this research into mainstream constructs in organizational behavior, such as equity comparison, has not been systematically theorized, even though these constructs plausibly explain the reactions elicited from algorithmic pay that may be disproportionate to its objective magnitude (Adams, 1965). Second, empirical research directly comparing algorithmic compensation and perceptions of justice so far has been conducted for specific occupational settings: gig delivery and ride-hail work (Semujanga & Parent-Rocheleau, 2024); trucking (Bujold et al., 2022); but a generalisation framework specifying the conditions under which these findings can be generalised across other occupational contexts such as hybrid salaried employment is lacking. Third, the moderators that tend to mitigate perceived wage injustice have generally been examined separately from each other (Semujanga & Parent-Rocheleau, 2024; Rosenblat & Stark, 2016; Dubal, 2023).

This paper's theoretical framework is designed to close this gap by providing a theoretically-based testable explanation for when algorithmic wage-setting reinforces workers' perception of distributive justice, and when it instead results in the type of distributive justice perception that is predicted by Equity Theory to lead to disproportionate behavioral and organizational costs (Adams, 1965; Colquitt, 2001).

4.6 Extending the Framework: From Platform Gig Work to the Hybrid Salaried Workplace

The research on algorithmic wage-setting began with platform-mediated gig work, ride-hail, food delivery, freelance marketplaces, in which the practice of algorithmic pay calculation was most evident and most prevalent (Dubal, 2023; Rosenblat & Stark, 2016). The framework developed here, however, is becoming increasingly applicable to conventional, salaried work, as these algorithmic and semi-algorithmic compensation methods have been introduced through dynamic incentive payment, AI scored bonuses, and productivity linked compensation adjustments (Parent-Rocheleau & Parker, 2022). Previous studies on HCIR have also demonstrated algorithmic management of workers that goes beyond compensation, and evidence from public organizations indicates that algorithmic managerial decisions can also impact procedural-justice judgments outside gig platforms (Lee et al., 2015; Nagtegaal, 2021).

The framework’s antecedents – the conditions which are associated with perceived distributive injustice – are more likely to occur in hybrid and salaried work. AI tools are more and more shaping productivity data for use in performance management systems, which are then translated into bonuses and merit pay, often without informing the individual being assessed about the weight assigned to the data (Parent-Rocheleau & Parker, 2022). Individualized pay differentiation is also expanding into salaried work with personalized incentive systems that are clearly the ones to be expected to shift from gig work to the formal employment context as employers are increasingly embracing the overarching logic for data extraction. The increased diffusion implies that the principles of transparency and contestability become relevant not only to gig workers, but also to those who rely on algorithmic managerial decisions.This greater diffusion extends the relevance of transparency and contestability beyond gig workers to those who are employed and subject to algorithmic managerial decisions (Nagtegaal, 2021).

The framework's moderators should note that salaried workers are not gig workers, however, but that they are different in a variety of ways. The nature of the occupation is important because, in many jurisdictions, the gig workers, defined as independent contractors, do not have the same baseline pay or collective-bargaining agreements as salaried workers, nor do they have internal grievance procedures (Dubal, 2023). It remains unclear whether these types of structures are useful substitutes for the equity-comparison processes that individualized algorithmic pay is supplanting, or just a formal process that workers mistrust as much as the algorithm itself, and whether they are reflecting or contradicting the pattern of the gig-economy (Colquitt, 2001).

In parallel, salaried workers could have higher expectations of pay equity within the organization than gig workers, who often have comparatively thin, transactional relationships with a platform (Adams, 1965). If it is, it may trigger a greater inequity perception among a long-tenured, salaried employee who expects to see his or her pay clearly marked on the scale, compared to a gig worker who has lower expectations for transparency in his or her pay. (Rosenblat & Stark, 2016) This implies that the amount of perceived distributive injustice from a gig to a hybrid salaried setting might not be linearly related to each other, and that the context of the job needs to be explicitly studied as an independent variable as opposed to a control variable (Parent-Rocheleau & Parker, 2022).

Figure 4. Extending the Framework: Gig Platform Work vs. Hybrid Salaried Work

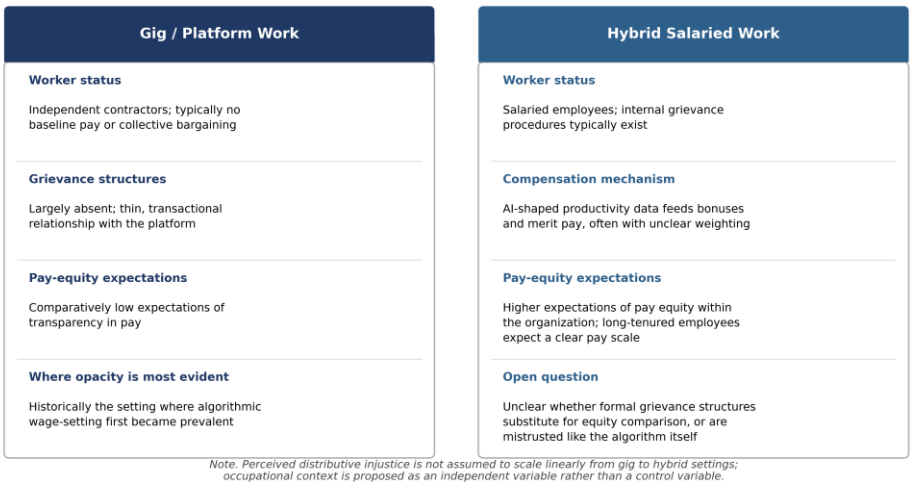

Figure 4. Extending the framework from gig platform work to hybrid salaried work: key contextual differences and an open empirical question.

5 Discussion and Implications

The main theoretical insight of this paper is that the three theories of algorithmic wage-setting (namely, Equity Theory, Organizational Justice Theory, and the newer taxonomy of algorithmic wage-setting) are all necessary to fully explain the perception of unfair compensation from algorithmic pay. Equity Theory provides the logic by which workers first make judgments about pay fairness (Adams, 1965); Organizational Justice Theory breaks down the judgement of pay fairness into three components: distributive justice, procedural justice, and interactional justice, with each having their own set of antecedents and consequences (Colquitt, 2001); and the algorithmic wage-setting literature identifies the technical features of contemporary compensation systems that are likely to undermine these judgements (Dubal, 2023; Teachout, 2023). No one of these traditions—Equity Theory, Organizational Justice Theory, or the literature on algorithms setting wages—is sufficient to capture the phenomenon: Equity Theory, for example, would explain the psychological mechanism, but not specify which features of the algorithm would trigger the phenomenon; Organizational Justice Theory would provide evaluative dimensions, without any account of why it was algorithmic pay in particular that degraded the dimensions; and the algorithmic wage-setting literature would document the phenomenon richly but without connecting it to generalizable, testable psychological constructs. A recent systematic synthesis of gig-economy algorithmic management also highlights the importance of making a link between

algorithmic mechanism and existing organizational theories and outcomes (Kadolkar et al., 2025).

To prepare, the factors named above that have been identified as important for empowering legitimate use of algorithmic wage-setting are conditions that need to be in place, not optional extras (Semujanga & Parent-Rocheleau, 2024). Platforms and employers that primarily use algorithmic compensation to reduce their labour costs but do not invest in these moderators are likely to experience cost savings that are partially illusory when taking into account increased turnover, effort withdrawal and reputational and regulatory risk (Dubal, 2023; Bujold et al., 2022). This makes algorithmic wage-setting a decision about distributive justice and not just an exercise in optimizing compensation, with direct consequences for retention and legitimacy (Teachout, 2023).

From the researchers' perspective, the framework provides a framework for empirical research that has been hitherto dispersed in the fields of labour law, platform-work sociology, and organizational justice research (Dubal, 2023; Colquitt, 2001). The eight propositions are amenable to being tested via field surveys of the nature employed in the study of algorithmic compensation and procedural justice amongst gig workers (Semujanga & Parent-Rocheleau, 2024), with qualitative and ethnographic approaches to the study of workers' subjective experience of variable pay being used (Dubal, 2023), and comparative designs contrasting gig and hybrid salaried contexts where the same algorithmic compensation is utilized (Parent-Rocheleau & Parker, 2022).

5.1 Limitations and Future Research

This is a conceptual framework which has not been tested empirically, and whose propositions are hypotheses that could be tested in future research (Adams, 1965). The framework also makes a set of algorithmic wage-setting applications less heterogeneous; future research could explore whether there are differences in the way the constructs in the framework work in these subtypes of demand-based pricing, productivity-based bonuses, and behavioral pricing based on lifestyle data (Teachout, 2023). However, the mediating factors are considered to be relatively independent, but they are likely to interact with each other; for instance, the impact of peer wage-information sharing may be moderated by algorithmic literacy because understanding how to compare the algorithms' results meaningfully requires some degree of algorithmic literacy (Dubal, 2023). Comparing across occupational contexts, gig work, hybrid, and traditional salary work, would enhance the external validity of the propositions proposed here (Parent-Rocheleau & Parker, 2022). A mixed-methods study design should be used in future research, and the combination of platform-level pay and turnover data, worker surveys of the three injustice dimensions and four outcome variables, and qualitative interviews of workers' lived experience of algorithmically determined pay (Semujanga & Parent-Rocheleau, 2024; Rosenblat & Stark, 2016). Future studies might also contrast the adaptation and resistance of workers in opaque evaluation, algorithmic scoring, platform control, and collective-action scenarios identified in previous research (Bellesia et al., 2023; Cameron & Rahman, 2022; Rahman, 2021; Tassinari & Maccarrone, 2020; Yu et al., 2022).

5.1 Conclusion

Algorithmic wage-setting is being adopted across platforms and, increasingly, conventional employers faster than the transparency and accountability practices needed to preserve workers' sense of distributive fairness (Dubal, 2023). This paper has argued that the efficiency typically attributed to algorithmic compensation can coexist with, and even produce, a perception of injustice that falls disproportionately on workers least able to observe or contest how their pay was calculated (Rosenblat & Stark, 2016; Semujanga & Parent-Rocheleau, 2024). By integrating Equity Theory, Organizational Justice Theory, and the emerging algorithmic wage-setting taxonomy (Adams, 1965; Colquitt, 2001; Dubal, 2023; Teachout, 2023), this paper has developed a framework tracing the pathway from algorithmic wage-setting characteristics through perceived

distributive injustice to worker- and organization-level outcomes, and identifying the institutional conditions capable of mitigating that pathway's worst effects (Bujold et al., 2022). The framework's propositions offer a research agenda for scholars of organizational behavior, labor studies, and human resource management, and its extension from gig work to hybrid salaried work underscores that the stakes of algorithmic wage-setting are not confined to the platform economy where the phenomenon was first documented (Parent-Rocheleau & Parker, 2022). The central challenge ahead is to ensure that the efficiency of algorithmic wage-setting for the firm does not come at the cost of the perceived fairness on which worker retention and effort ultimately depend.

Author Contributions

Shahrukh Khan, Sehresh Hena, and Baoyu Cui contributed to the conceptualization, development of the theoretical framework, methodology, literature analysis, interpretation, and preparation and critical revision of the manuscript. All authors read and approved the final manuscript and agreed to be accountable for the work.

Conflict of Interest

The authors declare that they have no financial, commercial, professional, institutional, or personal conflicts of interest related to this article.

Data Availability

No new data were created or analyzed in this conceptual study; therefore, data sharing is not applicable.

Informed Consent

Not applicable. This conceptual study did not involve human participants.

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The authors declare that no generative artificial intelligence tools were used to generate the scholarly content, conduct the analysis, interpret the findings, or formulate the conclusions presented in this article.

6 References

Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267–299). Academic Press. https://doi.org/10.1016/S0065-2601(08)60108-2

Anwar, M. A., & Graham, M. (2021). Between a rock and a hard place: Freedom, flexibility, precarity and vulnerability in the gig economy in Africa. *Competition & Change*, *25*(2), 237–258. https://doi.org/10.1177/1024529420914473

Bellesia, F., Mattarelli, E., & Bertolotti, F. (2023). Algorithms and their affordances: How crowdworkers manage algorithmic scores in online labour markets. *Journal of Management Studies*, *60*(1), 1–37. https://doi.org/10.1111/joms.12870

Breza, E., Kaur, S., & Shamdasani, Y. (2018). The morale effects of pay inequality. *The Quarterly Journal of Economics*, *133*(2), 611–663. https://doi.org/10.1093/qje/qjx041

Bujold, A., Parent-Rocheleau, X., & Gaudet, M.-C. (2022). Opacity behind the wheel: The relationship between transparency of algorithmic management, justice perception, and intention to quit among truck drivers. *Computers in Human Behavior Reports*, *8*, Article 100245. https://doi.org/10.1016/j.chbr.2022.100245

Cameron, L. D. (2024). The making of the "good bad" job: How algorithmic management manufactures consent through constant and confined choices. *Administrative Science Quarterly*, *69*(2), 458–514. https://doi.org/10.1177/00018392241236163

Cameron, L. D., & Rahman, H. A. (2022). Expanding the locus of resistance: Understanding the co-constitution of control and resistance in the gig economy. *Organization Science*, *33*(1), 38–58. https://doi.org/10.1287/orsc.2021.1557

Card, D., Mas, A., Moretti, E., & Saez, E. (2012). Inequality at work: The effect of peer salaries on job satisfaction. *American Economic Review*, *102*(6), 2981–3003. https://doi.org/10.1257/aer.102.6.2981

Cohen-Charash, Y., & Spector, P. E. (2001). The role of justice in organizations: A meta-analysis. *Organizational Behavior and Human Decision Processes*, *86*(2), 278–321. https://doi.org/10.1006/obhd.2001.2958

Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, *86*(3), 386–400. https://doi.org/10.1037/0021-9010.86.3.386

Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O. L. H., & Ng, K. Y. (2001). Justice at the millennium: A meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology*, *86*(3), 425–445. https://doi.org/10.1037/0021-9010.86.3.425

Cropanzano, R., Bowen, D. E., & Gilliland, S. W. (2007). The management of organizational justice. *Academy of Management Perspectives*, *21*(4), 34–48. https://doi.org/10.5465/amp.2007.27895338

Curchod, C., Patriotta, G., Cohen, L., & Neysen, N. (2020). Working for an algorithm: Power asymmetries and agency in online work settings. *Administrative Science Quarterly*, *65*(3), 644–676. https://doi.org/10.1177/0001839219867024

Cutolo, D., & Kenney, M. (2021). Platform-dependent entrepreneurs: Power asymmetries, risks, and strategies in the platform economy. *Academy of Management Perspectives*, *35*(4), 584–605. https://doi.org/10.5465/amp.2019.0103

Dubal, V. (2023). On algorithmic wage discrimination. *Columbia Law Review*, *123*(7), 1929–1992. https://doi.org/10.2139/ssrn.4331080

Duggan, J., Carbery, R., McDonnell, A., & Sherman, U. (2023). Algorithmic HRM control in the gig economy: The app-worker perspective. *Human Resource Management*, *62*(6), 883–899. https://doi.org/10.1002/hrm.22168

Duggan, J., Sherman, U., Carbery, R., & McDonnell, A. (2020). Algorithmic management and app-work in the gig economy: A research agenda for employment relations and HRM. *Human Resource Management Journal*, *30*(1), 114–132. https://doi.org/10.1111/1748-8583.12258

Gandini, A. (2019). Labour process theory and the gig economy. *Human Relations*, *72*(6), 1039–1056. https://doi.org/10.1177/0018726718790002

Goods, C., Veen, A., & Barratt, T. (2019). "Is your gig any good?" Analysing job quality in the Australian platform-based food-delivery sector. *Journal of Industrial Relations*, *61*(4), 502–527. https://doi.org/10.1177/0022185618817069

Griesbach, K., Reich, A., Elliott-Negri, L., & Milkman, R. (2019). Algorithmic control in platform food delivery work. *Socius: Sociological Research for a Dynamic World*, *5*, 1–15. https://doi.org/10.1177/2378023119870041

Kadolkar, I., Kepes, S., & Subramony, M. (2025). Algorithmic management in the gig economy: A systematic review and research integration. *Journal of Organizational Behavior*, *46*(7), 1057–1080. https://doi.org/10.1002/job.2831

Kellogg, K. C., Valentine, M. A., & Christin, A. (2020). Algorithms at work: The new contested terrain of control. *Academy of Management Annals*, *14*(1), 366–410. https://doi.org/10.5465/annals.2018.0174

Lee, M. K., Kusbit, D., Metsky, E., & Dabbish, L. (2015). Working with machines: The impact of algorithmic and data-driven management on human workers. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems* (pp. 1603–1612). Association for Computing Machinery. https://doi.org/10.1145/2702123.2702548

Möhlmann, M., Zalmanson, L., Henfridsson, O., & Gregory, R. W. (2021). Algorithmic management of work on online labor platforms: When matching meets control. *MIS Quarterly*, *45*(4), 1999–2022. https://doi.org/10.25300/MISQ/2021/15333

Nagtegaal, R. (2021). The impact of using algorithms for managerial decisions on public employees' procedural justice. *Government Information Quarterly*, *38*(1), Article 101536. https://doi.org/10.1016/j.giq.2020.101536

Parent-Rocheleau, X., & Parker, S. K. (2022). Algorithms as work designers: How algorithmic management influences the design of jobs. *Human Resource Management Review*, *32*(3), Article 100838. https://doi.org/10.1016/j.hrmr.2021.100838

Rahman, H. A. (2021). The invisible cage: Workers' reactivity to opaque algorithmic evaluations. *Administrative Science Quarterly*, *66*(4), 945–988. https://doi.org/10.1177/00018392211010118

Rosenblat, A., & Stark, L. (2016). Algorithmic labor and information asymmetries: A case study of Uber's drivers. *International Journal of Communication*, *10*, 3758–3784. https://doi.org/10.2139/ssrn.2686227

Semujanga, B., & Parent-Rocheleau, X. (2024). Time-based stress and procedural justice: Can transparency mitigate the effects of algorithmic compensation in gig work? *International Journal of Environmental Research and Public Health*, *21*(1), Article 86. https://doi.org/10.3390/ijerph21010086

Shapiro, A. (2018). Between autonomy and control: Strategies of arbitrage in the "on-demand" economy. *New Media & Society*, *20*(8), 2954–2971. https://doi.org/10.1177/1461444817738236

Tassinari, A., & Maccarrone, V. (2020). Riders on the storm: Workplace solidarity among gig economy couriers in Italy and the UK. *Work, Employment and Society*, *34*(1), 35–54. https://doi.org/10.1177/0950017019862954

Teachout, Z. (2023). Algorithmic personalized wages. *Politics & Society*, *51*(3), 436–458. https://doi.org/10.1177/00323292231183828

Veen, A., Barratt, T., & Goods, C. (2020). Platform-capital's 'App-etite' for control: A labour process analysis of food-delivery work in Australia. *Work, Employment and Society*,

34(3), 388–406. https://doi.org/10.1177/0950017019836911

Wiener, M., Cram, W. A., & Benlian, A. (2023). Algorithmic control and gig workers: A legitimacy perspective of Uber drivers. *European Journal of Information Systems*, *32*(3), 485–507. https://doi.org/10.1080/0960085X.2021.1977729

Wood, A. J., Graham, M., Lehdonvirta, V., & Hjorth, I. (2019). Good gig, bad gig: Autonomy and algorithmic control in the global gig economy. *Work, Employment and Society*, *33*(1), 56–75. https://doi.org/10.1177/0950017018785616

Yu, Z., Treré, E., & Bonini, T. (2022). The emergence of algorithmic solidarity: Unveiling mutual aid practices and resistance among Chinese delivery workers. *Media International Australia*, *183*(1), 107–123. https://doi.org/10.1177/1329878X221074793