

Reputation Systems, Algorithmic Management, and Gendered De-Flexibilization in Platform Work: A Conceptual Analysis

Yuan Gao ^{1,2*}, Jiayi Luo ^{1,2}, Zhenghang Xu ³

¹ College of International Economics & Trade, Ningbo University of Finance & Economics, Ningbo 315175, China

² Ningbo philosophy and social science key research base “Research Base on Digital Economy Innovation and Linkage with Hub Free Trade Zones”, Ningbo 315175, China

³ Hangzhou Expo Group Co., Ltd., Hangzhou 310000, China

*Corresponding author Email: gaoyuan@nbufe.edu.cn

Received 9 May 2026; Accepted 2 June 2026; Published 9 June 2026

© 2026 The Author(s). This is an open access article under the CC BY license

Abstract: Reputation systems have become a central mechanism of platform labor governance. Although digital labor platforms frequently define flexibility as workers' ability to choose when and where to work, this formal discretion is increasingly conditioned by algorithmic rating, ranking, and order-allocation systems. This paper develops a conceptual framework to explain how reputation systems may transform platform flexibility into gendered de-flexibilization. Drawing on labor process theory, algorithmic management research, feminist work-family scholarship, and studies of platform governance, the paper argues that reputation systems do not merely evaluate service quality. Rather, they convert customer feedback into algorithmic signals that influence future access to work, income stability, and workers' practical control over time. The proposed framework identifies a score-order-income-time compensation chain: customer ratings affect reputation scores; reputation scores influence order allocation and platform visibility; reduced orders or penalties affect income; and workers respond by extending working time or increasing availability to restore earnings and reputation. This chain is especially consequential for women platform workers whose time is already constrained by unpaid care responsibilities and household labor. The paper contributes to platform labor studies by conceptualizing flexibility as a conditional and reversible resource, contributes to gender and work-family research by linking algorithmic control to unequal time autonomy, and provides policy implications for transparent scoring, review and appeal mechanisms, anti-discrimination safeguards, and gender-sensitive platform governance.

Keywords: platform economy; algorithmic management; reputation systems; women platform workers; flexible work; de-flexibilization; work-family balance

1. Introduction

Digital labor platforms have become an important form of contemporary work organization. By using app-based interfaces to match customers, clients, and workers, platforms coordinate task allocation, payment, performance evaluation, and customer feedback within highly standardized digital systems (Donovan et al., 2016; West et al., 2018). A major attraction of this model is the promise of flexibility. Workers are commonly told that they may decide when to log on, which tasks to accept, and how much time to devote to paid work. However, this promise is increasingly mediated by algorithmic management. Scheduling, visibility, reward distribution, and sanctions are embedded in platform infrastructures rather than negotiated through visible managerial procedures (Choudary, 2018; Lee et al., 2015; Rosenblat & Stark, 2015). As a result, flexibility cannot be evaluated only in terms of

formal freedom to log on and off. It must also be assessed in relation to whether workers can maintain adequate income, reputation, and future access to work when they exercise that freedom.

This issue is particularly important for women platform workers. Across many labor markets, women continue to undertake a disproportionate share of unpaid domestic work, childcare, and eldercare (Alfers, 2016; Churchill & Craig, 2019; Vyas, 2020). Working-time flexibility is therefore not merely a preference for convenience. It is often a condition for remaining attached to paid work while managing household responsibilities and income needs. Work-family research has long shown that schedule control can support labor-market participation, but it also warns that flexibility may become problematic when it is connected to insecure employment, income volatility, or employer-driven scheduling (Golden, 2001; Scandura & Lankau, 1997; Warren, 2021). In platform work, this tension becomes more visible because workers may formally choose their hours while remaining dependent on ratings, order flows, customer demand, and penalty mechanisms. For women who combine platform income with unpaid care, any disruption to ratings or allocation may be experienced not only as income insecurity but also as pressure on rest time, care routines, and work-family boundaries.

Existing research has generated important insights into platform labor, algorithmic management, and reputation systems. Studies have shown that platform work can offer limited autonomy while shifting risk to workers and governing them through ratings, rankings, penalties, and information asymmetries (Aloisi, 2015; Broughton et al., 2016; Rani & Furrer, 2019, 2020). Research on algorithmic management further indicates that digital systems can perform functions similar to human resource management, including matching, monitoring, evaluation, incentives, and sanctions (Choudary, 2018; Lee et al., 2015; Rani & Furrer, 2020; Rosenblat & Stark, 2015). Nevertheless, the gendered temporal consequences of reputation systems remain insufficiently integrated into existing theory. This gap is significant because reputation systems do more than record customer satisfaction. They translate customer feedback into platform decisions about order allocation, income penalties, visibility, and future work opportunities. When negative or biased evaluations reduce access to orders, workers may extend working hours to recover income and repair reputation. For women with care responsibilities, this process can create a distinct mechanism of gendered de-flexibilization.

To address this gap, this paper develops a conceptual framework rather than an empirical test. It asks three theoretical questions: first, how should platform flexibility be conceptualized when access to work is conditioned by reputation metrics; second, through what mechanisms do reputation systems convert customer feedback into algorithmic labor control; and third, why are these mechanisms likely to produce gendered consequences for working time? The paper makes three contributions. First, it conceptualizes platform flexibility as a conditional and reversible resource rather than a fixed attribute of platform work. Second, it places gendered care responsibility at the center of platform labor analysis, showing why time autonomy is unevenly distributed. Third, it theorizes the score-order-income-time compensation chain as a mechanism through which reputation systems reshape workers' practical control over time. The remainder of the paper is organized as follows. Section 2 reviews the relevant literature. Section 3 develops the conceptual framework. Section 4 elaborates theoretical mechanisms and propositions. Section 5 discusses policy and managerial implications. Section 6 sets out a future research agenda, and Section 7 concludes.

2. Literature Review

2.1. Platform Flexibility as a Contested Concept

Flexibility is one of the most influential claims through which digital labor platforms attract workers, but it should not be treated as a natural or stable feature of platform work. In platform discourse, flexibility usually refers to the ability to choose working time, accept or reject tasks, and combine platform work with other responsibilities.

Some studies have emphasized that platform work may lower entry barriers and provide supplementary income, especially for groups excluded from standard employment (Barnes et al., 2015; Wood et al., 2018). However, formal discretion does not necessarily produce substantive control over working time. The key issue is not whether platforms provide any flexibility, but under what conditions workers can exercise that flexibility without losing income, reputation, or future access to work.

A critical reading of platform flexibility begins with the relationship between worker discretion and platform governance. Platforms do not simply match supply and demand. They define the conditions under which workers can access tasks, maintain visibility, avoid penalties, and secure future earnings. Acceptance rules, cancellation mechanisms, customer ratings, dynamic pricing, ranking systems, and penalties all shape the value of a worker's formal choice to work at a particular time (Broughton et al., 2016; Rani & Furrer, 2019, 2020). A worker may be free to stop working, but this decision can become costly if it reduces future allocation or weakens the worker's reputation. Platform flexibility is therefore continually produced through platform rules, data infrastructures, and incentive systems.

This tension is central to debates on algorithmic management. Algorithmic systems often perform managerial functions by recommending or allocating work, monitoring performance, evaluating conduct, distributing rewards, and applying sanctions (Choudary, 2018; Lee et al., 2015; Rosenblat & Stark, 2015; Wood et al., 2018). These functions may improve coordination efficiency, but they also generate information asymmetries because workers may not know how ratings, cancellations, or acceptance histories affect future opportunities. Platform workers can therefore experience autonomy and control simultaneously. They may select their working hours while remaining dependent on algorithmic systems that determine whether sufficient work will be available during those hours.

The concept of contested flexibility helps move the discussion beyond a simple opposition between autonomy and exploitation. Platforms may define flexibility as the ability to log on and off. Workers may define it as the ability to earn sufficient income within available time without unpredictable penalties. Customers may indirectly define it through demand patterns and service expectations. Algorithms then mediate these definitions by determining which workers receive orders, how quickly they must respond, and what consequences follow from negative evaluations. Flexibility is therefore an outcome of interaction among platform rules, customer demand, algorithmic allocation, and workers' economic constraints.

2.2. Gendered Care Responsibility and Time Autonomy

The meaning of flexibility is strongly gendered because workers do not enter platform labor with equal household responsibilities or equivalent control over time. Feminist work-family research has repeatedly shown that women perform a disproportionate share of unpaid domestic labor, childcare, and eldercare (Alfers, 2016; Churchill & Craig, 2019; Vyas, 2020). These responsibilities shape labor-market participation, employment preferences, and exposure to precarious work. For many women, working-time flexibility is not a lifestyle preference. It is a practical requirement for coordinating paid work with care obligations, household labor, and family income needs.

Classic research on flexible work shows that schedule control can support job satisfaction, organizational commitment, and labor-market attachment, especially where workers face family responsibilities (Golden, 2001; Scandura & Lankau, 1997). At the same time, flexibility may involve trade-offs when it is tied to insecure work, unpredictable schedules, or income volatility (Warren, 2021). Childcare costs and insufficient care support can reduce women's labor-market participation, while unstable working time can intensify rather than reduce work-family conflict (Vyas, 2020; Warren, 2021). The central issue is therefore not flexibility in the abstract, but whether workers have reliable time autonomy: the capacity to plan, interrupt, and resume paid work without disproportionate penalties.

Platform work appears to address this need because it promises income without a conventional fixed schedule. Yet recent scholarship warns that platform labor may relocate rather than resolve work-family conflict. Women may work at night, accept tasks around school or care routines, fragment paid work into short intervals, or intensify labor during limited windows of availability (James, 2024; Warren, 2021). These practices show agency, but they also reveal constraint. The burden of making platform work compatible with family life is often individualized. Women must reorganize rest, care, and household time around platform demand rather than receiving institutional support for care responsibilities.

This gendered context changes how algorithmic systems are experienced. Metrics such as response speed, acceptance rate, cancellation rate, and customer satisfaction may appear neutral, yet they privilege workers who can remain continuously available to the market. A worker without care responsibilities may treat platform flexibility as discretionary scheduling. A worker responsible for childcare or eldercare may experience the same platform rules as fragile because a family interruption can affect response time, task acceptance, customer evaluation, and income. If a rating loss requires additional hours to restore income or reputation, women with care duties may need to take that time from rest or domestic routines.

2.3. Reputation Systems as Algorithmic Control

Reputation systems are a key mechanism through which platform flexibility can turn into practical constraint. At first glance, reputation systems appear to solve a market problem by allowing customers to assess service quality, create trust among strangers, and reward reliable workers. However, in platform labor they also perform managerial functions. Customer ratings and feedback are translated into scores, rankings, or reputational indicators that may influence order allocation, platform visibility, penalties, income stability, and the capacity to refuse work (Broughton et al., 2016; Lee et al., 2015; Rani & Furrer, 2019, 2020). Reputation is therefore not only a signal of past performance. It becomes platform-mediated capital that workers must protect to maintain future access to work.

The disciplinary power of reputation systems lies in the chain that connects customer evaluation to working time. A negative rating may lower a reputation score; a lower score may reduce order allocation or trigger financial penalties; reduced orders and earnings may require workers to work additional hours; and additional hours may be needed not only to recover lost income but also to accumulate positive reviews and restore the score. This score-order-income-time compensation chain is central to understanding de-flexibilization. Workers are rarely ordered directly to work longer hours. Instead, the platform architecture makes additional labor a rational response to rating loss, income insecurity, and fear of future exclusion.

Opacity intensifies this control. Workers often do not know how many negative reviews will trigger penalties, how scores are weighted, how long penalties last, or how reputation interacts with allocation algorithms. This uncertainty encourages self-discipline because workers may overcompensate to avoid unknown risks (Rani & Furrer, 2019, 2020). Research on algorithmic management shows that workers' interpretations of automated assessment and allocation systems can affect work experience and behavior (Choudary, 2018; Lee et al., 2015; Rani & Furrer, 2020; Rosenblat & Stark, 2015). Similarly, studies of platform ratings and feedback systems suggest that customer evaluation can extend beyond the immediate task by shaping income security, future access to work, and workers' willingness to increase availability (Broughton et al., 2016; Rani & Furrer, 2019, 2020). Reputation-based control is therefore temporal as well as evaluative.

Reputation systems also delegate part of managerial authority to customers. Customers are not formal supervisors, yet their ratings can trigger managerial consequences. This delegation matters because customer feedback is not always neutral or accurate. Ratings may reflect misunderstanding, strategic complaints, mood, prejudice, or gendered expectations rather than service quality alone (Broughton et al., 2016; Chen, 2024). When platforms treat customer feedback as objective data, biased evaluations can be transformed into apparently neutral

algorithmic decisions. Evidence from online labor markets indicates that reputation systems do not automatically eliminate inequality, and recent research shows that platform ranking algorithms can amplify gender gaps when past customer behavior enters future allocation or visibility mechanisms (Chen, 2024). For women workers, customer-side bias may therefore be converted into lower scores, fewer orders, income loss, and additional time spent repairing reputation.

This literature review identifies the theoretical tension that guides the paper. Platform flexibility is not naturally present; it is shaped by platform rules, customer demand, order allocation, and algorithmic control. Women's need for flexible time is not merely personal preference; it is embedded in gendered care responsibility, household labor division, and economic pressure. Reputation systems are not neutral feedback tools; they translate customer evaluation into allocation, penalty, and score-recovery mechanisms that may invisibly extend working time. The unresolved theoretical question is how these three dynamics interact to produce gendered de-flexibilization.

3. Conceptual Framework

3.1. Conceptual Approach and Scope

By synthesizing labor process theory, algorithmic management research, feminist work–family scholarship, and platform governance literature, this paper explains how reputation systems may generate gendered de-flexibilization. It clarifies a mechanism that is evident in existing research but remains insufficiently integrated: when future access to work depends on reputation metrics, platform flexibility becomes conditional; when workers' time is structured by unpaid care responsibilities, this conditionality produces gendered consequences.

The conceptual approach is appropriate because the problem lies at the intersection of several fields. Labor process and HRM research explain how platforms exercise control through algorithms. Platform studies explain how digital infrastructures organize market exchange. Work-family scholarship explains why time autonomy is socially unequal. Discrimination research explains how customer evaluation may reproduce bias. A conceptual framework can connect these fields by specifying how reputation systems translate customer judgment into algorithmic control, how algorithmic control reshapes working time, and why the temporal burden is likely to fall unevenly on women workers.

3.2. Core Concepts

The framework is built around four concepts. First, formal flexibility refers to the platform-level ability to choose when to log on, accept tasks, or stop working. It is the form of flexibility most frequently emphasized in platform narratives. Second, substantive time autonomy refers to the practical capacity to earn adequate income during available working windows without disproportionate penalties for interruption, refusal, or delay. Substantive time autonomy depends on income stability, order availability, predictable consequences, and meaningful worker voice. Third, reputation capital refers to the accumulated score, review history, or platform-visible credibility that affects future access to work. It is often non-portable and platform-specific. Workers may lose it quickly, cannot easily transfer it across platforms, and may spend unpaid or underpaid time protecting or repairing it. Fourth, de-flexibilization refers to the process through which nominally flexible work becomes practically inflexible through indirect pressures such as rating anxiety, score recovery, income loss, and fear of future exclusion.

These concepts distinguish flexibility as a formal platform promise from flexibility as a lived temporal condition. A platform may provide formal flexibility while undermining substantive time autonomy. Similarly, reputation may appear to measure service quality while functioning as a labor-control mechanism. De-flexibilization does not require direct instruction. It can occur when workers voluntarily extend working hours because the alternative is lower income, reputational decline, or reduced future access to orders. The conceptual contribution is to show that

flexibility, reputation, and control are linked through a temporal mechanism rather than operating as separate features of platform work.

3.3. The Score-Order-Income-Time Compensation Chain

The central mechanism in the framework is the score-order-income-time compensation chain. The chain begins with customer evaluation. A negative rating, complaint, or low score is processed by the platform as a signal of worker reliability or service quality. The second link is order allocation. When reputation metrics are tied to ranking or matching systems, lower scores may reduce the worker's visibility, priority, or access to desirable tasks. The third link is income. Reduced orders, direct penalties, or lower-quality tasks can reduce current earnings and create uncertainty about future earnings. The fourth link is time compensation. Workers respond by extending working hours, accepting less desirable tasks, working during rest time, or increasing availability to recover income and rebuild reputation. The outcome is conditional flexibility: workers retain formal choice over working time but lose meaningful control over when and how long they need to work.

This chain is important because it explains how control operates without explicit command. Platform workers are not necessarily instructed to work longer hours after a rating loss. Nevertheless, the platform architecture makes additional labor the most rational strategy for restoring income and reputation. In this sense, the chain produces anticipatory discipline. Workers adjust present behavior in anticipation of future allocation decisions that they cannot fully observe. The chain also explains why reputation systems have temporal effects. They do not only evaluate completed tasks; they reorganize the worker's future time by making access to work conditional on maintaining or repairing reputation.

Figure 1. Conceptual framework of reputation-system-induced gendered de-flexibilization

Customer rating, review, or complaint
Reputation score and platform visibility
Order allocation, income penalty, and future access
Compensatory labor: longer hours, score recovery, and anticipatory compliance
Gendered de-flexibilization under care responsibility, income dependence, algorithmic opacity, and customer bias

Note. The model conceptualizes de-flexibilization as a process rather than as an outcome imposed directly by a manager. Platform rules, customer evaluation, and gendered care constraints jointly shape whether formal flexibility becomes substantive time autonomy.

3.4. Boundary Conditions

The framework identifies five boundary conditions that shape the strength of gendered de-flexibilization. The first is care intensity. Workers with frequent childcare, eldercare, or household responsibilities are more vulnerable to the temporal consequences of rating loss because they have fewer discretionary hours for score recovery. The second is income dependence. Workers who rely heavily on platform earnings are more likely to compensate for reduced income by extending hours. The third is algorithmic opacity. When workers cannot understand how ratings affect allocation, they may overcompensate by increasing availability and accepting unfavorable tasks. The fourth is customer-side bias. Where customer evaluations reflect gendered or other discriminatory assumptions, reputation systems can convert bias into algorithmic disadvantage. The fifth is institutional protection. Appeal procedures, social protection, childcare support, anti-discrimination rules, and algorithmic accountability can reduce the extent to which workers must repair reputational harm through unpaid or underpaid additional labor.

These conditions clarify why the framework does not claim that all platform work produces de-flexibilization in the same way. Platform sectors differ in task type, customer contact, visibility of worker identity, rating design,

income dependence, and regulatory context. This contingency-based view is consistent with digital transformation research showing that digital intelligence technologies create value when information-processing capacity, coordination mechanisms, and social norms fit the specific organizational context (Pang et al., 2024; Pang et al., 2025). A remote crowdworker, a food-delivery courier, a domestic-service worker, and a professional freelancer may all be subject to reputation systems, but the temporal and gendered consequences may vary. The framework is therefore intended as a mechanism-based model that can guide comparative research rather than as a universal description of all platform labor.

4. Theoretical Mechanisms and Propositions

4.1. Reputation-Contingent Flexibility

The first mechanism is reputation-contingent flexibility. Platforms may present flexibility as a worker-controlled resource, but reputation systems make flexibility dependent on maintaining favorable metrics. A worker with a high score may enjoy greater access to orders and therefore greater practical choice over working time. A worker whose score declines may retain formal freedom to log on, but the value of that freedom falls if the platform allocates fewer tasks or lower-quality work. Flexibility thus becomes a status that must be earned, defended, and restored.

Proposition 1: Platform flexibility is more likely to become de-flexibilization when workers' access to future work is strongly contingent on reputation metrics rather than transparent and stable scheduling rights.

4.2. Anticipatory Compliance and Hidden Working Time

The second mechanism is anticipatory compliance. Reputation systems discipline workers not only through actual penalties but also through the fear of future penalties. When workers do not know how many poor reviews trigger sanctions, how long low scores affect allocation, or how quickly reputation can be restored, they may increase availability to protect themselves against uncertain risk. This can create hidden working time: time spent waiting for orders, handling feedback, contesting reviews, accepting low-value tasks, or working during rest periods to rebuild reputation.

Proposition 2: The more opaque the relationship between ratings, penalties, and order allocation, the more likely workers are to engage in anticipatory compliance that extends working time beyond the formally chosen schedule.

4.3. Customer Delegation and Biased Evaluation

The third mechanism is customer delegation. Reputation systems place customers in a quasi-managerial position because customer ratings can trigger algorithmic consequences. This delegation may improve service accountability, but it also exposes workers to subjective, inconsistent, and potentially biased evaluations. When customer feedback is treated as neutral data, prejudice or misunderstanding can be converted into platform-visible reputation loss. For women workers, customer-side gender assumptions may affect how performance is judged, especially in customer-facing sectors where gender is visible and service encounters are direct.

Proposition 3: Reputation systems are more likely to generate gendered de-flexibilization when customer evaluations are directly incorporated into allocation, penalty, or ranking systems without robust procedures for detecting bias and contesting unfair feedback.

4.4. Gendered Care Constraints and Temporal Penalties

The fourth mechanism links reputation systems to gendered care constraints. Platform metrics often reward uninterrupted availability, fast response, low cancellation, and high customer satisfaction. These metrics may appear neutral, but they are easier to maintain for workers whose time is not frequently interrupted by care. Women with childcare, eldercare, or household responsibilities may have less capacity to respond quickly, accept tasks at

inconvenient times, or extend hours after reputation loss. When a low score reduces income, the additional time required for recovery may be taken from rest or care routines.

Proposition 4: The temporal costs of reputation loss are likely to be greater for women workers with unpaid care responsibilities because score recovery requires discretionary time that is already constrained by household labor.

4.5. Institutional Mitigation and Platform Accountability

The fifth mechanism concerns mitigation. De-flexibilization is not inevitable. The relationship between reputation systems and working time depends on platform design and institutional context. Transparent rating rules, meaningful appeal mechanisms, human review, rating portability, client accountability, and anti-discrimination monitoring can reduce the disciplinary power of unfair or opaque ratings. Broader social policies also matter. Childcare provision, social insurance, income protection, and training opportunities can reduce workers' dependence on unstable platform earnings and make it easier to resist unfair demands.

Proposition 5: The negative effects of reputation systems on substantive time autonomy are weaker where platforms and regulators provide transparent scoring rules, effective appeal mechanisms, anti-discrimination safeguards, and social protections that reduce workers' dependence on continuous platform availability.

Table 1. Summary of theoretical propositions

Proposition	Theoretical claim
P1	Platform flexibility becomes de-flexibilization when future access to work is strongly contingent on reputation metrics.
P2	Algorithmic opacity encourages anticipatory compliance and hidden working time.
P3	Customer evaluations produce gendered de-flexibilization when they directly shape allocation and penalties without robust bias review.
P4	The temporal costs of reputation loss are greater for women workers with unpaid care responsibilities.
P5	Transparent rules, appeal mechanisms, anti-discrimination safeguards, and social protection weaken the de-flexibilizing effects of reputation systems.

5. Policy and Managerial Implications

The framework has implications for platform design. First, platforms should distinguish between formal flexibility and substantive time autonomy. It is not sufficient to state that workers can choose when to work if the rating architecture penalizes interruptions, refusals, or limited availability. Platforms should disclose how ratings affect order allocation, income penalties, and score recovery. Workers need actionable information, including which behaviors affect ratings, how quickly scores recover, whether a poor review is weighted by customer history, how penalties are calculated, and how long allocation effects last. Without such information, workers cannot plan their schedules or protect themselves from arbitrary income loss.

Second, platforms should establish meaningful review and appeal mechanisms. Customer feedback should not automatically trigger allocation or income consequences without procedural safeguards. Platforms could require customers to provide reasons for very low ratings, audit patterns of repeated customer complaints, suspend the effect of contested ratings while review is pending, and allow workers to flag discriminatory or malicious feedback. Worker voice should be built into the reputation infrastructure itself. This is particularly important because customer feedback becomes disciplinary when platforms make it consequential without reciprocal accountability.

Third, reputation systems should be assessed for indirect discrimination. Metrics such as acceptance rate, cancellation rate, and response speed may appear neutral but can disadvantage workers with care responsibilities,

safety concerns, or limited availability. Platforms should conduct algorithmic audits to examine whether rating and allocation systems disproportionately reduce work access for particular groups. Possible design alternatives include separating customer-service feedback from allocation eligibility, weighting ratings by customer reliability, providing grace periods for care interruptions, and creating non-punitive mechanisms for temporary unavailability.

Fourth, policy makers should recognize that platform flexibility does not automatically provide decent work. Social protection, anti-discrimination rules, and platform accountability are necessary to prevent flexibility from becoming a justification for insecurity (Vyas, 2020; Warren, 2021). Where reputation scores affect access to work, workers should have rights to explanation, correction, and human review. Regulators could require platforms to disclose the main parameters through which ratings influence work allocation, provide accessible complaint procedures, and monitor whether evaluation systems generate indirect discrimination.

Finally, the framework has implications for human resource management. Algorithmic reputation systems perform recognizable HR functions, including performance appraisal, reward allocation, discipline, and retention. Yet these functions are often enacted outside conventional employment protections. Treating reputation systems as algorithmic HRM tools shows why platform work belongs within mainstream debates on fairness, worker voice, performance management, and employee well-being. Recent research on Logistics 4.0 further suggests that employee voice contributes to performance when it is matched by supervisor listening and perceived respect, reinforcing the need for voice-sensitive governance in digitally mediated work systems (Pang et al., 2026). Platform companies should therefore be evaluated not only as digital intermediaries but also as organizations that design and operate consequential labor-management systems.

6. Future Research Directions

As a conceptual paper, this article does not provide empirical estimates of the causal effects of reputation systems on working time. Future research should test and refine the proposed framework through multiple designs. Qualitative studies can examine how workers interpret rating systems, how they manage score recovery, and how care responsibilities shape platform strategies. Semi-structured interviews are particularly useful for exploring sensitive issues such as discrimination, income insecurity, and work-family conflict. Thematic analysis can then identify mechanisms and compare patterns across platform sectors.

Quantitative and mixed-methods research could examine whether the score-order-income-time compensation chain is observable in platform records. Access to rating histories, allocation data, cancellation metrics, earnings records, and working-time logs would allow researchers to test whether rating decline is followed by fewer orders, income loss, and increased working hours. Experimental or quasi-experimental designs could examine whether changes in rating systems, appeal procedures, or customer-feedback rules alter workers' time allocation. Longitudinal designs could also examine whether reputation accumulation creates sticky labor by making workers reluctant to leave platforms because their reputation capital is non-portable (Sun et al., 2021).

Comparative research should investigate how the framework varies across sectors and institutional contexts. Food delivery, ride-hailing, domestic services, online freelancing, healthcare platforms, and professional service platforms all use reputation systems, but they differ in customer contact, worker visibility, task duration, safety risk, pricing rules, and income dependence. Cross-national research could examine how childcare provision, labor regulation, and social protection shape the gendered effects of platform reputation systems. Large-scale surveys and public datasets may help situate platform experiences within broader labor-market trends.

Future studies should also examine intersectionality. The effects of reputation systems may vary not only by gender but also by race, age, migration status, disability, class position, and household structure. A worker's vulnerability to rating loss may depend on multiple identities and resources. Research that treats women platform

workers as a homogeneous category may miss important differences in exposure to customer bias, dependence on platform income, and capacity to contest unfair evaluations.

7. Conclusion

This paper has developed a conceptual framework for explaining how platform-based reputation systems can transform the promise of flexible work into gendered de-flexibilization. Its central argument is that flexibility should not be evaluated only by formal schedule choice. It must be assessed by the real conditions under which workers can preserve income, reputation, and future access to work while also meeting care responsibilities. Reputation systems matter because they connect customer evaluation to order allocation, income penalties, and score recovery. Through the score-order-income-time compensation chain, customer feedback becomes a mechanism of algorithmic labor control.

The paper has advanced three contributions. First, it conceptualizes platform flexibility as contested, conditional, and reversible rather than as a stable attribute of platform work. Second, it places gendered care responsibility at the center of platform labor analysis, showing why working-time flexibility is often a structural requirement rather than a personal preference for women workers. Third, it theorizes reputation systems as algorithmic control mechanisms that can restructure workers' practical time autonomy without direct managerial instruction. The proposed propositions provide a basis for future empirical research on how ratings, allocation systems, customer bias, and care responsibilities interact across different platform sectors.

The broader implication is that platform flexibility is neither inherently empowering nor inherently exploitative. Its effects depend on the design of reputation systems, the transparency of algorithmic allocation, the fairness of customer evaluation, the availability of worker voice, and the social conditions under which workers organize paid and unpaid labor. A fairer platform economy therefore requires not only flexible access to work but also substantive time autonomy, procedural justice, and gender-sensitive labor protection.

Funding: This manuscript has been prepared for journal-style submission. Funding information should be added before submission if applicable.

Funding: This study was partially supported by the Research Fund Project of Ningbo University of Finance and Economics(No.1320252012). This article represents one of the research outputs of the project.

References

- [1] Alfes L. Our children do not get the attention they deserve: A synthesis of research findings on women informal workers and child care from six membership-based organizations [R]. *Women in Informal Employment: Globalizing and Organizing*, 2016.
- [2] Aloisi A. Commoditized workers: The rising of on-demand work, a case study research on a set of online platforms and apps [J]. *SSRN Electronic Journal*, 2015, 37(3).
- [3] Barnes S A, Green A, de Hoyos M. Crowdsourcing and work: Individual factors and circumstances influencing employability [J]. *New Technology, Work and Employment*, 2015, 30(1): 16-31.
- [4] Broughton A, Green M, Rickard C, et al. Precarious employment in Europe: Patterns, trends and policy strategies [R]. *European Parliament*, 2016.
- [5] Chen Y. Does the gig economy discriminate against women? Evidence from physicians in China [J]. *Journal of Development Economics*, 2024, 169: 103275.
- [6] Choudary S P. The architecture of digital labour platforms: Policy recommendations on platform design for worker well-being [R]. *International Labour Office*, 2018.
- [7] Churchill B, Craig L. Gender in the gig economy: Men and women using digital platforms to secure work in Australia [J]. *Journal of Sociology*, 2019, 55(4): 741-761.
- [8] Donovan S A, Bradley D H, Shimabukuro J O. What does the gig economy mean for workers? [R]. *Congressional Research Service*, 2016.
- [9] Golden L. Flexible work schedules: What are we trading off to get them? [J]. *American Behavioral Scientist*, 2001, 44(7): 1157-1178.
- [10] James A. Platform work-lives in the gig economy: Recentering work-family research [J]. *Gender, Work & Organization*, 2024, 31(2): 513-534.
- [11] Lee M K, Kusbit D, Metsky E, et al. Working with machines: The impact of algorithmic and data-driven management on human workers [C]. *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems*, 2015.
- [12] Pang, Q., Cai, L., Wang, X., & Fang, M. (2024). Digital transformation as the fuel for sailing toward sustainable success: The roles of coordination mechanisms and social norms. *Journal of Enterprise Information Management*, 37(3), 1069-1096.
- [13] Pang, Q., Liu, X., & Su, M. (2025). Leveraging digital intelligence technologies for green shipping: Organization information processing and contingency perspective. *Business Strategy and the Environment*, 34(7), 9023-9039.
- [14] Pang, Q., Wang, M., Yao, J., & Fang, M. (2026). Employees' perceived respect and performance in Logistics 4.0: A dyadic perspective of the congruence between employee voice and supervisor listening. *International Journal of Physical Distribution & Logistics Management*, 56(2), 224-248
- [15] Rani U, Furrer M. On-demand digital economy: Can experience ensure work and income security for microtask workers? [J]. *Jahrbuecher fuer Nationaloekonomie und Statistik*, 2019, 239(3): 565-597.
- [16] Rani U, Furrer M. Digital labour platforms and new forms of flexible work in developing countries: Algorithmic management of work and workers. *Competition & Change*, 2020, 25(2): 212-236.
- [17] Rosenblat A, Stark L. Uber's drivers: Information asymmetries and control in dynamic work [J]. *SSRN Electronic Journal*, 2015.
- [18] Scandura T A, Lankau M J. Relationships of gender, family responsibility and flexible work hours to organizational commitment and job satisfaction [J]. *Journal of Organizational Behavior*, 1997, 18(4): 377-391.
- [19] Sun P, Chen J Y, Rani U. From flexible labour to sticky labour: A tracking study of workers in the food-delivery platform economy of China [J]. *Work, Employment and Society*, 2021, 36(3): 412-431.

- [20] Vyas N. Gender inequality - now available on digital platform: An interplay between gender equality and the gig economy in the European Union [J]. *European Labour Law Journal*, 2020, 12(1): 37-51.
- [21] Warren T. Work-life balance and gig work: Where are we now and where to next with the work-life balance agenda? [J]. *Journal of Industrial Relations*, 2021, 63(4): 522-545.
- [22] West J, Carblanc A, Ferguson S. *Online platforms: A practical approach to their economic and social impacts* [M]. OECD Publishing, 2018.
- [23] Wood A J, Graham M, Lehdonvirta V, et al. Good gig, bad gig: Autonomy and algorithmic control in the global gig economy [J]. *Work, Employment and Society*, 2018, 33(1): 56-75.