



Zero-Sum or Positive-Sum? Assessing the Relationship Between Platforms and Workers in the Gig Economy

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ABSTRACT:

This study analyzes the nature of the relationship between digital platforms and workers in the *gig economy* through the *zero-sum* and *positive-sum* theoretical framework to assess patterns of value creation and distribution. Using a qualitative normative-conceptual approach, the study integrates conceptual, philosophical, and critical-analytical analyses of scholarly literature, policy reports, and digital labor regulations. The findings indicate that platform-worker relations are hybrid in nature with a tendency toward a *quasi zero-sum* pattern, in which value creation through efficiency and market expansion is not matched by proportional surplus distribution and risk sharing. Workers bear most income uncertainty and operational costs, while platforms gain structural advantages through control over data, algorithms, and network effects. These results highlight that the character of economic relations in the *gig economy* is shaped by institutional design and regulatory frameworks rather than by technology alone. The study recommends strengthening algorithmic transparency, social protection, and worker representation mechanisms as prerequisites for transforming the *gig economy* into a fair and sustainable *positive-sum* model.

Keywords: Gig economy; Platform labor; Zero-sum and positive-sum; Value distribution; Algorithmic management.

ABSTRAK:

Penelitian ini menganalisis karakter relasi antara platform digital dan pekerja dalam *gig economy* melalui kerangka teori *zero-sum* dan *positive-sum* untuk menilai pola penciptaan serta distribusi nilai ekonomi. Menggunakan pendekatan kualitatif normatif-konseptual, kajian ini memadukan analisis konseptual, filosofis, dan analitis-kritis terhadap literatur ilmiah, laporan kebijakan, dan dokumen regulasi ketenagakerjaan digital. Hasil penelitian menunjukkan bahwa relasi platform-pekerja bersifat hibrida dengan kecenderungan *quasi zero-sum*, di mana penciptaan nilai melalui efisiensi dan perluasan pasar tidak diimbangi dengan distribusi surplus dan pembagian risiko yang proporsional. Pekerja menanggung sebagian besar ketidakpastian pendapatan dan biaya operasional, sementara platform memperoleh keunggulan struktural melalui penguasaan data, algoritma, dan efek jaringan. Temuan ini menegaskan bahwa karakter relasi ekonomi dalam *gig economy* ditentukan oleh desain institusional dan kerangka regulasi, bukan oleh teknologi semata. Penelitian ini merekomendasikan penguatan transparansi algoritmik, perlindungan sosial, dan mekanisme representasi pekerja sebagai prasyarat transformasi menuju model *positive-sum* yang adil dan berkelanjutan.

Kata Kunci: Gig economy; Tenaga kerja platform; Zero-sum dan positive-sum; Distribusi nilai; Manajemen algoritmik

INTRODUCTION

The development of digital technology has driven a significant transformation in the structure of the global labor market through the emergence of the gig economy, namely a platform-based work model that relies on flexible task assignment systems and non-permanent employment

relationships (Li et al., 2025). This phenomenon is reflected in the rapid growth of ride-hailing services, delivery services, freelance marketplaces, and the digital creator economy that connects service providers and users through algorithmic intermediaries.

According to data from the International Labour Organization (ILO, 2021), the number of global platform workers is estimated to have reached 154–435 million people in 2020, with projections of continued growth reaching 777 million workers by 2025. In Indonesia itself, the gig economy sector has experienced exponential growth, with more than 4 million drivers and couriers registered on ride-hailing and delivery platforms in 2023 (Azahra, 2026). This growth indicates that the gig economy has become an integral component of the contemporary employment ecosystem.

In this context digital platforms no longer merely function as media for market encounters, but rather act as new economic intermediaries that regulate access, the distribution of work opportunities, as well as mechanisms for price formation and incentives (Törnberg, 2023). Vallas dan Schor (2020a) refer to this phenomenon as “platform capitalism”, in which technology corporations control the digital infrastructure that forms the basis of the economic activities of millions of workers.

On the other hand, the gig economy is often promoted as an instrument of economic inclusion and market efficiency that is able to expand access to work, reduce transaction costs, and open space for participation for groups that were previously marginalized in the formal labor market (Hall & Krueger, 2018). This narrative positions the relationship between platforms and workers as one that is mutually beneficial and creates shared value (positive-sum).

A study by the McKinsey Global Institute (Kuhn et al., 2021) shows that digital platforms can increase matching efficiency between supply and demand by up to 30–40%, while also providing work flexibility that is highly valued by 70% of the surveyed gig workers. Furthermore, the World Bank (2019) identifies that the gig economy has the potential to reduce barriers to entry into the labor market for marginalized groups, including women, youth, and workers in rural areas who have limited access to formal employment.

In addition the perspective of entrepreneurial flexibility emphasizes that platform workers have autonomy in determining working hours, location, and work intensity, which can improve work-life balance and job satisfaction (Duanguppama et al., 2025). This argument is reinforced by findings that some platform workers use the gig economy as a source of supplemental income that complements their primary employment (Wood & Lehdonvirta, 2021).

However, on the other hand, various critical studies show the emergence of structural problems in the form of income instability, weak social protection, and power imbalances in the relationship between platforms as owners of digital infrastructure and workers as providers of labor and time (Wood et al., 2019). Hickson et al. (2025) criticizes the gig economy model as a form of “digital precarity” that transfers economic risk from corporations to individual workers without providing adequate compensation or protection.

The main criticism is directed at algorithm-based work management mechanisms that tend to create information asymmetries and weaken workers’ bargaining positions (De Stefano & Taes, 2023). The determination of rates, the distribution of orders, and incentive systems often occur in a closed and unilateral manner, so that the risks of demand fluctuations and income uncertainty are largely shifted onto workers. Rosenblat and Stark. Rosenblat dan Stark (2016a) refer to this practice

as “algorithmic management”, which uses reputation rating systems, surge pricing, and gamification to control worker behavior without sufficient transparency.

An empirical study by Berg et al. (2018) in the context of Amazon Mechanical Turk shows that the hourly wages of platform workers often fall below the minimum wage, with a median of \$2 per hour after accounting for the time spent searching for tasks and dealing with unilateral payment rejections. Similarly Shapiro’s (2018) research on Uber drivers finds that, after accounting for vehicle operating costs, insurance, and asset depreciation, workers’ net income is far lower than what is promoted by the platform.

From this situation, platforms derive profits from data accumulation, network effects, and transaction commissions, while workers bear operational costs and socio-economic risks on an individual basis (Nayak & Walton, 2024). Zuboff (2019) in her work *The Age of Surveillance Capitalism*, emphasizes that platforms not only extract value from labor, but also from workers’ behavioral data, which is then monetized for the purposes of prediction and algorithm optimization.

This situation raises a fundamental question regarding the character of economic relations in the gig economy: whether interactions between platforms and workers truly create added value that can be enjoyed proportionally by all parties (positive-sum), or instead represent a pattern of profit distribution that is unbalanced and tends to transfer value from workers to platforms (zero-sum).

This question is not only economic in nature, but also touches on the dimensions of ethics, social justice, and institutional structures in the digital economy. From a distributive justice perspective, this condition is exacerbated by the classification of workers as “independent contractors” or “partners” rather than employees, which legally excludes them from fundamental labor rights such as minimum wages, maximum working hours, and social security (Yang et al., 2021).

Therefore this study positions the gig economy as an arena of normative and conceptual analysis to assess how economic value is created and distributed within the relationship between platforms and workers. By integrating zero-sum and positive-sum theoretical perspectives as well as an economic justice approach, this research seeks to reveal whether the platform-based work model contributes to sustainable and inclusive economic development, or instead reinforces new patterns of inequality within the landscape of the digital labor market.

The contribution of this study lies in the effort to develop an analytical framework capable of explaining the complexity and ambivalence of the gig economy, moving beyond the simple dichotomy between technology as a solution versus technology as a problem. Thus, this research is expected to provide a theoretical foundation for the formulation of fairer and more sustainable digital labor policies.

RESEARCH METHOD

This study employs a normative-conceptual qualitative approach to critically analyze the nature of the relationship between digital platforms and workers in the gig economy through the theoretical framework of zero-sum and positive-sum (Creswell & Poth, 2023). This approach is chosen because the study not only focuses on the empirical aspects of digital labor relations, but also on the normative, ethical, and justice dimensions within the structure of economic value creation and distribution. The analysis is conducted by combining conceptual, philosophical, and critical-

analytical approaches to examine patterns of power relations, mechanisms of value formation, and the allocation of risk within the platform economy ecosystem (Hosseini & Gills, 2023).

The object of this study is the economic relationship between digital platforms and workers, with a focus on work assignment mechanisms, wage and incentive determination systems, risk distribution, and patterns of economic surplus sharing. The data sources used are secondary in nature, including national and international journal articles, books and academic works relevant to theories of political economy and business ethics, policy reports from international institutions, and digital labor regulation documents as materials for normative comparison.

Data collection is conducted through a literature review with a systematic search of scientific databases and official sources. Data analysis employs descriptive-analytical and argumentative methods that include reduction, categorization, normative interpretation, and conceptual synthesis to formulate tendencies in platform-worker relations as zero-sum, positive-sum, or hybrid forms. The validity of the analysis is maintained through source triangulation, while the limitation of the study lies in its conceptual and secondary-data-based nature; therefore, further research is recommended to use empirical approaches to enrich the validity of the findings (Saldaña, 2025).

RESULTS AND DISCUSSION

Mechanisms of the Relationship between Platforms and Workers in the Gig Economy

The results of the literature review indicate that the relationship between digital platforms and workers in the gig economy is constructed through a technology-based intermediary structure that integrates algorithmic systems, data ownership, and platform governance schemes (Kenney & Zysman, 2020a). Within this structure, workers act as the primary providers of labor, time, and most of the operational capital, such as vehicles, work tools, and digital connectivity (Vallas & Schor, 2020b).

In contrast, platforms function as the owners of digital infrastructure, managers of market access, and controllers of work distribution mechanisms. This configuration reflects what Langley and Leyshon (2017) describe as “platform-mediated capitalism”, in which economic power is concentrated in entities that control digital architectures and task-allocation algorithms.

Pricing determination, order allocation, and performance evaluation are generally carried out through algorithms that are closed in nature and not fully accessible or understandable to workers (Rosenblat, 2018). This condition creates information asymmetries that strengthen the platform’s position in the process of economic decision-making.

Ibrahim, (2025) in their ethnographic study of Uber drivers, identify systematic practices of “informational asymmetry”, in which platforms use behavioral nudging techniques, non-transparent surge pricing, and unilateral rating systems to control worker behavior. Similarly Möhlmann and Zalmanson (2017) find that task distribution algorithms on platforms such as TaskRabbit and Upwork employ “black box” logic that cannot be audited by workers.

Meanwhile workers are positioned as recipients of operational policies without adequate space for negotiation (Cant, 2020). This pattern indicates a shift in labor relations from formal contractual models toward functionally controlled digital relationships, yet without being accompanied by equivalent institutional protections (Doellgast & Wagner, 2022).

Duggan et al. (2020) refer to this phenomenon as “algorithmic control at distance”, in which management is carried out without direct interaction but with a level of supervision that is more intensive than in traditional work systems. Platform workers experience a paradox: formally classified as “independent contractors” who are autonomous, yet in practice subject to subordination through strict algorithmic mechanisms (Johnston & Land-Kazlauskas, 2019).

Furthermore the analysis shows that the risks of demand fluctuations, changes in pricing policies, and income uncertainty tend to be shifted onto workers (Huws et al., 2017). Platforms on the other hand derive benefits from transaction commissions, user network effects, and the accumulation and use of data as strategic economic assets.

A comparative study by Goods et al. (2019) of ride-hailing platforms in Australia shows that workers bear the costs of vehicle depreciation, fuel, insurance, and maintenance, which can amount to 40–60% of their gross income, while platforms only provide matching software without bearing operational risks. Similarly Berg et al. (2018) find that digital platform workers bear the risk of “wage theft” through mechanisms of unilateral payment rejection facilitated by rating systems and dispute resolution processes that are biased toward clients.

Indications of Zero-Sum Patterns in Gig Economy Practices

Several indicators in the literature point to a tendency toward quasi zero-sum relationships (Schor et al., 2020). First, there is a trend of declining pay per task or long-term rate stagnation, even as transaction volumes and the market value of platforms continue to increase (Dunn, 2019).

This phenomenon indicates that the economic growth of platforms is not always accompanied by a proportional improvement in workers’ welfare. A longitudinal study by Hara et al. (2018) of Amazon Mechanical Turk shows an average decline in pay per task of 20% over the period 2009–2016, while the platform’s transaction volume increased by more than 300%.

Data from the International Labour Organization (2021) show that 60% of global platform workers earn incomes below the national minimum wage in their respective countries after accounting for actual working hours, including waiting time and task searching. These findings are confirmed by a study by Kässi dan Lehdonvirta (2018b) using the Online Labour Index, which shows stagnation or a decline in real rates across most categories of platform work since 2016.

Second, the commission and service fee systems set by platforms tend to be unilateral and subject to adjustment without consultation mechanisms with workers (Sundararajan, 2016). This narrows the space for workers to retain a share of the surplus generated from their economic activities (Graham et al., 2017).

Third, the intensification of competition among workers triggered by ranking- and performance-based assignment systems weakens individual bargaining positions, thereby driving a “race to the bottom” in income standards and increasingly longer working hours (Wood et al., 2019).

Gandini (2019) identifies the phenomenon of the “reputation trap”, in which workers are compelled to accept low-paid jobs or poor conditions in order to maintain their ratings, which in turn creates downward pressure on overall compensation standards. A study by Gerber dan Krzywdzinski (2019) on the Upwork platform shows that global competition among workers has led to downward wage convergence, whereby workers from developed countries are forced to lower their rates to compete with workers from developing countries.

Fourth, structural dependence on platforms reinforces asymmetric relationships. Access to markets, digital reputation, and work opportunities is largely determined by account status and algorithmic performance, leaving workers exposed to the risk of economic exclusion in the event of policy changes or unilateral deactivation. In this context, the economic value generated by labor tends to accumulate more at the platform level than among workers, which constitutes a defining characteristic of a concealed zero-sum pattern.

Shapiro (2018) analyzes the phenomenon of “platform lock-in”, in which workers who have invested time and effort to build a reputation on one platform experience difficulties in moving to other platforms or returning to the traditional labor market. These high switching costs strengthen the monopsonistic position of platforms in determining working conditions (Zhao & Luo, 2025).

Potential Positive-Sum Patterns in the Gig Economy Ecosystem

Nevertheless, the review also identifies the presence of potential positive-sum relationships under certain conditions (Gavrilets & Seabright, 2025). Digital platforms have been shown to reduce transaction costs, expand market reach, and open access to work for individuals who previously faced difficulties entering the formal labor market (Katz & Krueger, 2019).

Flexibility in working time and location provides space for workers to align their economic activities with personal and social needs. A study by Chen et al. (2019) finds that 73% of platform workers value flexibility as a key benefit that enables them to combine work with caregiving or educational obligations.

In addition the use of information technology enables the creation of operational efficiencies and increased demand volumes that, in theory, can generate added value for all parties. Within this framework, the gig economy can function as an instrument of economic inclusion and social innovation, particularly for vulnerable groups and regions with limited employment opportunities (OECD, 2019).

Mastercard and Kaiser (Master card & Kaiser, 2020) In their analysis of platforms in developing countries, they found that the gig economy has opened economic access for 40% of workers who previously did not have formal employment, particularly women, youth, and populations in rural areas.

However, this positive-sum potential is conditional. Findings from various studies emphasize that the creation of shared value can only be realized when accompanied by fair wage mechanisms, transparency in algorithmic management, and adequate social protection schemes.

Without these prerequisites, platform efficiency and growth risk deepening inequality rather than generating benefits. Graham et al.(2020) within the Fairwork Principles framework, identify five minimum conditions for a positive-sum gig economy: fair pay, fair conditions, fair contracts, fair management, and fair representation.

A comparative study by Healy et al. (Healy et al., 2017) of platform cooperatives such as Stocksy and Resonate shows that alternative ownership models can create a more balanced distribution of value, with workers receiving 80–90% of transaction value compared to 50–70% on conventional platforms.

Critical Analysis: Zero-Sum or Positive-Sum?

Based on a systematic comparison of aspects of value creation, surplus distribution, risk sharing, and bargaining positions, the relationship between platforms and workers in the gig economy exhibits a hybrid character with a tendency toward quasi zero-sum. Economic value creation does occur through market expansion and digital innovation, yet its distribution tends to be uneven (Kenney & Zysman, 2020b)

Workers contribute directly to service production and user satisfaction, but face limitations in accessing strategic information and participating in economic decision-making. Meanwhile, platforms benefit from network effects, data ownership, and economies of scale that strengthen their dominant position within the digital ecosystem (Cusumano et al., 2019). From the perspective of economic justice, this condition indicates a gap between workers' contributions and the rewards they receive. The resulting relationship does not yet fully reflect the principles of shared value that are characteristic of a positive-sum economy.

Therefore, the gig economy is more appropriately understood as a space of contestation between the potential for shared value creation and value distribution practices that are still influenced by the logic of platform accumulation (Graham & Woodcock, 2018; Rohman & Sahrin, 2026). An analysis by Todolí-Signes (2017) shows that although platforms generate GDP growth, profit distribution is highly disproportionate, with 70–80% of value capture in the hands of platforms and investors.

A qualitative study by Dunn (2019) identifies three ideal types of platform–worker relationships:

1. Exploitative model: As seen in ride-hailing platforms with high commissions and tight algorithmic control (approaching zero-sum).
2. Intermediary model: Platforms that provide matching services with moderate commissions and minimal control (approaching neutral-sum).
3. Cooperative model: Platform cooperatives with shared ownership and governance (approaching positive-sum).

These findings underscore that the characteristics of the relationship are not inherent attributes of technology, but rather the result of institutional design choices and business models.

Theoretical and Conceptual Implications

The results of this discussion enrich the theoretical understanding of the platform economy by situating digital labor relations within the zero-sum and positive-sum framework. The findings indicate that this dichotomy is not absolute, but rather forms a spectrum of relationships influenced by institutional design, platform policies, and regulatory interventions.

The theoretical contribution of this study lies in the development of a contingent value distribution model, which explains that zero-sum or positive-sum outcomes depend on structural variables such as:

1. Ownership structure: Platform ownership by external investors versus cooperative ownership.
2. Algorithmic transparency: The level of openness in pricing, matching, and rating mechanisms.

3. Worker voice and representation: The presence of collective bargaining mechanisms or worker representation.
4. Regulatory framework: Government intervention in worker classification and labor standards.
5. Market concentration: The degree of competition among platforms versus monopoly/monopsony Pathways Toward a Positive-Sum Gig Economy.

Conceptually, this study emphasizes that transforming the gig economy toward a positive-sum model requires a restructuring of economic relations that includes :

1. More balanced risk sharing: Shared-risk mechanisms through insurance pools, income smoothing, or platform-funded safety nets.
2. Increased information transparency: Open algorithmic auditing, explainable AI, and data portability rights.
3. Strengthening workers' bargaining power: Collective bargaining rights, worker cooperatives, or multi-stakeholder governance models.
4. Principle-based regulation: Adaptive employment status tests, portable benefits systems, and algorithmic accountability frameworks.
5. Redistribution of economic value: Progressive platform taxation, minimum earnings guarantees, or profit-sharing mechanisms.

Thus, the added value generated by digital innovation can be distributed more fairly and sustainably.

This study contributes to the theoretical debate in the platform capitalism literature by demonstrating that:

1. Platforms are not neutral intermediaries: They are economic actors that actively shape value distribution through deliberate design choices.
2. Value creation \neq value distribution: A platform's ability to create efficiency and added value does not automatically result in fair distribution.
3. Technological determinism is misleading: The economic outcomes of the gig economy are not inherent products of technology, but of institutional and political choices.
4. Alternative models are viable: Platform cooperatives and stakeholder governance models demonstrate the feasibility of positive-sum alternatives.

These findings reinforce the critical political economy argument that digital transformation is not value-neutral, but rather embedded in power relations and institutional choices that can and should be intervened in to achieve more equitable outcomes.

CONCLUSION

This study shows that the relationship between digital platforms and workers in the gig economy forms a hybrid economic structure with a tendency toward quasi zero-sum. Although platform innovation has succeeded in creating market efficiency, expanding access to work, and generating

new economic value, the distribution of that value has not occurred proportionally. Workers bear most of the operational risks and income uncertainty, while platforms gain structural advantages through control over data, algorithms, and network effects that strengthen their dominant position within the digital ecosystem.

The results of the analysis affirm that the character of the platform–worker relationship is not an inherent consequence of technology, but rather a product of institutional design choices and business models. Variables such as ownership structure, the level of algorithmic transparency, mechanisms of worker representation, regulatory frameworks, and market concentration are shown to influence whether the economic value created tends to be distributed unevenly or can be converted into shared value. Thus, the zero-sum and positive-sum dichotomy is more appropriately understood as a spectrum of relationships that can be shaped through institutional interventions and public policy.

Conceptually, this study contributes to the literature on platform capitalism by emphasizing the separation between value creation and value distribution. The findings demonstrate that a platform’s ability to generate growth and efficiency does not automatically produce distributive justice. Therefore, transforming the gig economy toward a positive-sum model requires a restructuring of economic relations through more balanced risk-sharing, increased algorithmic transparency, the strengthening of workers’ bargaining power, and adaptive regulatory frameworks oriented toward social protection. These efforts constitute prerequisites for the realization of a fair, inclusive, and sustainable digital work ecosystem.

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