

## **Flexibility And Uncertainty: Gig Economy Dynamics In The Logistics Sector**

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### **Abstract**

The gig economy has become one of the global phenomena that has significantly changed the employment landscape, particularly in the logistics sector. With digital platforms such as Gojek, Grab, Shopee Express, and Maxim, the gig economy offers work flexibility, a significant attraction for many individuals. However, this flexibility is often accompanied by income uncertainty, lack of social protection, and high worker turnover rates. The transformation of employment from the formal to informal sectors creates new challenges in human resource management, including worker motivation, welfare, and retention. This paper explores the dynamics of the gig economy in the logistics sector, focusing on how work flexibility can affect the motivation and well-being of gig workers. Additionally, the article identifies key challenges such as regulatory uncertainty, lack of legal protections, and sustainability risks for workers and supply chains. Based on the literature review and empirical data results, policy recommendations were prepared for social protection, inclusive labor regulations, and worker capacity building through technology-based training. Through the perspective of human resources, this article aims to provide insight into how the gig economy can be managed more sustainably, fairly, and effectively. Thus, the gig economy serves as a temporary solution to employment challenges and becomes part of a modern logistics transformation oriented towards worker welfare and system sustainability.

**Keywords:** Gig Economy, Logistics Sector, Work Flexibility, Social Protection, System Sustainability

## **Introduction**

### **Flexibility and Uncertainty: The Dynamics of the Gig Economy in the Logistics Sector**

The gig economy has become one of the global phenomena that has significantly changed the employment structure. In the logistics sector, digital platforms such as Gojek, Grab, Shopee Express, and Maxim have created new work models that offer flexibility to workers. This model allows individuals to work independently without formal attachment to the company, thus attracting many workers looking for alternative income. This flexibility is one of the main attractions of the gig economy, especially for those who want to manage their working hours freely. However, behind the convenience offered, the gig economy presents significant challenges in income uncertainty, lack of social protection, and high worker turnover. (Shi and Li, 2023) (Li et al., 2023).

The shift from traditional work models to the gig economy in the logistics sector has given rise to new dynamics in workforce management. This transformation creates a more flexible work ecosystem but is often not balanced with adequate legal protections. Gig workers face significant social and economic risks, such as the absence of health insurance, pension guarantees, and regulations governing their rights. On the other hand, formal logistics companies face pressure to compete with gig models that offer high efficiency, although often at the expense of the job stability of their workers. (Yu and Abdul Hamid, 2024).

Although the gig economy has been recognized as an innovative solution in the face of modern logistics needs, the lack of regulation and social protection is still a **significant research gap**. This opens up an opportunity to further examine the impact of the flexibility of the gig economy on worker welfare and the sustainability of the logistics system as a whole. The rapid growth of the gig economy affects many aspects of employment, from work patterns to workforce management. In digital technology, these platforms are pioneers in applying data-driven innovations and AI algorithms to manage workers efficiently. However, this technology does not necessarily guarantee the welfare of workers, especially in terms of stable income, social security, and legal protection.

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This research is urgent because we must understand how digital transformation and the gig economy impact logistics workers. It is also essential to formulate policy recommendations supporting more inclusive regulations and the development of technologies oriented towards sustainability and worker welfare.

This paper is expected to contribute to developing digital technology and AI-based algorithms that are more equitable in managing the workforce in the logistics sector. By identifying the challenges and opportunities faced by gig workers, this research can encourage the development of technological systems that improve operational efficiency and pay attention to workers' social, economic, and welfare aspects. The objectives of this study are (1) To identify the main challenges facing gig workers, including the lack of regulation and social protection, (2) to identify Implications for the Future of gig workers

### **I. Defining the Gig Economy in Logistics:**

The logistics sector, which includes the movement and storage of goods, has witnessed a surge in gig-based jobs. These involve a variety of roles, from delivery drivers (e.g., using platforms such as Deliveroo, Uber Eats, and Instacart) to warehouse workers and couriers (Lord et al., 2023). (Lord et al., 2023) Fulfilling long-distance deliveries. Its core characteristic is using digital platforms to connect service providers with consumers or businesses and facilitating the completion of on-demand tasks. (Shrestha et al., 2024).

However, defining gig work itself is still challenging (Kuhn et al., 2021), with various terminology and definition constructions throughout the study (Kuhn et al., 2021). Some academics classify odd jobs into application, bulk, and capital platform jobs, highlighting the powerful technological features that support these variations. The rise of these platforms and their impact on traditional employment models is widely acknowledged (Arriagada et al., 2023), but further investigation into the nuances of worker classification and its implications for labor laws is needed (Ruth Berins Collier Veena Dubal, 2017).

In this system, gig workers rely on apps or websites to access jobs, such as freight delivery, transportation, or logistics services—

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examples of implementation in Indonesia (Gojek, Grab, Lalamove, Shopee Express). The main characteristics of the gig economy include flexibility of time and workplace, reliance on digital technology, and results-based work systems. However, gig workers often face challenges in income uncertainty, lack of social protection, and a heavy reliance on digital platforms.

## **II. The Difference Between Formal and Gig Jobs in the Logistics Sector**

Formal and gig jobs in the logistics sector differ in several aspects. Formal jobs offer income stability with a fixed salary, social security, and clear employment contracts. In contrast, gig jobs depend on the number of tasks completed without social security. In addition, gig jobs provide greater time flexibility than formal jobs that typically have fixed hours.

Although gig jobs offer more freedom, gig workers often face the risk of income uncertainty and excellent control of their work platform. (Ashish Tripathi et al., 2022; Meijerink et al., 2024; Taylor et al., 2023; Vu and Nguyen, 2024, 2024; Webster and Zhang, 2025). This difference can be seen in the following table 1:

**Table 1 Differences between formal workers and gig workers**

<b>Aspects</b>	<b>Formal Workers</b>	<b>Gig Workers</b>	<b>Brief Description</b>
<b>Employment Contract</b>	Long-term, often with job security	No long-term, task-based contracts	Formal workers have employment contracts that provide stability, while gig workers work on a specific task basis without a long-term job guarantee.

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<b>Aspects</b>	<b>Formal Workers</b>	<b>Gig Workers</b>	<b>Brief Description</b>
<b>Income</b>	Stable and fixed	Fluctuating, depending on the number of tasks	Formal workers receive a fixed salary, while gig workers depend on how many tasks they complete.
<b>Social Protection</b>	Getting benefits such as health insurance and pensions	No official social protection	Formal workers get social benefits, while gig workers do not get that kind of perk.
<b>Flexibility</b>	It tends to be less flexible; the company determines the schedule	Highly flexible, workers determine working hours	Gig workers are free to determine their working hours, unlike formal workers whose schedules are arranged by the company.
<b>Working Relations</b>	Hierarchical-based with direct employers	Platform-based relationships, often without direct interaction with employers	Gig workers often only interact through apps, while formal workers have a direct relationship with their employers.
<b>Job Security</b>	Relatively safe with a lower risk of layoffs	Less secure, depending on task availability	Formal workers are more secure in their jobs, while gig workers depend on the availability of

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Aspects	Formal Workers	Gig Workers	Brief Description
			jobs on the platform.

Sumber:(Ashish Tripathi et al., 2022; Meijerink et al., 2024; Taylor et al., 2023; Vu and Nguyen, 2024, 2024; Webster and Zhang, 2025)

## **Method**

This study uses a literature-based approach carried out manually but still systematically to study the dynamics of the gig economy in the logistics sector. This methodology does not involve using AI-based tools or digital algorithms but instead relies on a structured, manual process to ensure the quality and reliability of the analysis.

Literature searches were conducted thoroughly through academic databases such as Scopus, ScienceDirect, and Google Scholar, using keywords such as gig economy, logistics sector, worker welfare, flexibility, and social protection. The selection process is carefully carried out to evaluate the publication's relevance, quality, and up-to-date. Priority is given to studies published in the last five years to maintain the significance of the findings.

The selected literature is then critically analyzed by highlighting key themes such as work flexibility, income uncertainty, and regulatory challenges. The analysis was done through in-depth reading and manual tagging to identify recurring patterns and gaps in previous studies. The validity of the results is guaranteed through a manual cross-referencing process, where findings from various sources are compared to ensure consistency and identify differences in perspectives.

The identified themes are then synthesized to build a coherent narrative and support the formulation of relevant policy recommendations. With this systematic manual approach, the research can provide in-depth analysis without using digital technology while making a meaningful contribution to understanding the gig economy in the logistics sector.

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A flowchart is the most appropriate format for explaining the flow of a literature-based research methodology conducted manually but systematically. A flowchart helps visualize the process sequentially with clear decisions or key stages. The flowchart can be seen in Figure 1 below.

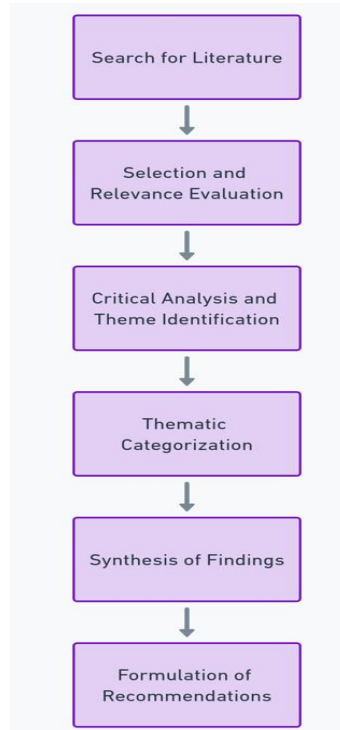


Figure 1 Flowchart of literature-based research methodology

## **Discussion**

### **Flexibility: Appeal and expectations**

Proponents of the gig economy emphasize the flexibility it offers workers (Kuhn et al., 2021). The ability to set working hours and choose tasks aligns with entrepreneurial appeal and work-life balance. (De Ruyter and Rachmawati, 2020). This flexibility is desirable to individuals looking for additional income or those with parenting responsibilities. (Kuhn et al., 2021), Alternatively, those prefer non-traditional work arrangements (Kuhn et al., 2021). However, this flexibility often masks the uncertain reality. While workers may have control over when they work, they usually do not control how much work is available (Melián-González, 2022).

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The fluctuating demand for on-demand services leads to unpredictable revenue streams, making planning for long-term financial stability difficult. (Melián-González, 2022). The apparent freedom of choice is often limited by the need to accept tasks to earn a living. (De Ruyter and Rachmawati, 2020) , thus limiting workers' ability to pursue other opportunities or build their client base. This tension between perceived autonomy and actual control is a significant theme in the literature.(Dazzi, 2019).

**Uncertainty: Income Instability and Job Insecurity**

The uncertainty inherent in the gig economy significantly impacts worker well-being.(Li et al., 2023). Income variability, a defining feature of this model (Kuhn et al., 2021), creates significant financial insecurity (Kuhn et al., 2021). Workers often struggle to meet their basic needs, facing rent, healthcare, and savings challenges.

This financial instability is exacerbated by a lack of benefits such as paid sick leave, health insurance, and retirement plans commonly associated with traditional employment. The absence of employer-sponsored benefits makes workers vulnerable to unexpected expenses and health crises. Furthermore, the gig economy often lacks job security. Workers can be deactivated from the platform anytime, with little way out, leaving them with no direct income or support. This imbalance of power between platforms and workers is a recurring theme, highlighting the vulnerability of freelancers and the need for strong legal protections.

**Regulatory Challenges and Policy Responses:**

The unique nature of gig work poses significant challenges to existing labor laws and regulations. Classifying workers as independent contractors instead of employees has been an important point of debate, as it often deprives them of basic employment protections (Kuhn et al., 2021). The legal battle over worker classification highlights the ongoing struggle to apply traditional employment frameworks to the casual economy.

Some argue that a new regulatory approach is needed to address the specific challenges posed by platform capitalism. In



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contrast, others propose innovative solutions, such as privatized systems, to bridge the regulatory vacuum. (Yu and Abdul Hamid, 2024). These privatized systems, such as the Self-Employed Plus (SE+) agreement in the UK courier sector, attempt to protect workers outside traditional regulatory frameworks. The effectiveness and implications of this alternative approach are still debatable.

The political dynamics surrounding platform regulation are complex. (Ronald Senz-Leandro, 2024), Involving interactions between governments, platform companies, and civil society, which form the platform governance path (Ronald Senz-Leandro, 2024). The gig economy's impact on skills development and workforce training must be investigated further. (Oluwaseun Kolade, 2022). The COVID-19 pandemic (Oluwaseun Kolade, 2022), Further highlights the vulnerability of freelancers, (Aleksandra Webb Ronald McQuaid, 2020), This underscores the need for policies that promote worker well-being and social safety nets.

Future research should explore the long-term social effects of freelancing and the development of more sustainable and equitable employment models (Aleksandra Webb Ronald McQuaid, 2020). More research is needed to understand the interaction between technology, job design, and worker well-being in the gig economy and the effectiveness of various regulatory approaches and policy interventions. Comparative studies in different countries and contexts are essential for understanding gig work's multiple experiences and challenges.

The need for worker-centric digital platform design (Webster and Zhang, 2025) Exploring alternative platform models prioritizing worker well-being is important for future research and innovation. Finally, the role of trade unions and worker organizing in shaping the dynamics of the gig economy (Lorenzo Cini Vincenzo Maccarrone, 2021) needs to be further examined, along with the potential for collective action to improve workers' conditions (Cant, 2017).

### **Conclusions and Implications of Social and Future Research**

The rise of the gig economy in logistics has broader social implications, including concerns about income inequality, social cohesion, and the future of work. The shift from traditional jobs to gig

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work raises concerns about job security and the erosion of workers' rights. The lack of social safety nets for gig workers creates vulnerable population segments, potentially exacerbating existing social inequalities. The concentration of wealth in the hands of platform companies also contributes to concerns.

On the other hand, the gig economy also provides opportunities for individuals seeking work flexibility and additional income. This working model allows some to set their hours and choose tasks that align with their skills. However, these benefits must be balanced with policies that ensure adequate social protection so gig workers are not exploited and continue to have access to essential workers' rights.

Reliance on secondary data is a significant limitation as it fails to capture the direct perspectives and experiences of individuals or groups being studied, leading to less in-depth analysis and a lack of reflection on fundamental dynamics. Future research should incorporate primary data through interviews, surveys, or observations to provide more authentic insights while combining it with secondary data for a more comprehensive understanding. Emphasizing local contexts, employing longitudinal studies, and ensuring rigorous data validation methods, such as triangulation and representative sampling techniques, are essential to enhancing research findings' relevance, accuracy, and reliability.

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