

Bridging Flexibility and Vulnerability in the Gig Economy: Regulatory Sandboxing as an Instrument for Determining Ideal Social Protection for Gig Workers

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Abstract

The legal relationship of gig workers lies at the intersection of a partnership model and employment model. This allows for debate, tension, and friction between the two regulatory regimes, including determining which social protection is more ideal to provide, whether in the position of worker or partner. In some cases, gig workers face the same vulnerabilities and occupational risks as regular workers. However, the flexibility of gig workers in determining their working hours, wages, etc., distinguishes them from regular workers who are bound by various rules and controls from their employers. This study examines the impact of the flexibility characteristics of gig workers on determining the ideal provision of social protection for gig workers based on work vulnerabilities and risks, as well as the instrumentalization of regulatory sandboxing on these impacts. Using literature study analysis in the form of secondary data and comparative policy analysis, this study compares models of employment relations in the gig economy broadly, not only focusing on digital work platforms, and the implementation of regulatory sandboxing in the digital financial services sector. The research results show that due to the varying flexibility characteristics, there are differences in the levels of work vulnerability and risks between gig worker relationship models in one company and another. This diversity presents challenges and obstacles in determining the ideal social protection for gig workers. Therefore, the use of the regulatory sandboxing method can be an adaptive and fair solution in formulating ideal social protection for gig workers by bridging the characteristics of gig workers' flexibility with the level of work vulnerability and risks in each model that vary on a case-by-case basis. This paper recommends the importance of developing flexible social protection standards in line with the level of vulnerability amidst the flexibility of gig workers, by developing regulatory sandboxing.

Keywords: gig workers, social protection, regulatory sandboxing, flexibility, vulnerability

1. Introduction

The gig economy arises from swift breakthroughs in digital technology, resulting in contemporary forms of employment. Currently, gig work is frequently termed digital work, online work, online outsourcing, crowd work, and virtual work globally (Hartono & Tarigas, 2025). The expansion of the gig economy significantly influences the overall global economy. According to World Bank, the

population of global internet gig workers varies between 154 million and 435 million, representing 4.4 to 12.5 percent of the worldwide working force (World Bank, 2023).

In Indonesia, the emergence of gig platforms as a result of digital economic transformation significantly influences the national economy. The gig economy in Indonesia is projected to attain a value of US\$146 billion by 2025. A recent survey by the World Bank found that approximately 6 to 7 percent of informal workers in Indonesia are full-time gig workers (World Bank, 2023). Simultaneously, the gig economy may also be viewed within the context of the creative economy sector. This sector accounted for a 4.02 percent increase in labor absorption from 2018 to 2019. In the subsequent year, the creative economy sector contributed Rp 1,134 trillion to Indonesia's GDP (Izza et al., 2024).

Amid the rapid development of the gig economy and its notable impact on the Indonesian economy in the last decade, gig workers encounter numerous risks and vulnerabilities in their employment. Some examples of cases that occurred in the field, such as several cases of death have occurred among gig workers and couriers as a result of inadequate rest periods and inconsistent delivery regulations, including multiple reports of online motorcycle taxi (*ojek online*) drivers who allegedly took their own lives due to depression. Precarious working conditions and declining wages tend to elevate the incidence of accidents and depression among *ojek online*/couriers (Wulansari et al., 2024). The absence of legal regulations and specific social protection schemes for gig workers has led to a proliferation of unsafe and detrimental incidents affecting gig workers in their fulfillment of their jobs (Wibowo & Susanto, 2025).

However, the status of gig workers remains at a crossroads between being employees and partners (independent contractors/self-employed), resulting in a dichotomy (Tan, 2021). This dichotomy raises discussions over the social protections to which gig workers are entitled and the responsibility of the state, employers, or work platforms in facilitating these protections. If gig workers are not classified as employees, they will forfeit numerous protections afforded to workers under Labor Law, encompassing social security, working hours, rest periods, salaries, freedom of association, dispute resolution, and additional rights (Nola, 2025). When gig workers are classified as partners, they are afforded protections under contract law as stipulated in the Civil Code (*Burgerlijk Wetboek*). Furthermore, partner protection regulations may pertain to other statutes aimed at safeguarding MSMEs, including Government Regulation No. 7 of 2021 and Transportation Minister Regulation 12/2019 (Wibowo, 2023).

Nevertheless, some contradictions may arise from establishing protection in the context of partnerships. In the partnership model of employment relations, the rights and obligations of the parties are executed according to the principles of equitable partnership, mutual trust, and reciprocal benefit (Wibowo, 2023). Consequently, gig workers should ideally be regarded as equals to their employers, including platform owners. In the realm of platform worker employment agreements, the platform's technological supremacy enables unilateral decisions that adversely affect workers. Platform owners easily control partner conduct through incentive mechanisms, consumer ratings, or the potential imposition of penalties (Nola, 2025). The inequality in position and authority is addressed in labor agreements, which fundamentally outline the tasks executed by workers under an employer's direction

(unequal position) and the remuneration provided by the employer (Wibowo, 2023). Inequality places gig workers in a precarious and dangerous position.

Considering the vulnerability and inequity faced by gig workers in relation to their employers, particularly platform workers, the discourse surrounding the employment status of gig workers and the requisite social protections mandated by present rules persists. However, despite all the vulnerabilities of gig workers, there are many arguments that state that gig workers have not been entirely acknowledged as part of the formal employment relationship type protected by labor law due to the flexible nature of their work, wherein they are often considered as independent contractors rather than permanent employees. To be considerate, the primary benefit of the gig economy is its flexibility. Gig workers possess the autonomy to establish their working hours, determine the amount of work they undertake, and choose their work location (Muhyiddin et al., 2024). While a formal worker protected under labor law does not have the flexibility of a gig worker, such as the obligation to a schedule established by their employers (Wibowo, 2023). The characteristic of flexibility acts as an obstacle to decision-making and the assurance of status in delivering social protection for gig workers, who are inherently vulnerable in their employment.

Despite the discourse regarding the status of gig workers, the government may focus on establishing adequate social protections for gig workers. The challenge of establishing suitable protections amidst the vulnerability for gig workers, that require partner-like flexibility, needs to be addressed by the regulators through a test of the relevance of social protection amidst work flexibility. However, the rapid development of innovation in the gig economy employment relationship model, particularly through the rise of platform work that provides work flexibility and is embraced by gig workers (Muhyiddin et al., 2024), is quite similar to innovations in diverse business models within the digital financial services sector and digital health services sectors. In these two sectors, through a testing methodology known as regulatory sandboxing, these diverse factors can be tested and predicted, ensuring that innovations do not undermine protections (OJK, 2024; Ministry of Health of Republic Indonesia, 2023). Therefore, this regulatory approach can be compared with innovations and developments in the gig economy which require a bridge between the flexibility and vulnerability of gig workers to determine the ideal social protection.

2. Research method

The research method used is literature study analysis and comparative policy analysis, using secondary data sourced from various laws and regulations, government publication data, books, journals, articles, official websites, etc. The use of literature study analysis is primarily used to analyze the impact of the flexibility of gig workers in determining the ideal social protection for gig workers, to identify: 1) the flexibility of gig workers; and 2) social protection for gig workers. The next stage is to analyze the impact of gig worker flexibility on determining relevant social protection for gig workers, by taking secondary data from various literatures to be able to describe examples of the application of gig worker flexibility and its impact on determining ideal social protection. The use of comparative policy analysis is primarily used to analyze the instrumentalization of regulatory sandboxing in determining ideal social protection for gig workers, by comparing policies in the digital

financial services and digital health sectors that have implemented regulatory sandbox instrumentalization in Indonesia. The analysis stage is carried out by identifying the regulatory sandbox concept that has been instrumented in Indonesia from various secondary data sources, then analyzing the implementation mechanism in determining ideal social protection for gig workers in order to bridge flexibility impact towards vulnerability.

3. Results and Discussion

3.1. The Impact of The Flexibility of Gig Workers in Determining The Ideal Social Protection for Gig Workers

The explanation regarding the impact of flexibility on determining ideal social protection is based on the work vulnerability and risk factors of gig workers (as the basis for providing social protection), which are affected by the flexible nature of work. As stated by ILO, the existence of social protection, or social security, is aimed at providing benefits to individuals on the basis of risks faced across the life cycle (e.g., unemployment, disability, maternity, etc.) and to those suffering general poverty and social exclusion (ILO, 2025). According to ILO, there are 9 branches of social securities (ILO, 2025). Social security standards are required based on The ILO Convention No. 102 of 1952 concerning Social Security (Minimum Standards).

Meanwhile regarding to flexibility, there are many definitions to indicate worker flexibility or work flexibility. Among all the definitions presented by experts, employment flexibility has also been identified in one of the ILO Publication (2003) with eight characteristics, namely: organizational, numerical, functional, job structure, working time (or temporal), wage system, labour force, and locational flexibility (Eyck, 2003). In simple terms, and therefore taken for analysis, Casuneanu (2013) identified the following four different forms of work flexibility: 1) Working time flexibility; 2) Contractual flexibility; 3) Functional flexibility; and 4) Wage flexibility. In line with Casuneanu, Davidescu et al. (2020) introduced a fifth indicator of work flexibility, namely Working space flexibility, in addition to the four existing types.

The following mapping illustrates the nine branches of ILO Social Protection and the foundational vulnerabilities and work risks that influence the implementation of these branches, linked with work flexibility (ILO, 2025).

Table 1. Matrix of The Nine Branches of ILO Social Protection, The Risks Covered, and an Analysis of The Five Forms of Work Flexibility

	Working Time Flexibility	Contractual Flexibility	Functional Flexibility	Wage Flexibility	Working Space Flexibility
Health Protection	To cover the risk of impoverishment due to loss of earnings in case of sickness (ILO, 2020b).				
Sickness Benefits (Earnings	To cover the risk of health decline, health-related poverty and loss of productivity. They allow workers to stay at home to recuperate until they have fully recovered, thereby protecting their own health and, covering the				

	Working Time Flexibility	Contractual Flexibility	Functional Flexibility	Wage Flexibility	Working Space Flexibility
Replacement), including Sick Leave	risk of people working in sick condition, which increase the risk of spreading their disease to others and/or putting their safety and the safety of their colleagues at risk (ILO, 2020a).				
Unemployment Benefits	To cover the risk of losing income due to the inability to obtain suitable employment (ILO, 2017).				
Old-age Pensions	To cover the risk of exclusion from access to well-paid jobs at older ages (ILO, 2014).				
Employment Injury Benefits	To cover the risk of workplace injuries and occupational disease, that arise because of workplace accidents or illnesses, and the lack of workplace safety (ILO, 2025).				
Family and Child Benefits	To cover the risk of children growing up without health, adequate nutrition, emotional security, and adequate livelihood skills (ILO, 2012).				
Maternity Benefits	To cover the risk of job discrimination of expectant and nursing mothers as a precondition for achieving genuine equality of opportunity and treatment for men and women at work and enabling workers to raise families in conditions of security (ILO, 2025).				
Disability Benefits	To cover the risk of unequal opportunities in the world of work due to attitudinal, physical, and/or informational barriers and its adverse effects (ILO, 2002, 2025).				
Survivors' Benefits	To cover the risk of the loss of a maintenance relationship due to death, for widows and widowers, as well as dependent children, in case of the death of family breadwinner (Becker, 2024; ILO, 2025).				

Source: (Becker, 2024; ILO, 2002, 2014, 2017, 2020a, 2020b, 2025)

Utilizing the ILO's framework of nine branches of social protection along with the associated risks relating to these branches, an analysis was conducted to determine the presence of these risks in relation to five indicators of work flexibility. This was undertaken to determine when this flexibility arises and to what extent the risks of social protection remain. This is conducted to determine whether flexibility influences worker vulnerability by evaluating the presence of work risk that determine vulnerable workers. The outcomes of the analysis are as follows:

a. Working time flexibility

Casuneanu (2013) identifies four components of working time flexibility: flexible scheduling, part-time employment, overtime, and work conducted beyond standard hours. All four components include a common attribute: the capacity for workers to independently and adaptively select their work hours and duration based on individual requirements and objectives. Regarding this characteristic of flexibility, in relation to the significance of the risks that underpin the establishment of social protection, it may be asserted that:

Table 2. Analysis of The Relevance of Social Protection to Working Time Flexibility

Type of Social Protection	Impact Analysis of Flexibility
Health Protection	Still relevant
Sickness Benefits (Earnings Replacement), including Sick Leave	This protection might prove irrelevant when employees have the option to abstain from work during illness and to determine the timing of their return upon recovery, thereby obviating the necessity for their presence in the workplace.
Unemployment Benefits	Still relevant
Old-age Pensions	Still relevant
Employment Injury Benefits	Still relevant
Family and Child Benefits	Still relevant
Maternity Benefits	If employees have the option to refrain from working during the pre- and post-natal period, this protection may be rendered irrelevant.
Disability Benefits	Still relevant
Survivors' Benefits	Still relevant

Source: Author's analysis

b. Contractual flexibility

This flexibility underscores the autonomy in defining the terms of employment contracts, which include temporary employment contracts, fixed-term contracts, or self-employment Casuneanu (2013). Considering the characteristic of flexibility in relation to the significance of the risks leading to the establishment of social protection, it can be asserted that:

Table 3. Analysis of The Relevance of Social Protection to Contractual Flexibility

Type of Social Protection	Impact Analysis of Flexibility
Health Protection	Still relevant
Sickness Benefits (Earnings Replacement), including Sick Leave	This protection might prove irrelevant when employees have the option to abstain from work during illness and to determine the timing of their return upon recovery, or when employees can also choose to refrain from attending the workplace while sick and fulfil their duties remotely if feasible.
Unemployment Benefits	When employees are engaged under temporary contracts, this protection becomes irrelevant, as their employment is limited to a specific period or the completion of a specified project, rendering unemployment inevitable.
Old-age Pensions	Similar to unemployment benefits, this risk becomes irrelevant if the employed individuals are solely on temporary contracts.
Employment Injury Benefits	If employees opt to work remotely or are self-employed, addressing this risk may prove challenging, and if the work is

Type of Social Protection	Impact Analysis of Flexibility
	conducted from home with minimal physical activity, this protection becomes essentially irrelevant.
Family and Child Benefits	Still relevant
Maternity Benefits	If employees can opt out of work during the pre- and post-natal period, this protection may be rendered irrelevant.
Disability Benefits	When employees opt for remote work or self-employment, the risks associated with social protection are often negligible for certain jobs which require less physical exertion.
Survivors' Benefits	Still relevant

Source: Author's analysis

c. Functional flexibility

This refers to the flexibility of employees to assume various positions according to the need to complete jobs associated with each phase (Casuneanu, 2013). This flexibility results in more alterations in work responsibilities, job rotation, and skill development for individual employees (Eyck, 2003). Considering the characteristic of flexibility in relation to the significance of risks underpinning social protection, it may be asserted that all forms of social protection are relevant.

d. Wage flexibility

This flexibility pertains to the "effort-reward" model in relation to the company's performance, alterations in production operations, and the internal and external market conditions, among other factors. Salaries based on the "effort-reward" system are disbursed to employees through monetary incentives and other indicators linked to firm productivity and market demand. This system aids in the elimination of inflexibilities associated with the automated indexing of wages, employment taxes, and similar factors (Casuneanu, 2013). Considering the characteristic of flexibility in relation to the significance of the risks leading to the establishment of social protection, it can be asserted that:

Table 4. Analysis of The Relevance of Social Protection to Wage Flexibility

Type of Social Protection	Impact Analysis of Flexibility
Health Protection	Still relevant
Sickness Benefits (Earnings Replacement), including Sick Leave	Still relevant
Unemployment Benefits	The "effort-reward" system, which eliminates the rigidity related to automatic wage indexing, effectively limits employee earnings if they fail to achieve the expected performance results. Consequently, the loss of earnings resulting from the absence of work is an inevitable outcome of the system, without necessitating classification as a work-related risk needing coverage.

Type of Social Protection	Impact Analysis of Flexibility
Old-age Pensions	Similar to unemployment benefits, the "effort-reward" system renders age irrelevant as individuals can secure rewarding jobs regardless of their age, depending upon their choices.
Employment Injury Benefits	Still relevant
Family and Child Benefits	Still relevant
Maternity Benefits	Still relevant
Disability Benefits	Still relevant
Survivors' Benefits	Still relevant

Source: Author's analysis

e. Working space flexibility

This flexibility also leads to Contractual Flexibility, which refers to the extent to which companies provide employees the autonomy to determine or adjust the location of their work activities. Workplace flexibility can be implemented fully (completely remote work) or partially (hybrid), occurring at the site determined by the employer and optionally at other locations (Pratiwi & Wartini, 2023). Considering the characteristic of flexibility, it may be asserted that:

Table 5. Analysis of The Relevance of Social Protection to Working Space Flexibility

Type of Social Protection	Impact Analysis of Flexibility
Health Protection	Still relevant
Sickness Benefits (Earnings Replacement), including Sick Leave	This protection may be irrelevant when employees can opt not to attend work when ill and fulfil their jobs from home when feasible.
Unemployment Benefits	Still relevant
Old-age Pensions	Still relevant
Employment Injury Benefits	If employees opt for full remote work, mitigating this risk will be challenging, and if the work is conducted from home that requires little physical activity, this protection becomes irrelevant.
Family and Child Benefits	When employees opt to work remotely or from a location that accommodates the needs of their growing children, the potential risks of this protection can be foreseen.
Maternity Benefits	Still relevant
Disability Benefits	When employees have the option to work in conditions that mitigate the risk of unequal opportunities, such as from home, this protection becomes irrelevant.
Survivors' Benefits	Still relevant

Source: Author's analysis

This analysis indicates that employment flexibility can influence the existence of risks that underpin social protection. Working time flexibility and wage flexibility can impact two branches of social protection, whereas working space flexibility affects four branches, and contractual flexibility influences only three branches that remain unaffected by the growing flexibility. Nonetheless, the presence of functional flexibility does not influence the risks associated with providing social protection. Consequently, some aspects of the nine social protections recommended by the ILO may become obsolete due to the influence of work flexibility.

The impact of work flexibility on the irrelevance or absence of the risks that form the basis for determining vulnerable workers raises problems concerning things below:

- a. Is the concept of social protection, typically associated with formal employment, still relevant for gig workers given their flexible nature?
- b. To what degree does the influence of gig worker flexibility impact work-related risks that underpin social protection, and how can ideal social protection be evaluated considering the variations in flexibility characteristics?
- c. How to evaluate and recognize work flexibility as the basis for establishing ideal social protection, considering the various attributes of flexibility?

This inquiry seeks to examine how regulators may define and implement ideal social protection for gig workers. Moreover, the nature of flexibility that affects workers is not uniformly applicable among companies, especially across various sectors within the gig economy. The implementation of flexibility characteristics is a decision influenced by operational needs in alignment with each company's business model for enhanced efficiency and cost reduction (CELIOS, 2024). For example, in Location-based Gig Work: Transport-related service providers such as ride-hailing drivers (CELIOS, 2024), including Gojek in Indonesia, benefit from increased flexibility in their working hours by not being required to meet specific work duration targets. Nonetheless, for identical services provided by Bluebird Taxi, certain employees are required to adhere to company-imposed time constraints (Kompas, 2023).

These disparities in flexibility levels impact the risks that shape the ideal social protection for gig workers within this sector, as Gojek's gig workers will possess an enhanced capacity to anticipate risks owing to a higher degree of flexibility in their working hours relative to Bluebird's gig workers. For example, in providing: Sickness Benefits, including Sick Leave; the risk factors covered in this type of social protection are: "the risk of health decline, health-related poverty and loss of productivity. They allow workers to stay at home to recover until they have fully recovered, thereby protecting their own health and, covering the risk of people working in sick conditions, which increases the risk of spreading their disease to others and/or putting their safety and the safety of their colleagues at risk" (ILO, 2020a). The existence of these risks and vulnerabilities will differ for Gojek workers compared to Bluebird workers. Gojek workers have the right to stay at home to recuperate until they have fully recovered due to the flexibility of working hours, allowing them to adjust them to their health conditions. Meanwhile, Bluebird workers who have the obligation to work hours as determined by the company, have the possibility of having on going working hours when they suddenly get sick, so

Bluebird workers have a need for social protection as mentioned: Sickness Benefits, including Sick Leave; which is more relevant to be given than to Gojek workers.

The application of social protection, which may differ from one company to another, is also very likely to occur in social protection: Employment Injury Benefits, with the risks it covers: “the risk of workplace injuries and occupational diseases that arise from workplace accidents or illnesses, and the lack of workplace safety” (ILO, 2025). This is because the nature of working space flexibility or contractual flexibility that can affect the relevance of social protection varies between one company and another. In companies operating in the ride-hailing sector, which also offer flexible work locations, this risk may arise due to the risk of accidents while driving. Meanwhile, for companies with an Online Gig Work: Online Freelancing model that offers Professional Services, such as those found on the Upwork platform, such as graphic design, writing/translation, or administrative services (World Economic Forum, 2024), most work is done remotely, such as at home or any other locations freely. Therefore, the risk of workplace accidents is minimal, unlikely to occur, or falls entirely on the gig workers’ responsibility. This creates differences in the impact of workplace flexibility on social protection risks: Employment Injury Benefits between companies in two different sectors.

However, if regulators stipulate that providing social protection for gig workers is required by law, for example: Sickness Benefits, including Sick Leave; and Employment Injury Benefits; for all gig workers without exception, with their relevance and needs varying between companies and sectors, then their implementation may be inapplicable in companies that are not relevant as exemplified above. These examples illustrate that the flexibility applied to one company may not necessarily be applied to another, even in the same sector or service, depending on their respective business models. Furthermore, if the companies employing gig workers are not in the same sector or even employ different types of gig workers, the business models for employing gig workers will be even more diverse. Ultimately, differing levels of flexibility affect the extent to which risks underlying social protection can be anticipated, thus determining the relevance and appropriateness of implementing social protection for gig workers. This presents a challenge for regulators to determine and find appropriate methods, and the existence of a regulatory sandbox instrument can be a consideration.

3.2. Instrumentalization of the Regulatory Sandbox to Determine Ideal Social Protection in the Gig Economy in Bridging the Impact of Flexibility Towards Vulnerability

The use of “one-size-fits-all” regulations that are set to emphasize the status or definition of gig workers, along with the social protection that is determined to be mandatory for gig workers, is not appropriate. Such treatment would render the legal provisions inapplicable due to differences in structure, practices, and processes in each company that uses the gig worker employment model, each with its own type and level of flexibility. In addition to the high-level universal principles, regulators must adapt to the activities, industry, context, and systems implemented in each company (OECD, 2014). The existence of conventional “one-size-fits-all” regulatory approaches that often prove inadequate when applied to dynamic and multifaceted innovations can be anticipated through Regulatory Sandboxes that function as a bridge between innovation and regulation by providing a

loose trial space for various dynamic innovations, while ensuring oversight and risk mitigation (Ayebo, 2025).

In both the financial services and healthcare sectors, the emergence of regulatory sandbox is driven by the rapid development and innovation through the use of digital technology by business actors in running their businesses demands a more adaptive government approach in regulating and overseeing these developments without sacrificing business innovation while ensuring optimal consumer protection (OJK, 2024; Ministry of Health of Republic Indonesia, 2023). The Regulatory Sandbox provides the government with the opportunity to identify new regulatory opportunities or improvements through monitoring and testing business models, bridging the needs of businesses and the government, ensuring business continuity for digital organizers/innovators, and protecting the public as service users (Ministry of Health of Republic Indonesia, 2023). Taking the healthcare sector as an example, using a regulatory sandbox provides the following benefits: 1) for digital organizers/innovators: protection for the needs of innovation development and investment in the business world; 2) for the government: as a space for interaction, learning, and a tool for testing business models to identify product security and reliability in order to form policies to provide protection for both organizers and users; and 3) for users (both service users and health worker partners): legal protection relevant to necessity.

Comparing the use of regulatory sandbox policymaking in the healthcare sector, it actually involves legal subjects similar to those in employment relationships in the gig economy that utilize platform work, namely: consumers/service users, gig workers/health worker partners, and platform providers/health digital organizers (Nola, 2025). Looking at the policy on the use of the regulatory sandbox in the healthcare sector consists of five stages: registration, recording, testing, recommendations, and coaching. Referring to implementation in the health sector, the most important stage in the use of the regulatory sandbox method is the testing phase, with the following flow mechanism:

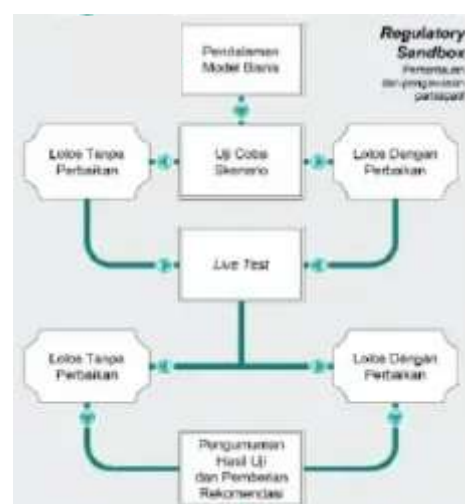


Figure 1. Regulatory Sandboxing Mechanism in Healthcare Sector
Source: (Ministry of Health of Republic Indonesia, 2023)

The testing phase is a place for the involved executors (technical officials from various related Ministries/Institutions) to deepen the business model through presentation activities and submission of documents by participants (organizers/digital innovators/business actors). Aspects explored include: 1) technological innovation, business processes, business models, and business plans; 2) risk management; 3) product standards, registration and product safety; 4) application or tool demos; 5) results from clinical trials or other relevant tests; 6) cost-effectiveness and effectiveness aspects of the product; 7) traction/attribution; 8) plans to be implemented after the trial. After a series of trial stages, including the Live Test, the results will be divided into three, namely: recommended; conditionally recommended; or not recommended. All three have different consequences, including the stages of supervision and guidance that will be carried out by the regulatory sandbox executors for participants.

Compared to applying a single, “one-size-fits-all” regulation to all digital health innovation providers, implementing a regulatory sandbox can provide the certainty and guidance needed by providers. This will address the unique structures, practices, and processes of each company while ensuring data confidentiality and privacy.

In the context of determining social protection for gig workers, the differences in structure, practices, and processes across companies that utilize gig worker employment models, each with its own type and level of flexibility, demand a regulatory sandbox approach to determine relevant and ideal social protection policies. Simply put, the model is as follows:

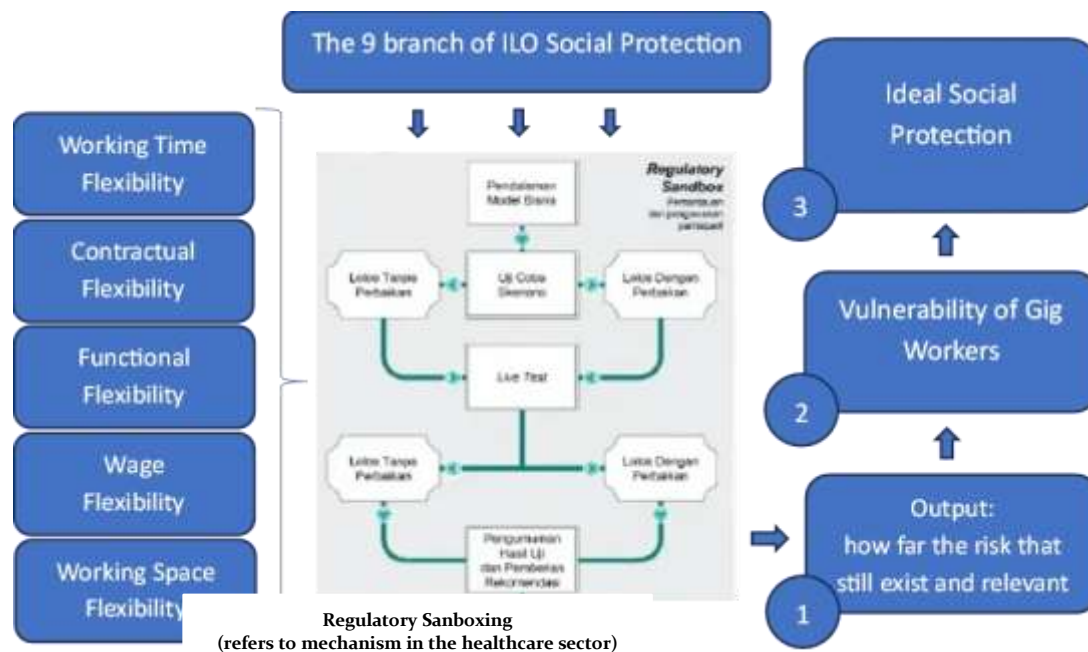


Figure 2. Regulatory Sandboxing Mechanism Model in Determining Relevant and Ideal Social Protection Policies for Gig Workers

Source: Author’s analysis

The chart above illustrates the instrumentalization of the Regulatory Sandbox as a bridge connecting various forms/indicators/characteristics of work flexibility, which considered as a key characteristic of partnership employment, with the vulnerabilities anticipated through the nine

branches of ILO social protection generally applied to formal workers. The position of gig workers, who are at the intersection of the two—between partnership flexibility and vulnerable workers whose work risks require social protection—can be bridged by the instrumentalization of the regulatory sandbox. Bridging these two factors is achieved by examining the flexibility and vulnerability of gig workers to identify ideal social protection. Through the instrumentalization of the regulatory sandbox, this can be tested and its output determined as follows:

- a. to what extent does this flexibility impact the existence and relevance of the risk;
- b. identify the extent to which gig workers are defined as vulnerable workers;
- c. determine ideal social protection for gig workers.

The advantages and urgency of using a regulatory sandbox are: effectiveness and efficiency. First, the policy for establishing ideal social protection for gig workers is tailored to the circumstances of each company on a case-by-case basis. This is crucial to address the varying flexibility requirements between companies, based on their structure, practices, and processes. Conversely, the inability of regulators to determine ideal social protection based on the activities, industry, context, and systems applied to each company will result in legal provisions being inapplicable (OECD, 2014). This inapplicability of legal provisions is one of the disadvantages of conventional "one-size-fits-all" regulatory approaches, where regulators establish social protection rules that apply generally to all companies in all sectors (Ayebo, 2025), without considering the existence of flexibility and its impact on the vulnerability of gig workers. Second, the advantage of having a regulatory sandbox is that it will be easier than if regulators decide to regulate in writing for each sector. In this case, regulators must detail the flexibility and vulnerability in each sector one by one and then regulate them differently, which will be time-consuming and less efficient, in addition to the many loopholes in the inaccuracy of the provisions with this concept.

4. Conclusion and Recommendations

Work flexibility, which is considered to be the main characteristic of gig workers, has an impact on the existence of work risks and vulnerabilities which are the basis for determining the provision of social protection for workers. In addition, the impacts actually vary at different levels between companies based on the implementation of their respective flexibilities, so that the determination of the provision of social protection according to flexibilities cannot be carried out through a "one-size-fits-all" regulatory approach by regulators. Therefore, reflecting on policies in the healthcare/digital health sector, the instrumentalization of regulatory sandbox can be a method to identify and examine the implementation of flexibility in each company on a case-by-case basis to determine ideal social protection according to relevant work risks and vulnerabilities for gig workers amidst the flexible nature of their work.

This paper recommends that the government instrumentalize a regulatory sandbox to bridge the flexibility and vulnerability of gig workers in order to determine ideal social protection. However, in developing a regulatory sandbox, the author recommends further research to map the involvement of various relevant Ministries/Institutions, a collaborative and sustainable working mechanism, and the

necessary regulations. This is because the instrumentalization of a regulatory sandbox will involve multi-stakeholders and multi-sectoral regulators working together in its implementation.

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