

# The Urgency of Takaful-Based Protection for Gig Workers through Pentahelix Model

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## ABSTRACT

This study highlights the urgency of implementing a Takaful-based protection scheme to address the increasing vulnerability of gig workers within Indonesia's rapidly expanding digital economy. The research aims to examine the opportunities and challenges of takaful implementation in the gig economy and to conceptualize a Pentahelix-based partnership model for developing an inclusive and sustainable Sharia-compliant insurance ecosystem. Using a qualitative descriptive approach with a conceptual strategy through library research, this study analyzes academic literature, regulatory frameworks, and institutional reports related to takaful, social protection, and platform-based labor. The findings indicate that despite the steady growth of the takaful sector in Indonesia, takaful penetration among gig and informal workers remains extremely low. Limited takaful literacy, weak digital integration, and insufficient cross-sectoral policy coordination is identified as the main constraints. To overcome these challenges, this study proposes a Pentahelix collaboration model involving government, academia, industry stakeholders, communities, and media to strengthen literacy, encourage product innovation, and improve institutional coordination. This study contributes to policymaking by offering a collaborative framework for integrating takaful into Indonesia's gig economy ecosystem and provides strategic insights for key policymakers particularly in terms of regulatory coordination, incentive alignment, and data integration mechanisms. Furthermore, the proposed Pentahelix-based model serves as an operational reference for industry stakeholders and digital platforms in embedding Sharia-compliant protection schemes within platform-based work systems.

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## 1. Introduction

Over the past decade, Indonesia has experienced a profound transformation in its economic structure and labor market, driven by the rapid expansion of the digital industry. This structural shift, closely associated with the dynamics of the Fourth Industrial Revolution, has accelerated the emergence of digital platforms that directly connect service providers and consumers through online applications (Adha, 2020; Fonna, 2019). This has given rise to a new group of workers known as gig workers individuals who work on an irregular project or temporary basis without regular employment arrangements (Spreitzer et al., 2017).

This change was also speeded up by the COVID-19 pandemic, which accelerated digitalization in nearly all sectors and forced people to switch to platform-

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based work as an economic strategy to adjust. On top of time flexibility and secondary income potentiality, gig economy has been a rational response for individuals who were unable to secure permanent jobs in the formal economy, particularly during the post-pandemic period when many companies reduced their workforce (Peters & Wagner, 2024).

With increasing adoption of digital technology, Indonesia's number of gig workers continued to rise every year. According Central Bureau of Statistics, informal workers still made up the majority with an estimated 86.58 million or 59.40% of employed persons in February (BPS-Statistics Indonesia, 2025). A substantial percentage of this segment are gig workers who engage in online platforms, including online taxi drivers, couriers, freelance designers, digital content writers, and other app-based service workers. The expansion of the gig economy points to the industry's prominence in curbing unemployment and economic activity in Indonesia.

Although it has economic potential, most gig workers lack adequate social protection. Its non-permanent nature excludes them from regular protection schemes such as pension, health, and workplace accidents insurance. This places them in a state of economic vulnerability, especially those who earn a living entirely from platform-based employment (Friedman, 2014; Donovan et al., 2016). In the absence of regular protection, gig workers are highly exposed to sudden income loss arising from work-related accidents, illness, temporary account suspensions, or algorithmic changes that reduce job allocations without prior notice. Given their irregular earnings and lack of employer-backed benefits, such shocks can immediately undermine daily consumption, savings capacity, and household financial stability. This vulnerability is reflected in official data from the Social Security Administrator for Employment which show that among an estimated 16.3 million digital platform workers in Indonesia, only about 12% are covered by pension and work accident schemes, leaving the vast majority without basic protections such as accident insurance, retirement savings, paid maternity or sick leave, and safeguards against algorithmic dismissal (Riyadi, 2025).

The absence of social protection for gig workers not only generates individual economic risk but also potentially increases social inequality in Indonesia. In the event of workplace accidents, productivity decline, or income disruptions, these workers lack proper safety nets. This could eventually impact household economic security and increase the state's social burden, as more and more productive-aged individuals depend on platform-based labor (Behrendt et al., 2019).

These vulnerabilities underscore the need for alternative and more inclusive social protection schemes. One such alternative is Takaful (Islamic insurance), which is grounded in principles of solidarity and mutual assistance among participants and does not rely strictly on formal employment relationships. Previous studies have highlighted the potential of takaful—particularly micro-takaful products as an adaptive and fair social protection instrument for gig workers with irregular income patterns (Ali et al., 2023; Samsudin et al., 2024). However, much of the existing literature remains focused on takaful at the product or conceptual level, paying limited attention to the broader institutional and ecosystem challenges that hinder its effective implementation within the gig economy.

Addressing this gap, this study proposes a Pentahelix-based approach as its main contribution, emphasizing cross-sectoral collaboration among government,

academia, industry, communities, and media in developing an inclusive takaful ecosystem for gig workers. Rather than positioning takaful merely as a financial product, the Pentahelix model conceptualizes it as part of a broader social protection system embedded within the digital labor ecosystem. This approach highlights the novelty of the study by shifting the analytical focus from individual participation to systemic coordination encompassing regulatory alignment, digital platform integration, literacy enhancement, and market development. Through this framework, takaful is positioned as a sustainable and collaborative social protection mechanism capable of strengthening economic resilience in Indonesia's evolving digital economy.

This article is attempting to analyze the future of takaful implementation as a social protection scheme for gig workers in Indonesia through a collaborative scheme based on Pentahelix. The research investigates: (1) opportunities and challenges of takaful in Indonesia's gig economy, and (2) cross-stakeholder synergy strategies to enhance the takaful ecosystem. This research aims to contribute conceptually to enhancing knowledge of Sharia-based social protection innovation and provide practicable recommendations to foster effective inclusive and sustainable takaful policy and industry in Indonesia.

## 2. Literature Review

Discussions on collaborative governance increasingly emphasize the importance of cross-sectoral interaction in addressing complex and multidimensional socio-economic challenges, particularly in contexts characterized by institutional fragmentation and rapid structural change (Ansell & Gash, 2008; Capetillo et al., 2021). One framework that captures this collaborative perspective is the Pentahelix model, which evolved from earlier innovation theories such as the Triple Helix and Quadruple Helix, and highlights the interdependent roles of government, academia, industry, community, and media in shaping sustainable development outcomes (Capetillo et al., 2021). Rather than viewing development as the result of isolated institutional efforts, the Pentahelix approach underscores the importance of systemic coordination, shared responsibility, and stakeholder co-creation in policy implementation and social innovation (Hibrizi, 2023). This perspective is particularly relevant in the context of the digital economy, where regulatory arrangements, market dynamics, social participation, and public communication are deeply interconnected. Within such a setting, social protection for gig workers emerges not merely as a technical or regulatory concern, but as a collective governance challenge that necessitates coordinated action across multiple actors (Maulana et al., 2022; Bielousov et al., 2023).

Against this backdrop, the rapid expansion of the digital economy has profoundly reshaped labor relations through the rise of the gig economy. Platform-based work has introduced new forms of employment that offer flexibility, yet are often accompanied by heightened insecurity and limited access to formal social protection (De Groen et al., 2017). Achour, (2025), further observes that gig workers are structurally disadvantaged due to their exclusion from conventional welfare systems, leaving them vulnerable to income shocks and employment instability. In Indonesia, this trend has intensified in the post-pandemic period, with significant growth in gig workers concentrated in online transportation and digital service

sectors; nevertheless, the majority of these workers remain informal and largely unprotected by national social security schemes (Natalia & Putranto, 2023).

Beyond identifying protection gaps, existing studies increasingly highlight the need for adaptive solutions. This study positions takaful, when integrated with a Pentahelix collaboration framework, as a viable institutional solution capable of addressing structural vulnerabilities faced by gig workers. A. Wood & Lehdonvirta, (2021) Reported that platform-dependent gig workers are subject to income insecurity and high-risk conditions. In the same light, F. Wood & Hattingh, (2025) explained that job insecurity and the lack of formal social protection can cause chronic socio-economic vulnerability. Various studies advocate the requirement for inclusive and adaptive policy innovations attending to the contours of digital work. In the Indonesian setting Syibly, (2015) points to the value of developing a social protection system embedded in local values and social justice, which can be delivered through Islamic finance mechanisms.

The practice of takaful in Islamic finance has been extensively discussed as an alternative social protection mechanism grounded in the principles of mutual assistance (*ta'awun*) and collective risk sharing. Conceptually, takaful is defined as a cooperative arrangement in which participants mutually guarantee one another against potential risks through pooled contributions (*tabarru'*), in accordance with Islamic law (Wahab et al., 2007). Based on the Indonesian National Sharia Council (DSN-MUI) fatwas, the contract bases (*akad*) of takaful consist of four core types: *tabarru'* (donation in mutual assistance), *tijarat* (Islamic lawful business), *wakalah bil ujah* (agency with service charges), and *mudharabah musytarakah* (participative profit-sharing among members and the manager). The combined agreements constitute the operational fundamentum of takaful with the rationale of upholding fairness and transparency and sustaining social solidarity in the Islamic financial tradition (Abdullah, 2018).

From a theoretical perspective, these principles position takaful not merely as a financial instrument, but as a value-based social protection system aligned with the objectives of social justice and collective welfare in Islamic economics (Kunhibava et al., 2024). However, in the context of the gig economy, the effectiveness of takaful as a protection mechanism is constrained by structural challenges, including limited financial literacy, fragmented regulation, and weak institutional coordination issues commonly faced by platform based workers operating outside formal employment systems (Saleh, 2016; Rahman et al., 2025). Therefore, this study adopts the Pentahelix model as an integrative theoretical framework that enables collaborative governance among government, academia, industry, community, and media. The Pentahelix framework provides a structured mechanism for translating takaful's normative values into an operational and coordinated social protection system that is adaptive to the characteristics of digital and platform-based work.

Previous studies further indicate that takaful holds significant potential to expand protection coverage among informal and low-income communities through flexible and affordable micro-takaful schemes. Wahab et al., (2007) distinguish takaful from conventional insurance by emphasizing its shared-risk and mutual cooperation principles, while Ali et al., (2023) argue that micro-takaful models are particularly suitable for workers with irregular and unstable income patterns. Similarly, Samsudin et al., (2024) contend that micro-takaful can also be an applicable type of social

coverage among the gig economy workers, particularly in Muslim-dominated nations with expanding Islamic financial literacy. Thus, earlier works pinpoint that takaful operates not only as a monetary instrument but also as a social and economic empowerment tool bespoke for the digital economy platform.

For successful implementation, several studies emphasize multi-stakeholder collaboration models such as the Pentahelix. In the Pentahelix model, government, academe, industry, community, and media play together in order to create innovation and sustainability in social programs, among others, as explained by Capetillo et al., (2021). In Indonesia, Hibrizi, (2023) observed that the Pentahelix model works in building an inclusive financial ecosystem through the synergy of regulation, innovation, and public engagement. In the Philippine setting for takaful coverage among gig workers, the same collaboration model can hasten the process of product innovations, increase Islamic financial literacy, and enhance the confidence of the people in Sharia-based protection mechanisms.

Overall, the available literature indicates conceptual and practical gaps in the social protection among gig workers and substantial potential for the establishment of takaful as an alternative remedy. Its implementation, however, largely relies on cross-industry collaboration in the form of Pentahelix implementation, which embraces regulatory, product innovation, and community empowerment aspects. Hence, the current study aims at deepening the knowledge base on the strategic establishment of takaful in the ecosystem of the digital economy in Indonesia with the aid of multi-stakeholder collaboration.

### **3. Research Method**

This study applies to a qualitative descriptive design with a conceptual framework developed through library research. This methodological approach is employed because the study is conceptual and exploratory in nature, aiming to construct a new analytical framework through the synthesis of relevant theories, empirical findings, and institutional practices related to takaful, gig economy, and collaborative governance (Jabareen, 2009). In the initial stage, an exhaustive literature review was conducted based on secondary sources such as academic journals, books, institutional reports, scholarly articles, and official reports addressing takaful, gig economy, social protection, and the Pentahelix model. The literature reviewed is comprised of current research on the application of Pentahelix in various sectors, research on the development of takaful in Indonesia and other countries, as well as research covering social protection needs of gig workers (Creswell, 2014).

Following literature collection, descriptive analysis was used to identify key stakeholders' contributions to the Pentahelix model government, higher education institutions, industry/digital platforms, communities/NGOs, and society. Descriptive analysis strives to elucidate stakeholders' interdependencies, their potential contributions, and drivers that facilitate their integration into the takaful system. Through this analytical process, the study mapped how each actor can contribute to regulatory support, knowledge production, product innovation, outreach, literacy enhancement, and public communication within a collaborative takaful ecosystem.

Based on the synthesis of the literature review and the results of the descriptive analysis, this study develops a conceptual model in the form of a Pentahelix-based takaful framework for gig workers. The proposed model illustrates the structural positioning of each stakeholder, coordination flows, and feasible operational mechanisms that support the integration of takaful into the digital labor ecosystem. This conceptual model is intended to serve as a foundational reference for future empirical research and policy formulation related to Islamic social protection and collaborative governance (Makri & Neely, 2021). With a qualitative descriptive approach based on library research, this article provides a rich, intensive, and systematic insight into the potential application of Pentahelix-based takaful and theoretical additions to the formulation of models of social protection for gig workers.

## 4. Result & Discussion

### 4.1. Opportunities and Challenges of Takaful in Indonesia's Gig Economy

The Indonesian takaful industry has recorded steady and substantial growth in various major indicators until the first quarter of April 2025. Based on the Financial Services Authority (OJK, 2025), the total premiums received were IDR 9.84 trillion, an increase of about 8.04% year-on-year (YoY). The payment of claims also grew by about 8.10%, and assets expanded by about 4.35%. Yet, the contribution of the takaful premium to the overall commercial insurance business remains low at around 8.45%, while the share of Islamic policies in total policies is only around 2.8%.

The expansion of takaful reflects in premium, claim, and asset figures and represents increasing public confidence and demand for Sharia-compliant financial products. However, the low contribution and policy reflect that the industry has yet to substantially enter a broader stratum of society, particularly those in the informal and gig economy sectors. This is a reflection that the scope for the growth of the takaful industry remains wide open, particularly among productive sectors that are yet to avail themselves of formal financial services, including gig workers.

Despite its promising prospects, the growth of takaful protection in the gig economy is also confronted by some structural and societal issues. Poor takaful literacy is one of the main hindrances to gig workers' uptake, given that many are still unaware of the role and principles of fairness embedded in the takaful mechanism. According to OJK data (2019), the literacy rate of takaful was only 3.77%, which indicates the low public awareness of the concept and benefit of Sharia-based protection (Shahreza, 2021). Beyond literacy issues, the limited uptake of takaful among independent and platform-based workers can also be attributed to the current structure of Indonesia's takaful regulatory framework. OJK policy documents emphasize product development, industry resilience, and market deepening; however, they do not explicitly address institutional integration between takaful operators, gig economy platforms, and labor governance systems. As a result, coordination among takaful providers, digital labor platforms, and financial regulators remains limited, constraining the development of takaful products tailored to the needs of gig workers (OJK, 2021).

This fact calls for the establishment of a functionally integrated system that connects various elements within the Sharia financial and digital economic systems. This integration should encompass the alignment of policy, harmonization of digital infrastructure, and aligned distribution and education mechanisms to allow the



process of takaful protection to be efficient and inclusive. Within this integration, the takaful products' offering, management, and accessibility can occur in a synergized value chain creating a responsive protection model that is attuned to the dynamic flexibility of gig work. Lastly, this integration solidifies the role of takaful as a critical component of the digital economy ecosystem that can offer fair and sustainable protection for gig workers.

#### 4.2. Enhancing the takaful Ecosystem via Pentahelix Synergy Model

The Pentahelix model emphasizes that the development of a sustainable takaful ecosystem requires strong inter-sectoral synergy rather than reliance on a single institutional actor. In the Indonesian context, this collaborative approach is particularly relevant given the persistently low penetration of takaful, especially among informal and gig economy workers. Existing policy directions and industry assessments indicate that expanding takaful coverage necessitates coordinated roles among government, academia, industry, communities, and media, each contributing complementary functions within an integrated ecosystem.

#### 4.3. Government

The government is the prime regulator in framing a takaful ecosystem to insure gig workers. Strategic interventions include releasing specific regulations that encourage collaboration among takaful companies and digital platforms such as ride-hailing firms, logistics businesses, freelance platforms, and other digital service platforms. The government may also provide fiscal incentives for businesses offering Sharia based protection products to gig workers and facilitate informal worker data integration. The key institutional actors in this setting are the Ministry of Manpower, Financial Services Authority (OJK), Social Security Administration Agency (BPJS), and the National Committee for Islamic Economy and Finance (KNEKS).

This regulatory commitment is reflected in OJK the Insurance Industry Strengthening Roadmap 2023–2027, for 50 Islamic insurance companies to develop products serving the halal sector by 2027, although this focal area has yet to directly touch on gig workers (OJK, 2023). It is the outcome of the government's and the regulator's commitment to pushing the Sharia-based protection coverage in the real economy. The initiative lays the foundation for potential takaful coverage extension to the gig economy through cross sector collaboration under the steer of KNEKS. Thus, through this approach, the government not only regulates but also leads in developing inclusive Sharia-inspired social protection in the digital age.

#### 4.4. Academician

Academia is a strategic conceptualizer within the Pentahelix model. Scholars contribute by empirical study, conceptual models, and policy advice that assist the takaful product design in adhering to the nature of gig workers. By interdisciplinarity research, academia will be able to establish gig workers' specific needs about financial insecurity and limited access to social protection and create protection approaches based on justice and sustainability principles under Sharia. Universities are important in filling the Sharia financial literacy gap by curriculum integration as well.

In fact, KNEKS and certain Indonesian universities have been in collaboration executing education, research, and community service programs for Islamic economics and finance (UII, 2024; ITS, 2025). Such collaboration strengthens the knowledge infrastructure and policy innovation to develop adaptive takaful protection frameworks responsive to the realities of gig workers in the digital economy.

#### 4.5. Business

Takaful business operators, including takaful and Sharia financial institutions, play a critical role in product innovation and must develop products that align with digital working arrangements. The strategy path is through application of academic research in the form of micro and flexible insurance product production. Collaboration with technology companies (tech platform collaboration) is also key to reaching employees that are difficult to trace on an individual basis. Industry groups can also help enable convergence between takaful and Sharia-compliant fintech firms to expedite product distribution via online ecosystems already well known among gig workers.

Some takaful providers in Indonesia such as Prudential Syariah, Allianz Syariah, and Takaful Keluarga have introduced mobile-based service platforms to improve customer access and service efficiency. These digital initiatives support online registration, contribution payments, and claims services, thereby lowering participation barriers and operational costs (Harianja et al., 2024).

#### 4.6. Community

Communities serve as accelerators, forging links between business players, government, and society to facilitate takaful uptake among gig workers. Through relations within social networks and proximity to pools of informal workers, communities serve as intermediaries linking takaful institutions and digital platforms to potential participants. This role drives market penetration and enhances public trust in Sharia-based protection arrangements. Community actors include gig worker associations and civic groups who promote literacy and public participation.

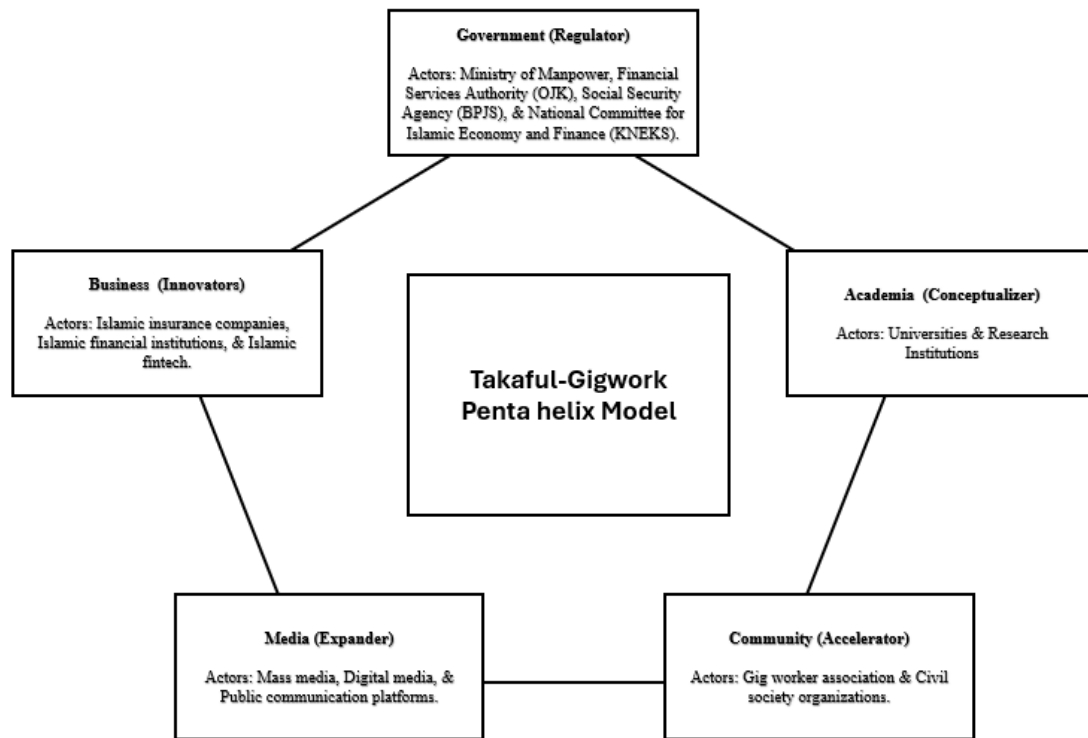
Based on Beddu et al., (2024), Islamic institutions are a key driver of supporting the Sharia economy in the Riau Islands by using economic, social, and cultural strategies. It is possible to accomplish this through community outreach, training, and mentorship programs that reinforce gig workers' knowledge of takaful benefits and the Islamic concept of mutual assistance (ta'awun). These activities also help identify social protection needs that synchronize with actual working conditions.

#### 4.7. Media

Media function as expanders and drivers of public literacy, raising gig workers' awareness of the importance of Sharia-based protection. Communication strategies through digital campaigns, social media educational posts, and collaborations with gig platforms to embed Islamic financial literacy messaging in work applications can effectively generate awareness and confidence in takaful. Media also plays a crucial role in promoting best practices of micro-takaful implementation in the digital economy, inspiring replication across regions and platforms.



Within this environment, mass media, digital media, and public communication channels make up media players that are disseminating information, promoting Sharia financial literacy, and creating public trust and a positive image of takaful implementation among gig workers. Media and information technology serve as an instrumental tool for boosting the awareness and knowledge of the public regarding Islamic values (Sahikh et al., 2012).



**Figure 1.** Takaful-Gigwork Pentahelix Model

Source: Author, 2025

Figure 1. Cross-stakeholder cooperation through the Pentahelix approach forms the backbone of developing a strong takaful ecosystem in the gig economy sector. The government formulates rules and incentives, scholars provide the scientific basis and ingenuity, business stakeholders employ responsive products, communities provide social outreach, and the media enhance public awareness. This collaboration will expand coverage of Sharia-based protection to millions of digital laborers while driving the growth of the takaful sector towards inclusive and sustainable financial inclusion in the era of the digital economy in Indonesia.

## 5. Conclusion

This study affirms that the evolution of the digital economy has ushered in huge potential to develop the role of takaful in providing protection for gig workers in Indonesia. The upward trend of the takaful industry is an indicator of increasingly demonstrated confidence in Sharia-based finance among the populace, and it also includes space for its extension into the informal sector, which has historically been beyond the reach of conventional insurance facilities. Even so, it is still faced with a variety of challenges including low takaful literacy, inadequate product innovation to

align with adaptable work patterns, and a missing interconnecting mechanism between takaful providers and the digital workplace.

To face these challenges, this study proposes the Pentahelix model as a strategic approach to build the takaful ecosystem by collective efforts between the government, academia, business stakeholders, gig worker communities, and the media. Through this harmony, takaful development can be done more systematically and inclusively: government regulation and incentives; academically driven research bases and innovation; business players' adaptive digital-based products; community social engagement; and media literacy and public trust. All of these factors combined are more likely to establish an equitable, efficient, and sustainable Sharia-compliant protection system within Indonesia's ongoing digital economic growth.

However, this research has a shortcoming in terms of its empirical scope as it has yet to establish a direct test of the performance of the proposed collaborative model in increasing participation of gig workers in takaful. Therefore, future research is recommended to develop quantitative studies or digital micro-takaful implementation models that can quantify tangible economic and social impacts. More research should also consider the investigation of data integration mechanisms between digital platforms and takaful institutions to build an adaptive and responsive protection system that is aligned with the dynamics of Indonesia flexible work.

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