

Digitisation in the Protection of Indonesian Migrant Workers: Improving Safety and Welfare in the Era of Globalisation

Elfia Farida¹, Muh.Afif Mahfud², Aga Natalis^{3*}, Ilmam Fauzi Hashbil Alim⁴

^{1,2,3} Faculty of Law, Universitas Diponegoro, Jalan dr. Antonius Suroyo, Tembalang, Semarang, City, Central Java 50275, Indonesia

⁴ Department of Computer Engineering, Universitas Diponegoro, Jalan Prof. Sudarto, SH, Tembalang, Semarang, Indonesia.

* Corresponding author: aganataliss@lecturer.undip.ac.id

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OIDA International Journal of Sustainable Development, Ontario International Development Agency, Canada.

ISSN 1923-6654 (print) ISSN 1923-6662 (online) www.oidaijsd.com

Also available at <https://www.ssm.com/index.cfm/en/oida-intl-journal-sustainable-dev/>

Abstract: This study aims to investigate the impact of digitalisation on the protection of Indonesian migrant workers in the face of the challenges posed by globalisation. The continuous rise in the number of Indonesian Migrant Workers each year highlights the necessity for digitalisation as a strategic approach to tackle intricate labour challenges, such as exploitation, human trafficking, and breaches of migrant workers' rights. The Indonesian government, through the BP2MI, has implemented several digital platforms, including SISKOP2MI and the Indonesian Migrant Worker Information System, to enhance the monitoring and oversight of the conditions faced by Indonesian Migrant Workers. The systems enable real-time monitoring of migrant workers, facilitate the submission of emergency complaints, and provide crucial information about their rights and responsibilities. Digitalisation presents various advantages in improving transparency; however, it also faces significant challenges, particularly in terms of technology accessibility for many migrant workers, especially those located in remote regions. This study highlights the need to revise regulations to better align with advancements in the digital work sector and to protect the rights of migrant workers. The research findings suggest that digitalisation holds significant potential to improve protections for migrant workers. However, the effectiveness of its implementation is contingent upon international collaboration, enhanced regulations, and more rigorous oversight of recruitment agencies for migrant workers.

Keywords: Digitalisation, Globalisation, Protection, Migrant Workers, Human Rights.

Introduction

The Constitution stipulates the right to work and to a decent life as articulated in Article 27 paragraph (2) of the 1945 Constitution of the Republic of Indonesia, which states, "Every citizen shall have the right to work and to a decent life for themselves and their families" (Sitorus et al., 2025; Tobing et al., 2023). The frameworks of human rights, international law, and national law establish essential provisions for human existence, ensuring that every individual has access to the necessary resources for well-being and dignity (McDougal et al., 2018; Talbott, 2010). In society, fulfilling basic needs necessitates the pursuit of employment (Freedman, 1979; Szal, 1979). Employment serves a dual purpose: it provides financial resources and fulfils essential personal needs, both of which significantly influence family dynamics and overall well-being (Noviadana et al., 2025). Every individual inherently holds the right to pursue employment in any nation of their choosing, free from external interference or constraints (Blades, 1967; Grey, 2014; Kerwin et al., 2025).

Labour migration involves the cross-border movement of individuals seeking employment opportunities (Faist, 2016; Parenti & Tealdi, 2021; van der Velde & van Naerssen, 2011). This occurrence can manifest through both legal and illegal means, with or without assistance, and in various forms. The contributions of workers significantly influence the economic dynamics of both the host nation and their country of origin (Edo & Özgüzel, 2023; Kanas & van Tubergen, 2009). Indonesia, recognised for its role as a labour-exporting nation, dispatches workers internationally to address job vacancies. Indonesian workers abroad are referred to as Indonesian Migrant Workers, who generally operate under a contractual agreement for a specified duration, receiving wages in return for their labour. Individuals

primarily seek employment abroad due to the prospect of increased earnings. A significant number are motivated by the opportunity to increase their earnings and enhance their overall quality of life. The challenge of securing employment in Indonesia is influenced by the substantial existing workforce, which constrains opportunities for the younger generation (Dananjaya & Marsaulina, 2020).

The scarcity of job opportunities in Indonesia has compelled numerous Indonesian citizens to pursue employment overseas as migrant workers. According to data from the Indonesian Migrant Workers Protection Agency (BP2MI), which has been processed by the Ministry of Manpower's Data Centre, the Private-to-Private scheme is the most prevalent placement method, accounting for a total of 181,270 placements. A total of 60,922 individuals are engaged in the formal sector, comprising 46,458 males and 14,464 females. In contrast, the informal sector employs 120,348 individuals, including 336 males and 120,012 females. The Overseas PK Extension Scheme successfully placed a total of 20,374 individuals in the formal sector, which includes 5,299 males and 15,075 females. The Individual Scheme achieved a total of 16,313 placements, exclusively within the formal sector, comprising 10,638 males and 5,675 females. The Government-to-Government (G2G) scheme documented a total of 7,712 placements within the formal sector, comprising 7,161 males and 551 females. The Domestic PK Extension scheme successfully placed a total of 1,203 individuals, comprising 871 in the formal sector (535 males and 336 females) and 332 in the informal sector (31 males and 301 females). Finally, the Company's Interest program recorded the lowest placement figures, with a total of 654 individuals, all of whom were employed in the formal sector, comprising 649 males and five females. A total of 227,526 Indonesian Migrant Workers were deployed from January to September 2024, predominantly in the informal sector (Badan Pelindungan Pekerja Migran Indonesia (BP2MI), 2024).

The Indonesian government offers safeguards for Indonesian Migrant Workers and their families through specific legislation, particularly Law No. 18 of 2017, which addresses the Protection of Indonesian Migrant Workers. The safeguarding of Indonesian Migrant Workers and their families is established through the enforcement of the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families 1990. This convention has been formally integrated into Indonesian legislation as Law No. 6 of 2012, which pertains to its ratification by the Indonesian government (Natalis & Ispriyarso, 2018; Romadhona et al., 2025).

On September 22, 2004, the Government of Indonesia executed additional international conventions in New York, which included the Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families. The signing establishes a legal requirement for ratification by Law of the Republic of Indonesia Number 6 of 2012, which addresses the ratification of the International Convention on the Protection of the Rights of All Migrant Workers and Members of Their Families. This ratification aims to enhance worldwide acknowledgement and implementation of international principles and standards designed to safeguard the rights of migrant workers and their families. The state must ensure the rights outlined in the convention for all migrant workers and their families are upheld, guaranteeing that these rights are enforced without discrimination (Erwin, 2025; Muhammad, 2024).

The state has a responsibility to ensure the protection of Indonesian migrant workers during their employment overseas. The responsibility to safeguard encompasses the necessity of preventing any infractions carried out by external entities. The government should establish conditions that facilitate the enjoyment of individual rights, including the right to decent work, by providing job information and creating job opportunities (Prianto et al., 2023; Widyawati, 2018).

The era of Industry 4.0 introduces significant changes, particularly in the labour sector, characterised by swift digitalisation that fundamentally alters the work environment (Haleem et al., 2025; Wang et al., 2024). The process of digitalisation introduces a range of new opportunities for workers, including the potential for flexible working hours and locations, as well as access to diverse digital platform-based job options (Dunn et al., 2023; Knoll et al., 2022). Workers have the opportunity to market their skills on a global scale, free from geographical constraints. This phenomenon has enabled individuals to exercise greater autonomy over their work schedules and facilitated the development of innovative, more flexible work arrangements.

Industry 4.0 significantly influences the workforce, as smart factories increasingly minimise the demand for human labour (Kurt, 2019; Shuttleworth et al., 2022). The automation of tasks by machines and robots leads to layoffs and an increase in unemployment rates. The situation is exacerbated by stringent labour competency standards and a scarcity of job opportunities, especially in nations such as Indonesia. With the advancement of technology, nations need to focus on enhancing workforce competencies, reducing unemployment rates, and addressing welfare disparities. The issue of overseas migration has highlighted concerns regarding the treatment of Indonesian migrant workers, leading the Indonesian government to enhance protections via Law No. 18 of 2017. This legislation guarantees that migrant workers receive dignified treatment and safeguards against exploitation, highlighting the

obligation of the state to maintain human rights standards. Many workers encounter significant mistreatment and challenges, including labour disputes, fraud, and human trafficking, which frequently remain unrecognised due to prevailing perceptions of them as outsiders. The evolution of the labour market necessitates that regulations adjust accordingly to protect workers' rights across both traditional and digital sectors. This balance is essential for fostering technological innovation while ensuring the safety and rights of the workforce are upheld.

The Impact of Digitalisation on Employment: Embracing Technological Revolution and Worker Protection

The shift towards a digital economy has garnered significant attention from researchers across multiple studies, particularly due to the technological advancements that have instigated substantial changes and innovations across all sectors in recent decades. The swift and evolving advancement of digital technology has profoundly influenced various facets of everyday life, the economy, organisational growth, and society at large. The digitalisation of work has facilitated organisational growth and innovation. The integration of new digital technologies in the workplace, such as robotics, artificial intelligence, digital work platforms, and innovative digital systems, has significantly altered workplace design and the execution of work tasks for both employers and employees across various sectors. This transformation also has implications for the quality of professional life. The changes in technology, society, and organisational structures brought about by digitalisation have the potential to enhance working conditions. However, they also introduce new challenges and risks to worker safety and health that remain inadequately comprehended (Milea, 2024).

The advancement of digital technology has swiftly integrated into every facet of human existence in the current era (Javaid et al., 2024; Omol, 2023). Digitalisation is fundamentally intertwined with virtually all human activities, exemplified by the internet's utilisation by both individuals and groups. The internet represents a culmination of advancements in information and communication technology (ICT), and its utilisation is expanding at an accelerating pace. Internet users encompass a diverse array of demographics, including children, teenagers, adults, the elderly, and individuals of various genders, both male and female (Natalis & Djohan, 2025).

The landscape of employment has evolved as a result of digitalisation, introducing new challenges for social security systems to guarantee that all workers are sufficiently safeguarded (Behrendt et al., 2019; International Labour Organization (ILO) et al., 2025). Labour laws must evolve to ensure that all workers, regardless of their employment status—whether permanent or through digital platforms—are granted their rights fairly and equitably (Deng & Galliers, 2024; Mangold, 2024). The involvement of the government and employers is essential in facilitating workers' adaptation to digitalisation and ensuring they have access to sufficient social protection, irrespective of the type of work they engage in. The operational frameworks of organisations and institutions in contemporary society have been shaped by digital transformation and diverse aspects of human existence. Specific instances of digital transformation implemented in the workplace encompass the digitisation of administrative and office management processes. According to the legal market report, 70% of organisations surveyed emphasise the importance of leveraging technology to streamline workflows and reduce manual tasks (Legal Executive Institute & Thomson Reuters, 2020).

The process of digitalisation involves the utilisation of digital devices by companies, including online sales platforms, virtual meeting tools, and digital storage solutions. This technology is often associated with innovative business models for customers and clients, as it delivers added value. The transformation of business models through digital technology has created new revenue and value opportunities, marking a transitional phase towards digital business. The introduction of digital technology, particularly through computers and various information technologies, has transformed the nature of work for individuals. Consider a scenario where factory workers transition from traditional tools such as hammers and lathes to utilising computer-controlled machinery. These transformations are fundamental to the process of digitalisation.

The economy, companies, and society are progressively transitioning to a more digital framework due to the influence of the digital world. The evolution of economic activities that utilise the internet, alongside digital products and societal functions dependent on online connectivity, has compelled companies to strategically adapt to these transformations. Digitalisation involves the conversion of analogue or traditional methods into digital formats, aiming to enhance operational efficiency across all businesses. This transformation is essential for companies to thrive and maintain competitiveness in a global market. The significance of digitalisation in supply chains and industrial networks characterises the Industry 4.0 era, highlighting the necessity for integrating digital data from diverse locations and sources. This integration is essential for advancing manufacturing and the Fourth Industrial Revolution, both of which can be utilised to enhance workers' ability to perform their tasks effectively and efficiently.

The digitisation of processes involves the application of digital technologies and the management of both digital and original data. This transformation aims to enhance processes, making them more efficient, productive, profitable, and capable of satisfying customer needs in both digital and physical interactions with the company. Consequently, digitalisation facilitates the utilisation of digital data to enhance business performance, drive new revenue streams, decrease costs, and develop innovative customer experiences, among various other advantages (Milea, 2024).

Remote or hybrid work facilitates improved time management and workplace organisation for employees, while also minimising the potential hazards associated with commuting. Nonetheless, the primary obstacles stem from psychosocial risks, including diminished social interaction, which may impact employees' mental health, and the blurring of boundaries between work and personal life. Furthermore, the heightened expectations for online connectivity and the escalation of work intensity present significant challenges to the quality of life for workers.

Utilising digital platforms offers increased flexibility in employment; however, these systems frequently lead to uncertainty regarding job status. This can result in feelings of isolation among workers, who may not benefit from the same protections as those in traditional employment, such as guaranteed wages, regulated working hours, and legal safeguards. The psychosocial health of workers on digital platforms is jeopardised by erratic workloads and the sense of insecurity stemming from unstable job status.

Conversely, automation and robotics present avenues for improving productivity and efficiency by minimising workers' engagement with dangerous physical tasks. The shift towards automated systems introduces potential uncertainties surrounding job security and raises concerns about psychosocial risks stemming from significant alterations in work methods and organisational structures. Workers are experiencing stress and concerns regarding the reduction of human labour, feeling increasingly threatened by advancements in technology.

Artificial intelligence (AI) has the potential to enhance efficiency and productivity by analysing extensive datasets. However, it also raises significant concerns regarding the erosion of worker control over their roles and the possibility of job displacement by machines. Furthermore, the ethical implications surrounding accountability for decisions made by AI systems, along with the security of personal data utilised in training these systems, represent significant concerns that require careful consideration.

Innovative digital systems, evolving rapidly in the Fourth Industrial Revolution, offer considerable advantages for monitoring workplace conditions and worker health, while also enhancing work efficiency. Nonetheless, some challenges must be addressed to ensure these systems operate effectively without placing additional burdens on workers, particularly in terms of privacy concerns and the risks associated with potential system failures.

The data concerning Indonesian Migrant Workers necessitates digitisation, which should begin with the adoption of biometric and blockchain technologies. This approach will enhance the security of stored identity data and reduce the potential for document fraud. Various countries are currently employing digital-based systems to manage their borders, utilising AI and big data analysis to enhance border surveillance and identify patterns of illegal migration. Digitalisation has influenced the world of work, offering benefits and creating opportunities that can be effectively applied to meet the government's objectives and desired outcomes through its employment policies and authority.

Digitalisation serves as a potential instrument within a comprehensive strategy aimed at optimising recruitment and emigration processes, ensuring they are structured to provide decent work and safeguard the rights of migrant workers. Technology platforms will operate within the context of a comprehensive national policy framework regarding labour migration. The legislative framework of the Emigration Act of 1983 in India is currently undergoing a review, a process initiated in 2019 that was delayed due to the COVID-19 pandemic. Revising policies to align with current realities and international labour standards will enhance the resilience of technology platforms. Consequently, timely revisions of emigration policies represent a crucial step in developing an efficient digital system (Asian Development Bank Institute et al., 2023).

Digital platforms for recruitment and emigration that necessitate the submission of biometric data and other sensitive information must adhere rigorously to privacy and personal data protection laws. It is essential to maintain a rigorous oversight of adherence to these regulations. The policies governing data protection, usage, confidentiality, and storage of personal data must be explicitly defined and prominently displayed on the platform's home page. It is crucial to establish precise regulations governing the collection, storage, and utilisation of personal and biometric data about migrant workers. This is particularly important in scenarios where private companies play a role in the development and management of government digital platforms designed for migration management.

Effective communication with the public, particularly migrant workers, regarding the objectives of data collection is crucial. It is essential to clarify how their data will be utilised and, equally important, how it will not be employed. This method has the potential to enhance public confidence in the platform. Enhancing trust and knowledge could lead to greater public engagement with government-regulated platforms, particularly among demographics that exhibit scepticism towards government institutions.

Labour Migration Dynamics: The Influence of Economic, Social, and Network Factors in Migration Decisions

Numerous studies have been undertaken to examine the motives behind migration, especially in the context of labour migration. These studies utilise different migration theories that connect the reasons for immigration to both the country of origin and the destination country. Lee's (1966) migration theory is frequently cited and posits that the choice to migrate is shaped by a variety of factors, which can be distilled into four primary components. Initially, elements associated with the origin area, specifically the circumstances in the place of origin, may either promote or inhibit individuals from remaining. Secondly, elements about the destination region encompass the appeal or opportunities present in that location. Third, some barriers impede migration, encompassing a range of challenges or obstacles encountered throughout the migration process. Fourth, individual factors that may have either beneficial or detrimental effects in both domains. Favourable elements can draw individuals to remain in or relocate to a region, whereas unfavourable elements generally compel them to seek a more advantageous location.

The subsequent migration theory elucidates the motives behind migration through the lens of push and pull factors. Dorigo and Tobler (1983) link push factors to the characteristics of the sending country, while they connect pull factors to the attributes of the receiving country. Push factors are characterised as circumstances that lead individuals to feel discontent with their existing location, while pull factors are identified as qualities of remote areas that render them appealing. The migration gravity model posits that gross migration flows are influenced by both push and pull factors associated with the origin and destination (Kushnirovich, 2010). These factors include regional population size, housing and labour market conditions, relative wages, among others, in addition to the distance between the origin and destination (Molho, 1986). This model interprets migration primarily as a reaction to wage differentials, focusing on wage levels in both the origin and destination regions as the main push and pull factors, while overlooking the influence of distance. Congdon (2010) establishes a connection between push and pull factors and the appeal and retention of a region.

Researchers often classify the elements influencing migration into two distinct categories: push factors and pull factors. Factors related to the economy and labour, including poverty, unemployment, and economic instability, serve as significant motivators that compel individuals to migrate. Conversely, pull factors encompass improved job prospects, increased wages, and the presence of established immigrant networks within the destination country. Research underscores the critical role of social networks, emphasising that family connections and previous migration experiences are particularly influential in the context of temporary labour migration. The human capital model suggests that demographic factors, including age, education, and work experience, significantly influence migration decisions. Migration is frequently viewed as a reaction to wage disparities, as demonstrated by models such as the Harris-Todaro (1970) model, which posits that income variations between regions are the primary motivators of migration. Factors that drive migration can be categorised into two groups: those that compel individuals to leave their home country due to unfavourable domestic conditions, and those that attract them to a destination country where conditions are perceived to be more favourable. Research conducted by Kandil and Metwally (1992) suggests that pull factors often outweigh push factors, particularly in the context of temporary migration. The migration supply-demand theory posits that shifts in demand within the destination country have a significant impact on migration patterns. These changes can result in heightened output and wages, thereby enhancing the appeal of immigration.

Castles identifies two primary migration models: the first is permanent settlement migration, characterised by immigrants who progressively integrate into economic and social networks, reunite or establish families, and ultimately assimilate into the host society; the second is temporary labour migration, where migrant workers opt to reside in the host country for a defined period while retaining connections to their country of origin. The distinction between permanent and temporary migration is not clearly defined, and these two forms often interact in ways that mutually promote each other. Certain temporary workers tend to persist despite the existence of official policies. Consequently, analysing the willingness of temporary migrant workers to stay in the host country represents a significant concern within migration studies. The length of temporary migration is typically shaped by employment contracts, which establish the legal timeframe for migration. Numerous nations issue temporary permits, typically valid for a limited duration of a few years. The duration of temporary labour migration is influenced not only by the work permit period but also by the worker's intentions, which can lead to variations in the overall timeframe. Stark et

al. (1997) identified that the length of migration could be less than the allowed duration, as particular advantages of migration may be realised through return migration. This dynamic affects the migration duration, contingent upon the savings that migrant workers accrue in the host country.

A significant number of temporary migrants repatriate after spending a specific duration abroad. The decision to return could be influenced by a preference for consumption in their home countries, where they experience greater purchasing power stemming from their savings, or by the enhanced value placed on their human capital in those environments. It is posited that when a worker seeks compensation upon returning, a decrease in wages in the host country increases the marginal utility of wealth, thus motivating migrants to extend their stay in the foreign country where wages are relatively higher. Additionally, issues related to loans in the home country, combined with the potential to earn a reasonable wage in the destination country, play significant roles in labor migration. A substantial body of research indicates a strong correlation between the intention to migrate and the actual migration that follows (Böheim & Taylor, 2002). Dustmann (2003) observed that immigrants returning to their home country had previously indicated their intention to do so. Consequently, the intention to remain in the destination country for the long term or to return upon the expiration of work permits is likely to have a strong correlation with future actions.

Challenges and Strategies for Protecting Indonesian Migrant Workers: A Legal and Government Policy Analysis

The state is tasked, as outlined in the Preamble of the 1945 Constitution of the Republic of Indonesia, with the responsibility of safeguarding all Indonesian citizens. This indicates that Indonesian Migrant Workers are encompassed within this protection. The state holds the responsibility of regulating and ensuring that the interests of its citizens are fair and equitable. The government has the potential to formulate policies that safeguard the needs and interests of migrant workers. It is essential to prioritise legal protection for migrant workers abroad by upholding their rights as workers and ensuring their work environment is safe and suitable. The state has a responsibility to provide them with a sense of security and comfort through comprehensive services and protections. Migrant workers possess fundamental rights that must be safeguarded against various criminal acts, which in turn imposes a duty on the state to ensure the protection of both illegal and legal migrant workers (Agus, 2023; Faradila & Harahap, 2023; Pratiwi et al., 2022).

An individual pursuing job opportunities in a foreign country is referred to as a migrant worker. The pursuit of employment abroad by individuals in Indonesia can be attributed to the country's prevailing unstable economic conditions. It is assumed by prospective migrant workers and current migrant workers that the wages offered abroad surpass those available in Indonesia. The work contract in the destination country stipulates the receipt of wages and outlines the terms of employment under a specific agreement. The high number of migrant workers abroad can be attributed to three primary factors: firstly, demographic shifts and the labour demands of industrialised nations. Secondly, issues related to population, unemployment, and economic crises are significant factors to consider. Third, there are cross-border networks that are founded on family, cultural, and historical connections.

The initiation of Indonesian migrant worker deployment overseas can be traced back to the Dutch East Indies period, specifically around 1887. During this time, numerous individuals were dispatched to locations such as Suriname, New Caledonia, Siam, and Sarawak to serve as contract labourers. The trend persisted with Indonesian workers pursuing job opportunities, especially in Malaysia, leading to the establishment of a formal policy by the Indonesian government for the deployment of workers abroad in 1970. The implementation of this policy was carried out through Minister of Manpower Regulation No. 4 of 1970 and Minister of Manpower Regulation No. 1/MEN/1986 concerning Labour Migration (AKAN). The deployment of Indonesian migrant workers abroad addresses unemployment by offering work experience and technological expertise, while simultaneously enhancing the country's balance of payments through remittances. In 2022, data from the Indonesian Migrant Workers Protection Agency (BP2MI) indicated that Saudi Arabia accounted for the largest share of complaints, representing 29.5% of the total number of complaints. Malaysia, Taiwan, the UAE, and Poland followed this (Badan Pelindungan Pekerja Migran Indonesia (BP2MI), 2023). The majority of these complaints pertain to acts of violence directed at workers, encompassing physical, non-physical, and mental abuse, thereby contravening international conventions regarding the rights of migrant workers. Furthermore, a significant number of workers fall victim to human trafficking, frequently as a result of oversight by private manpower placement agencies. The trafficking has resulted in significant violations, including sexual exploitation and organ harvesting. Law No. 21 of 2007 establishes penalties for human trafficking, which encompass prison sentences and substantial fines (Apriani et al., 2024).

A notable concern that has arisen is the inconsistency between wages and employment agreements. Prior to their departure, migrant workers were made aware of the stipulated wage amount; however, the actual payments received

by many did not align with this agreement, and some were not compensated at all. In 2022, the BP2MI documented a total of 83 complaints concerning unpaid wages. A significant number of Indonesian migrant workers lack awareness regarding their rights as outlined in their employment contracts, which hinders their ability to assert claims for wages in alignment with the stipulations of Law No. 11 of 2020. Furthermore, reports indicate that Indonesian Migrant Workers have died in their destination countries, with a total of 93 cases documented in 2022. The factors contributing to mortality are diverse, encompassing accidents, capital punishment, and violence perpetrated by employers. The case of Aris bin Saing serves as a poignant illustration of the consequences of inadequate medical care during detention. He succumbed to illness while being held, a situation compounded by the poor conditions experienced by his two children, who were also detained alongside him. The regulation of the detention of migrant workers abroad is outlined in international conventions and Law No. 18 of 2017, which additionally addresses the repatriation of deceased migrant workers.

The increasing prevalence of undocumented workers can be attributed to the practices of illicit companies that take advantage of cross-border recruitment networks. A significant number of migrant workers, drawn by the allure of increased wages and improved job prospects, become victims of these networks, often neglecting to follow appropriate protocols and safety measures. The recruitment fees and complex procedures encountered by these workers are often excessively high, contravening Article 30 of Law Number 18 of 2017, which stipulates that migrant workers should not incur placement fees. Nonetheless, a significant number continue to be indebted to government-supported systems, resulting in a repetitive cycle of exploitation and heightened risks. To tackle these challenges, the government and relevant institutions need to ensure the legal protection and appropriate placement of migrant workers, while providing comprehensive services that uphold their rights throughout the entire deployment process. Legal protection, according to Philipus M. Hadjon (1987), must integrate both repressive and preventive measures to avert disputes and guarantee justice. The welfare of migrant workers and their families should be prioritised, with social security provisions specified in Law Number 18 of 2017. The law provides social security for workers and their families; however, additional regulations and amendments, including Ministerial Regulation No. 7 of 2017, primarily emphasise the interests of workers over those of their families. The effectiveness of policies, particularly about repatriation cases, requires ongoing assessment to ensure that migrant workers receive sufficient protection and support. The structure for safeguarding Indonesian migrant workers and their families necessitates cooperation among all tiers of government, reducing the influence of the private sector in favour of a more government-centric strategy aimed at guaranteeing the safety and welfare of migrant workers.

The legal framework for Indonesian Migrant Workers, as specified in the Indonesian Migrant Workers Protection Law, is organised into three primary domains. Initially, it establishes criteria for destination countries aimed at safeguarding workers, which includes the government's power to restrict specific countries from being considered as potential destinations. The law underscores the responsibilities of central and regional governments in ensuring sufficient protection for workers both while they are abroad and upon their return to Indonesia. The legislation emphasises economic safeguarding, advocating for the effective management of remittances, enhancing financial literacy, and providing entrepreneurship training to equip workers for their reintegration upon return. Furthermore, systematic approaches have been established for the social reintegration of migrant workers, encompassing enhancements in education, vocational training, and certification initiatives. Protection policies encompass vulnerable groups, including children and women, and facilitate the establishment of protection centres in destination countries. Technical protection focuses on enhancing workplace safety, whereas social protection is concerned with providing health insurance and safeguarding workers' rights to organise. Economic protection ensures equitable compensation and safeguards for future stability. The protection framework is structured around the principles of equality, dignity, democracy, social justice, and non-discrimination. The law systematically tackles human trafficking and exploitation, to guarantee that migrant workers receive fair treatment and respect, devoid of any form of abuse. In light of these provisions, persistent challenges such as exploitation, inadequate living conditions, and obstacles to accessing justice continue to exist. This underscores the need for ongoing enforcement of legal protections and the alignment with international labour standards via bilateral agreements. These frameworks are designed to protect workers' rights and foster an equitable and just working environment, both domestically and internationally.

Satjipto Rahardjo (2000) posits that laws or regulations often exhibit a bias towards specific groups due to the inherent conditions and structure of contemporary society. He notes that the pronounced divisions within society complicate efforts to mitigate the inclination of laws or regulations to favour particular groups. Individuals who demonstrate effectiveness in this social context are those capable of exerting influence over the economic and political structures within society. Individuals with wealth possess greater advantages in the realm of legislation, particularly those who engage more actively in political activities.

The rights of Indonesian Migrant Workers are safeguarded by Law No. 18 of 2017, which encompasses provisions for social security administered by employers and guarantees that workers are insured before, during, and after their placement (Widyastuti, 2024). Government Regulation No. 59 of 2021 outlines protections across three essential phases: prior to placement, during placement, and after placement. Migrant workers are entitled to technical and administrative protection prior to departure, ensuring adherence to secure and authorised protocols during the registration process. During placement, workers benefit from various safeguards that address job types, working conditions, and employer oversight. Additionally, there are services available for resolving labour disputes, providing legal aid, offering consular support, and facilitating repatriation. The Indonesian government faces constraints in its jurisdiction regarding migrant workers implicated in criminal or civil offences in the host country, as it must comply with the legal frameworks established by the host nation and international law. Following placement, migrant workers retain their entitlement to legal protection, and placement agencies are obligated to report their status to the Ministry of Manpower. Non-compliance leads to administrative penalties. Even with these safeguards in place, a significant number of migrant workers continue to disregard the prescribed protocols, particularly in matters such as identity documentation. Immigration offices can adopt proactive strategies to effectively tackle these challenges. Organisations that dispatch employees in contravention of these protocols may incur penalties, beginning with administrative actions, which could escalate to licence revocation and criminal sanctions as stipulated in Article 87 of Law No. 18 of 2017.

The protection of Indonesian Migrant Workers is influenced not only by the regulations set forth by the Indonesian government but also by the legal frameworks of the destination countries where these workers are employed. The protections established by the Indonesian government are not universally applicable, as Indonesian Migrant Workers are also required to adhere to the regulations set forth by the destination countries. To guarantee that regulations set forth by governments globally incorporate consistent core principles and provisions, it is essential to establish international legal frameworks that address these matters.

The rights of migrant workers in the context of their employment require comprehensive respect and protection. To achieve this, the International Convention outlines specific legal protections for both migrant workers and their families. The International Convention outlines four primary rules concerning legal protection. Legal protection for migrant workers initiates at the onset of the migration process, encompassing the phases before, during, and after their employment. The Convention emphasises the need to protect migrant workers not only while they are employed abroad but also throughout the entire migration process, encompassing the period preceding departure and the period following arrival. The significance of this matter lies in the fact that challenges encountered while working overseas frequently stem from a pre-departure process that fails to adhere to established protocols.

Secondly, this legal protection establishes the foundation for developing a range of legal regulations and frameworks that oversee the efficient management of migrant labour. This process initiates at the national level and progresses to the regional level, encompassing the negotiation of both bilateral and multilateral agreements about labour migration. Third, the country of origin of workers, the transit countries during their journey, and the destination country must ensure the protection of the rights of migrant workers and their families. They must deliver services that facilitate the enforcement and safeguarding of the law throughout all phases of migration. The fourth aspect involves the mitigation of human trafficking practices targeting migrant workers. Migrant workers who adhere to official procedures establish more robust legal connections, which guarantee them enhanced protection compared to those who bypass legitimate processes.

Digitalisation and Protection of Migrant Workers: Strengthening Social, Economic, and Legal Protection in The Era of Globalisation

Globally, low-wage migrant workers encounter numerous violations of labour rights and mistreatment throughout each phase of the migration process. The issues encompass misleading tactics employed by recruitment agents, insufficient compensation, hazardous working environments, along with various exploitative behaviours that may result in criminal activities, including forced labour or human trafficking. The prevalence of these violations can be attributed to considerable disparities in power and access to information among migrant workers, recruiters, employers, and various intermediaries. A variety of structural forces play a role in the exploitation of migrant workers. The core issue revolves around global economic dynamics, interconnected supply chains, and labour markets that emphasise the demand for lower-cost goods and services produced with minimal labour expenses. The demand for low-wage jobs among migrant workers frequently surpasses the available positions, intensifying their susceptibility to vulnerability and exploitation (Farbenblum et al., 2018).

The ILO's 2017 report articulates that states have the sovereign right to develop their policies for managing labour migration, and that opportunities and risks may vary nationally and within migration corridors, so tailored and

effective policy responses need to be developed; it further emphasises that effective labour migration governance must also respond to changing business and worker needs, including addressing skill gaps, education and training, with particular attention to women and youth, as well as persons with disabilities and other vulnerable groups. The formulation of policies and laws governing migrant workers is a sovereign prerogative of each nation, shaped by its economic, social, human resource, and cultural contexts. Considering the current circumstances surrounding migrant labour management in Asian sending countries, the authors propose the following measures to enhance effective governance of migrant labour and to more effectively safeguard their rights and benefits (Raju et al., 2024).

Initially, it is essential to maintain a robust enforcement of the fundamental human rights of migrant workers in the workplace, ensuring that there is no discrimination based on their migration status. This encompasses safeguarding the rights of migrant workers in the workplace as outlined in pertinent ILO Conventions, including the Migration for Employment Convention (Revised), 1949 (No. 97), the Migrant Workers (Supplementary Provisions) Convention, 1975 (No. 143), the Private Employment Agencies Convention, 1997 (No. 181), and the Domestic Workers Convention, 2011 (No. 189). Furthermore, countries need to formulate effective social protection policies that foster conducive environments for migrant workers and their families. This includes facilitating access to social protection regulations and adhering to both national and international obligations. Ensuring the realisation of their rights to social security, establishing parity in the working conditions of domestic and migrant workers, and enhancing the fairness and transparency of the labour migration process are critical components of this effort (Raju et al., 2024).

Secondly, it is essential to implement equitable recruitment policies and establish sustainable employment programs to ensure the fundamental labour rights of migrant workers are upheld. The ILO's study emphasises that equitable recruitment is essential for improving skills and securing appropriate employment for migrant workers, in both their home countries and host nations. Reducing the likelihood of migrant workers becoming victims of gender-based violence, child labour, forced labour, exploitation, abuse, and human trafficking is crucial. Additionally, the government needs to reduce recruitment expenses and establish strategies to address illegal recruitment and migration. Furthermore, implementing targeted protections for workers in vulnerable demographics, including young women and children, is crucial in the prevention and combat of human trafficking (Zunnuraeni et al., 2023).

Third, it is essential to reinforce oversight and inspection mechanisms while improving the accountability of stakeholders in ensuring and advancing the rights and interests of migrant workers. Labour inspection is acknowledged worldwide as a significant mechanism in the management of the labour market. In nations with significant influxes of migrant workers, it is essential to implement specific procedures that facilitate the effective monitoring of their working conditions by labour inspectors. Migrant workers often work in sectors or regions that pose challenges for government oversight, including domestic work, the fishing industry, and agriculture. The division of labour concerning employment and working conditions has grown more intricate due to the rise of outsourcing and tripartite relationships that include migrant workers, specifically individuals hired by one company to perform tasks for another. Consequently, enhancing the capabilities of professional, courageous, and highly skilled labour inspection teams is critically important.

The lack of information significantly complicates the migration and employment processes for workers, as well as the recruitment and management efforts of employers. For effective logistics planning, authorities in both the country of origin and the country of employment need to possess thorough and accurate information regarding migrant workers. This includes contacting target recipients, providing updated information, and coordinating assistance or repatriation efforts.

Furthermore, it is imperative for countries to promptly implement data systems for migrant workers to systematically collect, manage, analyse, and evaluate information regarding trends, challenges, and the current circumstances faced by migrant workers overseas. The IOM indicates that precise data collection regarding the realisation of migrants' rights and their role in development will enhance the understanding of migration and the conditions faced by migrant workers. Thorough data collection regarding migrants is essential to establish a framework for safeguarding their human rights and enhancing their access to fundamental services.

Governments might evaluate the potential benefits of taking a more proactive approach in empowering social-professional organisations, including trade unions, migrant associations, and various social organisations, to deliver support services for migrant workers. Implementing this can involve utilising complaint mechanisms, launching media campaigns, and engaging in policy advocacy to promote equitable recruitment practices within their respective countries. Twenty-six migrant worker resource centres have been established across Southeast Asia through the collaborative efforts of trade unions, community organisations, and government employment centres, with backing from the ILO. These facilities provide protective services for migrant workers, potential migrants, and their families.

Furthermore, they provide legal counsel and support to migrants seeking to lodge complaints about inadequate treatment they have encountered during the recruitment phase or in the workplace. In addition to delivering services, migrant workers need to be empowered to advocate for their interests and safeguard their rights through the establishment of migrant worker associations and unions.

Effective governance of labour migration requires meticulous coordination among various relevant government agencies to formulate and achieve shared objectives in facilitating orderly and lawful migration. For migration activities to align with international and national legal provisions, organisations and institutions involved in this domain need to collaborate and provide mutual support in pursuit of shared objectives. They are required to take responsibility for upholding the human rights of all workers, including migrant workers, by adopting a sustainable approach that guarantees consistent outcomes and adherence to relevant standards. As stated by P. Maximilian and colleagues, companies should establish their migration management systems grounded in four fundamental pillars. The initial pillar involves a dedication to policy, which encompasses the formulation of transparent migration policies that align with human rights principles. The second pillar focuses on the protection of human rights, emphasising the need to safeguard the rights of migrant workers throughout the entire migration process, in both their countries of origin and destination. The third pillar, corrective action, necessitates the establishment of mechanisms to detect and address any errors or violations that may arise during the migration process. The fourth pillar focuses on the interaction with migrant workers, highlighting the significance of fostering open and reciprocal communication between migrant workers and migration management authorities. The implementation of this system, which governs the entire labour migration process, requires a commitment to integrity, transparency, and accountability to facilitate safe, secure, and rights-based migration.

Maximilian and colleagues advocate for businesses to formulate policies that explicitly reflect a commitment to human rights broadly, with a particular emphasis on the rights of migrant workers. It is advisable to incorporate these policies into internal management systems to guarantee uniform and effective enforcement. To effectively address adverse human rights impacts, both current and potential, arising from or associated with their commercial activities, relationships, products, or services, organisations should undertake human rights due diligence. In terms of resolution, companies need to establish or implement complaint procedures that are accessible to migrant workers. They must ensure effective and timely redress when harm occurs, closely monitor corrective actions, and systematically capture lessons learnt to facilitate continuous improvement. Companies should cultivate relationships with migrant workers by engaging them in the development, implementation, and monitoring of policies and management systems related to human rights and labour migration. Additionally, it is essential to offer effective support services that address the unique vulnerabilities faced by migrant workers. Partnering with prominent organisations may provide solutions to these challenges.

The complexity and opacity of global labour production networks, coupled with cost pressures, contribute to the increasing vulnerability of workers to exploitation within global supply chains, particularly as the demand for cheap labour diminishes. The situation is further complicated and rendered more challenging to identify due to insufficient levels of worker organisation and advocacy, alongside a transition towards subcontracted labour instead of directly employed workers. Simultaneously, numerous companies are encountering emerging legal reporting requirements and increasing pressure from consumers, investors, and shareholders to prevent, detect, and address labour exploitation practices within their supply chains. Acknowledging the potential legal and reputational risks, a growing number of companies are taking steps to tackle these challenges. Nonetheless, they encounter considerable challenges in identifying inadequate recruitment practices and substandard working conditions within intricate supply chains. Traditional compliance audits and workplace condition monitoring tend to be disjointed, expensive, labour-intensive, and susceptible to issues such as corruption, fraud, and worker intimidation.

Companies are increasingly facing demands to show their commitment to enhancing sustainable and intermediary-free worker engagement on a large scale, all while minimising risks for participants. This holds significant relevance for suppliers vying for contracts with buyers dedicated to addressing modern slavery within their supply chains. In this context, various digital initiatives are being developed to gather information from migrant workers and other low-wage workers regarding their recruitment and working conditions, which will be communicated to brands and global suppliers.

The national legal framework establishes a crucial responsibility for the protection of Indonesian Migrant Workers, as outlined in Law No. 13 of 2003 on Labour and Law No. 18 of 2017 on the Protection of Indonesian Migrant Workers. The two pieces of legislation offer extensive safeguards for Indonesian migrant workers employed overseas. The Manpower Act outlines a range of protections that encompass several key principles, notably the principle of non-

discrimination. This principle ensures that all workers, including migrant workers, are safeguarded against discrimination on the grounds of gender, ethnicity, race, religion, and political affiliation, as detailed in Articles 5 and 6. Migrant workers have the right to receive fair wages that align with the minimum wage standards set by the destination country or as specified in bilateral agreements between nations, as detailed in Article 88.

Additional safeguards include social security, which mandates that employers provide health insurance, work accident insurance, and old-age insurance for migrant workers, as outlined in Article 99. This Law establishes regulations regarding working hours and rest periods to mitigate exploitation by capping excessive working hours and guaranteeing sufficient rest periods, as outlined in Articles 77-79. Migrant workers receive protections regarding occupational safety and health, with employers required to establish an integrated safety management system, as outlined in Article 86.

This Law explicitly prohibits the exploitation of children in the workplace, including within the migration sector, as a measure to combat human trafficking and child exploitation, as detailed in Articles 68-75. Migrant workers possess the entitlement to establish or affiliate with trade unions, as outlined in Article 104. The Law outlines mechanisms for resolving industrial disputes that migrant workers can access, with support from Indonesian representatives abroad, as stipulated in Article 136.

The government plays a significant role in labour oversight, ensuring that the enforcement of these laws is effective, particularly concerning migrant workers, as outlined in Article 176. Violations of migrant workers' rights may lead to administrative and criminal sanctions, which could be enforced through bilateral cooperation with the host country, as outlined in Article 190. This protection aims to ensure that the rights of migrant workers are upheld throughout their employment overseas.

The Indonesian Migrant Workers Protection Agency (BP2MI) plays a crucial role in providing comprehensive placement and protection services for Indonesian migrant workers and their families. The development of the Computerised System for the Placement and Protection of Indonesian Migrant Workers (SISKOP2MI) represents a significant innovation, which has since been updated to the Overseas Labour Computerised System (SISKOTKLN). This system integrates various applications, enhancing the efficiency of tracking and managing migrant workers. SISKOP2MI aims to enhance the efficiency of services related to registration, education, vocational training, placement, and protection for individuals seeking opportunities as migrant workers. The implementation spans all BP2MI Technical Implementation Units, facilitating a comprehensive national reach and optimising the registration process. The Indonesian Migrant Worker Information System app provides essential information to migrant workers, featuring functionalities for communication, maintaining family connections, accessing emergency assistance, and enabling real-time location tracking. Another important initiative is Doctor Migrant, a digital platform that provides virtual health services, ensuring that migrant workers can access healthcare consultations in their native language, particularly during the pandemic. Digital platforms are designed to enhance the well-being of Indonesian migrant workers by providing essential support in communication, legal rights, and healthcare during their time abroad.

The digital worker reporting platform is designed to collect information directly from workers, enabling the generation of extensive data on working conditions. These platforms are designed for companies to identify and mitigate issues related to worker exploitation, forced labour, and human trafficking within their operations or among subcontractors, suppliers, and recruiters in their supply chains. The potential applications of these tools extend to government law enforcement agencies, trade unions, and, in certain instances, consumers. These platforms are commonly identified as tools for expressing worker perspectives. Recent studies are starting to investigate the conditions under which worker input—whether in digital or physical environments—qualifies as a valid form of “worker voice.” This input is significant as it produces tangible results for employees and alters the dynamics of power within the organisational frameworks in which they operate.

Although there are notable exceptions, the majority of worker engagement tools remain in the developmental or experimental phase. Several companies have begun making significant investments in this sector, despite the market's continued predominance of public grants and private investors. Investors observe that although the adoption of digital worker engagement tools is increasing, their full potential has yet to be realised. Investment levels in this area are currently modest across companies worldwide, with private sector contributions estimated at \$5 to \$10 million annually, alongside a comparable yet increasing investment from philanthropic sources. Governments have yet to fully utilise these tools in their procurement practices.

Worker engagement tools frequently utilise automated calls or text messages to gather responses from workers regarding their working conditions through surveys that consist of a limited set of questions. The introduction of these

tools typically involves direct outreach to enhance participation, and worker engagement is frequently encouraged through incentives such as phone credit or other rewards. In contrast to conventional social audit techniques, these tools facilitate the rapid collection of data from a large number of workers across various work sites. Several of these initiatives focus on creating a sustainable two-way communication channel. This includes allowing employers to communicate safety information or project updates to workers, while also providing workers the opportunity to voice complaints. Certain companies opt not to perform worker surveys for clients, such as employers or primary entities in the supply chain. Instead, they choose to interact with workers directly, subsequently gathering and marketing aggregated data to clients. This approach aims to deliver insights into market conditions across various companies or work sites.

The prevalent mobile technologies used for worker surveys include IVR (interactive voice response), USSD (unstructured supplementary service data), which provides more responsive connections than SMS through a mobile network operator's computer, and SMS. These technologies eliminate the need for workers to utilise smartphones or incur usage fees, while also being suitable for individuals with lower literacy levels. With the rise in smartphone ownership and digital literacy, there is a noticeable emergence of more complex technologies, including phone-based and web-based applications that offer increasingly integrated functions. Certain providers, including Laborlink, have established criteria to assess the appropriateness of various data collection methods.

A new model is being adopted by companies like MicroBenefits and Workplace Options, which combines worker engagement and survey capabilities within platforms designed for human resources functions, such as employee training and job record management, effectively addressing the requirements of both employees and organisations. This model effectively engages workers on familiar platforms, enhancing motivation while simultaneously lowering costs for companies by integrating additional functionality into existing systems.

Considering these factors, important stakeholders from both the business and nonprofit sectors have acknowledged the risk of a “race to the bottom” among technology providers, leading to “poorly designed interventions that fail to deliver on their promises.” In this scenario, several industry groups have aimed to establish principles for ethical and practical practices in the application of worker engagement tools. In December 2017, the Worker Engagement Supported by Technology (WEST) principles were developed through collaboration among a coalition of nonprofit and for-profit technology providers, aiming to enhance the effectiveness of technology-driven initiatives in engaging workers within global supply chains. The principles aim to unify all stakeholders through a comprehensive framework of design and implementation guidelines that promote the positive use of technology. The eight principles are crafted to influence industry leaders and facilitate collaborative learning regarding future worker engagement. These principles have been suggested based on evaluations conducted in industry benchmark assessments concerning forced labour.

The initial principle, ‘Begin with Integrity and Purpose,’ highlights the potential issues that may arise if technology is not aligned with the needs of workers or if it is developed without a thorough understanding of the specific local contexts in which workers operate. The subsequent two principles pertain to design: Implement Worker-Centric & Inclusive Design and Establish Trust with Workers. The principles are designed to prevent harm to workers by addressing issues such as retaliation, ensuring transparency regarding projected processes and outcomes, and promoting equitable access to technology to avoid the exclusion of vulnerable groups.

The fourth principle, Facilitate Uptake and Ownership, emphasises the potential risks associated with insufficient engagement from all relevant stakeholders, particularly employers who are not participating. The fifth principle, Manage Security & Risk, emphasises the importance of identifying risks to worker safety and others who may be impacted, along with formulating mitigation strategies to avert data breaches. The sixth principle, Analyse Impact and Engagement, focuses on issues related to data integrity, the credibility of results, and the potential for workers' needs to go unaddressed, particularly due to unintended consequences arising from such engagement.

The seventh principle, Inform Decisions & System Changes, highlights the potential negative consequences of failing to communicate findings that could enhance workers' knowledge. It also emphasises the importance of ensuring that data collection and analysis result in systemic changes aimed at improving working conditions. The eighth principle, Collaborate & Share Learnings, addresses concerns regarding transparency by promoting the public sharing of anonymous data. This data should be presented in a manner that is accessible, easy to understand, and actionable.

The principles arise from the necessity to assess possible risks and consequences for workers that could emerge from utilising digital tools to gather data from individuals within the supply chain. Their guidance focuses on the application of technology to safeguard workers and to ensure that the systems developed lead to beneficial outcomes.

Alongside principles driven by the industry, multiple legislative frameworks are being established to address concerns regarding potential risks to users of digital platforms. The new European Union General Data Protection Regulation stands out as a critical development, grounded in essential rights to data privacy and carrying substantial legal and financial repercussions for any breaches.

Conclusion

The digitalisation of protections for migrant workers in Indonesia is becoming increasingly important, given the ongoing increase in the number of Indonesian migrant workers. The Indonesian government has adopted various digital technologies to monitor and protect workers, thereby ensuring the safeguarding of their rights during the migration process. Digitalisation addresses the intricate challenges posed by globalisation by enhancing administrative efficiency and facilitating access to real-time information, particularly about human rights and labour standards. The Computerised System for the Placement and Protection of Indonesian Migrant Workers (SISKOP2MI) enables the government to monitor the locations and statuses of migrant workers, thereby minimising the potential for abuse and exploitation.

While progress has been made, numerous obstacles persist, especially in achieving universal access to digital platforms for migrant workers, particularly those in remote locations or with limited technological literacy. Moreover, although digitalisation enhances monitoring capabilities, it does not provide an infallible mechanism to completely protect workers' rights. The success of implementation hinges on the government's capacity to enable workers to maximise the use of these technologies, both in the recruitment process and while they are overseas. Furthermore, it is essential to implement policy updates that respond to the evolving dynamics of migrant work, particularly for individuals engaged in digital platforms. Enhancing international cooperation and refining bilateral agreements are essential for safeguarding the rights and welfare of migrant workers in their host countries. The government should prioritise the education of migrant workers regarding their rights, utilising technology for the broad dissemination of this information and enforcing stricter oversight of recruitment agencies to guarantee adherence to legal standards.

Acknowledgment: The authors would like to express their sincere gratitude to the Institute for Research and Community Service of Universitas Diponegoro (LPPM Undip) for the financial and institutional support provided through the *Pengabdian Kepada Masyarakat Skema IPTEK Bagi Daerah Binaan UNDIP* (IDBU) funding scheme.

Funding: This research is one of the outcomes of the community service program, which was funded by the Institute for Research and Community Service of Universitas Diponegoro (LPPM Undip) through the *Pengabdian Kepada Masyarakat Skema IPTEK Bagi Daerah Binaan UNDIP* (IDBU) scheme, under the Derived Community Service Contract Number: 274-005/UN7.D2/PM/IV/2025.

Data Availability: Not applicable.

Ethical Approval: Not applicable.

Competing Interests: The authors declares no competing interests. Informed Consent Not applicable

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