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Transforming Labour and Employment Law: Protection for Female Workers Against Discrimination in Artificial Intelligence Era

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ABSTRAK

Artikel ini mengkaji perlindungan pekerja perempuan terhadap potensi diskriminasi akibat penggunaan kecerdasan buatan (AI) dalam pelaksanaan hubungan kerja. Kehadiran AI dalam proses produksi menyebabkan perubahan sistem dan cara kerja di perusahaan. Penggunaan AI dalam dunia kerja berdampak signifikan pada representasi perempuan dalam hubungan kerja, karena AI banyak digunakan untuk menggantikan pekerjaan administratif dan rutin yang memiliki pola serupa. Hasil penelitian menunjukkan bahwa sebagian besar pekerjaan tersebut sebelumnya diduduki oleh pekerja perempuan. Penelitian ini merupakan penelitian normatif dengan pendekatan konseptual melalui studi literatur data sekunder. Hasil kajian mengungkapkan beberapa langkah yang dapat dilakukan untuk melindungi pekerja perempuan dari diskriminasi di era AI, yaitu: (1) transformasi regulasi pelatihan kerja yang mendukung pekerja perempuan di bidang STEM untuk meningkatkan kesiapan penggunaan AI; (2) pengaturan penggunaan AI dalam program terkait jalur karier, perhitungan upah, tunjangan, dan kompensasi; (3) transformasi regulasi penggunaan perjanjian kerja bersama oleh serikat pekerja untuk memperjuangkan perlindungan pekerja perempuan di era AI; (4) penetapan regulasi etika teknologi; dan (5) penetapan batasan penggunaan AI dengan analogi serupa seperti penggunaan tenaga kerja asing.

***Kata kunci**: Pekerja perempuan; Diskriminasi; Kecerdasan Buatan; Hukum Ketenagakerjaan; Hubungan Kerja.*

ABSTRACT

This article examines the protection of female workers against possible discrimination due to using AI in implementing employment relations. The presence of AI in this production process caused changes in the implementation of the system and the way workers work in the company. AI in the implementation of work will significantly impact

women's representation in labour relations. The condition occurs because AI is used to replace administrative, routine jobs and tends to have the same pattern. The study found that most workers who occupied these jobs were women. This is normative research with a conceptual approach conducted through a secondary data literature study. The result shows that some things which can be done to protect female workers from discrimination in the AI era are: (1) transformation of job training regulation that facilitates female workers in STEM fields to support readiness for use; (2) regulate the use of AI in programs related to career paths, calculation of wages, benefits, and compensation; (3) Transformation of the regulation of the use of collective labour agreements by worker unions to fight for the protection of female workers in the AI era in; (4) stipulate ethical regulation of technology; and (5) setting restrictions on the use of AI by analogy similarly with the use of foreign workers.

Keywords: Female workers; Discrimination; Artificial Intelligence; Labour Law; Employment Law.

INTRODUCTION

Factually, the world has reached a point where an Industrial Revolution 5.0 has occurred. The Industrial Revolution 5.0 concept focuses on the merging of technology and people, as well as the need to develop systems that are more adaptive and responsive to changes in the production environment. The Industrial Revolution 5.0 focuses more on integrating advanced technologies such as AI, IoT, and robot technology with human expertise and innovation that can encourage the development of production systems that are more efficient, flexible, sustainable, and improve welfare(Siagian, 2023). However, developing countries such as Indonesia nowadays are still struggling at the stage of the Industrial Revolution 4.0 era. The Industrial Revolution 4.0 is related to applying very rapid technological developments in the company's production process mechanism. The application of technological developments contained in the Industrial Revolution 4.0 is also encouraged by the occurrence of the COVID-19 pandemic(Bick et al., 2020) which disrupted human activities in general, including the company's production process. During the pandemic, humans were forced to reduce activities outside the home and carry out extreme physical distancing, so all production processes and work implementation ultimately depended on various technological developments offered in this era.

Artificial Intelligence (AI) is a technological development that combines automation with robotics. The application of AI in the company's production process means that programs

are designed to imitate human intelligence and abilities (Davenport et al., 2018). AI is made in such a way that it performs tasks that usually require human intelligence by analyzing big data and specific patterns. The presence of AI in this production process caused changes in the implementation of the system and the way workers work in the company. Therefore, the existence of AI in the Industrial Revolution 4.0 can affect the structure of the world economy and employment (Pardede, 2022). World Economic Forum stated that by 2025, at least 85 million jobs will be replaced by AI(World Economic Forum, 2020). Such a significant risk must be the government's concern so that the employment situation remains stable and not hit by a large wave of unemployment. For this reason, protection efforts for workers whose jobs are expected to be disrupted or replaced by AI must be carried out immediately. Declaration of Human Rights stipulated that the protection of fulfilment of the right to decent work and livelihood as part of human rights must be guaranteed.

Regarding protecting workers due to AI disruption in the production process and work operations, special attention should be paid to protecting female workers. According to the results of recent research conducted by McKinsey Global Institute(Elingrud & Sanghvi, 2023) and Nexford University(Talmage-Rostron, 2024), the presence of AI in the implementation of work will significantly impact women's representation in labour relations. The condition occurs because AI is used to replace administrative, routine jobs and tends to have the same pattern. The study found that most workers who occupied these jobs were women. ILO also reinforces this finding that 56% or around 60 million women engineering workers in Indonesia will face the risk of automation due to using AI (Berg Marianne Furrer Ellie Harmon Uma Rani Six Silberman, n.d.).

In Indonesia, the advancement of AI technology has contributed to indirect gender-based discrimination in the labor market, though formal legal cases remain rare due to underreporting and the structural invisibility of algorithmic bias. For example, in the textile and electronics sectors, where women dominate routine jobs, many have been laid off or reassigned to lower-paid roles as companies adopt AI and automation technologies. The impact includes job loss, wage reduction, and stalled career advancement for women, reinforcing gender inequality.

Overcoming this issue is challenging because of entrenched gender stereotypes, lack of transparency in AI decision-making, limited legal protection against algorithmic discrimination, and minimal access to reskilling opportunities for female workers. Without targeted

government policies, inclusive AI governance, and corporate accountability, systemic barriers will continue to marginalize women in the evolving digital labor market. Dominique Virgil in *People: International Journal of Social Sciences* found that automation threatens thousands of female workers in Indonesia, yet existing protection mechanisms—spanning legal and socio-cultural spheres—are inadequate to safeguard their livelihoods (Virgil, 2019). Complementing this, Anisah *et al* in *Shautuna* critically assessed Indonesian labor law's capacity to address AI-driven disruption, noting that despite regulatory frameworks, there is limited enforcement and lack of gender-sensitive provisions to support displaced women (Fadiah Anisah et al., 2025).

Seeing such a situation, it is crucial to make more intense protection efforts for female workers due to AI in the era of the Industrial Revolution 4.0. Especially in conventional employment relations conditions, female workers are included in vulnerable groups, which often get discriminatory treatment in the workplace. In fact, in implementing employment relations, the principle of anti-discrimination is one of the crucial things to be enforced. There must be guarantees of fair and equal treatment of female workers. ILO Conventions have also emphasized this (Berg Marianne Furrer Ellie Harmon Uma Rani Six Silberman, n.d.).

For this reason, this article aims to examine the protection of female workers against possible discrimination due to using AI in implementing employment relations. The study was conducted based on the concept of employment relations in labour and employment law, the concept of using AI in the implementation of employment relations, and the concept of protecting female workers from discrimination in the workplace. The study results are directed to provide insight and problem-solving plans on what must be considered and done to guarantee the protection of female workers from discrimination in the era of AI.

RESEARCH METHOD

This research is normative research conducted through a literature study using secondary data on protecting female workers and implementing labour relations using AI. The secondary data used are primary legal materials, which are laws and regulations (Law Number 13 of 2003 (Manpower Act--*UU Ketenagakerjaan*) *juncto* Law Number 6 of 2023 (Law on the Ratification of the Government Regulations in Lieu of Law Regarding Job Creation--*Perppu Cipta Kerja*), International Labour Organisations' conventions, and other binding rules related to the problem, and secondary legal materials sourced from books, journals, and doctrines related to the problem. The findings in the literature study were analyzed using a conceptual

approach related to the concept of employment relations in labour and employment law, the concept of using AI in the implementation of employment relations, and the concept of protecting female workers from discrimination in the workplace. The analysis results and conclusions are then presented descriptively in this article.

RESULTS & DISCUSSION

The Industrial Revolution 4.0, as the fourth industrial revolution, is related to automation in doing work. Internet integration and its features are carried out to become a platform for doing work. Currently known as the digital workplace trend, work is done using email, internet messaging, video conferencing, and cloud computing (White, 2012). In other developments, robotic technology has also been used to help carry out work or even replace workers' jobs (Ozan Özparlak, n.d.). For example, in some hotels and restaurants, robots have been used as receptionists and servers. Such technological developments certainly affect employment law because these things relate to how workers work. The industrial revolution will affect working time, work risks, termination of employment, and working conditions (Caraway, 2010).

The latest technological development in the Industrial Revolution 4.0 is the application of AI in the company's production and operational processes. AI is a computer program or system designed to imitate human intelligence and perform tasks that usually require human intelligence (Jaya et al., 2021). The examples are related to decision-making tasks, problem-solving, or language understanding. This AI system is programmed by ingesting large amounts of labelled training data and then analyzing the data to look for correlations and patterns in the available data (MÉLYPTAKI et al., 2021) The pattern analysis information is then used to predict future circumstances, becoming the basis for the task of AI.

The design of AI, which is intended to imitate human intelligence, if integrated into the company's production and operational processes, will significantly impact employment conditions. In the case of AI that imitates human intelligence, in various conditions, the implementation of work will be directed to replace the duties of workers. In the results of research presented by Goldman Sachs, Massachusetts Institute of Technology, and Boston University, here are some jobs that have the potential to be replaced by AI(Johnson, 2023): (1) customer service; (2) retail; (3) office administration; (4) engineering and manufacturing; (5) receptionist; (6) bookkeeping; (7) marketing; (8) media related to writers, journalists, or content

creators; (9) analyst data; (10) graphic design; (11) technology such as coding, programmers, software engineers; and (12) traders. In essence, routine and administrative work related to pattern analysis in decision-making or problem-solving are the main targets of disruption from AI.

McKinsey Global Institute(Berg Marianne Furrer Ellie Harmon Uma Rani Six Silberman, n.d.) and Nexford University(Talmage-Rostron, 2024) found that the jobs most affected by AI are customer service, reception, office administration, retail, and manufacturing. The problem is that female workers mostly occupy the affected jobs. The presence of AI in the implementation of work will significantly impact women's representation in labour relations. ILO also finds that 56% or around 60 million women engineering workers in Indonesia will face the risk of automation due to using AI (Berg Marianne Furrer Ellie Harmon Uma Rani Six Silberman, n.d.) This figure, derived from the ILO's 2023 report titled "Generative AI and Jobs: A Global Analysis of Potential Effects on Job Quantity and Quality", reflects a growing concern about the impact of digital transformation on labor markets, particularly for vulnerable groups such as women in technical fields (Paweł Gmyrek, Berg, & Bescond, 2023). The report utilizes a data-driven approach by analyzing job descriptions from the Occupational Information Network and mapping them against the capabilities of generative AI technologies, including tools like ChatGPT, DALL·E, and various machine learning systems (Pawel Gmyrek et al., 2025). These findings were further calibrated against the occupational structures of individual countries, including Indonesia, allowing for a comprehensive assessment of job exposure levels to AI. The types of jobs most susceptible to displacement by AI, include: (1) Technical and architectural drafters, whose manual design tasks are increasingly being replaced by AI-powered CAD software; (2) Data analysts and systems operators, especially those performing large-scale data processing and interpretation; (3) Technical administrative staff, such as project report compilers, data entry clerks, and technical archivists; (4) Basic coding and programming roles, many of which are now supported or replaced by generative AI tools like GitHub Copilot; and (5) Early-stage technical design functions, which can be automated through AI-based design and modeling platforms. UN Women also states that at least eight out of ten female workers are forced to move to other companies or lose their jobs due to the integration of AI (United Nation, 2023). Such conditions certainly harm the position of female workers in employment relations.

Women, in general in society are often positioned as vulnerable groups. This is because women often get discrimination and other harmful things in society. In the implementation of employment relations, female workers also often experience discrimination and adverse things in the workplace. This discrimination occurs in the form of job stereotypes only for specific genders, thus limiting the space for female workers to be creative and develop their careers (Nuraeni Pusat Penelitian dan Pengembangan et al., n.d.). Another disadvantage that can arise is also due to the high risk of sexual harassment in the workplace. In addition, the practice of differentiating wages for men and female workers in the same job, performance, and qualifications is also very often found. The existence of AI in the implementation of work has great potential to harm and create discrimination for female workers (Coccoli, 2017) It will worsen the working relationship conditions for the female workers. In fact, in various international and national legal instruments, including ILO Conventions, equality in employment relations has been guaranteed (Berg Marianne Furrer Ellie Harmon Uma Rani Six Silberman, n.d.) For this reason, optimal protection measures must be prepared for female workers in this era of AI.

The transformation of the company's production and operational processes that integrate AI in the implementation of work will have two negative impacts. First, job destruction, that the presence of AI in employment relationships will result in the loss of certain types of jobs. As explained earlier, AI is designed to imitate human intelligence so that, at a certain level, AI can replace humans in carrying out specific jobs. In essence, routine and administrative work related to pattern analysis in decision-making or problem-solving are the main targets of disruption from AI. The loss of jobs in this field then creates discrimination and disadvantage for female workers because it is undeniable that the majority of these jobs are occupied by female workers.

Women in labour relations tend to be placed in administrative, routine, and patterned jobs. This phenomenon is based on the stereotype attached to female workers that such jobs are suitable only for female workers. In developing countries, even female workers have stereotypes of occupying simple and low-wage jobs (Farida, 2021) This stereotype then develops into discriminatory and detrimental acts for female workers. The presence of AI that destroys jobs that become stereotypes exacerbates these conditions of discrimination and disadvantage. Many female workers have lost their jobs because they were replaced by AI.

In many labor markets, especially within developing countries, women in employment relations are overwhelmingly concentrated such as data entry clerks, secretaries, typists, call center agents, and textile workers. This occupational segregation is rooted in deep-seated gender stereotypes, which suggest that women are naturally better suited for detail-oriented, repetitive, and low-complexity tasks. Consequently, women are disproportionately pushed into low-wage, low-mobility positions, often with limited bargaining power, minimal career progression, and reduced access to technical training. In countries like Indonesia, Bangladesh, and India, for instance, millions of women are employed in garment factories, back-office administration, and micro-tasking platforms, where job roles are rigid, monotonous, and easily replicable (The Asia Foundation, 2022). With the advent of AI, particularly automation technologies, chatbots, and intelligent document processing systems, many of these roles are being rapidly phased out.

A concrete example of this can be seen in the call center industry, where female workers, who make up the majority of customer service personnel in the Philippines and India, are being replaced by AI-powered virtual assistants that can handle customer inquiries 24/7 in multiple languages (Soriano, 2023). Similarly, in finance and insurance sectors, roles such as claims processing, payroll management, and invoice entry, which have historically been dominated by female clerical workers, are being automated through robotic process automation (RPA) tools. In Mexico, thousands of women working in data processing centers have reported layoffs as banks and government agencies adopt AI systems for document verification and database management. Another example is in garment manufacturing, where AI-integrated machines are increasingly being used for sewing, quality checking, and cutting, eliminating the need for manual labor—jobs that predominantly employ women with little formal education or digital skills.

These developments do not occur in a neutral vacuum; instead, they exacerbate existing patterns of gender inequality. Since women are already structurally positioned in the lowest tiers of the labor hierarchy, job loss due to AI intensifies their economic vulnerability.

Second, job disruption or disruption in the implementation of work. Integrating AI in production and job operations will undoubtedly change how workers carry out their work. AI can provide convenience in carrying out work so that, for example, the completion of work becomes more straightforward, and the time is shorter. This job disruption also has an impact on workers, namely by the occurrence of company efficiency, namely reducing the number of workers, or organizing or rearranging companies that cause adverse mutations (demotion) to

workers. Again, the main target of company efficiency and demotion is female workers. Female workers are vulnerable to company efficiency and demotion due to discrimination due to stereotypes that assume female workers are not the primary breadwinners in the family, so in this case, their position is considered not to provide a significant disadvantage compared to doing this to male workers (Kunarti & Pamuji, 2019).

The integration of Artificial Intelligence (AI) into production processes and workplace operations has undeniably transformed how labor is organized, resulting in both gains in productivity and disruptive consequences for workers. AI enables companies to automate tasks, streamline workflows, and optimize resource allocation, allowing for faster and more accurate task completion in areas such as inventory management, quality control, and customer service. For instance, in automotive manufacturing, AI-driven robotics and predictive maintenance systems reduce the need for manual oversight, enabling one machine operator to monitor tasks that previously required a team. Similarly, in logistics and warehouse operations, companies like JD.com in China and Amazon globally now use AI-powered systems to sort, pack, and dispatch goods with minimal human intervention, reducing turnaround time dramatically (The Asia Foundation, 2022). While these advancements increase efficiency and reduce costs, they also trigger job restructuring, often in the form of downsizing or role reassignment (demotion) as companies pursue leaner operational models.

However, this wave of efficiency frequently comes at the expense of female workers, who are disproportionately targeted during workforce reduction and role reclassification exercises. For example, in electronics manufacturing plants in Malaysia and Thailand, where women comprise the majority of assembly line workers, AI-enabled automation has led to mass layoffs or reassignment to lower-paying roles such as cleaning, packing, or inspection—tasks perceived as peripheral or non-technical (The Asia Foundation, 2022). In Indonesia’s garment sector, where over 80% of workers are women, automation in sewing and quality control has allowed companies to reduce their workforce significantly. Often, women are among the first to be demoted or laid off, based on a persistent stereotype that they are not the main income earners in their families. This bias suggests that the economic impact of removing a female worker is less severe than removing a male worker, reinforcing a patriarchal notion that sees women's labor as supplemental or secondary.

Moreover, when job roles are restructured to require digital or technical skills—such as operating AI-enhanced machinery or analyzing automated data outputs—women are less likely

to be retained or promoted due to historical exclusion from training programs and decision-making positions. A concrete case occurred in the Philippines' Business Process Outsourcing (BPO) sector, where the shift toward AI-assisted customer interaction systems led to the demotion of many female customer service representatives to support or backup roles with reduced salaries, while male employees with IT backgrounds were retained for more strategic AI-overseeing roles (The Asia Foundation, 2022). These trends show that AI integration, when combined with discriminatory workplace cultures, can exacerbate inequality rather than reduce it, leaving female workers more exposed to adverse labor outcomes such as demotion, marginalization, and long-term unemployment.

In addition, in general, there is also a stereotype that hiring female workers is expensive and has many consequences, such as having to provide various paid leaves such as menstrual leave and maternity leave, as well as a high possibility of conflict between family affairs and work matters (International Organisation of Employers, 2017). This is the basis for discrimination in the career path for female workers. The nominal wages, benefits, and compensation for women tend to be lower than for men. For example, in Vietnam's electronics manufacturing sector, research by the International Labour Organization found that some employers prefer male candidates for machine operation roles to avoid disruptions caused by maternity leave and shift restrictions for pregnant workers (Paweł Gmyrek et al., 2023). Likewise, in Indonesia, some companies in the retail and hospitality industries have openly expressed reluctance to hire women of childbearing age, citing the "cost" of covering leave entitlements, which includes 1.5 months of paid maternity leave before birth and 1.5 months after.

These stereotypes directly impact women's career progression and their access to leadership roles. Even when employed, female workers are often overlooked for promotions, particularly in fields where mobility or overtime is considered essential. In Japan, for instance, the "M-curve" in women's labor force participation reflects a career drop during childbearing years, with employers reluctant to invest in women's professional development if they anticipate future career interruptions (Pawel Gmyrek et al., 2025). In corporate environments across Asia, including Indonesia, it's not uncommon for human resource managers to assume that women will eventually prioritize family over work, thereby labeling them as less committed than male colleagues—a perception that severely restricts their upward mobility.

Furthermore, wage inequality remains a tangible and measurable consequence of these discriminatory assumptions. The Global Gender Gap Report 2024 by the World Economic Forum shows that women globally earn, on average, 16–22% less than men for equivalent roles ((Pawel Gmyrek et al., 2025). In Southeast Asia, including Indonesia and the Philippines, female workers in manufacturing and service sectors often receive lower base pay, fewer benefits, and limited access to bonuses compared to their male counterparts, even when performing the same tasks (Pawel Gmyrek et al., 2025). A concrete example was observed in a 2021 field study of the textile sector in West Java, where women working in production lines reported receiving less overtime pay and fewer incentives than male colleagues, despite having similar workloads and hours (Virgil, 2019). In India's IT sector, a 2023 study by NASSCOM revealed that male engineers with comparable qualifications earned approximately 30% more in performance bonuses than female engineers in the same firms, citing "availability for night shifts" as a justification (Pawel Gmyrek et al., 2025).

These interlocking stereotypes and systemic practices result in a double disadvantage for women: not only are they undervalued and underpaid, but they are also structurally excluded from the very processes—such as reskilling, promotion, or leadership training—that could help them adapt and thrive in an evolving AI-driven workplace. Without intentional policy reforms and proactive corporate accountability, such dynamics are likely to persist or even worsen, particularly as AI further restructures the labor market with efficiency-driven rationalizations that frequently ignore questions of equity and gender justice.

The presence of AI should be directed as optimally as possible to create the fulfillment of guarantees of equality and equal opportunities for female workers. The momentum of the presence of AI should be used to eliminate discrimination towards female workers. Now is the right opportunity to transform employment law. So far, the protection of women workers in Law Number 13 of 2003 (Manpower Act--*UU Ketenagakerjaan*) *juncto* Law Number 6 of 2023 (Law on the Ratification of the Government Regulations in Lieu of Law Regarding Job Creation--*Perppu Cipta Kerja*) are only limited to a general scope; for example, related to the implementation of menstrual leave, maternity leave, the right to breastfeed their babies, or the implementation of work at night. This transformation should be directed by making arrangements related to the use of AI to minimize discrimination for women workers.

The formulation of employment development policies can be directed to facilitate female workers towards jobs in the fields of science, technology, engineering, and mathematics

(STEM) that can strengthen the position of female workers amid the three impacts of the presence of AI above. A study by UNESCO revealed that 50% of female workers surveyed still need to gain more skills in jobs in STEM fields (UNESCO, 2022). UNDP Indonesia explained that the participation rate of female workers in STEM jobs is only 30% (UNDP Indonesia, 2019). Manpower Act *juncto* Law on the Ratification of the Government Regulations in Lieu of Law Regarding Job Creation only regulate job training for workers in general. However, it is not specifically regulated for female workers, nor are there guarantees for implementing job training adapted to the times. In order to transform employment law, arrangements directed at facilitating women workers in job training for the latest skills against the times are the first step that can be taken.

In addition, AI can also be directed to create programs or systems within the company related to career paths, wage calculations, benefits, and workers' compensation. Humans do not carry out the decision to grant and calculate workers' rights, but they do so through AI with transparent, neutral, and objective patterns and programming measures. The use of AI in these matters is expected to minimize the occurrence of discrimination against female workers. The employment relationship situation for female workers is hoped to be more conducive and fairer. The various efforts to use AI above are steps to ensure the fulfilment of protection for female workers in employment law. So far, the Manpower Act juncto Law on the Ratification of the Government Regulations in Lieu of Law Regarding Job Creation only require employers to have a wage scale structure document, which must be attached to various service application activities submitted by employers to the local Manpower Office. The wage scale structure document is a document of the company's wage level from the lowest to the highest wage with various indicators set by the company itself. This document shows if there is discrimination regarding wages and other payments against female workers. However, supervision and law enforcement related to the wage scale structure still need to be more optimal. In such circumstances, the transformation of employment law can be directed to regulate the possibility of utilizing AI to guarantee equal workplace treatment for female workers related to wage calculations, benefits, workers' compensation, and career paths.

Worker unions can also seek other forms of protection for female workers due to AI in the workplace (Naser et al., 2020). In the Manpower Act juncto Law on the Ratification of the Government Regulations in Lieu of Law Regarding Job Creation, worker unions are given special rights to make collective labour agreements with employers. The collective labour

agreement can be used as a legal basis to establish the rules of the employment relationship within the company that generally apply to employers and all workers. This collective labour agreement is an employment relationship document with legal force and a strategic position between workers and employers. Regulations in the law regarding the preparation of collective labour agreements in companies can be transformed to lead to efforts to protect female workers specifically. Currently, the arrangement for preparing collective labour agreements is only limited to protecting workers in the company in general.

Well-known technology companies, namely Microsoft, carry out good practices (Rofiansyah et al., 2022). Microsoft agreed on a collective labour agreement proposed by its union on how Microsoft applies AI in the implementation of work at the company. The Microsoft Workers Union succeeded in getting the company to agree that AI is only implemented if it benefits workers, not losses. AI must be applied in a copilot/collaborative system, not in the context of replacing workers. This concrete example can be followed by worker unions everywhere to minimize losses due to the presence of AI. This includes seeking particular protection points for female workers in the collective labour agreement.

The transformation of employment law regulations in protecting female workers in the AI era can also be done by making clear employment law regulations regarding AI application and integration in production and work operations. So far, the regulation of AI in employment law has yet to be commonplace. Regulatory points regarding ethical use of technology in its use and integration in employment relations need to be established, considering that in conventional employment relationship situations, there are still many violations, especially the implementation of things that are not regulated. The use of AI involving female workers in the workplace is vital to reducing the possibility of discrimination and other harmful actions.

In addition, the transformation of labour law must also be complemented by ethical regulation of technology. It is also necessary to regulate the extent to which AI can be applied in working relationships. Theoretically, there are three types of AI, namely: (1) Artificial Narrow Intelligence (ANI), which is a weak form of AI; (2) Artificial General Intelligence (AGI), which is a powerful form of AI, which can resemble human intelligence; and (3) Artificial Super Intelligence (ASI), the most potent form that is predicted to surpass humans. The extent to which AI can be used and does not significantly impact actors in the working relationship needs to be regulated. The restriction of using AI can also be applied similarly to the philosophy and principle of using foreign workers in the employment law, which is allowed

but must follow existing regulations and requirements. By analogy, AI and foreign workers can benefit employment relations in the company but are used in a limited way to not harm the interests of workers in the company.

CONCLUSION

The presence of AI is a form of development during the Industrial Revolution 4.0 era, which affects the condition of employment law in a country. One of these influences is the occurrence of negative impacts in the form of increasing discrimination and other adverse actions to workers. However, it does not mean that AI always harms labor relations; if it is used and appropriately regulated, taking into account the point of view and position of female workers in the workplace, it can have an excellent opportunity to provide the fulfillment of protection guarantees for female workers themselves. Therefore, a transformation of employment law must be carried out that leads to the regulation of the use of AI in efforts to protect female workers in the AI era. Some things that can be done in the framework of employment law transformation are: (1) transformation of job training regulation that facilitate female workers in STEM fields to support readiness for use; (2) regulate the use of AI in programs related to career paths, calculation of wages, benefits, and compensation; (3) Transformation of the regulation of the use of collective labour agreements by worker unions to fight for the protection of female workers in the AI era in; (4) stipulate ethical regulation of technology; and (5) setting restrictions on the use of AI by analogy similarly with the use of foreign workers.

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