



Determinant return to work program for work-injured employees in Indonesia

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ARTICLE INFO

► Research Article

Article History

Received 29 December 2022

Accepted 21 June 2023

Published 11 July 2023

Keywords

disability management;
logistic regression;
occupational accident; return
to work; social security

JEL Classification

H55; E24; J24

ABSTRACT

Work accidents can determine the safety quality in the workplace, which contributes to national economic development. It is estimated that gross domestic product losses from work injuries are 3.94% annually. It is important to reactivate work-injured persons' productivity. The Return to Work (RTW) program was formed to accommodate employees who become disabled after a fatal injury. This study aims to estimate the RTW rate and the factors that influence the probability of success of the RTW program for work-injured persons. Data were obtained from the Social Security Organization (BPJS Ketenagakerjaan) for the 2020–2021 period. A total of 195 participants enrolled in this program because of fatal work injuries. The study was cross-sectional and used a logistic regression model. The results showed that 75.90% of participants could work after following the program. Factors positively influencing the success of the RTW program included lower and upper amputation (OR = 2.474), working in the secondary sector (OR = 2.409), enrolling in the RTW program in 2020 (OR = 2.184), and paying a lower insurance premium rate (OR = 3.260). The rate of RTW in Indonesia is relatively high, with more than three-quarters of participants being able to work. Risky groups need more attention by providing information about the work environment and road hazards. These findings can be used as a reference point for further developing the RTW program to increase assistance to high-risk patients who are not able to work after finishing the program.

To cite this article: Aprianto, D., Hakim, D. B., & Sahara. (2023). Determinant return to work program for work-injured employees in Indonesia. *Journal of Socioeconomics and Development*, 6(1), 86-97. <https://doi.org/10.31328/jsed.v6i1.4412>

ISSN 2615-6075 online; ISSN 2615-6946 print
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INTRODUCTION

Indonesia experiences positive economic growth every year, with the trend of gross domestic product (GDP) ranging from around 3.5% to 4.3% from 2013 to 2019 (Central Agency on Statistics, 2020). Economic activity implies that people are involved in business. However, there is a trade-off: accidents due to potential hazards in the workplace. A large number of employees in Indonesia work in the primary or

extractive sectors, for instance, agriculture, construction, and mining. This sector creates a particular risk that stems from hazardous agents, such as radioactive and chemical substances (ILO, 2020a).

Globally, occupational accidents involve more than 374 million nonfatal cases and 2.78 million deaths per year (ILO, 2020b). A comparison between countries in Southeast Asia shows that Indonesia has the highest number of fatal accidents at 43%, followed by Thailand (19.2%) and Singapore (10.5%) (Takala,

1999). Additionally, in Indonesia, there are 15,973 accidents per 100,000 workers, with a 20.9 fatality rate for accidents caused by three days of absence (Hämäläinen et al., 2006).

The Indonesian government has taken action to reduce the number of work injuries. It has developed occupational accident prevention programs to increase productivity, health promotion programs to raise awareness of work hazards, programs to control the work environment, and the provision of occupational accidents (Irfani, 2015). Occupational accidents typically occur because of machines and electrical equipment, for example, steam, pounding, pressing, sewing, drilling, and weaving machines. Other sources of occupational accidents are transporters and lifters. These sources are mainly from the mining and manufacturing sectors (Ministry of Manpower Republic Indonesia, 2021).

People with serious accidents tend to have disabilities afterwards. Mild and severe injuries sometimes result in amputation. After amputation, some individuals develop psychological disorders, such as anxiety and depression. Research in Kenya showed that 47.4% of amputees develop depression. Furthermore, around 24.5% of participants develop postoperative depression. Individual and social factors exacerbate this condition: young age, single status, low education, trauma, absence of prostheses, and lack of social support (Mohamed et al., 2022).

Click or tap here to enter text. Sustained depression in individuals affects work productivity. Workers who are depressed tend to lose work hours and fully not work, which results in lost productive time. The decline in productivity affects costs incurred by the company significantly. It is estimated that the lost productivity cost among workers in Japan due to presenteeism is around \$469,67 per capita (Yoshimoto et al., 2020). Additionally, health costs for compensation-related occupational accidents were \$114,000 for 234,370 cases in 2021 (BPJS Ketenagakerjaan, 2021).

Economically, occupational accidents affect both companies and workers. It is estimated that state losses due to occupational accidents make up 4% of the gross national product (Somavia, 2005). An accident's direct and indirect costs include medical expenses, lost working days, reduced production, lost compensation for workers, time and money expenses from retraining workers, equipment breakdown and repair costs, negative publicity for the company, and

loss of contracts due to occupational accidents (ILO, 2007).

Persons with disabilities (PWD) in Indonesia number around 7.9 million, out of which 96% are working and 4% are openly unemployed (Ministry of Manpower Republic Indonesia, 2021). PWD experience lower labor force participation rates than nondisabled people (Halimatussadiah et al., 2017). PWD regulations were issued to protect them from discrimination and guarantee them opportunities (Dewi, 2019). Nevertheless, PWD face burdens regarding joining the formal sector. Employees perceive PWDs as bringing higher cost and lower productivity (Suryahadi, 2022). The Return to Work (RTW) program was developed to protect employees who become unemployed because of occupational accidents and to prevent additional unemployed PWDs in Indonesia.

Occupational accidents that cause physical and functional disabilities increase the number of PWDs in Indonesia. The proportion of patients who can recover completely without experiencing disability is around 95%. Meanwhile, 5% of patients die or experience functional disability, permanent/partial disability, and total disability. Even though this percentage is small, workers with disabilities can affect various economic areas, specifically unemployment and low productivity. Moreover, there were a significant number of occupational accident cases in 2021. There was a 265% increase in total claimants from 2020 to 2021. Additionally, the number of fatality cases increased slightly from 2.91% to 3.48%.

The issuance of Ministry of Manpower regulation No. 10/2016 regarding procedures for administering the RTW program provide additional benefits to the Work Injured Benefit program. The program focuses on fatal injuries, which cause physical and functional disabilities. It aims to recover workers' productivity after an injury that affects them physically and mentally. The patient is enrolled in several programs, including medical treatment, rehabilitation, and vocational training.

The RTW program has been operated in Indonesia since 2015. The program focuses on workers with fatal injuries or potential disabilities. Workers with fatal injuries usually experience amputation or a decrease in the body's functions caused by injuries in several locations, such as fractures, burns and wounds. The program aims to make workers physically and

mentally productive again after a occupational accident.

Since it was established, the number of patients who participated in the RTW program has increased gradually. By 2021, 1106 participants had experienced occupational accidents following the RTW program in Indonesia. In the last three years, there has been an increase of 40.08% of participants enrolled in this program. Before a worker can join the RTW program, the employer should sign an agreement to reemploy the patient. If, after the program ends, the patient cannot work productively in their current company, they have the opportunity to perform another job at the company or work at a new company. The program also includes on-the-job training for amputees who need to readjust to their tasks.

Several countries have researched the RTW program, aiming to identify determinants that affect the probability of returning to work. In Malaysia, Awang et al. (2016) revealed the internal and external factors behind the success of the RTW program: year of injury, cause of injury, gender of injured person, age of injured person, industry type, duration of intervention, participant motivation, and company interest. Kang (2022) stated that, in South Korea, age, gender, marital status, education, household income, residential area, accident type, disability level, company size, industry group, and job stability influenced the determinants of the RTW program. In China, He et al. (2010) found that the RTW program's determinants are age, working years, monthly salary, gender, marital status, education level, technical job title, occupational group, and injury severity.

Kang (2022) researched Korea's industrial accident and insurance patients. Kang found that workers' awareness of health recovery and rehabilitation on the physician were positive factors that influenced RTW. Additionally, environmental aspects and individual characteristics (age, level of disability) significantly affected RTW.

Awang et al. (2016) aimed to examine the success of the RTW program in Malaysia among work injury patients. As many as 65% of patients were able to return to work. The male gender, age, motivation, employer interest, intervention duration, and injury type were the key success factors in reemployment.

He et al. (2010) studied RTW patients recovering from work injuries in China. The authors found that 92.9% of patients could return to work with an average of 43 days off. Factors that influenced the

success of the RTW program were age, injury severity, injury locus, injury nature, pain in the injury locus, self-report health status, and preinjury monthly salary.

Cancelliere et al. (2016) analyzed various health injury conditions and their relationship to the RTW program. Factors that influenced the success of the RTW program were higher education, lower severity of the injury, multidisciplinary intervention, and RTW coordination. Negative associations with RTW were the female gender, older age, higher disability, and depression.

Van der Kemp et al. (2019) examined mild-to-moderate stroke patients in the RTW program. Factors predicting RTW were global cognitive function and depressive symptoms after two-month onset for one year RTW.

In Indonesia, research related to the RTW program is still limited. Expanding this field to develop a better program in Indonesia is important. The current research aims to estimate the RTW rate in Indonesia, analyze the internal and external factors affecting participants who are able to work after the RTW program, and examine the factors affecting the probability of success the RTW program.

RESEARCH METHOD

The data used in this study were secondary data. The main resource was BPJS Ketenagakerjaan, which is responsible for conducting the RTW program. Other literature sources were the Central Statistics Agency, the Indonesian Ministry of Manpower, the Indonesian National Police, and journal articles. The data were processed using Microsoft Excel and STATA.

The respondent pool for the 2020–2021 period was 226 participants throughout all provinces in Indonesia. Only 195 participants were eligible to be included in this study. Respondents were excluded for having incomplete data. Further, respondents who were still undergoing treatment were not included because the study's focus was on working and nonworking status of patients after the RTW program. The data consisted of participants' working status, participants' age, participants' gender, participants' injury type, participants' working experience, accident year, industry group, insurance rate, and accident location.

The research adopted a cross-sectional quantitative approach. Descriptive and quantitative analyses were conducted. The illustrative method was

used to answer the first research question, and quantitative analysis using a logistic regression model was conducted to answer the second research question.

The RTW rate was calculated based on the total number of participants in the RTW program who could work divided by the total number of patients after the RTW program. The RTW rate was used to estimate the success rate of the RTW program. This calculation was based on previous research by Vles et al. (2005) and Awang et al. (2016).

Descriptive statistics were used to describe the risk factors influencing the RTW program's success. A frequency distribution technique was adopted to determine the distribution of research data by calculating the frequency of the data, which were then presented in tables.

The logistic regression analysis model analyses the response variable (dependent variable) to the independent variable. Logit modeling transforms the probability prediction problem in the interval to log-odds prediction. Odds are defined as risk or possibility, the ratio of something happening to the opportunity for another alternative (Juanda, 2009).

This study used a logit model where productivity was defined as being able to work after a patient finished an RTW program. The model was based on previous research by Kang (2022) and Awang et al. (2016).

RESULT AND DISCUSSION

Return to Work in Indonesia

There were 195 participants enrolled in the RTW program between 2020 and 2021. They were spread throughout Indonesia. The highest number of cases were found in the islands of Java and Sumatra. Participants in the RTW program receive special attention from doctors, who assess participants' postinjury conditions, ability to perform daily activities, and ability to work. Table 1 shows the distribution of participants' final working status after the RTW program.

These results indicate that the proportion of patients who can work is higher than that of patients who cannot. The success rate of the RTW program for workers in Indonesia is thus relatively high. To specify, 75.90% of participants are able to be active again in the labor market after the program. Awang et al. (2016) found that in Malaysia, the success rate of the

RTW program was 65%, and Vles et al. (2005) found that in the Netherlands, the success rate was 74%. RTW participants with reemployed status have a higher tendency to leave the job compared to returning to it. Participants' regular or daily work status increase their chances of doing the same job after returning to work (Bae et al., 2023).

Table 1. Working Status after the Return to Work Program in Indonesia (2020–2021)

| Working Status | Frequency | Percentage % |
|----------------|-----------|--------------|
| Not Working | 47 | 24.10 |
| Working | 148 | 75.90 |
| Total | 195 | 100.00 |

Source: BPJS Ketenagakerjaan (2021)

Internal Factor of the Return to Work Program

The internal factors analyzed in this research were related to individual characteristics, including employee age, working years, gender, and injury type. These demographic characteristics can be further explained based on the data this study obtained.

Among the workers who participated in the RTW program, the lowest age was 18 years and the highest age was 58 years. The average age of participants was 30. The distribution of RTW participants was mainly in the 20–29 years category (45.64%) (Table 2). This shows that younger workers tend to experience more work injuries compared to older workers. Older workers in the 40–49 years category formed the highest proportion of those who were not working (46.15%). This proportion was higher than the average proportion of those who were not working (24.10%).

Regarding the number of working years of employees who participated in the RTW program, the lowest number was one year and the highest was 27 years. The median number was three years. The working years variable pertained to participants' work duration based on the first time they paid social insurance in their current company. Participants' average work duration was five years. The results showed employees' working years proportion to be mainly in the 0–5 category. A total of 69.23% of employees had lower working years. Work injuries mainly occurred among employees with low working years. In this category, 52 participants worked less than 12 months or one year. Occupational accidents

mainly occurred in employees with work experience below five years.

Table 2. Distribution of Internal Factors in the Return to Work Program (2020–2021)

| Variable | Frequency | Percentage % |
|-------------------------------|-----------|--------------|
| Age | | |
| 18–29 year | 89 | 45.64 |
| 30–39 year | 53 | 27.18 |
| 40–49 year | 39 | 20.00 |
| 51–59 year | 14 | 7.18 |
| Sub total | 195 | 100.00 |
| Working Duration | | |
| 0–5 year | 135 | 69.23 |
| 6–10 year | 36 | 18.46 |
| 11–15 year | 10 | 5.13 |
| >15 year | 14 | 7.18 |
| Sub total | 195 | 100.00 |
| Gender | | |
| Male | 168 | 86.15 |
| Female | 27 | 13.85 |
| Sub total | 195 | 100.00 |
| Injury Type | | |
| Upper limb amputation | 108 | 55.38 |
| Lower limb amputation | 54 | 27.69 |
| Multiple injury nonamputation | 33 | 16.92 |
| Sub total | 195 | 100.00 |

Source: BPJS Ketenagakerjaan (2021)

The distribution of RTW program participants by gender showed that men had more occupational accidents than women. The proportion of women in the RTW program was only 13.85% compared to 86.15% for men. The higher proportion of male participants experiencing occupational accidents is in line with Ashuro *et al.* (2021). Seland *et al.* (2006) found that men outnumbered women three times in RTW programs. According to Shewiyo *et al.* (2021), men (83%) outnumbered women four times in RTW programs. These results indicate that men face a higher risk of occupational accidents than women.

Regarding the type of injury, there are three major types: the lower limb type, which consists of the lower body; and the upper limb type, which consists of the upper body and multiple injuries (i.e., injuries in several parts of the body, including the upper body, lower body, and head). Both upper and lower limb cases are amputation cases, whereas multiple injury cases are nonamputation cases with a functional disability.

Respondents in the upper limb category were the most common (55.38%) in the current study. These respondents experienced disabilities in the upper area,

including amputation of hands, arms, palms, and fingers. Because the hands are the most active body compared to the feet, upper limb injuries pose the most risk at work related to this research. A total of 27.69% of participants had lower limb injuries that needed amputation, most commonly amputations of the knees, thighs, and soles of the feet.

Last, the percentage of multiple injury patients was 17.62%. Patients with multiple injuries have injuries in more than one location, such as burns, electrocution injuries, injuries from exposure to chemicals, or fractures of both legs and arms. In the current study, these patients mainly worked in the manufacturing and goods and services sectors. Awang *et al.* (2016) found that lower limb and upper limb injuries formed the most significant proportion of work injury cases in Malaysia. A total of 59.6% of participants had these injuries. He *et al.* (2010) revealed that 66.67% of participants had lower and upper injuries.

External Factor of the Return to Work Program

The external factors analyzed in this research were workplace accident characteristics. They included industry group, accident year, insurance rate, and accident location. These characteristics can be further explained based on observations from the data obtained in this study.

An industry is grouped into three areas based on the type of business activity it performs: primary, secondary, and tertiary. The primary industry group includes industries that conduct their main activities by extracting resources from nature (land and sea). This study's primary industry categories were agriculture/forestry and mining. The percentage of RTW participants who work in this sector is 10.25% (Table 3).

The secondary industry includes activities that produce finished products and ready-to-use products. In this study, there were three categories: construction, electrical, and manufacturing. This industry had 62.08% RTW participants, the largest proportion from the manufacturing industry.

The tertiary industry has service, trading, transportation, public service, insurance, and tourism activities. In this study, the tertiary industry group performed three main activities: goods and services, public services, and transportation. The industry had 26.67% participants. Trade was this group's most common activity, including goods supply and delivery.

Table 3. Distribution of Internal Factors in Return to Work Program (2020–2021)

| Variable | Frequency | Percentage % |
|-------------------|-----------|--------------|
| Industry Group | | |
| Primary | 20 | 10.25 |
| Secondary | 123 | 62.08 |
| Tertiary | 52 | 26.67 |
| Sub Total | 195 | 100.00 |
| Accident Year | | |
| 2020 | 92 | 47.18 |
| 2021 | 103 | 52.82 |
| Sub Total | 195 | 100.00 |
| Insurance Rate | | |
| 0.24 | 54 | 27.59 |
| 0.54 | 16 | 8.21 |
| 0.89 | 101 | 51.79 |
| 1.27 | 11 | 5.64 |
| 1.74 | 13 | 6.67 |
| Sub Total | 195 | 100.00 |
| Accident Location | | |
| Inside | 134 | 68.72 |
| Outside | 13 | 6.67 |
| Road | 48 | 24.62 |
| Sub Total | 195 | 100.00 |

Source: BPJS Ketenagakerjaan (2021)

Research in the European Union on business sectors that cause occupational accidents indicated that several sectors have a significantly greater risk of accidents, including agriculture, forestry, fishing, manufacturing, construction, and transport storage (Ivascu & Cioca, 2019). This result has a similar business sectors pattern of work activity that has an impact on work injury in Indonesia.

The number of patients in the RTW program was higher in 2021 than in 2020. The RTW rate in 2020 (82.60%) was higher than in 2021 (69.90%). This might be because of COVID-19 regulations restricting work activity to slow down the spread of the virus. In 2021, some activities were limited, but the regulations were not as tight in 2020 when the coronavirus first infected Indonesia. Additionally, vaccinations started in January 2021.

The JKK claimants increased 205% from 2020 to 2021. The lower percentage in 2020 was due to the restrictions on commercial activities. In the last semester of 2020, BPJS Ketenagakerjaan started a program to promote RTW during the COVID-19 pandemic. Using posters distributed to offices, companies, and vocational training institutes, this program aimed to clarify to participants that the RTW program was still running during the pandemic.

JKK has an insurance rate based on the risk level of a company's activities. The higher the risk, the higher the insurance rate percentage, which is categorized into five types. The proportion of work activity is higher in the moderate level of occupational risk, 51.79%. Only 12.31% participants in the RTW program worked in high-risk and very high-risk occupations. This shows that work injuries occur not only in high-risk companies but also in low-risk ones. In addition, damage caused by traffic accidents is covered by the insurance program. The insurance rate does not determine the occupational risk on the road. The employee has an equal chance of accident while in commute from home to the workplace or vice versa.

Occupational accidents can occur in the workplace, outside the workplace, or on the road. In this research, a significant number of studies showed that they occurred in the workplace. The highest number of accident cases were inside the workplace, with a proportion of 68.72%. Meanwhile, occupational accidents outside the workplace were relatively low (6.67%). Furthermore, occupational accidents on the road were high (24.62%). These findings are similar to those of Shewiyo et al. (2021) for work injury in Tanzania. A total of 65.72% of work injury insurance claims were due to an accident inside the workplace. A total of 34.27% of claims were due to an accident on the road. Regulations related to the implementation of work safety in the workplace already exist. Nevertheless, occupational accidents that take place inside the workplace indicate a lower commitment to implementing safety standards. The government's control and supervision methods need to be improved.

Factor Influence the Success of the Return to Work Program

Internal and external factors were used to estimate factors influencing RTW programs. The factors were age, working years, gender, injury type, industry group, accident year, and accident location. These factors were analyzed using the logit model, which is a part of logistic regression, to estimate the probability of success RTW participants returning to work. The results of the logistic regression test with a 95% confidence interval found a relationship between risk factors and working status variables (Table 4).

Table 4. Regression Analysis of Factors Influencing Return to Work in Indonesia (2020–2021)

| Working Status(0: Not Working, 1: Working) | Coef. | Odds | p-value |
|--|--------|-------|---------|
| Age (Year) | -0.014 | 0.985 | 0.500 |
| Working Experience (Year) | 0.065 | 1.060 | 0.160 |
| Gender (0: Female, 1: Male) | 0.718 | 2.050 | 0.158 |
| Injury Type (0: Nonamputation, 1: Amputation) | 0.906 | 2.474 | 0.039** |
| Industry Group_Primary (0: Others, 1: Primary) | -0.354 | 0.705 | 0.570 |
| Industry Group_Secondary (0: Others, 1: Secondary) | 0.879 | 2.409 | 0.036** |
| Accident Year (0: 2021, 1: 2020) | 0.781 | 2.184 | 0.041** |
| Insurance Rate (0: High Risk, 1: Low Risk) | 1.181 | 3.260 | 0.017** |
| Accident Location (0: Inside/Outside, 1: Road) | 0.577 | 1.781 | 0.215 |

***, **, and * denote significant level at 0.01, 0.05, and 0.10

The injury type variable had a significant influence with a p-value of 0.024. Lower and upper limb injuries (amputation) had a higher probability in the RTW program. Patients with lower-upper limb injuries had a 2.6-times higher probability of returning to work than patients with multiple injuries.

Patients in the upper and lower limbs category were dominated by amputees. Patients in the lower-upper limb category had better physical conditions than those with multiple injuries. Meanwhile, the multiple injury group had common injuries: fractures; tendon ruptures; burns; and trauma such as eye and head trauma. Some patients experienced a significant decrease in their body function, which affected their mobility.

These results are in line with those of Kang (2022), who found that the higher the degree of disability, the lower the chances of returning to work. Severe occupational accident rates lead to lower RTW rates. Injuries to the head, lower limb, pain for more than three years, and stress disorders are the causes of failure to return to work (Pélissier et al., 2017).

The success rate of the RTW program is related to the severity of the injury the patient experiences. Awang et al. (2016) and Cancelliere et al. (2021) found that the level of injury determines the success of the RTW program.

The dummy industry group secondary had a significant relationship with the secondary sector with a p-value of 0.014. Patients in the secondary industry had a 2.8-fold higher probability of returning to work than those in the tertiary sector. In contrast, the dummy industry group primary had no significant relationship with the tertiary sector.

The primary sector involves agriculture/forestry and mining activity with a higher risk of occupational injury. The agriculture/forestry sector dominated this study's primary group. Ouattara et al. (2022) found

that 12% of farmers had one or more work injuries per year. The prevalence of occupational accidents in the agriculture sector is relatively high. The work environment and safety on the road while driving influence the risk of work injuries.

The tertiary industry group experiences 58% of accidents in outside workplaces. Business activities such as trade and transportation also lead to accidents. Road accidents are unpredictable, such as slips or collisions involving multiple vehicles. Research conducted in Australia, New Zealand, and the United States found evidence that truck drivers have the highest risk of road accidents (Driscoll et al., 2005).

In Italy, Mucci et al (2020) found that agriculture is the most hazardous economic sector. Upper limb injury is common in this sector. The source of such an injury is hand tools and machinery such as tractors. Such an injury can cause body impairment, including open wounds, lacerations, fractures, and overexcretion lesions.

The secondary industry comprises manufacturing, electronics, and construction, all of which face a high risk of occupational accidents (Seland et al., 2006). Research from Turkey found the most severe occupational accidents in this industry. From 2010 to 2019, these accidents caused permanent disability. The top five work areas contributing to disability are construction, metal products manufacturing, civil engineering, specialized construction activity, and land transport. The most frequent accidents occur in the mining of coal and lignite (Ceylan et al., 2022).

The accident year variable showed significant results with a p-value of 0.031. Patients in 2020 had a higher probability (2.2 times) of returning to work than patients in 2021. Some casualties influenced patients in 2021 in the RTW program negatively. Awang et al (2016) found that the RTW program in

2010 was successful, creating a likelihood of the program enrolling more participants in 2011 and 2012.

Several factors, such as the COVID-19 pandemic, affected the higher RTW rate in 2020. In 2020, there were still relatively few cases, and hospitals could still serve many non-COVID-19 patients. In early and mid-2021, however, there was a first and second wave, which led to a higher demand for health services and a lack of services for common diseases. Geyman (2021) stated that the COVID-19 pandemic created problems for health care in the United States such as barrier to access, higher cost and price, bad quality, widespread disparities, and equality.

Moreover, COVID-19 reduced the public's motivation to visit the hospital because of their fear of contracting the virus. Moynihan et al. (2021) found that health-care utilization increased three-fold during the pandemic. Arsenault et al. (2022) conducted a literature review in 10 countries of health-care services during the COVID-19 pandemic. There was significantly lower utilization of health care in those countries, around 9–40%. Patients were discouraged from consultations because of the anxiety of COVID-19 infection.

The insurance rate variable had a significant result with a p-value of 0.025. Participants working at a lower-risk insurance rate had a higher probability of returning to work than participants working at a higher-risk insurance rate. The probability of RTW at a lower-risk insurance rate was three times higher than at a high-risk insurance rate. The insurance rate determines the level of hazards in the workplace. The higher the danger in the workplace, the higher the insurance rate the employer should pay.

The insurance rate is also correlated to occupational risk. The higher the insurance rate, the higher the probability of fatal injury in some industries. This finding shows that the high-risk sector has a higher probability of fatal injury that causes people who experience it to be unable to work.

Research in Sweden found a significant correlation between high-risk companies and insurance payments. Employees in risky sectors are more likely to have work injuries and claim benefits from public insurance. However, the redistribution effect of social insurance in a occupational accident is due to participant contribution of lower or higher premiums (Andersson et al., 2022). For example, in this study, more than half of the RTW participants paid moderate premiums. However, they received similar treatments

or benefits compared to people who paid a higher premium.

The RTW rate in Indonesia is relatively high compared to other countries. This shows that participants with fatal occupational accidents can work and be paid premiums as regular employees. This has positively influenced BPJS Ketenagakerjaan to increase the RTW rate and maintain the sustainability of the social security fund. The higher the RTW rate, the higher the sustainability premium from work-injured employees.

Research Implication

Workers with disabilities are currently not in a favorable position in Indonesia. Various government regulations for this group require further development (Kusumastuti et al., 2014). The RTW program is designed to reactivate workers' ability after a fatal work injury. The high success rate of RTW in Indonesia indicates the program's ability to restore worker productivity. Its impact has reduced the potential for unemployment, poverty, and GDP loss caused by fatal injuries. The RTW rate can be improved by examining motivation to shorten time of rehabilitation until RTW (Vanovenberghe et al., 2021). At the same time, employers should increase their awareness of PWD and promote equality and equal opportunity in the workplace as a support and reduce likelihood of long-term RTW (Jansen et al., 2021).

Government regulations oblige companies to employ 2% of disabled employees. Labor unions should mediate the relationship between employers and employees who experience disability after a work injury. The labor union's function would be supervising, controlling, and accompanying the disabled worker for a sustainable RTW experience. Labor unions would also provide social support to ensure employee convenience in the workplace (Skivington et al., 2016).

The health-care system plays a major role in restoring work injury victims' physical and psychological aspects. A fast response during an emergency can ensure better medication is provided to the patient. The "golden hour," or the earliest time when an employee suffers an injury, calls for a fast response to prevent the injury's effects from becoming more severe. As this research showed, the injury type affects the probability of returning to work. Health care for handling work injury patients has a significant

impact on this probability. The health-care provider needs to ensure priority service for work injury patients (Shaw *et al.*, 2018). Additionally, BPJS Ketenagakerjaan, as an insurance provider, needs to provide fast service to insurer health care costs. The relationship among the health-care provider, BPJS Ketenagakerjaan, and the patient can provide better opportunities for the patient to return to the labor market (Kosny *et al.*, 2018).

Furthermore, the year of the accident can influence the probability of success the RTW program. COVID-19 might have affected the program in Indonesia. The program depends on the health-care facility for medical treatment and rehabilitation. The COVID-19 wave in 2021 possibly decreased service quality, led to high occupancy, and decreased patients' motivation to visit the hospital (Tuczyńska *et al.*, 2022). Thus, health-care providers should be aware of the services they can provide for patients injured at work.

BPJS Ketenagakerjaan is responsible for conducting promotive and prevention programs. The programs can be designed and integrated by following the riskiest group in the RTW program to optimize results and reduce workplace accidents. The tertiary and primary sectors face a greater risk of occupational accidents resulting from working in the secondary sector. Controlling road accidents requires providing safe driving training and installing proper lights, signs, and lines. Risk factors for occupational accidents can be reduced by implementing work safety standards, monitoring health and safety compliance, and conducting occupational safety training to increase workers' knowledge of hazards in the workplace.

The diversity in the employer insurance rate following the RTW program shows the effect of the principle of redistribution. It means social risk can be distributed among low- and high-risk companies equally (Andersson *et al.*, 2022). However, a high-risk insurance rate contributes a significant number of not returning to work, which means there is a potential chance of higher fatality compared to a lower insurance rate.

CONCLUSION AND SUGGESTION

Based on the results, it can be concluded that the rate of the RTW program in Indonesia is relatively high, with more than two-thirds of participants able to return to work. The RTW program in Indonesia has a

significant influence on increasing patients' ability to be productive after a work injury. Younger age, lower experience, male gender, lower and upper limb amputation, work in the secondary sector, higher enrollments in 2021, insurance rate payments in the moderate category, and accidents inside the workplace dominate the distribution of RTW participants. This group needs more attention to obtain information about hazards in the work environment and on the road. The key factors of the RTW program are lower-upper limb amputation, working in the secondary sector, accidents in 2020, and a lower insurance rate. These findings can be used as a reference for further developing the RTW program to focus on high-risk patients who are not able to work after the program ends.

This study did not include the duration of rehabilitation and job training as variables to determine the effectiveness of intervention in the RTW program. Furthermore, changes in wage levels before and after becoming disabled are important to determine the impact of occupational accidents on workers' income levels. Evaluation should be conducted three months to 12 months after the RTW program to ensure the sustainability of productivity, successful reactivation, and successful job replacement. The spatial analysis can assist institutions in mapping work risks and formulating more targeted policies. The year duration can be longer to include more participants and achieve better analysis accuracy. Major variables can be included in future research, including education level and marital status.

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