

Impacts of unemployment benefit program on job search duration: Evidence from Indonesia

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Abstract

Purpose — This study examines the impacts of the Unemployment Benefit Program (*Jaminan Kehilangan Pekerjaan*, JKP) on the duration of job search in Indonesia using internal data sourced from the Employment Social Security Administering Agency (Badan Penyelenggara Jaminan Sosial Tenaga Kerja, BPJS TK).

Method — The Regression Kinked Design (RKD) model and Ordinary Least Square (OLS) estimation method are used to analyze the data on laid-off workers who have received the JKP benefits.

Findings — On average, the JKP beneficiaries have a longer duration of job search than laid-off workers who do not receive benefits. An increase in the replacement rate of the JKP benefits is associated with an increased duration of both job search and benefit claims. The RKD plot indicates that a replacement rate lower than 45% may decrease the duration of benefit claims and job searches.

Implication — The results imply that the government should consider two potential options: (1) maintaining the current level of monetary benefits that leads to a longer job search duration; in other words, the program management must continue providing benefits for the maximum duration offered (up to 6 months), or, (2) reducing the monetary benefits, if BPJS TK aims to reduce the job duration. The results may change if a more robust labor market information system is available.

Originality — This study represents the first attempt to investigate the impact of the Unemployment Benefit Program (JKP) on job search duration in Indonesia. It might also be important to enrich the existing literature on the impact of similar programs in developing countries and countries with large populations.

Keywords — JKP, unemployment benefits, impact, job-search, Indonesia

Introduction

Theories on the Unemployment Benefits Program (UBP) in developed countries generally reveal that unemployment benefits increase the unemployment rate (Moffitt, 2014; Zaretsky & Coughlin, 1995). This prediction is based on two central pieces of labor economics: the job-search theory and the

efficiency-wage theory. In the job-search theory, unemployment benefits cause an increase in the duration of unemployment by reducing the incentive for unemployed workers to search for and accept a job. The efficiency-wage theory reduces the unemployment cost and induces workers to ask for higher wages, decreasing labor demand (Spiezia, 2000). This is also evident in recent research conducted in various countries, which found similar results, especially in developed countries (Card et al., 2016; Landais, 2015; Liepmann & Pignatti, 2024). However, even though the unemployment rate model theoretically influences an increase in job-search duration, it does not necessarily increase the unemployment rate (Spiezia, 2000). Even so, in some cases, the unemployment rate is often increased due to increased job-search duration caused by the expansion of UBP (increase in benefit or duration) (Baker & Fradkin, 2017; Jesse, 2011). Despite many studies on the impact of UBP on job-search duration in developed economies, only a few studies have been conducted in the developing economy. Some studies show that, in a weak labor market condition, UBP cannot significantly impact job search duration (Farber & Valletta, 2015), especially in a crisis. So far, however, no conclusive evidence exists for the job-search theory stand in developing countries.

In Indonesia, the UBP was first implemented in 2021, partly in response to the concern about the pandemic's scarring effects on the labor market during that period (Dartanto et al., 2023). As of July 2023, about 37 thousand unemployment claims have been made (BPJS TK internal data). This research aims to show the impact of JKP on job-search duration in Indonesia based on job-search theories found in the literature. As JKP has only been in place for two years, a good understanding of the program is needed, so the program management might take action to improve the program. This is the first research that specifically looks at the impact of JKP on job search duration in Indonesia, and it might be important for the literature on UBP in emerging markets. The labor market situations in developing countries, which are often characterized by a large informal sector, weak administrative capacity, significant political risk, and an environment prone to corruption, might respond differently to the presence of UBP from that in developed countries. Vodopivec and Raju (2002) even argue that the impact of unemployment benefit programs is strongly related to the level of development of a country.

The rest of this paper is structured as follows: Section 2 reviews the literature on JKP and job-searching theory, especially how job insurance matters. Section 3 explains our data and econometric method. Section 4 describes our analysis and discusses the result. Lastly, section 5 concludes the paper.

The global economic crisis, coupled with the Covid-19 outbreak, serves as a reminder of the value of social security programs in shielding income from labor market shocks (Morgandi et al., 2020). According to ILO Convention number 102 of 1952, having unemployment benefits to safeguard employees in the event of unemployment is one of the fundamental requirements for social security.

Indonesia passed a job creation law amid the Covid 19 pandemic to govern the absorption of Indonesian labor due to increasingly competitive labor competition and the demands of economic globalization. The government introduced the JKP as one of its initiatives to safeguard its employees. This program aims to protect employees who have experienced a layoff. The Job Creation Law is the primary regulation of the JKP Program. This law states that the main objective of JKP is to maintain a decent standard of living if workers lose their jobs. Funding for this program comes from the government's initial capital, the recomposition of the existing Social Security program contributions, and BPJS TK operational funds. JKP participants are workers or laborers who have/have just been registered by the employer for social security. If the worker works in large and medium businesses, he must be registered with the other social protection programs (Health, Accident, Death, Old-age, and Pension programs). The monthly contribution for this program is 0.46% of a month's wage, of which the central government pays 0.22% and 0.24% from JKP funding sources. As aforementioned, the source of JKP funding (0.24%) comes from the recomposition of Working Accident Protection (Jaminan Kecelakaan Kerjaa, JKK) contributions (0.14%) and Life Insurance (Jaminan Kematian, JKM) contributions (0.10%).

In terms of benefits, three benefits are given to participants who experience layoffs: cash benefits, access to job market information, and job training. With these perks, it is envisaged that

workers will not experience poverty, and Indonesia's economy will keep growing. [Chang \(2020\)](#) believes that the economy will continue to function and that employment will be available if unemployed workers receive cash assistance and use it for household needs. In addition, to receive the benefits, participants must continue to search for a job or attend training. These two benefits will maintain economic security regardless of employment status ([Chang, 2020](#)). The JKP benefits are administered by two government entities: BPJS TK and the Ministry of Manpower. The latter is responsible for cash benefits, while the former is responsible for the labor market information and job-training benefits. The cash benefits JKP are 45% of wages before layoffs for the first three months and 25% for the next three months for six consecutive months, with the upper limit of wages for the first time set at IDR 5,000,000.00. The job market information is provided as job vacancy data, which can be accessed online. Apart from job vacancy data, the benefit of access to job market information can be career counseling. For the job training benefit, competency-based training provided by government, commercial, or company-owned work institutions which can be conducted online or offline

Job-search theory models individuals' decisions about participating in the labor market and changing or leaving jobs. The worker is assumed to be looking for a job lacking information and may encounter unsuitable offers before finding a job. Each time the unemployed worker receives a job offer, he decides whether to accept the offer based on a previously determined set of criteria. These criteria are important in the decision-making process and are the subject of our investigation ([Zaretsky & Coughlin, 1995](#)). During the period of unemployment, workers are also assumed to have constant worker's income and opportunity costs. Thus, the worker's income during this period matters in changing the job-search duration ([Zaretsky & Coughlin, 1995](#)). The reservation wage and job-search effort characterize the optimal job-search behavior. Both components depend on factors such as income during the job search and the probability of receiving a job offer ([van den Berg & Uhlenhorff, 2023](#)). In the case where UBP is present, if the individual is risk-neutral, the benefit will decrease the marginal cost (due to the lower value of the worker to continue searching for a job) for an additional search while keeping all else constant so the gain from the job search will be reduced ([Zaretsky & Coughlin, 1995](#)).

Despite the theory showing the correlation between the quantity of UBP benefits received and the duration of unemployment positive, there has been a debate regarding the possibility of moral hazard with respect to benefits obtained through the UBP program ([Katz & Meyer, 1990](#)). Many believe receiving unemployment insurance benefits for an extended period will help workers find better jobs. However, [Schmieder et al. \(2016\)](#) argue that beneficiaries will make fewer efforts to find new jobs as their unemployment benefits are extended. The beneficiary may be less inclined to hunt for employment due to the monetary benefits they receive. Moral hazard can arise from people's propensity to quit their jobs to get monetary benefits rather than actively seeking employment ([Rotar & Krsnik, 2020](#)). However, the moral hazard effect was not found in some circumstances, such as during the 2008-2012 crisis in the U.S. The increase in the duration of benefits does not affect the duration of the job search ([Farber & Valletta, 2015](#)).

Moreover, despite the moral hazard of UBP in the developed economy, job search duration is mostly in line with the theory, and the evidence for developing countries is more limited ([Robalino, 2014](#)). The case of several developing countries such as Argentina and Chile found that the duration of the unemployment spell increases with the level and duration of the unemployment benefit, with the duration of benefits having a greater impact ([Robalino, 2014](#); [Sehnbruch et al., 2020](#)). In Chile, this effect is driven mainly by the 40% lowest income population and the fifth quintile, but the same impact is not found in the population with middle income (40% middle) ([Sehnbruch et al., 2020](#)). Meanwhile, the case in Argentina shows little evidence that the increase in job search duration caused by UBP helps workers to find better jobs (jobs that pay higher wages). The study on Mauritius Island by [Liepmann and Pignatti \(2024\)](#) also showed that the impact of UBP on the increase of job search duration is seen even in countries with high informal job market.

[Lechthaler and Ring \(2021\)](#) suggests that the program's generosity, that is, the monetary replacement rate (percentage income before layoffs covered by UBP cash benefit) of the benefit, also matters. The generosity of unemployment benefits might reduce search efforts for those

unemployed workers. However, at the same time, it makes other individuals enter the labor market and actively search for a job. So even during the benefit duration, the worker tends to prolong the job-search duration. However, the UBP gives workers incentives back to the labor market. Since Indonesia started the program during the pandemic, there is a possibility that this effect will take place among JKP beneficiaries.

However, the case in Brazil, one of the high-income developing countries, shows how introducing the new system can reduce the negative impact of UBP cash benefits on job search duration. Early findings in the country using data around the 1990s showing the implementation of UBP slightly increased the unemployment rate and job search duration (Cunningham, 2000; Robalino, 2014). But the revision of the job interview referral system in Brazil's National Employment System (SINE)¹ as one of the UBP benefits increases the probability of finding a job within three months of the referral by 20 percent and reduces the number of months needed to find reemployment, the average job tenure of the next job, and the reemployment wage (O'leary et al., 2021). The impact is particularly effective in helping less educated workers find work in a timely fashion (O'leary et al., 2021). Thus, a good UBP design in developing countries is important to lessen the negative impact of UBP cash benefits on job search duration.

Based on the literature above, we develop a hypothesis that can be tested: The duration of a job search depends on the program's generosity. The current level of monetary benefits creates a moral hazard, leading to a longer job search duration. A reduction in the benefits will shorten the time spent searching for jobs.

Methods

This study analyzes the impact of JKP on the duration of a worker's return to work after being laid off using two types of data. The first uses internal BPJS TK data containing information on employee workers who re-registered as BPJS TK participants from April to September 2023 after previously making JKP claims in both 2022 and 2023. The period is used due to limited access to BPJS TK data as a whole.

The second dataset is survey data conducted by the Demographic Institute and BPJS TK in three regions in Indonesia with 400 respondents with three types of respondent categories, namely 1) wage earners who were laid off in 2022 and received JKP; 2) wage earners who were laid off in 2022 who did not receive JKP but were members of BPJS TK; and 3) wage earners who were laid off in 2022 who were not members of BPJS TK. Then, the survey was conducted in three regions, namely Greater Jakarta, which represents the western region of Indonesia; Pontianak, which represents the central region of Indonesia; and Makassar, which represents the eastern region. It is assumed that this data will represent Indonesia as a whole.

Regarding the number of respondents who claimed JKP, the target respondents were calculated using the Slovin method with a margin of error of 0.75, and the target respondents per region were determined based on proportions based on internal BPJS TK data. The selection of respondents was carried out using the systematic random sampling method using the same database. Meanwhile, for the second category, the target was determined purposively with approximately the same percentage, and respondents were determined using the snowball or non-probability method. Table 1 illustrates the number of respondents by type and region.

Table 1. Respondent by Region and Respondent Category

Region	Respondent Category		
	JKP Beneficiary	Laid-Off Worker (BPJS TK Participant)	Laid-Off Worker (Non-BPJS TK Participant)
Greater Jakarta	120	50	50
Pontianak City	40	25	25
Makassar City	25	30	35
Total	185	105	110

¹ Since 2014, the SINE job interview referral system allows job seekers to make an online self-referral if the worker meets the minimum requirements listed by the employer in the job vacancy posting

Regarding demographic characteristics, the average age of survey respondents (37 years) and BPJS TK internal data are relatively similar (36 years). Gender also shows a similar thing with the achievement of survey respondents by gender, dominated by women with a percentage ranging from 58 percent. In comparison, BPJS TK internal data shows a percentage of 57 percent. On average, the number of claims from participants is in the range of 5 claims based on both internal data and survey data. Then, the data on the total nominal amount of claims shows a slight difference between the survey and internal data of BPJS TK, where the survey shows a higher average total claim for beneficiaries (Rp. 7.3 million) compared to BPJS TK data (Rp. 6.5 million).

Table 2. Comparison of Demographic Characteristics, Number of Claims, and Total Claim Value of JKP Beneficiaries Survey Data with BPJS TK Internal Data with the First Claim Range February - December 2022

Description	Population /Sample	% Female	Average		
			Age	Number of Claims	Claim Nominal (Rp)
BPJS TK Internal Data	10,388	57	36	5	6,500,176
Survey	185	58	37	5	7,346,535

An impact analysis was conducted to examine the causality of JKP on the duration of job search and benefit receipt using internal data and survey data. Duration of benefits is also included in the analysis since one of the reasons why workers stop receiving benefits is by returning to work. The model commonly used in analyzing UBP or U.B. impact is the Regression Kinked Design (RKD) (Card et al., 2015; Landais, 2015; Liepmann & Pignatti, 2024). This is the latest model recommended to describe causality in UBP analysis (Card et al., 2015; Mckenzie, 2016). The RKD method is a development of the Regression Discontinuity Design (RDD) model, which describes causality based on the discontinuity of the assignment rule.

In contrast, RKD describes the relationship between a policy variable and the underlying assignment through the kink between the two relationships (Card et al., 2015). This kink can usually arise for several reasons, including the existence of a maximum or minimum value of a government benefit program, as is the case with the JKP program (Card et al., 2015). Implementing an RKD involves estimating quantities "close" to a threshold using (local) polynomial regressions as in an RDD. Instead of estimating a shift in the intercept, however, we are interested in estimating a slope change (Card et al., 2015).

Then, this study will take the RKD model from the Liepmann and Pignatti (2024) study to see the impact of Unemployment insurance on the duration of looking for work and the length of receiving benefits at each moment the participant receives benefits when kinked at a benefit of Rp. 2,250,000. This figure is calculated based on the maximum amount of cash benefit provided 45 percent of wages before the layoffs for the first three months of benefit with the upper limit of wages for the first time set at Rp 5,000,000. Unlike the Liepmann and Pignatti (2024) study, we will only use the upper bound kink due to limited observations from BPJS TK internal data, considering that the JKP program is still relatively new and has only been going on for almost two years. The model used is as follows:

$$E[Y|W] = \beta_0 + \beta_1(W - W_k) + \vartheta_k(W - W_k)II[W \geq W_k] \quad (1)$$

II : Dummy if the benefit is above kinked

W : Wage before Layoff

W_k : Benefit in the kink (Rp. 2,250,000)

Y : Benefit Claim Duration/Job Finding Duration

β_1 : Coefficient for $W - W_k$

ϑ_k : Coefficient for the interaction term

β_0 : Constant

The duration of the job search is estimated using data on when an employee re-registers as a BPJS TK participant again after layoffs and when they receive JKP using internal BPJS TK data. Based on the survey, this is still relevant, considering the application for JKP benefits will take approximately a month. At the same time, the registration time from someone being hired to re-registered in BPJS TK database is also approximately a month. However, BPJS TK internal data only includes the wage profile data of some participants, considering that wage data before layoffs are not required to be submitted to BPJS TK. We then estimate using the first three months of JKP claim data to estimate respondents' wages before Layoff as below:

$$JKP_{Benefit} = 0.45W \quad (2)$$

$$W = \frac{JKP_{Benefit}}{0.45} \quad (3)$$

$JKP_{Benefit}$: Benefit from the JKP program in the first, second, or third month

W : Wage before layoffs

Then, considering that BPJS covers an 5 million income limit, the estimated income of those above 5 million will be limited to only 5 million. So the RKD estimation will be carried out with two types of observations. First, JKP beneficiaries who have returned to work with income before less than 5 million layoffs. Second, JKP beneficiaries who have worked with income before layoffs are above 5 million, but the data is limited to a maximum value of 5 million. To conduct a robustness analysis of the results on RKD, we will also use OLS estimation and survey data to confirm the result.

Results and Discussion

In the earlier section, a hypothesis was put forward regarding the duration and generosity of the job search. The initial hypothesis based on job search theory found that in terms of job search duration, the greater the JKP benefit, the longer the job search duration for the laid-off worker. This is in line with the length of time a person receives benefits, whereas, in [Liepmann and Pignatti \(2024\)](#), it was found that the lower the replacement rate, the faster the few months of receiving benefits. Thus, it is assumed that there is a positive relationship between receiving JKP and the time to return to work (those who receive JKP take longer to return to the labor market).

Before entering the regression model analysis, this section will explain the preliminary results using descriptive analysis of the two leading indicators of the two variables. Based on survey data, the average length of time to look for work after layoffs from JKP recipient respondents looks longer (7 months) compared to the other two categories of respondents, laid-off employees and BPJS TK participants (6 months) and employees who were laid off but not BPJS TK participants (6 months) (Figure 1). Interestingly, the number 7 indicates that they immediately looked for work right after they got the 6th claim. However, internal data for those who have returned to work as wage earners shows that the average of those who return to work is 4.31 months. Since the data only shows those re-registered as employees (not including entrepreneurs or freelance workers) at BPJS TK, this data is assumed relevant for assessing the causality of JKP on the length of time looking for work only for employees. This is also reflected in the average length of time receiving benefits (Figure 2), where the survey data shows a higher length of time receiving benefits compared to the survey data, which shows that people re-registered based on BPJS TK data show they receive fewer benefits (months) than the overall JKP recipient data. The descriptive statistics of the two data used can be seen in Appendix 3.

Then, after knowing the above, we analyzed RKD using internal data of BPJS TK employees who re-registered as employees in April - September 2023. RKD estimation is carried out with sharp RKD according to [Liepmann and Pignatti \(2024\)](#) by using VCE calculations with heteroskedasticity-robust plug-on residual variance estimator without weights with polynomial order 1. Order 1 was chosen because the lower the polynomial order, the more accurate the analysis, according to [Gelman and Imbens \(2019\)](#).

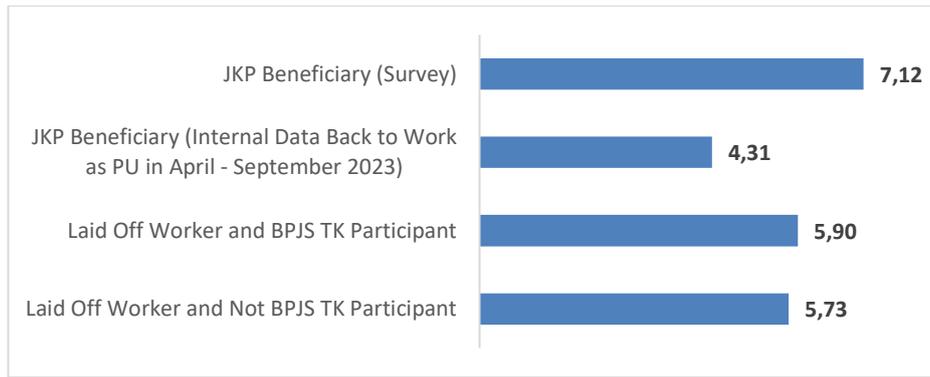


Figure 1. Average Job-Search Duration by Respondent Category (Months)

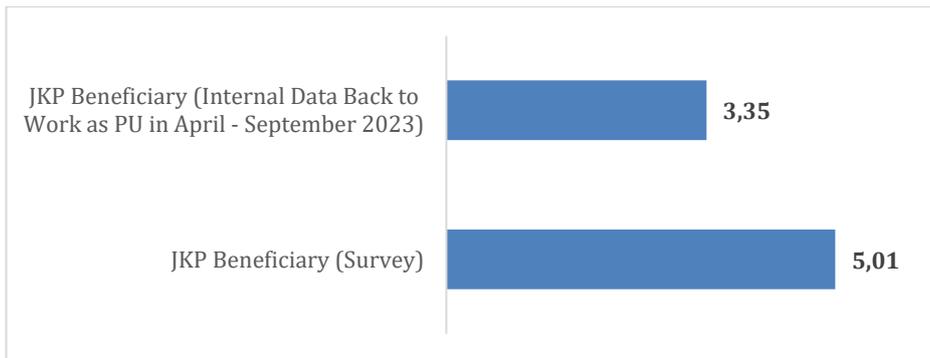


Figure 2. Average JKP Claim by Data

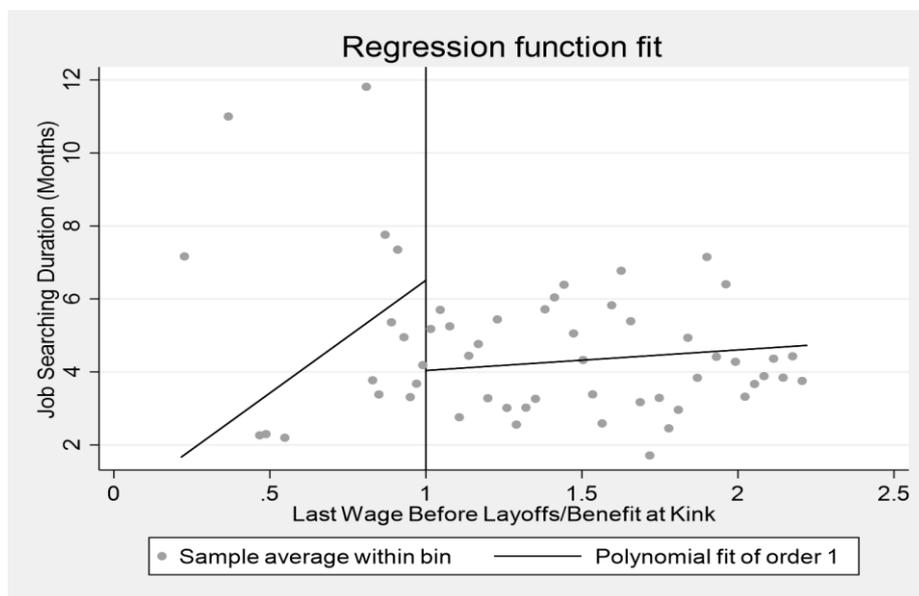


Figure 3. RKD Plot for Job-Search Duration and Replacement Rate

Using this assumption, we try to estimate the RKD plot on two indicators, namely length of job-search duration and benefit claim duration using observations with income before Layoff less than Rp. 5 million since, in the internal data, individuals with income more than Rp. 5 million cannot be estimated accurately. Using these data, based on the RKD plot on the left side of the kink in Figure 3 (value 1 in the replacement rate), where the maximum benefit is 45 percent of income before Layoff with an upper limit of income of Rp. 5 million, there is a positive correlation between the length of return to work and the replacement rate of previous income. Then, after the 45 percent limit, the correlation between replacement rate and length of job search is relatively constant. A replacement rate of less than 45% will make individuals return to work faster. In

addition, this is supported by similar results on the duration of receiving benefits in Figure 4, where there is a similar correlation between the replacement rate and the duration of receiving benefits, where a replacement rate of less than 45 percent will make an individual receive fewer benefits.

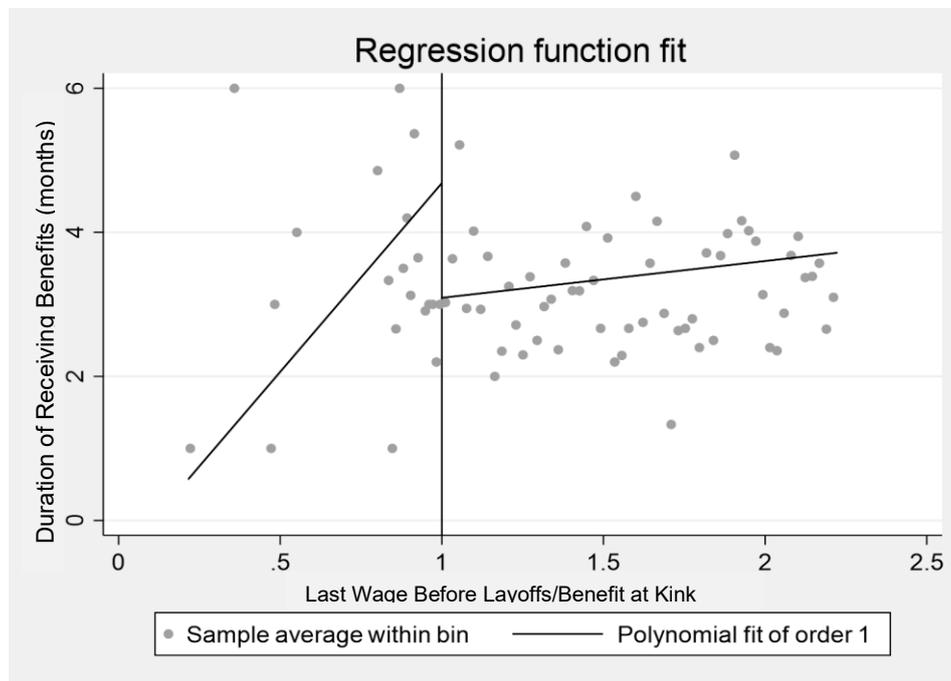


Figure 4. RKD Plot for JKP Claim Duration and Replacement Rate

The RKD estimation results in Table 3 confirm this by using two types of observations with income before Layoff < 5 million only (column 1) and including those above Rp. 5 million but capped at Rp. 5 million (column 2) shows similar results where there is a positive correlation between the number of benefits received and the length of job search after Layoff. However, to minimize the bias towards the upper-income earners, we prefer to use the estimates in column 1, i.e., those whose income before layoffs can be accurately estimated. Based on the estimation, it can be seen that an increase in the number of benefits received by 10 thousand rupiahs will take a worker 0.149 months longer to look for a job (since in the model, the wage and benefit at kink is divided by 10 thousand rupiahs). At the same time, similar results for benefit claims can also be seen in column 3, which shows that an increase in benefits by 10,000 will increase the length of benefit claims by 0.242 months. This aligns with the findings of several other studies using RKD, showing the moral hazard of providing UBP to workers in job search duration (Card et al., 2015; Landais, 2015; Liepmann & Pignatti, 2024).

Table 3. RKD Regression Results with Dependent Variable Log Length of Return to Work and Length of Benefit Claims

	Duration of Job Finding (Months)		Duration of JKP Benefit (Months)	
	(1)	(2)	(3)	(4)
	Wage Before Layoff < Rp. 5 Million	All Observation (Wage Before Layoff Estimation Max Rp. 5 Million)	Wage Before Layoff < Rp. 5 Million	All Observation (Wage Before Layoff Estimation Max Rp. 5 Million)
RKD_Estimate	0.149*	0.189***	0.242**	0.243**
	(0.034)	(0.000)	(0.008)	(0.008)
Number of Observation	2429	3624	2429	3624

p-values in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

This finding is also in line with job-search theory about how UBP increases the length of job search. This phenomenon, according to Moffitt (2014), can arise due to two things. Firstly, it is because the benefits of getting a job are lower for individuals who receive benefits, especially in the period of receiving maximum benefits. Secondly, in the condition of someone who has few assets, those who do not have benefits will tend to immediately look for a new job. So that their consumption and assets are not disturbed even if they must accept a job with low or even inadequate income. This term is usually known as liquidity constraint. In addition, Holmlund (1998) also adds that this can be caused by an increase in the reservation wage due to the benefits received from workers so that their probability of finding a job will decrease. Given the limited data in this study, more in-depth data and research are needed to explore which reason is stronger in the case of Indonesia.

To strengthen the findings of the above model, we also estimated the survey data using the OLS model to determine the comparison of job search duration between those who receive benefits and those who do not. The results of the OLS estimation using control variables such as gender, last diploma, age group, marital status, and the total value of benefits obtained in log form are shown in Table 4. Based on these results, compared to JKP benefit recipients, there is a positive correlation between receiving JKP and length of return to work. Table 4 shows that JKP beneficiaries who claimed twice had a nine percentage point higher return to the labor market (months) compared to those who did not claim, while those who claimed six times had a ten percentage point higher. These results align with the previous model's findings and strengthen the previously estimated RKD model.

Table 4. OLS Regression Results with Dependent Variables Log Length of Return to Work and Percentage Decrease in Consumption on Layoff²

	Log Job Finding Duration	Percentage of Change in Consumption
Number of Claims		
1 time	8.222 (0.110)	2.774*** (0.056)
Two time	8.900*** (0.097)	2.794*** (0.065)
3 time	9.863*** (0.075)	2.962*** (0.058)
4 time	9.596*** (0.096)	2.978*** (0.067)
5 time	9.834*** (0.080)	3.040*** (0.055)
6 time	10.15*** (0.075)	3.003*** (0.062)
Constant	-0.485 (0.603)	0.115 (0.661)
Control Variable	Yes	Yes
Observations	195	195
R ²	0.187	0.175

p-values in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4 also shows additional results of the same OLS model for the percentage change in consumption. Based on the model, there is a positive correlation between the percentage change in consumption and the number of claims. This means that when a claim occurs, consumption tends to increase. For example, in the case of 1 claim, the consumption of those who make a claim will be 2.7 percent greater than those who do not. Based on the analysis so far, it can be concluded that although JKP can be a bumper for the decline in income caused by layoffs, JKP also provides

² The complete OLS estimation is provided in Appendix 1

a moral hazard to workers (beneficiaries will make fewer efforts to find new jobs as their unemployment benefits are extended) to return to the labor market immediately. The results of the heteroscedasticity test can be seen in appendix 2.

Conclusion

Based on the analysis of descriptive statistics and the RKD model, JKP provides a moral hazard for workers to return to work immediately after layoffs. Using the RKD Plot, we find that a replacement rate of less than 45 percent will make individuals return to work faster. In addition, this is supported by similar results on the duration of receiving benefits where there is a similar correlation between the replacement rate and the duration of receiving benefits where a replacement rate of less than 45 percent will make an individual receive fewer benefits and expected to enter the new jobs. This is in line with findings in several other countries using the same model, both in developing countries such as Mauritius (Liepmann & Pignatti, 2024) and in developed countries such as Austria (Card et al., 2015) and the United States (Landais, 2015). This also aligns with job search theory and recent research where liquidity constraints can cause moral hazard. However, let us look at the average job search duration of JKP beneficiaries (7 months). It is still far from the national average job search duration estimated through Sakernas 2020 (6.7 months). Furthermore, if we look at consumption, there is a positive correlation between JKP claims and changes in consumption, which illustrates that the provision of JKP can be a bumper for the consumption of workers affected by layoffs despite negatively impacting job-search duration.

As with other studies, this study also has limitations. The limitation of this analysis is that it only includes the financial part of the benefits. The exclusions of the other two benefits, namely the access to labor information system and training, are done for two reasons: the information system has yet to be implemented thoroughly, and only a few people have taken advantage of the training.

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References

- Baker, S. R., & Fradkin, A. (2017). The impact of unemployment insurance on job search: Evidence from Google search data. *The Review of Economics and Statistics*, 99(5), 756–768. https://doi.org/10.1162/REST_a_00674
- Card, D., Lee, D. S., Pei, Z., & Weber, A. (2015). Inference on causal effects in a generalized regression kink design. *Econometrica*, 83(6), 2453–2483. <https://doi.org/10.3982/ecta11224>
- Card, D., Lee, D. S., Pei, Z., & Weber, A. (2016). *Regression kink design: Theory and practice* (22781; NBER Working Paper Series). <https://doi.org/10.3386/w22781>
- Chang, Y.-L. (2020). Does state unemployment insurance modernization explain the trajectories of economic security among working households? Longitudinal evidence from the 2008 survey of income and program participation. *Journal of Family and Economic Issues*, 41(2), 200–217. <https://doi.org/10.1007/s10834-020-09661-4>
- Cunningham, W. (2000). *Unemployment insurance in Brazil: Unemployment duration, wages, and sectoral choice*.
- Dartanto, T., Susanti, H., Augustin, E., & Fitriani, K. (2023). Reemployment during the Covid-19 pandemic in Indonesia: What kinds of skill sets are needed? *Cogent Economics & Finance*, 11(2), 2210382. <https://doi.org/10.1080/23322039.2023.2210382>

- Farber, H. S., & Valletta, R. G. (2015). Do extended unemployment benefits lengthen unemployment spells? Evidence from recent cycles in the U.S. labor market. *The Journal of Human Resources*, 50(4), 873–909.
- Gelman, A., & Imbens, G. (2019). Why high-order polynomials should not be used in regression discontinuity designs. *Journal of Business & Economic Statistics*, 37(3), 447–456. <https://doi.org/10.1080/07350015.2017.1366909>
- Holmlund, B. (1998). Unemployment insurance in theory and practice. *The Scandinavian Journal of Economics*, 100(1), 113–141. <https://doi.org/10.1111/1467-9442.00093>
- Jesse, R. (2011). *Unemployment insurance and job search in the great recession* (Brookings Papers on Economic Activity).
- Katz, L. F., & Meyer, B. D. (1990). The impact of the potential duration of unemployment benefits on the duration of unemployment. *Journal of Public Economics*, 41(1), 45–72. [https://doi.org/10.1016/0047-2727\(92\)90056-L](https://doi.org/10.1016/0047-2727(92)90056-L)
- Landais, C. (2015). Assessing the welfare effects of unemployment benefits using the regression kink design. *American Economic Journal: Economic Policy*, 7(4), 243–278. <https://doi.org/10.1257/pol.20130248>
- Lechthaler, W., & Ring, P. (2021). Labor force participation, job search effort and unemployment insurance in the laboratory. *Journal of Economic Behavior & Organization*, 189, 748–778. <https://doi.org/10.1016/j.jebo.2021.06.048>
- Liepmann, H., & Pignatti, C. (2024). Welfare effects of unemployment benefits when informality is high. *Journal of Public Economics*, 229, 105032. <https://doi.org/10.1016/j.jpubeco.2023.105032>
- Mckenzie, D. (2016). *Tools of the trade: The regression kink design*. World Bank Group. <https://blogs.worldbank.org/en/impactevaluations/tools-trade-regression-kink-design>
- Moffitt, R. (2014). *Unemployment benefits and unemployment* (13; IZA World of Labor). IZA World of Labor. <https://doi.org/10.15185/izawol.13>
- Morgandi, M., Fietz, K. M., Ed, M. L. S., De Farias, A. R., & Weber, M. (2020). *Enhancing coverage and cost-effectiveness of Brazil's unemployment protection system*. World Bank.
- O'leary, C., Cravo, T., Sierra, A. N. A. C., & Justino, L. (2021). Effects of job referrals on labor market outcomes in Brazil. *Economía*, 21(2), 157–186.
- Robalino, D. (2014). *Designing unemployment benefits in developing countries* (15; IZA World of Labor, Vol. 15). IZA World of Labor. <https://doi.org/10.15185/izawol.15>
- Rotar, L. J., & Krsnik, S. (2020). Analysing the relationship between unemployment benefits and unemployment duration. *Society and Economy*, 42(3), 280–297. <https://doi.org/10.1556/204.2020.00009>
- Schmieder, J. F., von Wachter, T., & Bender, S. (2016). The effect of unemployment benefits and nonemployment durations on wages. *American Economic Review*, 106(3), 739–777. <https://doi.org/10.1257/aer.20141566>
- Sehnbruch, K., Carranza, R., & Contreras, D. (2020). *Unemployment insurance in Chile: Lessons from a high inequality developing country* (54; LSE Working Paper).
- Spiezia, V. (2000). The effects of benefits on unemployment and wages: A comparison of unemployment compensation systems. *International Labour Review*, 139(1), 73–90. <https://doi.org/10.1111/j.1564-913X.2000.tb00403.x>
- van den Berg, G. J., & Uhlenhorff, A. (2023). Economic job search and decision-making models. In *The Oxford handbook of job loss and job search* (pp. 234–256). Oxford University Press.

- Vodopivec, M., & Raju, D. (2002). *Income support systems for the unemployed: Issues and options* (25529; Social Protection Discussion Papers and Notes).
- Zaretsky, A. M., & Coughlin, C. (1995). An introduction to the theory and estimation of a job-search model. *Federal Reserve Bank of St. Louis Review*, 77(1), 53–65.
<https://doi.org/10.20955/r.77.53-65>

Appendix

Appendix 1. Full Regression Result OLS Model for Job-Search Duration and Percentage Change in Consumption

OLS Regression Result

	(1) Log Job-Search Duration	(2) Percentage Change in Consumption
Number of Claim		
1 time	8.222 (0.110)	2.774*** (0.056)
2 time	8.900*** (0.097)	2.794*** (0.065)
3 time	9.863*** (0.075)	2.962*** (0.058)
4 time	9.596*** (0.096)	2.978*** (0.067)
5 time	9.834*** (0.080)	3.040*** (0.055)
6 time	10.15*** (0.075)	3.003*** (0.062)
Male	-0.015 (0.906)	-0.033 (0.373)
Female		
Age <=20	0.553 (0.138)	-0.177*** (0.092)
Age 21-25		
Age 26-30	0.687*** (0.076)	-0.209*** (0.056)
Age 31-35	0.457 (0.251)	-0.117 (0.297)
Age 36-40	0.872*** (0.041)	-0.077 (0.520)
Age 41-45	0.618 (0.148)	-0.107 (0.374)
Age 46-50	0.312 (0.498)	-0.184 (0.158)
Age 51-55	0.387 (0.456)	-0.203 (0.167)
Did not have certificate	1.381 (0.122)	0.034 (0.892)
Primary School		
Secondary School	0.925 (0.312)	0.015 (0.955)
High School	1.436*** (0.096)	-0.164 (0.500)
High School (Vocational)	1.566*** (0.071)	-0.136 (0.575)
Academy (D1/D2/D3)	1.030 (0.254)	-0.052 (0.837)
Bachelor	1.332 (0.126)	-0.176 (0.472)
Master/Doctoral Degree	1.953*** (0.066)	-0.124 (0.677)
Not Married	0.045 (0.808)	-0.057 (0.274)
Married		
Divorce	-0.367 (0.419)	-0.150 (0.240)
Widow	0.638 (0.149)	0.0221 (0.858)
Log Total Benefit Received	-0.610*** (0.088)	-0.188*** (0.062)
Constant	-0.485	0.115

	(1)	(2)
	Log Job-Search Duration	Percentage Change in Consumption
	(0.603)	(0.661)
Observations	195	195
R ²	0.187	0.175

p-values in parentheses

* *p* < 0.01, ** *p* < 0.05, *** *p* < 0.1

Appendix 2. Heteroscedasticity Test Result

Hetttest Result	Log Job-Search Duration	Percentage Change in Consumption
Prob → chi2	0.243	0.137

Appendix 3. Descriptive Statistics

Internal BPJS TK Data for RKD Design

Variable	Obs	Mean	Std. Dev.	Min	Max
Job Search Duration	3,624	4.319	3.149	0.033	18.533
Duration of JKP Benefit Claim	3,624	3.353	1.734	1	6
Replacement Rate	3,624	1.802	0.461	0.216	2.222

Survey Data for OLS Model

Variable	Obs	Mean	Std. Dev.	Min	Max
Duration of job-search	195	6.65	4.39	1.00	19.00
Percentage change in consumption	195	0.21	0.24	-0.33	0.88
Number of claim	195	1.83	2.56	0.00	6.00
Age	195	32.60	8.62	20.00	55.00
Education (Latest Certificate)	195	5.14	1.56	1.00	8.00
Marriage status	195	1.72	0.63	1.00	4.00
Sex	195	1.46	0.50	1.00	2.00