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Disability and Labor Market Exclusion: Evidence from Indonesia

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Abstract

In accordance with the Sustainable Development Goals (SDG) No. 8 on Decent Work and Economic Growth, people with and without disabilities have equal rights to access decent and productive jobs. Furthermore, the fulfillment of the righths of disabled people to decent jobs will help to achieve SDG No. 10 on Reduced Inequality. However, in reality, there are pervasive and persistent barriers for people with disabilities to access the labor market. Using Indonesian data, this study examines labor market exclusion among people with disabilities and identifies the challenges that they face. Our findings on labor force participation, unemployment status, employment status as self-employed or employee in the formal sector, and feeling discouraged to enter the labor market indicate that being disabled is associated with a greater probability of being excluded from the labor market and of feeling discouraged, particularly among unemployed individuals. Various factors, including individual level factors, environmental supports, and government policies, affect the inclusion of disabled people in the labor market. These imply that the governments need to strengthen the affirmative actions and promote disabled people's capabilities to increase employment opportunities for them. Important measures to improve labor market inclusion among people with disabilities are ensuring that their employment quota is enforced and protecting their rights to access employment, increasing their access to high-quality formal and non-formal education, and increasing their access to credit.

Keywords: disability, labor market, decent work, inclusion, Indonesia

JEL Codes: J71, J83

INTRODUCTION

In economic theories, disability status is among economically irrelevant indicator to affect labor market outcomes of individual labor supplies (Walters, 2003). People with disabilities basically have equal rights as those without disabilities, including the rights to access the labor market. Globally, the equal rights of disabled and nondisabled persons is acknowledged in the UN Convention on the Rights of Person with Disabilities (UNCRPD). Similarly, in accordance with the Sustainable Development Goals (SDG) No. 8 on Decent Work and Economic Growth, people with and without disabilities have equal rights to access decent and productive jobs. Furthermore, the fulfillment of the righths of disabled people to decent jobs will help to achieve SDG No. 10 on Reduced Inequality.

However, various studies indicate that the fulfilment of this equal rights principle has not been realized. There are pervasive and persistent barriers for people with disabilities to access the labor market. Lack of job availability for disabled persons, employers reluctance to hire disabled persons, discouragement from family members, lack of transportation, discrimination in job promotion, lower wages and fewer working hours are some cases persons with disabilities face when they want to enter or are already in the labor market (Lamichhane & Sawada, 2013; Sundar et al., 2018; Halimatussadiah et al., 2015; LPEM UI, 2017b). The exclusion people with disabilities generates social costs—lowering the opportunities for family members to enter the labor market due to caring activities and lowering the opportunities for the economy to gain benefit from disabled persons' economic productivity (Halimatussadiah et al., 2015).

In 2016, Indonesia enacted Disability Law (UU No.8/2016), a legal basis that promotes and protects the rights of disabled people, including their rights to employment and decent work. As a way to promote the rights to employment and decent work, the law obligates the implementation of quota policies—employers, both private and public ones, are obliged to employ disabled workers at minimum 1% and 2% of total employees, respectively. At least 100 countries in the world have adopted the quota policies (United Nations, 2018).

Some countries established a quota-levy system, requiring employers to pay levy if they are unable to meet the quota. Meanwhile, some other countries also require employers to buy goods and services from companies with significant proportion of disabled workers (ILO & OECD, 2018). In Indonesia, the law promotes the use of quota-incentive system, which entails giving incentives toward employers that meet the quota. However, to date, the policy has not been implemented effectively. The is no law enforcement to those who do not meet the quota. In general, both private and public workplaces have not fulfilled the quota policy (Budiarti, 2018).

Using Indonesian data, this study aims to analyze labor market exclusion among people with disabilities and identify the factors that hinder or promote the inclusion of disabled people in the labor market. In this study, we analyze the probability and determinants of disabled people to enter the labor market, to be employed, and to work as formal employees or self-employed/casual workers. In addition, we also analyze disabled workers' discouragement to capture the severity of their exclusion from the labor market. Previous studies on this topics only focus on two employment outcomes, entrance to labor market and probability to be employed. In this study, we use more comprehensive indicators. In addition, we perform heterogeneity analysis by gender, urban-rural areas, and education level.

The rest of this paper is organized as follows. Section two discusses the methodology and data used in this study. Section three presents the estimation results. Section IV provides a discussion of the results. The conclusion and policy implication are in section five.

METHODOLOGY AND DATA

Data

In this study, we use data from Indonesia. Specifically, we utilize the dataset from the National Socioeconomic Survey (Susenas) 2018. Susenas is an annual, nationally representative household survey administered by Statistics Indonesia (BPS), which collects individual and household socio-demographic information, including employment, education, and consumption.

The Susenas 2018 also has questions to identify a person with difficulties to perform eight basic universal activities: walking, hearing, seeing, self-care, communication, moving hands and fingers, cognition, and managing emotion. There is a four-point answer scale for each basic activity: 1 = unable to do, 2 = with a lot of difficulty, 3 = with some difficulty, and 4 = with no difficulty. Those who reported options 1-3 for at least one domain are considered as people with disabilities.

Statistical approach

Our analysis begins with examining the exclusion of disabled people by depicting the proportions excluded from the labor market, measured through four labor market outcomes. These outcomes include labor force participation, unemployment status, employee in the formal sector[1], and the discouragement to be or to enter the labor market. The four outcome variables are binary variables at the individual level[2]. Using logistic regression analysis, we analyze the effect of disability status (and other determinants) on each of the four labor market outcomes.

To examine whether the disabled labor force face exclusion from the labor market, we include all sample (i.e. observations of both disabled and nondisabled individuals) in the regressions. If the influence of disability status is significant in affecting a labor market outcome, then it can be considered that disabled people are, to some extent, excluded from the labor market. We check the heterogeneity of the experience of exclusion of disabled people based on gender, location, and education level[3].

[1] Working status as employee in the formal sector becomes a concern in this paper due to low proportion of disabled people working as employees in the formal sector. In contrast, many disabled people are working as self-employed. We are interested to know what factors contributed to this condition.

[2] For labour force participation, we mark 1 for those who participate in the labor market (they are either working or unemployed) and 0 for those who are out of the labor market. For unemployment status, we mark 1 for those who are not working but actively look for work or preparing new business or having a feeling of hopeless to find job and 0 for those who are working. For working status, we mark 1 for those who are working as employees while 0 for those who are self-employed and freelance/informal workers. Finally, for discouraged feeling, we mark 1 for those who are feeling discouraged to join the labor force and 0 for others.

[3] In addition to regressing all observations, we do separate regression analysis for male and female individuals, individuals with low and high education, and individuals living in rural and urban areas.

We then analyze the factors that hinder or promote the inclusion of disabled people in the labor market. For this purpose, we include only disabled observations in the analysis.

In the logistic regression, both for regression with all sample and only with disabled sample, we include various determinants of labor market access of disabled people. The determinants can be classified, following Sundar et al. (2018), into three groups: a) individual and household factors, b) environmental or contextual factors, and c) social and policy factors.

The individual factors included in this study are various sociodemographic variables—age[4], sex[5], marital status[6], relationship with the head of the household[7], education attainment[8], and type of school[9]. The household characteristics include dependency ratio[10], social assistance recipient status, urban resident status[11], and access to social assistance programs[12]. Variation of individual and household characteristics would lead to various experiences in the labor market (ILO & OECD, 2018).

The environmental or contextual factors indicate the atmosphere of social and economic activities in the area where disabled people live, which might hinder or promote their access to the labor market. We include district-level indicators such as district GDP per capita[13], unemployment rate[14], access to credit[15], and the proportions of villages that have vocational training centers. Meanwhile, the policy factors indicate government intervention to increase employment outcomes. We include minimum wage at the district level and the presence of a disability regulation in a district.

The coefficient of the covariate in logistic regression is not interpretable. Therefore, we show the marginal effect of the covariate for each regression results.

ESTIMATION RESULTS

Sample characteristics

[4] For age variable, the observations are grouped into 5 groups of age-dummy variables: 15-24 years old, 25-34 years old, 35-44 years old, 45-54 years old, and 55-64 years old.
[5] Sex is a dummy variable: 1 for female, 0 for male.
[6] Marital status is a dummy variable: 1 for married, 0 for unmarried (single or divorced).
[7] Relationship with household head is a dummy variable with 1 for the one who is household head, 0 for others.
[8] Education attainment is a dummy variable with 1 for those with low education background (graduated from junior secondary school or lower), 0 for those with high education background.
[9] Type of school is a dummy variable with 1 for individuals graduated from special schools for the disabled (SLB) and 0 for others.
[10] Dependency ratio indicates the proportion of non-working age household members to working age members.
[11] Urban resident status is a dummy variable: 1 for those living in urban areas, 0 for those living in rural areas.
[12] We use two dummy variables to indicate access to social assistance programs: beneficiaries of the conditional cash transfer program (PKH) and the free national health insurance program (JKN-PBI).
[13] District DGP per capita indicates the size of economy of the district where an individual live.
[14] Unemployment rate is share of people unemployed at the district level. District level unemployment rate might have ambiguous effect. High unemployment rate might discourage entry into the labor market due to fewer jobs available. However, it might also compel the entry into the labor market to maintain household income if other family members are unemployed (Fang & Gunderson, 2015).
[15] Access to credit is a dummy variable with 1 for individual living in a household who have access to formal credits (KUR, KUBE, BUMDES programs or Cooperatives), 0 otherwise.

In total there are 1,131,825 individuals surveyed in the Susenas 2018. In our analysis, we only include those who are in productive age, between 15 and 64 years old. There are 741,063 observations in the dataset to be analyzed in this study. Among those observations, about 93,074 people (12.6%) are disabled—6.2% of those have severe disability status.

As indicated in Table 1, the observations are more concentrated in rural areas. The proportion of male and female observations is almost balanced, both for disabled and nondisabled observations. The distribution of disabled observations increases with age, while age distribution pattern for nondisabled observation decreases.

The proportion of married observations is quite significant: 75% for disabled observations and 67% for nondisabled ones. The proportion of those who are the head of the household is higher among disabled observations (48.7%) than the nondisabled ones (32.7%). The average dependency ratio of households with disabled observations is lower (0.42) than households with no disabled people (0.52).

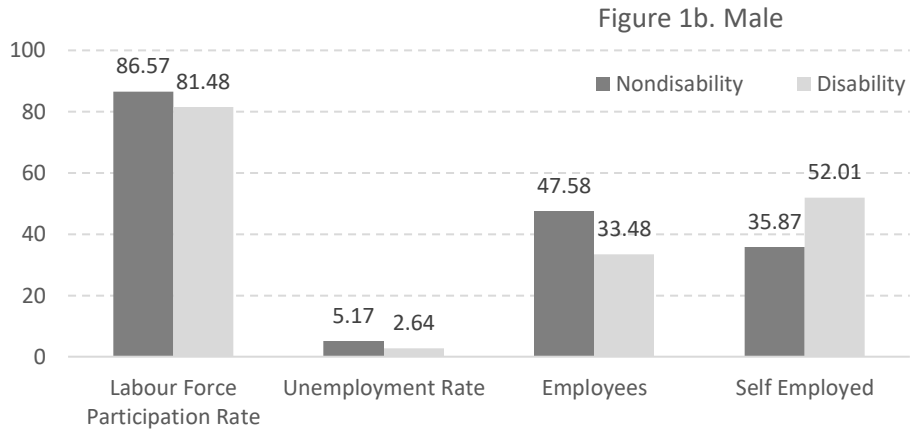
Capabilities of disabled observations are lower than nondisabled ones, as noted from their educational level. About 73.3% of disabled observations only graduated from junior secondary school and lower, while the figure for nondisabled observations is only 53.3%. Only a few disabled observations have accessed special schools (0.6%). Regarding access to social protection programs, about 10% of both disabled and nondisabled observations are beneficiaries of the conditional cash transfer program (PKH). Meanwhile, observations obtaining the free national health insurance (JKN-PBI) are larger among disabled observations (40.9%) than among nondisabled ones (35.1%).

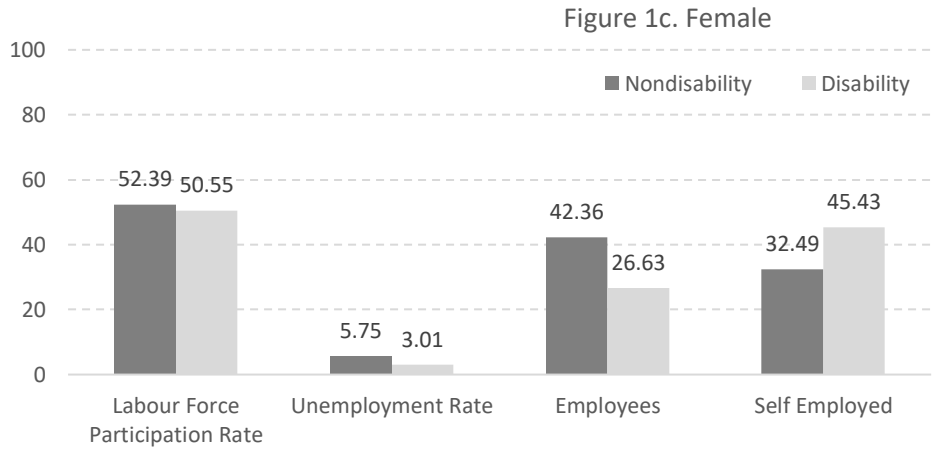
[Table 1 is about here]

The state of labor market exclusion of disabled people

Descriptive statistics of various labor market indicators for productive aged people in Indonesia indicate a lower labor market outcomes for disabled people than the nondisabled ones (see **Error! Reference source not found.**). Their participation in the labor market is lower than the participation of nondisabled. Although their unemployment rate is lower than the rate for nondisabled people, they are still less likely to be recruited by employers as shown by the sizeable gap between disability and non-disability regarding their employment status as employee, 30.6% versus 45.6% respectively. About a half of working disabled people (52.63%) is self-employed with a significant number of them (93.1%) to have subsistent/small-scale business (recruiting no employee to run their business). Across gender, the labor market outcomes of females disabled appear to be the worse than males (see Figure 1b and 1c).

Figure 1. Labor market indicators of productive adults based on disability status and gender (%)





Source: Calculated from Susenas 2018 data

Is there enough evidence to confirm that disabled people are excluded from/in the labor market? Based on our logit estimation, as shown in Table 2, there is indeed a significant effect of disability status on adult participation in the labor force. The people with disabilities have a lower probability to join the labor force, on average by 8.2 percentage point, compared to the nondisabled people.

We check the heterogeneity effect of disability status on labor force participation by gender, location, and education level by comparing each disability effect with each of its mean dependent variables (see Table 2). We find that disability status has a higher effect on lower educated population than on high-educated population[16]. Across gender and location, the effect is quite similar[17].

[Table 2 is about here]

The same is also the case for unemployment rate (see Table 3). People in the labor force with disabilities have a higher probability to be unemployed by as much as 0.8% point on average than nondisabled labor force. Even though Figure 1c indicates a lower unemployment rate among disabled than nondisabled people, the logit estimation indicates that being disabled increases one's probability to be employed, after controlling for relevant confounding factors.

Compared to mean dependent variable, the disability status has a higher effect among those who are living in rural areas, with a 22% (0.008/0.036) higher chance to be unemployed than those living in urban areas (17,5% or 0.01/0.057). The effect is also higher among the low-educated labor force than the high educated labor force (25% vs. 13.43% higher possibility to be unemployed).

[Table 3 is about here]

Being recruited as employees in the formal sector is challenging for disabled labor force. As shown in Table 4, there is a 2.7% point lower probability of disabled workers to be employed in the formal sector. If we compare to mean dependent variable, the effect of disability is higher in among the low educated labor force as they have 10% (-0.024/0.239) lower chance to be in the formal sector compared to the high educated labor force (-4.3% or -0.025/0.581).

[Table 4 is about here]

Factors that promote or hinder the inclusion of disabled people in the labor market

Table 5, 6, 7 and 8, which include only disabled people observations, show the contribution of individual, household, environmental/contextual, and policy factors on the chances of disabled people to join the labor force, to be unemployed, and to be employees in the formal sector. In this sub section, based on those tables, we will analyze what factors that hinder or promote the inclusion of disabled people in the labor market. The analyses also refer to the regression results in Tables 2, 3, and 4 (tables of logistic

[16] The probability of low educated population with disability to enter the labor market is on average 12.7% lower than those without disability. Meanwhile, among high educated population, disability status only decreases their probability to enter the labor market by 8%.

[17] Across gender and location, having disability reduces the probability to enter the labor market by 11-12%.

regression for the whole population) to enable us to compare the effect of certain factors on disabled and nondisabled populations.

The effects of individual and household factors

For disabled people, severity of disability and the number of functional difficulties owned by a disabled person are found to have a significant correlation with their chance to join the labor force and to be unemployed. Severely disabled people have 10.3%-19.5% point lower chance to join the labor force and 0.6%-2.1% point higher chance to be unemployed.

Individuals with disabilities in the age of 35-54 years old have a higher probability to enter the labor force and to be employed than the other age groups. Among females, the likelihood of females with disabilities in the same age range to join the labor force is far greater than males with disabilities. Among those living in rural areas, age is less likely to be a factor that correlate with employability of disabled people as employee in the formal sector. However, in urban areas, age does matter. This is due to the different characteristics of economic activities in urban and rural areas. Agriculture sector, which dominates the economic activity in rural areas, is able to recruit workers at any age. In contrast, in urban areas, which are mostly dominated by industrial and services sectors, there is an age limit for workers to work, particularly for those who have no previous work experience.

Females with disabilities have lower probability to join the labor force, particularly those with low education levels. Living in a household with a high dependency ratio tends to make disabled female out of the labor force. In contrast, a high dependency ratio makes disabled males to join the labor force. This indicates that the role of females to perform caring activities is also relevant in the context of disabled people.

In urban areas, disabled females are more likely to work than male. In contrast, they are more likely to be unemployed in rural areas. This may be due to greater job opportunities available in urban than rural areas. Moreover, female disabled workers have a lower probability to be employed in the formal sector than males. Gender has a greater impact on access to formal employment among low educated workers.

Disabled people who are the head of household, those who are married, and those who are rural residents have a higher probability to join the labor force. Graduating from a special school for disability (SLB) is associated with a lower probability to be in the labor force. While the effect of SLB education among males is only 3.8% lower probability to join the labor force, the effect on females is about 31%.

The effects of environmental/contextual factors

We include district level indicators such as unemployment rate, district GDP per capita, access to credit, and percentage of villages that have vocational training centers as the indicators of socio-economic condition of the districts that may influence the outcomes of disabled people.

We find that the unemployment rate at the district level negatively influence the decision of disabled and nondisabled people to join the labor force. Furthermore, the higher the unemployment rate in a district, the higher the probability that disabled people living in the district will be unemployed.

District GDP per capita indicates the size of the economy of a district. We find that workers living in districts with higher GDP per capita have higher probability to work as employees in the formal sector. This is also the case among disabled workers. Workers with disabilities in the higher income level have a greater probability to be employed (as employees) in the formal sector compared to workers in the lower economic level.

Disabled and nondisabled workers who have access to small-scale credit are more likely to be self-employed or casual workers. This is because most small-scale credit is targeted toward the poor. However, the percentage of villages that have credit access at the district level has no correlation to employment status in both estimations.

The availability of vocational training centers in the district has a negative and significant effect on the probability to be unemployed. This means that the labor force has a greater chance to be employed since the opportunity of getting training is available in their neighborhood. However, the effect on the disabled labor force is not as strong as that on the entire sample regression. This indicates that the trainings provided by the training centers is not sensitive towards providing job opportunities for disabled workers. Furthermore, there is a strong and positive correlation between the availability of vocational training centers and the probability to become employees in the formal sector, including for disabled workers.

The effects of social and policy factors

Indonesia has a minimum wage policy and disabilities regulation—the later protects the rights of disabled people, including the rights to obtain jobs. We find that the minimum wage policy has no correlation with the probability of both disabled and nondisabled individuals to join the labor force. However, among disabled labor force, the policy is positively correlated with the opportunity of disabled females to be unemployed. In urban areas, the effect of the policy is significant for both disabled and nondisabled workers. The minimum wage policy is specifically designed for industrial sectors, which are mostly located in urban areas. Meanwhile, there is no significant correlation between minimum wage policies and the probability to be employed in the formal sector.

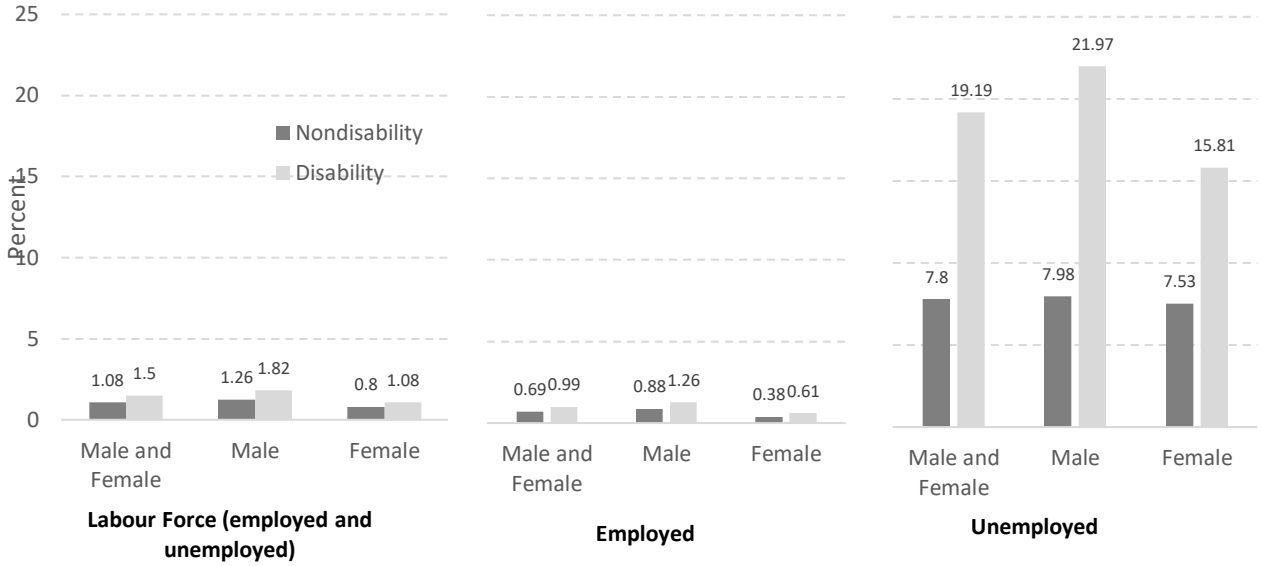
At the national level, Indonesia has the Law No.8/2016 on people with disabilities. However, only 18 districts in Indonesia have district level regulations that protect the job access by people with disabilities[18]. The presence of district regulations is found to have a positive correlation with the probability of disabled people to be employed in formal sectors.

The severity of the exclusion

We further explore the severity of the exclusion of disabled people in the labor market by examining their feeling of discouragement. Descriptive statistics of the feelings of discouragement are shown in Figure 2. The figure indicates that the discouragement in the labor market is the case for both disabled and nondisabled individuals and both among the employed and unemployed ones. However, the proportion of disabled labor force that is discouraged, particularly among unemployed ones, is far greater than among nondisabled ones. Across gender, the proportion of discouraged males is larger than females.

[18] There are actually more than 18 districts that have district regulations on people with disabilities. However, only 18 districts have regulations that are in line with the social and human rights model of disabilities—the concept adopted by the national disability law.

Figure 2. Percentage of People in the Labor Force with Feeling of Discouragement based on Disability and Labor Force Status



Source: Calculated from Susenas 2018 data

Based on the results of the logistic regression in Table 9, we find a larger probability among disabled labor force, about 0.4% point on average, to be discouraged than nondisabled ones. On average, for all sub sample estimation, the effect of disability status is 30% relative to the mean dependent variable. That is considered high since 500,000s individuals out of 1.4 million are discouraged.

[Table 9 is about here].

Table 10 provides the estimation on the characteristics of discouraged disabled labor force. There is no correlation between the severity of disability status to feeling of discouragement in the labor market. However, the number of functional difficulties a disabled person has is positively and significantly correlated with feelings of discouragement. Unemployed and low educated workers with disabilities are more likely to be discouraged. Males have a higher probability to be discouraged than females, as well as among unmarried disabled people. Workers in high dependency ratio households are more likely to be discouraged. Furthermore, disabled people who have access to credit have a significantly lower probability to be discouraged. This is particularly the case among disabled males, high and low-educated disabled workforce, and those who are living in rural areas.

[Table 10 is about here]

There is no correlation between the status of being beneficiaries of social assistance programs (PKH and JKN-PBI) and have graduated from a special school for the disabled (SLB) with feelings of discouragement. There is also no correlation between residence location, GDP per capita of the district, percentage of people unemployed in the district, province minimum wage, percentage of the villages that have

vocational training centers in the district, district with disability regulations, and percentage of the villages that have credit access in a district with discouraged status among disabled workers.

DISCUSSION

In this study, we find that there is a higher probability that disabled people are excluded from the labor market. They are less likely to join the labor force. When they enter the labor market, their likelihood to be employed is lower than that of nondisabled people, particularly to work as employees in the formal sector. The more severe the disability status and the higher the number of functional difficulties that a disabled person has, the less likely that disabled person will be in the labor force and to work as an employee in the formal sector.

The exclusion of disabled people from the labor market is consistent with previous research in Indonesia (LPEM UI, 2017a) and evidence from both developing and developed countries (Campolieti, 2002; Mavromaras et al., 2007; and ILO & OECD, 2018). This confirms that the exclusion of disabled people from the labor market is a global problem and Indonesia is no exception.

This study shows that disabled people in Indonesia have supply-side constrain in education. Based on Susenas 2018, according to Hastuti et al. (2020), the majority (87.22%) of disabled people aged 15 years old and above only graduated from junior secondary school or lower. We find that a low education level among disabled workers is associated with lower participation in the labor force, higher difficulties to obtain a job (particularly to be employed in the formal sector), and higher probability to be discouraged in the labor market. The effect of low education level is greater among disabled females.

This means that investment in education seems to be a tipping point not only to increase the access of disabled people to the labor market, but also to create gender equity for disabled people. Furthermore, it is also beneficial for increasing welfare. A study in Nepal also found that education significantly increases the wages of people with disabilities. Return to education among disabled people in Nepal is about 19.3%-25.6% (Lamichhane & Sawada, 2013).

We find that district level disability regulation regarding employment quota significantly increases the probability of disabled workers to be employed by the formal sector. This finding indicates a potential for improving job access for disabled people through disability regulation at the district level. Unfortunately, there are only 18 out of 514 districts that already have the regulations. This low percentage of districts with disability regulation indicates low attention of the majority district governments toward protecting and fulfilling the rights of people with disabilities.

Availability of vocational training centers at the district level is found to increase the probability of disabled people to be employed and to be recruited as employees in the formal sector. The presence of training centers in the area where workers live enable them to have a greater chance to improve their knowledge and skills, and hence to be employed, including in the formal sectors.

Many studies on disabilities and employment have found the presence of barriers among employers to recruit disabled workers. However, we are unable to confirm this finding in this study due to data limitation. The literature review on employment access of disabled people in Indonesia confirms that

employers confront barriers in recruiting disabled workers. According to a founder of online disabilities job search platform:

> *"Many companies are reluctant to recruit disabled workers… The most common reason we receive is stigma and underestimation on the ability of people with disabilities. In addition, there is also an issue of limited accessibility for persons with disabilities [in the workplace]. Companies are reluctant to spend additional costs for improving workplace accessibility, both physical and non-physical" (Putri, 2019)*

According to Emir (2019) and Peck & Trew (2001), some factors that discourage employers to recruit disabled people include fear of higher cost associated with hiring disabled people and the perception that disabled workers have lower productivity. When jobs are available for disabled workers, there is a concern regarding the type of work suitable for individual with certain functional difficulties. According to Budiarti (2018), who did her research in Jakarta and Bandung, their placement is not based on their potential.

On the other hand, the benefits of employing disabled people include better retention and attendance rate, and generating a positive image for the companies (Joseph, 2019; ILO & OECD, 2018). For the overall economy, excluding disabled people from the workforce would cost a potential loss of 3%-7% of GDP per year (Buckup, 2009).

Solving the exclusion of disabled people in the labor market will lower the probability to have feelings of discouragement in the labor market. In addition to the above measures, having access to credit is found to significantly decrease the probability to be discouraged in labor market. For unemployed disabled people, having access to credit will increase the chance to be self-employed.

CONCLUSION AND POLICY IMPLICATION

In accordance with the Sustainable Development Goals (SDG) No. 8 on Decent Work and Economic Growth, people with and without disabilities have equal rights to access decent and productive jobs. Furthermore, the fulfillment of the righths of disabled people to decent jobs will help to achieve SDG No. 10 on Reduced Inequality. However, in reality, there are pervasive and persistent barriers for people with disabilities to access the labor market.

Using Indonesian data, this study finds disabled people significantly have lower probability to participate in the labor market. When they decide to start finding jobs, their probability to be recruited as employees in the formal sector is lower than the nondisabled labor force. Therefore, their probability to be unemployed is higher. As a consequence, being self-employed become the job of more than 50% working disabled people.

Various factors contribute to the exclusion of the disabled in the labor market. At individual level, severity of the disability and the number of functional difficulties that a disabled person has are associated with lower likelihood a disabled person will be in the labor force and to work as an employee in the formal sector. Education matters as the experience of exclusion is most profound among disabled people with low education level (while in fact, majority of productive-aged disabled people (87.22%) are indeed having low education level—only graduated from junior secondary school or lower). Graduating from a special school for disability (SLB) is associated with a lower probability to be in the labor force than those

graduating from an inclusive/general school. Gender also matters as disabled females are marginalized more than the males. They have lower probability to join the labor force and lower probability to be employed in the formal sector than their male counterparts. Disabled females with low education are excluded the most.

The environmental/contextual factors also influence the exclusion of people with disabilities in the labor market. Living in districts with higher unemployment rate increases the probability for the disabled people to be unemployed**.** The availability of vocational training centers in the district has a negative and significant effect on the probability to be unemployed and to work in the formal sector. Unfortunately, training centers are more sensitive towards providing job opportunities for nondisabled workers. There are also barriers among employers to recruit disabled workers, including fear of higher cost associated with hiring disabled people and the perception that disabled workers have lower productivity. Hence, their placement is not based on their potentials.

Government policies are found to influence the dynamics of exclusion of the disabled in the labor market. District level disability regulation regarding employment quota significantly increases the probability of disabled workers to be employed in the formal sector. Unfortunately, there are only few (18 out of 514) districts that already have the regulations—indicating a low attention of the majority district governments toward protecting and fulfilling the rights of people with disabilities.

Availability of vocational training centers at the district level is found to increase the probability of disabled people to be employed, and to be recruited as employee in the formal sector. There is law that obligates the implementation of quota policies to employ disabled workers at minimum 1%-2% of total employees. However, there is no law enforcement for those who do not meet the quota.

Altogether with having greater experience of exclusion in the labor market, we also found that being disabled is also associated with greater discouragement feeling in the labor market. Across gender, the proportion of discouraged males is larger than females. Moreover, unemployed and low educated workers with disabilities are more likely to be discouraged.

We propose the following measures to improve the social and labor market inclusion of disabled people. The government needs to increase education attainment among people with disabilities because it is beneficial for improving the inclusion of disabled people in the labor market and to reduce gender inequality among disabled people. It may be accomplished through a) increasing the access of disabled people to quality formal and non-formal education, b) creating an education system that is inclusive for people with disabilities, both males and females, and c) improving the quality of special schools for people with disabilities (SLB).

There is a need to appoint a body to monitor the implementation of the employment quota in Indonesia. The body will be responsible for monitoring and enforcing the law by both providing incentives for those obeying the law and punishing those who ignore the quota policy.

The low number of districts with disability regulations indicates low awareness regarding protecting the rights of people with disabilities. Therefore, awareness improvement is necessary. A translation of awareness as local regulations is another important measure for catalyzing the process of employment inclusion among disabled people.

Within the government body, there are various ministries that have financial assistance and training programs for entrepreneurs. Ensuring that such trainings are disabled-people inclusive is important in order to promote disabled people in the labor market and address their feelings of discouragement in relation to the labor market.

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Table 1. Sample Characteristics

	Disability					Non-disability				
	Obs.	Mean	Std.Dev.	Min	Max	Obs	Mean	Std.Dev.	Min	Max
Individual level data										
Labor force participation (Yes=1)	93074	0.675	0.468	0	1	647989	0.704	0.456	0	1
Severe disability status (Yes=1)	93074	0.062	0.241	0	1					
Disability index (number of functional difficulties)	93074	1.760	1.267	1	8					
Age 15-24	93074	0.060	0.238	0	1	647989	0.256	0.437	0	1
Age 25-34	93074	0.081	0.273	0	1	647989	0.232	0.422	0	1
Age 35-44	93074	0.181	0.385	0	1	647989	0.241	0.428	0	1
Age 45-54	93074	0.325	0.468	0	1	647989	0.175	0.380	0	1
Age 55-64	93074	0.352	0.478	0	1	647989	0.095	0.293	0	1
Female	93074	0.541	0.498	0	1	647989	0.498	0.500	0	1
Married	93074	0.746	0.435	0	1	647989	0.670	0.470	0	1
Household head	93074	0.487	0.500	0	1	647989	0.327	0.469	0	1
Low education levels (graduated from SMP and lower)	93074	0.733	0.443	0	1	647989	0.533	0.499	0	1
Special school for disability	93074	0.006	0.076	0	1					
Received social assistance (PKH)	93074	0.104	0.305	0	1	647989	0.105	0.307	0	1
Obtain health insurance subsidy JKN-PBI)	93074	0.409	0.492	0	1	647989	0.351	0.477	0	1
Dependency ratio	93074	0.423	0.488	0	6	647989	0.516	0.507	0	8
Urban resident	93074	0.402	0.490	0	1	647989	0.445	0.497	0	1

	All observations				
	Obs	Mean	Std.Dev.	Min	Max
District level data					
GDP per capita	741063	17.122	0.661	15	20
Percentage of unemployed people	741063	0.050	0.026	0	0
Minimum wage	741063	14.541	0.235	14	15
Percentage of the village has vocational training centers	741063	0.182	0.139	0	1
District with disability regulations	741063	0.045	0.207	0	1

Table 2. Logit estimation for labor force participation (marginal effects)

	All	Female	Male	Urban	Rural	Low education	High education
Disability status (Yes=1)	-0.082	-0.067	-0.103	-0.084	-0.085	-0.091	-0.055
	(0.006)***	(0.008)***	(0.005)***	(0.006)***	(0.007)***	(0.007)***	(0.004)***
Age 25-34	0.234	0.268	0.217	0.275	0.200	0.153	0.303
	(0.006)***	(0.009)***	(0.003)***	(0.008)***	(0.007)***	(0.008)***	(0.004)***
Age 35-44	0.260	0.341	0.191	0.286	0.238	0.206	0.321
	(0.008)***	(0.012)***	(0.004)***	(0.009)***	(0.009)***	(0.011)***	(0.007)***
Age 45-54	0.247	0.341	0.126	0.251	0.242	0.207	0.289
	(0.010)***	(0.015)***	(0.005)***	(0.012)***	(0.012)***	(0.014)***	(0.010)***
Age 55-64	0.127	0.236	-0.020	0.088	0.160	0.122	0.050
	(0.013)***	(0.017)***	(0.006)***	(0.014)***	(0.014)***	(0.014)***	(0.015)***
Female	-0.220			-0.204	-0.237	-0.271	-0.172
	(0.008)***			(0.006)***	(0.012)***	(0.012)***	(0.006)***
Married	0.022	-0.047	0.123	-0.000	0.047	0.041	-0.004
	(0.005)***	(0.010)***	(0.003)***	(0.006)	(0.005)***	(0.004)***	(0.007)
Household head	0.227	0.179	0.097	0.217	0.244	0.214	0.235
	(0.009)***	(0.012)***	(0.005)***	(0.010)***	(0.010)***	(0.009)***	(0.011)***
Low education	-0.019	-0.075	0.044	-0.027	-0.013		
	(0.007)***	(0.012)***	(0.003)***	(0.005)***	(0.009)		
Received social assistance (PKH)	-0.002	0.008	-0.010	0.007	-0.005	0.007	-0.019
	(0.004)	(0.006)	(0.002)***	(0.005)	(0.004)	(0.004)	(0.005)***
Obtain health insurance subsidy (JKN-PBI)	0.000	-0.000	0.003	0.008	-0.004	0.002	0.001
	(0.004)	(0.008)	(0.002)	(0.003)**	(0.005)	(0.005)	(0.002)
Dependency ratio	-0.027	-0.036	-0.006	-0.036	-0.022	-0.016	-0.044
	(0.003)***	(0.006)***	(0.002)**	(0.003)***	(0.004)***	(0.003)***	(0.004)***
Urban resident	-0.013	-0.004	-0.024			-0.021	-0.006
	(0.003)***	(0.006)	(0.002)***			(0.005)***	(0.004)
GDP per capita (in district, log)	-0.015	-0.031	0.003	0.002	-0.028	-0.025	-0.002
	(0.007)**	(0.013)**	(0.002)	(0.003)	(0.008)***	(0.010)***	(0.003)
Percentage of unemployed people(in district)	-0.982	-1.865	-0.156	-0.754	-1.164	-1.284	-0.613
	(0.138)***	(0.275)***	(0.070)**	(0.148)***	(0.160)***	(0.167)***	(0.121)***
Minimum wage (in province, log)	0.004	-0.002	0.006	-0.021	0.007	-0.003	0.001
	(0.024)	(0.048)	(0.007)	(0.016)	(0.032)	(0.037)	(0.010)
Percentage of the village with vocational training centers (in district)	-0.019	-0.007	-0.024	-0.011	-0.148	-0.021	-0.040
	(0.021)	(0.042)	(0.010)**	(0.017)	(0.056)***	(0.034)	(0.017)**
Mean of dependent variable	0.700	0.546	0.857	0.680	0.716	0.718	0.678
N	741,063	373,055	368,008	325,768	415,295	413,857	327,206

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Notes: Robust standard errors are in parentheses and clustered in provincial level.

Table 3. Logit estimation for unemployment (marginal effect)

	All	Female	Male	Urban	Rural	Low education	High education
Disability status (Yes=1)	0.008	0.010	0.008	0.010	0.008	0.007	0.009
	(0.001)***	(0.002)***	(0.002)***	(0.001)***	(0.002)***	(0.001)***	(0.002)***
Age 25-34	-0.030	-0.036	-0.027	-0.038	-0.025	-0.021	-0.043
	(0.001)***	(0.002)***	(0.001)***	(0.001)***	(0.002)***	(0.001)***	(0.002)***
Age 35-44	-0.051	-0.068	-0.036	-0.060	-0.044	-0.033	-0.077
	(0.002)***	(0.004)***	(0.002)***	(0.002)***	(0.002)***	(0.001)***	(0.004)***
Age 45-54	-0.060	-0.090	-0.030	-0.064	-0.059	-0.041	-0.086
	(0.003)***	(0.005)***	(0.002)***	(0.003)***	(0.003)***	(0.002)***	(0.006)***
Age 55-64	-0.063	-0.103	-0.026	-0.064	-0.065	-0.047	-0.066
	(0.003)***	(0.006)***	(0.002)***	(0.003)***	(0.003)***	(0.002)***	(0.006)***
Female	0.006			-0.007	0.017	0.007	0.006
	(0.003)**			(0.002)***	(0.002)***	(0.002)***	(0.004)
Married	-0.047	-0.049	-0.050	-0.059	-0.040	-0.030	-0.073
	(0.002)***	(0.002)***	(0.002)***	(0.002)***	(0.002)***	(0.002)***	(0.002)***
Household head	-0.040	-0.045	-0.043	-0.047	-0.036	-0.025	-0.059
	(0.002)***	(0.003)***	(0.002)***	(0.003)***	(0.002)***	(0.002)***	(0.004)***
Low education levels	-0.011	-0.007	-0.012	-0.006	-0.013		
	(0.002)***	(0.003)*	(0.002)***	(0.002)***	(0.002)***		
Received social assistance (PKH)	0.001	0.003	0.000	0.000	0.002	0.000	0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)	(0.003)
Obtain health insurance subsidy (JKN-PBI)	0.003	0.005	0.002	0.003	0.002	0.003	0.002
	(0.001)***	(0.002)**	(0.001)*	(0.001)***	(0.001)	(0.001)***	(0.001)
Dependency ratio	-0.003	-0.005	-0.003	0.000	-0.005	-0.002	-0.003
	(0.001)***	(0.002)***	(0.001)**	(0.001)	(0.001)***	(0.001)**	(0.002)**
Urban resident	0.007	-0.003	0.014			0.008	0.006
	(0.002)***	(0.002)	(0.002)***			(0.002)***	(0.002)***
GDP per capita (in district, log)	0.001	0.002	0.000	-0.001	0.002	0.003	-0.003
	(0.002)	(0.003)	(0.001)	(0.002)	(0.001)	(0.001)**	(0.002)
Percentage of unemployed people(in district)	0.483	0.575	0.425	0.478	0.478	0.357	0.628
	(0.032)***	(0.048)***	(0.032)***	(0.037)***	(0.035)***	(0.025)***	(0.051)***
Minimum wage (in province, log)	0.002	0.014	-0.005	0.015	-0.005	-0.006	0.018
	(0.004)	(0.009)	(0.003)	(0.004)***	(0.006)	(0.004)*	(0.005)***
Percentage of the village with vocational training centers(in district)	-0.026	-0.051	-0.011	-0.035	0.009	-0.004	-0.045
	(0.007)***	(0.011)***	(0.006)**	(0.008)***	(0.013)	(0.005)	(0.011)***
Mean of dependent variable	0.045	0.050	0.041	0.057	0.036	0.028	0.067
N	519,105	203,678	315,427	221,661	297,444	297,322	221,783

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Notes: Robust standard errors are in parentheses and clustered in provincial level.

Table 4. Logit estimation for employee in the formal sector (marginal effect)

	All	Female	Male	Urban	Rural	Low education	High education
Disability status (Yes=1)	-0.027	-0.022	-0.027	-0.036	-0.020	-0.024	-0.025
	(0.003)***	(0.005)***	(0.003)***	(0.004)***	(0.004)***	(0.003)***	(0.005)***
Age 25-34	-0.004	0.002	0.009	-0.055	0.022	-0.039	0.028
	(0.012)	(0.014)	(0.010)	(0.011)***	(0.011)**	(0.007)***	(0.018)
Age 35-44	-0.070	-0.059	-0.049	-0.138	-0.029	-0.083	-0.058
	(0.015)***	(0.017)***	(0.013)***	(0.012)***	(0.014)**	(0.010)***	(0.022)***
Age 45-54	-0.125	-0.115	-0.098	-0.196	-0.078	-0.146	-0.092
	(0.018)***	(0.021)***	(0.016)***	(0.014)***	(0.017)***	(0.014)***	(0.022)***
Age 55-64	-0.220	-0.186	-0.204	-0.292	-0.173	-0.239	-0.157
	(0.021)***	(0.026)***	(0.018)***	(0.018)***	(0.021)***	(0.016)***	(0.022)***
Female	-0.036			-0.041	-0.034	-0.078	0.024
	(0.007)***			(0.006)***	(0.008)***	(0.011)***	(0.010)**
Married	-0.028	-0.093	0.018	-0.034	-0.023	-0.037	-0.025
	(0.004)***	(0.008)***	(0.005)***	(0.004)***	(0.005)***	(0.003)***	(0.006)***
Household head	0.022	-0.044	-0.021	0.015	0.024	0.018	0.022
	(0.004)***	(0.006)***	(0.005)***	(0.004)***	(0.005)***	(0.004)***	(0.005)***
Low education levels	-0.210	-0.244	-0.179	-0.200	-0.218		
	(0.012)***	(0.016)***	(0.011)***	(0.010)***	(0.013)***		
Received social assistance (PKH)	-0.020	-0.022	-0.021	0.005	-0.026	-0.000	-0.094
	(0.010)**	(0.011)**	(0.010)**	(0.005)	(0.010)***	(0.006)	(0.013)***
Obtain health insurance subsidy (JKN-PBI)	-0.011	-0.003	-0.016	-0.016	-0.011	0.003	-0.039
	(0.009)	(0.009)	(0.010)	(0.011)	(0.009)	(0.008)	(0.014)***
Dependency ratio	-0.026	-0.044	-0.013	-0.030	-0.021	-0.016	-0.038
	(0.004)***	(0.004)***	(0.004)***	(0.003)***	(0.005)***	(0.004)***	(0.007)***
Has credit access	-0.028	-0.048	-0.015	-0.068	-0.002	-0.018	-0.044
	(0.004)***	(0.004)***	(0.004)***	(0.007)***	(0.004)	(0.003)***	(0.005)***
Urban resident	0.134	0.113	0.144			0.126	0.131
	(0.004)***	(0.006)***	(0.005)***			(0.005)***	(0.006)***
GDP per capita (in district, log)	0.058	0.045	0.066	0.031	0.072	0.064	0.045
	(0.010)***	(0.010)***	(0.010)***	(0.008)***	(0.011)***	(0.011)***	(0.009)***
Minimum wage (in province, log)	-0.061	-0.067	-0.059	-0.062	-0.063	-0.071	-0.051
	(0.031)**	(0.034)**	(0.030)*	(0.024)**	(0.042)	(0.038)*	(0.027)*
Percentage of the village with vocational training centers(in district)	0.169	0.132	0.195	0.185	0.354	0.232	0.143
	(0.045)***	(0.044)***	(0.050)***	(0.034)***	(0.091)***	(0.049)***	(0.047)***
Share of village has credit access (in district)	0.045	0.077	0.019	-0.050	0.028	0.088	-0.042
	(0.043)	(0.043)*	(0.043)	(0.031)	(0.043)	(0.051)*	(0.034)
Mean of dependent variable	0.382	0.348	0.404	0.541	0.266	0.239	0.581
N	495,910	193,448	302,462	209,107	286,803	289,083	206,827

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Notes: Robust standard errors are in parentheses and clustered in provincial level.

Table 5. Logit estimation for labor force participation for disability sample only (marginal effect)

	All	Female	Male	Urban	Rural	Low education	High education
Severe disability status (Yes=1)	-0.175	-0.186	-0.115	-0.155	-0.181	-0.195	-0.103
	(0.006)***	(0.010)***	(0.005)***	(0.008)***	(0.009)***	(0.007)***	(0.009)***
Number of category disability	-0.051	-0.044	-0.047	-0.062	-0.046	-0.049	-0.065
	(0.003)***	(0.003)***	(0.002)***	(0.002)***	(0.003)***	(0.003)***	(0.004)***
Age 25-34	0.149	0.183	0.115	0.188	0.127	0.096	0.220
	(0.009)***	(0.015)***	(0.008)***	(0.011)***	(0.011)***	(0.011)***	(0.010)***
Age 35-44	0.160	0.223	0.098	0.179	0.155	0.141	0.199
	(0.009)***	(0.016)***	(0.009)***	(0.009)***	(0.011)***	(0.011)***	(0.010)***
Age 45-54	0.154	0.220	0.066	0.155	0.161	0.133	0.202
	(0.010)***	(0.019)***	(0.009)***	(0.013)***	(0.012)***	(0.012)***	(0.013)***
Age 55-64	0.044	0.117	-0.045	-0.002	0.083	0.044	-0.001
	(0.012)***	(0.019)***	(0.011)***	(0.013)	(0.013)***	(0.012)***	(0.016)
Female	-0.146			-0.132	-0.160	-0.158	-0.124
	(0.010)***			(0.008)***	(0.013)***	(0.012)***	(0.009)***
Married	0.081	0.094	0.069	0.073	0.090	0.094	0.049
	(0.006)***	(0.010)***	(0.004)***	(0.008)***	(0.007)***	(0.006)***	(0.007)***
Household head	0.230	0.266	0.162	0.233	0.229	0.241	0.202
	(0.006)***	(0.010)***	(0.007)***	(0.006)***	(0.006)***	(0.006)***	(0.009)***
Low education levels	-0.030	-0.087	0.023	-0.017	-0.037		
	(0.006)***	(0.009)***	(0.004)***	(0.006)***	(0.008)***		
Special school for disability	-0.083	-0.167	-0.032	-0.123	-0.060	-0.072	-0.114
	(0.019)***	(0.039)***	(0.014)**	(0.024)***	(0.025)**	(0.021)***	(0.041)***
Received social assistance (PKH)	0.018	0.037	-0.002	0.022	0.015	0.020	0.008
	(0.006)***	(0.008)***	(0.006)	(0.008)***	(0.007)**	(0.007)***	(0.013)
Obtain health insurance subsidy (JKN-PBI)	0.001	0.009	-0.006	0.004	-0.001	0.004	-0.009
	(0.003)	(0.006)	(0.003)*	(0.005)	(0.005)	(0.004)	(0.007)
Dependency ratio	0.004	-0.012	0.019	-0.001	0.006	0.006	-0.005
	(0.003)	(0.005)**	(0.004)***	(0.005)	(0.003)	(0.004)	(0.006)
Urban resident	-0.042	-0.035	-0.049			-0.042	-0.037
	(0.007)***	(0.010)***	(0.006)***			(0.008)***	(0.007)***
GDP per capita (in district, log)	-0.016	-0.030	0.000	0.004	-0.031	-0.022	-0.001
	(0.006)**	(0.011)***	(0.004)	(0.005)	(0.007)***	(0.007)***	(0.005)
Percentage of unemployed people (in district)	-0.899	-1.583	-0.141	-0.644	-1.121	-1.140	-0.327
	(0.185)***	(0.338)***	(0.080)*	(0.206)***	(0.210)***	(0.209)***	(0.155)**
Minimum wage (in province, log)	-0.006	-0.033	0.020	-0.013	-0.016	-0.012	0.011
	(0.027)	(0.041)	(0.015)	(0.021)	(0.040)	(0.031)	(0.023)
Percentage of the village with vocational training centers(in district)	-0.063	-0.030	-0.083	-0.072	-0.168	-0.045	-0.120
	(0.030)**	(0.055)	(0.017)***	(0.026)***	(0.081)**	(0.040)	(0.025)***
District with disability regulations	-0.015	-0.013	-0.015	-0.017	-0.002	-0.022	0.005

	(0.014)	(0.028)	(0.005)***	(0.016)	(0.020)	(0.013)*	(0.022)
Mean of dependent variable	0.675	0.538	0.836	0.628	0.707	0.662	0.711
N	93,074	50,334	42,740	37,438	55,636	68,202	24,872

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Notes: Robust standard errors are in parentheses and clustered in provincial level.

Table 6. Logit estimation for unemployment for disability sample only (marginal effect)

	All	Female	Male	Urban	Rural	Low education	High education
Severe disability status (Yes=1)	0.009	0.021	0.002	0.012	0.006	0.007	0.013
	(0.002)***	(0.003)***	(0.002)	(0.004)***	(0.002)***	(0.002)***	(0.004)***
Number of category disability	0.004	0.003	0.004	0.006	0.003	0.003	0.008
	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.002)***
Age 25-34	-0.018	-0.027	-0.013	-0.027	-0.013	-0.016	-0.025
	(0.002)***	(0.003)***	(0.002)***	(0.003)***	(0.002)***	(0.002)***	(0.004)***
Age 35-44	-0.031	-0.045	-0.021	-0.046	-0.023	-0.026	-0.045
	(0.002)***	(0.003)***	(0.003)***	(0.005)***	(0.002)***	(0.002)***	(0.006)***
Age 45-54	-0.038	-0.057	-0.022	-0.050	-0.032	-0.031	-0.059
	(0.002)***	(0.004)***	(0.003)***	(0.004)***	(0.003)***	(0.002)***	(0.005)***
Age 55-64	-0.041	-0.063	-0.022	-0.053	-0.034	-0.036	-0.043
	(0.003)***	(0.004)***	(0.003)***	(0.004)***	(0.003)***	(0.002)***	(0.006)***
Female	-0.002			-0.010	0.004	0.000	-0.006
	(0.002)			(0.003)***	(0.001)**	(0.002)	(0.004)
Married	-0.018	-0.018	-0.018	-0.025	-0.014	-0.012	-0.037
	(0.001)***	(0.003)***	(0.001)***	(0.002)***	(0.002)***	(0.002)***	(0.003)***
Household head	-0.019	-0.018	-0.022	-0.025	-0.016	-0.014	-0.031
	(0.002)***	(0.004)***	(0.002)***	(0.003)***	(0.002)***	(0.001)***	(0.005)***
Low education levels	-0.004	-0.000	-0.006	-0.002	-0.006		
	(0.002)**	(0.003)	(0.002)***	(0.003)	(0.002)***		
Special school for disability	0.003	-0.021	0.007	0.004	0.003	0.002	0.004
	(0.006)	(0.019)	(0.006)	(0.012)	(0.007)	(0.006)	(0.020)
Received social assistance (PKH)	0.001	0.003	-0.001	-0.000	0.001	0.000	0.004
	(0.002)	(0.002)	(0.002)	(0.005)	(0.002)	(0.002)	(0.007)
Obtain health insurance subsidy (JKN-PBI)	0.000	0.001	-0.001	0.000	-0.000	-0.001	0.002
	(0.001)	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.003)
Dependency ratio	-0.002	0.001	-0.005	0.000	-0.003	-0.002	-0.000
	(0.001)	(0.002)	(0.002)***	(0.002)	(0.001)**	(0.001)	(0.003)
Urban resident	0.010	0.007	0.011			0.009	0.010
	(0.002)***	(0.003)**	(0.002)***			(0.002)***	(0.004)***
GDP per capita (in district, log)	0.001	0.001	0.001	0.001	0.001	0.002	-0.002
	(0.001)	(0.003)	(0.001)	(0.002)	(0.002)	(0.001)*	(0.003)
Percentage of unemployed people (in district)	0.221	0.284	0.174	0.293	0.181	0.191	0.298
	(0.022)***	(0.039)***	(0.031)***	(0.040)***	(0.027)***	(0.019)***	(0.056)***
Minimum wage (in province, log)	0.003	0.014	-0.003	0.010	-0.001	0.002	0.010
	(0.002)	(0.006)**	(0.003)	(0.003)***	(0.005)	(0.002)	(0.006)
Percentage of the village with vocational training centers(in district)	-0.012	-0.023	-0.005	-0.015	-0.004	0.001	-0.029
	(0.005)**	(0.012)*	(0.005)	(0.009)*	(0.009)	(0.005)	(0.014)**
District with disability regulations	-0.001	0.006	-0.006	-0.003	-0.000	-0.001	0.000
	(0.002)	(0.008)	(0.008)	(0.003)	(0.002)	(0.002)	(0.005)

Mean of dependent variable	0.023	0.027	0.020	0.035	0.017	0.018	0.038
N	62,827	27,096	35,731	23,506	39,321	45,155	17,672

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Notes: Robust standard errors are in parentheses and clustered in provincial level.

Table 7. Logit estimation for unemployment for disability sample only (marginal effect)

	Light	Moderate	Severe	Single	Double
Number of category disability	0.002	0.005	0.022		
	(0.001)***	(0.002)***	(0.004)***		
Age 25-34	-0.018	-0.021	-0.023	-0.021	-0.012
	(0.002)***	(0.008)***	(0.013)*	(0.002)***	(0.004)***
Age 35-44	-0.030	-0.044	-0.038	-0.037	-0.021
	(0.002)***	(0.008)***	(0.013)***	(0.003)***	(0.005)***
Age 45-54	-0.036	-0.038	-0.100	-0.041	-0.034
	(0.002)***	(0.008)***	(0.024)***	(0.003)***	(0.005)***
Age 55-64	-0.037	-0.049	-0.143	-0.041	-0.036
	(0.002)***	(0.009)***	(0.030)***	(0.003)***	(0.005)***
Female	-0.002	-0.015	0.042	-0.001	-0.005
	(0.002)	(0.006)**	(0.013)***	(0.002)	(0.003)**
Married	-0.016	-0.015	-0.066	-0.017	-0.022
	(0.001)***	(0.004)***	(0.014)***	(0.001)***	(0.003)***
Household head	-0.017	-0.029	-0.062	-0.018	-0.023
	(0.001)***	(0.004)***	(0.019)***	(0.002)***	(0.002)***
Low education levels	-0.004	-0.004	-0.026	-0.003	-0.008
	(0.002)**	(0.006)	(0.013)**	(0.002)	(0.002)***
Special school for disability	0.009	0.017	-0.042	-0.002	0.005
	(0.010)	(0.012)	(0.044)	(0.012)	(0.008)
Received social assistance (PKH)	0.000	0.008	0.002	0.001	0.002
	(0.002)	(0.008)	(0.015)	(0.002)	(0.004)
Obtain health insurance subsidy (JKN-PBI)	0.001	-0.003	-0.026	0.000	-0.001
	(0.001)	(0.004)	(0.010)**	(0.002)	(0.002)
Dependency ratio	-0.000	-0.004	-0.040	-0.001	-0.005
	(0.001)	(0.004)	(0.014)***	(0.001)	(0.003)*
Urban resident	0.009	0.017	0.009	0.008	0.010
	(0.002)***	(0.006)***	(0.015)	(0.002)***	(0.003)***
GDP per capita (in district, log)	0.001	-0.003	0.017	0.001	0.001
	(0.001)	(0.004)	(0.009)*	(0.002)	(0.002)
Percentage of unemployed people (in district)	0.200	0.275	0.725	0.228	0.213
	(0.019)***	(0.074)***	(0.228)***	(0.031)***	(0.055)***
Minimum wage (in province, log)	0.004	0.006	-0.015	0.005	0.001
	(0.003)	(0.008)	(0.019)	(0.004)	(0.005)
Percentage of the village with vocational training centers(in district)	-0.012	0.000	-0.040	-0.020	0.007
	(0.006)**	(0.017)	(0.040)	(0.008)**	(0.013)
District with disability regulations	-0.001	0.005	-0.018	0.001	-0.006
	(0.002)	(0.011)	(0.034)	(0.002)	(0.004)
Mean of dependent variable	0.021	0.029	0.078	0.024	0.023
N	54,885	6,021	1,921	42,333	20,494

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Notes: Robust standard errors are in parentheses and clustered in provincial level.

Table 8. Logit estimation for employee in the formal sector for disability sample only (marginal effect)

	All	Female	Male	Urban	Rural	Low education	High education
Severe disability status (Yes=1)	0.001	0.017	-0.007	0.007	-0.003	-0.015	0.039
	(0.011)	(0.013)	(0.013)	(0.016)	(0.016)	(0.011)	(0.024)
Number of category disability	-0.016	-0.012	-0.017	-0.022	-0.012	-0.008	-0.039
	(0.002)***	(0.003)***	(0.002)***	(0.003)***	(0.002)***	(0.002)***	(0.005)***
Age 25-34	-0.010	-0.011	0.001	-0.050	0.013	-0.049	0.026
	(0.012)	(0.019)	(0.014)	(0.019)***	(0.015)	(0.012)***	(0.021)
Age 35-44	-0.060	-0.054	-0.050	-0.141	-0.015	-0.074	-0.074
	(0.016)***	(0.021)***	(0.018)***	(0.025)***	(0.016)	(0.015)***	(0.029)***
Age 45-54	-0.098	-0.091	-0.085	-0.175	-0.055	-0.120	-0.081
	(0.016)***	(0.021)***	(0.017)***	(0.024)***	(0.017)***	(0.015)***	(0.025)***
Age 55-64	-0.177	-0.147	-0.179	-0.272	-0.122	-0.199	-0.142
	(0.018)***	(0.025)***	(0.019)***	(0.025)***	(0.021)***	(0.018)***	(0.025)***
Female	-0.035			-0.052	-0.026	-0.052	0.011
	(0.007)***			(0.010)***	(0.008)***	(0.009)***	(0.015)
Married	0.008	-0.023	0.025	-0.002	0.013	-0.003	0.023
	(0.005)	(0.010)**	(0.008)***	(0.009)	(0.007)**	(0.006)	(0.011)**
Household head	0.022	-0.009	0.013	0.015	0.023	0.032	-0.006
	(0.006)***	(0.008)	(0.010)	(0.009)	(0.006)***	(0.006)***	(0.012)
Low education levels	-0.201	-0.227	-0.179	-0.223	-0.194		
	(0.011)***	(0.012)***	(0.012)***	(0.013)***	(0.011)***		
Special school for disability	0.013	-0.138	0.051	0.001	0.010	0.010	-0.096
	(0.033)	(0.095)	(0.042)	(0.061)	(0.039)	(0.033)	(0.090)
Received social assistance (PKH)	-0.000	0.005	-0.004	0.037	-0.008	0.017	-0.141
	(0.012)	(0.012)	(0.014)	(0.016)**	(0.010)	(0.008)**	(0.027)***
Obtain health insurance subsidy (JKN-PBI)	-0.017	-0.004	-0.026	-0.012	-0.021	0.002	-0.081
	(0.008)**	(0.007)	(0.009)***	(0.012)	(0.007)***	(0.005)	(0.020)***
Dependency ratio	-0.015	-0.028	-0.004	-0.022	-0.010	-0.011	-0.013
	(0.005)***	(0.006)***	(0.006)	(0.008)***	(0.004)**	(0.006)*	(0.011)
Has credit access	-0.017	-0.034	-0.005	-0.058	0.003	-0.007	-0.045
	(0.007)***	(0.008)***	(0.008)	(0.010)***	(0.006)	(0.006)	(0.015)***
Urban resident	0.109	0.094	0.120			0.101	0.112
	(0.006)***	(0.008)***	(0.007)***			(0.007)***	(0.011)***
GDP per capita (in district, log)	0.042	0.029	0.052	0.029	0.048	0.045	0.036
	(0.007)***	(0.009)***	(0.007)***	(0.010)***	(0.007)***	(0.008)***	(0.012)***
Minimum wage (in province, log)	-0.029	-0.023	-0.037	-0.035	-0.025	-0.038	-0.001
	(0.032)	(0.039)	(0.028)	(0.035)	(0.040)	(0.038)	(0.034)
Percentage of the village with vocational training centers(in	0.115	0.071	0.152	0.122	0.299	0.169	0.071

district)							
	(0.030)***	(0.032)**	(0.034)***	(0.032)***	(0.073)***	(0.031)***	(0.054)
District with disability regulations	0.025	0.037	0.013	0.027	0.025	0.025	0.024
	(0.015)*	(0.010)***	(0.022)	(0.013)**	(0.028)	(0.019)	(0.025)
Share of village has credit access (in district)	0.005	0.039	-0.023	-0.045	-0.022	0.038	-0.109
	(0.028)	(0.034)	(0.025)	(0.027)	(0.026)	(0.036)	(0.028)***
Mean of dependent variable	0.266	0.231	0.293	0.413	0.180	0.170	0.518
N	61,360	26,359	35,001	22,691	38,669	44,357	17,003

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Notes: Robust standard errors are in parentheses and clustered in provincial level.

Table 9. Logit estimation for discourage workforce (marginal effect)

	All	Female	Male	Urban	Rural	Low education	High education
Disability status (Yes=1)	0.004	0.002	0.005	0.004	0.004	0.005	0.002
	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Unemployed	0.030	0.028	0.030	0.025	0.033	0.036	0.021
	(0.002)***	(0.002)***	(0.002)***	(0.001)***	(0.003)***	(0.002)***	(0.001)***
Age 25-34	0.002	0.002	0.002	0.004	0.000	0.001	0.003
	(0.001)**	(0.001)**	(0.001)***	(0.001)***	(0.001)	(0.001)	(0.001)***
Age 35-44	0.002	0.003	0.002	0.006	-0.002	-0.000	0.004
	(0.001)	(0.001)**	(0.002)	(0.001)***	(0.002)	(0.002)	(0.001)***
Age 45-54	0.001	0.003	0.002	0.008	-0.003	-0.001	0.006
	(0.001)	(0.001)**	(0.002)	(0.001)***	(0.002)*	(0.002)	(0.001)***
Age 55-64	0.000	0.004	0.000	0.007	-0.004	-0.002	0.007
	(0.002)	(0.002)**	(0.002)	(0.001)***	(0.002)*	(0.002)	(0.002)***
Female	-0.007			-0.005	-0.008	-0.008	-0.005
	(0.001)***			(0.001)***	(0.001)***	(0.001)***	(0.001)***
Married	-0.009	-0.009	-0.008	-0.006	-0.011	-0.010	-0.008
	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***
Household head	-0.001	-0.003	-0.005	-0.001	-0.001	-0.001	-0.001
	(0.001)*	(0.001)***	(0.001)***	(0.001)**	(0.001)	(0.001)	(0.001)
Low education levels	0.010	0.009	0.011	0.007	0.011		
	(0.001)***	(0.001)***	(0.001)***	(0.001)***	(0.001)***		
Received social assistance (PKH)	0.002	0.002	0.001	0.001	0.002	0.001	0.003
	(0.001)***	(0.001)**	(0.001)*	(0.001)	(0.001)**	(0.001)	(0.001)***
Obtain health insurance subsidy (JKN-PBI)	0.001	0.001	0.001	0.002	0.001	0.001	0.002
	(0.001)*	(0.001)	(0.001)*	(0.001)***	(0.001)	(0.001)	(0.001)***
Dependency ratio	0.002	0.001	0.002	0.002	0.002	0.001	0.002
	(0.000)***	(0.001)*	(0.000)***	(0.000)***	(0.001)**	(0.001)**	(0.000)***
Has credit access	-0.003	-0.003	-0.003	-0.002	-0.004	-0.004	-0.003
	(0.001)***	(0.001)***	(0.001)***	(0.001)**	(0.001)***	(0.001)***	(0.001)***
Urban resident	-0.004	-0.003	-0.005			-0.004	-0.004
	(0.001)***	(0.001)***	(0.001)***			(0.001)***	(0.001)***
GDP per capita (in district, log)	-0.002	-0.002	-0.003	-0.001	-0.003	-0.003	-0.002
	(0.001)**	(0.001)*	(0.001)**	(0.001)	(0.001)*	(0.001)**	(0.001)*
Percentage of unemployed people (in district)	0.026	0.012	0.031	0.015	0.033	0.036	0.012
	(0.022)	(0.015)	(0.028)	(0.016)	(0.036)	(0.023)	(0.023)
Minimum wage (in province, log)	0.010	0.010	0.010	0.008	0.011	0.013	0.005
	(0.003)***	(0.003)***	(0.004)***	(0.002)***	(0.005)**	(0.004)***	(0.002)**
Percentage of the village with vocational training centers(in	0.002	-0.000	0.004	-0.005	0.025	0.006	-0.001

district)							
	(0.004)	(0.004)	(0.005)	(0.003)*	(0.009)***	(0.005)	(0.003)
Share of village has credit access (in district)	-0.010	-0.007	-0.013	-0.002	-0.018	-0.014	-0.006
	(0.003)***	(0.002)***	(0.003)***	(0.003)	(0.004)***	(0.003)***	(0.003)**
Mean dependent variable	0.013	0.010	0.015	0.010	0.015	0.015	0.010
N	519,105	203,678	315,427	221,661	297,444	297,322	221,783

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Notes: Robust standard errors are in parentheses and clustered in provincial level

Table 10. Logit estimation for discourage workforce for disability sample only (marginal effect)

	All	Female	Male	Urban	Rural	Low education	High education
Severe disability status (Yes=1)	0.003	0.006	-0.001	0.001	0.004	0.003	0.002
	(0.002)	(0.003)**	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)
Number of category disability	0.001	0.001	0.001	0.002	0.001	0.001	0.001
	(0.000)***	(0.000)***	(0.001)***	(0.001)***	(0.001)*	(0.001)***	(0.001)**
Unemployed	0.041	0.036	0.044	0.036	0.044	0.046	0.026
	(0.003)***	(0.003)***	(0.003)***	(0.003)***	(0.004)***	(0.004)***	(0.003)***
Age 25-34	0.005	0.003	0.006	0.008	0.003	0.006	0.002
	(0.003)*	(0.004)	(0.003)**	(0.003)**	(0.004)	(0.004)	(0.003)
Age 35-44	0.007	0.007	0.008	0.011	0.004	0.007	0.003
	(0.003)**	(0.004)*	(0.004)**	(0.003)***	(0.004)	(0.004)*	(0.003)
Age 45-54	0.006	0.008	0.005	0.011	0.002	0.005	0.005
	(0.003)**	(0.004)**	(0.004)	(0.003)***	(0.004)	(0.004)	(0.003)
Age 55-64	0.005	0.007	0.005	0.010	0.002	0.004	0.005
	(0.003)*	(0.004)*	(0.003)	(0.004)***	(0.004)	(0.004)	(0.003)
Female	-0.010			-0.012	-0.010	-0.011	-0.008
	(0.001)***			(0.002)***	(0.001)***	(0.002)***	(0.001)***
Married	-0.011	-0.014	-0.008	-0.010	-0.012	-0.013	-0.008
	(0.002)***	(0.002)***	(0.003)***	(0.002)***	(0.002)***	(0.002)***	(0.002)***
Household head	-0.003	-0.006	-0.008	-0.004	-0.003	-0.005	0.000
	(0.002)**	(0.002)***	(0.003)***	(0.002)**	(0.002)	(0.002)**	(0.002)
Low education levels	0.012	0.013	0.012	0.009	0.015		
	(0.002)***	(0.003)***	(0.002)***	(0.002)***	(0.003)***		
Special school for disability	-0.011		-0.008	-0.012	-0.009	-0.022	0.008
	(0.007)		(0.008)	(0.009)	(0.010)	(0.014)*	(0.008)
Received social assistance (PKH)	0.000	0.003	-0.001	-0.004	0.002	0.000	0.004
	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)	(0.003)	(0.002)
Obtain health insurance subsidy (JKN-PBI)	0.001	-0.000	0.002	0.003	0.000	0.000	0.004
	(0.001)	(0.002)	(0.002)	(0.001)**	(0.002)	(0.002)	(0.001)***
Dependency ratio	0.003	0.001	0.005	0.004	0.003	0.003	0.003
	(0.001)***	(0.001)	(0.001)***	(0.002)**	(0.001)***	(0.001)***	(0.001)***
Has credit access	-0.005	-0.002	-0.007	-0.003	-0.006	-0.005	-0.006
	(0.002)***	(0.002)	(0.002)***	(0.002)	(0.002)**	(0.002)**	(0.002)***
Urban resident	-0.002	-0.002	-0.001			-0.004	0.003
	(0.002)	(0.002)	(0.002)			(0.002)*	(0.003)
GDP per capita (in district, log)	0.000	0.000	0.000	0.002	-0.001	0.001	-0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Percentage of unemployed people	0.025	-0.014	0.049	0.036	0.003	0.041	-0.005

(in district)							
	(0.030)	(0.029)	(0.036)	(0.033)	(0.044)	(0.041)	(0.029)
Minimum wage (in province, log)	0.003	0.008	-0.000	-0.000	0.007	0.005	-0.002
	(0.005)	(0.005)	(0.005)	(0.004)	(0.008)	(0.006)	(0.002)
Percentage of the village with vocational training centers(in district)	0.004	0.001	0.007	-0.009	0.041	0.011	-0.003
	(0.007)	(0.009)	(0.008)	(0.007)	(0.017)**	(0.010)	(0.006)
District with disability regulations	-0.004	-0.006	-0.003	-0.007	-0.001	-0.005	-0.004
	(0.004)	(0.005)	(0.005)	(0.003)**	(0.007)	(0.006)	(0.004)
Share of village has credit access (in district)	-0.012	-0.010	-0.014	-0.005	-0.020	-0.017	-0.000
Mean of dependent variable	0.014	0.011	0.017	0.014	0.015	0.016	0.010
	(0.005)**	(0.006)*	(0.005)***	(0.006)	(0.008)**	(0.006)***	(0.004)
N	62,827	27,051	35,731	23,506	39,321	45,155	17,672

* $p<0.1$; ** $p<0.05$; *** $p<0.01$. Notes: Robust standard errors are in parentheses and clustered in provincial level.

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