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FINAL REPORT

MAPPING PERSONS WITH DISABILITIES (PWD) IN INDONESIA LABOR MARKET

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MAPPING PERSONS WITH DISABILITIES (PWD) IN INDONESIA LABOR MARKET

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ABBREVIATIONS

BPS	Statistics Indonesia
CPRD	Convention on the Rights of Persons with Disabilities
ICF	International Classification of Functioning
Podes	The Village Potential Statistics
Pusdatin	Data and information center
PWD	Persons with Disabilities
PWOD	People without Disabilities
Riskesdas	National Report on Basic Health Research
Sakernas	National Labour Force Survey
SP	Population Census
Susenas	National Socio-Economic Survey
UN	United Nations
ILO	International Labour Organization
WHO	World Health Organization
WHODAS	World Health Organization Disability Assessment Schedule

CHAPTER 1. INTRODUCTION

1.1. Background

OVER one billion people or 15 percent of the world's population are persons with disabilities (PWD) and more than 70 percent are in working age population. It is believed that excluding PWD in the labour market will lessen the benefit generated from economic activity. The Convention on the Rights of Persons with Disabilities (CPRD) has invited all countries to engage in the issue of PWD, mainly after the UN treaty came into force in 2008. Since then, many governments and international agencies have focused their attention on the goal of including PWD in economic development.

Indonesia has established greater understanding on the rights of persons with disabilities by enacting the People with Disabilities Act No. 8 Year 2016, following the ratification of UNCRPD through Act No. 19 Year 2011. This is a revision of the previous act, PWD Act No. 4 Year 1997 and shifts from a 'charity' to an 'empowerment' perspective in looking at persons with disabilities. The act mandates the involvement of PWD in all aspect of life – including economics. The number of articles in the law has increased from 51 to 153, reflecting better assurance in securing the rights of PWD.

The strong message regarding inclusion of PWD in the labour market appears in Article 53 Law No. 8 Year 2016, which mandates companies to accommodate PWD: at least one percent of its labour force for the private sector and two percent for the public sector (government and state-owned companies). Implementing Article 53 presents challenges considering the current status and unfamiliarity of the formal economy regarding disability that have, in turn, created barriers for PWD to enter the formal economy. From total employment, only 0.26 percent of formal workers are persons with severe disabilities[1]. Another reason for low involvement of PWD in the formal labour market is the lack of infrastructure for supporting PWD such as access to the workplace.

To date, we have found limited study discussing the involvement of PWD in the Indonesian labour force. This is partly due to limited data available for thorough analysis

1 The data shows encouraging figure on the percentage of PWD employed relative to total employment: 6.23 percent. The figure is far above the requirement of the regulation, 1-2 percent. However, careful analysis is a must since large number of PWDs do not enter the labor market – they discourage to enter and become 'inactive people'. Another thing to be noted is that the numbers are based on definition of disability in Sakernas 2016, which may be different with the one used in the law mentioned or the one defined by WHO in International Classification of Functioning, Disability and Health (ICF).

on PWD conditions in the labour market. The most recent information came in 2016, when Statistics Indonesia (BPS) launched its first national labour force survey (Sakernas), with data involving disability. Although Sakernas only included one question regarding disability in the survey, it enables analysis on the current situation of PWD in the labour market which can improve policy design on PWD.

This study attempted to map the condition of PWD in the Indonesian labour market using 2016 Sakernas data. The main point to be explored from the data is the socio-economic condition of PWD, the characteristics of employed PWD, and the wage distribution of PWD. The analysis is compared to the condition of people without disabilities (PWOD), for relevant context. The report is presented in three parts. First, literature reviews regarding the definition and different measurements of disability, labour force participation of PWD and wage difference of PWD compared to PWOD are discussed. Second, a comprehensive elaboration of Sakernas 2016 on the relation of working status and socio-economic characteristics of PWD is presented, including the following: socio-economic characteristics between employed PWD and employed PWOD, income disparities between PWD and PWOD and the characteristics between employed and unemployed PWD. Third, an econometric model to test whether there is a significant difference in the probability of PWD securing employment and the criteria for employable PWD is examined.

The term of disability used in this study is based on disability questions in Sakernas term 1/2016. Categorization of having a disability is not based on the perception of respondents on having disability. A respondent will be categorized as PWD if they "feel" difficulty/disorder in seeing, hearing, walking/climbing (mobility), using/moving fingers/hands, speaking and/or understanding/communicating with others and other disabilities (e.g. remembering, concentrating, emotion, self-care, etc.). The degree of disability is also based on perception of respondents, whether they "feel" mild difficulties, severe difficulties or none. In this study, a person is considered as PWD if he/she has at least one of any kind and any severity of disability. PWD with severe disability refers to every person having at least one severe disability, while PWD with mild disability refers to every person having at least one mild disability but doesn't have any severe disability. Therefore, the summarized number of PWD with mild disability and PWD with severe disability will be equal to the number of PWD in Indonesia.

1.2. Literature Review

1.2.1. Disability Definition: A Comparison

In Indonesia, statistics show different numbers of PWD. The numbers and percentage varies between less than 1 percent (Podes, 2014) to more than 12 percent (Sakernas, 2016). Table 1 shows the difference of disability prevalence from different data sources. The difference not only occurs in published statistics, but also in statistics referenced by relevant ministries. For example, according to Pusdatin data of the Ministry of Social Affairs, as of

2010, the total number of persons with disabilities in Indonesia was 11 million. Meanwhile, the data from the Ministry of Manpower, estimated 7 million (ILO, 2013). Such discrepancy in data on PWD is concerning as it impacts how the policy is delivered.

Various prevalence rates of disability in Indonesia are related to the definition used in measuring disability as well as the effectiveness in which the disability data is gathered. The question design and reporting sources considered can affect estimates; whether a health or general survey, self-reported or measured aspect of disability – all will affect how people answer the question or data generated (WHO, 2001).

While accurate data on disability are mostly lacking in Indonesia, progress is being made through better definition of disability through the new law, Law No. 19 Year 2011. The law introduced the term 'disability', replacing *'penyandang cacat'* stated in the previous law, Law No. 4 Year 1997. 'Penyandang cacat' closely refers to 'impairment' while 'disability' accommodates the latest approach, 'difficulties in functioning' approach. *"Penyandang cacat"* defines disabled persons as those having physical and/or mental disorder, which can impair them or become obstacles and barriers – consisting of the physically handicapped, the mentally handicapped and the physically and mentally handicapped. *"Penyandang disabilitas"* means persons with physical, mental, intellectual or sensory limitations for long periods, who are challenged in interacting with the environment and addressing others, thus preventing them from fully engaging in their guaranteed equal rights. This changing term shifts a paradigm in Indonesia for people with disabilities from charity- based approach to right-based approach. As a result, the countermeasure of problems of people with disabilities does not only focus on the people with disabilities, but also on the provision and maintenance of physical environment to support accessibility of people with disabilities (the Ministry of Social Affairs, 2011).

Even after adopting the international term of "disability", there are still variations in measurements of disability in Indonesia, which makes disability prevalent and the analysis of disability not comparable from one source of disability measurement to another. In Indonesia, there are some data collection activities (census and survey) which measure disability, such as the Population Census 2010, the National Socio-Economic Survey (Susenas), Sakernas 2016, Podes and the National Report on Basic Health Research (Riskesdas). Table 1 below shows different measurements and disability prevalence from some data collection activities as mentioned above. Appendix 1 provides the question asked in the survey.

Based on Table 1, it can be concluded that Podes has the coarsest definition of disability, which is 'tuna'. Tuna was used in the previous law, and due to its harsh meaning, 'lacking of' or 'without' in Javanese (Adioetomo et al., 2014), it was later revised. However, Podes still uses this term today. Moreover, the lowest prevalence of disability in Podes may be the result of village officers undervaluing the conditions faced by disabled members of their community.

Among the survey of people at any age (without age restriction), Riskesdas appears to have higher prevalence of disability and aligns more with those found in other countries (Adioetomo et al., 2014). It is claimed that measurement in Riskesdas followed the International Classification of Functioning (ICF). The measurement of disability based on ICF is assessed in WHO Disability Assessment Schedule (WHODAS) 2.0. There are two versions of

the questionnaires: a 12-item version (used in Riskesdas) and a 36-item version. Each version asks about difficulties due to health conditions over the past 30 days using six response categories: none, mild, moderate, severe, extreme and cannot do.

Table 1. Comparison of Disability Measurements in Indonesia

Data Collection Activities	Year	Measurement of Disability	Response Categories	Disability Prevalence	Number of Observations
Population Census	2010	Asking individual, whether he/she has difficulty in seeing, hearing, walking/ climbing, remembering, concentrating, or communicating with others, and self-care even after using disability aids (for seeing and hearing).	Three response categories: none, a little, a lot.	4.30%	237,641,326
Podes	2011	Asking village officers about the number of people with disabilities in the village for nine types of disability: blind, deaf, mute, deaf and mute, physical disability, mental disability, ex-psychoneurotic, ex-leper, mental-physical disability.	Mentioning the number of people with disabilities in the village for every type of disability.	0.41%	78,614 villages
Susenas	2012	Asking individual, whether he/she has dysfunction/limitation/ disability in seeing (even after using glasses), hearing (even after using hearing aids), communicating with others (in term of speaking), remembering/ concentrating, walking/ climbing, and self-care.	Three response categories: no, mild, severe.	2.31%	277,854 individuals
Riskesdas	2013	Adapting 12 questions from WHODAS 2 as an operationalization of ICF. Riskesdas uses broader definition of disability.	Five response categories: none, mild, moderate, severe, extreme	11%	300,000 households

Data Collection Activities	Year	Measurement of Disability	Response Categories	Disability Prevalence	Number of Observations
Sakernas	2016	Asking individual, whether he/she has difficulty/disorder in seeing, hearing, walking/ climbing (mobility), using/moving fingers/ hands, speaking and/ or understanding/ communicating with others, other disability (e.g. remembering, concentrating, emotion, self-care, etc.)	Three response categories: no, mild, severe.	12.15% (for age 15 and above)	131,339 individuals

Sources: Adioetomo et al. (2014) and the Ministry of Health (2013)

Table 2. Provinces in Top Ten Highest Disability Prevalence from Five Disability Data Sources

Prevalence Rate	Prevalence Rate
Top 10 in 5 Data	Gorontalo
Top 10 in 4 Data	South Sulawesi, West Sumatera, West Sulawesi
Top 10 in 3 Data	East Nusa Tenggara

Sources: Halimatussadiah et al. (2015) and author's calculation

Table 2 describes how the five data sources measure prevalence rates in Indonesian provinces. It shows the top ten provinces which have the highest prevalence rate in Indonesia in all (five) data, four data, and three data. Consistently, Gorontalo appears as a top-10 province in five data sources, while, South Sulawesi, West Sumatera and West Sulawesi appear as top-10-provinces consistently in four data sources; East Nusa Tenggara is a province which appears as top-10 in three data sources. Full data of the provincial rankings is available in Appendix 2.

The varied statistics regarding disability in Indonesia further enhances the need to standardize the measurement method of disability for improved analysis and policy design, which can also ease disability comparison with other countries.

1.2.2. PWD and Participation in the Labour Market

Studies have shown that PWD have difficulties in entering the job market. Mavromaras et al. (2007) found that disability decreases the probability of being employed by 17.6 percent and the probability of entering the labour force by 16.9 percent among people aged 15-64 years in Australia, in 2003. Similarly, Campolieti (2002) found that disability decreases the probability of entering the labour force among the elderly in Canada. This study estimated disability from health conditions and status variables such as respiratory problems, diabetes, heart condition, BMI, age, household/individual conditions, etc. In line with previous studies, Brown & Emery (2010) found that disability is associated with a 30 percentage point reduction in labor force participation of Canadian men and women.

The issue of PWD participation in the labour force can also impact members of their families. Mavromaras et al. (2007) found that the disability of a family members is associated with lower labour participation for the other (non-disabled) members of the family. This indicates that PWD possibly are more dependent on his/her family member. Overall, the effects of disabilities on labour force participation are larger for men and single women than for married women (Loprest et al., 2016).

Oguzoglu (2009) studied the relationship of disability severity to labour force participation. This study found that severe, profound, moderate, mild, and low severity of disability significantly decreased the probability of men entering the labour force, compared to severe, profound and moderate severity of disability significantly decreased probability of women entering the labour force.

The lack of availability of suitable jobs (according to their ability) is the most frequent reason asserted by PWD for not joining the labour market. They are also discouraged from finding jobs as the accommodations required for PWD may be considered a hindrance by potential employers (Loprest, 2001). Among developing countries, the employment rate gap is often to be larger in middle income countries than low income countries (Mitra, 2013).

In the case of Indonesia, Halimatussadiah et al. (2015) is the first study to elaborate labour force characteristics of PWD. The study found that the size of the labour force of PWD is significantly smaller than the size of the labour force of PWOD. It suggests that low educational attainment is the main obstacle of PWD to enter the labour market. Further, they argue that institutional constraints such as low numbers of schools and infrastructure to access schools are the factors behind low educational attainment of PWD.

Despite the limitations in daily activities caused by physical or mental disabilities, many persons with disabilities actively participate in the labour market. Nevertheless, they remain less likely to be employed than others. Numerous PWD testified that discriminatory attitudes from employers seem to be apparent at the time of hiring (Cook, 2006). On the other hand, some employers reported hesitation in hiring PWD for several reasons, including lack of awareness about disability and accommodation apprehensions, concern on cost-related issues, and fear of legal liabilities (Kaye et al., 2011).Several studies attempted to find causal determinants of the employment rate gap of PWD. Potts (2005) found that social capital may partially account for the unemployment rate of persons with specific types of

disabilities. The likelihood of being employed is affected by the prospect that PWD may have less effective social networks. Another study highlights gender related issues in explaining the unemployment rate of PWD. Mitra (2013) argued that disability might represent a distinguished barrier to employment between women and men. For women, the gender related barriers may not pose a burden as much as they do for men. In more specific analysis, Baldwin & Johnson (2015) found that males are relatively disabled by limitations to mobility and strength than females, while limitations to sensory capacities and appearance has the opposite effect.

1.2.3. PWD, PWOD and Wage Differences

One cannot deny that for PWD, their abilities of keeping a job have been hampered, and companies to some extent should accommodate their special needs . However, many PWD who perform well are unable to get equal remuneration, raising another grave concern. Discrimination toward PWD not only hampers their chances of finding jobs, but also contributes to the wage gap for those already employed. .

Studies have shown that disability has a negative association with earnings. One early survey-based study noted that there are considerable differences in the estimated wage received by PWD, which arise from differences in the degree of work disability often associated with (Baldwin et al., 1994). A similar result was also found by Jones (2008), even after controlling the specific definition of disability, data source, country or time period disability. Education may serve as a buffer to protect against potential negative wage effects, but it is not sufficient to narrow the gap (Hollenbeck & Kimmel, 2008).

In line with previous studies, Jones et al. (2011) noted the association between earning and disability is stronger among employees with a work-limiting disability than among employees with a non-work-limiting disability. However, the robustness of such a relationship is still questionable as unobserved variables might be involved after controlling individual heterogeneity. In addition, Brown & Emery (2008) found that males with mild, moderate, severe and very severe disability have earnings that are 21 percent, 30 percent, 40 percent and 55 percent lower than a nondisabled male, while for females, the estimated impacts range from a 19-percent earnings reduction for mild disability to a 49-percent reduction for a very severe disability.

CHAPTER 2.

MAPPING PWD IN INDONESIA LABOUR MARKET

THIS chapter intends to elaborate findings from 2016 Sakernas data on its relation to disability. The focus is to portray the characteristics of PWD in Indonesia, comparing the participation of PWD and PWOD in the labour market, and examining wage difference between PWD and PWOD. Sakernas 2016 covers 131,330 observations with people aged 15 years old and above as the sample respondents. The method used in this section is mainly descriptive analysis.

2.1. Portrait of PWD characteristics in Indonesia

Among people aged 15 years old and above, there are 12.15 percent people living with disabilities (around 22.8 million people). Taking severity of disability into account, there are 1.87 percent people with severe disability and 10.29 percent people with mild disability. Comparing to global data, disability prevalence from Sakernas 2016 data is still lower than those published by WHO (2011), with 15.6 percent disability prevalence rate on average (18 years old and above), ranging from 11.8 percent in high income countries and 18 percent in lower income countries, and severe disability 2.2 percent for adults percent.

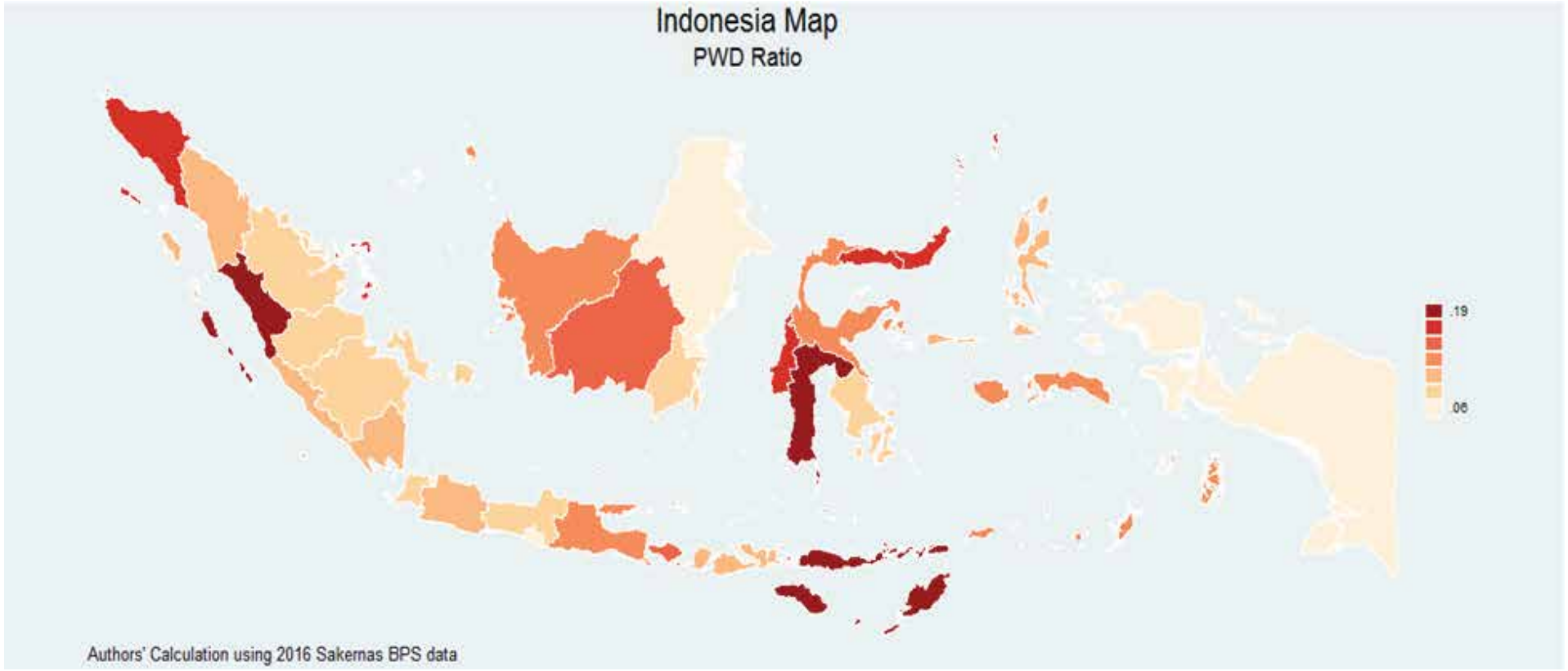
The statistics show that the number of people with mild disability in Indonesia is five times greater than the number of people with severe disability. Most PWD have multiple impairments – approximately 40 percent of multiple mild disabilities and 38 percent of multiple severe disabilities. Regarding impairment categories, visual impairment is the most frequent type of disability. It is estimated that 37 percent of people with mild disability and 17 percent of people with severe disability have visual impairment (see Appendix 3).

Among regions in Indonesia, Sulawesi has the highest disability prevalence, which is 14.5 percent compared to 12.2 percent of Indonesia's (see Appendix 4). Both mild and severe disabilities have the highest prevalence at 12.1 percent for the former and 2.4 percent for the latter. The second region having the highest prevalence of disability is Nusa Tenggara. This region is expected to have high occurrence civil unrest and malnutrition, which increases

the prevalence of disability in this region. Overall, the range of disability prevalence rate in all provinces varies between 6.41 percent and 18.75 percent. For mild disability, the range is between 5.73 percent and 15.83 percent, and for severe disability is between 0.62 percent and 2.92 percent. Attention should be placed to Sulawesi Island, which has many provinces having a high disability prevalence rate.

The region with the smallest prevalence of disability is Papua, which is only 8.5 percent. However, this result of Papua may be biased as a result of imbalanced sampling due to unreachable locations in the rural and remote area of Papua. Comparing one province to another, West Sumatera has the highest prevalence of disability in Indonesia, which is approximately 18.8 percent. Disability prevalence across provinces can be seen in Figure 1. It shows three provinces with the third highest rank of prevalence rate, namely West Sumatera, East Nusa Tenggara and South Sulawesi.

Figure 1. Disability Prevalence across Provinces



Source: Authors' calculation using 2016 Sakernas data

In terms of provincial severity of disability, there is variation in percentage of persons with mild or severe disability. Papua and Riau Island have the highest percentage of persons with mild disabilities, which are 93.2 percent and 92.7 percent respectively. Meanwhile, North Kalimantan and D.I. Yogyakarta have the highest percentage of persons with severe disabilities, which are 27.8 percent and 25.8 percent respectively.

Each province has varied distribution regarding types of disability prevalence. For example, Riau Island has the highest prevalence rate for visual impairment (84.58%) but with the lowest prevalence rate in both mobility and hearing impairment. East Java has the highest prevalence rate for both mobility impairment (43.79%) and hand/grip impairment (18.85%); while for hearing impairment, the province with the highest prevalence rate is Yogyakarta (27.74%).

In terms of distribution of PWD throughout the provinces, West Java, East Java and Central Java have the highest number of PWD. The fact is not surprising, however, as Java Island is inhabited by 58 percent of the total population of Indonesia (Population Census 2010). As much as 18 percent of PWD live in West Java, while the other 17 percent and 13 percent live in East Java and Central Java respectively. Depiction of the data mentioned above is in Appendix 5.

Table 3. Comparing Social and Demographic Condition of PWD and PWOD in Indonesia

Variables	PWD	PWOD	Total	
Household Size	3.69	4.26	4.19	4.19
Age	57.45	36	38.61	38.61
Location				
Urban	49.32%	55.13%	4.19	4.19
Rural	50.68%	44.87%	38.61	38.61
Education				
Never Attend/Do Not Finish Primary School	45.74%	12.69%	16.70%	31,334,876
Primary School	26.38%	26.03%	26.07%	48,905,026
Junior Secondary School	10.64%	23.39%	21.84%	40,968,590
Senior Secondary School	12.41%	28.29%	26.36%	49,459,006
Higher Education	4.83%	9.61%	9.03%	16,933,136
Gender				
Female	53.37%	49.64%	50.09%	93,974,703
Male	46.63%	50.36%	49.91%	93,625,931
Marital Status				
Other Status	38.48%	34.06%	34.60%	64,904,579
Married	61.52%	65.94%	65.40%	122,696,055

Source: Authors' calculation

Table 3 provides brief information on the socio-demographic condition of PWD compared to PWOD. The household size of PWOD tends to be larger than PWD, which may be attributed to a higher percentage of PWOD having the married status. A lower percentage of married PWD compared to PWOD may be caused by lower probability of PWD to find spouses who accept their disabilities.

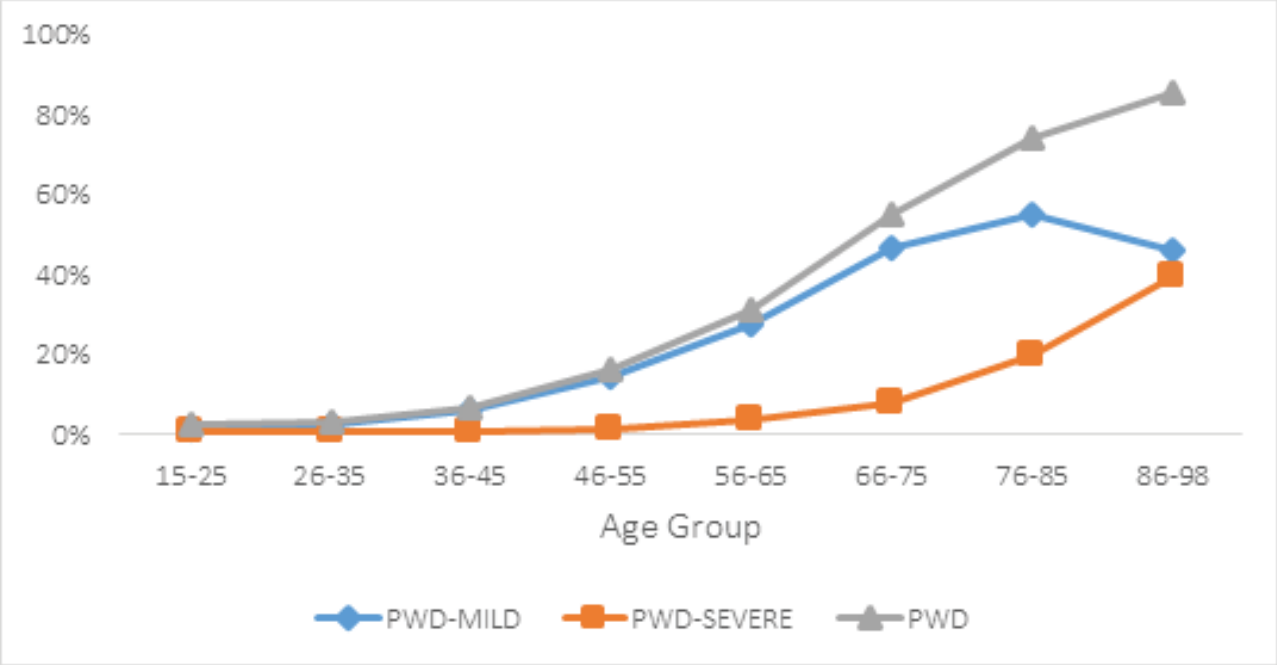
In terms of age, PWD tend to have a higher life expectancy than PWOD, likely due to the higher probability of PWOD in having accidents and the weaker physical states associated with aging. In Figure 2, the prevalence of disability increases with age, and after the 76-85 age group, the prevalence of mild disability decreases. As people age, body functions begin to deteriorate, the probability of contracting diseases increases, ultimately leading to disability. The trend of decreasing mild disability prevalence from the 76-85 age group to the 86-98 age group may be caused by converted disability from mild to severe disability in that age, so that the prevalence of severe disability increases in that period.

Regarding the location, PWD tend to live in rural areas. The limited access, facilities, and poor health conditions in rural areas may increase the number of PWD in this area. The difficulties of PWD to migrate from rural to urban areas might be the cause of PWD staying in rural areas.

In terms of education, almost half of PWD do not finish elementary or never attend school. This number is much higher compared to education of PWOD, whose percentage of not finishing elementary or never attending school is only 12.7 percent. This fact is supported by Lamichhane & Kawakatsu (2015) who found that children aged 6-18 with mild and severe disability are less likely to participate in school. Furthermore, the percentage of PWD who attend higher education is only around half of PWOD's.

Looking at the gender of people aged 15 and above, PWOD have a higher number of males than females, while people with mild and severe disabilities tend to have higher number of female than male. As seen in Table 3, 50.4 percent PWOD are male, while only 46.4 percent and 48 percent people with mild and severe disabilities are male. This condition may be caused by discrimination and abuse towards girls or women, such as malnourishment and torture, exposing them to a higher probability of becoming disabled.

Figure 2. Disability Prevalence by Age Group



Source: Authors' calculation

2.2. Participation of PWD in Labour Market

In line with previous studies about disability and labour force participation or employment rate, people with mild and severe disability have much lower labour force participation rate as seen in Table 4, which are only 56.72 percent for the former and 20.27 percent for the latter. These percentages are much lower compared to labour force participation rate of PWOD, which is 70.40 percent. The difficulty of PWD to enter the labour force may be caused by discrimination faced by PWD, which are institutional discrimination, physical environmental discrimination and social discrimination (Yeo & Moore, 2003). Taking inactivity rate into account, the percentage of inactive people (people not in the labour force) with mild and severe disability is much higher than the percentage of inactive people for PWOD. Among inactive people, the percentage of people with mild and severe disability whose status is "student" is much lower for PWD than the percentage for PWOD. This condition shows that PWD have difficulty getting an education compared to PWOD, due to the high cost of education and lower return of education for PWD (will be discussed later). As a result, inactive PWD tend to dedicate themselves to activities other than education.

Table 4. People with Disabilities in Indonesia Labour Force

Status	PWOD	PWD-mild	PWD-severe	Percent
Labour Force	**70.40%**	**56.72%**	**20.27%**	**68.06% (127,671,869)**
Employed	66.42%	54.63%	18.32%	64.31% (120,647,697)
Unemployed	3.98%	2.08%	1.95%	3.74% (7,024,172)
Not in Labour Force	**29.60%**	**43.28%**	**79.73%**	**31.94% (59,928,765)**
Housewife	18.13%	28.71%	21.14%	19.27% (36,158,428)
Student	9.74%	0.84%	0.85%	8.66% (16,245,007)
Others	1.73%	13.74%	57.74%	4.01% (7,525,330)
Total Population	**100.00% (164,804,980)**	**100.00% (19,296,030)**	**100.00% (3,499,624)**	**100.00% (187,600,634)**
Unemployment Rate[2]	5.65%	3.67%	9.63%	5.50%

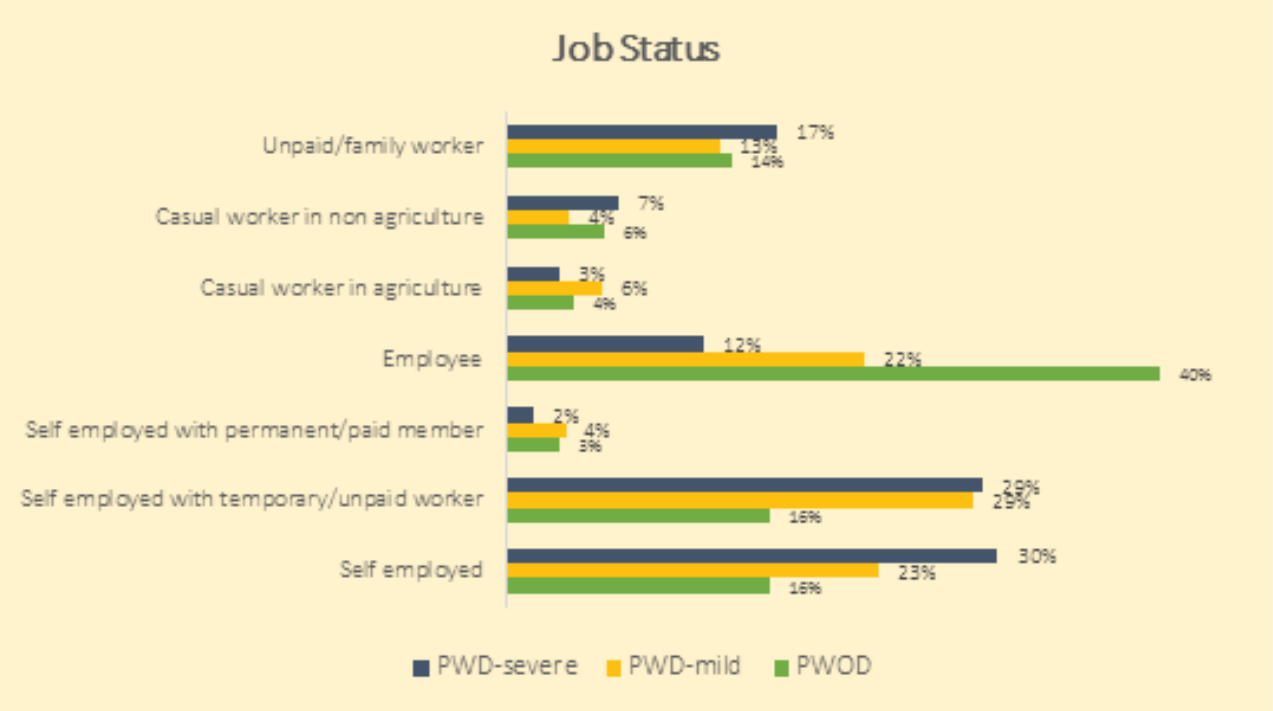
Source: Authors' calculation

The unemployment rate of people with mild disabilities is lower than that of PWOD, while the unemployment rate of people with severe disabilities is higher than that of PWOD. The statistics indicate that once people with mild disabilities enter the labour force, they experience greater ease in finding jobs compared to people with severe disabilities. This may be caused by the level of severity of disabilities which leads to lower choice of job. As a result of fewer job choices, people with severe disabilities experience higher unemployment rates compared to people with mild/no disability.

In terms of job sector, most PWD work in agriculture, plantations, forestry, and fishery sectors (see Appendix 6). The percentage of PWD in those sectors is almost two times higher than PWOD's (46.01% compared to 29.51% of PWOD). Concerning job status, almost half of PWOD work as employees (approximately 40.11%). This statistic is significantly higher compared to the percentage of people with mild and severe disabilities who work as employees, 21.93 percent for the former and 12.16 percent for the latter. Disability seems to be a burden for PWD to enter the job market as employees due to the competitive labour market. As a result, those with mild and severe disabilities tend to work as self-employed, self-employed with temporary/unpaid, or unpaid/family workers. Visualization of job status can be seen in the figure below.

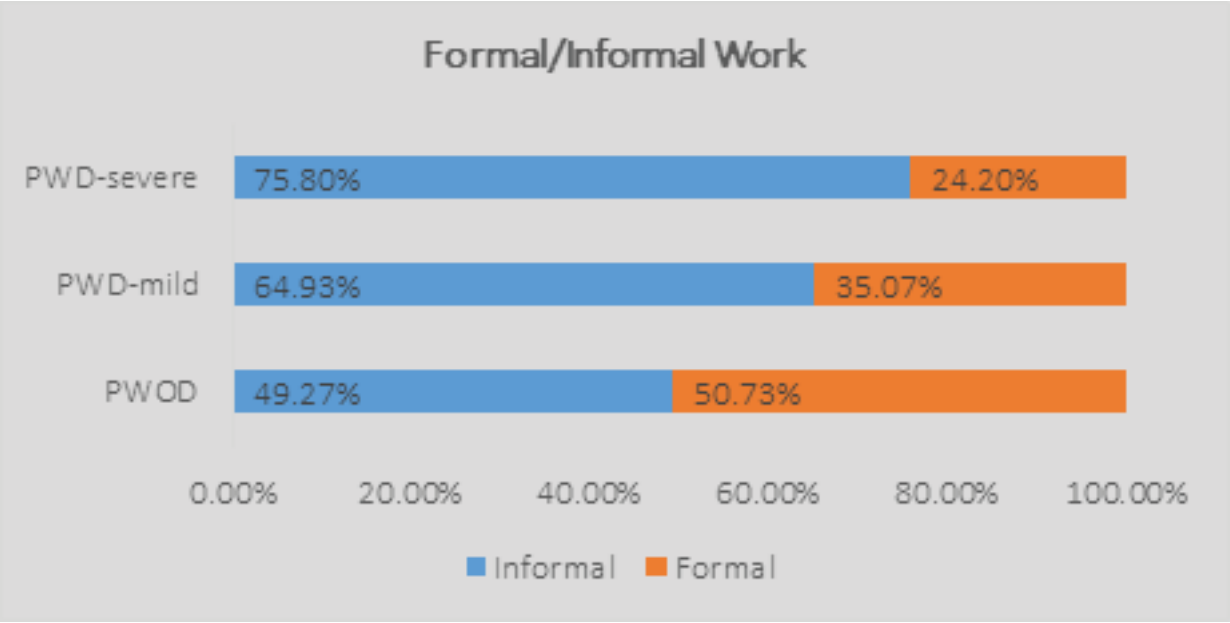
2 Unemployment Rate: Number of Unemployed People/Labor Force

Figure 3. Job Status



Source: Authors' Calculation

Figure 4. Formal/Informal Job Status



Source: Authors' Calculation

Moreover, if we categorize each status of job to formal and informal job, most PWD work in the informal sector. The percentage of people with mild and severe disabilities who work in informal jobs is 64.93 percent and 75.80 percent respectively. This number is much higher compared to PWOD's at only 49.27 percent. Depiction of formal/informal job status that is held by PWD and PWOD is in Figure 4. The categorization of job status to formal/informal

refers to work status (Figure 3) and work type (manager, professional expert, clerical support, service/sales, agriculture, machine operators and assemblers, unskilled worker, and army/ police) (see Appendix 7).

On the matter of the distance to workplace, most PWD live close to their homes. Around 89percent and 86percent of people with severe and mild disabilities commute only less than 10 km to their workplace (see Appendix 8). Compared to the percentage of PWOD who commute less than 10 km, which is around 79 percent, the percentage of PWD who commute less than 10 km to their workplace is higher. Relating to time to workplace, PWD tend to commute less than or equal to 30 minutes to their workplace. This fact is in line with previous statistic saying that PWD tend to commute less than 10 km (see Appendix 9). The fact that PWD tend to find jobs near their homes and have shorter commute times to the workplace may be due to their difficulty to travel to other places, especially for with visual and mobility impairment. This is also supported by the fact that the percentage of people with severe and mild disabilities who work at home is estimated at 11 percent and 5 percent higher than the percentage of PWOD who work at home, which is 17 percent (see Appendix 10).

There is an interesting pattern of people taking additional jobs. The percentage of people with mild disabilities taking additional jobs is higher than the percentage of PWOD taking additional jobs, but the percentage of people with severe disabilities taking additional jobs is lower than that of PWOD (see Appendix 11). This fact may be related to the wage of PWD, which is lower than that PWOD. PWD have a lower average monthly wage, so they take on additional jobs. However, people with mild disabilities may have fewer limitations with their physical abilities and fewer obstacles to finding additional work. As a result, the percentage of people with severe disabilities who have additional jobs is lower than the percentage of people with mild disabilities who have additional job. Regarding employment benefits, , the percentage for PWD is lower in almost all areas, such as health insurance, injury compensation, severance, etc. This may be related to the higher percentage of PWD who work in the informal sector compared to PWOD.

Among people in the labour force, contacting relatives is the main source of finding work. People with severe disabilities tend to find jobs through relatives who may then refer them, rather than applying directly or through third parties, such as job fairs and advertisements (see Appendix 12). Regarding willingness to work, the percentage of PWD who want a job is half of PWOD who want a job (see Appendix 13). Moreover, the percentage of people with severe disabilities wanting a job is three times lower than that of PWOD. This may show that many PWD feel discouraged about seeking work. Further inquiry into their reasons for not seeking work, most answered that they already had a job or their own businesses (see Appendix 14). Interestingly, the percentage of people with severe disabilities feeling discouraged about finding work, and therefore do not look for work – is five times higher than PWOD and three times higher than people with mild disabilities. This fact supports the previous fact that people with PWD a have lower willingness to work than PWOD. Taking the reason to look for work into account, PWOD tend to look for work as self-actualization (already finish school or no longer going to school), while PWD tend to look for work as a necessary means to survive and earn a living (see Appendix 15). The higher cost of living of PWD for their disability compensation may be the reason of this fact (Zaidi & Burchardt, 2003).

2.3. Comparing Socio-Demographic Characteristics of PWD and PWOD in Labour Market

This section analyzes the socio-demographic conditions of people of varying status, such as employed and unemployed, non-labour force, paid and unpaid workers, and workers having additional jobs and not having additional jobs. The analysis is conducted both for PWD and PWOD (see Appendices 16-19).

As age increases, the percentage of employed PWD increases and the percentage of non-labour force PWD decreases until the 46-55 age group. After this age group, the percentage of employed PWD decreases and the percentage of non-labour force PWD increases, both with “housewife” or “student” status and “other” status. This may be a result of increasing productivity as age increases until a certain point (maximum productivity), then productivity starts decreasing and people face retirement. The trend is similar with PWD. However, the reduction in the percentage of employed PWD from those aged 46-55 to those aged 56-65 is higher: 19 percent for PWD compared to 8 percent for PWOD.

Compared to PWOD, the percentage of employed PWD in rural areas is higher than urban areas. This fact reflects barriers faced by PWD enter formal jobs, as rural areas only serve informal types of work. The ease of finding a job in rural areas, especially for unskilled workers, particularly in the agricultural sector, may be the reason for higher employment of PWD in rural areas compared to urban areas. This employment pattern between rural and urban locations is also reflected with PWOD.

In terms of education, both PWD and PWOD also share a similar trend, in which people who have attained higher education have the highest percentage of being employed. As people obtain higher levels of education, they are more valued in society, thereby increasing their probability of being employed. Taking gender into account, the percentage of employed male PWD is higher than the percentage of employed female PWD PWOD. This fact may be due to the following: 1) Higher tendency of women to stay at home after marriage; 2) Gender discrimination in the labour market.

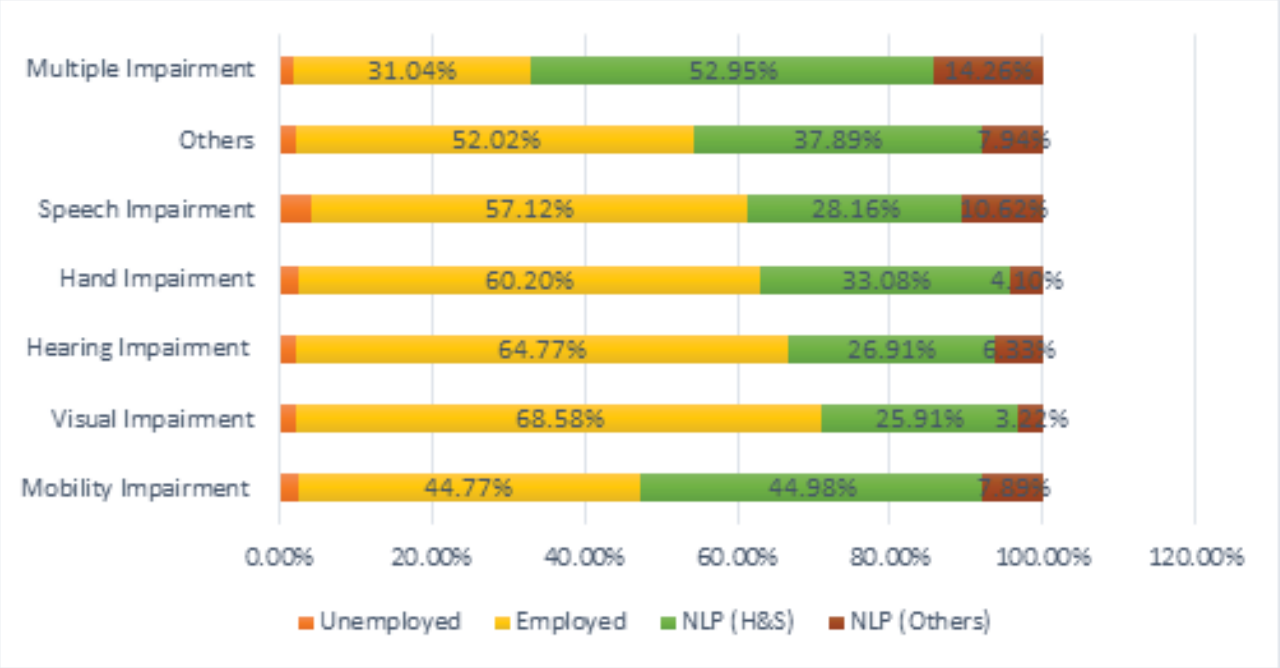
Looking into status of employment (formal/informal), the percentage of formal workers decreases as age increases for both PWD and PWOD. It is in line with decreasing health conditions and increasing probability of disability as age increases. However, the percentage of PWD in informal workers is higher than that of PWOD. Both PWD and PWOD also show higher percentages of informal workers in rural areas than in urban areas. As education attainment increases, the percentage of workers in the informal sector decreases. More educated people are more likely to find jobs in the formal sector to fit their educational background and get proper wages. Thus, educated workers tend to have formal jobs. In terms of gender, PWD and PWOD have a similar trend, in which female workers tend to be employed in the informal sector. This is in line with statistics that show lower education attainment for females compared to male.

Considering payment status of workers, the percentage of paid PWD and PWOD increases until the 26-35 age group, and subsequently decreases. It may be a sign that this is a cohort with maximum productivity for workers to be paid. The remaining characteristics

also show similar patterns for both PWD and PWOD, in which the percentage of paid workers is higher in urban areas, tends to increase as education attainment increases, is higher for males, and is higher for people with "other" status. However, for all characteristics, the percentage of paid workers is higher for PWOD than for PWD.

In terms of additional jobs, the percentage of PWD workers having additional jobs increases until age group 46-55, and decreases thereafter. On the other hand, the percentage of PWOD having additional jobs increases until age group 55-65, and decrease thereafter. The difference in patterns of having additional jobs across age group may be caused by disability since disability will be harder to bear as age increases. As a result, productivity of PWD may decrease faster than that of PWOD. PWD and PWOD show a higher percentage of workers having additional jobs in urban areas, which appears to be due to more job opportunities in urban areas. The percentage of female workers having additional jobs is lower than male workers having additional jobs. This may be caused by added responsibilities of women in their households (taking care of family as wife and mother). Similarly, married workers tend to have additional jobs for both PWD and PWOD; increased responsibilities due to a higher number of dependents may be one of the reasons for this issue.

Figure 5. Status Based on Disability Types of PWD



Based on types of disabilities, people with visual impairment have the highest probability of being employed. This statistic is in line with the study of Bella & Dartanto (2016), which found that PWD with visual impairment tend not to become poor. The high percentage of employment for PWD with visual impairment may be the reason of the study's finding. According to the study, visually impaired PWD tend to be employed because they are not distracted by people's treatment or underestimating of their sight, so they are able to focus on what they are doing (Bella & Dartanto, 2016). PWD with multiple disabilities have the lowest percentage of employment. Each kind of disability will limit a person's activity in certain areas,

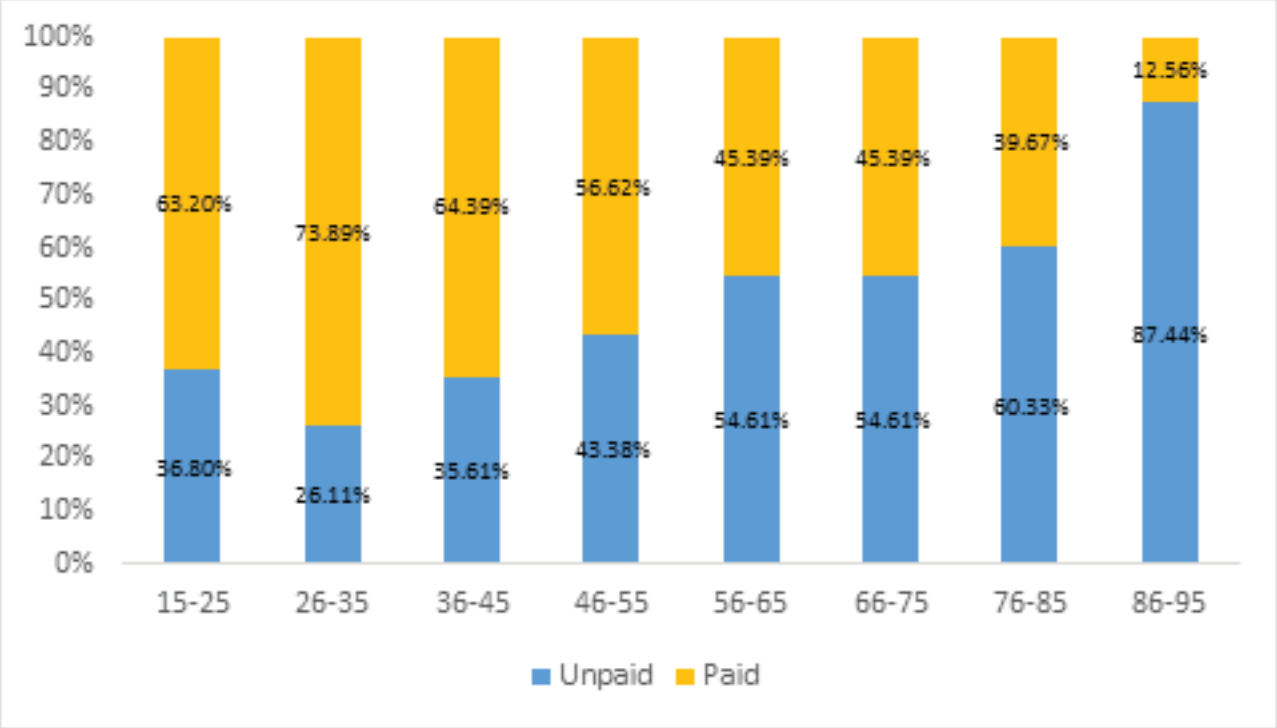
so people with more than one disability tend to have more activity limitations. As a result, people with multiple disabilities tend not to be employed, considering their limitations.

Appendices 20 and 21 show similar figures as Figure 5 for PWD with mild and severe disabilities. Among people with mild disabilities, people with mild visual impairment have the highest percentage of being employed, which is 69 percent. The trend follows previous statistics of PWD. Meanwhile, among people with severe disabilities, people with severe hearing impairment have the highest percentage of employment, which is 38 percent. The statistic is in line with Yin & Shaewitz (2015) who found that people with vision or hearing difficulties in the United States had the highest labour force participation rate and employment rate in 2013.

2.4. Who Earns Lower Wages?

In general, PWD earn lower pay per hourly wage or take-home pay per month. Attention should also be given to unpaid PWD as the percentage of unpaid PWD is higher than unpaid PWOD. The percentage of people with mild and severe disabilities who are unpaid is 46 percent and 50 percent respectively: Higher than the percentage of unpaid PWOD which is only 34 percent (see Appendix 22).

Figure 6. Status of Payment of PWD across Age



As shown in Figure 6, PWD tend to be unpaid as their age increases. This may be related to increasing disability prevalence related with aging. As people get older, the probability of being disabled and having more severe disabilities increases. As a result, finding work will

become more difficult, and they are more likely to end up as family (unpaid) workers or other unpaid workers. Following the issue, the percentage of paid PWD increases as education attainment increases (see Appendix 23). As education attainment increases, firms tend to value workers more, and as a result, workers tend to be paid.

Table 6 shows the average monthly wage, average working hours, and average wage per hour from the employed people being paid (have non-zero wage). As seen in Table 6, the average wage of people with mild disabilities is 14 percent lower than that of PWOD, while the average wage of people with severe disabilities is 32 percent lower than that of PWOD. According to Yin & Shaewitz (2015), once PWD enter labour force, they tend to get low-income jobs due to their lower level of education.

Table 5. Average Wage and Working Hour

Status of Disability	Average Wage/Month	Average Working Hours/Week	Average Wage/Hour
PWOD	Rp. 1,873,564	42 hours/week	Rp. 11,146
Mild PWD	Rp. 1,615,231	35 hours/week	Rp. 11,447
Severe PWD	Rp. 1,280,347	35 hours/week	Rp. 9,636
Average	Rp. 1,589,714	37 hours/week	Rp. 10.743

Source: Authors' Calculation

Compared to PWOD, PWD not only face lower income, but are also prone to fluctuating income due to methods of payment. PWD tend to get payment based on output or on a daily basis, while the percentage of PWD who get monthly-based income is much lower. The condition is worse for people with severe disability (see Appendix 24). Meanwhile, people with mild and severe disabilities who are paid monthly are much lower than PWOD.

Table 6. Income Distribution of PWD and PWOD

Income range	PWOD	PWD-Mild	PWD-Severe
<750.000	21.65 %	36.58 %	42.07 %
750.000 - <1.500.000	26.48 %	23.29 %	27.15 %
1.500.000 - <2.500.000	29.66 %	23.04 %	22.01 %
>=2.500.000	22.21 %	17.09 %	8.77 %
Population	72,081,986	5,593,602	318,790

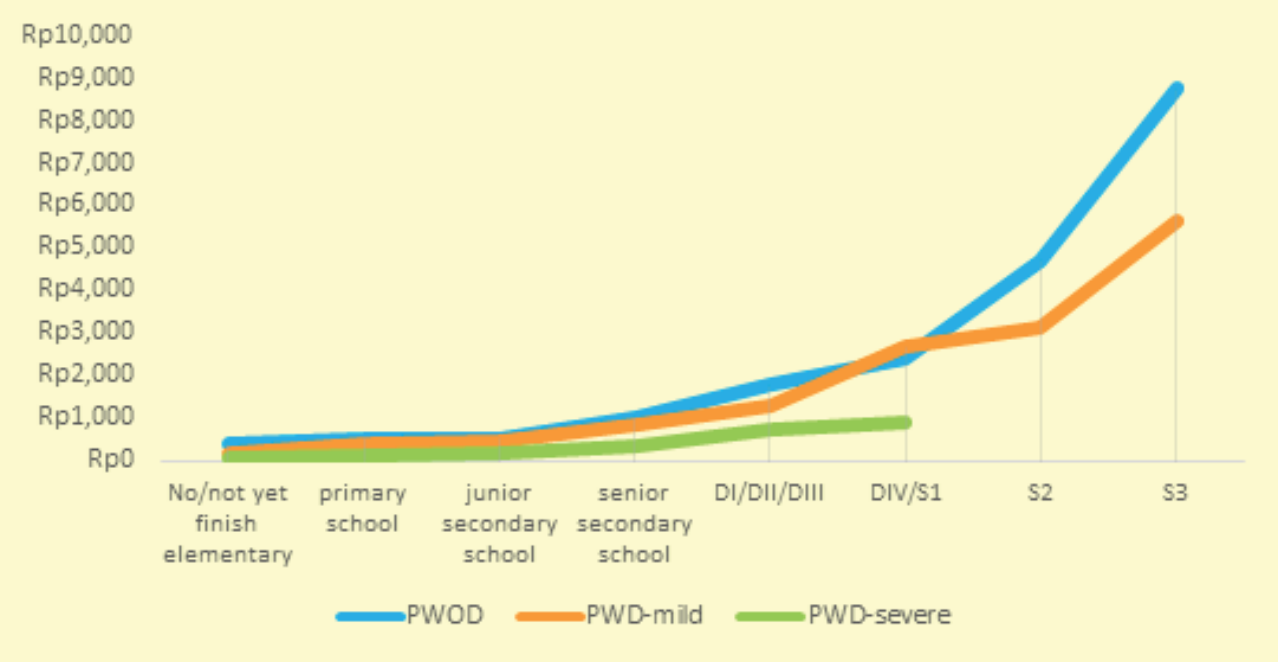
Source: Authors' Calculation

Table 6 above shows income distribution of PWOD, PWD with mild disabilities and PWD with severe disabilities. Percentage of PWD having the lowest percent income range (< Rp.750,000) is higher than of PWOD. Moreover, PWD with severe disabilities having an income

lower than Rp. 750,000 (lowest group of income) is almost two times that of PWOD. On the other hand, percentage of PWD having the highest income range (>= Rp. 2,500,000) percent tis lower than PWOD, given that PWD with severe disabilities belongs to this group is 2.5 times lower than PWOD. This may indicate that the welfare of PWD may be lower than that of PWOD due to income differences.

Figure 7 informs the average wage earned based on education attainment. The lines depicted in the diagram shows that people earn more wage as their education attainment rises. This pattern applies for all classification, including persons with mild disabilities, persons with severe disabilities, and persons without disabilities. Along with the attainment of education, people gain more skill which they can use to be more productive and earn more income. In this figure, we can see that the gap between marginal return of education of PWD and PWOD is getting bigger as the education attainment is higher. This may be an indication that wage discrimination to PWD still exists even among high-skilled labourers.

Figure 7. Monthly Wage and Education Attainment (in thousands)

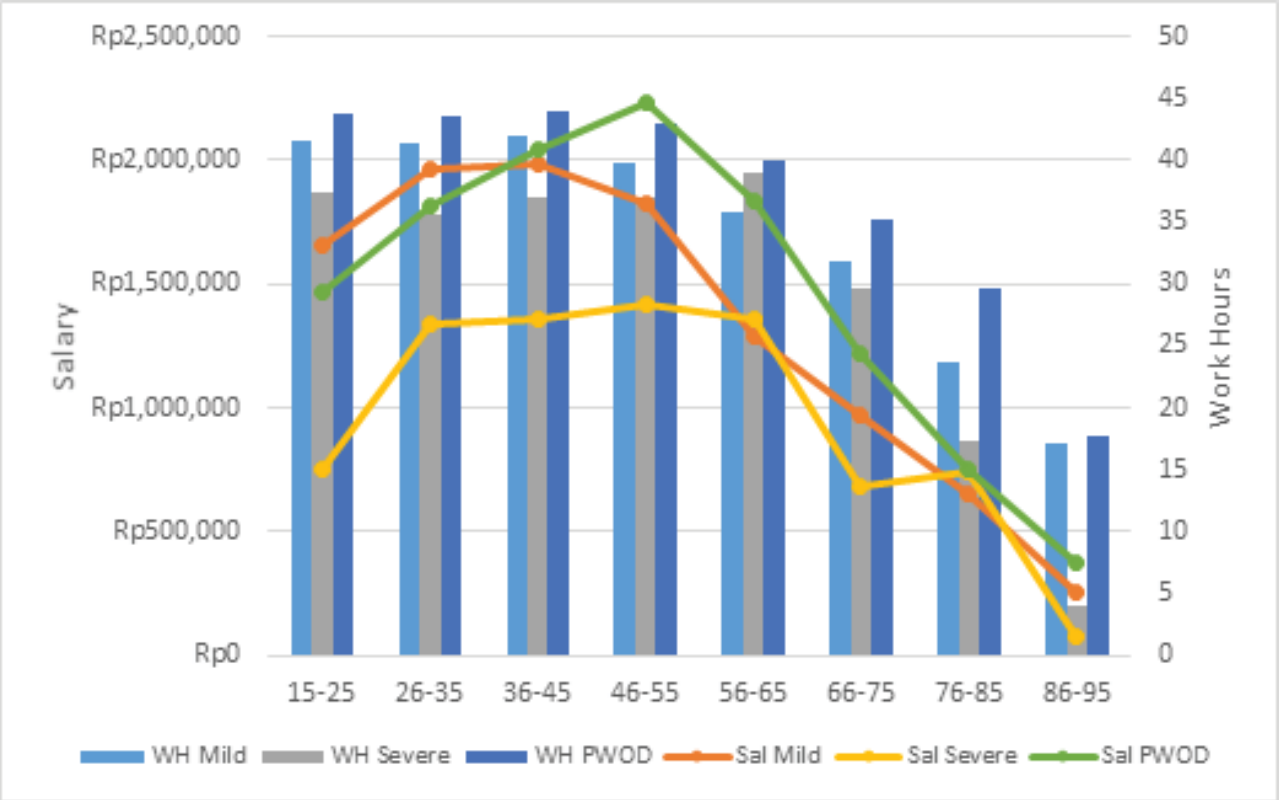


However, the additional wage gained as the more education is attained is not the same between PWD and PWOD. For almost all stage of education, PWOD, on average receive higher earnings than PWD. The gap widens along the upper stages of education attainment. The skills gained by PWD in educational institutions is not considered as good as those of PWOD. A further study can be pursued to check whether wage discrimination exist PWD and PWOD.

In Figure 8, age tabulation data by age group depicts a U-inverse line salary as people's age increases. Until a particular age, employees earn more as productivity increases. The lessening pattern is inevitably drawn as the decline in work hours when people age. However, after the diminishing point, people with severe impairment suffer the highest lost in work hours, resulting in relatively low wages. Although the patterns of wage based on age are quite the same among PWOD and PWD, those who exhibited any impairment, either mild or

severe, reported a considerably low wages compared to the wages of PWOD. It is even worse for people with severe disabilities. A further investigation is needed to check whether the impairment issue causes such a gap.

Figure 8. Average Wage and Working Hours by Age Group and Disability Status



The wage starts to dramatically decline after the age of 55. This applies for all but people who suffer severe impairment. Their wage remains the same from the age of 26 until 65.

CHAPTER 3.

WHO GETS EMPLOYED? ANALYSIS OF FACTORS DETERMINING PROBABILITY OF PWD TO BE EMPLOYED

NOT only is the percentage of employed PWD is low compared to the total PWD population, but the number of PWD who enter the labour market is also limited. The previous part of the report shows that PWD has lower percentage in labour force and employment compared to PWOD. Thus, this part will confirm the statistical facts discussed previously, which are the probability of getting into the labour force and the probability of being employed, and the relation between the severity of the disability to the probability of being employed.

In this study, we use cross-sectional 2016 Sakernas 2016 data, which contains questions about disability, to analyze conditions of people with disabilities (PWD) in the Indonesian labour market. There are three samples used in this study: 1) Whole sample, which contains people inside and outside labour force for 131,339 observations; 2) Indonesia labour force (people aged 15 and above) for 90,648 observations; and 3) PWD in labour force for 9,945 observations. Samples 1, 2 and 3 were used respectively to analyze probability of PWD to get into labour force, probability of PWD to be employed and relation of disability severity to likelihood of being employed.

The estimation method used in this study is Logistic Regression (Logit) with two binary dependent variables for three models: 1) Likelihood of getting into labour force (1 for being in labour force and 0 for not being in labour force); 2) Likelihood of being employed (1 for employed and 0 for unemployed) from all sample (PWD and PWOD); and 3) Likelihood of being employed (1 for employed and 0 for unemployed) among PWD. The first dependent variable is used for model 1, while the second dependent variable is used for model 2 and model 3. The three estimation models in this study can be written as follows:

$$LF=\alpha+\beta Disability\_Status+\delta\hat{}i\ SD\_Char+\varepsilon\ (1)$$

$$Employment\_{All}=\alpha+\beta Disability\_Status+\delta\hat{}i\ SD\_Char+\varepsilon\ (2)$$

$$Employment\_{Dis}=\alpha+\beta\_i\ Disability\_Severity+\delta\hat{}i\ SD\_Char+\varepsilon\ (3)$$

Where:

LF: Probability of getting into labour force (1=in labour force; 0=not in labour force);

Disability_Status: Disability status (1=having disability; 0=not having any disability);

$Employment_{\_All}$: Probability of being employed (1=employed; 0=unemployed) for all sample (PWD and PWOD);

$Employment_{\_Dis}$: Probability of being employed (1=employed; 0=unemployed) for PWD sample;

Disability_Severity: Disability severities, which are 1) have one severe disability, 2) have 1 severe disability and multiple mild disability, 3) have multiple severe disability and 4) have multiple mild disability;

SD_Char: Social and demographic characteristics, which are age, household size, location, education, gender, marital status, and gender-marital status interaction.

ε: Error term

In the 2016 Sakernas survey, people were asked about their opinion regarding their disability condition, and the response options were 'no', 'yes, mild', and 'yes, severe'. The categories of impairment in the questionnaire as follows:

- Visual Impairment
- Hearing Impairment
- Walking/climbing stairs (mobility)
- Using/moving fingers/hands
- Talking/understanding/communicating with others
- Others (for example: remembering, concentrating, emotional impairment, self-caring, etc.)

3.1. PWD Entering the Labour Market

The first model aims to analyze probability of PWD to get into the labour force. As statistics show, there is a lower percentage of PWD in the labour force compared to PWOD confirming the significance of that fact: whether there is any significant relationship between disability status and probability of getting into the labour force.

Table 7. Marginal Effect of Model 1 – Probability of PWD getting into labour force

VARIABLES	MARGINAL EFFECT
Disability Status	
Disability (1=having disability & 0=not having disability)	-0.201***
Social and Demographic Variables	
Age	0.0008***
Household size	-0.0108***
Location (1=rural & 0=urban)	0.064***
Finish primary school (1=yes & 0=no)	-0.038***
Finish junior secondary school (1=yes & 0=no)	-0.136***
Finish senior secondary school (1=yes & 0=no)	0.011***
Finish higher education (1=yes & 0=no)	0.160***
Gender (1=female & 0=male)	-0.112***
Marital status (1=married & 0=others)	0.346***
Married Female (1=yes & 0=others)	-0.295***
Observations	131,339
Pseudo R2	0.0568
chi2	159.82
prchi2	0.0000

Standard errors in parentheses; Signification *** p<0.01, ** p<0.05, * p<0.10

The result shows that disability status is negatively correlated with probability of getting into the labour force. Disability will decrease the probability of getting into the labour force by 20.1percent. The finding is in line with previous studies which have similar findings such as Stephens (2011), Brown & Emery (2008), Campolieti (2002) and Stern (1989).

Yin & Shaewitz (2015) explained this phenomenon in consecutive reasons. First, people with disabilities who enter the labour force tend to get low-income jobs due to their low education attainment compared to PWOD. These jobs do not provide long-term career advancement, adequate benefits, or a living wage. As a result, PWD tend not to enter the labour force because the cost of job searches and health care may exceed the expected benefits from employment.

Arlette (2012) stated that the reasons for lower labour force participation rate for PWD come from the supply and demand side of the labour market. From the supply side, PWD may experience higher cost of working compared to PWOD, and PWD's reservation wage will increase. As a result, some PWD may choose other opportunities in place of work. Another possibility is that impairment increases efforts for job search, which will increase unemployment duration. In the end, this can cause PWD to feel discouraged and leave the labour market.

On the demand side, PWD may be offered lower wages by firms due to lower productivity. Another factor that may often not be easily apparent is discrimination. The discrimination may arise when PWD and PWOD have similar levels of productivity, but PWD receive lower wages or opportunities for employment. Knowing this treatment in the labour market, can be another reason to discourage PWD from entering the labour force.

3.2. Probability of PWD Getting Employed

The second model focuses on the sample of those who have already joined the labour market. It aims to find the impact of disability on probability of being employed, controlled by social and demographic variables. The result clearly shows a negative relationship between disability status and opportunity of finding jobs in the Indonesian labour market. It supports previous studies which found that employment rates for PWD are significantly lower than for PWOD (Jones, 2008; Metts, 2000; WHO, 2011).

Table 8. Marginal Effect of Model 2 – Probability of PWD Getting Employed (from all samples)

VARIABLES	MARGINAL EFFECT
Disability Status	
Disability (1=having disability & 0=not having disability	-0.0229***
Social and Demographic Variables	
Age	0.0018***
Household size	-0.0023***
Location (1=rural & 0=urban)	0.0118***
Finish primary school (1=yes & 0=no)	-0.0001
Finish junior secondary school (1=yes & 0=no)	0.0013
Finish senior secondary school (1=yes & 0=no)	-0.0138 ***
Finish higher education (1=yes & 0=no)	-0.014***
Gender (1=female & 0=male)	0.0013
Marital status (1=married & 0=others)	0.054***
Married Female (1=yes & 0=others)	0.0003
Observations	90,648
Pseudo R2	0.1520
chi2	4,011.99
prchi2	0.0000

Standard errors in parentheses; Signification *** p<0.01, ** p<0.05, * p<0.10

PWD are 1.9 percent less likely to be employed than persons without disabilities. On one hand, PWD cannot fill every occupation filled by PWOD. Therefore, with the narrow field of work, PWD have less opportunities to find jobs. In addition, PWD may also have less effective social networks to lead them successfully through the challenges of the job market (Potts, 2005).

On the other hand, companies may avoid hiring PWD. This view is supported by Kaye et al. (2011) who found that employers reported hesitation in hiring PWD for several reasons, including lack of awareness about disability and accommodation apprehensions, concern on cost–related issues, and fear of legal liabilities.

3.3. Which PWD Get Employed?

The third model aims to find which types of disabilities face the best or worst opportunities in finding jobs in the Indonesian labour market. The data sample used here only represent persons with disabilities. In this model, disability is categorized into four types: single severe disability, severe and mild disability, multiple severe disability, and multiple mild disabilities. All are used as the independent variable, determining whether the person secures a job in the labour market. Similar to the second model, it is also controlled by social and demographic variables.

The result above shows that the probability of getting job is significantly affected by disability status. It supports previous findings that PDW have fewer opportunities to find jobs in the Indonesian labour market. This negative relationship applies for all types of disability based on severity, including single severe disability, mild and severe disability, multiple mild disability, and multiple severe disabilities. Such results are controlled by social and demographic variables which also have significant coefficients.

People exhibiting single severe disability are 2.7 percent less likely to get a job. This percentage is considerably higher compared to those who exhibit multiple mild disabilities, which is only 1.2 percent. Meanwhile, people who have both mild and severe disabilities are 0.9 percent less likely to find jobs; and even worse, those who reported multiple severe disabilities are 49.4 percent less likely to find jobs. These indicate that the degree of severity plays a significant role in determining the opportunities of an individual to find a job. The more severe the disability, the worse the negative effect of disability in finding work.

Table 9. Marginal Effect of Model 3 – Probability of PWD Getting Employed (among PWD)

VARIABLES	MARGINAL EFFECT
Disability Characteristics	
Single severe disability (1=yes & 0=others)	-0.0222***
Mild and severe disability (1=yes & 0=others)	-0.0222***
Multiple severe disability (1=yes & 0=others)	-0.037***
Multiple mild disability (1=yes & 0=others)	-0.006*
Social and Demographic Variables	
Age	0.0006***
Household size	-0.0005
Location (1=rural & 0=urban)	0.0223***
Finish primary school (1=yes & 0=no)	0.0014
Finish junior secondary school (1=yes & 0=no)	-0.0045
Finish senior secondary school (1=yes & 0=no)	0.0053
Finish higher education (1=yes & 0=no)	0.0152***
Gender (1=female & 0=male)	0.007
Marital status (1=married & 0=others)	0.0239***
Married Female (1=yes & 0=others)	-0.0007
Observations	9,945
Pseudo R2	0.0568
chi2	159.82
prchi2	0.0000

Standard errors in parentheses; Signification *** p<0.01, ** p<0.05, * p<0.10

The results of the study indicate that severe disabilities may restrict individuals, at a higher degree compared to mild disabilities and even without-disability, to bear responsibility in the workplace. The company may refuse to hire persons with severe disabilities as a way of avoiding additional costs. A broader implication of this finding is that protection should be specially addressed to those who suffer severe disabilities without neglecting those with mild disabilities. It is unfortunate that the people who need the most assistance in fact have less assistance and fewer opportunities to improve their lives.

CHAPTER 4. CONCLUSION AND RECOMMENDATION

THERE is still limited information on PWD and the labour market in Indonesia. This study intends to map the situation of PWD in facing the labour market. In the beginning, the study compares some data sources of PWD in which each has different disability measurements. As a result, there are variations of disability prevalence in Indonesia from different data sources, ranging from 1 percent to more than 12 percent. The different data of disability tend to complicate the comparison of disability condition between Indonesia and other countries. In terms of disability prevalence in Indonesia from Sakernas 2016, there is a need to pay more attention to disability in Eastern Indonesia and Western Sumatera.

The implications for PWD regarding gender, education and employment require further study. As the research has shown, there are more female than male PWD. Next, the participation of schooling of PWD is much lower than that of PWOD. The government should prioritize education with regards to PWD as it is one of the factors leading to employment and employability, particularly in the formal sectors. Moreover, labour force participation of PWD is still lower than that of PWOD. This is an indication of higher rate of discouragement among people with disabilities. In relation to this, there is a higher rate of PWD who prefer other activities (not household and not schooling) over working. Taking job sector and status into account, PWD tend to have informal work status and avenues into the work force: agricultural sector, self-employed worker, home-based work, rural area, and informal job searches.

Among the working population, the rate of unpaid PWD is higher than that of PWOD. Moreover, wage differences between PWD and PWOD still exists, which may account for a higher percentage of people with mild disabilities who have additional jobs. However, further study to explore the reasons of this wage difference is required. In terms of job facilities and benefits, PWD tend to have insufficient facilities and a lower percentage of benefits/securities.

Based on this study, there is a need to increase labour force participation of PWD. Broadening the labour market for PWD may fulfill this need. We recommend three ways to broaden the labour market for PWD:

1. Establishment of formal channel to apply to jobs for PWD.
2. Improvement of technology to assist PWD.
3. Disclosure job offers for PWD to the public.

Improvement of technology to assist PWD may be conducted by providing disability accommodation/aids for each type of PWD. The government may take part by providing more affordable accommodations and disability aids through subsidized programs and regulations. The disclosure of job offers for PWD may be conducted through facilitation by PWD job fairs or establishing job fairs dedicated specifically for PWD. In implementing the three actions, the government will initiate the needed actions for others to follow.

The three actions needed to increase labour force participation of PWD may be conducted from the demand and supply sides of the labour market. From the demand side, there is a need to socialize regulation of PWD workers in Indonesia, especially after the establishment of Law No. 8/2016 regarding the responsibilities of private companies employ at least 1percent PWD in the workforce. Moreover, the government should also socialize the sanction of not employing PWD so that companies will hire more PWD. Furthermore, the government may also establish champion companies as a role models for other companies, to employ PWD. Regarding this establishment, the government and state-owned companies should be the first model this practice to have at least 2percent of PWD in their workforce. Finally, the regulation concerning workers with disabilities may also encourage companies to employ PWD by providing incentives.

On the supply side, there is a need to pay close attention to workers with disabilities. Firstly, technical and social skills of PWD should be improved. As companies may look at PWD as inferior applicants, PWD should have sufficient skills to be able to compete in the labour market and perform their jobs satisfactorily. Next, PWD should be informed about the jobs offered to PWD through formal channels. Lastly, PWD should create networks and establish communities to increase their bargaining power in the labour market.

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APPENDICES

1. Appendix 1: Disability Questions of Each Data Collecting Activities

a) Sensus Penduduk 2010

		1. Tidak	2. Sedikit	3. Parah
Apakah *(NAMA)* mempunyai kesulitan:				
a.	Melihat, meskipun pakai kacamata?...	▭	▭	▭
b.	Mendengar, meskipun memakai alat bantu pendengaran?.....	▭	▭	▭
c.	Berjalan atau naik tangga?.....	▭	▭	▭
d.	Mengingat atau berkonsentrasi atau berkomunikasi dengan orang lain karena kondisi fisik atau mental?.....	▭	▭	▭
e.	Mengurus diri sendiri?.....	▭	▭	▭

b) Susenas 2012

Apakah mengalami gangguan fungsi keterbatasan/disabilitas (cacat) dalam hal:

Melihat, meskipun pakai kacamata (misal penglihatan kurang jelas (low vision), buta warna, buta total, dll.)	Mendengar meskipun pakai alat bantu pendengaran (misal, tuna rungu, dll)	Berkomunikasi dengan orang lain (misal, tuna wicara, dll)	Mengingat atau berkonsentrasi (misal, autis, mental/ retardasi, kejiwaan, dll)	Berjalan atau naik tangga (misal, lumpuh/ layuh, kaki kecil. pendek sebelah, dll)	Mengurus diri sendiri (misal, makan, mandi, berpakaian, ke toilet, dll)
1. Ya, ringan *2. Ya, berat* *3. Tidak*	*1. Ya, ringan* *2. Ya, berat* *3. Tidak*	*1. Ya, ringan* *2. Ya, berat* *3. Tidak*	*1. Ya, ringan* *2. Ya, berat* *3. Tidak*	*1. Ya, ringan* *2. Ya, berat* *3. Tidak*	*1. Ya, ringan* *2. Ya, berat* *3. Tidak*

c) Riskesdas 2013

	Tidak Ada	Ringan	Sedang	Berat	Sangat Berat
1. Sulit berdiri dalam waktu lama misalnya 30 menit?	88,9	88,9	88,9	88,9	88,9
2. Sulit mengerjakan kegiatan rumah tangga yang menjadi tanggung jawabnya	90,1	90,1	90,1	90,1	90,1
3. Sulit mempelajari/mengerjakan hal-hal baru, seperti untuk menemukan tempat/ alamat baru, mempelajari permainan, resep baru	90,4	90,4	90,4	90,4	90,4
4. Sulit dapat berperan serta dalam kegiatan kemasyarakatan (misalnya dalam kegiatan keagamaan, sosial)	91,3	91,3	91,3	91,3	91,3
5. Seberapa besar masalah kesehatan yang dialami mempengaruhi keadaan emosi?	90,1	90,1	90,1	90,1	90,1
6. Seberapa sulit memusatkan pikiran dalam melakukan sesuatu selama 10 menit?	90,9	90,9	90,9	90,9	90,9
7. Seberapa sulit dapat berjalan jarak jauh misalnya 1 kilometer?	88,5	88,5	88,5	88,5	88,5
8. Seberapa sulit membersihkan seluruh tubuh?	94,1	94,1	94,1	94,1	94,1
9. Seberapa sulit mengenakan pakaian?	94,5	94,5	94,5	94,5	94,5
10. Seberapa sulit berinteraksi/bergaul dengan orang yang belum dikenal sebelumnya?	92,9	92,9	92,9	92,9	92,9
11. Seberapa sulit memelihara persahabatan?	93,3	93,3	93,3	93,3	93,3
12. Seberapa sulit mengerjakan pekerjaan sehari-hari?	91,9	91,9	91,9	91,9	91,9

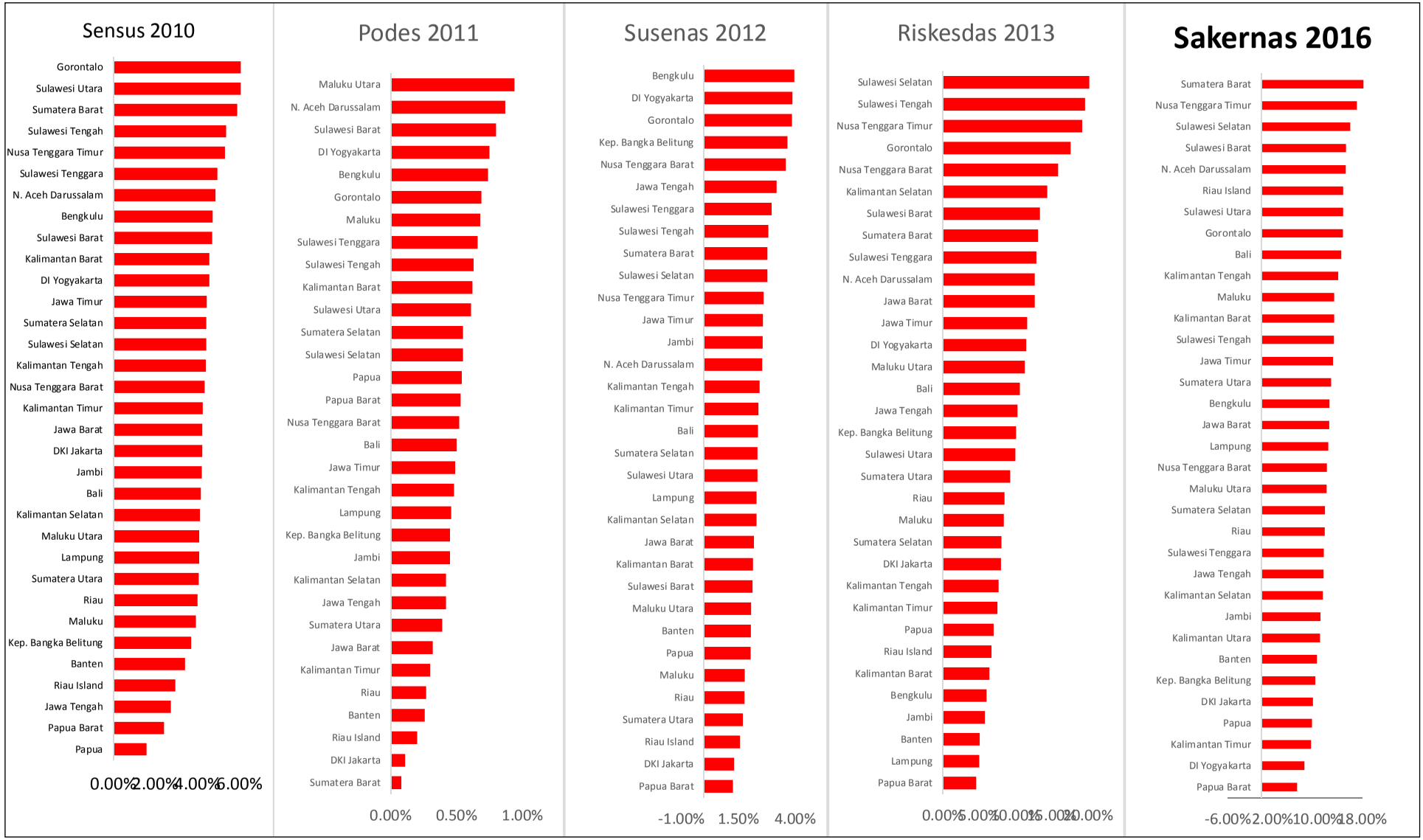
d) Podes 2014

Banyaknya penyandang cacat di desa/kelurahan:	
Jenis kecacatan	**Perkiraan banyaknya penyandang cacat**
a. Tunanetra (buta)	☐☐☐
b. Tunarungu (tuli)	☐☐☐
c. Tunawicara (bisu)	☐☐☐
d. Tunarungu-wicara (tuli-bisu)	☐☐☐
e. Tunadaksa (cacat tubuh/fisik): kelumpuhan/kelainan/ ketidaklengkapan anggota gerak	☐☐☐
f. Tunagrahita (cacat mental, keterbelakangan mental)	☐☐☐
g. Tunalaras (eks-sakit jiwa, mengalami hambatan/gangguan dalam mengendalikan emosi dan kontrol sosial)	☐☐☐
h. Cacat eks-sakit kusta: pernah mengalami sakit kusta dan telah dinyatakan sembuh oleh dokter	☐☐☐
i. Cacat ganda (cacat fisik-mental): cacat fisik (buta, tuli, bisu, bisu-tuli, atau cacat tubuh) dan cacat mental (tunagrahita atau tunalaras)	☐☐☐

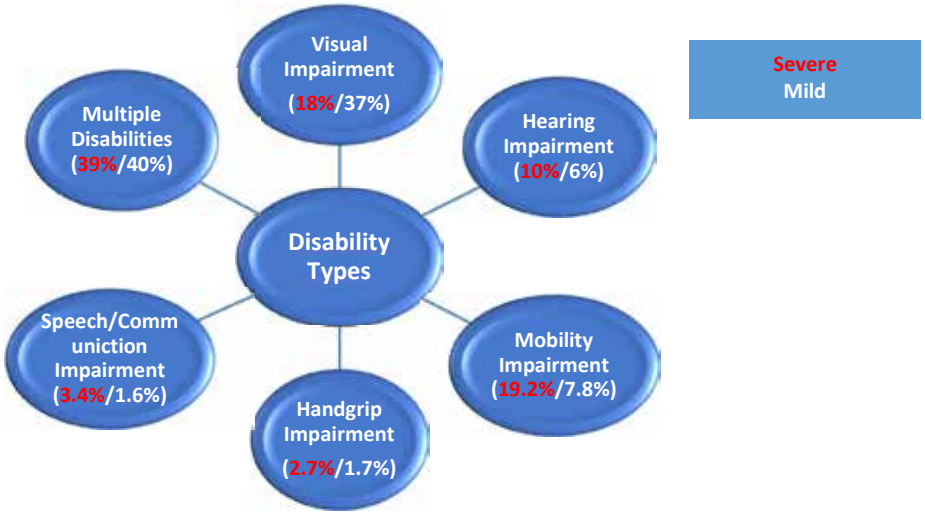
e) Sakernas 2016

4. Apakah (NAMA) mengalami kesulitan/gangguan:			
	TIDAK	SEDIKIT/SEDANG	PARAH
a. Penglihatan	1	2	3
b. Pendengaran	4	5	6
c. Berjalan/naik tangga (mobilitas)	1	2	3
d. Menggunakan/menggerakkan jari/tangan	4	5	6
e. Berbicara dan atau memahami/ berkomunikasi dengan orang lain	1	2	3
f. Lainnya (misalnya: mengingat/konsentrasi, perilaku/emosional, mengurus diri, dan lain-lain	4	5	6

2. Appendix 2: Disability Prevalence Across Provinces in Five Disability Data Sources



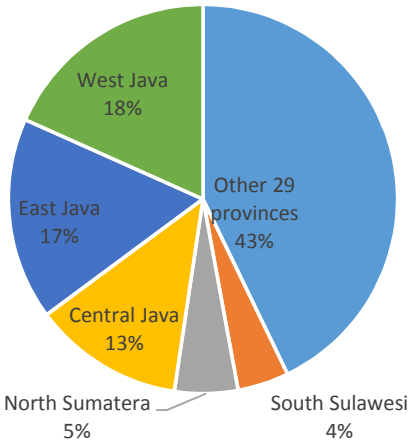
3. Appendix 3: Impairment Categories



4. Appendix 4: Disability Prevalence across Regions

Region	Prevalence of Disability		
	Mild	Severe	Total
Sumatera	10.88%	1.92%	12.80%
Jawa/Bali	9.86%	1.79%	11.65%
Kalimantan	9.82%	1.74%	11.56%
Sulawesi	12.11%	2.43%	14.54%
NT	12.10%	2.30%	14.40%
Maluku	10.47%	1.99%	12.46%
Papua	7.87%	0.62%	8.49%
Indonesia	10.29%	1.87%	12.15%

5. Appendix 5: Distribution of PWD Across Indonesia Provinces



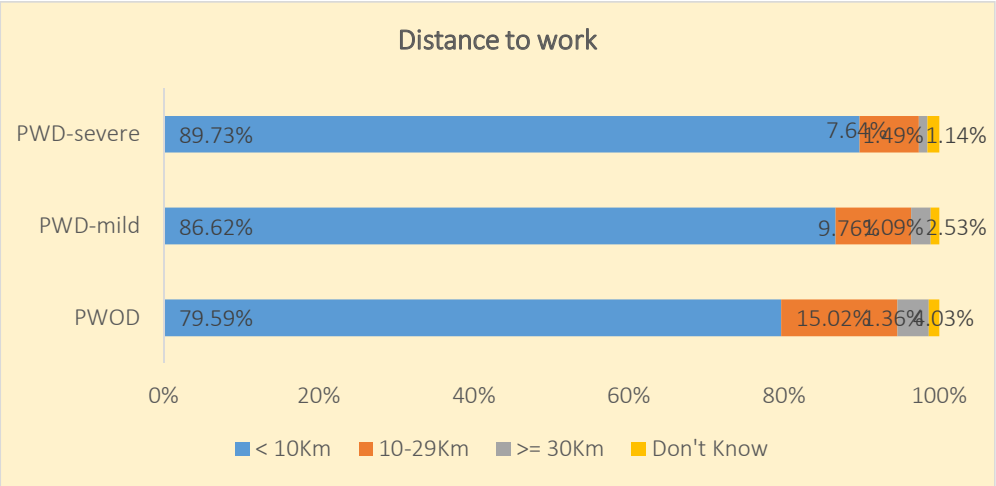
6. Appendix 6: Job Sectors

Job Sectors	PWD-mild	PWD-severe	PWD	PWOD
Agriculture, plantation, forestry, fishery	46.10%	44.76%	46.01%	29.51%
Mining	4.52%	3.72%	4.47%	6.46%
Industry	5.07%	5.69%	5.11%	7.31%
Electricity, fuel, drink water	3.83%	2.86%	3.77%	6.26%
Construction	19.14%	17.47%	19.04%	21.87%
Wholesale, restaurant, accommodation	5.20%	5.09%	5.19%	5.51%
Transportation, warehousing, communication	0.58%	0.00%	0.55%	1.70%
Finance, real estate, rental, business services	0.58%	0.61%	0.58%	0.77%
Social services, social, and individual	11.33%	10.16%	11.26%	14.95%
Others	3.67%	9.63%	4.03%	5.65%
Total	100.00%	100.00%	100.00%	100.00%

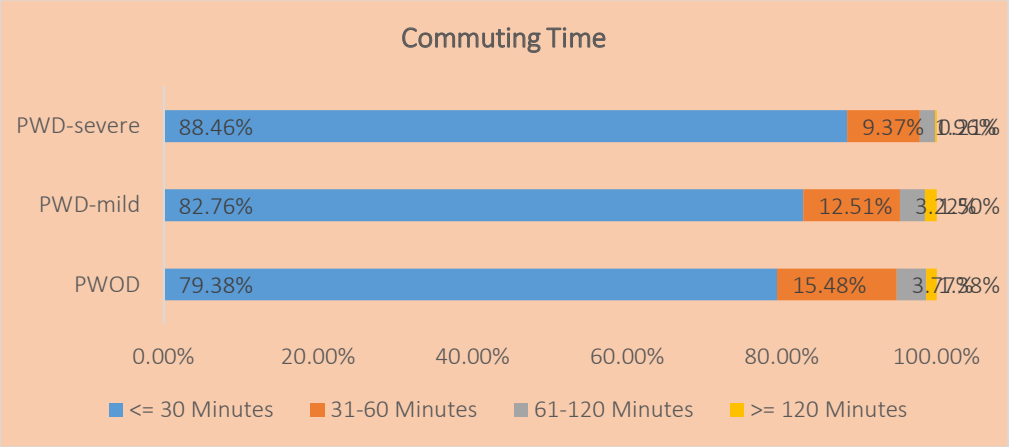
7. Appendix 7: Matrix Definition of Formal/Informal Job Status

Work type/ Work Status	Legislative member, senior official, manager	Proffessionals expert	Technicians and associate proffesionals	Clerical support workers	Service and sales workers	Agricultural and animal husbandry worker	Processing and handicraft worker	Machine operators and assemblers	Unskilled worker, janitors, and other elementary occupations	Army (TNI) and Police (POLRI)
Self employed	Formal	Formal	Formal	Informal	Informal	Informal	Informal	Informal	Informal	Informal
Self employed with temporary/unpaid worker	Formal	Formal	Formal	Formal	Formal	Informal	Formal	Formal	Formal	Informal
Self employed with permanent/paid member	Formal	Formal	Formal	Formal	Formal	Formal	Formal	Formal	Formal	Formal
Employee	Formal	Formal	Formal	Formal	Formal	Formal	Formal	Formal	Formal	Formal
Casual worker in agriculture	Formal	Formal	Formal	Informal	Informal	Informal	Informal	Informal	Informal	Informal
Casual worker in non agriculture	Formal	Formal	Formal	Informal	Informal	Informal	Informal	Informal	Informal	Informal
Unpaid/family worker,	Informal	Informal	Informal	Informal	Informal	Informal	Informal	Informal	Informal	Informal

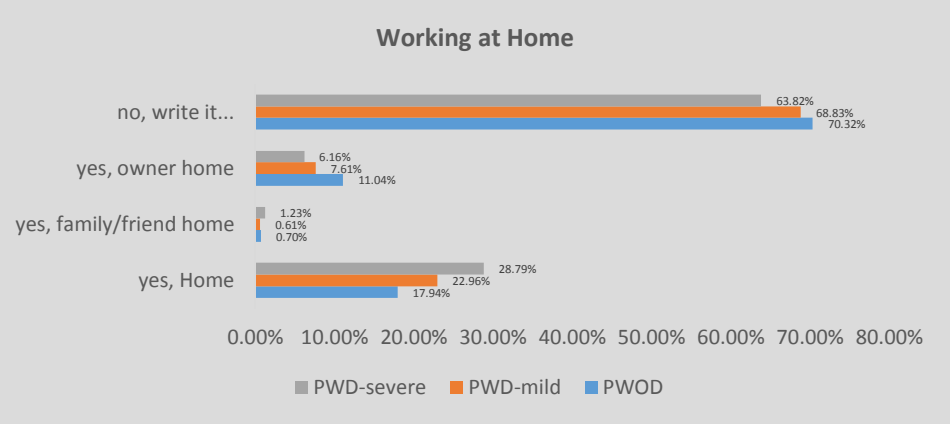
8. Appendix 8: Distance to Workplace



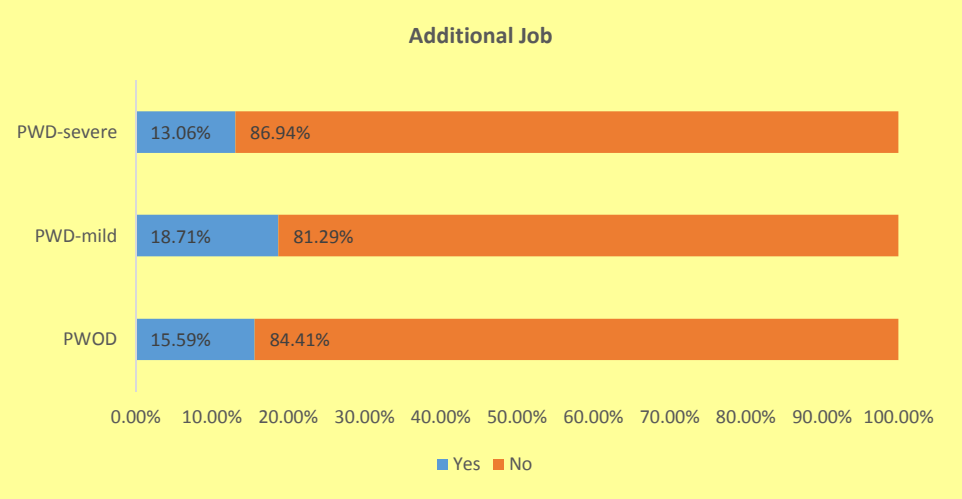
9. Appendix 9: Time to Workplace



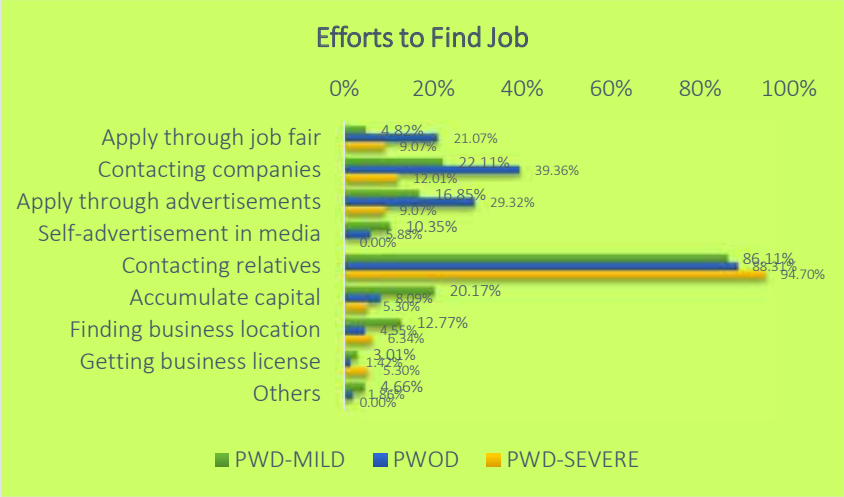
10. Appendix 10: Working at Home



11. Appendix 11: Additional Jobs

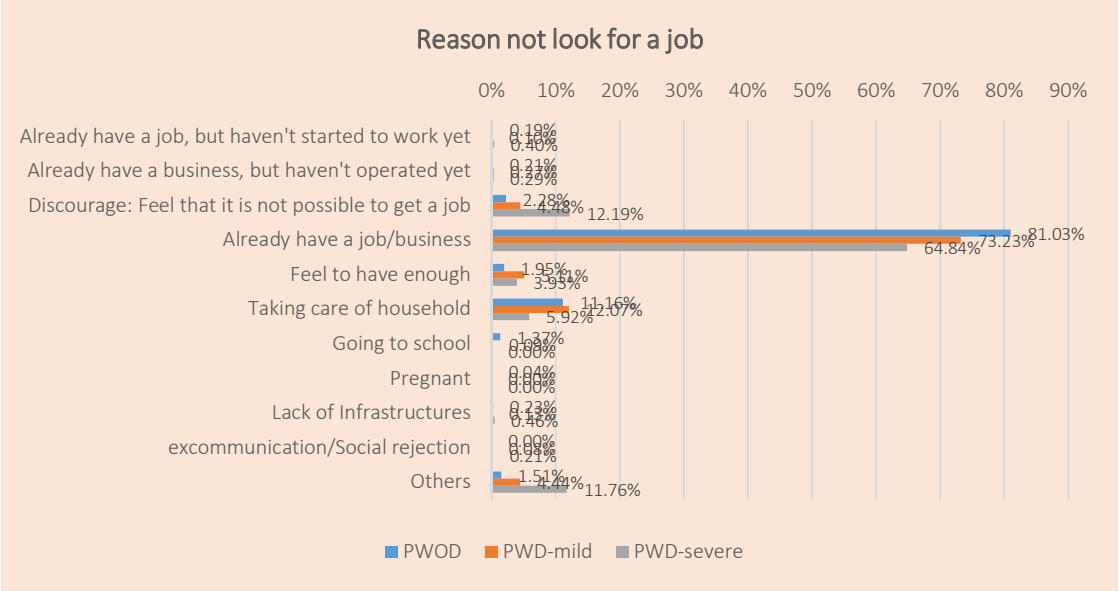


12. Appendix 12: Efforts to Find Jobs

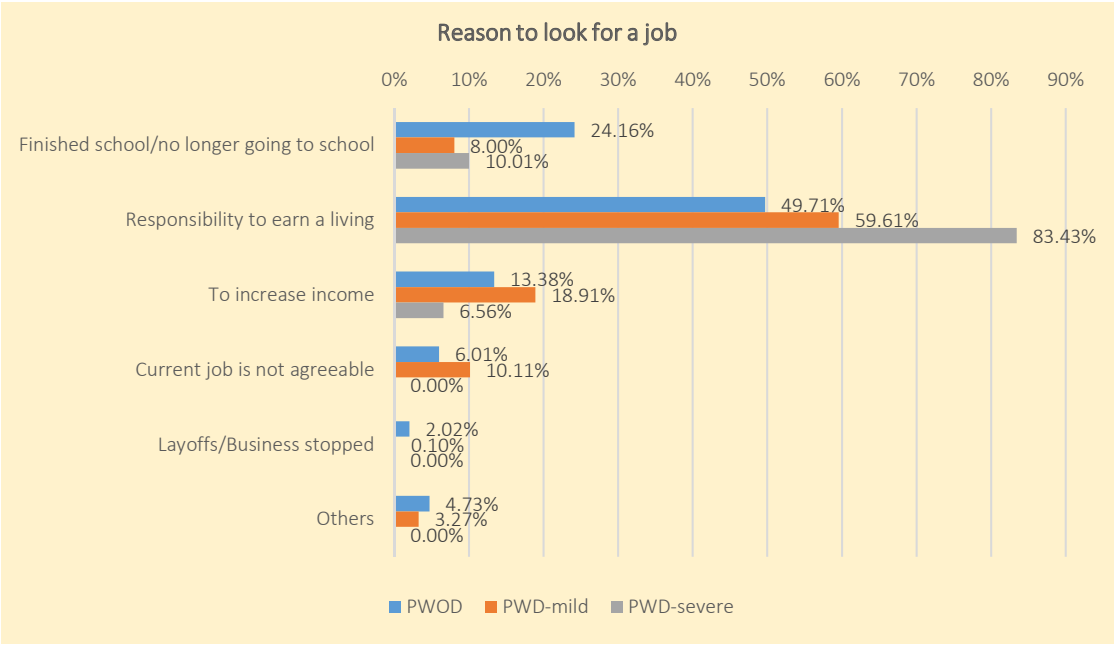


13. Appendix 13: Willingness to Work

14. Appendix 14: Reasons Not to Look for A Job



15. Appendix 15: Reasons to Look for A Job



16. Appendix 16: Social and Demographic Characteristic of PWD in Labor Force

Category	Unemployed	Employed	NLP (Housewife & Student)	NLP (Others)	Total	Unemployment Rate	Labour Force Participation Rate
Age							
Age 15-25	6.45%	31.90%	51.89%	9.75%	100.00%	16.83%	38.36%
	67,649	334,406	543,957	102,195	1,048,207		
Age 26-35	3.93%	54.41%	35.85%	5.81%	100.00%	6.74%	58.34%
	51,467	712,158	469,267	76,080	1,308,972		
Age 36-45	2.47%	68.01%	26.04%	3.49%	100.00%	3.51%	70.48%
	61,219	1,683,742	644,599	86,314	2,475,874		
Age 46-55	2.28%	71.06%	23.93%	2.73%	100.00%	3.11%	73.34%
	108,575	3,382,389	1,138,913	130,095	4,759,972		
Age 56-65	1.52%	52.48%	38.18%	7.82%	100.00%	2.81%	53.99%
	86,329	2,990,338	2,175,813	445,786	5,698,266		
Age >65	1.26%	27.72%	55.16%	15.86%	100.00%	4.35%	28.98%
	94,502	2,080,041	4,139,329	1,189,855	7,503,727		
Location							
Urban	2.51%	44.21%	42.99%	10.29%	100.00%	5.37%	46.72%
	282,145	4,970,456	4,833,836	1,156,429	11,242,866		
Rural	1.62%	53.78%	37.03%	7.56%	100.00%	2.93%	55.40%
	187,619	6,213,113	4,278,160	873,896	11,552,788		
Education							
Never Attend/Do Not Finish Primary School	1.89%	42.09%	45.83%	10.19%	100.00%	4.30%	43.98%
	197,377	4,389,193	4,778,841	1,062,237	10,427,648		
Primary School	1.91%	54.04%	36.66%	7.40%	100.00%	3.41%	55.94%
	114,713	3,249,647	2,204,778	444,819	6,013,957		
Junior Secondary School	2.45%	48.56%	41.44%	7.55%	100.00%	4.80%	51.01%
	59,425	1,177,776	1,005,034	182,999	2,425,234		
Senior Secondary School	2.83%	57.63%	31.50%	8.05%	100.00%	4.68%	60.46%
	80,098	1,629,738	890,753	227,564	2,828,153		
Higher Education	1.65%	66.98%	21.13%	10.24%	100.00%	2.40%	68.63%
	18,151	737,215	232,590	112,706	1,100,662		
Gender							
Male	2.49%	63.27%	22.08%	12.16%	100.00%	5.84%	85.72%
	265,172	6,724,582	2,347,093	1,291,939	10,628,786		
Female	1.68%	36.65%	55.60%	6.07%	100.00%	5.35%	54.85%
	204,592	4,458,987	6,764,903	738,386	12,166,868		
Marital Status							
Other Status	2.65%	30.33%	54.98%	12.04%	100.00%	8.03%	32.97%
	232,284	2,659,929	4,822,795	1,056,262	8,771,270		
Married	1.69%	60.78%	30.58%	6.95%	100.00%	2.71%	62.47%
	237,480	8,523,640	4,289,201	974,063	14,024,384		

17. Appendix 17: Social and Demographic Characteristic of PWOD in Labour Force

Category	Unemployed	Employed	NLP (Housewife & Student)	NLP (Others)	Total	Unemployment Rate	Labour Force Participation Rate
Age							
Age 15-25	8.63% 4,055,584	41.98% 19,730,980	47.52% 22,334,633	1.87% 880,894	100.00% 47,002,091	17.05%	50.61%
Age 26-35	3.56% 1,421,890	73.41% 29,301,708	22.62% 9,028,053	0.41% 164,149	100.00% 39,915,800	4.63%	76.97%
Age 36-45	1.54% 546,624	79.83% 28,287,672	18.34% 6,498,218	0.29% 102,638	100.00% 35,435,152	1.90%	81.37%
Age 46-55	1.37% 341,645	81.08% 20,260,337	17.01% 4,249,926	0.54% 135,983	100.00% 24,987,891	1.66%	82.45%
Age 56-65	1.07% 135,239	73.60% 9,313,391	22.00% 2,784,318	3.33% 421,675	100.00% 12,654,623	1.43%	74.67%
Age >65	1.11% 53,426	53.44% 2,570,040	36.18% 1,739,880	9.28% 446,077	100.00% 4,809,423	2.04%	54.55%
Location							
Urban	4.54% 4,128,716	64.02% 58,163,139	29.93% 27,186,980	1.51% 1,370,641	100.00% 90,849,476	6.63%	68.57%
Rural	3.28% 2,425,692	69.37% 51,300,989	26.30% 19,448,048	1.06% 780,775	100.00% 73,955,504	4.51%	72.65%
Education							
Never Attend/Do Not Finish Primary School	2.17% 454,334	74.45% 15,564,692	21.58% 4,510,880	100.00% 20,907,228	100.00% 20,907,228	2.84%	76.62%
Primary School	2.57% 1,104,241	68.15% 29,228,775	28.13% 12,065,831	100.00% 42,891,069	100.00% 42,891,069	3.64%	70.72%
Junior Secondary School	3.25% 1,254,390	52.68% 20,303,499	42.84% 16,510,623	100.00% 38,543,356	100.00% 38,543,356	5.82%	55.93%
Senior Secondary School	6.04% 2,814,928	67.38% 31,418,010	25.27% 11,784,731	100.00% 46,630,853	100.00% 46,630,853	8.22%	73.41%
Higher Education	5.85% 926,515	81.79% 12,949,152	11.14% 1,762,963	100.00% 15,832,474	100.00% 15,832,474	6.68%	87.64%
Gender							
Male	5.01% 4,155,981	80.72% 66,992,188	12.36% 10,258,301	1.92% 1,590,675	100.00% 82,997,145	5.84%	85.72%
Female	2.93% 2,398,427	51.92% 42,471,940	44.47% 36,376,727	0.69% 560,741	100.00% 81,807,835	5.35%	54.85%
Marital Status							
Other Status	8.64% 4,848,851	51.61% 28,971,566	37.45% 21,022,076	2.30% 1,290,816	100.00% 56,133,309	14.34%	60.25%
Married	1.57% 1,705,557	74.07% 80,492,562	23.57% 25,612,952	0.79% 860,600	100.00% 108,671,671	2.07%	75.64%

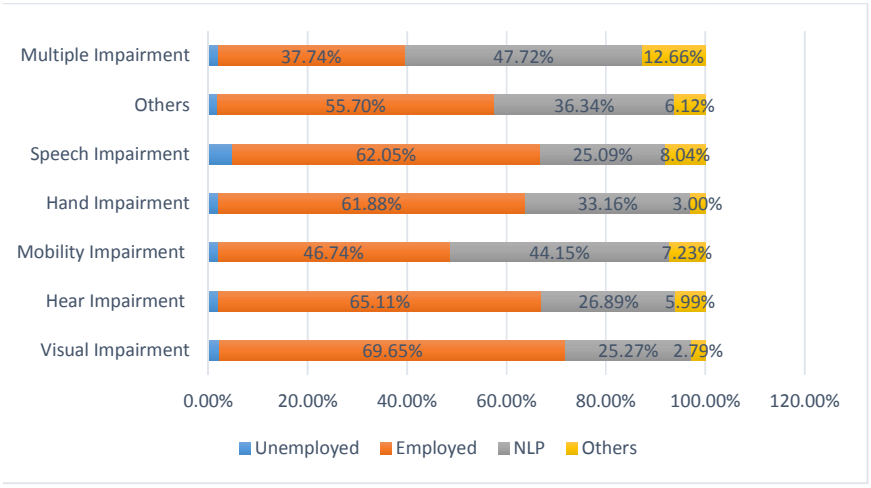
18. Appendix 18: Social and Demographic Characteristic of Employed PWD

Characteristics/ Category	Formal	Informal	Unpaid	Unpaid	Have Additional Job	No Additional Job	Total Employed
Age							
Age 15-25	48.68%	51.32%	36.80%	63.20%	6.78%	93.22%	100.00%
	162,790	171,616	123,052	211,354	22,687	311,719	334,406
Age 26-35	56.22%	43.78%	26.11%	73.89%	13.20%	86.80%	100.00%
	400,353	311,805	185,979	526,179	94,020	618,138	712,158
Age 36-45	44.64%	55.36%	35.61%	64.39%	18.87%	81.13%	100.00%
	751,695	932,047	599,515	1,084,227	317,758	1,365,984	1,683,742
Age 46-55	40.77%	59.23%	43.38%	56.62%	20.48%	79.52%	100.00%
	1,378,988	2,003,401	1,467,326	1,915,063	692,753	2,689,636	3,382,389
Age 56-65	26.68%	73.32%	54.61%	45.39%	19.78%	80.22%	100.00%
	797,798	2,192,540	1,632,962	1,357,376	591,435	2,398,903	2,990,338
Age >65	17.36%	82.64%	60.67%	39.33%	16.25%	83.75%	100.00%
	361,124	1,719,412	1,262,343	818,193	338,010	1,742,526	2,080,536
Location							
Urban	49.65%	50.35%	34.06%	65.94%	11.96%	88.04%	100.00%
	2,467,891	2,502,565	1,693,165	3,277,291	594,298	4,376,158	4,970,456
Rural	22.29%	77.71%	57.59%	42.41%	23.54%	76.46%	100.00%
	1,384,857	4,828,256	3,578,012	2,635,101	1,462,365	4,750,748	6,213,113
Education							
Never Attend/Do Not Finish Primary School	18.10%	81.90%	55.33%	44.67%	19.86%	80.14%	100.00%
	794,591	3,594,602	2,428,322	1,960,871	871,632	3,517,561	4,389,193
Primary School	28.28%	71.72%	50.15%	49.85%	19.43%	80.57%	100.00%
	919,122	2,330,525	1,629,699	1,619,948	631,355	2,618,292	3,249,647
Junior Secondary School	40.96%	59.04%	45.57%	54.43%	16.91%	83.09%	100.00%
	482,399	695,377	536,665	641,111	199,215	978,561	1,177,776
Senior Secondary School	61.04%	38.96%	33.06%	66.94%	16.14%	83.86%	100.00%
	994,863	634,875	538,859	1,090,879	263,031	1,366,707	1,629,738
Higher Education	89.77%	10.23%	18.67%	81.33%	12.40%	87.60%	100.00%
	661,773	75,442	137,632	599,583	91,430	645,785	737,215
Gender							
Male	37.32%	62.68%	45.02%	54.98%	22.04%	77.96%	100.00%
	2,509,279	4,215,303	3,027,584	3,696,998	1,482,317	5,242,265	6,724,582
Female	30.13%	69.87%	50.32%	49.68%	12.88%	87.12%	100.00%
	1,343,469	3,115,518	2,243,593	2,215,394	574,346	3,884,641	4,458,987
Marital Status							
Other Status	28.97%	71.03%	37.35%	62.65%	11.81%	88.19%	100.00%
	770,550	1,889,379	993,402	1,666,527	314,193	2,345,736	2,659,929
Married	36.16%	63.84%	50.19%	49.81%	20.44%	79.56%	100.00%
	3,082,198	5,441,442	4,277,775	4,245,865	1,742,470	6,781,170	8,523,640

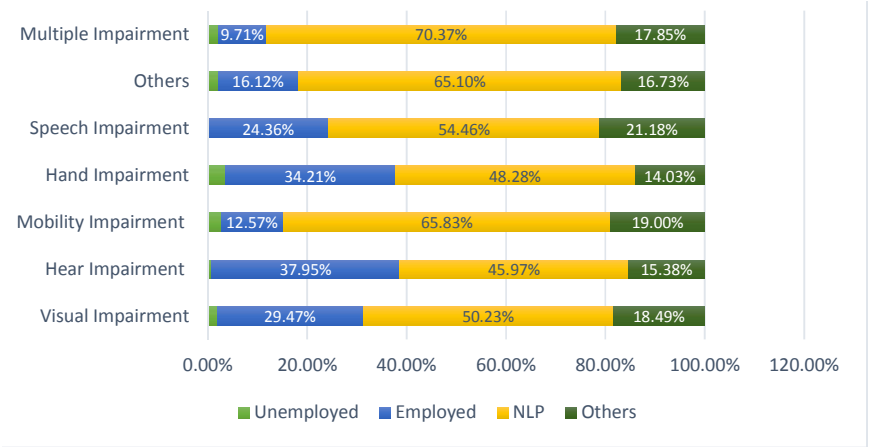
19. Appendix 19: Social and Demographic Characteristic of Employed PWOD

Category	Formal	Informal	Paid	Unpaid	Have Additional Job	No Additional Job	Total Employed
Age							
Age 15-25	60.05%	39.95%	27.49%	72.51%	7.41%	92.59%	100.00%
	11,847,577	7,883,403	5,423,973	14,307,007	1,462,793	18,268,187	19,730,980
Age 26-35	57.54%	42.46%	26.52%	73.48%	13.56%	86.44%	100.00%
	16,859,663	12,442,045	7,771,358	21,530,350	3,971,897	25,329,811	29,301,708
Age 36-45	50.45%	49.55%	34.05%	65.95%	18.17%	81.83%	100.00%
	14,270,123	14,017,549	9,632,079	18,655,593	5,139,775	23,147,897	28,287,672
Age 46-55	44.32%	55.68%	40.37%	59.63%	19.71%	80.29%	100.00%
	8,979,358	11,280,979	8,178,369	12,081,968	3,994,199	16,266,138	20,260,337
Age 56-65	32.37%	67.63%	51.93%	48.07%	21.23%	78.77%	100.00%
	3,014,989	6,298,402	4,836,055	4,477,336	1,977,559	7,335,832	9,313,391
Age >65	21.56%	78.44%	59.93%	40.07%	20.01%	79.99%	100.00%
	554,026	2,016,014	1,540,308	1,029,732	514,201	2,055,839	2,570,040
Location							
Urban	65.56%	34.44%	22.46%	77.54%	9.52%	90.48%	100.00%
	38,133,269	20,029,870	13,062,020	45,101,119	5,535,270	52,627,869	58,163,139
Rural	33.90%	66.10%	47.41%	52.59%	22.47%	77.53%	100.00%
	17,392,467	33,908,522	24,320,122	26,980,867	11,525,154	39,775,835	51,300,989
Education							
Never Attend/Do Not Finish Primary School	41.21%	58.79%	51.17%	48.83%	21.65%	78.35%	100.00%
	8,418,665	12,011,050	7,964,331	7,600,361	3,369,343	12,195,349	15,564,692
Primary School	32.77%	8,418,665	42.56%	57.44%	18.61%	81.39%	100.00%
	9,579,039	19,649,736	12,439,629	16,789,146	5,439,604	23,789,171	29,228,775
Junior Secondary School	45.15%	54.85%	36.82%	63.18%	13.78%	86.22%	100.00%
	9,167,212	11,136,287	7,474,893	12,828,606	2,798,685	17,504,814	20,303,499
Senior Secondary School	68.34%	31.66%	25.12%	74.88%	11.79%	88.21%	100.00%
	21,471,643	9,946,367	7,890,693	23,527,317	3,704,489	27,713,521	31,418,010
Higher Education	90.77%	9.23%	12.45%	87.55%	13.50%	86.50%	100.00%
	11,754,200	1,194,952	1,612,596	11,336,556	1,748,303	11,200,849	12,949,152
Gender							
Male	52.55%	47.45%	29.79%	70.21%	18.28%	81.72%	100.00%
	35,201,123	31,791,065	19,957,788	47,034,400	12,243,305	54,748,883	66,992,188
Female	47.85%	52.15%	41.03%	58.97%	11.34%	88.66%	100.00%
	20,324,613	22,147,327	17,424,354	25,047,586	4,817,119	37,654,821	42,471,940
Marital Status							
Other Status	57.74%	42.26%	25.30%	74.70%	9.24%	90.76%	100.00%
	16,728,447	12,243,119	7,329,217	21,642,349	2,677,629	26,293,937	28,971,566
Married	48.20%	51.80%	37.34%	62.66%	17.87%	82.13%	100.00%
	38,797,289	41,695,273	30,052,925	50,439,637	14,382,795	66,109,767	80,492,562

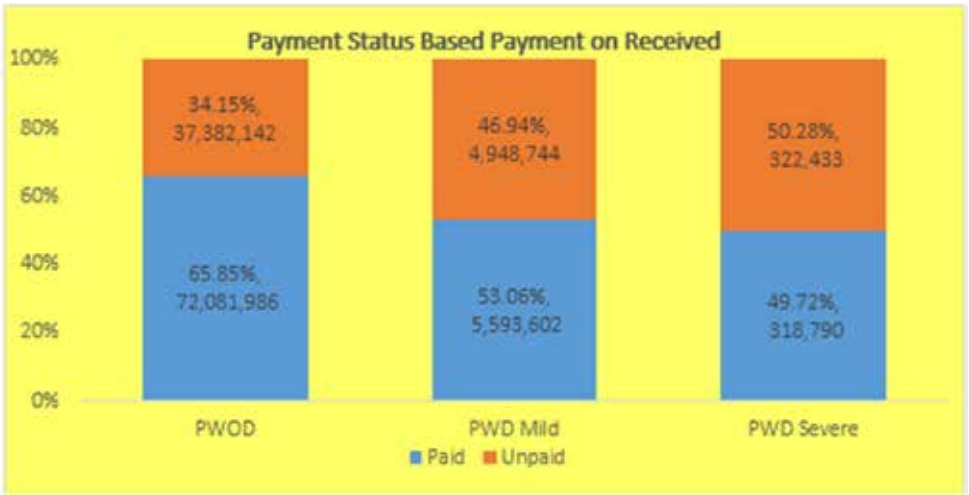
20. Appendix 20: Status Based on Disability Types of PWD with Mild Disability



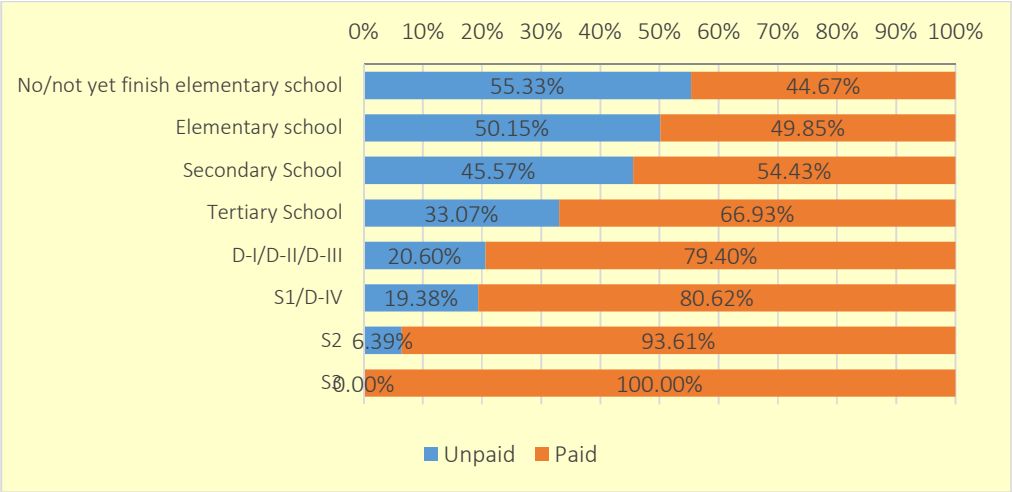
21. Appendix 21: Status Based on Disability Types of PWD with Severe Disability



22. Appendix 22: Payment Status Based on Payment Received



23. Appendix 23: Payment Status Based on Education for PWD



24. Appendix 24: Payment Method