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MORALITY BEFORE KNOWLEDGE

The effect of education, training, and work experience on the employment probability of people with disabilities in Indonesia

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ABSTRACT

Background: The significant gap in labor force participation among Indonesia's 22.5 million persons with disabilities poses an urgent challenge to inclusive development, despite the existence of affirmative policy frameworks. This study aims to analyze the influence of human capital, measured by education level, training, and work experience, on the probability of employment among persons with disabilities. **Methods:** This study uses a mixed-methods approach, processing quantitative data from the February 2024 National Labor Force Survey with a logistic regression (logit) model and reinforced with qualitative analysis through in-depth interviews. **Findings:** The results of the study show that higher education and participation in job training significantly increase the probability of employment for people with disabilities. However, this study reveals a crucial contrasting finding: secondary education has no significant effect, while work experience and residence on the island of Java are negatively correlated with employment opportunities. Qualitative interviews explain this paradox, in which systemic discrimination, stigma, and structural barriers in the workplace effectively negate the benefits of human capital. **Conclusion:** Investment in human capital (supply side) is important but insufficient if not balanced with intervention on the demand side. The main barriers to the inclusion of persons with disabilities in the workforce lie in discriminatory practices by employers and the lack of an accommodative work environment. Therefore, policy recommendations must shift from merely training individuals to strict law enforcement, incentives for proper accommodation, and changes in corporate culture to create a truly inclusive job market. **Novelty/Originality of this article:** This study uniquely combines recent National Labor Force Survey 2024 data and mixed methods to reveal how discrimination and structural barriers undermine human capital returns for persons with disabilities in Indonesia.

KEYWORDS: qualifications; probability of employment; persons with disabilities.

1. Introduction

People with disabilities are the largest minority group in the world, with an estimated 1.3 billion people (WHO, 2023). This status puts them in a vulnerable position, as they generally face various systemic barriers in their daily lives. Various international reports also concur with these findings, showing that persons with disabilities are more vulnerable to poverty, face health challenges, and are often prevented from participating fully in social and economic activities (Mitra et al., 2011). The accumulation of these barriers contributes to a complex cycle of social exclusion, distancing persons with disabilities from inclusive economic participation.

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The global situation is also reflected in Indonesia, where there are an estimated 22.97 million people with disabilities who face more complex challenges due to regional diversity and socioeconomic conditions. This means that nearly one in ten people in Indonesia has a disability. The problems they face are exacerbated by local conditions, such as public facilities and transportation that are not yet fully disability-friendly, as well as negative perceptions in society regarding their abilities (Adioetomo et al., 2014). As a result, this group is often left behind and unable to participate optimally in the national development process. One of the most important areas to consider in relation to this issue is the employment sector.

Data from the Ministry of Manpower shows an alarming situation, where out of 5.17 million people with disabilities of productive age, only 1.04 million are counted as part of the workforce. This figure indicates a very low Labor Force Participation Rate (LFPR) of only 20.14% . This low participation rate indicates that there is a large potential human resource that has not been utilized to support the country's economy.

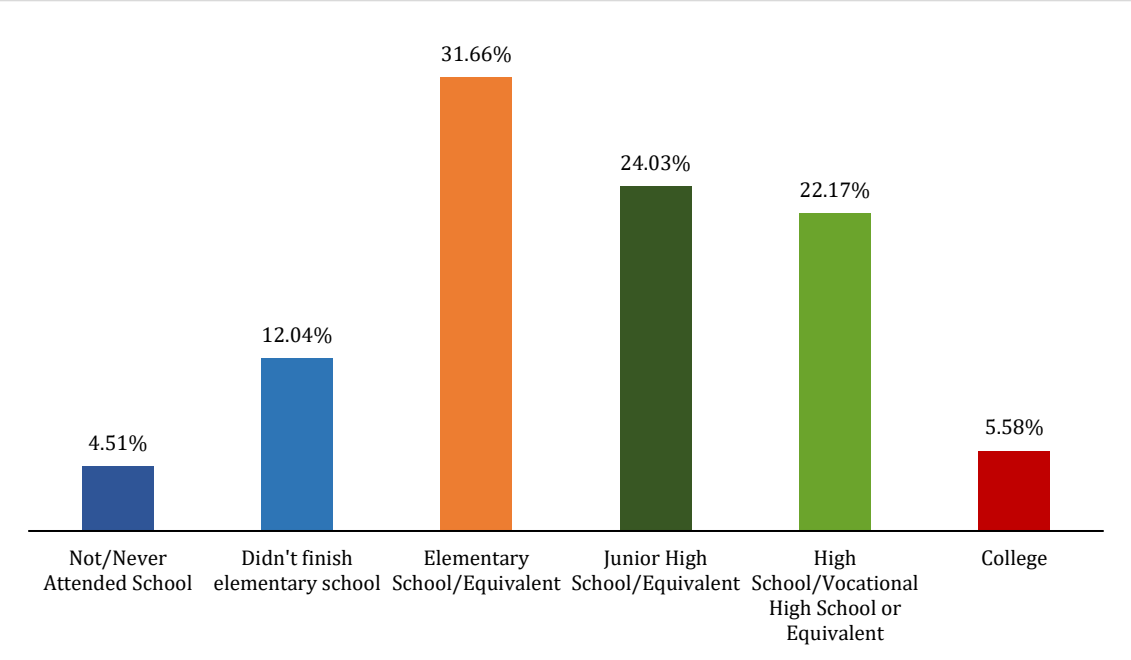

Fig. 1. Latest education for persons with disabilities in Indonesia (Zaravina, 2024)

The root cause of this lack of human resource readiness often stems from the level of education. The level of educational attainment among persons with disabilities in Indonesia is still relatively low, with the majority (31.66%) only completing primary school. In addition, data from the National Socioeconomic Survey shows that 17.2% of persons with disabilities aged 15 years and above have never attended school (Statistics Indonesia, 2024). This condition is caused by various obstacles, ranging from inflexible curricula to unsupportive school environments, resulting in graduates who are often ill-prepared to compete in the workforce (Adioetomo et al., 2014). Outside of formal education, skills training (vocational) and work experience emerge as equally important determining factors. Vocational training serves as a strategic bridge to overcome the gap between academic competencies and the specific needs of the industrial world (Al Shuaili, 2025). Meanwhile, work experience gained through internships or previous jobs serves to break the "vicious cycle" of difficulty in finding employment due to lack of experience, yet inability to gain experience due to lack of prior work (Schur et al., 2013). This practical experience provides tangible evidence of technical capacity and adaptability, which are key considerations for employers (Schur et al., 2013).

Based on the various issues described above, this study aims to analyze the influence of three main factors, namely education, training, and work experience, on employment

opportunities for people with disabilities in Indonesia. This research is considered important to encourage a change in policy perspective, from one that tends to be purely assistance-oriented to a more strategic approach that focuses on human resource investment. Thus, this study is expected to provide more detailed and applicable recommendations to create a more inclusive job market for all, in line with the mandate of national development.

2. Methods

2.1 Data and data sources

This study uses secondary data sourced from the February 2024 National Labor Force Survey conducted by the Central Statistics Agency of the Republic of Indonesia. National Labor Force Survey is an official government survey designed to provide comprehensive employment data, including information on labor force participation rates, open unemployment, types of employment, and demographic characteristics of individuals, including persons with disabilities. The data used in this study focuses entirely on the period of February 2024, in order to provide an up-to-date picture of the employment dynamics of persons with disabilities in Indonesia.

The February 2024 National Labor Force Survey data was selected as the main source because it is nationally representative and contains all the variables required for this study, such as disability status, highest level of education, employment status, gender, and region of residence. This data also enables analysis of the current disability situation in relation to employment distribution and provides detailed information on employment conditions based on individual characteristics. By using the most recent data, this study seeks to provide an up-to-date understanding of the gaps in access to education and labor force participation among people with disabilities in Indonesia.

2.2 Logit model

The logit model was chosen in this study because it has the most suitable characteristics for analyzing the relationship between independent variables (education, training, and work experience) and binary dependent variables (employment status of persons with disabilities: employed or unemployed). The logit model assumes that the error distribution follows a cumulative logistic distribution, which theoretically captures changes in the probability of events more stably than ordinary linear models (Saab et al., 2024). In addition, the Logit model produces coefficients that can be interpreted in the form of odds ratios, making it easier to understand the extent of the influence of education on the likelihood of employment (Norton & Dowd, 2017).

Empirically, the Logit model is widely used in labor studies, labor economics, and socioeconomics, especially when the focus of research is on predicting the odds or probability of a binary event (Wooldridge, 2010). The Logit model is chosen because it is more robust to the possibility of heteroscedasticity, which often occurs in models with binary dependent variables (Hosmer et al., 2013). In addition, the logit model is very effective in estimating the probability of an event occurring based on predictor variables. In the context of this study, variables such as education, training, and work experience are important factors that influence a person's likelihood of working. By using the logit model, researchers can see how much each factor influences the probability of employment for people with disabilities, which is the main focus of this study.

In the data processing, researchers will use the age squared variable. The use of the age squared variable in regression analysis is not only important for capturing the non-linear relationship between age and outcome, but also highly relevant when linked to a person's employment status. The relationship between age and employment status is not always linear; for example, a person's chances of working full-time or maintaining employment tend to increase during their productive years, but decline after a certain age due to health

factors or retirement, forming an inverted U-shaped curve (Previtali et al., 2022). By including age squared, the model can describe this dynamic more accurately and show that older workers have a higher risk of job instability than younger age groups. Furthermore, research shows that older workers with contingent employment status tend to be more vulnerable to psychosocial risks and job loss than permanent workers, indicating a non-linear interaction between age and employment status (Previtali et al., 2022). Thus, the age squared variable helps to understand how changes in employment status at various stages of life are not constant, but follow a non-linear pattern influenced by age and job type.

Before using the Logit model, the researchers tested the model's suitability using a likelihood ratio test to compare whether the addition of control variables such as disability severity, age, gender, marital status, region of residence, and region classification significantly improved the model's suitability. The researcher created two models to be compared, namely the reduced model and the full model. The reduced model only included the main independent variables, namely education, training, and work experience. Meanwhile, the full model included the main independent variables and control variables, namely education, training, work experience, disability severity, age, gender, marital status, region of residence, and region classification. From these two models, it will be apparent which model is more suitable for use in this study.

Table 1. Likelihood ratio test

LR χ^2 (df = 9)	Prob > χ^2
2420.85	<0.001

The results of the Likelihood Ratio Test show a Chi-Square statistic of 2420.85 with a p-value of 0.0000, which means that the difference between the reduced model and the full model is statistically significant. With highly significant test results and a more comprehensive model, it can be said that the full model is more appropriate and provides a more accurate picture of the factors that influence employment opportunities in the population. This model is able to capture greater variation and provide a more complete understanding of the dynamics of the workforce, which cannot be explained by simpler models such as the reduced model. Therefore, the full model can be considered a more suitable and representative model for describing the phenomenon being analyzed.

2.3 In-depth interview

In addition to using logistic regression to analyze the relationship between independent variables and the employment status of persons with disabilities, this study also employed qualitative methods through in-depth interviews. This approach was used to enrich the understanding of quantitative findings, particularly in exploring the experiences, perceptions, and real barriers faced by persons with disabilities in accessing employment. In-depth interviews allow researchers to obtain contextual information that cannot be revealed statistically, as well as provide a deeper perspective on the social and structural complexities that influence work participation (Creswell & Clark, 2018). By combining quantitative and qualitative methods, this study adopts a mixed methods approach that produces a more comprehensive and practically relevant analysis.

Before conducting in-depth interviews with persons with disabilities, researchers must take strict ethical measures. The first step is to ensure that the informed consent process is clear and adaptive, including providing research information in an easily understandable format and allowing sufficient time for participants to consider their participation independently or with the support of a companion if necessary (Ho et al., 2018). Researchers must also assess participants' capacity to give informed consent and accommodate special communication needs, such as the use of sign language, large print materials, or technological aids, to ensure equal and dignified participation.

In addition, it is important to maintain the privacy and confidentiality of participant data, and to anticipate potential psychological risks arising from the discussion of sensitive

topics during interviews (Barrow et al., 2022). Researchers need to prepare protocols for handling signs of stress or trauma in participants, and ensure access to psychosocial support if necessary. Researchers must also understand and respect the social, cultural, and historical experiences of persons with disabilities, avoid all forms of discrimination or stigmatization, and involve the disability community in the design and implementation of the research so that the results are relevant and beneficial to them (Agmon et al., 2016).

2.4 Variabel description

2.4.1 Independent variables

The main independent variables in this study consist of three important aspects that are assumed to have an influence on the employment status of persons with disabilities, namely education level, training, and previous work or business experience. These three variables are used to measure the forms of human resource investment that play a role in improving individual capabilities and competitiveness in the labor market. First, the level of education is measured based on the highest level of formal education completed by individuals at the time of the February 2024 National Labor Force Survey. In this study, the measurement of the education variable is divided into three categories, namely Low and Lower Middle as variables representing persons with disabilities who did not attend school to those who attended junior high school/equivalent, Upper Middle as variables representing persons with disabilities who attended senior high school/equivalent, and High representing higher education such as Diploma to Postgraduate. The representation of Low and Lower Middle education is described through the baseline used in this study. According to Statistics Indonesia (2024), in the National Labor Force Survey, the highest level of education reflects the highest formal level of education completed by respondents, without considering whether they are currently pursuing further education. This variable is ordinal and categorized into several hierarchical levels, ranging from no/no schooling to higher education (Diploma/Bachelor's/Postgraduate).

Second, job preparation training is measured based on individuals' experience in participating in job training programs and/or obtaining skill certificates. This data was also collected through the February 2024 National Labor Force Survey and includes training organized by government, private, and community institutions. According to the World Bank (2022), job training plays an important role in bridging the gap between the education system and labor market needs, especially for vulnerable groups such as people with disabilities. Training serves as a remedial mechanism to improve skills that have not been acquired through formal education. In the context of persons with disabilities, training also contributes to building confidence and work readiness through curriculum adaptation and the use of assistive technology (Schur et al., 2013). Therefore, in the logit analysis model, the Training variable is used as an additional indicator to measure the strengthening of work capabilities outside of formal education.

Third, previous work or business experience is a variable that represents whether an individual has a history of working in the formal or informal sector prior to the survey. This information is obtained from items in National Labor Force Survey that ask about previous work or self-employment experience. Work experience is considered important because it can strengthen an individual's employability through the accumulation of practical skills, understanding of work culture, and relevant social networks (OECD, 2021). For persons with disabilities, having previous work experience can also increase employers' confidence in their ability to carry out job responsibilities (Pasin & Karatekin, 2024). In the logit model framework, work experience is used to control for the historical influence of an individual's involvement in the world of work on the current probability of returning to work.

Overall, these three main independent variables are constructed to capture the capabilities and competitiveness of persons with disabilities in the labor market and are used in logit model estimates as predictors of employment opportunities. Analysis of the influence of each variable is expected to provide an empirical picture of the interaction

between education, training, and work experience in increasing the economic participation of persons with disabilities in Indonesia.

2.4.2 Dependent variables, control variables and operationalization of variables

Employment status is the main focus as the dependent variable in this study. This variable measures whether individuals with disabilities are included in the employed or unemployed (unemployed or inactive) group. This study uses a binary approach (0 = not working, 1 = working) to measure participation in the workforce, which allows testing the influence of individual characteristics and socioeconomic conditions on employment status. The logit method approach used in this study makes it possible to estimate the probability of individuals with disabilities being in employment status based on individual characteristics and certain socioeconomic factors. Thus, through this approach, the study can identify factors that significantly influence the chances of persons with disabilities obtaining employment, with the results interpreted in the form of odds ratios that facilitate policy analysis.

In this study, several control variables were used to strengthen the estimation of the effect of education on the probability of employment among persons with disabilities, namely the level of disability severity, age, gender, marital status, province of residence, and urban/rural classification. The use of these control variables aims to ensure that the relationship between education and employment status is not distorted by external factors that also have the potential to affect the participation of persons with disabilities in the workforce. First, the level of difficulty covers six aspects of disability measured in the 2024 National Social Survey, namely difficulty seeing, hearing, walking, moving fingers, speaking, and other difficulties. Each condition is coded based on the level of difficulty, ranging from "completely unable" to "no difficulty". This variable is included to control for the direct impact of physical limitations on the possibility of working, given that the severity of disability significantly affects ability and access to the world of work (Mitra, 2018).

Second, age is included as a continuous variable to reflect the age of respondents in years. Age is an important determinant of labor force participation because it is closely related to the employment life cycle, work readiness, and the risk of age-based discrimination. In some cases, the logistic regression model also includes the age squared variable (age^2) to capture non-linear effects, namely when employment opportunities increase during productive age and decline again towards old age (Borjas, 2010). Third, gender is coded as a binary variable (1 = male, 0 = female) and is used to capture the influence of gender structures on labor force participation. Research shows that women with disabilities face double barriers to employment, both because of their disability and because of social norms that limit women's participation in economic activities (Schur et al., 2013). By including this variable in the model, the analysis can distinguish the effects of education more fairly between gender groups.

Fourth, marital status is used as a social indicator that can influence work needs and motivation. This variable is classified into four categories: unmarried, married, divorced, and widowed. Marital status correlates with household responsibilities, social stability, and social networks, all of which can affect a person's employment opportunities, including for persons with disabilities (ILO, 2021). Fifth, provincial area is used to capture the effects of geographical heterogeneity in the context of employment. This variable is categorical and reflects the administrative location of the respondent's residence. Regional differences, such as levels of economic development, job availability, and the effectiveness of regional inclusion policies, can affect employment opportunities for persons with disabilities. Therefore, provincial controls are necessary to avoid estimation bias due to regional variations that are not directly observed.

Sixth, the use of urban/rural classification variables in research on the employment status of persons with disabilities in Indonesia is important for identifying differences in access and employment opportunities between the two regions (Nopiah & Pangaribowo, 2023). Research shows that the percentage of persons with disabilities working in rural

areas is higher than in urban areas, partly because it is easier to find unskilled work in rural areas, while discrimination against persons with disabilities tends to be higher in urban areas. In addition, persons with disabilities in urban areas tend to face stiffer job competition and more limited access to formal employment, even though educational and training opportunities are more readily available in cities (ILO, 2021). Thus, the urban/rural classification is crucial for understanding inequalities and formulating more inclusive employment policies for persons with disabilities in Indonesia (Septiawan et al., 202).

All of these control variables were included in the logit model to ensure that the relationship between education and the probability of employment among persons with disabilities was analyzed more objectively, and to reflect the influence of socio-demographic, geographic, and technological factors that have been shown to significantly affect individual participation in the labor market. With these controls, the model can produce more robust estimates that more closely reflect the actual conditions of labor participation among persons with disabilities in Indonesia.

To obtain valid and relevant analysis results, this study formulated the operationalization of variables based on the conceptual and technical definitions of each indicator, particularly those listed in the February 2024 National Labor Force Survey. This operationalization includes dependent variables, main independent variables, and several control variables that are considered to influence the probability of employment for persons with disabilities. All variables are grouped and coded according to the requirements of binary logistic regression (logit) estimation, using a categorical or ordinal approach depending on the nature of each variable. The use of variable classifications in accordance with National Labor Force Survey guidelines also aims to ensure data comparability and the integrity of the analysis results.

3. Results and Discussion

3.1 Descriptive statistics and data frequency analysis

Descriptive statistical analysis was conducted to provide an overview of the characteristics of respondents with disabilities who were the subjects of the study. This analysis included the frequency distribution and percentage of each variable used in the study, including dependent, independent, and control variables. The purpose of this descriptive analysis is to understand the basic profile of respondents, such as their level of education, training, work experience, demographic characteristics, and disability conditions, before conducting further inferential analysis using a logistic regression model. This analysis is important as an initial stage in quantitative research to ensure that the data structure is in accordance with basic assumptions and representative of the target population (Hair et al., 2014).

Table 2 presents descriptive statistics from data on persons with disabilities in Indonesia, covering several important variables. Based on the available data from a total of 10,960 respondents, a complete profile of the sample can be drawn. Demographically, this sample is dominated by middle-aged individuals, with an average age of 49.97 years and a productive age range of 15 to 64 years. The gender composition is fairly balanced, with 48% being male, and the vast majority of respondents (85.6%) being married. In terms of location, around 47.7% of respondents live in urban areas, and 23.9% reside on the island of Java.

In terms of capabilities and economics, more than half of the respondents (56.4%) are recorded as working. However, the level of participation in formal training is still relatively low, at only around 12.7%, even though almost half of the respondents (49%) have previous work experience. Their educational background shows that the majority (75.1%) completed their education at the elementary and junior high school levels, 18.2% at the senior high school level, and only 6.7% have a college education. Regarding disability status, 78.5% of respondents had mild disabilities, 13.3% had moderate disabilities, and 8.2% had

severe disabilities, indicating that disability is an important characteristic in this sample population.

Table 2. Descriptive statistical analysis

Variables	Observation	Mean	Std. deviation
Employment	10,960	0.563	0.495
Primary & lower secondary education	10,960	0.750	0.432
Upper secondary education	10,960	0.181	0.385
Higher education	10,960	0.067	0.250
Training	10,960	0.126	0.332
Work experience	10,960	0.490	0.499
Mild disability	10,960	0.785	0.410
Moderate disability	10,960	0.132	0.339
Severe disability	10,960	0.082	0.274
Age	10,960	49.966	11.950
Gender	10,960	0.480	0.499
Marital status	10,960	0.856	0.350
Area of residence	10,960	0.239	0.426
Area classification	10,960	0.477	0.499

Based on table below, demographically, with a total of 10,960 respondents, this sample was dominated by middle-aged individuals, with an average age of 49.97 years and a productive age range of 15 to 64 years. The gender composition is fairly balanced, with 48% of respondents being male, and the vast majority of respondents (85.6%) being married. 47.7% of respondents live in urban areas, and 23.9% reside on the island of Java.

Table 3. Descriptive statistical analysis and frequency and proportion of data

Variable	Frequency	Proportion (%)
Working	6,178	56.3
Not working	4,782	43.6
Primary & lower secondary education	8,230	75.09
High school education	1,993	18.18
High education	737	6.72
Training	1,391	12.69
No training	9,569	87.31
Work experience	5,373	49.02
No work experience	5,587	50.98
Mild disability	8,604	78.5
Moderate disabiliy	1,457	13.29
Severe disability	899	8.20
Age (15-64 years old)	10,960	100
Male	5,262	48.01
Female	5,698	51.99
Married	9,385	85.63
Single	1,575	14.37
Javanese	2,624	23.94
Non-Javanese	8,336	76.06
City	5,231	47.73
Village	5,729	52.27

In terms of capabilities and economics, more than half of respondents (56.4%) are employed. However, participation in formal training remains low, at only around 12.7%, even though nearly half of respondents (49%) have previous work experience. Educational background shows that the majority (75.1%) completed primary and junior high school, 18.2% completed senior high school, and only 6.7% attended higher education. Regarding disability status, 78.5% of respondents had mild disabilities, 13.3% had moderate

disabilities, and 8.2% had severe disabilities, indicating that disability is an important characteristic in this sample population.

Table 4. Logistic regresion results

Variable	OR	P-value
High school education	0.901	0.091*
Higher education	1.572	0.000***
Training	1.449	0.000***
Work experience	0.791	0.000***
Moderate disability	0.207	0.000***
Severe disability	0.192	0.000***
Age	1.220	0.000***
Age 2	0.997	0.000***
Gender	2.856	0.000***
Marital status	2.814	0.000***
Area of residence	0.850	0.003***
Area classification	0.616	0.000***
Constant	0.014	0.000***

Significant level ***P<.01. **P<.05. *P<0.1

The results of logistic regression on table 3 estimates show several factors that significantly influence employment opportunities for persons with disabilities in Indonesia. In terms of human capital, higher education has proven to be a strong driver, with university graduates with disabilities having a 57.2% higher odds of employment than those with low to lower-middle education. This finding is in line with various studies that confirm that higher education significantly improves competitiveness and access to more decent jobs for persons with disabilities (Morwane et al., 2021). Similarly, those who have undergone training experience a 44.9% increase in their odds of employment compared to those who have not, confirming the important role of vocational training in bridging the skills gap in the labor market. Conversely, the Work Experience variable is significantly negatively correlated, with those who have worked having a 20.9% lower odds of employment. This phenomenon may indicate that the data captures a group of experienced workers who have left the labor force (e.g., due to early retirement or becoming discouraged workers) and does not mean that work experience itself is not valuable.

This finding can also be explained by the concept of skill obsolescence, which is when a person's skills become outdated or irrelevant to the current job market. According to McGuinness et al. (2017), skill obsolescence occurs when individuals do not have the opportunity to update their skills in line with technological changes and job demands. This is generally experienced by older workers or those who do not receive continuous training, so that even though they have previous work experience, their skills become less competitive.

Disability status is the strongest negative predictor. People with moderate disabilities have a 79.3% lower odds of working, and people with severe disabilities have an 80.8% lower odds compared to people with mild disabilities. This is consistent with global literature showing that severity and functional barriers are major obstacles to labor force participation (Adioetomo et al., 2014). Demographic characteristics also show a very significant influence; men have a 185.6% higher odds of working than women, highlighting the phenomenon of "double discrimination" often faced by women with disabilities (Gandigbe et al., 2025). In addition, those who have been married have 181.4% higher odds than those who are single, which can be attributed to greater economic demands and family responsibilities (Mincy et al., 2009). The age variable shows an inverted U-shaped non-linear relationship, a classic pattern in labor economics where productivity and employment opportunities increase at a young age until they peak, then decline with age (Scarfe et al., 2024). Based on statistical data analysis, an important turning point was found to occur at the age of 43. This age is considered to be the peak of a person with a disability's

career, where employment opportunities for persons with disabilities are at their best, then slowly decline as the person with a disability ages.

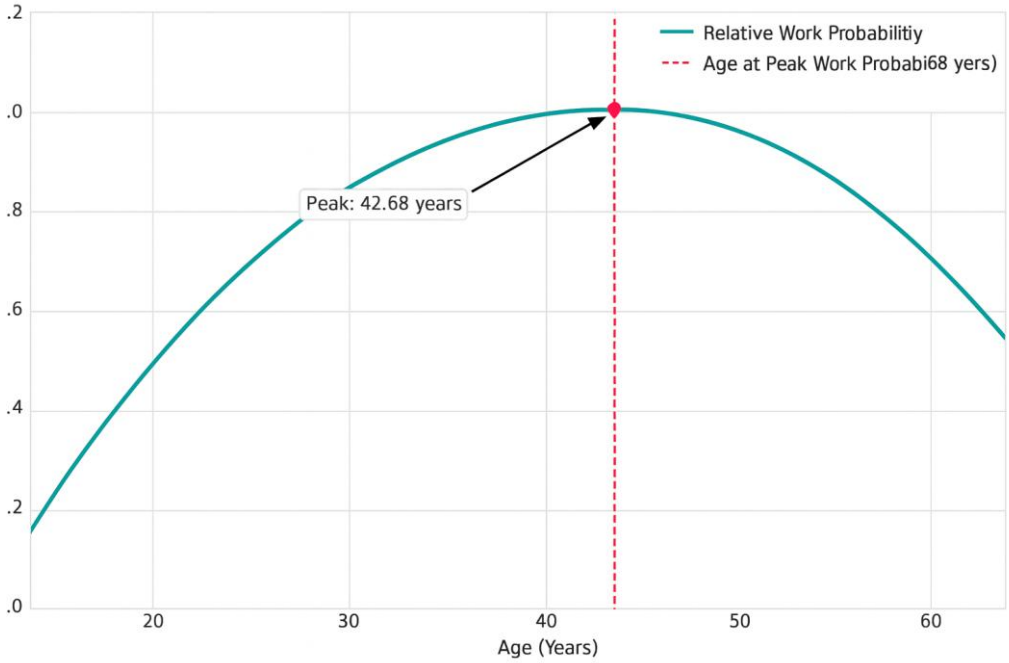

Fig. 2. Probability of employment based on age

From a geographical perspective, the analysis shows that persons with disabilities residing on the island of Java have a 15% lower odds of working, and those living in urban areas have a 38.4% lower odds of working compared to their reference group (outside Java and rural areas). This paradox can be explained by Indonesia's economic structure, where the informal and agricultural sectors, which are more dominant outside Java and in rural areas, tend to be more accessible to persons with disabilities than the highly competitive formal urban labor market (Kurniati & Abdillah, 2025). Overall, this model is statistically significant (Prob > chi^2 = 0.000) in explaining the determinants of employment opportunities for persons with disabilities. Quantitative analysis has mapped the factors that determine employment opportunities for people with disabilities, but in-depth interviews with informants provide the voices, context, and real experiences behind each number. By triangulating, the meaning of each variable in the regression model can be fully understood.

These statistical findings are supported by a strong statement from the experience of A (25), an IT graduate with a physical disability, that higher education is a major driver of confirmed employment opportunities. He emphasizes that formal qualifications are crucial capital for overcoming initial stigma.

> *"A bachelor's degree is like an 'entry ticket', sis. Without it, HR might just see me as 'someone with a crutch'. But because I have a degree and proven skills, they see me as an 'asset'. This is what my friends who only graduated from high school or junior high school don't have (A)."*

The importance of training was also emphasized by B as a complement to a diploma. However, the surprising statistical finding that work experience has a negative correlation can be explained by his observations of the surrounding environment, which indicate the phenomenon of workers who have left the workforce.

> *"Work experience is important, but the data may capture other phenomena. For example, my neighbor used to work in a factory until he was 50, then he was laid off. Due to his age*

and disability, he couldn't find another job. According to the data, he is 'experienced', but now he is not actively working. Perhaps there are many cases like this that make work experience meaningless (B). "

Furthermore, the regression results showing that the more severe the disability, the smaller the chances of employment, are clearly illustrated in the reality faced by informant F (20), a person with hearing impairment, who feels that his condition is a direct obstacle due to the stigma that still clings to him.

"Companies are often hesitant because I cannot hear. They worry about communication within the team, even though I can adapt. The stigma that disability is troublesome is still very strong (F)."

Meanwhile, disparities in opportunities based on gender and marital status were also confirmed. F felt strongly that she experienced double discrimination as a woman, while V felt that her marital status was an economic driver.

"I also feel that if the candidate is male, the company is more likely to accept him. Perhaps he is considered more reliable. It's not fair, but that's how I feel (F)."

An even more extreme condition was described by V (36), a person with a hand disability, when talking about his neighbor, who reflects the group of people with severe disabilities in the data, for whom work participation is almost impossible without full support.

"I have a friend, sis, who has had a severe disability since birth. Let alone working, even daily activities require full assistance from family members. So realistically, it's impossible for them to work outside the home. Their livelihood depends entirely on their family (V)."

The findings regarding age forming an "inverted U" curve are also supported by observation A in formal work environments, where there is a peak productive age for workers. Meanwhile, the opportunity gap based on gender and marital status has also been confirmed. F feels strongly that there is double discrimination as a woman, while V feels that marital status is an economic driver.

"I feel that if the candidate is male, the company is more likely to accept them. Perhaps they are considered more reliable. It's not fair, but that's how I feel (F)."

"Back when I was single, I just worked enough to support myself. Since getting married and having children, the responsibilities are different, sis. I have no choice but to work harder to earn money, which is why I started and took this workshop seriously (V)."

The unique statistical finding that employment opportunities are higher in rural areas and outside Java can be understood through the lens of the informal sector.

"I gave up looking for office work in the big city. The competition is fierce, and transportation is inconvenient. In the village, I can start my own business. Maybe the income isn't as much as in the city, but I can be independent. Here, what matters is the results of your work, not your appearance or your degree (U)."

Overall, these in-depth interviews add a human dimension to the statistical data. Each number in the regression model tells a story of the struggles and survival strategies experienced by persons with disabilities, providing a holistic and comprehensive understanding of their employment issues in Indonesia.

3.2 Discussion

The findings of this study clearly demonstrate the relevance of Human Capital Theory in determining employment opportunities for people with disabilities in Indonesia. Pioneered by Gary Becker, this theory states that investing in individuals through education and training will increase their productivity and value in the labor market (Becker, 1964). The regression results, which show that higher education graduates have a 57.2% higher odds of being employed and training participants have a 44.9% higher odds, quantitatively support this premise. Qualitative data provides concrete evidence of how this mechanism works in the field. The acknowledgment by source A (25) that his bachelor's degree served as an "entry ticket" that shifted employers' perceptions from focusing on physical limitations to focusing on expertise is a perfect illustration of how human capital acts as a signal of quality (Herrmann et al., 2023) that can reduce information asymmetry and initial stigma. Thus, investment in education and skills is not merely a social program, but a fundamental strategy to enhance the economic competitiveness of persons with disabilities.

However, human capital alone has proven insufficient when faced with structural barriers, a reality that can be analyzed in depth through the framework of Social Inclusion. This concept emphasizes that full participation in society is hindered by various barriers, whether physical, institutional, or social (Djatmiko et al., 2025). The regression results showing that a more severe level of disability and being female drastically reduce employment opportunities are not a reflection of a lack of human capital, but rather a manifestation of the process of social exclusion. The testimony of F (20), who feels the stigma that "disability is troublesome" and discriminatory treatment because of her gender, highlights the barriers that hinder her participation. This is in line with the concept of "double discrimination" where marginalized groups face multiple barriers (Lindsay et al., 2025). The paradox of lower employment opportunities in urban areas can also be seen as a failure of structural inclusion, where competitive formal labor markets and unfriendly physical environments create greater barriers than the informal sector in rural areas.

Ultimately, to understand the choices and life strategies of the interviewees, the Capability Approach proposed by Amartya Sen offers the most holistic lens. This approach argues that development should not only focus on resources (such as income or education), but on a person's substantive freedom to achieve the life they value (Sen, 1993). Decision V (36) to leave the competition in the city and build a business in the village is a concrete example of the implementation of capability. He did not just passively look for work, but actively used his agency to transform his resources (skills and family support) into a "functioning" that he valued highly, namely becoming independent and providing for his family. His motivation was not purely economic, but rather his "responsibility" as a husband and father. This shows that the ultimate goal of empowering people with disabilities is not simply to place them in a job, but to expand their capabilities so that they can choose and live a dignified life according to their own reasons and values (Cobley, 2012).

4. Conclusions

This study concludes that employment opportunities for persons with disabilities in Indonesia are determined by a complex interaction between individual capital, social barriers, and economic structures. Quantitatively, human capital factors such as higher education and training have been shown to be significant positive predictors, a finding reinforced by qualitative data where formal qualifications are recognized as a "ticket" to overcoming stigma. However, this study also clearly shows that individual capital is often negated by exclusionary factors beyond the control of persons with disabilities. The severity of disability and gender discrimination are major barriers rooted in social stigma, while rigid urban labor market structures create a paradox where the informal sector in rural areas actually offers greater accessibility. Thus, it can be concluded that in order to work, a person with a disability must not only invest in themselves, but also be able to navigate a maze of systemic social and structural barriers.

By combining statistical analysis, in-depth interviews, and various theoretical frameworks, this study arrived at a comprehensive understanding. It is clear that the journey of a person with a disability in finding work is not simply a matter of having skills or not. This journey is the end result of a tug-of-war between the individual's internal strengths (such as education), external pressures from the environment (such as stigma and discrimination), and the individual's ability to create their own life choices (such as entrepreneurship). Ultimately, genuine employment opportunities for people with disabilities are realized through a combination of these three elements: competent personal abilities, an accepting social environment, and the space to choose a life path that is considered valuable.

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References

Adioetomo, S. M., Mont, D., & Irwanto. (2014). *Persons with disabilities in Indonesia: Empirical facts and implications for social protection policies.* Palgrave Macmillan.

Agmon, M., Sa'ar, A., & Araten-Bergman, T. (2016). The person in the disabled body: A perspective on culture and personhood from the margins. *International Journal for Equity in Health, 15,* 147. https://doi.org/10.1186/s12939-016-0437-2

Al Shuaili, A. S. T. (2025). Bridging the skills gap: Technical and vocational education and training student competencies and labor market alignment in Oman. *Vocational and Technical Education, 2*(3). https://doi.org/10.54844/vte.2025.0991

Barrow, J. M., Brannan, G. D., & Khandhar, P. B. (2022). Research ethics. In *StatPearls.* StatPearls Publishing. https://europepmc.org/article/NBK/nbk459281

Becker, G. S. (1964). *Human capital: A theoretical and empirical analysis.* University of Chicago Press.

Borjas, G. J. (2010). *Labor economics* (5th ed.). McGraw-Hill Education.

Creswell, J. W., & Clark, P. V. L. (2018). *Designing and conducting mixed methods research* (3rd ed.). SAGE Publications. https://collegepublishing.sagepub.com/products/designing-and-conducting-mixed-methods-research-3-241842

Cobley, D. S. (2012). *Towards economic empowerment for disabled people: Exploring the boundaries of the social model of disability in Kenya and India*. Doctoral dissertation, University of Birmingham. https://etheses.bham.ac.uk/id/eprint/4050/

Djatmiko, G. H., Sinaga, O., & Pawirosumarto, S. (2025). Digital transformation and social inclusion in public services: A qualitative analysis of e-government adoption for marginalized communities in sustainable governance. *Sustainability, 17*(7), 2908. https://doi.org/10.3390/su17072908

Gandigbe, G. V. S., Mignanwande, Z. F., Tossou, Y. B., Codjo-Seignon, K. L. M., Agbo, S. I. E., Gbaguidi, F. N. C., … & Gine-March, A. (2025). Inequities and factors associated with gender and disability in NTD-endemic communities in Benin and Côte d'Ivoire: An intersectional approach to interventions. *Frontiers in Global Women's Health, 6,* 1575082. https://doi.org/10.3389/fgwh.2025.1575082

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2014). *Multivariate data analysis.* Pearson Education Limited.

Herrmann, A. M., Zaal, P. M., Chappin, M. M. H., Schemmann, B., & Lühmann, A. (2023). "We don't need no (higher) education": How the gig economy challenges the education-income paradigm. *Technological Forecasting and Social Change, 186,* 122136. https://doi.org/10.1016/j.techfore.2022.122136

Ho, P., Bulsara, C., Patman, S., Downs, J., & Hill, A.-M. (2018). Addressing challenges in gaining informed consent for a research study investigating falls in people with intellectual disability. *British Journal of Learning Disabilities, 46*(2), 92–100. https://doi.org/10.1111/bld.12217

Hosmer, D. W., Lemeshow, S., & Sturdivant, R. X. (2013). *Applied logistic regression* (3rd ed.). Wiley. https://doi.org/10.1002/9781118548387

ILO. (2021). *World employment and social outlook: Trends 2021.* International Labour Organization. https://www.ilo.org/publications/world-employment-and-social-outlook-trends-2021

Kurniati, Y., & Abdillah, A. (2025). Comparative labor law studies in Indonesia and Malaysia: Social–economic inequality and governance of migrant workers. *Laws, 14*(6), 79. https://doi.org/10.3390/laws14060079

Lindsay, S., Phonepraseuth, J., Thomson, N., Stinson, J. N., & Smile, S. (2025). Exploring clinicians' suggestions for addressing discrimination towards children and youth with disabilities with multiple minoritized identities. *Child: Care, Health and Development, 51*(5), e70155. https://doi.org/10.1111/cch.70155

McGuinness, S., Pouliakas, K., & Redmond, P. (2017). *How useful is the concept of skills mismatch?* (No. 10786). IZA Discussion Papers. https://www.econstor.eu/handle/10419/170770

Mincy, R., Hill, J., & Sinkewicz, M. (2009). Marriage: Cause or mere indicator of future earnings growth? *Journal of Policy Analysis and Management, 28*(3), 417–439. https://doi.org/10.1002/pam.20439

Mitra, S. (2018). *Disability, health and human development.* Palgrave Macmillan

Mitra, S., Posarac, A., & Vick, B. C. (2011). *Disability and poverty in developing countries: A snapshot from the World Health Survey.* World Bank social protection working paper, (1109). https://dx.doi.org/10.2139/ssrn.1908128

Morwane, R. E., Dada, S., & Bornman, J. (2021). Barriers to and facilitators of employment of persons with disabilities in low- and middle-income countries: A scoping review. *African Journal of Disability, 10,* 833. https://doi.org/10.4102/ajod.v10i0.833

Nopiah, R., & Pangaribowo, E. N. (2023). Determinants of labor participation and wages toward people with disabilities in Indonesia. *Indonesian Journal of Disability Studies, 10*(2), 287–303. https://doi.org/10.21776/ub.ijds.2023.10.02.12

Norton, E. C., & Dowd, B. E. (2017). Log odds and the interpretation of logit models. *Health Services Research, 53*(2), 859–878. https://doi.org/10.1111/1475-6773.12712

OECD. (2021). *OECD employment outlook 2021: Navigating the COVID-19 crisis and recovery.* OECD Publishing. https://doi.org/10.1787/5a700c4b-en

Pasin, T., & Dogruoz Karatekin, B. (2024). Determinants of social participation in people with disability. *PLOS ONE, 19*(5), e0303911. https://doi.org/10.1371/journal.pone.0303911

Previtali, F., Picco, E., Gragnano, A., & Miglioretti, M. (2022). The relationship between work, health and job performance for a sustainable working life: A case study on older manual employees in an Italian steel factory. *International Journal of Environmental Research and Public Health, 19*(21), 14586. https://doi.org/10.3390/ijerph192114586

Saab, G., Jamhour, T., El-Hayek, M., & Khayr Yaacoub, H. (2024). The logit model: A prediction of future economic events. *Journal of Mathematical Finance, 14*(1), 124–129. https://doi.org/10.4236/jmf.2024.141006

Scarfe, R., Singleton, C., Sunmoni, A., & Telemo, P. (2024). The age-wage-productivity puzzle: Evidence from the careers of top earners. *Economic Inquiry, 62*(2), 584–606. https://doi.org/10.1111/ecin.13191

Schur, L., Kruse, D., & Blanck, P. (2013). *People with disabilities: Sidelined or mainstreamed?* Cambridge University Press.

Septiawan, L., Utomo, A., & Wiesel, I. (2024). Urban informality, culture, and participation of people with mobility impairments in Tegalrejo, Indonesia. *Disability & Society, 40*(4), 950–978. https://doi.org/10.1080/09687599.2024.2312225

Sen, A. (1993). Capability and well-being. In *The quality of life* (pp. 30–53). Oxford University Press. https://doi.org/10.1093/0198287976.003.0003

Statistics Indonesia. (2024). *Penduduk usia 15 tahun ke atas menurut penyandang disabilitas dan tingkat pendidikan, Survei Sosial Ekonomi Nasional (Susenas) 2024*. Badan Pusat Statistik. https://www.bps.go.id/statistics-table/1/MTkwOSMx/penduduk-usia-15-tahun-ke-atas-menurut-penyandang-disabilitas-dan-tingkat-pendidikan.html

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). MIT Press. https://mitpress.mit.edu/9780262232197/econometric-analysis-of-cross-section-and-panel-data-second-edition/

World Bank. (2022). *World development report 2022: Finance for an equitable recovery.* World Bank. https://doi.org/10.1596/978-1-4648-1730-4

WHO. (2023). *Disability*. World Health Organization. https://www.who.int/news-room/fact-sheets/detail/disability-and-health

Zaravina, P. (2024, December 12). 17,85% Penyandang Disabilitas di Indonesia Tidak Pernah Sekolah, Apa yang Salah? *GoodStats Data.* https://data.goodstats.id/statistic/1785-penyandang-disabilitas-di-indonesia-tidak-pernah-sekolah-apa-yang-salah-P7JYL

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