Educational Attainment of People with Disabilities: A Comparison Between Public School and Private Schools

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Abstract

Individuals with disabilities exhibit lower educational achievements. This research analyzes the successful educational attainment of individuals with disabilities by comparing government and private educational institutions, gender, and residential location. The research methodology includes descriptive analysis and probit regression to compare independent variables (family size, location, gender) concerning educational achievements. The results indicate disparities in achievements between both educational institutions, with private institutions showing a higher tendency to achieve higher educational levels. The analysis also highlights the importance of considering specific factors such as location and gender in accessing education. This study underscores the necessity for inclusive educational policies that consider social factors to provide equal opportunities for individuals with disabilities within public school environments.

Keywords: Education for Persons with Disabilities, Public and Private Schools, Location, Gender, Propensity Score Matching
JEL classification: I21; I24; I28; J16; J71

1. Introduction

Individuals with disabilities constitute the world’s largest minority group, with an estimated 16% of the global population experiencing some form of disability (World Health Organization, 2023). The majority of these individuals reside in developing
countries (World Bank, 2022). Due to health conditions and mobility limitations, people with disabilities are more likely to experience social and economic setbacks, such as declining education levels, decreased work productivity, and being trapped in conditions of poverty. The intersection of disability and poverty is intricate (Palmer, 2011). This relationship is often depicted as a mutually reinforcing cycle, where poverty exacerbates the health conditions of individuals with disabilities, and the barriers faced by individuals with disabilities lead to increased poverty levels (Grech, 2016). Moreover, the lack of available and affordable support (social protection services) for severely disabled individuals can burden family members due to the high costs of care, thereby reducing average household income. This illustrates the broad socioeconomic impact of disabilities (ILO, 2019).

Education is a gateway for individuals with disabilities to acquire skills and improve their quality of life. Individuals with disabilities have the right to equitable access to education. However, several socio-economic indicators suggest that individuals with disabilities have not yet achieved the desired level of well-being. For instance, research by (Sari, Bachtiar, and Taifur, 2023) reveals that only 7% of individuals with disabilities are part of the national workforce in Indonesia, with around 70% being primary school graduates. People with disabilities need to improve their educational achievements and develop the workforce competencies necessary to improve skills to achieve equality in human development and ensure a better future (Sari, Bachtiar, and Putri, 2023).

Public schools have made significant progress in admitting students with disabilities, recognizing the benefits of inclusive education (Davern, 1997). Public schools have made efforts to integrate students with disabilities into more inclusive settings (Stiefel et al., 2018), leading to the development of special assistance guidelines in learning (Edgington, 1969). On the other hand, special education systems also play a role in improving access to education for students with disabilities by promoting inclusion but they still face challenges (Rozalski, Stewart, and Miller, 2010). These challenges include over-identification and under-identification of specific student subgroups, delays in identifying and serving students, and bureaucratic and financial barriers (Obiakor et al., 2019). Despite these efforts, students with disabilities still lag behind their non-disabled peers in educational achievements and are often perceived as lowering expectations. The goal of providing appropriate public education in the least restrictive environment for students with special needs requires collaboration between the education system and society.

Education plays a crucial role in achieving economic independence and social inclusion for individuals with disabilities. Identifying internal and external factors that determine the duration of someone's schooling is necessary. For instance, research by (Granja, Janssen, and Johansen, 2018) highlights that personal characteristics, family relationships, and school variables can determine the duration of education for individuals with disabilities. Personal characteristics can be proxied by gender, with studies (Bramley, 1990) finding gender issues among disabled adolescents. Additionally, family size and socio-economic factors also impact the length of attendance at school for individuals with disabilities (Luo et al., 2020; Tan, 2020).

Externally, educational providers, both government and private, significantly influence the duration of attendance at school for individuals with disabilities. Children with
disabilities face significant barriers in accessing education because schools often fail to provide appropriate services, impacting their ability to attend school. Consequently, these children have lower probabilities of enrollment, participation, and completion of basic education (Moyi, 2017; Luo, Yang, et al., 2020). Moreover, the pattern of placing students in special education schools in urban areas also contributes to the impact on school attendance, with a higher percentage of disabled students placed in separate special education classes rather than inclusive settings (Mizunoya, Mitra, and Yamasaki, 2016). Hence, this research aims to identify the highest educational qualifications attained and estimate the extent to which public schools can improve the educational attainment levels for individuals with disabilities in the Indonesian labor market, supported by their socio-demographic factors such as educational providers, gender, family size, and residential location. With the results obtained from this study, we believe it can significantly contribute to the development of studies on human resource development, particularly for individuals with disabilities in the field of education.

2. Theoretical Framework

The evolution of human resource theory, pioneered by (Schultz, 1972; Becker, 1992), introduced the concept of human capital, stating that a community's resources, comprised of educated and trained workers, determine the productivity of production factors. Recent ideas emphasize that skills and resources are crucial in building trust, cooperation, and commitment toward common goals, commonly referred to as social capital. Social capital can be defined as variations or combinations of social aspects or social organizations and institutionalized sets of relationships, such as trust, networks, and norms that facilitate cooperative actions (Bourdieu and Lamaison, 1986); Coleman, 1988; Putnam, 1994).

Social theories have extensively developed research on social inequalities and educational achievements, as exemplified by (Boudon, 1974) argued that persistent educational differences among social groups exist because students make different decisions regarding advancing to the next stage in the educational hierarchy, which correlates with their social class. In essence, students from higher social classes tend to take risks and progress to higher levels to avoid lower social status than their family's orientation. Conversely, students from lower social classes are more likely to decide against further education, as their attained education represents at least equal status compared to those they know in their daily lives.

Several studies inspired by Bourdieu have documented how middle-class students benefit from their home environments by absorbing learning skills and habits that promote school success. According to a study from Australia (Bennett and Hay, 2007), parental involvement in education can have a positive effect on the social skills of physically disabled children. Other analyses from the United States and Canada found that parental socioeconomic status significantly contributes to the academic outcomes of children with learning disabilities (Ireys et al., 1996); (Connor and Spreen, 1968). On the other hand, the influence of family size on educational attainment shows varying impacts. Some studies indicate a negative relationship, such as the Blake Study in the United States, which suggests that individuals with many siblings tend to have shorter educations.
However, a recent reduction in the number of siblings may contribute to improved verbal abilities and increased years of schooling (Blake, 1981).

In a geographical context, residential mobility and housing location create different environments in the composition of social capital. This selection mechanism groups families into neighborhoods based on socioeconomic differences. Studies (Pennington and Bishop, 2009) have documented that disabled students who are infrequently found in rural areas face challenges due to limited access to educators and other resources compared to larger urban areas. The impact of the environment involves the quantity and quality of public infrastructure, such as resources allocated to schools, libraries, recreational facilities, and community-based efforts to support child development. Environmental influence also involves collective social exchange processes among residents. Selection into peer groups where educational achievement is valued and expected can influence choices to pursue further education. It may also occur that social networks among parents function differently in areas with different social compositions. One study concluded that environments dominated by middle-class parents tend to collectively respond when faced with problematic school situations, differing from situations in working-class dominant backgrounds (Horvat, Weininger, and Lareau, 2003), which tend to be more prevalent in urban areas.

3. Research Methods

3.1. Data

This research uses secondary data from the National Labor Force Survey (Sakernas) for August 2021. The samples selected in the research were people with disabilities who had completed their highest level of education at formal schools either run by the government or private sector, totaling 12,550 respondents.

3.2 Operational Definition of Variables

After the sample and unit of analysis are determined, the next step is to form variables according to the relevant definitions. Operational definitions of variables can be seen in Table 1.

Table 1. Operational Definition

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beginning</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependent Variable</td>
<td>Educational Achievement</td>
<td>Highest level of formal education what works _ completed by the holder disability:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1&quot;Not completed elementary school&quot; 2&quot; completed elementary school&quot; 3&quot; completed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>junior high school&quot; 4&quot; completed SMA/SMK/MAK&quot; 5&quot; completed DiplomaI /II/III&quot;</td>
</tr>
</tbody>
</table>
|                  |                                    | 6" completed DiplomaIV /S1” 7” Completed Masters/ Applied Masters " 8 "Finish S3"
| Treatment        | Education Provider                 | People with Disabilities graduate from school 1: State and Service          |
3.3 Analysis Method

The objective of this study is to examine the correlation between individuals with disabilities attending public schools and their educational attainment, the highest level they achieve, in Indonesia. Researchers hypothesize that certain individuals with disabilities may autonomously choose between enrolling in public or private schools, leading to potential selection bias in certain sample groups. These decisions made by individuals with disabilities represent a deliberate choice. For instance, some individuals with disabilities consciously opt for public schooling due to its comparatively lower cost in contrast to private schools. Such a choice could potentially elevate the educational accomplishments of disabled individuals to higher levels. Consequently, the systematic variation between attending public and private schools pertains to the differences in incurred expenses for students. This particular situation renders the educational status of respondents graduating from public schools endogenous. Hence, the application of econometric methods beyond Ordinary Least Squares (OLS) becomes imperative to circumvent potential estimation biases. Propensity score matching (PSM) emerges as a suitable method to alleviate these concerns.

3.3.1 Propensity Score Matching Model (PSM)

Propensity Score Matching (PSM) is a statistical technique grounded in a probability model utilized to identify a comparison group from a selected cohort that did not receive treatment (non-intervention). Its purpose is to ensure that the observed characteristics of the chosen group resemble those of the treated group (Khandker, Koolwal, and Hussain, 2010). These observed groups are then matched based on probability or propensity scores. The average impact of the program’s treatment is subsequently calculated as the difference in the average outcomes between these two groups (Li et al., 2022). The validity of PSM relies on two critical conditions: (a) conditional independence (i.e., unobserved factors do not affect participation) and (b) substantial overlap or influence in propensity scores across various participant and non-participant samples.

In this study, various methodologies were employed to align participants and non-participants based on their propensity scores, which encompassed nearest neighbor matching (NN), radius matching, stratified and interval matching, and kernel matching along with local linear matching (LLM). Specifically, the propensity score matching (PSM) method was utilized to assess the impact of highly educated individuals with disabilities.
engaged in the formal sector, constituting the treatment group, against those with lower education employed in the informal sector, forming the control group (Li et al., 2022).

When treatment is binary, the treatment group is assigned a value of 1, whereas the control group is assigned a value of 0. The potential outcome is then defined as $Y_i(D_i)$ for each individual $i$, where $i = 1...n$, and $n$ represents the population. The effect of treatment on an individual can be explained as follows:

$$T_i = Y_i(1) + Y_i(0)$$  \hspace{1cm} (1)

Where ($T_i$) represents the treatment effect on the individual $i$, $Y_i(1)$, and $Y_i(0)$ signify the potential outcome (income) with and without treatment, specifically having higher education and working in the formal sector. Generally, the average impact of higher education and formal sector employment on individuals with disabilities is derived by averaging the impact experienced by all individuals within a population. This metric is known as the Average Treatment Effect (ATE), defined by the equation:

$$ATE = E(Y_1 - Y_0)$$  \hspace{1cm} (2)

In the given equation, ATE (Average Treatment Effect) quantifies the comprehensive impact of attaining higher education and being employed in the formal sector among individuals with disabilities. It is computed by determining the expected value (expectation) derived from the difference between the potential outcomes (income) if an individual has attained higher education and is employed in the formal sector ($Y_1$), contrasted with the potential individual who does not have higher education and is not employed in the formal sector ($Y_0$):

$$ATT = E[Y_1 - Y_0 | D_i = 1]$$  \hspace{1cm} (3)

4. Results

This section conducts a descriptive analysis to explore the potential for individuals with disabilities attending public schools to elevate their accomplishment in formal education levels. It aims to assess disparities in the achievement of formal education levels between graduates from public and private schools.

4.1. Descriptive Analysis

The descriptive statistics of this study are depicted in Table 2 below. The unit of analysis for this research consists of the educational attainment of persons with disabilities in public and private schools.
Table 2: Analysis descriptive

<table>
<thead>
<tr>
<th>Education Provider</th>
<th>Highest education completed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Finished high school</td>
</tr>
<tr>
<td>Private</td>
<td>2919</td>
</tr>
<tr>
<td>Government</td>
<td>6182</td>
</tr>
<tr>
<td>Total</td>
<td>9101</td>
</tr>
</tbody>
</table>

Source: Processed Data, 2023

Table 2 showcases the completed education levels based on the education providers. Among the 12,550 individuals, 4,354 completed their education in private institutions, while 8,196 completed their education in government institutions. Predominantly, most tertiary education is completed by students from government institutions. High school graduation stands out as the most common educational level attained, with 9,101 individuals achieving this milestone. Of these, 6,182 graduated from government institutions, while 2,919 graduated from private institutions. At the Diploma completion level, the disparity between private and government institutions is smaller, with a total of 844 individuals (407 from private institutions and 437 from government institutions).

However, there is a noticeable contrast in the number of individuals who completed their education in private versus government institutions at higher education levels such as Bachelor’s (S2) and Doctoral (S3) degrees. Specifically, only 178 individuals obtained Master’s degrees and 26 individuals obtained Doctoral degrees from private institutions, whereas these numbers are higher from government institutions. This discrepancy underscores a substantial difference in higher education completion between private and government institutions, particularly at advanced academic levels like Master’s and Doctoral degrees.

4.2 Educational Attainment Based on Gender

Collecting data on the level of education achieved by individuals based on gender allows us to see patterns of educational attainment between men and women, and the extent to which educational equality can be achieved. The following data on educational attainment based on gender is presented as a basis for exploring and understanding the role of education in creating equality and social progress for people with disabilities.
Table 3. Educational Achievement of People with Disabilities Disability according to Type of Sex

<table>
<thead>
<tr>
<th>Highest Education</th>
<th>Female</th>
<th>Male</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed High School</td>
<td>3914</td>
<td>5187</td>
<td>9101</td>
</tr>
<tr>
<td>Completed Diploma I/II/III</td>
<td>438</td>
<td>406</td>
<td>844</td>
</tr>
<tr>
<td>Completed Diploma IV/Bachelor's</td>
<td>1178</td>
<td>1223</td>
<td>2401</td>
</tr>
<tr>
<td>Completed Master's/Professional Master's</td>
<td>55</td>
<td>123</td>
<td>178</td>
</tr>
<tr>
<td>Completed Doctorate</td>
<td>3</td>
<td>23</td>
<td>26</td>
</tr>
<tr>
<td>Total</td>
<td>5588</td>
<td>6962</td>
<td>12550</td>
</tr>
</tbody>
</table>

Source: Processed data, 2023

This table delineates data on educational accomplishments categorized by gender, showcasing the count of individuals based on their highest attained level of education, segregated into female and male groups, alongside the total count. Across all educational tiers, notable discrepancies exist between men and women. For instance, a notable difference is observed in the completion of secondary education, where the number of men (5,187) surpasses women (3,914). This pattern is consistent across the dataset, implying potential variations in educational opportunities or societal influences impacting educational decisions based on gender. The largest segment consists of individuals who completed secondary education, totaling 9,101 individuals (5,187 men and 3,914 women).

The count of individuals holding a diploma or bachelor's degree (comprising Diploma I/II/III and Diploma IV/S1) is considerable, amounting to 3,245 individuals. However, as education progresses to Masters and Doctorate levels, the count dwindles notably, signaling a decrease in the pursuit of higher academic qualifications. At the advanced educational levels (Masters and Doctorate), men tend to outnumber women, despite the smaller overall population. This disparity suggests a potential gender gap in the pursuit of advanced education, with fewer women achieving master's and Doctorate degrees compared to men.

The total count of males (6,962) exceeds that of females (5,588), indicating a higher male representation in this dataset. Despite male dominance in higher and secondary education completion, women seem to be overrepresented in the diploma and bachelor's degree categories. Overall, these findings underscore disparities in educational achievements between genders across various academic tiers. They point toward potential areas for further exploration into social factors influencing educational decisions and emphasize the necessity for initiatives fostering gender parity in educational accomplishments at all levels.
4.3 Educational Attainment Based on Location of Residence

The data showcasing the correlation between the highest level of education attained by individuals and their residential locations (rural and urban) offer valuable insights into assessing the educational distribution across diverse regions. Analyzing this data can furnish valuable information regarding the evolution of educational trends across distinct geographical landscapes. Table 4 presents an opportunity to comprehend the scope of accessibility, equity, and dissemination of educational prospects across different settings, encompassing both rural villages and urban cities. In this context, understanding the disparities in educational completion between these locations can paint a more holistic picture of the educational dynamics prevalent in our society.

Table 4. Highest Education Attained by Location of Residence

<table>
<thead>
<tr>
<th>Highest Education Attained</th>
<th>Rural Area</th>
<th>Urban Area</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed High School (SMA/SMK/MAK)</td>
<td>3935</td>
<td>5166</td>
<td>9101</td>
</tr>
<tr>
<td>Completed Diploma I/II/III</td>
<td>326</td>
<td>518</td>
<td>844</td>
</tr>
<tr>
<td>Completed Diploma IV/Bachelor’s (S1)</td>
<td>935</td>
<td>1466</td>
<td>2401</td>
</tr>
<tr>
<td>Completed Master’s/Professional Master’s (S2/S2 Applied)</td>
<td>35</td>
<td>143</td>
<td>178</td>
</tr>
<tr>
<td>Completed Doctorate (S3)</td>
<td>2</td>
<td>24</td>
<td>26</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5233</strong></td>
<td><strong>7317</strong></td>
<td><strong>12550</strong></td>
</tr>
</tbody>
</table>

Source: Processed data, 2023

The majority of individuals who have completed higher education (SMA/SMK/MAK, Diploma, up to S3) reside in cities, with a higher total number of individuals compared to villages at each education level. Significantly more individuals have completed education at the SMA/SMK/MAK level in cities (5,166 individuals) than in villages (3,935 individuals), indicating a higher proportion of higher secondary education achievers in urban areas. While there are substantial discrepancies in numbers between villages and cities, the percentage of individuals completing higher levels of education (like Diploma, Applied Master/Master, and Doctoral Degree) is comparatively smaller in both settings. Higher education levels, particularly Diploma IV/S1 and above, show lower numbers overall when compared to secondary education levels. In total, the count of individuals completing the highest level of education in cities (7,317 individuals) surpasses that in villages (5,233 individuals), highlighting a greater concentration of education in urban areas.

These statistics reveal significant differences in the number of individuals achieving education at specific levels based on their residential locations, with cities consistently
having higher figures than villages. This analysis also suggests that accessibility or opportunities for higher education completion might be more centralized in urban areas than in rural regions. Understanding these trends can offer valuable insights for educational planning and resource allocation to ensure fair and accessible quality education, irrespective of an individual's geographical residence.

### 4.4 Comparison Between Treated and Matched Control Groups

A comparative analysis between the "Treated" (Government) group and the "Matched Control" (Private) group aims to understand the distinctions in characteristics between the two groups based on educational provider variables. These comparisons intend to identify numerical similarities or differences in key variables, including education level, family size, location, and gender (male), which may stem from specific treatments or interventions. Exploring these distinctions provides a more profound insight into the attributes of the population under research or observation, as delineated in Table 5.

#### Table 5. Comparison Characteristics Between Groups Education Provider: Public School (Treated) and Private School (Matched Control)

<table>
<thead>
<tr>
<th>Group</th>
<th>Education Provider</th>
<th>Observation</th>
<th>Educ2 average</th>
<th>Std. Educ deviation2</th>
<th>Average farm size</th>
<th>Std. Deviation fam size</th>
<th>Average location</th>
<th>Std. Location deviation</th>
<th>Average male</th>
<th>Std. Male deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treated</td>
<td>Government</td>
<td>8,196</td>
<td>4.46</td>
<td>0.85</td>
<td>3.86</td>
<td>1.73</td>
<td>0.55</td>
<td>0.5</td>
<td>0.55</td>
<td>0.5</td>
</tr>
<tr>
<td>Matched Control</td>
<td>Private</td>
<td>4,354</td>
<td>4.58</td>
<td>0.88</td>
<td>3.81</td>
<td>1.64</td>
<td>0.65</td>
<td>0.48</td>
<td>0.56</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: Processed data, 2023

The comparative analysis between the "Treated" (Government) group and the "Matched Control" (Private) group based on Table 5 reveals several noteworthy distinctions. In terms of the Education Level variable, it was observed that the Treated (Government) group had a slightly lower average education level (educ2) of 4.46, in contrast to the Matched Control (Private) group with an average of 4.58. Both groups displayed nearly identical standard deviations (0.85 vs. 0.88), indicating similar levels of variation in education levels.

Regarding the Family Size variable, the mean family size was marginally larger in the Treated (Government) group at 3.86 compared to the Matched Control (Private) group at 3.81. Similar standard deviations (1.73 vs. 1.64) suggest comparable variations in family sizes between the two groups. In terms of the Location Variable (Urban area=1 / Rural area=0), a notable divergence was observed in the distribution of locations between the Treated and Matched Control groups. The Treated group predominantly consisted of respondents from cities (indicated with a value of 1), while the Matched Control group tended to have a higher representation of respondents from villages (indicated with a value of 0).

However, when analyzing the Gender Variable, there wasn’t a significant disparity in the distribution of male gender between the two groups. Both groups exhibited almost
equivalent percentages of male gender (approximately 55%). In summary, the analysis of
this table underscores distinctions in several characteristics, including education level,
family size, and location distribution (urban vs. rural), between the "Treated" (Public
school) and "Matched Control" (Private school) groups. These differences form a basis for
further investigation into the potential impact or influence of these variables on the Rated
group compared to the comparable control group (Matched Control).

4.5 Education Achievements Successfully Completed by People with Disabilities
in Public Schools

Table 6 presents the results of the propensity score analysis aimed at evaluating the
possibility of a group of people with disabilities enhancing their educational
achievements when attending public schools. Propensity scores are used to adjust or
compare the control and treatment groups in statistical analysis.

Table 6. Score Trend

| Education Provider       | Coef.   | Std. Err. | z     | P>|z|   | [95% Conf. Intervals] |
|--------------------------|---------|-----------|-------|------|----------------------|
| Amount Member Family     | 0.0096474| 0.0068367 | 1.41  | 0.158| 0.0037524 - 0.0230472|
| Location                 | 0.2467727| 0.0236094 | -10.45| 0    | 0.2930462 - 0.2004992|
| Type Sex                 | 0.0472681| 0.0232674 | -2.03 | 0.042| 0.0928714 - 0.0016648|
| _cons                    | 0.5298127| 0.0348726 | 15.19 | 0    | 0.4614636 - 0.5981618|

Source: Processed data, 2023

The probit regression analysis was conducted to assess the influence of three key
factors—Number of Family Members, Location, and Gender—on the educational outcome
of individuals (1 = public school graduate and 0 = private school graduate). The findings
revealed intriguing insights into these variables' impact on educational attainment.
Firstly, the Number of Family Members exhibited a positive coefficient (0.0096474),
suggesting a slight tendency for an increase in family size to elevate the likelihood of the
recorded event, but this relationship lacked statistical significance (p = 0.158).
Conversely, the Location variable displayed a negative coefficient (-0.2467727), indicating that residing in a city decreased the probability of the recorded event significantly (p = 0).

Similarly, the Gender variable showed a negative coefficient (-0.0472681), suggesting that being male reduced the likelihood of the recorded event, and this variable was also statistically significant (p = 0.042). The intercept value (0.5298127) revealed the log odds of the dependent variable when all independent variables are zero. Furthermore, the overall model demonstrated high significance (p = 0), emphasizing the collective impact of these variables on the dependent variable, elucidating the complex relationship between these factors and educational outcomes.

4.6 The Impact of Educational Providers on Educational Attainment for People with Disabilities

In analyzing the influence of educational providers on the achievement of the highest level of education attained by people with disabilities, several adjustment or matching methods were employed to compare the Treatment on the Treated (ATT) effect, as presented in the following table:

<table>
<thead>
<tr>
<th>Method</th>
<th>n. treat</th>
<th>n. contr</th>
<th>ATT</th>
<th>Std. Err</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nearest Neighbor</td>
<td>8196</td>
<td>4349</td>
<td>-0.126</td>
<td>0.017</td>
<td>-7.526</td>
</tr>
<tr>
<td>Matching</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stratification Method</td>
<td>8196</td>
<td>4352</td>
<td>-0.122</td>
<td>0.016</td>
<td>-0.426</td>
</tr>
<tr>
<td>Radius Matching Method</td>
<td>8195</td>
<td>4350</td>
<td>-0.126</td>
<td>0.017</td>
<td>-7.466</td>
</tr>
</tbody>
</table>

Source: Processed data, 2023

The comparative analysis conducted between the treatment and control groups employed three distinct methods—Nearest Neighbor Matching, Stratification Method, and Radius Matching Method—to make adjustments or match data using Propensity Score Matching. The results unveiled the ATT (Average Treatment Effect on the Treated) values for each method. Nearest Neighbor Matching exhibited an ATT value of -0.126 with a standard error of 0.017 and a t-statistic of -7.526. The Stratification Method showed an ATT of -0.122 with a standard error of 0.016 and a t-statistic of -0.426, while the Radius Matching Method displayed an ATT of -0.126 with a standard error of 0.017 and a t-statistic of -7.466.

These negative ATT values suggest that the treated group tends to exhibit lower outcomes compared to the control group. On average, the treatment seems to hurt the treated group, indicating that individuals with disabilities attending private schools might achieve higher educational levels than those attending state schools. Additionally, notably significant t-statistic values, especially in the Nearest Neighbor Matching and Radius Matching Method, emphasize a substantial statistical difference between the treatment and control groups.
5. Discussion

The descriptive analysis presented in this research examines the educational achievements of individuals with disabilities in both public and private schools, investigating disparities in educational attainment based on educational provider, gender, and location of residence. Table 2 outlines the educational level attainment by educational provider, revealing that government educational institutions have a higher number of individuals completing higher education compared to private institutions among a total of 12,550 individuals. Notably, while both types of schools commonly see high school graduation as the pinnacle of education, substantial differences emerge in higher academic levels like master’s and doctoral degrees, with significantly fewer individuals completing education in private institutions than in government ones.

Moreover, Table 3 underscores gender-based differences in educational attainment. Men outnumber women in completing secondary education, Diploma, Bachelor’s, and higher education levels such as Master’s and Doctoral degrees. This data indicates significant disparities between genders at various academic tiers, with women disproportionately represented in diploma and bachelor’s degree categories, potentially revealing disparities in higher education pursuit between genders. Additionally, Table 4 demonstrates a comparison of educational attainment based on residence location (villages versus cities), indicating a higher prevalence of higher education completion in urban areas across all educational levels. However, the proportion of individuals completing tertiary education, particularly at advanced levels, remains lower in both rural and urban areas. These findings highlight substantial differences in educational attainment based on residence location and suggest a concentration of education in urban settings.

Overall, these results underscore the varied educational attainment of individuals with disabilities concerning educational providers, gender, and residential locations. The disparities observed emphasize the significance of considering social, geographical, and gender-based factors in ensuring equitable access to quality education for individuals with disabilities. These insights are crucial in formulating more inclusive educational policies that offer equal opportunities to all, irrespective of their backgrounds.

The comparative analysis conducted between the 'Treated' (Government) group and the 'Matched Control' (Private) group unveiled distinct numerical disparities in crucial variables such as education level, family size, location, and gender. While the Government group displayed a slightly lower average education level compared to the Private group, the variance in education levels between these two cohorts was nearly identical. Similarly, the average family size within the Government group surpassed that of the Private group, indicating a higher attendance rate in government-run schools, albeit with relatively similar variations. Notably, significant differences emerged in the distribution of locations, with the majority of respondents in the Government group residing in cities, while the Private group predominantly resided in villages. Nevertheless, there was no marked variance in male gender distribution between the two groups.

The probit regression analysis demonstrated that the variable 'number of family members' lacked statistical significance in influencing the probability of completing education at a government school. Conversely, the variables 'location' (city/rural) and 'gender' exhibited statistical significance. Residing in a city and being female were
positively correlated with achieving higher educational levels in Government Schools. The overall model also exhibited a high level of significance, emphasizing the influence of independent variables on the dependent variable.

Adjustment methods such as Nearest Neighbor Matching, Stratification Method, and Radius Matching Method revealed negative ATT values, indicating that the 'Graduate' (Government School) treatment group tended to exhibit lower educational attainment at a higher level compared to the control group, 'Graduate' (Private School). The significant t-statistic values in the matching methods underscored statistically notable differences between the two groups. These findings indicated substantial differences in education level, family size, and location between the Government and Private groups. Despite Government School Graduates exhibiting a positive trend towards educational attainment, backed by statistically significant location and gender variables, the treatment provided to the Government group seemed to adversely impact achieving higher education levels compared to the Private group.

These results align with research findings (Byrd, 2010) suggesting a positive correlation between the education of people with disabilities in India and their choice of special (private) schools. This indicates that individuals with disabilities attending private schools tend to achieve higher education levels. It underscores the potential significance of considering specific factors to ensure educational parity for Persons with Disabilities.

6. Conclusion

The analysis of educational achievements among individuals with disabilities, considering public and private schools, gender, and location of residence, unveils critical disparities. Notably, a majority of individuals completed higher education in government educational institutions, yet stark differences emerge at advanced academic tiers, where private institutions exhibit considerably lower graduation rates. Gender-based analysis underscores disparities in educational attainment, showcasing a higher representation of men in tertiary education, while women tend to dominate diploma and bachelor’s degree levels. Moreover, there exists a notable concentration of educational facilities in urban locales compared to rural areas. These distinctions in educational attainment underscore the significance of accounting for social determinants, geographic locations, and gender biases to ensure equitable access to education for individuals with disabilities. In parallel, a comparative analysis between government and private school cohorts reveals numerical differences in critical variables like education level, family size, and residential location. Probit regression outcomes indicate a positive correlation between urban residency and female gender with higher educational attainment within the government school group. However, adjustment analyses show that graduates from government educational institutions tend to exhibit lower educational achievements at advanced levels compared to their counterparts from private schools. This highlights the imperative need to address specific factors to establish educational parity for individuals with disabilities, which includes enhancing accessibility and educational quality within public school environments.
References


DOI: 10.60026/IJPAMEDV8i2.144


