



Bridging Gaps: Exploring Gender Parity and Disability Inclusion in Indonesia

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Abstract. Introduction: This paper delves into the challenging issues related to achieving gender parity, disability and inclusivity in Indonesia education. It underscores the critical need for quantitative strategies to promote real gender equality. Novelty: We discuss the various elements involved in this quest, such as ensuring equal participation for all genders and enhancing the quality of educational experiences, all within the broader context of economic impact. Research Method: This paper employs data from the 2023 Social Economic Survey (Susenas) to analyze and compare recent developments in gender parity and inclusivity in Indonesia. This approach helps identify trends and shifts over the five-year period. Finding/Result: The analysis reveals significant disparities in school participation rates between disabled and non-disabled students across all educational levels. While the median participation rate for disabled primary students is 100%, the mean is only 76.79%, indicating many are not fully included. Participation rates for disabled students decline sharply at the junior and senior secondary levels, underscoring the urgent need for targeted interventions to enhance educational inclusion and equity for disabled individuals. To address the variations in gender parity and inclusivity observed across different districts in Indonesia, it is recommended that policymakers implement and enhance the availability and quality of educational facilities in underserved areas to ensure equitable access for all genders. Additionally, policies should focus on awareness and training programs to tackle cultural and societal norms that contribute to gender disparities and inclusivity in education.

Keywords: School Participation, Disability, Gender

1 Introduction

The puzzling issue of disability and inclusion in the education sector are paramount. Discrepancies between students with and without disabilities are prominent, particularly in developed countries such as the United States. For instance, graduation rates significantly differ between these groups. According to Schaeffer (2023), only 49.5% of students with disabilities manage to graduate, in stark contrast to 68% of students without disabilities. This discrepancy highlights the persistent barriers and challenges that students with disabilities face within the education system, which hinder their academic success and limit their future opportunities.

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The importance of addressing these challenges is further underscored by the findings of the Pew Research Center. In developed economies, disabilities such as dyslexia have increasingly pushed the issue of school inclusion to the forefront of educational policy and practice discussions. The necessity for inclusive educational practices that accommodate students with various disabilities is recognized as a crucial element in creating equitable learning environments. However, the COVID-19 pandemic disrupted these efforts, with 40% of schools struggling to maintain inclusive practices during this period (NCES, 2023). The pandemic exacerbated existing inequalities and highlighted the fragility of inclusion efforts, emphasizing the need for robust systems that can adapt to unforeseen challenges.

Despite the critical importance of inclusivity in education, the intersection of disability and education economics remains under-researched. Understanding how disabilities impact educational outcomes and economic opportunities is essential for developing effective policies. This gap in research limits our ability to address the economic implications of educational disparities faced by students with disabilities, further underscoring the need for comprehensive studies in this area.

In the context of Indonesia, the situation presents both challenges and opportunities. The BSKAP (2022) report emphasizes the importance of inclusive education in providing opportunities for students with disabilities, including those with physical, emotional, social, and other exceptional conditions. Inclusive education is seen as a vital step towards ensuring that all students, regardless of their disabilities, have access to quality education and the chance to realize their full potential. However, despite the recognition of its importance, the reality of inclusive education in Indonesia falls short of this ideal.

Several government regulations in Indonesia reflect a commitment to disability inclusion. Law No. 4/1997 mandates that disabled persons should have equal opportunities in all aspects of life. Following this, Law No. 39/1999 guarantees the right to work for individuals with disabilities. Additionally, Law No. 25/2009 specifies special treatment for people with disabilities, aiming to ensure their inclusion and participation in various societal domains. Despite these legal frameworks, evidence suggests that people with disabilities in Indonesia continue to face significant challenges. According to AIPEG (2017), individuals with disabilities in Indonesia have lower educational attainment, poorer health, fewer economic opportunities, and reduced access to public services compared to their non-disabled peers. These disparities highlight the gap between policy and practice, indicating that legislative measures alone are insufficient to achieve true inclusion.

The issue of inclusion in education for students with disabilities is multifaceted, involving various stakeholders, including policymakers, educators, parents, and the students themselves. In developed countries like the USA, the discrepancies in graduation rates

between students with and without disabilities point to systemic issues within the education system. These issues may include inadequate teacher training on inclusive practices, lack of appropriate resources and accommodations, and societal attitudes towards disability. The lower graduation rates for students with disabilities suggest that these students are not receiving the support they need to succeed academically, which can have long-term implications for their future employment and quality of life.

The impact of the COVID-19 pandemic on education systems worldwide has further highlighted the challenges of maintaining inclusive education practices. With schools shifting to online learning, students with disabilities faced additional barriers, such as limited access to technology, lack of specialized support services, and difficulties in adapting to new modes of learning. In Asia, the prevalence of disabilities among the population underscores the urgent need for inclusive education practices.

According to ESCAP (2020), almost 16% of the population in the region has some form of disability. Despite this significant proportion, many educational institutions lack the necessary infrastructure and resources to support students with disabilities. In countries like China, the lack of accessibility and specialized services means that students with disabilities are often excluded from mainstream education, limiting their opportunities for social and academic development (Wang, 2016). This exclusion not only affects the individuals but also has broader societal implications, as it perpetuates cycles of poverty and inequality.

The research aims to delve into the factors that influence gender inclusion for students with disabilities in school participation. Gender inclusion is a critical aspect of inclusive education, as girls with disabilities often face compounded disadvantages due to both their gender and disability status. Understanding the specific barriers that affect girls with disabilities can help in developing targeted interventions to promote their inclusion and participation in education.

Additionally, the research seeks to examine the current situation regarding gender parity in disability inclusion in Indonesia. Gender parity in education is essential for achieving broader goals of gender equality and social inclusion. By exploring the current state of gender parity in disability inclusion, the research aims to identify gaps and challenges that need to be addressed to create a more equitable education system. Therefore, this research aims to provide a more in-depth examination of recent evidence on disability and inclusion in year 2023. The research questions guiding this study are: What are the determinant factors of gender inclusion for disability in school participation? What is the current situation regarding gender parity in disability inclusion in Indonesia? By addressing these questions, the research seeks to contribute to a better understanding of the barriers to inclusion and identify strategies to improve educational outcomes for students with disabilities.

2 Literature Review

Research has explored various dimensions, including the impact of societal attitudes, educational policies, and the role of socioeconomic factors on the educational experiences of individuals with disabilities. This body of literature reveals several key relationships and themes that inform our understanding of inclusion and education for individuals with disabilities.

First, the impact of societal attitudes and conceptions of disability is a critical factor influencing inclusive education. Many studies identify that conceptions of disability often align with the deficit or medical model, leading to negative attitudes that hinder inclusive education. The medical model views disability as a defect or problem within the individual, which requires fixing or curing. This perspective often leads to stigmatization and marginalization of individuals with disabilities. Negative attitudes are prevalent among both teachers and students, affecting the overall educational environment for individuals with disabilities. For instance, Marina (2020) and Anastasiou (2011) found that such attitudes result in lower expectations for students with disabilities, limited opportunities for participation, and reduced access to quality education. Teachers with negative attitudes may be less likely to implement inclusive practices, and peers may engage in discriminatory behaviors, creating a hostile learning environment.

Second, the interplay between disability and socioeconomic factors significantly impacts educational outcomes. Disability and income both negatively impact educational attainment, completion rates, dropout rates, and academic achievements. Individuals with disabilities often face additional financial burdens related to their condition, which can limit their access to educational resources and support services. Policies addressing disability-based discrimination and improving school accessibility are recommended to mitigate these barriers. Higher educational levels can buffer the psychological impact of disability, with cognitive abilities and better social positions playing a significant role (Mandemakers et al. 2010; Takeda et al. 2018). Educational attainment not only improves economic prospects but also enhances social inclusion and psychological well-being, creating a positive feedback loop that benefits individuals with disabilities and society as a whole.

Third, educational exclusion and the increasing policy attention it receives highlight the urgent need for systemic change. Children with disabilities are often excluded from primary education, especially in developing countries. This exclusion is now receiving more policy attention, with a focus on improving definitions, data collection, policies, service delivery, and capacity development. Bines et al. (2011) and Peters (2008) emphasize that disabled people face global exclusion from both formal and informal education sectors, leading to a cycle of poverty and limited opportunities. Addressing discrimination and ensuring equal access to education are crucial for breaking this cycle. Effective policies should aim to dismantle physical, attitudinal, and systemic barriers to education, ensuring that all children, regardless of their abilities, have the opportunity to learn and thrive.

The social model of disability offers a compelling alternative to the traditional special education approaches rooted in the medical model. The social model views disability as a result of societal barriers rather than individual deficits. This perspective shifts the focus from "fixing" the individual to transforming society to be more inclusive and accommodating. Anastasiou et al. (2011) argue that this model advocates for inclusive policies that accommodate various disabilities beyond just physical ones. It emphasizes the importance of accessibility, adaptability, and the removal of environmental and attitudinal barriers that impede full participation in education.

Inclusive education, grounded in the social model of disability, promotes the idea that all students, regardless of their abilities, should learn together in a supportive environment that adapts to their needs. This approach challenges the traditional segregation of students with disabilities into special education programs and instead encourages mainstream classrooms to be more flexible and inclusive. Research shows that inclusive education benefits all students, not just those with disabilities. It fosters a culture of acceptance, empathy, and diversity, which enriches the learning experience for everyone involved.

However, the implementation of inclusive education policies faces numerous challenges. One significant barrier is the lack of teacher training and professional development in inclusive practices. Teachers play a crucial role in creating inclusive classrooms, yet many feel unprepared to meet the diverse needs of their students. Professional development programs that focus on inclusive pedagogy, differentiated instruction, and classroom management strategies are essential for equipping teachers with the skills and knowledge they need to support all students effectively.

Another challenge is the availability of resources and support services. Inclusive education requires adequate funding to provide necessary accommodations, such as assistive technologies, modified curricula, and additional support staff. In many contexts, particularly in developing countries, schools lack the financial resources to implement these accommodations effectively. This resource gap often leads to suboptimal educational experiences for students with disabilities and can perpetuate existing inequalities. The role of families and communities is also critical in supporting inclusive education. Families of children with disabilities often face significant challenges, including social stigma, financial strain, and limited access to information and support services. Engaging families and communities in the process of inclusion is essential for creating a supportive environment that extends beyond the classroom. Community-based initiatives, parent education programs, and advocacy efforts can play a vital role in fostering inclusive attitudes and practices.

Furthermore, research highlights the importance of early intervention and support for children with disabilities. Early identification and intervention can significantly improve educational outcomes by addressing developmental delays and providing targeted support from a young age. Programs that offer early childhood education, health

services, and family support are crucial for ensuring that children with disabilities enter school ready to learn and succeed.

In addition to these practical considerations, the literature underscores the importance of a rights-based approach to inclusive education. Education is a fundamental human right, and inclusive education is essential for realizing this right for all children. International frameworks, such as the United Nations Convention on the Rights of Persons with Disabilities (CRPD), emphasize the obligation of states to provide inclusive education systems. These frameworks provide a legal and moral basis for advocating for policy changes and resource allocation to support inclusive education.

Despite the progress made in recent years, significant work remains to achieve truly inclusive education systems worldwide. Continued research is needed to understand the complex factors that influence inclusion and to identify effective strategies for overcoming barriers. Collaborative efforts among policymakers, educators, researchers, families, and communities are essential for driving systemic change and ensuring that all children have the opportunity to reach their full potential.

The literature on inclusion and education highlights the multifaceted nature of the challenges faced by individuals with disabilities in accessing quality education. Societal attitudes, educational policies, and socioeconomic factors all play critical roles in shaping the educational experiences of these individuals. The shift from a deficit-based to a social model of disability offers a more inclusive and equitable framework for addressing these challenges. However, the implementation of inclusive education policies requires adequate resources, teacher training, family and community engagement, early intervention, and a rights-based approach. Continued research and collaborative efforts are essential for creating inclusive education systems that support the diverse needs of all students and promote equity and social inclusion.

3 Method, Data and Analysis

To answer the research question, the study will utilize the Social Economic Survey (SUSENAS) datasets in 2023. This approach will allow for a comparative analysis of the progress in terms of gender and inclusive participation in education over the specified period. By examining these datasets, the research aims to identify the factors that influence gender parity in school participation, particularly focusing on how socioeconomic and regional variables impact educational inclusion for students with disabilities.

The econometric model employed in this study will be a multiple regression analysis, with the dependent variable being the parity of gender in terms of school participation. The independent variables will include various socioeconomic and regional indicators that are expected to influence educational outcomes. The model can be mathematically represented as follows:

$$Y_{it} = \alpha + \beta_1 \cdot Electricity_{it} + \beta_2 \cdot HouseOwnership_{it} + \beta_3 \cdot PKHRecipient_{it} + \beta_4 \cdot BPNTRecipient_{it} + \beta_5 \cdot Expenditure_{it} + \beta_6 \cdot JavaDummy_{it} + \beta_7 \cdot PovertyRate_{it} + \beta_8 \cdot EducationYears_{it} + \beta_9 \cdot BankAccount_{it} + \epsilon_{it} \quad (1)$$

Independent Variables:

- **Percentage of Electricity in District:** This variable captures the extent of electricity coverage in each district. Access to electricity is crucial for educational facilities and the ability of students to study at home, particularly in remote areas.
- **House Ownership in District Level:** This variable indicates the percentage of households that own their homes within each district. Homeownership can be a proxy for economic stability, which may influence educational participation.
- **PKH Recipient Rate:** The Program Keluarga Harapan (PKH) is a social assistance program in Indonesia. The recipient rate of PKH in a district can reflect the level of support provided to poor families, which can affect school attendance and participation.
- **BPNT Recipient Rate:** The Bantuan Pangan Non Tunai (BPNT) is another social assistance program providing food subsidies. Similar to PKH, the recipient rate of BPNT in a district can indicate the extent of social support for low-income families.
- **Monthly Per Capita Expenditure:** This variable represents the average monthly expenditure per person in each district. Higher expenditure levels generally correlate with better access to educational resources and facilities.
- **Region Java Island Dummy:** This dummy variable distinguishes whether a district is located on Java Island. Java is more developed compared to other regions in Indonesia, and this variable helps to control for regional disparities.
- **Poverty Rate:** The poverty rate in each district is a critical variable, as higher poverty levels are often associated with lower school participation rates due to economic constraints.
- **Bank Account in Household:** This variable measures the percentage of households with a bank account, reflecting financial inclusion. Access to financial services can facilitate savings and investments in education.
- **Years of Schooling:** This variable captures the average number of years of schooling completed by the adult population in each district. Higher educational attainment in the adult population can influence attitudes towards education and school participation among children.

The study employs a multiple regression analysis utilizing the Social Economic Survey (SUSENAS) datasets from 2023 to investigate gender parity in school participation, particularly for students with disabilities. This method is used for several reasons.

First, multiple regression analysis is a robust statistical technique that allows for the examination of the relationship between a dependent variable (gender parity in school participation) and multiple independent variables (socioeconomic and regional indicators) (Wooldridge, 2010). This method is particularly suitable for identifying the relative importance of various factors influencing educational outcomes, enabling a nuanced understanding of how different variables interact to affect inclusion.

Second, by including a range of independent variables such as electricity access, poverty rates, and household financial inclusion, the model aims to control for potential confounding factors that could bias the results. This is crucial in educational research, where numerous socioeconomic factors can influence participation rates (Baker & LeTendre, 2005). The inclusion of these variables helps to isolate the effects of specific indicators on gender parity, providing clearer insights into the determinants of educational inclusion.

Third, the choice of variables reflects a strong emphasis on the socioeconomic context of education in Indonesia. Variables such as PKH and BPNT recipient rates, monthly per capita expenditure, and homeownership are directly relevant to understanding the economic barriers faced by students with disabilities. This focus aligns with existing literature that highlights the critical role of socioeconomic factors in educational access and success (Baker & LeTendre, 2005). Additionally, the inclusion of a dummy variable for Java Island allows the analysis to account for regional disparities in development and educational resources. Given that Java is more developed than other regions in Indonesia, this variable helps to control for the significant differences in educational infrastructure and opportunities that may exist across the country. This regional focus is essential for understanding the broader context of educational inclusion and gender parity.

Furthermore, the findings from this analysis can inform policymakers about the key determinants of gender parity in school participation. By identifying which socioeconomic and regional factors most significantly impact educational outcomes, the study can provide actionable insights for targeted interventions aimed at improving educational inclusion for students with disabilities. This aligns with the growing emphasis on evidence-based policy-making in education (Cohen & Levinthal, 1990). While the use of a single year of data presents challenges, the method allows for a snapshot analysis that can still yield valuable insights into the current state of gender parity in education. The findings can serve as a baseline for future longitudinal studies, highlighting areas that require further investigation and monitoring over time..

4 Result and Discussion

The analysis of school participation rates (SPR) for disabled and non-disabled students across primary, junior secondary, and senior secondary levels reveals significant disparities. This examination sheds light on the extent of educational inclusion and highlights areas requiring policy intervention to achieve parity.

For primary students, the participation rate of disabled students varies widely. The median participation rate is 100%, indicating that at least half of the disabled students are fully participating in primary education. However, the mean participation rate is

76.79%, with a standard deviation of 41.16, showing substantial variation. The distribution is skewed to the left, with 25% of students having a participation rate below 75.89% and a significant portion (5%) having no participation at all. In contrast, non-disabled primary students have a much higher and more consistent participation rate, with a mean of 98.39% and a standard deviation of just 5.08. The median participation rate is also very high at 99.45%. This indicates that almost all non-disabled students are participating in primary education, with minimal variation and skewness.

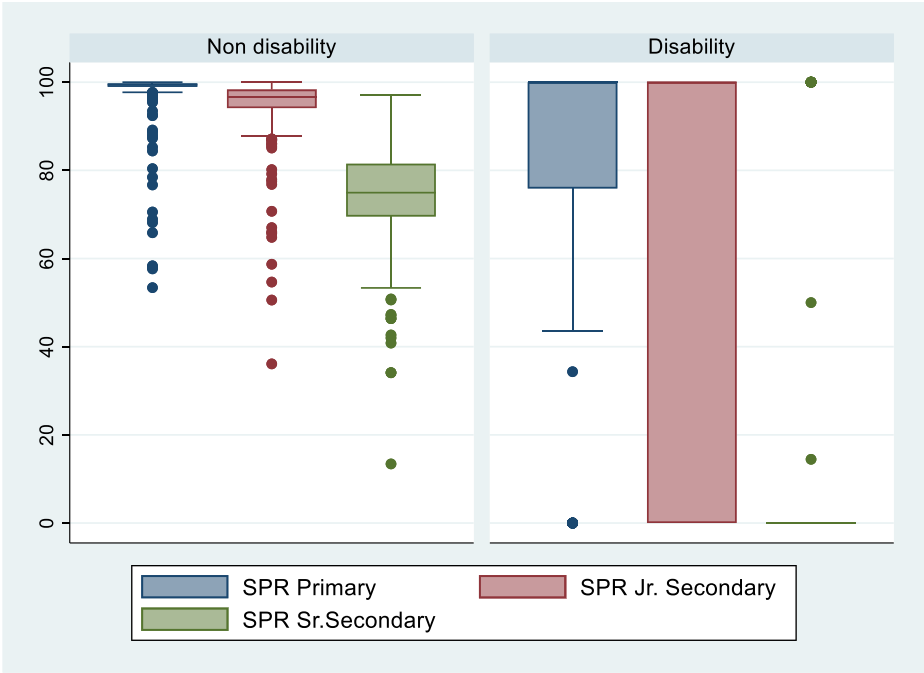


Fig. 1. Comparative of non disability and disability of School Participation Rate

At the junior secondary level, the disparity remains stark. Disabled students have a mean participation rate of 59.04%, with a large standard deviation of 48.40, highlighting considerable variation and a substantial proportion of students with very low participation rates. The median rate is 100%, but this reflects that half of the students are fully participating while the other half are not, as 25% have a participation rate of 0%. The non-disabled junior secondary students, however, have a mean participation rate of 95.21% with a standard deviation of 6.02, indicating a high and consistent participation rate. The median rate is 96.73%, with 25% of students having participation rates above 94.11%, showcasing minimal variability and high levels of inclusion.

For senior secondary students, the participation rate among disabled students drops significantly, with a mean of 21.90% and a standard deviation of 41.03, pointing to extreme variability and generally low participation rates. The median participation rate is

0%, meaning more than half of the disabled students are not participating in senior secondary education at all. The highest percentiles show some students fully participating, but these are outliers. Non-disabled senior secondary students, on the other hand, have a mean participation rate of 74.86% and a standard deviation of 9.88. The median participation rate is 74.94%, with participation rates being more evenly distributed and generally higher, reflecting better educational inclusion compared to their disabled peers.

In summary, the participation rates of disabled students are markedly lower and more variable across all educational levels compared to non-disabled students. This disparity is most pronounced at the senior secondary level, where the majority of disabled students are not participating in education at all. The data indicates a critical need for targeted interventions to improve the inclusion of disabled students in the education system, ensuring that they have equitable access to educational opportunities across all levels. The consistent high participation rates of non-disabled students contrast sharply with the experience of disabled students, underscoring the systemic barriers that need to be addressed to achieve true educational equity.

Gender Parity

The table presents the results of multiple regression analyses examining the determinants of gender parity in school participation across different educational levels: primary, junior secondary, and senior secondary. The regression models are applied both with and without robust standard errors, yielding six sets of results.

Variables	(1) Robust- primary	(2) parity Robust - jr.sec	(3) parity Robust - sr.secondary	(4) parity parity primary	(5) parity jr.sec	(6) parity sr.sec
Electricity	0.371*** (0.0951)	0.155 (0.161)	0.342 (0.212)	0.371*** (0.0259)	0.155*** (0.0579)	0.342** (0.154)
House ownership	-0.000431 (0.0123)	0.0193 (0.0270)	-0.151** (0.0722)	-0.000431 (0.0156)	0.0193 (0.0349)	-0.151 (0.0929)
PKH receiptient	-0.0137 (0.0383)	0.0230 (0.0493)	-0.133 (0.104)	-0.0137 (0.0178)	0.0230 (0.0399)	-0.133 (0.106)
BPNT receiptient	0.00801 (0.0216)	0.0231 (0.0342)	0.0966 (0.0916)	0.00801 (0.0156)	0.0231 (0.0348)	0.0966 (0.0926)
Capita Expenditure	-1.75e-08 (1.29e-08)	-6.98e-09 (2.02e-08)	-1.82e-08 (3.48e-08)	-1.75e-08*** (5.69e-09)	-6.98e-09 (1.27e-08)	-1.82e-08 (3.38e-08)
Java Dummy	0.00658	0.0117	-0.0914**	0.00658	0.0117	-0.0914**

	(0.00867)	(0.0151)	(0.0360)	(0.00634)	(0.0142)	(0.0377)
Poverty Rate	-0.0621**	0.0307	-0.0474	-0.0621***	0.0307	-0.0474
	(0.0287)	(0.0522)	(0.0873)	(0.0159)	(0.0355)	(0.0943)
Internet User	-0.188***	-0.0197	-0.00294	-0.188***	-0.0197	-0.00294
	(0.0585)	(0.105)	(0.105)	(0.0166)	(0.0370)	(0.0984)
Bank Acc Owner- ship	0.0448	-0.0169	-0.0674	0.0448***	-0.0169	-0.0674
	(0.0281)	(0.0561)	(0.0826)	(0.0143)	(0.0321)	(0.0853)
Education Year	0.00256	0.000489	0.00198	0.00256*	0.000489	0.00198
	(0.00280)	(0.00496)	(0.00824)	(0.00137)	(0.00307)	(0.00816)
Constant	0.762***	0.865***	0.949***	0.762***	0.865***	0.949***
	(0.0555)	(0.0934)	(0.207)	(0.0303)	(0.0677)	(0.180)
Observations	514	514	514	514	514	514
R-squared	0.344	0.040	0.040	0.344	0.040	0.040

Robust standard errors in parentheses

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

The results highlight that electricity coverage, representing the percentage of districts with access to electricity, has a significant positive impact on gender parity in primary education. This effect is robust across different model specifications, indicating that better electricity access likely facilitates improved educational conditions, such as better study environments at home and more functional school facilities. Specifically, the coefficient is 0.371, significant at the 1% level in both the robust and non-robust models. This positive relationship is also observed, albeit less consistently, at the junior secondary and senior secondary levels, where the significance varies across models. For junior secondary education, the effect is significant only in the non-robust model (coefficient: 0.155, significant at the 1% level). For senior secondary education, the coefficient is 0.342, significant at the 5% level in the non-robust model.

House ownership, reflecting economic stability within a district, does not show a significant impact on gender parity in primary and junior secondary education. However, a negative and statistically significant effect is observed for senior secondary education in the robust model, with a coefficient of -0.151, significant at the 5% level. This could imply that other forms of economic stability or indicators might be more relevant for higher education levels, where direct financial constraints become more pronounced.

The rate of PKH (Program Keluarga Harapan) recipients does not significantly influence gender parity across all educational levels, indicating that while social assistance programs are essential, their current structure or implementation might not directly address gender disparities in school participation. Similarly, the rate of BPNT (Bantuan Pangan Non Tunai) recipients shows no significant relationship with gender parity, suggesting that these food subsidy programs might need to be better integrated with educational support initiatives.

Monthly per capita expenditure, which serves as an indicator of overall economic conditions, is significant only in the non-robust model for primary education, indicating a very small effect on gender parity (coefficient: $-1.75e-08$, significant at the 1% level). This suggests that while economic conditions are crucial, their direct impact on gender parity might be moderated by other factors. For junior and senior secondary education, this variable does not show significant effects, highlighting that the relationship between economic expenditure and educational outcomes might be more complex and influenced by additional variables.

Urbanization, or the distinction between urban and rural areas, positively affects primary and junior secondary education, though not significantly. Interestingly, for senior secondary education, urbanization shows a significant negative relationship with gender parity in both models (coefficient: -0.0914 , significant at the 5% level). This might reflect disparities in educational resources or opportunities in urban areas, potentially pointing to issues like higher dropout rates or unequal access to quality education in more urbanized districts.

The poverty rate negatively affects gender parity in primary education significantly in both models (coefficient: -0.0621 , significant at the 5% and 1% levels). This underscores the persistent challenge that poverty poses to achieving educational equity, as higher poverty levels are often associated with numerous barriers to school participation. For junior and senior secondary education, the effects of poverty are not significant, indicating that the initial barriers might be more pronounced at the primary level.

Internet access in households shows a significant negative impact on gender parity in primary education in both models (coefficient: -0.188 , significant at the 1% level). This counterintuitive result suggests that mere access to the internet does not automatically translate into educational benefits and might reflect deeper issues such as the quality of internet access, digital literacy, or the socioeconomic context in which this access is provided. The effects are not significant for junior and senior secondary education,

pointing to the need for more nuanced analyses of how technology and education interact.

Bank account ownership, reflecting financial inclusion, shows a significant positive effect on gender parity in primary education in the non-robust model (coefficient: 0.0448, significant at the 1% level), but the effect is not significant for other education levels. The average years of schooling among adults, a proxy for the educational environment, has a marginally significant positive effect on gender parity in primary education in the non-robust model (coefficient: 0.00256, significant at the 10% level), but no significant impact on junior and senior secondary education. This indicates that higher educational attainment among adults might influence attitudes toward education and school participation among children, particularly at the primary level.

The study's results align with existing literature on the multifaceted challenges faced by individuals with disabilities in accessing quality education. First, while the literature emphasizes that negative societal attitudes hinder inclusive education (Marina, 2020; Anastasiou, 2011), the significant positive impact of electricity coverage on gender parity in primary education suggests that improved infrastructure can enhance educational conditions, potentially mitigating stigma. Second, the interplay between disability and socioeconomic factors is critical, as individuals with disabilities often face financial burdens that limit access to educational resources (Mandemakers et al., 2010; Takeda et al., 2018). The study's finding that poverty negatively impacts gender parity in primary education underscores the persistent challenges poverty poses to educational equity. Additionally, the lack of significant effects from PKH and BPNT recipient rates indicates that social assistance programs may not adequately address the specific needs of students with disabilities, echoing calls for improved policies.

The literature also highlights the urgent need for systemic change to address educational exclusion (Bines et al., 2011; Peters, 2008). The study's mixed results for economic indicators and the significant role of electricity coverage emphasize the importance of targeted policies that address both infrastructural and socioeconomic factors. Furthermore, the findings on the marginally significant effect of adult educational attainment suggest that addressing environmental barriers is crucial for fostering inclusion, aligning with the social model of disability (Anastasiou et al., 2011). Lastly, the literature underscores the importance of a rights-based approach to education, advocating for equitable access for all students (United Nations Convention on the Rights of Persons with Disabilities). Overall, the study reinforces the need for collaborative efforts to create inclusive educational systems that support the diverse needs of all students.

Overall, the study's findings emphasize the multifaceted nature of educational inclusion and the need for targeted policies that address both infrastructural and socioeconomic factors to achieve gender parity in education. The significant role of electricity coverage and the mixed results for economic indicators highlight the importance of a holistic approach to educational policy, ensuring that improvements in infrastructure, economic conditions, and social support are aligned to promote equitable educational opportunities for all genders.

5 Conclusion

The analysis of school participation rates (SPR) for disabled and non-disabled students across primary, junior secondary, and senior secondary levels reveals significant disparities, highlighting a critical need for targeted policy interventions to achieve educational parity. The findings show that disabled students have notably lower participation rates compared to their non-disabled peers, with the gap widening at higher education levels. To address this, policies must focus on several key areas.

Firstly, enhancing infrastructure is crucial. The positive impact of electricity coverage on school participation indicates that improving access to electricity in underserved areas can significantly boost educational inclusion (UNESCO, 2015). Government and policymakers should prioritize extending reliable electricity to all districts, ensuring that schools and homes are adequately equipped to support students' educational needs.

Secondly, economic stability and targeted social assistance programs need to be bolstered. While the current social assistance programs (PKH and BPNT) do not show a significant direct impact on gender parity in education, they remain vital for supporting low-income families. Policymakers should consider refining these programs to more directly address educational barriers faced by disabled students. This could include providing additional educational grants or subsidies specifically for disabled students to cover school fees, transportation, and learning materials (World Bank, 2018).

Thirdly, addressing poverty is essential for improving school participation rates. The negative impact of poverty on primary education participation underscores the need for comprehensive poverty alleviation strategies. Policies aimed at increasing household incomes, such as job creation, vocational training, and microfinance initiatives, can help mitigate the economic constraints that hinder educational participation (OECD, 2017).

Moreover, the counterintuitive negative impact of internet access on primary education participation suggests that mere access is insufficient without accompanying measures to ensure effective utilization. This highlights the need for digital literacy programs and better integration of technology in education. Policymakers should invest in training

teachers and students in digital skills, ensuring that internet access translates into tangible educational benefits (ITU, 2020).

Financial inclusion, as indicated by the positive effect of bank account ownership, suggests that promoting financial services can support educational participation. Policies encouraging the opening of bank accounts and providing financial education can help families better manage educational expenses and invest in their children's future (G20, 2016).

In summary, the disparities in school participation rates between disabled and non-disabled students across educational levels underscore the need for targeted interventions to promote educational inclusion. The findings highlight the importance of improving infrastructure, particularly electricity access, enhancing economic stability through refined social assistance programs, addressing poverty, promoting effective use of technology in education, and encouraging financial inclusion. By adopting a holistic approach that addresses both infrastructural and socioeconomic factors, policymakers can ensure that educational opportunities are equitable and inclusive, enabling all students, regardless of their disabilities, to participate fully in the education system. These efforts are critical for achieving Sustainable Development Goal 4, which aims to ensure inclusive and equitable quality education for all (UN, 2015).

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