

## EVALUATING THE EFFECTS OF INDONESIA'S SCHOOL ZONING POLICY ON EDUCATIONAL EQUALITY AND EQUITY: INSIGHTS FROM PARENTS IN BANGKA BELITUNG ISLANDS PROVINCE

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### Abstract

*In 2018, the Indonesian government implemented a school-zoning admission system (PPDB) aimed at democratizing access to quality basic education. However, empirical evaluations of the policy's effectiveness in promoting equality and equity are still scarce, particularly beyond Java. This study examines parental perceptions of educational equality (including equal access, respect and recognition, care, power, and working and learning conditions) and equity (targeted support) within the zoning scheme, based on a cross-sectional survey of 300 parents from 25 public and private secondary schools across four districts in the Bangka Belitung Islands Province. A structured questionnaire comprising 32 closed questions and four open questions was administered both online and on paper during the period of March to April 2025. Descriptive statistics and independent samples t-tests/ANOVA were utilized to analyze mean differences among socio-demographic groups. Results indicate a high level of positive perceptions regarding equal access (95%) and opportunity (92%), while responses concerning competitiveness reveal ambivalence (50%). Mean equality ( $M = 14.83$ ,  $SD = 1.21$ ) and equity scores ( $M = 3.86$ ,  $SD = 0.42$ ) are relatively high; however, notable variations exist across gender, occupation, income, and school type (public vs private). Digital PPDB platforms and geospatial dashboards were viewed as enhancing transparency; however, the presence of digital divides in rural areas moderated this enthusiasm. The findings indicate that while the zoning policy is essential, it alone is inadequate for achieving sustainable educational innovation. Additional investments in digital infrastructure and tailored support are necessary to convert equal access into equitable learning outcomes. The discussion focuses on the implications for policymakers and school leaders in utilizing digital transformation to address remaining gaps*

**Keywords:** school zoning policy; educational equality; educational equity; digital transformation; sustainable innovation

### Introduction

Educational equity has become a cornerstone of Sustainable Development Goal 4, compelling nations to ensure inclusive and equitable quality education for all (UNESCO, 2023). Indonesia's Ministry of Education, Culture, Research and Technology issued Ministerial Decree No. 14/2018 concerning the New Student Admission System (Penerimaan Peserta Didik Baru, PPDB), also referred to as the school-zoning policy. The policy aims to disperse enrollment possibilities and reduce de facto tracking based on academic prestige by prioritizing physical closeness between a student's residence and school (Sulistiyosari et al., 2023). Scholarly evaluations have yielded inconclusive results, with certain research highlighting ongoing urban–rural discrepancies (Husni, 2024; Kearney, 2022). Simultaneously, Indonesia is adopting digital transformation to modernize public services, shown by the PPDB's shift from manual verification to GIS-enabled online platforms that visualize catchment regions and automate admission quotas (UNESCO, 2024). Although these innovations may improve transparency, they also pose a risk of exacerbating inequality in areas with poor internet connectivity (Digital Education Council, 2025).

This study examines whether the zoning-based admission system has fulfilled its intended equality and equitable objectives from the perspective of parents, while simultaneously exploring the influence of digitalization on these attitudes. The research specifically seeks to assess parents' perceptions of equality and equity regarding the zoning policy, identify socio-demographic characteristics linked to varying perspectives, and examine the impact of digital PPDB platforms on transparency and fairness. This strategy guarantees that all students, irrespective of their background or geographical location, have access to high-quality education (Widiharjanti, Kamnuansilpa, Ronghanam, & Chaiyarit, 2025; Sulistiyosari et al., 2023). This research provides new quantitative evidence and context-specific recommendations by addressing these aims within the often-overlooked island province of Bangka Belitung in national studies. Comprehending stakeholder perceptions is essential for policy refinement, and the results of this study will assist provincial education offices in utilizing digital tools to enhance zoning boundaries, allocate resources, and more effectively target support, thus promoting sustainable, data-driven

innovation in the education sector.

Indonesia's education system is rigorously governed and structured, with the objective of ensuring educational equity and upholding high standards. Attaining these objectives necessitates robust commitments to equity and diversity in education (OECD, 2012). Expanding on this foundation, Widiharjanti, Kamnuansilpa, Ronghanam, and Chaiyarit (2025) emphasize that the proper execution of school zoning rules is essential for actualizing these ideas within the Indonesian setting. Equality in education denotes equitable access, opportunity, and treatment among various groups, whereas equity highlights the necessity of tailored support to guarantee that students with varying requirements attain similar outcomes (UNESCO, 2017). Equality guarantees universal access to the system, whereas equity ensures that all individuals are supported and none are marginalized. The school zoning admission system (PPDB) in Indonesia, established by Ministry of Education and Culture Regulation No. 17/2017, aims to diminish elitism in school admissions and foster diversity. Research suggests that zoning may mitigate excessive competitiveness and enhance community cohesion (Fitriah, 2020), while it has also led to unexpected outcomes such as residential segregation and digital obstacles in application processes (Suryadarma & Jones, 2021). The current incorporation of digital platforms, GIS dashboards, and online PPDB systems exemplifies Indonesia's overarching initiative to modernize governance via transparency and efficiency (World Bank, 2022). Nonetheless, enduring digital disparities between urban and rural regions prompt apprehensions regarding the accessibility of such innovations for all inhabitants (Rahmawati, 2023). Collectively, these factors indicate that school zoning is not solely an issue of equity, but also a sustainability concern that necessitates ongoing policy enhancement and innovation in the digital age.

### Methods

The population consisted of parents of Grade 11 students in the Bangka Belitung Islands during the 2023/2024 school year. Employing multi-stage cluster sampling, 25 schools were chosen, comprising 19 public and 6 private institutions throughout Bangka Belitung province. From this sampling frame, 300 valid questionnaires were collected, resulting in a response rate of 78%. The survey instrument was modified from Gillborn and Youdell's (2000) equality–equity paradigm and implemented into five dimensions of equality and five dimensions of equity. The internal consistency was deemed satisfactory (Cronbach's  $\alpha = 0.88$ ). Items were evaluated using a four-point Likert scale, where elevated scores signified greater agreement. Alongside 32 closed-ended items, four open-ended questions were incorporated to obtain contextual insights.

Data collection occurred from July to early October 2025, with responses gathered directly from parents using printed surveys disseminated via schools. The researcher and the study team subsequently obtained and processed the completed surveys. The data analysis was conducted in two phases. Initially, descriptive statistics were employed to summarize parental responses and evaluate the central tendencies of equality and equity scores. Secondly, inferential tests, including independent-samples t-tests and one-way ANOVA, were performed to see if significant differences existed across socio-demographic characteristics such as gender, age, occupation, income, education, and school location. A significant level of  $\alpha = 0.05$  was consistently employed.

### Results and Discussions

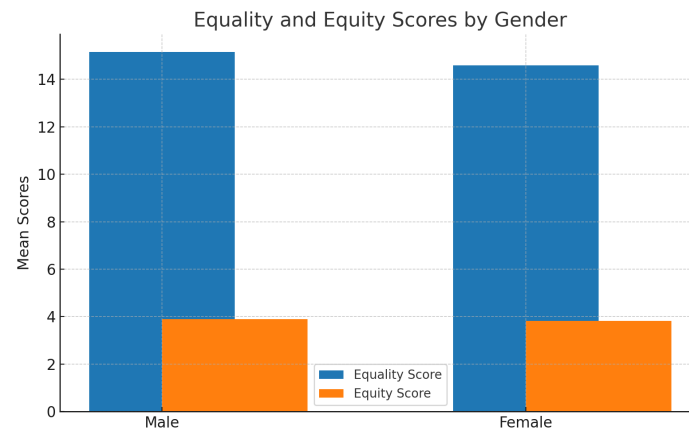
The research indicated that parents predominantly maintained favorable views of the school zoning policy regarding both equality and equity, with mean scores of  $M = 14.83$  ( $SD = 1.21$ ) for equality and  $M = 3.86$  ( $SD = 0.42$ ) for equity. The elevated approval rates for equal access (95%) and opportunity (92%) indicate that zoning has been notably effective in expanding school enrollment and offering more students the option to study in proximity to their residences. Perceptions of competitiveness were ambiguous, as only 50% of respondents concurred that the strategy improved merit-based motivation. This signifies that although access has been enhanced, the competitive dynamics of education continue to be disputed.

**Table 1. Variations in Equality and Equity Scores by Demographic Groups**

| Demographic Group             | Equality Mean | Equity Mean | Significance (p)     |
|-------------------------------|---------------|-------------|----------------------|
| Male Parents                  | 15.15         | 3.90        | $p < .01$ (Equality) |
| Female Parents                | 14.59         | 3.82        |                      |
| Government Employees          | –             | 3.92        | $p < .01$ (Equity)   |
| Housewives/Unemployed         | –             | 3.66        |                      |
| Income $\geq$ IDR 1.6 million | –             | 3.90        | $p < .05$ (Equity)   |
| Income $<$ IDR 1.6 million    | –             | 3.79        |                      |

**Source: Data Processing Result, 2024**

Significant variations also emerged across demographic groups. Male parents reported higher equality perceptions ( $M = 15.15$ ) compared to females ( $M = 14.59$ ,  $p < .01$ ), a finding that may reflect cultural roles in educational decision-making, where fathers and mothers interpret fairness differently. Occupation served as a distinguishing factor: government employees demonstrated more pronounced judgments of equity compared to housewives or jobless individuals ( $p < .01$ ), highlighting the influence of employment security on the feeling of fairness. Income exacerbated these discrepancies, as families with monthly wages exceeding IDR 1.6 million reported higher equity than their lower-income counterparts ( $p < .05$ ). These findings highlight that while zoning fosters equitable access, entrenched socio-economic disparities persist in influencing the policy's reception.



**Figure 1. Equality and Equity Scores by Gender**

At the same time, the integration of digital PPDB platforms has enhanced transparency and accountability in the admission process. Parents appreciated features such as geospatial dashboards and automated quota allocation, which made the process more visible and consistent. However, this digitalization has also established new obstacles, especially in rural areas where internet connectivity and digital literacy are inadequate. Failure to address these disparities may prevent the complete realization of school zoning's potential to foster sustainable educational innovation.

The data indicate that zoning alone cannot ensure sustained reform in education. To enhance both equality and equity, complementary measures are necessary, including investment in digital infrastructure to mitigate rural-urban disparities, training for school administrators to proficiently manage online platforms, and customized subsidies for underprivileged families to ensure access translates into authentic opportunity. These measures would facilitate the zoning policy to democratize access and yield equitable outcomes, so harmonizing with overarching objectives of sustainable innovation in the era of digital transformation.

## Conclusion

This study offers empirical insights into parental perceptions of equality and equity regarding Indonesia's school zoning legislation in the Bangka Belitung Islands. The data indicate that the policy has been effective in broadening access and improving transparency, as evidenced by significant parental acceptance of equal access and opportunity. Nonetheless, discrepancies persist among gender, occupation, and income categories, indicating that although the zoning system mitigates entry barriers, it fails to comprehensively tackle underlying structural inequalities.

The research highlights the dual use of digitalization in the PPDB process. Online platforms and GIS dashboards enhance transparency and accountability. Conversely, digital divides, especially in rural regions with inadequate connectivity, persist in hindering equal participation. In the absence of further measures, the advantages of digital transformation are likely to be inequitably allocated.

To ensure the zoning system evolves into a sustainable innovation amid digital disruption, officials must embrace a comprehensive strategy. This entails investing in digital infrastructure to mitigate rural-urban disparities, offering capacity-building and training for school administrators to proficiently handle digital platforms, and guaranteeing targeted subsidies or help for economically disadvantaged families. These metrics are crucial for expanding access equality and ensuring equitable outcomes.

The results from this island province underscore the necessity for more contextually relevant education policies. Expanding this research to more provinces will provide comparative analysis of regional disparities, while longitudinal studies may monitor the enduring impacts of zoning on student achievement, social integration, and educational mobility. Ultimately, school zoning signifies a crucial advancement in the democratization of education in Indonesia. It should be regarded as an element within a comprehensive ecosystem of changes where

policy design, socio-economic conditions, and digital transformation converge. Only through an integrated and flexible strategy can the policy achieve its promise of providing not only equality of access but also fairness of outcomes in a swiftly evolving digital landscape.

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The contributions of each author were as follows: the first author conducted the fieldwork, reviewed the literature, and collected the data; the second author designed the research methodology and wrote the article; the third author managed the data and reviewed the literature; and the fourth author analyzed the data, interpreted the statistical test results, and integrated the qualitative findings.

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