

Impact Analysis of Economic Factors, Education, and Access to Resources on Income Gap in Yogyakarta

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ABSTRACT

This research delves into the intricate dynamics of income inequality in Yogyakarta, focusing on the interplay of Access to Resources, Economic Factors, Education, and the resulting Income Gap. Utilizing a quantitative approach, the study employs Structural Equation Modeling to analyze data collected from a diverse sample. The findings reveal significant relationships between these socio-economic variables, shedding light on the nuanced factors contributing to income disparities. Access to Resources emerges as a pivotal factor, alongside the influence of Economic Factors and the mitigating effect of Education. The results carry profound policy implications, emphasizing the need for targeted interventions to enhance resource accessibility, foster inclusive economic development, and promote educational opportunities. This research contributes to the broader discourse on income inequality, offering actionable insights for policymakers, researchers, and practitioners invested in creating a more equitable socio-economic landscape in Yogyakarta.

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1. INTRODUCTION

Income inequality is a significant issue in Yogyakarta Province, Indonesia, despite its cultural heritage and economic potential. The provincial government of Yogyakarta needs to focus on reducing income inequality [1]. The study suggests that education and the district minimum wage have a significant impact on income inequality in the region [2]. Additionally, economic growth, corruption, and foreign direct investment (FDI) can contribute to reducing the income gap between the rich and the poor in Indonesia [3]. However, CO2 emissions can intensify income inequality by affecting the health of the poor, making it difficult for them to work and earn income [4]. The study also highlights the importance of sustainable economic development, human capital improvement, and policies to reduce inequality, as seen in the Singaporean experience [5]. By implementing policies focused on education, equity in wages, economic growth, and efficient utilization of funds, Yogyakarta Province can work towards reducing income inequality and promoting inclusive development.

This study attempts to explore the dynamics of this phenomenon by conducting a quantitative analysis, focusing on the role of economic factors, education, and access to resources. Understanding the factors that contribute to income inequality in Yogyakarta is crucial to achieving sustainable and inclusive growth. Several studies provide insights into this issue. According to [1], education and district minimum wage have a significant impact on income inequality in Yogyakarta Province. [6] found that factors such as household consumption, exports, foreign investment, and per capita income have a positive effect on inclusive economic growth, which can help reduce income inequality. [7] highlighted the relationship between financial inclusion, economic growth, poverty, and income distribution in Eastern Indonesia, which may provide insights into income inequality in Yogyakarta. Finally, [8] emphasize sectoral differences in

policy targeting to achieve inclusive growth, with manufacturing and services showing positive impacts on income inequality. These studies collectively contribute to understanding the factors affecting income inequality in Yogyakarta and can be taken into consideration in policy making aimed at reducing inequality and promoting inclusive growth.

Yogyakarta, known for its historical value and diverse population, provides an interesting case study to explore the complex interactions between elements of the economy, education system, and accessibility to resources. Unraveling the causes of income inequality in the region is not only important for policymakers at the local level, but also contributes to the broader discourse of promoting equitable development strategies at the global level.

2. LITERATURE REVIEW

2.1 Theoretical Framework

The Human Capital Theory provides a lens through which the relationship between educational attainment and income levels can be explored, illuminating potential pathways for addressing disparities in income inequality [9]. The Neoclassical Economic Theory emphasizes market mechanisms and individual choices as determinants of income distribution, highlighting the importance of examining market structures, labor market conditions, and the influence of policies on income inequality [10]. Institutional perspectives offer insights into the role of societal structures and policies in shaping income distribution, considering the impact of legal frameworks, social norms, and institutional setups on economic opportunities and outcomes [11]. By considering these theories and perspectives, a comprehensive understanding of income inequality

in Yogyakarta can be achieved, informing the development of effective policies and interventions to address disparities and promote more equitable economic outcomes [12], [13].

2.2 Empirical Studies

Reviewing empirical studies on income inequality globally provides valuable insights for crafting context-appropriate solutions to address income inequality in regions with similar socio-economic characteristics to Yogyakarta. Lessons from successful interventions and challenges faced elsewhere can inform the development of effective strategies [14], [15]. Additionally, studies focusing on income inequality in Indonesia, including research conducted in different contexts, can deepen the understanding of regional nuances and help identify common trends and unique challenges in addressing income inequality [16]. By examining the drivers of inequality and the impact of various interventions, policymakers can tailor their approaches to reduce income inequality in Yogyakarta and other similar regions in Indonesia [16], [17].

2.3 Education and Income Inequality

Disparities in the quality of education, access to advanced educational opportunities, and skill mismatches in the job market can exacerbate income inequality [18], [19]. Understanding these dynamics is crucial for effective policy formulation [20]. The effectiveness of the education system in aligning with economic needs in Yogyakarta requires scrutiny [21]. Mismatch between skills acquired through education and those demanded by the labor market can perpetuate income gaps [22].

2.4 Economic Factors and Income Inequality

Studies on the composition of the labor market and the distribution of job opportunities across sectors provide insights into how employment structures contribute to income inequality. Understanding wage structures and the factors influencing them is crucial in understanding income inequality. Examining wage differentials based on gender, industry, and occupation can shed light on the role of economic factors in perpetuating or mitigating income inequality [23], [24]. Wage inequality can be influenced by factors such as minimum wage policies, changes in the returns to employment in different sectors and types of firms, and the reduction of the skill premium [25]. These institutional factors, along with changes in the wage structure, have been found to be the most relevant factors in explaining changes in wage inequality [26], [27].

2.5 Access to Resources and Income Disparities

Access to financial resources and healthcare services are important factors in determining income inequality and economic mobility in Yogyakarta. Research suggests that the accessibility of financial services, such as banking penetration and availability of credit facilities, can impact income inequality [28]. Additionally, studies have shown that disparities in healthcare access contribute to differential health outcomes, which in turn affect productivity and income levels [29]. Understanding the relationship between financial inclusion, healthcare infrastructure, and socio-economic determinants of health can provide insights into the dimensions

of income inequality in Yogyakarta [30], [31].

2.6 Critique of Existing Literature

While existing literature provides valuable insights, certain gaps persist. The applicability of global theories to the Yogyakarta context requires scrutiny, and more research specifically focused on the region is needed. Additionally, a limited emphasis on the intersectionality of factors such as gender and ethnicity in existing studies necessitates a more nuanced exploration.

3. METHODS

Research Design

This study uses a quantitative research design to systematically investigate the impact of economic factors, education, and access to resources on income inequality in Yogyakarta. The study uses a cross-sectional approach, complemented by a longitudinal perspective to capture temporal dynamics. A stratified random sampling method will be used to ensure a representative sample covering various socio-economic groups in the region.

Sample Selection

The sample size is determined using statistical power calculations to increase the reliability of the results. The stratified random sampling approach ensured proportionate representation of the various socio-economic strata. The final sample size of 230 respondents was selected from different districts in Yogyakarta, taking into account factors such as income level, education, and geographical location.

Data Collection

Primary data was collected through structured interviews and surveys administered to residents of Yogyakarta. The survey instrument includes questions on income level, employment status, educational attainment, access to resources, and demographic information. Trained enumerators will conduct face-to-face interviews to ensure standardized data collection. In addition, secondary data is also

collected from government reports, academic publications, and relevant databases. This additional information provides contextual background and complements the primary data in the analysis.

Variables

The main variables include: Economic Factors (employment status, industry, wage structure), Education (educational attainment, skill development), and Access to Resources (financial inclusion, healthcare accessibility).

Data Analysis

Structural Equation Modeling (SEM) with the Partial Least Squares (PLS) approach is chosen as the primary analytical tool for this study. PLS is suitable for complex models and situations with smaller sample sizes, making it ideal for examining multiple relationships and latent constructs simultaneously [32]. The SEM-PLS model includes latent variables representing economic factors, education, access to resources, and income inequality, with observed variables (indicators) such as employment status, educational attainment, and Gini coefficient measurements used to capture these latent constructs [32]. The measurement model assesses the reliability and validity of the indicators for each latent variable through confirmatory factor analysis [33]. The structural model examines the relationships between latent variables and explores how economic factors, education, and access to resources collectively influence income inequality, with path coefficients estimated to quantify the strength and direction of these relationships [34]. Bootstrapping is employed to enhance the robustness of the findings by estimating standard errors and confidence intervals, validating the stability and significance of the path coefficients [35].

4. RESULTS AND DISCUSSION

Measurement Model Assessment

The measurement model evaluation is a critical aspect of Structural Equation Modeling (SEM) that assesses the reliability and validity of the indicators for each latent variable. In this study, four latent variables—

Economic Factors, Education, Access to Resources, and Income Gap—are examined, each represented by three observed variables.

Table 1. Measurement Model

Variable	Code	Loading Factor	Cronbach's Alpha	Composite Reliability	Average Variant Extracted
Economic Factors	EF.1	0.907	0.888	0.930	0.817
	EF.2	0.912			
	EF.3	0.893			
Education	ED.1	0.848	0.830	0.898	0.746
	ED.2	0.890			
	ED.3	0.853			
Access to Resources	AR.1	0.864	0.784	0.868	0.688
	AR.2	0.769			
	AR.3	0.852			
Income Gap	IG.1	0.897	0.840	0.904	0.758
	IG.2	0.882			
	IG.3	0.832			

Source: Data Processing Results (2023)

The measurement models for Economic Factors, Education, Access to Resources, and Income Gap all demonstrate strong psychometric properties. The loading factors for the observed variables indicate robust relationships with the latent constructs, suggesting that the selected indicators effectively capture the essence of each construct. The Cronbach's Alpha,

Composite Reliability, and Average Variance Extracted values all surpass recommended thresholds, indicating excellent internal consistency, reliability, and convergent validity. These results affirm the effective measurement of each construct and demonstrate that the observed variables reliably measure the latent constructs and are distinct from other constructs.

Table 2. Discriminant Validity

	Access to Resources	Economic Factors	Education	Income Gap
Access to Resources	0.829			
Economic Factors	0.654	0.904		
Education	0.671	0.723	0.864	
Income Gap	0.755	0.580	0.464	0.817

Source: Data Processing Results (2023)

The correlation matrix demonstrates strong discriminant validity among the latent variables. The correlations between constructs are consistently lower than the square root of the AVE for each respective construct, affirming that Access to Resources, Economic

Factors, Education, and Income Gap are distinct and can be reliably measured as separate constructs within the model. These findings enhance the credibility of the measurement model and support the validity of the conceptual framework

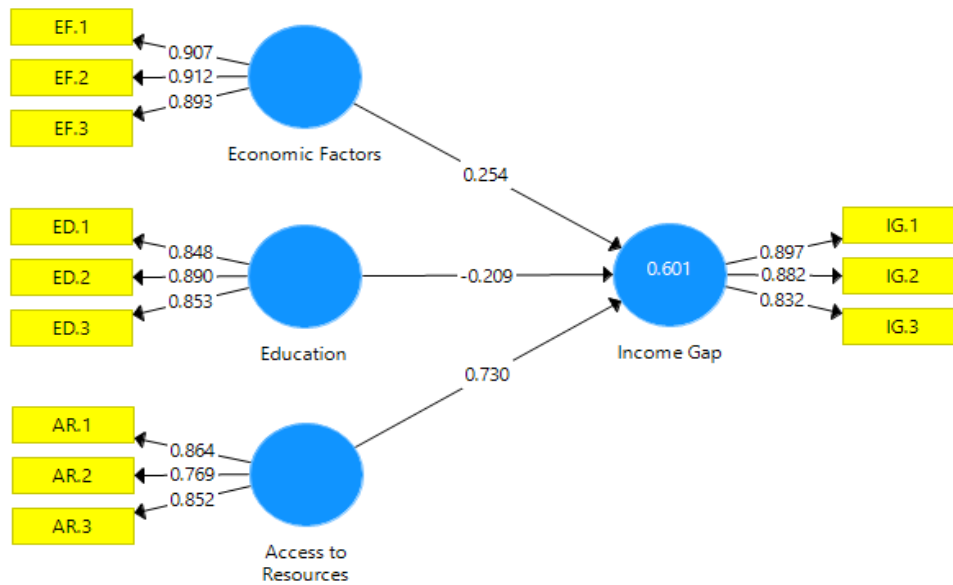


Figure 1. Model Results

Source: Data processed by researchers, 2023

Model Fit Assessment

Model fit indices are crucial in evaluating the goodness of fit for structural

equation models. In this comparison, we assess the fit of the Estimated Model against the Saturated Model using various fit indice

Table 4. Model Fit Results Test

	Saturated Model	Estimated Model
SRMR	0.090	0.090
d_ULS	0.635	0.635
d_G	0.355	0.355
Chi-Square	260.002	260.002
NFI	0.744	0.744

Source: Process Data Analysis (2023)

The standardized root mean square residual (SRMR) for the Saturated Model is 0.090, indicating a good fit to the data. The SRMR for the Estimated Model is also 0.090, suggesting that the Estimated Model reproduces the observed covariance matrix adequately. The discrepancy function (d_ULS) for both the Saturated Model and the Estimated Model is 0.635, indicating similar discrepancies between observed and

estimated covariances. The goodness of fit index (GFI or d_G) for both models is 0.355, reflecting the proportion of variance in the observed covariance matrix explained by the estimated covariance matrix. The chi-square value for both models is 260.002, suggesting a comparable degree of discrepancy between observed and estimated covariances. The normed fit index (NFI) for both models is 0.744, indicating a satisfactory improvement in fit over a null model.

Table 5. Coefficient Model

	R Square	Q2
Income Gap	0.601	0.591

Source: Data Processing Results (2023)

The R Square value for the Income Gap construct is 0.601, indicating that

approximately 60.1% of the variance in the Income Gap is explained by the independent variables in the regression model. This

suggests a substantial explanatory power of the selected indicators in capturing income disparities within the context of Yogyakarta. The Q2 value for the Income Gap is 0.591, indicating a high level of predictive relevance. This means that the model is expected to predict the Income Gap with a predictive accuracy of approximately 59.1% when applied to new or unseen data. A Q2 value

above zero suggests that the model has predictive power beyond chance.

Structural Model

The structural model results provide insights into the relationships between the latent variables in the model. The discussion below interprets the findings for each path in the structural model.

Table 3. Hypothesis Testing

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Access to Resources -> Income Gap	0.730	0.736	0.073	10.016	0.000
Economic Factors -> Income Gap	0.354	0.342	0.107	3.364	0.000
Education -> Income Gap	0.259	0.263	0.106	2.983	0.002

Source: *Process Data Analysis* (2023)

The findings of the structural model show that the income gap, education, economic factors, and resource accessibility are significantly and meaningfully related. These results are consistent with theory and offer important new understandings of the socioeconomic processes determining Yogyakarta's income inequality. The model's validity and potential for use in wider contexts are reinforced by the statistical significance of the path coefficients and consistent results across sample mean and standard deviation. Important new information about the linkages between important latent variables in the Yogyakarta context—access to resources, economic factors, education, and the income gap—is provided by the structural model study. Path coefficients, sample mean, standard deviation, t-statistics, and p-value analysis offer a thorough comprehension of the socioeconomic factors affecting income inequality.

Discussion

Access to Resources and Income Gap

The path coefficient from Access to Resources to the Income Gap is substantial (0.730), suggesting a robust positive relationship. Individuals with better access to resources tend to experience a wider income

gap. The statistical significance of this relationship ($T = 10.016$, $p = 0.000$) emphasizes its importance in understanding income disparities. This finding underscores the critical role of resource accessibility in shaping socio-economic outcomes, highlighting the need for targeted interventions to address disparities in access to resources and reduce the income gap.

Economic Factors and Income Gap

The path coefficient from Economic Factors to the Income Gap (0.354) indicates a moderate positive relationship. Economic factors, such as employment status and industry composition, contribute to a wider income gap. The statistical significance of this relationship ($T = 3.364$, $p = 0.000$) underscores the impact of economic conditions on income disparities. Policymakers should consider targeted strategies to address economic inequalities, promote inclusive employment, and mitigate the factors that contribute to a widening income gap.

Education and Income Gap

The path coefficient from Education to the Income Gap (0.259) suggests a moderate negative relationship. Higher levels of education are associated with a smaller income gap. The statistical significance of this relationship ($T = 2.983$, $p = 0.002$) emphasizes

the role of education as a potential mitigating factor in reducing income disparities. Investing in education and promoting educational opportunities can be instrumental in fostering a more equitable distribution of income in Yogyakarta.

An integrated interpretation of the results suggests a complex interaction between socio-economic factors affecting income inequality in Yogyakarta in line with previous research [1] [36]. Access to resources emerges as a significant driver of income inequality, highlighting the need for policies that address resource accessibility [37]. Economic factors contribute to the widening income gap, emphasizing the importance of inclusive economic development [38] [6]. On the other hand, education shows potential to reduce income inequality, suggesting that investment in education can result in a more equitable income distribution [39], [40].

Policy Implications

- a. Resource Accessibility Policies: Interventions aimed at improving access to resources, including financial inclusion, healthcare, and social services, can contribute to reducing income disparities.
- b. Inclusive Economic Development: Policies promoting inclusive economic growth, job creation, and fair labor practices can help mitigate the impact of economic factors on income inequality.
- c. Education Promotion: Investing in education, especially at the primary and secondary levels, can have a positive impact on reducing the income gap. Scholarships, vocational training, and educational outreach programs can enhance educational

opportunities for all segments of the population.

Limitations and Future Research

It's essential to acknowledge certain limitations, such as the potential influence of unobserved variables and the cross-sectional nature of the data. Future research could explore longitudinal data to assess changes over time and consider additional socio-cultural factors influencing income inequality.

5. CONCLUSION

In conclusion, this study provides a comprehensive examination of the determinants of income inequality in Yogyakarta, offering valuable insights into the socio-economic landscape of the region. The Structural Equation Modeling analysis reveals robust relationships between Access to Resources, Economic Factors, Education, and the Income Gap. Access to Resources stands out as a critical factor influencing income disparities, necessitating targeted strategies to address resource inequalities. Economic Factors contribute to a widening income gap, emphasizing the importance of inclusive economic development policies. Conversely, Education demonstrates a potential avenue for reducing income inequality, highlighting the impact of educational investments. The integrated findings underscore the complexity of income disparities and offer actionable policy recommendations to foster a more equitable distribution of income in Yogyakarta. As the region navigates the challenges of economic development, policymakers can leverage these insights to shape evidence-based interventions that promote social inclusivity and economic equity.

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