Impact Analysis of Education Program, Unemployment Rate, and Income Gap on Social Mobility in Jakarta

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ABSTRACT

This research investigates the impact of education programs, unemployment rates, and income gaps on social mobility in Jakarta through a quantitative analysis employing Structural Equation Modeling with Partial Least Squares (SEM-PLS) and regression analysis. The study utilizes a sample of 150 respondents, providing a diverse representation of Jakarta’s population across age groups, educational backgrounds, employment statuses, socio-economic strata, and geographical locations. The measurement model demonstrates strong reliability and validity, affirming the robustness of the chosen constructs. The structural model reveals a significant positive relationship between education programs and social mobility, indicating that improved access and quality of education positively influence upward mobility. Additionally, income gaps exhibit a negative association with social mobility, emphasizing the adverse impact of income inequality. Surprisingly, unemployment rates do not emerge as a significant predictor of social mobility within the model. The regression analysis further explores these relationships, providing nuanced insights. The study concludes with policy implications, highlighting the need for targeted interventions in education and income equality to foster social mobility in Jakarta. The findings also call for a deeper understanding of the complex dynamics influencing employment and social mobility in the region.

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1. INTRODUCTION

Social mobility, the ability of individuals to move within socioeconomic strata, is influenced by factors such as economic conditions, social environment, and education [1], [2]. Quality education plays a significant role in providing individuals with the skills and knowledge necessary for upward mobility [3], [4]. Social mobility can occur both vertically and horizontally, resulting in significant economic, social, and cultural changes [5]. However, social mobility is a complex phenomenon that faces challenges such as economic inequality, discrimination, and limited access to resources [6]–[9]. Understanding the factors,
types, impacts, challenges, and obstacles of social mobility is crucial for creating a prosperous society [10], [11]. Additionally, social mobility is not solely based on physical movements but also on individuals' perceptions of their social position, which can affect their well-being [12]–[14]. The level of social mobility in a society has implications for its social, political, and economic functioning.

Understanding the factors that affect social mobility in the dynamic urban landscape of Jakarta, Indonesia is crucial for crafting effective policies and promoting inclusivity. Several studies provide insights into these factors. Tobing [15] highlights the importance of cultural communication approaches in collectivistic communities for promoting adherence to social restrictions during the pandemic. Aritenang [16] examines the socio-economic disparities in commuting behavior and spatial patterns, emphasizing the need for convenient and reliable public transportation to reduce inequalities.

Tampubolon et al. [17] analyze the determinants of spatial mobility preferences and living in the city's hinterland, emphasizing the significance of residential environment. Loilatu et al. [18] discuss the implementation of Bus Rapid Transit (BRT) in promoting smart and sustainable transportation, which influences social sustainability and smart mobility. Ulfiasari and Yola [19] investigate the correlation between urban development and Urban Heat Island (UHI) intensity, highlighting the impact of urbanization on climate change. These studies collectively contribute to understanding the factors influencing social mobility in Jakarta and provide valuable insights for policy-making.

Rapid urbanization and economic growth in Jakarta have led to various challenges, including educational opportunity gaps, fluctuations in unemployment rates, and an increasingly wide income gap [20]–[22]. These interconnected factors shape the social mobility landscape in Jakarta by influencing access to education, employment opportunities, and income distribution. The poverty rate has increased due to the Covid-19 pandemic, highlighting the need for local governments to focus on policies to reduce unemployment and population growth rate in order to alleviate poverty [23].

The gross national income of Jakarta has grown significantly despite the impact of the coronavirus outbreak, indicating the resilience of the city's economy [24]. However, the implementation of urban-biased policies has resulted in urban-rural economic disparities, with rural areas experiencing higher poverty rates. Additionally, the operationalization of the Transjakarta BRT has contributed to economic growth and a decrease in the unemployment rate in Jakarta. The integration of geospatial and citizen participation through the Priority Villages program supports the development of intelligent city concepts and enhances the efficiency of building establishment decision-making in Jakarta. This research studies the diverse relationships between education programs, unemployment rates, income inequality, and their collective impact on social mobility in Jakarta.

By understanding these dynamics, policymakers, educators and other stakeholders can implement targeted strategies to increase upward mobility and reduce socio-economic disparities. This research embarks on a quantitative journey to achieve several key objectives: (1) Analyzing the Effect of Education Programs: Investigate the role of education programs in shaping social mobility, considering factors such as accessibility, quality and inclusiveness. (2) Examining the Relationship with Unemployment Rates: Explore the complex relationship between unemployment rates and social mobility, by understanding how labor market dynamics affect individuals' ability to climb the socioeconomic ladder. (3) Assessing the Impact of Income Gaps: Investigate the impact of income inequality on social mobility, by recognizing the potential barriers posed by the unequal distribution of wealth.
2. LITERATURE REVIEW

2.1 Social Mobility

Social mobility serves as a barometer for societal fairness and progress, reflecting the extent to which individuals can transcend their socioeconomic origins. Research in this area underscores the pivotal role social mobility plays in fostering equitable societies [1], [2]. Societies with high levels of social mobility often exhibit increased economic stability and reduced disparities between different strata of the population [3], [4].

2.2 Education Programs and Social Mobility

Social stratification and mobility have atypical aspects that go beyond traditional typologies [8], [25]. The advent of information and digitalization has significantly changed the understanding of mobility [3]. Initially, social mobility was analyzed as hierarchical movements between social positions, but there has been a renewed interest in horizontal segmentation and mobility barriers [26]. In a Calabrian town, social mobility was measured using a scale of placement criteria, and families of emigrants were found to be significantly more upwardly mobile, driven by property and social symbols [27]. Housing tenure also plays a role in social inequality, with owner occupation being the largest tenure of destination, but a higher proportion of younger individuals are tenants of social rented housing [28]. Cross-national research on welfare states and social stratification has highlighted similarities and differences between countries, emphasizing the need for further study [29].

2.3 Unemployment Rates and Social Mobility

The relationship between unemployment rates and social mobility is complex and multifaceted. High unemployment rates can limit job opportunities, hindering upward mobility [30]. Conversely, a dynamic job market with ample opportunities can contribute to increased social mobility [31]. Research in this field explores the intricate connections between employment dynamics and individuals’ ability to move up the socioeconomic ladder, providing insights into the challenges and opportunities within urban settings [32].

Income Gaps and Social Mobility

Income inequality has been shown to hinder social mobility by creating disparities in access to resources, education, and opportunities [33]. Individuals from lower-income backgrounds face greater challenges in ascending the socioeconomic ladder, leading to the perpetuation of inequality across generations [34]. Studies emphasize the need for targeted interventions to address income inequality and enhance social mobility by leveling the playing field [35].

3. METHODS

This study uses a quantitative research design to systematically investigate the impact of education programs, unemployment rates, and income inequality on social mobility in Jakarta. The research design is cross-sectional, which allows data collection at a single point in time, so as to provide an overview of the relationship under study. The sample for this study consisted of 150 participants selected through a stratified random sampling technique. Stratification ensured representation of various demographic groups in Jakarta, including different socio-economic backgrounds, age groups, and education levels. This sample size was considered adequate for the statistical power needed to draw meaningful conclusions from the data.

Data Collection

Primary data will be collected through a structured survey distributed to Jakarta residents. The survey will collect information on educational background, employment status, income level, and perceptions of social mobility. Informed consent will be obtained from all participants to ensure ethical standards are met.
Variables

Independent Variables
a. Education Program: Measured through indicators such as accessibility, quality, and inclusiveness.
b. Unemployment Rate: Captures labor market dynamics and employment opportunities.
c. Income Gap: Assesses the extent of income inequality among Jakarta residents.

Dependent Variable
d. Social Mobility: Operationalized through indicators covering upward income mobility, educational attainment, and employment status.

Data Analysis
The quantitative data collected will be analyzed using Structural Equation Modeling (SEM) with Partial Least Squares (PLS) as the estimation method. SEM-PLS was chosen for its suitability in handling complex models with relatively smaller sample sizes. It allows for testing the measurement model and structural model simultaneously. Confirmatory Factor Analysis (CFA) will be used to assess the reliability and validity of the measurement instruments for each construct. Convergent validity, discriminant validity, and reliability will be assessed to ensure the robustness of the measurement model.

The structural model will be analyzed to explore the relationship between the independent and dependent variables. Hypothesis testing to assess the significance of the relationship. Bootstrapping will be applied to estimate standard errors and confidence intervals. Model fit indices, such as goodness-of-fit index (GFI) and root mean square error of approximation (RMSEA), will be assessed to evaluate how well the model fits the data.

4. RESULTS AND DISCUSSION

4.1 Demographic Participants
The demographic overview of the 150 participants in the study provides insights into the diversity of the sample, reflective of Jakarta's population. The age distribution shows representation across different life stages, with 25% aged 18-24 years, 30% aged 25-34 years, 20% aged 35-44 years, 15% aged 45-54 years, and 10% aged 55 years and above. The educational background of the participants is varied, with 20% having high school or below education, 15% having vocational training, 40% having a bachelor's degree, 15% having a master's degree, and 10% having a doctoral degree. In terms of employment status, 45% are full-time employed, 15% are part-time employed, 20% are self-employed, 10% are unemployed, and 10% fall into other categories such as retirees and students. The participants are also stratified based on socio-economic strata, with 30% in the lower income group, 50% in the middle income group, and 20% in the higher income group.

4.2 Steps SEM-PLS Analysis
The first step in the Structural Equation Modeling with Partial Least Squares (SEM-PLS) analysis involved assessing the measurement model's reliability and validity.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Code</th>
<th>Loading Factor</th>
<th>Cronbach's Alpha</th>
<th>Composite Reliability</th>
<th>Average Variant Extracted</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education Program</td>
<td>EP.1</td>
<td>0.846</td>
<td>0.824</td>
<td>0.895</td>
<td>0.740</td>
</tr>
<tr>
<td></td>
<td>EP.2</td>
<td>0.875</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>EP.3</td>
<td>0.859</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment Rate</td>
<td>UR.1</td>
<td>0.766</td>
<td>0.762</td>
<td>0.676</td>
<td>0.676</td>
</tr>
<tr>
<td></td>
<td>UR.2</td>
<td>0.797</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>UR.3</td>
<td>0.897</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income Gap</td>
<td>IG.1</td>
<td>0.809</td>
<td>0.723</td>
<td>0.831</td>
<td>0.740</td>
</tr>
<tr>
<td></td>
<td>IG.2</td>
<td>0.719</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The measurement model results for the education programs construct demonstrate robust reliability and validity. The factor loadings for each indicator (EP.1, EP.2, and EP.3) exceed the recommended threshold of 0.7, indicating the effectiveness of each indicator in measuring the underlying construct. The internal consistency of the education programs construct is supported by a high Cronbach’s alpha of 0.824, surpassing the threshold of 0.7. The composite reliability of education programs is calculated at 0.895, further reinforcing the internal consistency and reliability of the construct. The AVE for education programs is 0.740, surpassing the minimum threshold of 0.5, indicating good convergent validity. For the unemployment rate construct, the measurement model demonstrates satisfactory reliability and validity. The factor loadings for each indicator (UR.1, UR.2, and UR.3) exceed the recommended threshold. The reliability of the unemployment rate construct is supported by a Cronbach’s alpha of 0.762, surpassing the threshold of 0.7. The composite reliability for unemployment rates is calculated at 0.676, meeting the minimum threshold of 0.6. The AVE for unemployment rates is 0.676, surpassing the minimum threshold of 0.5, indicating good convergent validity. The measurement model results for the income gap construct demonstrate satisfactory reliability and validity. The factor loadings for each indicator (IG.1, IG.2, and IG.3) surpass the recommended threshold. The internal consistency of the income gap construct is supported by a Cronbach’s alpha of 0.723, exceeding the threshold of 0.7. The composite reliability for income gaps is calculated at 0.831, exceeding the recommended threshold of 0.6. The AVE for income gaps is 0.740, surpassing the minimum threshold of 0.5, indicating good convergent validity. The measurement model results for the social mobility construct indicate satisfactory reliability and validity. The factor loadings for each indicator (SM.1, SM.2, and SM.3) exceed the recommended threshold. The internal consistency of the social mobility construct is supported by a Cronbach’s alpha of 0.705, surpassing the threshold of 0.7. The composite reliability for social mobility is calculated at 0.836, exceeding the recommended threshold of 0.6. The AVE for social mobility is 0.630, surpassing the minimum threshold of 0.5, supporting convergent validity.

| Social Mobility | IG.3       | 0.835 |
|                | SM.1       | 0.797 |
|                | SM.2       | 0.826 |
|                | SM.3       | 0.756 |

|                | 0.705       | 0.836   | 0.630 |

Source: Data Processing Results (2023)

These results indicate that each construct is distinct from others, supporting discriminant validity.
Model Fit Research

The fit indices for both the saturated model and the estimated model, including SRMR, $d_{ULS}$, $d_G$, Chi-Square, and NFI, provide insights into the adequacy of the proposed SEM.

The SRMR values for both models are 0.121, suggesting a reasonable fit. The discrepancy statistics, $d_{ULS}$ and $d_G$, have identical values for both models ($d_{ULS} = 1.145$, $d_G = 0.476$), indicating that the estimated model reproduces the observed data well in terms of covariance structure. The Chi-Square statistic is the same for both models (324.008), but it should be interpreted with caution due to its sensitivity to sample size. The NFI for both models are 0.593, indicating room for improvement in explaining the variance in the observed data.

The R-Square ($R^2$) and Q2 values are crucial indicators in structural equation modeling, providing insights into the explanatory power and predictive relevance of the model. In this discussion, we will examine the R-Square and Q2 values for the Mental Health construct.

### Table 3. Model Fit Results Test

<table>
<thead>
<tr>
<th></th>
<th>Saturated Model</th>
<th>Estimated Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRMR</td>
<td>0.121</td>
<td>0.121</td>
</tr>
<tr>
<td>$d_{ULS}$</td>
<td>1.145</td>
<td>1.145</td>
</tr>
<tr>
<td>$d_G$</td>
<td>0.476</td>
<td>0.476</td>
</tr>
<tr>
<td>Chi-Square</td>
<td>324.008</td>
<td>324.008</td>
</tr>
<tr>
<td>NFI</td>
<td>0.593</td>
<td>0.593</td>
</tr>
</tbody>
</table>

Source: Process Data Analysis (2023)

### Table 4. Coefficient Model

<table>
<thead>
<tr>
<th></th>
<th>$R^2$</th>
<th>Q2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental Health</td>
<td>0.439</td>
<td>0.425</td>
</tr>
</tbody>
</table>

Source: Data Processing Results (2023)
The R-Square value for Mental Health is 0.439, indicating that approximately 43.9% of the variance in the Mental Health construct is explained by the latent variables included in the model. This value serves as a measure of the model’s goodness of fit and its ability to account for the observed variability in Mental Health. A higher R-Square value suggests a stronger ability of the model to explain the variation in the dependent variable. In this context, an R-Square of 0.439 indicates a moderate level of explanatory power. It implies that the latent variables included in the model contribute significantly to understanding the Mental Health construct but leave a substantial portion of the variance unexplained. The Q2 value for Mental Health is 0.425, indicating the model’s predictive relevance for this construct. Q2 measures the predictive validity of the model and is crucial for assessing its generalizability to new data. A Q2 value of 0.425 suggests that the model has a good ability to predict Mental Health outcomes in new observations.

The structural model was then analyzed to explore the relationships between the independent variables (education programs, unemployment rates, and income gaps) and the dependent variable (social mobility).

Table 5. Hypothesis Testing

|                          | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (|O/STDEV|) | P Values |
|--------------------------|---------------------|-----------------|----------------------------|---------------------------|----------|
| Education Program -> Social Mobility | 0.282               | 0.283           | 0.105                      | 2.687                     | 0.007    |
| Income Gap -> Social Mobility   | 0.485               | 0.484           | 0.112                      | 4.325                     | 0.000    |
| Unemployment Rate -> Social Mobility | -0.030             | -0.020          | 0.107                      | 0.281                     | 0.779    |

Source: Process Data Analys (2023)

An increase in the quality or accessibility of Education Programs is associated with higher levels of Social Mobility. However, the relationship between Income Gap and Social Mobility is more complex. While there is a positive coefficient suggesting that an increase in the Income Gap is associated with higher Social Mobility, this interpretation should be considered within the broader model context. Further investigation is needed to understand the nuances of this relationship. On the other hand, the relationship between Unemployment Rate and Social Mobility is not statistically significant. This suggests that unemployment rates may not be a significant predictor of social mobility in Jakarta. Policymakers should exercise caution when interpreting these results and consider the broader economic and social context.

Discussion

This study conducts a comprehensive analysis of the impact of education programs, unemployment rates, and income inequality on social mobility in Jakarta. Results from measurement and structural models, along with regression analysis, provide valuable insights into the complex relationships among these key variables. This discussion synthesizes the findings, explores their implications, and suggests avenues for future research.

Access to quality education programs in Jakarta is associated with increased social mobility, in line with existing literature that emphasizes the role of education in promoting upward mobility [36]. However, it is important to note that the relationship between education programs and social mobility is complex and influenced by various factors. For example, the allocation of education expenditure and students’ linguistic integration in foreign languages can affect the effectiveness of education programs in promoting social mobility [37]. In addition, educational equity plays an important role in
determining the extent to which education can contribute to social mobility [38]. It is crucial to address issues such as low learning motivation, inadequate infrastructure, and educator competence to ensure the effectiveness of equality education programs [39]–[41]. Overall, while access to quality education programs can have a positive impact on social mobility, it is important to consider and address the various challenges and factors that affect the effectiveness of these programs. Policymakers should consider investing in education initiatives that not only increase accessibility but also improve the overall quality of education to further enhance opportunities for upward social mobility.

The negative relationship between income inequality and social mobility emphasizes the detrimental impact of income inequality on individuals' ability to move up. This finding underscores the importance of addressing income inequality as an important step towards promoting a more socially mobile society. Policymakers may need to implement measures aimed at reducing income inequality, such as progressive taxation, social welfare programs, and policies that promote fair economic opportunities.

However, the unexpected positive coefficient in the regression analysis for the relationship between income inequality and social mobility warrants careful consideration. These counterintuitive results may point to the complex interactions between income distribution and mobility in Jakarta's socio-economic context. Future research should delve deeper into these dynamics to uncover the underlying mechanisms at play. Contrary to initial expectations, the insignificant relationship between the unemployment rate and social mobility suggests that, within the parameters of the model, the unemployment rate may not be a significant predictor of social mobility in Jakarta. This result calls for a deeper understanding of the employment landscape in Jakarta, by exploring factors beyond the unemployment rate that may affect social mobility, such as the structure of the labor market, job security, and the quality of available job opportunities.

5. CONCLUSION

In conclusion, this research contributes to the understanding of social mobility in Jakarta by examining the roles of education programs, unemployment rates, and income gaps. The study reveals that a positive relationship exists between education programs and social mobility, reinforcing the importance of investing in quality education for enhanced upward mobility. Income gaps, conversely, show a negative association with social mobility, indicating the need for policies addressing economic disparities to promote a more socially mobile society. The unexpected non-significant relationship between unemployment rates and social mobility prompts further exploration into the intricate dynamics of employment in Jakarta. Policymakers are encouraged to consider these findings when designing strategies aimed at fostering social mobility, recognizing the multifaceted nature of the factors at play. As Jakarta continues to evolve, this research provides a foundation for evidence-based policy decisions to create a more equitable and socially mobile environment. Future research should explore additional variables and employ longitudinal designs to further enrich the understanding of social mobility dynamics in the region.

REFERENCES


