Research Article

The Influence of Gender Inequality on Economic Growth in Riau Province 2012-2021

Ryan Wibawa, Rahmita Budiartiningsih*, Sri Endang Kornita, Yusni Maulida, Poppy Nurmayanty M

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Abstract.
The purpose of this study was to determine whether the average length of schooling, life expectancy, and labor force participation rates affect economic growth with productivity levels as intervening variables in Riau Province in 2012-2021. The data used in this study was secondary data, which is a combination of time series and cross-section. The analytical method used in this study was multiple linear regression analysis using theory and data related to research. The results showed that the average length of schooling for boys had a negative and insignificant effect on economic growth in Riau Province. Meanwhile, the average length of schooling for women has a negative and insignificant effect on economic growth in Riau Province. From the results of the partial test, it can be concluded that the average length of schooling does not show gender inequality. Directly, the life expectancy for men has a negative and insignificant effect on economic growth in Riau Province. Meanwhile, life expectancy for women has a positive and insignificant effect on economic growth in Riau Province. From the results of the partial test, it can be concluded that there is gender inequality in life expectancy. Directly, the labor force participation rate for men has a negative and insignificant effect on economic growth in Riau Province. Meanwhile, the labor force participation rate for women has a negative and insignificant effect on economic growth in Riau Province. From the results of the partial test, it can be concluded that there is no gender inequality in the labor force participation rate. Indirectly, through the level of productivity, the average length of schooling for men has a positive and insignificant effect on economic growth in Riau Province. Meanwhile, the average length of schooling for women has a positive and insignificant effect on economic growth in Riau Province. From the results of the Sobel test, it was concluded that the average length of schooling does not have a relation to gender inequality. Indirectly, through the level of productivity, the life expectancy rate for men has a positive and insignificant effect on economic growth in Riau Province. Meanwhile, life expectancy for women has a negative and insignificant effect on economic growth in Riau Province. From the results of the Sobel test, it was concluded that there is a gender gap in life expectancy. Indirectly, through the level of productivity, the labor force participation rate for men has a negative and insignificant effect on economic growth in Riau Province. Meanwhile, the labor force participation rate for women has a positive and insignificant effect on economic growth in Riau Province. From the results of the Sobel test, it can be concluded that there is a gender imbalance in the labor force participation rate. The results of this study were influenced by gender inequality in terms of education, health, and employment which are categorized as experiencing low inequality so that they do not have much impact on economic growth in Riau Province.
From the education side, as seen from the average length of schooling, it has no effect on economic growth in Riau Province, as well as from a health perspective, the high life expectancy rate does not have a serious impact on economic growth in Riau Province.

**Keywords:** Gender Inequality; Productivity; Economic Growth

### 1. Introduction

Economic growth is an indicator that shows a region’s ability to increase income through optimizing all existing economic sectors. Economic growth can be used as a benchmark to see the progress of a country and the results of development carried out during that period. If the development carried out by the government is successful effectively, significant economic growth will be seen in society. Economic growth also describes the prosperity of the people because it is seen based on per capita income or the average income of a country’s population.

In measuring economic growth, it can be seen from the welfare of the people of the area. Per capita income is an indicator that shows the welfare of society because it depicts in real terms the level of success of economic development and prosperity of the society. The higher the per capita income of a region, the region is synonymous with prosperity, both in terms of development, education, health and security.

Each country uses certain economic instruments to measure its level of productivity and welfare, per capita income is one of them. In an economic context, per capita income is the real amount of money earned by individuals in a country and reflects their economic activity on a micro scale. On an international scale, per capita income is one indicator to determine the class of a country, whether it is a developed, upper middle, lower middle or underdeveloped country. Meanwhile, on a national scale, the government can use per capita income data in various conditions.

Per capita income, which in aggregate causes economic growth in a region, is influenced by the ability of human resources as the main production factor in managing existing resources so as to increase production output. Inclusive economic growth can benefit women and men equally, by creating more job opportunities and increasing incomes. This can increase women’s access to economic and social resources, such as employment, education, and health care (1). Inclusive growth can also reduce poverty levels and improve family welfare.
Gender itself is the existence of non-biological differences and similarities between women and men, in this term it is often juxtaposed with equality in rights as living creatures. Meanwhile, gender equality means that women and men have the status, conditions and potential to realize their rights as human beings and contribute to national, political, economic, social and cultural development (2). The manifestation of this is that there is no discrimination between the female and male population in experiencing national development. The existence of injustice or inequality in gender can result in hampering the country’s development potential (3).

Gender inequality can affect productivity and economic growth in various ways. On the one hand, gender inequality can limit labor force participation and economic opportunities for women, which can reduce productivity and economic growth. On the other hand, gender inequality can also hinder progress in innovation and technological development, which can affect long-term growth.

Conceptually, productivity is the level of efficiency of an economy in using its capital, people and technology to produce output (4). Productivity is an important concept in the analysis of economic development, because apart from increasing production inputs, income growth can occur as a result of increasing productivity. This measurement is obtained from dividing GRDP using a value added approach (usually divided by sector), by the number of workers or total working hours in that sector (5).

The successful development of a country can increase the level of social welfare. The higher the economic growth of a country indicates the better the economic development, so that the society will be more prosperous. Another factor that can influence economic growth is giving people freedom to choose their rights and opportunities. However, this is hampered by the lack of justice or gender equality.

Human development efforts in Riau Province have made a lot of progress, but have not been fully able to overcome gender inequality, especially among women. In fact, women’s involvement in economic activities is the key to ending poverty which influences economic growth (6). Keeping women’s investment in education and health low reduces the level of human capital in society thereby reducing income levels. Women’s low education and skills as well as health and limited access to resources limit productivity, economic growth and reduce the effectiveness of overall development (7). Or in other words, issues regarding gender inequality and equality are very important in efforts to encourage successful development.

The need for special attention to cross gender inequality so that it can contribute more to economic growth is a harmony that must be evaluated further. Where in particular the role of women in economic growth is thought to be very important (8).
of harmony between men and women together really supports increasing economic growth in Indonesia both in terms of education, health, labor and also the economy. So that it has an impact on economic growth in Indonesia, one of which is the source of income generated by both women and men. Based on these problems, this study aims to analyze whether gender inequality affects economic growth with productivity levels as an intervening variable in Riau Province.

2. Research methods

This research uses data in Riau Province which is sourced from the Riau Province Central Statistics Agency. The data used in this research was collected by searching various sources such as literature books or data that has been processed. Data from this research was obtained from the Central Statistics Agency of Riau Province as well as journals sourced from Google Scholar and other searches.

Analysis of the influence of gender inequality on economic growth using the multiple linear regression method. Using panel data, the expected analysis results can show the influence of the independent variable on the dependent variable. The use of panel data allows research to have more and larger data, besides being able to minimize collinearity between variables compared to using cross section data or time series data (9).

Multiple linear regression is a linear regression model that involves more than one independent variable. Multiple linear regression analysis is used to calculate the magnitude of the quantitative influence of variable X1, namely Average Years of Schooling (RLS), variable X2, namely Life Expectancy Rate (AHH), variable on variable Y, namely Gross Regional Domestic Product (GRDP) Per Capita at Constant Prices in 2010. The multiple linear regression model is formulated with the following equation:

Model I
\[ Z = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon \] (3.1)

Model II
\[ Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 Z + \epsilon \] (3.2)

Information :
Y = Economic Growth
Z = Productivity Level
X1 = Average Years of Schooling (RLS)
X2 = Life Expectancy (AHH)
X3 = Labor Force Participation Rate (TPAK)  
ε = error  
β1- β4 = Coefficient  
α = Constant  

In the regression test above, each variable is classified based on gender, resulting in 4 multiple linear regression equation tests. With model I and model II, each of which has 2 multiple linear regression equations between men and women. Each independent variable is classified based on gender so that the variable form is as follows: average length of schooling for men (RLSL) and women (RLSP), life expectancy for men (AHHL) and women (AHHP), and male labor force participation rate -men (TPAKL) and women (TPAKP).

3. Results

3.1. The Influence of Gender Inequality on Economic Growth in Riau Province

The following effect of gender inequality on economic growth in Riau Province can be seen from the following SPSS data:

<table>
<thead>
<tr>
<th>TABLE 1: T test (Partial) Stage 2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>(Constant)</td>
</tr>
<tr>
<td>RSLSL</td>
</tr>
<tr>
<td>RLSP</td>
</tr>
<tr>
<td>AHHL</td>
</tr>
<tr>
<td>AHHP</td>
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<tr>
<td>TPAKL</td>
</tr>
<tr>
<td>TPAKP</td>
</tr>
<tr>
<td>PRODUCTIVITY</td>
</tr>
</tbody>
</table>

a. Dependent Variable: GRDP  
Source: SPSS 24.0 processed data, 2023

Partially in stage 2, the variable Average Years of Schooling for Boys (RLSL) has a negative and insignificant effect on economic growth in Riau Province. Meanwhile, the
Average Years of Schooling for Women (RLSP) has a negative and insignificant effect on economic growth in Riau Province. Male Life Expectancy (AHHL) has a negative and insignificant effect on economic growth in Riau Province. Meanwhile, Female Life Expectancy (AHHP) has a positive and insignificant effect on economic growth in Riau Province. The Male Labor Force Participation Level (TPAKL) has a negative and insignificant effect on economic growth in Riau Province. Meanwhile, the Female Labor Force Participation Rate (TPAKP) has a negative and insignificant effect on economic growth in Riau Province. However, on the other hand, the regression coefficient figures for AHHL and AHHP are -0.036 and 0.088. This shows that there is gender inequality in terms of health.

3.2. The Effect of Gender Inequality on Economic Growth Through Productivity Levels in Riau Province

The following effect of gender inequality on economic growth through productivity levels in Riau Province can be seen from the following Sobel test data:

<table>
<thead>
<tr>
<th>Model</th>
<th>A</th>
<th>sa</th>
<th>B</th>
<th>SB</th>
<th>Z</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>RLSL - Z - Y</td>
<td>-1.259</td>
<td>8.006</td>
<td>-0.204</td>
<td>0.241</td>
<td>0.155</td>
<td>0.877</td>
</tr>
<tr>
<td>RLSP - Z - Y</td>
<td>-8.870</td>
<td>4.003</td>
<td>-0.204</td>
<td>0.241</td>
<td>0.790</td>
<td>0.429</td>
</tr>
<tr>
<td>AHHL - Z - Y</td>
<td>-1.899</td>
<td>5.621</td>
<td>-0.204</td>
<td>0.241</td>
<td>0.314</td>
<td>0.754</td>
</tr>
<tr>
<td>AHHP - Z - Y</td>
<td>1.576</td>
<td>4.345</td>
<td>-0.204</td>
<td>0.241</td>
<td>-0.033</td>
<td>0.739</td>
</tr>
<tr>
<td>TPAKL - Z - Y</td>
<td>0.968</td>
<td>2.304</td>
<td>-0.204</td>
<td>0.241</td>
<td>-0.376</td>
<td>0.707</td>
</tr>
<tr>
<td>TPAKP - Z - Y</td>
<td>-0.931</td>
<td>0.602</td>
<td>-0.204</td>
<td>0.241</td>
<td>0.743</td>
<td>0.458</td>
</tr>
</tbody>
</table>

Source: Research results, 2023

Judging from the Sobel test which uses an intervening variable from the level of productivity, it can be concluded that the Average Years of Schooling for Boys (RLSL) has a positive and insignificant effect on economic growth in Riau Province. Meanwhile, the Average Years of Schooling for Women (RLSP) has a positive and insignificant effect on economic growth in Riau Province. Male Life Expectancy (AHHL) has a positive and insignificant effect on economic growth in Riau Province. Male Life Expectancy (AHHP) has a positive and insignificant effect on economic growth in Riau Province. Meanwhile, Women’s Life Expectancy (AHHP) has a negative and insignificant effect on economic growth. The Male Labor Force Participation Level (TPAKL) has a negative and insignificant effect on economic growth in Riau Province. Meanwhile, the Female Labor Force Participation Rate (TPAKP) has a positive and insignificant effect on economic growth in Riau Province.
However, on the other hand, the regression coefficient figures for AHHL and AHHP are 0.314 and -0.033. This shows that there is gender inequality in terms of health. And also on the employment side, the regression coefficient figures for TPAKL and TPAKP are -0.376 and 0.743. This shows that in terms of employment there is gender inequality.

### 4. Discussion and Analysis

#### 4.1. The Influence of Education on Economic Growth in Riau Province

Judging from statistical testing, it can be seen that education as seen from the Average Years of Schooling (RLS) for men and women has a negative and insignificant effect on economic growth in Riau Province in 2012-2021 directly and indirectly through productivity levels has a positive effect and not significant to economic growth. The small influence of Average Years of Schooling (RLS) on economic growth indicates that an increase in Average Years of Schooling (RLS) has no impact on productivity levels assuming other variables are held constant.

Average Years of Schooling (RLS) as a composite indicator of the human development index should influence economic growth along with its influence on the human development index. With the level of education depicted through data on the average length of schooling for men and women, it has no effect on economic growth. Meanwhile, (10) found that the Average Years of Schooling (RLS) for men and women has a significant positive influence on economic growth in Indonesia. In contrast to this research, in the Riau region it can be concluded that an increase in the average length of schooling does not have a significant influence on economic growth in Riau Province.

Average Years of Schooling does not have an influence on economic growth in Riau Province because Average Years of Schooling does not reflect the real situation in the year studied because years of schooling will not significantly increase labor productivity which can influence economic growth. Apart from that, judging from direct statistical testing, the average length of schooling for men has a regression coefficient of -0.968 and for women -1.682. Indirectly, the average length of schooling for men has a regression coefficient of 0.155 and for women of 0.790. From this explanation, it can be concluded that in terms of education, directly and indirectly, there is no gender inequality.

In many regions, women’s access to education has increased, giving them better opportunities to enter the labor market with skills equal to those of men. This can
reduce the impact of gender inequality on economic growth. Additionally, the impact of education on economic growth may take a long time to become apparent. Investments in education may take several generations before their positive impacts are truly felt in the form of increased productivity and economic growth. Education quality is one of the key factors in creating a more knowledgeable and inclusive society.

4.2. The Effect of Health on Economic Growth

Judging from statistical testing, it can be seen that health as seen from the Life Expectancy Rate (AHH) for men has a negative and insignificant effect on economic growth in Riau Province and women’s AHH has a positive and insignificant effect on economic growth. Based on data obtained from BPS Riau Province, there is an increase in life expectancy every year which directly reflects the good level of public health and should be able to encourage economic growth because the level of health directly shows good human capital development and supports increased work productivity (1).

The results of this research state that in terms of health, the life expectancy figures for men and women have no effect on economic growth. This shows that the high level of Life Expectancy does not contribute to economic growth in Riau Province. Apart from that, high life expectancy rates for men and women can become an obstacle to economic growth if it is not accompanied by education and existing human resource expertise. On the other hand, the high life expectancy for men and women interprets the length of life that is getting higher than the total population so that it directly reflects the increasing increase in non-productive age which is a burden on economic growth (dependency ratio).

This research is in line with (12) prove that life expectancy has no effect on economic growth in Bali Province. The high life expectancy rate does not affect economic growth due to the relatively high level of dependency ratio and the high level of open unemployment which is an obstacle to development so it does not affect economic growth.

Apart from that, judging from direct statistical testing, the life expectancy rate for men has a regression coefficient of -0.036 and for women it is 0.088. Indirectly, life expectancy for men has a regression coefficient of 0.314 and for women -0.033. From this explanation, it can be concluded that from a direct and indirect health perspective there is gender inequality.

Life expectancy is an important indicator in measuring the well-being and quality of life of a population, but its relationship with economic growth may have a weak influence
in some contexts. The impact of increasing life expectancy may take some time to be seen in economic growth. Reducing infant mortality rates or increasing life expectancy can influence economic growth in the long term by increasing the number of productive workers in the future, but the effects are not always felt immediately.

Additionally, economic growth often focuses more on economic quantity (e.g., GDP per capita) than quality of life. Although life expectancy is an important indicator of quality of life, economic growth can reflect increases in production and income without necessarily considering social conditions or welfare.

Although life expectancy may have a weak influence on economic growth in some contexts, it is important to remember that improving the quality of life and well-being of populations is a very important goal. Societal well-being is not just about income, but also about factors such as health, education, access to basic services, and social justice. Therefore, life expectancy remains an important indicator for assessing social progress and broader human development.

### 4.3. The Influence of Labor Force Participation Levels on Economic Growth in Riau Province

Based on statistical tests that have been carried out, it is known that the Labor Force Participation Rate (TPAK) of men and women has a negative and insignificant effect on economic growth in Riau Province. A high Labor Force Participation Rate (TPAK) will reduce economic growth in Riau Province. As the Labor Force Participation Rate increases, structural unemployment will also increase. A high Labor Force Participation Rate can mean more competition for available jobs. This could increase pressure on the job market and result in more underemployment, where people who previously were not actively looking for work are suddenly forced to look for work. The results of this research are in accordance with research conducted by Risky Puspita Sari (2019) which stated that the Labor Force Participation Rate (TPAK) of men and women had no significant effect on Gross Domestic Product (GRDP) in Central Java in 2011-2017.

Apart from that, judging from direct statistical testing the Labor Force Participation Rate for men has a regression coefficient of -0.149 and for women -0.295. It can be concluded that, directly, the Labor Force Participation Rate has no gender inequality. Indirectly, life expectancy for men has a regression coefficient of -0.376 and for women it is 0.743. It can be concluded indirectly that the Labor Force Participation Rate has gender inequality.
Although TPAK is an important indicator in measuring labor force participation, there are several reasons why TPAK may have a weak influence on economic growth. TPAK reflects the proportion of the working age population who are active in the labor market. However, the composition of the workforce can vary widely in terms of education levels, skills and productivity. Not all members of the workforce have the same economic contribution. Therefore, the impact of TPAK on economic growth will depend on the qualifications and productivity of the workforce. Apart from the number of active workforce members, the quality of the workforce is also very important for economic growth. The level of qualifications, skills and education of the workforce will influence productivity and contribution to economic growth more than participation rates alone.

Economic growth is influenced by a number of other macroeconomic factors such as investment, consumption, exports and economic policy. These factors can have a greater influence on economic growth than TPAK directly. In investigating the relationship between TPAK and economic growth, it is important to consider other factors that can influence economic growth and interact with TPAK. A high labor force participation rate in itself does not necessarily guarantee high economic growth, but the quality, productivity, and types of jobs available in the labor force should also be important considerations in economic analysis.

4.4. The Effect of Gender Inequality on Economic Growth through Productivity Levels in Riau Province

Productivity and growth are two indicators that cannot be separated. Gender inequality can have a negative impact on productivity and economic growth. When there are gender disparities in access to education, employment opportunities, or fair treatment in the workplace, fully realized human potential cannot be achieved.

Gender inequality in educational access and participation can hinder economic growth through its impact on productivity. When women have limited opportunities to obtain quality education, they tend to have lower skills. This results in a suboptimal workforce and limited innovation. Investment in equal education for men and women is essential to increase productivity and economic growth.

Gender disparities in access to health services and medical care can also affect productivity and economic growth. When women do not have equal access to health care, it can harm their health and well-being. The impact is higher work absenteeism, reduced productivity, and higher costs for society. Investments in equal health access
and protection of women's health can increase their productivity and economic contribution.

Gender inequality in labor force participation and equal employment opportunities can affect economic growth through productivity levels. When women face barriers to entering the labor market or are pushed into the low-wage informal sector, they are less likely to exploit their full productive potential. Increasing women's participation in the workforce and removing barriers that hinder gender equality can increase productivity, reduce the wage gap and promote economic growth.

From statistical testing it can be seen that indirectly health through productivity as seen from the Average Years of Schooling (RLS), Life Expectancy Rate (AHH), and Labor Force Participation Rate (TPAK) has a gender gap that is small enough so that it does not have a serious impact on economic growth in Riau Province. This is in line with the gender inequality index in Riau Province which is categorized as approaching perfect gender equality. According to data from the Provincial BPS, the gender inequality index figure in Riau Province from 2018-2022 was 0.50 in 2018, 0.52 in 2019, 0.50 in 2020, 0.48 in 2021, and in 2022 it will be 0.47. Where a value of 0 indicates perfect gender equality and a value of 1 indicates the highest gender inequality. So it can be concluded that in the last few years, seen from the gender inequality index, Riau Province has become a region that is categorized as approaching gender equality so that gender inequality does not have a serious impact on economic growth in Riau Province.

Apart from that, several regional programs are also supported to improve gender equality so as to minimize gender inequality in Riau Province. As reported in (Kumparan: 2021), in 2021 Riau Province will strive to rise to a higher level by improving its performance in gender mainstreaming (PUG) through Gender Responsive Planning and Budgeting (PPRG) in every development sector. Supported in the Governor's Circular Letter No. 35 of 2020 concerning the Implementation of Gender Mainstreaming in Riau Province through PPRG which instructs the implementation of document analysis with Gender Analysis Pathway / GAP, Gender Budgeting Statement / GBS , KAK / TOR as well as the establishment of regional apparatus focal points. Apart from several policies, it is also supported by the gender responsive village implementation facility program in various regions of Riau. From the explanation above, it can be seen that local governments are very responsive to gender so that they can reduce inequality which can have an impact on productivity and economic growth.

This research is also in line with research by Nazmi and Jamal (2018) entitled The Effect of Gender Inequality on Economic Growth in Indonesia. The results show that there is no influence of gender inequality on economic growth.
5. Conclusion

The results of data analysis from research on the influence of gender inequality on economic growth through productivity levels as an intervening variable in Riau Province in 2012-2021 provide the following conclusions:

Directly, the average length of school for boys has a negative and insignificant effect on economic growth in Riau Province in 2012-2021. The average length of schooling for women has a negative and insignificant effect on economic growth. So that in the Average Years of Schooling there is no gender inequality.

Directly, male life expectancy has a negative and insignificant effect on economic growth. Women's Life Expectancy has a positive and insignificant effect on economic growth. So that in the Life Expectancy there is a gender gap.

Directly, the Male Labor Force Participation Rate has a negative and insignificant effect on economic growth. The level of female labor force participation has a negative and insignificant effect on economic growth. So that in the Life Expectancy Rate there is no gender inequality.

Indirectly through productivity levels, the average length of schooling for men has a positive and insignificant effect on economic growth. Indirectly, through the level of productivity, the average length of schooling for women has a positive and insignificant effect on economic growth. So that in the Average Years of Schooling there is no gender inequality.

Indirectly through productivity levels, male life expectancy has a positive and insignificant effect on economic growth. Indirectly, through the level of productivity, women's life expectancy has a negative and insignificant effect on economic growth. So that in the Life Expectancy there is a gender gap.

Indirectly through the level of productivity, the male labor force participation rate has a negative and insignificant effect on economic growth. Indirectly, through the level of productivity, the level of female labor force participation has a positive and insignificant effect on economic growth. So in the Labor Force Participation Level there is gender inequality.

Biography

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