The Effects of Women Empowerment on Indonesia’s Regional Economic Growth

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Abstract
In the development, women should be in the same rate as men to participate, have an equal chance in decision making, and reach the development needed to maximize their potential. Despite this, women often got a difficulty to participate in the economy. Women often do unpaid work or work in the informal sector. The higher portion of women to men employed in the informal sector represent women difficulty to access the employment, because of higher rates of illiteracy, lower jobs skills, lower level of education, and social-cultural barrier that prevent women to work in the formal sectors. This paper wants to analyze how the increase of women participation in the economy can increase the Indonesia’s economic growth. Using data from 34 province in Indonesia between 2014-2018, the result of the panel data regression found that the number of women’s empowerment positively affect gross regional domestic product. Women’s life expectancy positively affects gross regional domestic product. Women’s population percentage positively affects gross regional domestic product. From the three independent variables used as a predictor in this model, all variable is significantly affects Indonesia’s gross regional domestic product.

Keywords: Women Empowerment; Women Participation; Economic Growth; Gender Equality

JEL Classification: J16, I31, O15


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1. Introduction
Gender inequalities not only an issue of moral and social, but also a critical economic challenge. If women population, who account for almost half of Indonesia’s population do not achieve their potential, the economy will suffer. Women empowerment is important to the economic development as they account for almost half of Indonesia’s human capital. Women empowerment and Economic development are closely related. In one direction, higher economy can lower inequality between men and women; In other direction more empowered women can increase the economy itself. Giving women equal access to work will reduce global poverty dramatically (OECD, 2008). Development agenda and program often not view women as an integral to the economic development process, this is proved by a large investment on women’s education, health is rather aimed to lowered the birth rate and improving the well-being of the children, an empirical research suggest that it
is easier to improve women’s capabilities rather than their opportunities (Mehra, 1997). Much of women’s work goes unrecorded, because it takes place in the informal sector and/or unpaid work which are not recorded by the census bureau. It means that providing skills needed by women is easier than providing the same opportunity as men in the economy. There are many reasons behind this statement, it involves unfair treatment through stereotypes, work family balances, and gender pay gap. In labor market opportunities, women are less likely to work, they earn less than man in similar work, and are more likely to be in poverty even when they work. The less opportunities in labor market is because women spend almost twice as much time on housework, almost five as much time on childcare, and about half as much time on market work as men do (Duflo, 2012).

If we see the development history of women empowerment in Indonesia, We cannot reject the role of R.A Kartini figure that shape the nation. From the 19th century, Kartini is well known among other women figure that fight for women empowerment Indonesia for her bravery sending letter to her friends in the Netherland which will be collected and published on a book by Mr. J. H. Abendanon. This book title is Door Duistenis tot Licht which means After the Dark Comes the Sunshine. That book tells a story of Kartini’s fought for Javanese women emancipation, her taught is every Javanese women should have an equal chance to get education, freedom of thinking, and decide her own destiny. She was created a women school at Jepara, this is the first gate for Indonesia’s women to get an education. Kartini also empower women through entrepreneurship, her Jepara wood craft product are being sent to women creation expo at Den Haag in 1898 (Mustikawati, 2015). In the aftermath, Jepara become famous for the furniture city.

At the world stage, The Universal Declaration of Human rights states that everyone including women should has the right to take part in the government, The empowerment and autonomy of women and the improvement of women’s social, economic, and political status is essential for the achievement of both transparent and accountable government and administration and sustainable development in all areas of life, the Millennium Declaration in 2000 also urges that every men and women must be assured to have equal rights and opportunities (UNFPA, 1994). Sustainable Development Goals stated in goal 5 to achieve gender equality and empower all women and girls, one of the target is to end all forms of discrimination all women and girls everywhere (UN, 2016). Gender equality will decrease poverty, increase the education levels that can bring the world into more sustainable economy (OECD, 2008). Figure 1 represent the spread map of women population percentage in Indonesia 2018, the lightest blue color represents the province that accounts for women population between 47.35-48.93 percent, the darkest blue color represents the province that accounts for women population between 49.9-51.14 percent. Therefore, women account for little over half population in Indonesia. Central Bureau of Statistics (CBS) stated that women account for 49.76 percent of Indonesia’s population in the year of 2018 (CBS, 2019a). It is shown that women account for almost half of Indonesia’s population, almost half of Indonesia’s human capital. Better use of women population in Indonesia will induce economic growth. If women could participate in the same rate as men in the economy, the overall world’s real GDP would increase by 26 percent (Woetzel et al., 2015) the global economy will suffer. While all types of inequality have economic consequences, in our new McKinsey Global Institute (MGI. However, women’s unpaid care work still be a problem, as it is often undervalued. It is estimated that women would account for more than half of GDP in the OECD area if the value of housework and childcare were included in national accounting (OECD, 2008).
However, women often faced difficulty entering the formal sector. Women often disregarded due to personal prejudices that women should take care of and assist people, while men work and focus on the more important task. Women also often being seen only as their reproductive role rather than their productive role. Much of the investment in women aimed to lower the birth rate rather than improving the participation and opportunities of women in the economy. The International Labour Organizations (ILO) revealed that in Asia Pacific, women do unpaid care work 4.1 times more than men do. Even if women can succeed work in formal sector, they often discriminated by the form of wages and positions (ILO, 2017). Mckinsey studies found that 75 percent of global unpaid work done by a woman (Woetzel et al., 2015). US Bureau of Census found that women over the age of 24 who work full time earned at the average of 73 percent wage that men earned at the year of 2014 (Ehrenberg & Smith, 2018). Figure 2 represent the percentage of women representative in the parliament of Indonesia between the year of 2014 and 2018. It is shown that Sulawesi Utara, followed by Gorontalo and Sumatera Barat hold the highest percentage of women representative in the parliament among other province in Indonesia.
Meanwhile Bangka Belitung, followed by Papua Barat and Bali holds the lowest percentage of women representative in the parliament among other provinces in Indonesia. The high amounts of women representative percentage in the parliament shown high women’s presence in political decision making that can support women empowerment through the policy implemented in the parliament that may contribute women’s rights.

Figure 3. Gender Empowerment Measure
Source: UNDP Human Development Report 1995, processed

Women empowerment refers to the process of participating women in the social, economic, and political process. The full participation of both women and men is required in a productive and reproductive life (UNFPA, 1994). Women often get difficulty to enter the formal economy, as most of the women do unpaid work and work in the informal economy, which is hard to measure. The reason for that can be really diverse, women receive less education than men, women have higher rates of illiteracy, lower job skills, and social-cultural barriers that prevent women to enter the formal economy. Even if women are working in the formal sector, they are facing many challenges such as gender pay gap and childcare penalty. Gender pay gap is a certain condition in which there is a gap of income between women that receive less than men. This is mostly because of the fact that women are still seen as the primary caregiver and more likely to stay at home to raise children than men. That phenomenon also be called as childcare penalty, which is the circumstances where women lose opportunity to advance their career, extend their experience and earn more money due to raising the children (Ehrenberg & Smith, 2018).

To measure women empowerment in Indonesia, we used UNDP’s Gender Empowerment Measure (GEM) which contains three components: political representation, representation in senior positions in the economy, and power over economic resources (Klasen & Schüler, 2011). The GEM measures women participation in economic, political, and professional activities (UNDP, 1995). The other findings suggest that women’s empowerment defined as improving the ability of women to access the constituent of development in particular health, earning opportunities, education rights, and political participation (Duflo, 2012). The three keys variable for GEM that are introduced by UNDP Human Development Report in 1995 are Women’s Per-Capita Income to measure women’s power over economic resources based on earned income. Women’s as Professional to measure the women’s access to professional opportunities and participation in economic decision-making. Women’s representative in the parliament to measure the women’s access to political opportunities and participation in political decision-making. Women are key to the economic development as they account for almost half of the world’s population. It also account for 47.6 percent of Indonesia’s population (CBS, 2019b). Therefore, it accounts for almost half of Indonesia’s human capital. Closing the gap of participation rate between men and women would yield significant economic benefit and individual welfare (ILO, 2017).

The political representation is represented by the percentage of women representative in parliament in 34 provinces in Indonesia. According to CBS, percentage of women representatives in parliament is a measurement that shown the proportion of seat who occupied by women in parliament (CBS, 2019a). The empowerment and autonomy of women and the improvement of women’s social, economic and political status is essential for the achievement of both transparent and accountable government and administration and sustainable development in all areas of life (UNFPA, 1994). Greater transparency and more open participation in political processes
is an important part of women's empowerment in government, and thus administrations and political institutions at all levels must become more open to public scrutiny and made accessible to a wider portion of the public (OECD, 2008). The women in senior positions in the economy is represented by women as professional data in 34 province in Indonesia. According to CBS, Women as a professional is a measurement that shown the proportion of women population who worked as a manager, administration staff, professionals, and technician (CBS, 2019a). The women’s power over the economic resources is represented by women’s expenditure per capita data in 34 provinces in Indonesia.

According to Central Bureau of Statistics, expenditure per capita is an is the cost incurred for the expenditure of all household members for the time spent divided by the number of household members (CBS, 2018). Data released can reveal general household consumption patterns using contribution indicators for food and non-food. The composition of household expenditure can make a measure to increase the level of welfare of the population, the higher the percentage for food to the total increase (CBS, 2019c). Much of the development support women need is outside the formal economies, where they engage in activities such as petty trade, agriculture, food processing, household help (Mehra, 1997). However, an OECD studies found that the wage gaps between men and women are still high (OECD, 2008). Women earns less income than man even when they work at the same hours due to persistent gender wage gaps. The average difference in pay for men and women in full-time jobs in OECD countries is more than 18% (OECD, 2008).

To represent the economic growth, this research used real Gross Regional Domestic Product (GRDP) from 34 province across Indonesia. GRDP is one of the important indicators to oversight economic condition in a province during certain period of time, whether based on actual price or constant price (Bank Indonesia). Basically, GRDP is the market value of the overall final goods and services produced within a province in a given period of time. GRDP is calculated in two ways: (1) On the basis of current prices, (2) On the basis of constant prices. GRDP can be translated into three terms, namely: (1) Production Approach, (2) Income Approach, (3) Expenditure approach (Helianti & Dwiputra, 2016).

Life expectancy is an estimation of the number of years of a person expected to live based on the statistical average. It reflects the health of a country’s population. There is two kind of life expectancy which are life expectancy at birth, and life expectancy at age (Kumalasari, 2011). Another research suggest that the improvements in life expectancy will lead to some growth in aggregate incomes, the increase in life expectancy was associated with a significant increase in population and a considerably smaller increase in total GDP within the variation of country post 1940 data (Acemoglu & Johnson, 2007). An increase of women’s life expectancy indicates more equal health facilities provided between men and women in a country that will make people healthier, therefore increase women’s opportunities to participate in the workforce that will induce economic growth. This is supported by (Luci, 2009) that suggest an increase of women’s labor force participation will have a positive impacts on the economic growth.

Women population percentage is the proportion of women population compared to the total population in the area (CBS, 2019b). Therefore, it also accounts for Indonesia’s women human capital. Women are disproportionately represented among the poor. The number of women’s poverty grew faster than the rate of men (Mehra, 1997). An OECD report comes to the statement that better use of female population will reduce poverty, and increase economic growth (OECD, 2008). Another research suggest a positive impact of female labor market participation on growth but the impact of growth on women’s labour market participation is not as clear (Luci, 2009). Other findings suggest that lower female labour force participation rates may lead to marginally lower economic growth.
in the region, while the removal of region-specific barriers to female labour force participation may encourage economic growth (Tsani et al., 2012).

This research wants to analyze how the effect of women empowerment towards Indonesia’s economy through various women empowerment indicator such as life expectancy, the percentage of women who worked as professional (take leading position in company), women representation in parliament, women per capita expenditure, and women population percentage. Women’s empowerment is defined as improving the ability of women to access the constituents of development in particular health, education, earning opportunities, rights, and political participation.

2. Research Method

This research is using panel data regression. Panel data (also known as longitudinal cross-sectional time-series data) is a dataset in which the behavior of entities are observed across time, panel data allows researchers to control variables that change over time, but not across entities (Torres-Reyna, 2007). It accounts for individual heterogeneity. This method is more effective in overcoming the problem of heteroskedasticity, autocorrelation, standard error, degree of freedom (Ergo, 2014). In panel data, we focus on two techniques use to analyze which are fixed effect and random effect. Use fixed effect if we think that unobserved variable is correlated with explanatory variable over time. Otherwise use random effect if we think that unobserved variable is not correlated with explanatory variable over time. If we have a problem such as heteroskedasticity and multicollinearity that break the Gauss-Markov assumption on multiple linear regression, we can use either robust regression, and generalized least square regression to fix that problem. To test that, we can use Breusch-Pagan test for heteroskedasticity. To choose the best techniques that fit for our model, we can run a Hausman test to calculate the different of correlation between random effect model and fixed effect model (Wooldridge, 2002). On this research, we use secondary data from Central Bureau of Statistics of 34 provinces in Indonesia by the year 2014-2018 processed by the STATA 14 application. The econometrics model is:

\[
GRDP_i = B_0 + B_1 \text{IPROMENGPK}_{it} + B_2 \text{AHH}_{it} + B_3 \text{PERPEN}_{it} + \mu
\]  

Equation (1) is the model of panel data that uses robust regression. This model will estimate the effect of women empowerment on Indonesia’s regional economic growth. The variable consisted on this model is Indonesia’s Gross Regional Domestic Products (GRDP), The logarithmic combined variable of women as a professional, the percentage of women representation in parliament and women expenditure per capita in Indonesia (IPROMENGPK), Women’s Life Expectancy from 34 provinces in Indonesia (LE), the percentage of women population from 34 provinces in Indonesia (PERPOP), and error term (\(\mu\)).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Obs</th>
<th>Mean</th>
<th>Std. Dev.</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRDP</td>
<td>170</td>
<td>277,887.6</td>
<td>395,815.5</td>
<td>19,208.76</td>
<td>1,736,196</td>
</tr>
<tr>
<td>IPROMENGPK</td>
<td>169</td>
<td>1,554.238</td>
<td>0.601,2269</td>
<td>1,346.982</td>
<td>1,678.905</td>
</tr>
<tr>
<td>LE</td>
<td>170</td>
<td>7,114.271</td>
<td>2,530.576</td>
<td>66</td>
<td>76.65</td>
</tr>
<tr>
<td>PERPOP</td>
<td>170</td>
<td>4,899.324</td>
<td>3,925.949</td>
<td>0</td>
<td>51,52.00</td>
</tr>
</tbody>
</table>

Source: STATA 14, processed
3. Results and Discussion

3.1 Results

This research is using the Hausman test to know whether it can use random effect or fixed effect. The result of the Hausman test, which conducted on this research is shown on table 3, with the P-value (0.8221) > (0.05). Therefore, with 5 percent significance level, the null hypothesis can't be rejected and the best model for the estimation is random effect. After that, we conduct the Breusch-Pagan test to check whether there is a heteroskedasticity problem or not. The result of the Breusch-Pagan test is shown on table 3, P-value (0.0000) < α (0.05). Therefore, with a 5 percent of significance level, the null hypothesis is rejected and heteroskedasticity is assumed in the model. To fix that problem, we use robust regression. Robust regression is a technique to take unbiased standard errors of least square coefficient under the problem of heteroskedasticity.

The regression result of this research is shown below:

### Table 2. The definition of each Operational Variable

<table>
<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRDP</td>
<td>Indonesia’s Gross Regional Domestic Products (in billion rupiah)</td>
</tr>
<tr>
<td>IPROMENGPK</td>
<td>The Logarithmic Combined Variable of Women as a Professional, the Percentage of Women Representative in Parliament and Women Expenditure per Capita in Indonesia</td>
</tr>
<tr>
<td>LE</td>
<td>Women's Life Expectancy from 34 Province in Indonesia</td>
</tr>
<tr>
<td>PERPOP</td>
<td>The Percentage of Women Population from 34 Province in Indonesia</td>
</tr>
</tbody>
</table>

Sources: Author

### Table 3. Panel Data Regression Result

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) GRDP</th>
</tr>
</thead>
<tbody>
<tr>
<td>IPROMENGPK</td>
<td>76374*</td>
</tr>
<tr>
<td></td>
<td>(42818)</td>
</tr>
</tbody>
</table>

Note: () is Standart Error
*** p<0.01, ** p<0.05, * p<0.1
Sources: STATA 14, processed

3.2 Discussion

From the result of the panel data regression, it is found that the women empowerment positively affects Indonesia's GRDP. It is statistically significant at a 10% significance level. Women's life expectancy positively affects Indonesia's GRDP. It is statistically significant at a 1% significance level. Women's population percentage positively affects Indonesia's GRDP. It is statistically significant at a 1% significance level.

![Figure 4. The scatter plot graph of the relationship between Gross Regional Domestic Product and the women empowerment](image-url)

Sources: STATA 14, processed
Figure 4 shows the positive correlation between Gross Regional Domestic Products (GRDP) and the logarithmic combined variable of women as a professional, the percentage of women representative in parliament, and women expenditure per capita (IPROMENGPK) that represent Indonesia’s women empowerment. From the regression result, women empowerment positively affects Gross Regional Domestic Products (GRDP) in Indonesia. Every one unit increases in women empowerment increase gross regional domestic product by 76,374 billion rupiah. It is statistically significant at 10% significant level. This result is consistent with previous research (ILO, 2017) that suggests closing the gap of participation rate between men and women would yield significant economic benefit and individual welfare. The women empowerment variable is based on Gender Empowerment Measure (GEM) which contains three components: political representation, representation in senior positions in the economy, and power over economic resources (Klasen & Schüler, 2011) the United Nations Development Programme (UNDP). The empowerment and autonomy of women and the improvement of women’s social, economic, and political status is essential for the achievement of both transparent and accountable government and administration and sustainable development in all areas of life (UNFPA, 1994). Women empowerment refers to the process of participating women in the social, economic, and political process. Women often get difficulty to enter the formal economy, as most of the women do unpaid work and work in the informal economy, which is unrecorded by the census bureau.

Figure 5 shows the relationship between Women’s Life Expectancy and Gross Regional Domestic Product in Indonesia. There is a positive correlation between Women’s Life Expectancy (LE) and Gross Regional Domestic Products (GRDP) in Indonesia. Every one year increase in life expectancy will increase the gross regional domestic product by 64,314 billion rupiahs. It is significant at a 1% significance level. From the regression result, the Percentage of Women Population (PERPOP) is positively correlated with Gross Regional Domestic Products (GRDP) variable. Every one percent increase of the percentage of women population will increase the gross regional domestic product by 10,007 billion rupiahs. It is significant at a 1% significance level. This result is in line with previous research (Luci, 2009; OECD, 2008) that suggests the better use of the female population and the increase of female labor market participation will have a positive impacts on economic growth. The R-squared is 0.235; it means that 23.5 percent variance of all independent variable can explain the increase in life expectancy was associated with a considerably increase in smaller total GDP within the variation of a country. Life expectancy is important for women because it is shown how good a country provides health services, reduces inequality to obtain equitable health service between men and women that will make the life expectancy of women in a country increase. The increase in women’s life expectancy has shown that by health will in turn increase women’s opportunities to participate in the workforces (Al Faizah, Mafruhah, & Sarungu, 2020). An increase in women’s labor force participation rate will increase economic growth.
Indonesia’s GRDP variable. Obviously, it is not startling that the researcher found a relatively low correlation. This can be explained by other factors that affect the economy, such as short-run factors (Consumption, Investment, Government Expenditure, Net export), and unsystematic risks such as trade wars, crises from other countries, and global pandemic that affects the economy.

4. Conclusions
This research has shown that women empowerment from 34 provinces in Indonesia has a positive and significant effect on Indonesia’s GRDP. There is a correlation between Women’s Life Expectancy from 34 provinces in Indonesia (LE), the Women’s Population Percentage from 34 provinces in Indonesia (PERPOP) have positive and significant effects on Indonesia’s GRDP. This research also found that women are contributing important factor towards economic growth, as without any effect from independent variables inside the model, the dependent variable of the model will be negative, ceteris paribus. The policy recommendation for the government is to ensure all people in Indonesia, including women, have an equal right to economic resources, have an equal chance to participate in political decision-making process, and to end discrimination in all forms. All of these will make the nations into wealthier people, reduce poverty, and increase economic growth. However, this research has the limitations, which are: (1) lack of representative data that can be put into research, (2) there are only three independent variables used in this model, while there are many other factors that represent the effects of women towards the economy, (3) lack of findings regarding the contributions of women to the economy through the increase of nation’s productivity, this is due to a lack of data that can be found by the author. Therefore, further research can improve those limitations to obtain better, accurate, and important findings.

5. Reference


