**Research Article**

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**Analysis Of Factors Affecting the Gender Development Index of Indonesia in 2023**

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**Abstract:** *Human quality, whether male or female, can be said to be high if they have better life choices such as high education and skills, high levels of health and high income. Although efforts have been made to improve the role and quality of women in development, the gender gap still exists in many areas compared to men. Using the human development index (women), women's income contribution in the family, and the percentage of women as professionals as independent variables and using the cross-section method in conducting regression, it is known that all independent variables have a positive and significant effect on the Gender Development Index in 34 Indonesian provinces.*

**Keywords*:*** *Gender Development Index, Human Development Index (Women), Women's Income Contribution, Women as Professionals.*

**Introduction**

Women are human resources with a large population and have high potential in relation to being the subject and object of development. Based on the 2023 population census data, the number of Indonesian women reached 136.3 million of the total population. However, this large number is not accompanied by the high quality of women as well. This can be seen from the backwardness of women against men both in the formal sector such as the education sector, employment, income, and other informal sectors. This backwardness illustrates that women are still not empowered.

Although efforts to iprove the role and quality of women in development have been developed, the gender gap still occurs in various lines compared to men. Whereas the large number of women is a potential development capital if developed appropriately or in other words, with quality.

Gender is a social construction of men and women that is specific, contextual and situational according to place, time, ethnicity, culture, social status, religion, ideology, politics and economics. Gender differentiation causes gender discrimination and injustice and has a negative impact on economic development (Ministry of Finance, 2019). In Indonesia itself, the form of socio-cultural traditions and value systems that influence gender roles is a patriarchal culture, such as : Men are required to be decision makers in the household or men whose main task is to take part in the public space or outside the home, such as their role in earning a living, carrying out various social activities, etc. while women take part in the domestic space or in the household whose main task is to do household chores such as taking care of the family or household.

Gender equality is an urgency in all areas of development, namely health, education, economy, social, and politics. Both men and women are equally important to be considered so that they can both contribute to achieving full human development. To complement the calculation of HDI by providing information on human development achievements by gender, the Gender Development Index (HDI) indicator was formed. (BPS & Kemenppa, 2015).

Recognizing the important role of women in development, the Indonesian government targets four main sectors, namely in the fields of education, health, employment, and related to violence prevention. In addition, strategic steps are prepared to address issues of women's empowerment, gender equality, as well as to achieve the Sustainable Development Goals (SDG's), especially the fifth goal, namely gender equality.

The Gender-Based Human Development publication contains the achievements of Gender indicators at the global and national levels. Gender-based human development achievements at the global level are analyzed using the Human Development Index (HDI), Gender Development Index (GDI), Gender Inequality Index (GII). Meanwhile, gender-based human development at the national level uses the Human Development Index (HDI), Gender Development Index (GDI), and Gender Empowerment Index (IDG) which are analyzed up to the district/city level.

According to data from the Indonesian Central Bureau of Statistics (BPS) in 2023 showed that the IPG figure in Indonesia was at 91.85%, which indicates that the ratio of achievements of women and men is close to equal. This is also indicated by more and more women becoming educated, knowledgeable, skilled, and entering the professional world of work. The presence of women in the world of work is proven through many studies to improve the welfare of family members.

**Graph 1.** Gender Development Indeks in Indonesia 2023

Source : Central Statistics Agency (BPS) Indonesia

In the same year, BPS also noted that the proportion of Indonesian women professionals had reached 49.53%, almost half of all professionals in Indonesia or an increase of 0.88% from the previous year. With the increasing participation of women as professionals, this certainly has a good impact on further equality. This includes women's contribution to household income.

**Graph 2.** Women as Profesionals in Indonesia 2023

Source : Central Statistics Agency (BPS) Indonesia

 In Indonesia, the enhancement of women's roles in various aspects of life, gender-based integration in all stages of development, and the strengthening of gender institutions at both the central and regional levels are key focuses of national development, as outlined in the RPJMN 2015-2019. To evaluate these achievements, two main indicators are used: the Gender Empowerment Index (GEI) and the Gender Development Index (GDI). The GDI measures disparities in achievements between women and men in the fields of health, education, and a decent standard of living. Improving the GDI and GEI requires affirmative policies and the enhancement of contributing indicators to address external factors and stereotypes that hinder women.

**Graph 3.** GDI by Province in Indonesia in 2023

Source : Central Statistics Agency (BPS) Indonesia

**Method**

**Type of Data and Research Model**

This study uses secondary data regressed using the cross-section method where all data is taken from the Central Statistics Agency Indonesia (BPS). As for the research year taken is 2023 with the sample in the form of data from 34 provinces in Indonesia. Below is a regression model used in this study with 1 dependent variable and 3 independent variables.

$$IPG\_{i}=β\_{0}+β\_{1}IPMP\_{i}+β\_{2}SPP\_{i}+β\_{3}PSTP\_{i}+μ\_{it}$$

Description :

IPG = Gender Development Indeks (Percent)

IPMP = Women’s Human Development Indeks(Percent)

SPP = Women's Income Contribution (Percent)

PSTP = Women as Profesionals (Percent)

$β\_{0}$ = Constanta

$β\_{1-3}$ = Regression Coefficient

$e$ = Error Term

i = (1,2,3,...,n) cross section data

**Data Analysis Methods**

In using the cross-section regression method, the data used is enough with only one time period and this tends to be simpler when compared to the time series method or panel data. Another advantage of the cross-section method is that it does not require other tests such as the classical assumption test or stationarity test. But some things that must be done in research using the cross-section regression method are ensuring that the data entered is clean before processing and then conducting descriptive statistical analysis to understand the characteristics of the data and hypothesis testing is carried out to find out whether the hypothesis made is in accordance with the results obtained which includes the t test and F test.

1. **Classic Assumption Test**
2. **Normality Test**

Evaluating whether the residuals in the regression model exhibit a normal distribution involves using the Jarque-Bera test. This test is applied in normality assessments to examine the distribution of the disturbance variables (Sugiyanto, 2017).

1. **Multicollinearity Test**

Multicollinearity occurs when one or more independent variables can be expressed as a linear combination of other independent variables (Sugiyanto, 2017). This test aims to detect the presence of correlations between independent variables in the regression model. One requirement in regression models is the absence of multicollinearity. To detect the presence of multicollinearity, the VIF (Variance Inflation Factor) value can be examined; if the value is less than 10, then multicollinearity is not present.

1. **Autocorrelation Test**

This test aims to determine whether disturbance variables in one period are correlated with disturbance variables in another period, in other words, the disturbance variables are not random (Sugiyanto, 2017). A good regression model is one in which there is no autocorrelation.

1. **Heteroscedasticity Test**

This test aims to examine whether disturbance variables do not have the same variance for all observations (Sugiyanto, 2017). A good regression model is one with homoscedasticity or no heteroscedasticity. To determine whether the parameters in the formed regression equation are good estimators, the following test is required.

**Results and Discussion**

1. **Results**
2. **Data Analysis Results**

**Table 1.**Regression Results

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob.   |
|  |  |  |  |  |
|  |  |  |  |  |
| C | 46.15421 | 4.080061 | 11.31214 | 0.0000 |
| IPMP (X1) | 0.437011 | 0.056400 | 7.748455 | 0.0000 |
| SPP (X2) | 0.198179 | 0.056642 | 3.498782 | 0.0015 |
| PSTP (X3) | 0.154777 | 0.053381 | 2.899493 | 0.0069 |
|  |  |  |  |  |
|  |  |  |  |  |
| R-squared | 0.802466 |     Mean dependent var | 91.08765 |
| Adjusted R-squared | 0.782713 |     S.D. dependent var | 3.049293 |
| S.E. of regression | 1.421399 |     Akaike info criterion | 3.651292 |
| Sum squared resid | 60.61129 |     Schwarz criterion | 3.830864 |
| Log likelihood | -58.07196 |     Hannan-Quinn criter. | 3.712531 |
| F-statistic | 40.62426 |     Durbin-Watson stat | 1.678167 |
| Prob(F-statistic) | 0.000000 |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

$$IPG\_{i}= 46,15421+0,437011 IPMP\_{i}+0,198179 SPP\_{i}-0,154777 PSTP\_{i}$$

The regression estimation results show that the R2 value is 0.802466, which means that all independent variables in this study have an influence of 80.25% on the dependent variable,while the remaining 19.75% is influenced by other variables not included in the research model. The constanta value in the regression results is 46.15421, which means that if it is assumed that all independent variables are worth 0, the value of the GDI variable is 46%. More details regarding the interpretation of each variable are explained as follows.

IPMP variable has a positive and significant effect on GDI with a coefficient value of 0.437011 at α = 5%. This indicates that if there is a 1% increase in IPMP, it will rise the level of GDI by 0.437% assuming ceteris paribus. Next, SPP variable has a positive and significant effect on GDI with a coefficient value of 0.198179 at α = 5%. which means that every 1% increase in the value of SPP will raise the level of GDI by 0.198% with the assumption of ceteris paribus. The last is PSTP has a positive and significant effect on GDI with a coefficient value of 0.154777 at α = 5%. which means that every 1% increase in the value of PSTP will rise the level of IPG by 0.155% with the assumption of ceteris paribus.

Based on the partial test results, all variables are stated to have a significant influence on the dependent variable. Likewise, based on the results of the F test, where the F-Statistic value is bigger than the table value, then the adjusted R-Squared value of 0.802 indicates that the accuracy of the variables used in this study is 80.2% and the rest is influenced by variables outside this study, so that based on these results it can be concluded that all independent variables have a significant effect on the dependent variable.

1. **Classical Assumption Testing**
2. **Normality Test**

**Table 2.** Normality Test

|  |  |  |  |
| --- | --- | --- | --- |
| Value*Jarque-Bera* | Prob. | *Crittical Value*α = 5% | Information |
| 0.707385 | 0.702091 | 0,05 | Residuals are normally distributed |

Source: Data processed with Eviews 13

The assessment of normality test residuals in the research data refers to the Jarque-Bera test value of 0.758067. The probability value shows a figure of 0.702091 > 0.05, indicating that the normality test on the research data is normally distributed. The data processing results for the normality test illustrate that the research regression model meets the assumption of normality.

1. **Multicollinearity Test**

**Table 3.** Multicollinearity Test

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  |  |  |  |
|  | *Coefficient* | *Uncentered* | *Centered* |
| Variable | *Variance* | *VIF* | *VIF* |
|  |  |  |  |
|  |  |  |  |
| C |  16.64689 |  280.1430 |  NA |
| IPMP |  0.003181 |  261.5152 |  1.165194 |
| SPP |  0.003208 |  61.41998 |  1.024600 |
| PSTP |  0.002850 |  123.8252 |  1.153913 |
|  |  |  |  |

Source: Data processed with Eviews 13

The test for multicollinearity on the research variables indicates that the VIF values are below 10 or >1, which means there is no multicollinearity in the research variables. The research variables from this test do not experience multicollinearity.

The Centered Variance Inflation Factor (VIF) values for the Female Human Development Index (HDI) variable are 1.165194, below 10; the variable for Women's Income Contribution is 1.0224600, also below 10; and the variable for women as professional workers is 1.153913, below 10. Therefore, it can be stated that there is no multicollinearity in the regression model.

1. **Heteroscedasticity Test**

**Table 4.** Heteroscedasticity Test

|  |  |  |  |
| --- | --- | --- | --- |
| Value *Obs\*R-Squared* | Prob. | *Crittical Value*α = 5% | Information |
| 6.587692 | 0.0863 | 0,05 | There is no heteroscedasticity |

Source: Data processed with Eviews 13

The White Heteroscedasticity Test from Table 4 shows an Obs\*R-squared value of 6.587692 with a probability of 0.0863 > 0.05, indicating no heteroskedasticity in the model as the probability exceeds the significance level of 0.05. Therefore, the data used for analysis is deemed satisfactory.

1. **Autocorrelation Test**

**Table 5.** Autocorrelation Test

|  |
| --- |
| Breusch-Godfrey Serial Correlation LM Test: |
| Null hypothesis: No serial correlation at up to 3 lags |
|  |  |  |  |  |
|  |  |  |  |  |
| F-statistic | 0.842916 |     Prob. F(3,27) | 0.4824 |
| Obs\*R-squared | 2.911652 |     Prob. Chi-Square(3) | 0.4054 |
|  |  |  |  |  |
|  |  |  |  |  |

Source: Data processed with Eviews 13

Based on the autocorrelation test in Table 5, it can be observed that the probability value of the chi-square is 0.1688, which is greater than α = 0.05. This leads to the conclusion that there is no autocorrelation in the residuals.

**Discussion of Research Findings**

**1. Human Development Index (HDI)**

Human Development Index (HDI) based on statistical tests that have been carried out, it is known that the Human Development Index (HDI) has a positive and significant influence on the Gender Development Index (GDP) in Indonesia. The Human Development Index (HDI) will increase human resources which will help improve quality and productivity in the future.

**2. Contribution of Women's Income (SPP)**

Based on statistical tests that have been carried out, it is known that Contribution of Women's Income (SPP) has a significant positive effect on the Gender Development Index (HDI) in Indonesia. Women's Income Contribution provides benefits to improve the quality of human resources that will impact the next generation.

**3. Women as Professional Personnel (PSTP)**

Based on statistical tests that have been carried out, it is known that Women as Professionals have a positive and significant influence on the Gender Development Index in Indonesia. Women as professionals are the main source in supporting economic productivity which in turn will increase economic growth in Indonesia.

**Conclusion**

Based on the results of the research conducted, it can be concluded that all independent variables including the human development index (women) (IPMP), women's income contribution in the family (SPP), and women as professionals (PSTP) have a positive and significant influence on the dependent variable used, namely the gender development index (HDI) and with these results it is hoped that it can add reference material for researchers who want to conduct research related to similar topics in the future.

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