

ARTICLE

The Role of Women in East Kalimantan's Economic Growth

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ABSTRACT

Gender equality is essential because it indicates justice and equality for men and women with the same rights, obligations, and opportunities, resulting in economic growth in the region and country. This study aims to analyze the effects of women's roles: the gender development index (GDI), the gender empowerment index (GEI), the percentage of women as professionals (PWP), the mean years of schooling for women (MYSW), and the women's life expectancy (WLE), on economic growth in East Kalimantan. This study used secondary data from Statistics of East Kalimantan Province (BPS). This data was analyzed using panel data regression covering from 2017 to 2021 from 10 cities/regencies in East Kalimantan. The findings indicate that GEI significantly influences economic growth in East Kalimantan, whereas GDI, PWP, MYSW, and WLE do not significantly affect economic growth. This lack of impact can be attributed to women's limited involvement and participation in various sectors, including economics, education, and health. Consequently, programs aimed at enhancing GDI, PWP, MYSW, and WLE have not translated into tangible economic growth in East Kalimantan. To address this, local governments and stakeholders in East Kalimantan must increase women's participation in political spheres such as parliament and higher education, ensure access to healthcare, and fortify regulations and institutions promoting women's rights, fostering regional economic growth.

A. INTRODUCTION

A high economic growth rate indicates a region's or country's achievement in development. One pivotal factor contributing to economic growth is the quality of human resources supporting various life sectors. Human resources serve as agents of change in national development, thus necessitating a focus on quality, skills, and reliability in human development. Qualified, educated, and technologically proficient human capital is crucial for a country's economic growth (Todaro & Smith, 2012).

To achieve balanced social and economic welfare for the community, increasing human capital must be pursued equitably, without gender discrimination. Gender equality is a key indicator of social and economic welfare. Regardless of gender, every societal component should have equal opportunities for improving their well-being (Arifin, 2018). Gender equality transcends biological differences between men and women, and its role is predominantly related to political, socio-cultural, and economic aspects (Sitorus, 2016). However, gender disparities persist in the economic, educational, and healthcare sectors, perpetuating significant

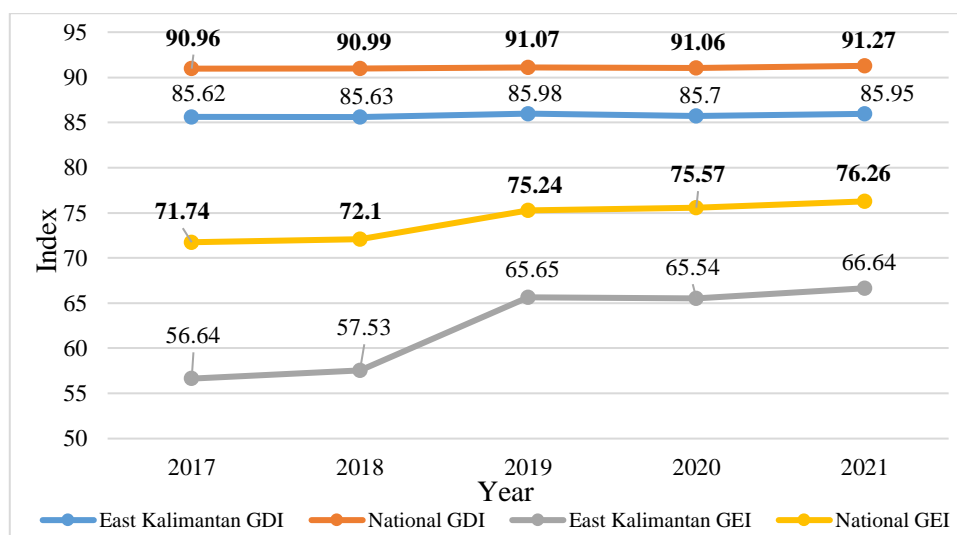
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gender inequality due to prevailing beliefs that women are not sufficiently robust or trained for physically demanding employment (Nova, 2022; Purba & Wahyuningsi, 2023; Sulisto et al., 2023).

This gender inequality must be reduced, if not eliminated, by changing people's perceptions of women as agents of national development and as potential national assets in economic growth and sustainable development. The achievement of the fifth sustainable development goal, namely gender equality, must be fully implemented to minimize gender inequality and improve the quality of women's human resources. The comparison between the gender development index (GDI) and the human development index (HDI) is one of the indicators of the condition of gender inequality in Indonesia (Adika & Rahmawati, 2021). Additional indicators are also employed to gauge the extent to which women's roles are linked to economic growth, such as the gender empowerment index (GEI) in the economic and political spheres, the percentage of women in professional positions (PWP) in the employment sector, the mean years of schooling for women (MYSW) in the education sector, and women's life expectancy (WLE) in the health sector.

Based on data from (BPS-Statistics Indonesia, 2022a), East Kalimantan is one of the provinces where the GDI performance level remained below the national average from 2017 to 2021. In 2021, the GDI only reached 85.95, below the national achievement of 91.27. Furthermore, the East Kalimantan GEI's degree of achievement from 2017 to 2021 remains significantly lower than the national achievement score. East Kalimantan's GEI ranks in the bottom five nationally in 2021, with a gender empowerment index of 66.64, lower than the national GEI of 76.26 (BPS-Statistics Indonesia, 2022b). This scenario indicates that the efforts of the Local Government of East Kalimantan have yet to fully address gender inequality, equal employment opportunities, and economic improvement. Persistent gender inequality poses risks to the region's and country's social, educational, political, healthcare, and economic aspects. Figure 1 illustrates the GDI and GEI conditions at the national and East Kalimantan levels from 2017 to 2021.



(Source: BPS-Statistics Indonesia (2022a, 2022c))

Figure 1. The GDI and GEI at the National and East Kalimantan Levels

In addition to the GDI and GEI, indicators such as PWP, MYSW, and WLE are used to analyze women's roles in economic growth. In general, East Kalimantan PWP from 2017 to 2021 is below the achievement of the National PWP; in 2021, the East Kalimantan PWP was 45.37%, and the National PWP reached 49.99% (BPS-Statistics Indonesia, 2022e). However, the East Kalimantan PWP has experienced year-after-year improvements, including an

increase in the role of women in the professional field of employment. The MYSW measures the role of women in the education sector; the higher a woman's education level, the higher her family and regional income. Table 1 shows that East Kalimantan's MYSW is increasing yearly; in 2021, the MYSW was 9.42 years (BPS-Statistics Indonesia, 2022d). Furthermore, the East Kalimantan MYSW achievement level from 2017 to 2021 was higher than the MYSW achievement level in Indonesia. Then, WLE becomes an indicator of the condition of women in the health sector by looking at the estimated average age of women. Similarly to the MYSW, East Kalimantan's WLE indicator increased from 2017 to 2021; in 2021, the WLE achievement was 76.51 years (BPS-Statistics Indonesia, 2022c). Table 1 compares East Kalimantan and Indonesia's PWP, MYSW, and WLE data.

Table 1. Comparison of PWP, MYSW, and WLE Data Between East Kalimantan and Indonesia in 2017-2021

Year	PWP (Percent)		MYSW (Year)		WLE (Year)	
	East Kalimantan	Indonesia	East Kalimantan	Indonesia	East Kalimantan	Indonesia
2017	39.36	46.31	8.93	7.65	75.61	73.06
2018	41.68	47.02	9.06	7.72	75.87	73.19
2019	44.12	47.46	9.25	7.89	76.13	73.33
2020	45.86	48.76	9.27	8.07	76.21	73.46
2021	45.37	49.99	9.42	8.17	76.51	73.55

Source: BPS-Statistics Indonesia (2022e, 2022d, 2022e)

The statistical data and issues outlined above indicate a gap in the literature where no comprehensive analysis has been conducted on the impact of women's roles (Adika & Rahmawati, 2021; Arifin, 2018; Hidayah & Rahmawati, 2020; Kurnianingsih et al., 2022; Lusiarista & Arif, 2022; Novtaviana, 2020; Nursini & Syahrul, 2022; Rajagukguk, 2015; Salsabila & Hendrawan, 2021; Sari, 2021; Sitorus, 2016; Sulisto et al., 2023). Conversely, existing research reveals disparities or gaps in findings, suggesting that the degree of women's involvement has an insignificant impact on economic growth (Cahyaningrum, 2022; Daud & Soleman, 2020; Ernawati, 2022; Nazmi & Jamal, 2018; Padang et al., 2019; Pertiwi, 2022; Rachmawati & Wibowo, 2016; Roseana, 2022; Sari & Arif, 2022). Based on the background and empirical studies, this current study examines women's participation in economic growth in East Kalimantan in 2017–2021, using the GDI, GEI, PWP, MYSW, and WLE indicators.

B. LITERATURE REVIEW

Economic growth, defined as the increasing activity in the community's economy resulting in enhanced welfare, signifies a region's or country's developmental progress. Boediono (2008) described economic growth as augmenting the production of goods or services per capita over time. Positive economic growth reflects the successful advancement of national development in meeting societal needs. However, even with positive economic growth, equitable benefits across all societal groups may not be guaranteed. Some factors influence these conditions in forming economic capital, including high and equitable levels of health and education and an increased quality of human capital (Todaro & Smith, 2012). Gender equality is one of the human capital qualities that shape a region's and a country's economies.

Gender equality is crucial as it signifies justice and parity for both men and women regarding rights, responsibilities, and opportunities. The presence of gender equality reduces gender disparities in society (Sitorus, 2016). At the same time, gender inequality leads to discrimination and impedes future economic growth. Gender inequality manifests in various forms, including disparities in healthcare and education facilities, life expectancy, income

distribution, professional training opportunities, workforce representation, and political participation. Therefore, promoting gender equality is vital for women to achieve fairness and parity in education, health, income, politics, and employment.

The GDI and GEI are indicators to gauge gender inequality across different life aspects (Ministry of Women's Empowerment and Child Protection, 2021). Additionally, indicators such as PWP, MYSW, and WLE help assess women's contribution to economic growth. According to Novtaviana (2020), Nursini & Syahrul (2022), Sari (2021), and Sitorus (2016), GDI has a significant effect on economic growth. On the other hand, the findings of this research indicate that the GDI does not always have an insignificant impact on economic growth (Cahyaningrum, 2022; Ernawati, 2022; Nazmi & Jamal, 2018; Roseana, 2022; Sari & Arif, 2022; Sulistiyowati & Agusalm, 2023).

The GEI highlights gender disparities in political, economic, and decision-making spheres. Past studies by Cahyaningrum (2022), Infarizki et al. (2020), Kurnianingsih et al. (2022), Novtaviana (2020), and Salsabila & Hendrawan (2021) explained that the GEI positively impacted economic growth. PWP is a critical economic indicator for measuring employment or professional staff participation. PWP significantly affects Indonesia's economic growth (Buterin et al., 2023; Firmansyah & Sihaloho, 2021; Mirziyoyeva & Salahodjaev, 2023; Rajagukguk, 2015). However, contrary to this research, PWP's effect on the regional economy appears insignificant (Pertiwi, 2022).

MYSW measures women's educational attainment, correlating with their ability to contribute to family income and the regional economy. Aligning with previous research by Adika & Rahmawati (2021); Arifin (2018); Frederich et al. (2023); Hidayah & Rahmawati (2020); Infarizki et al. (2020); Lusiarista & Arif (2022); Roseana (2022), a significant relationship exists between MYSW and economic growth. Despite theoretical expectations, several studies have found RLSP to have an insignificant effect on economic growth (Cahyaningrum, 2022; Ernawati, 2022; Irvan et al., 2021; Padang et al., 2019; Rachmawati & Wibowo, 2016; Sari & Arif, 2022).

WLE assesses women's health contributions by evaluating their life expectancy. The greater the WLE, the more positive the effect on economic growth in a variety of regions, consistent with prior research by Adika & Rahmawati (2021); Arifin (2018); Aurelya et al. (2022); Ernawati (2022); Firmansyah & Sihaloho (2021); Hidayah & Rahmawati (2020); Infarizki et al. (2020); Rachmawati & Wibowo (2016). However, this study's findings contradict previous research suggesting a negative impact of WLE on regional economic growth (Azizi, 2020; Daud & Soleman, 2020; Irvan et al., 2021; Padang et al., 2019; Roseana, 2022). The indicators or variables of women's roles serve as the independent variables, while economic growth in cities and regions is the dependent variable, analyzed using the panel data regression method. The research framework is depicted in Figure 2.

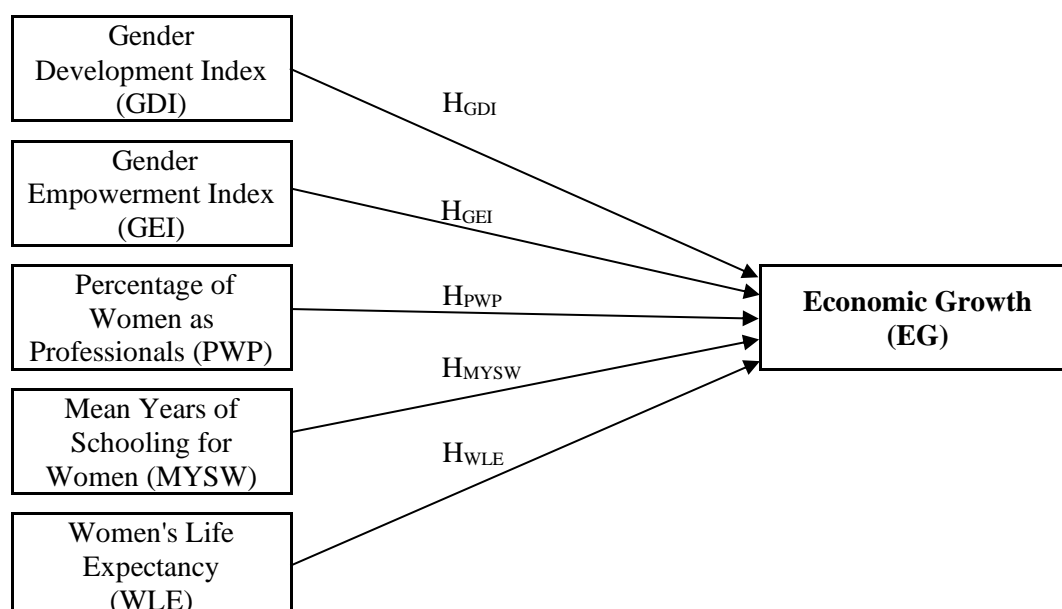


Figure 2. Research Framework

C. METHOD

Data Types and Data Sources

This study used secondary data obtained from BPS Statistics of East Kalimantan Province. The research panel data consisted of time series data for 2017-2021 originating from 10 cities and regencies in East Kalimantan. The ten cities and regencies were Paser Regency, North Penajam Paser Regency, West Kutai Regency, Kutai Kartanegara Regency, Mahakam Ulu Regency, East Regency, Berau Regency, Samarinda City, Balikpapan City, and Bontang City, resulting in 50 observations.

Table 2. Types of Variables, Operational Definitions, Units, and Research Hypotheses

Variables	Operational definition	Unit	Hypothesis
Dependent Variable			
EG	The condition of the economic rate in a region or country with fluctuations up or down in a certain period	Percentage	
Independent Variables			
GDI	The ratio between women's HDI and men's HDI	Index	Positive and Significant Effects
GEI	Equality for women to entrepreneurs/work and play an active role in the economy and politics.	Index	Positive and Significant Effects
PWP	Women's economic participation is represented by positions or professional staff such as administrators, technicians, managers, company leaders, and other professionals.	Percentage	Positive and Significant Effects
MYSW	The average number of years it takes for women aged 15 and up to complete their education.	Year	Positive and Significant Effects
WLE	The estimated average number of years a woman has lived since birth.	Year	Positive and Significant Effects

Source: BPS-Statistics of East Kalimantan Province

Data Analysis

The problem to be solved in this study is determining how the independent variables (GDI, GEI, PWP, MYSW, and WLE) correlate with the dependent variable (EG) in Indonesia. The panel data regression model was used in this study to examine the correlation or effect between the five independent variables and the dependent variable. The panel data regression model is as follows:

$$EG_{it} = \beta_0 + \beta_1 GDI_{it} + \beta_2 GEI_{it} + \beta_3 PWP_{it} + \beta_4 MYSW_{it} + \beta_5 WLE_{it} + \varepsilon_{it} \quad (1)$$

Where:

EG	:	Economic growth in East Kalimantan (%)
β_0	:	Constant
$\beta_1 - \beta_5$:	Regression coefficient
GDI	:	Gender development index (index)
GEI	:	Gender empowerment index (index)
PWP	:	The percentage of women as professionals (%)
MYSW	:	The mean years of schooling for women (Year)
WLE	:	Women's life expectancy (Year)
ε_{it}	:	Error term
i	:	Cities and regencies in East Kalimantan
t	:	Year (2017-2021)

The first step in this research is a descriptive statistical analysis to create a comprehensive view of an event without generalizing it (Aurelya et al., 2022; Yuliarmi & Marhaeni, 2019). The average value is calculated by summing all the research data on the same research variable and dividing it by the number of observations on the same research variable (number of cities and regencies in East Kalimantan and year of study sample). The maximum value is the highest amount of research data for each research variable; otherwise, the minimum value is the lowest amount for each research variable (Aurelya et al., 2022; Yuliarmi & Marhaeni, 2019).

For further data processing, panel data regression is employed. Panel data is created by combining cross-sectional data and time-series data. This analysis studies more efficient, reasonable, and acceptable statistical estimation findings to observe positive or negative, significant or insignificant effects between the independent and dependent variables. The advantage of panel data analysis is that there are more observations, and the marginal impact of the dependent variable can be seen in two dimensions, resulting in more accurate estimated parameters (Baltagi, 2021). There are three-panel data regression models: the Common Effect Model (CEM), the fixed effect model (FEM), and the random effect model (REM).

CEM, also known as the "pooled least squares" model, is the simplest basic model, bringing together all cross-sectional and time-series data with no variances in time or individual dimensions, such that data behaviour between individuals is considered the same in various periods (Baltagi, 2021). The next model, FEM, assumes that each individual in the model has a different intercept, but the slope between individuals is constant (Baltagi, 2021). The last model is REM, which can overcome the uncertainty of FEM, where individual and aggregate errors are assumed to be uncorrelated (Baltagi, 2021).

The Chow, Hausman, and LM Tests determine the best model from the three preceding alternatives. Referring to Baltagi (2021), the Chow Test is used to choose between CEM and FEM models. The Hausman test is used to select between FEM and REM models. The LM test determines the difference between CEM and REM models. The three tests were examined following the specifications of each of these statistical tests. After selecting the model, the classic assumption test was done to see if the results met the Best Linear Unbiased criteria. The

test consisted of a normality test, a multicollinearity test, a heteroscedasticity test, and an autocorrelation test.

The feasibility of the research model was assessed next using an F-test, a t-test, and the coefficient of determination (Baltagi, 2021). The F-test analyzed the model's feasibility as a whole and determined whether the effect of independent variables is simultaneously significant on the dependent variable. The t-test was used to determine the partial effect of the five independent variables on the dependent variable. The coefficient of determination determines how well the independent variable explains the dependent variable.

D. RESULT AND DISCUSSION

Result

Data from 10 East Kalimantan cities and regencies from 2017 to 2021 indicate that the average economic growth was 2.01%, with the highest growth rate of 8.17% recorded in East Kutai Regency in 2019, while the lowest rate of -4.21% occurred in Kutai Kartanegara Regency in 2020 (BPS-Statistics of East Kalimantan Province, 2022). The average Gender Development Index (GDI) for the study period was 83.03. Balikpapan City achieved the highest GDI of 89.83 in 2021, while Paser Regency attained the lowest index of 69.78 in 2017 (BPS-Statistics Indonesia, 2022a). The Gender Empowerment Index (GEI) averaged 60.96, with significant variations between the highest and lowest values. Mahakam Ulu Regency recorded the highest GEI of 80.61 in 2019, whereas Bontang City had the lowest index of 45.44 in 2017 (BPS-Statistics Indonesia, 2022b).

The PWP averaged 44.61%, with North Penajam Paser Regency having the highest PWP of 58.81% in 2021 and Samarinda City recording the lowest at 34.87% in 2018. MYSW, used to assess women's role in education, averaged 8.80 years, with Balikpapan City having the highest MYSW of 10.69 years in 2021, while Mahakam Ulu Regency had the lowest at 7.32 years in 2017 (BPS-Statistics Indonesia, 2022d). The Women's Life Expectancy (WLE) in East Kalimantan during 2017-2021 averaged 74.72 years. Balikpapan City recorded the highest WLE of 76.55 years in 2021, while North Penajam Paser Regency had the lowest at 73.08 years in 2017 (BPS-Statistics Indonesia, 2022c).

Table 3. Descriptive Statistical Results of Research Data

Variable	GE (Percent)	GDI (Index)	GEI (Index)	PWP (Percent)	MYSW (Years)	WLE (Years)
Mean	2.01	83.03	60.96	44.61	8.80	74.72
Maximum	8.17	89.83	80.61	58.81	10.69	76.55
Minimum	-4.21	69.78	45.44	34.87	7.32	73.08

Source: Data Processing (E-Views 9.0)

The analysis of women's role in the economy in East Kalimantan utilized panel data regression and generated several alternative models. The Chow test yielded a chi-square cross-section value of 0.197 (> 5%), indicating acceptance of the null hypothesis (H0). Subsequently, the LM test showed a Breusch-Pagan value of 0.000 (< 5%), thereby accepting the alternate hypothesis (H1). Based on these analyses, the Random Effects Model (REM) emerged as the most suitable model for addressing the research hypothesis.

Classical assumptions were tested to ensure compatibility with the REM model. The normality test assessed whether the error term followed a normal distribution. Results showed that the Jarque-Bera probability value was 0.927 (> 5%), affirming the normality assumption (Table 5). Furthermore, the multicollinearity test verified that the independent variables exhibited no perfect correlation. Analysis revealed that the correlation coefficient between the

independent variables in this study remained below 0.80, indicating no violation of the multicollinearity assumption (Table 5). Employing cross-section weighting, the REM model in this study addressed heteroscedasticity and autocorrelation issues (Baltagi, 2021).

Table 5. Results of the Normality Test and Multicollinearity Test

Normality Test					
Jarque-Bera probability	0,927				
Multicollinearity Test					
	GDI	GEI	PWP	MYSW	WLE
GDI	1.000	-0.090	-0.093	0.555	0.383
GEI	-0.090	1.000	-0.233	-0.105	0.083
PWP	-0.093	-0.232	1.000	-0.243	-0.218
MYSW	0.555	-0.105	-0.243	1.000	0.779
WLE	0.383	0.083	-0.218	0.779	1.000

Source: Data Processing (E-Views 9.0)

The F-test findings showed a probability value 0.037 ($< 5\%$), indicating that at least one independent variable significantly affects the dependent variable. The partial feasibility test using the t-test showed that two independent variables, the GEI and PWP, significantly affected the dependent variable (EG). In contrast, the GDI, MYSW, and WLE variables had no significant effect on the dependent variable (Table 6). The coefficient of determination (0.229%) indicates that the independent variables (GDI, GEI, PWP, MYSW, and WLE) in the study can explain 22.90% of the variation in the dependent variable (EG); the remaining 77.10% is explained by other independent variables not included in this study's analysis.

Table 6. Estimation of Variables Affecting Economic Growth in East Kalimantan

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	36.886	23.652	1.559	0.126
GDI	0.056	0.034	1.633	0.110
GEI	0.094	0.037	2.529	0.015
PWP	-0.198	0.082	-2.404	0.021
MYSW	-0.297	0.198	-1.502	0.140
WLE	-0.453	0.309	-1.464	0.150
<i>Goodness Of Fit</i>				
R ²				0.229
Adj R ²				0.141
F-stat				2.612
Prob (F-stat)				0.037

Source: Data Processing (E-Views 9.0)

Discussion

The findings regarding several research variables suggest that women's engagement in the economy of East Kalimantan remains relatively low. Gender equality is imperative for fostering regional economic growth (Arifin, 2018). Therefore, enhancing women's roles and participation in household and regional economies is crucial. The Gender Development Index (GDI) compares women's Human Development Index (HDI) with men's. As depicted in Table 6, the GDI coefficient is 0.056, indicating that a one-unit increase in GDI would lead to a mere 0.018% rise in average economic growth, *ceteris paribus*. The insignificant p-value of 0.110 suggests that GDI does not significantly influence economic growth.

These findings contradict previous studies suggesting a positive and significant association between GDI and economic growth (Novtaviana, 2020; Nursini & Syahrul, 2022; C. P. Sari, 2021; Sitorus, 2016). However, they align with Cahyaningrum (2022); Ernawati

(2022); Nazmi & Jamal (2018); Roseana (2022); Sari & Arif (2022); Sulistiyowati & Agusalam (2023), indicating that GDI has yet to exert a positive and substantial impact on economic growth in several regions. Gender inequality persists, and the gap in achieving basic capabilities between men and women remains unbridged. These findings underscore the ongoing struggle to attain gender equality in the economy. Based on [BPS-Statistics of East Kalimantan Province \(2023\)](#), there is a significant disparity in the population working over 15 years according to gender. In 2021, there will be 1,006,805 working men, or 64.32% of the total working population, and only 558,548 working women (35.68%). Local governments and stakeholders must actively contribute to increasing women's roles in all aspects of life.

The GEI demonstrates a positive correlation between GEI and economic growth, with a coefficient value 0.094. This implies that a one-unit increase in GEI corresponds to a 0.094% rise in average economic growth, *ceteris paribus*. If the p-value in the significance test is 0.015 or less than 5%, H_{GEI} is accepted. The research findings confirm the study's hypothesis that the GEI variable significantly affects economic growth. The results of this study are consistent with prior research, indicating that the women's empowerment index has a positive and significant effect on economic growth in various regions ([Cahyaningrum, 2022](#); [Infarizki et al., 2020](#); [Kurnianingsih et al., 2022](#); [Novtaviana, 2020](#); [Salsabila & Hendrawan, 2021](#)). The condition of women's participation in the economy in East Kalimantan has resulted in positive outcomes. Women's representation has developed in offering input in policy formulation so that policies are perceived as more just and responsive to gender equality in East Kalimantan. Women's participation in the formal sector can improve the quality of women's empowerment, therefore increasing the attainment of regional and national economic development in the future.

The PWP shows women's economic participation level in occupying positions or being professional staff in various formal sectors. The PWP variable had a p-value of -0.198, indicating that H_{PWP} was rejected. It was concluded that the results of the PWP variable do not significantly affect economic growth in East Kalimantan. This result contrasts prior studies reporting that PWP positively affects the economy ([Buterin et al., 2023](#); [Firmansyah & Sihaloho, 2021](#); [Mirziyoyeva & Salahodjaev, 2023](#); [Rajagukguk, 2015](#)). However, the findings of this study are consistent with ([Pertiwi, 2022](#)), suggesting that PWP conditions have no positive effect on economic growth in Indonesia.

Furthermore, women's limited political participation in parliament has not positively impacted economic growth ([Sari & Arif, 2022](#)). Thus, the local government, allied agencies, and corporations in East Kalimantan should strive to enhance the percentage of women professionals in all sectors of the formal economy to promote gender equality and reduce disparities between men and women. Addressing gender inequality will enhance workforce participation and stimulate economic growth in the region.

The education sector is a critical investment in a country's human capital, fostering the production of skilled, competent, and competitive individuals in the technology field, thereby enhancing the nation's economy ([Todaro & Smith, 2012](#)). The MYSW variable was used in this study to analyze educational achievement in a particular region. The MYSW determines the number of years of education completed by women over 15. However, the results indicated a coefficient of -0.297 for MYSW, leading to rejection of the MYSW hypothesis. Consequently, the MYSW variable was found to have an insignificant effect on economic growth in East Kalimantan.

These results are in contrast with previous research by [Adika & Rahmawati \(2021\)](#); [Arifin \(2018\)](#); [Frederich et al. \(2023\)](#); [Hidayah & Rahmawati \(2020\)](#); [Infarizki et al. \(2020\)](#); [Lusiarista & Arif \(2022\)](#); [Roseana \(2022\)](#) reporting a positive and significant effect between the MYSW variable and economic growth. However, they are consistent with prior research revealing that MYSW harmed economic growth ([Cahyaningrum, 2022](#); [Ernawati, 2022](#); [Irvan et al., 2021](#);

Padang et al., 2019; Rachmawati & Wibowo, 2016; Sari & Arif, 2022). The lower and shorter MYSW reduces their quality and skills, making them ineffective at work and incompetent to increase economic growth and the gender development index. This situation should concern The Local Government of East Kalimantan and related agencies to improve the quality of education for women by emphasizing "9 Years Compulsory Education" and for the people in the area to be open-minded that women's and men's education are equal. Improving women's abilities and insights can improve goods and services production performance, thereby increasing economic growth and GDI in the future (Abidin et al., 2022; Setyaningrum et al., 2023).

The WLE is used to study aspects of women's health that impact regional economic growth. Table 6 reveals that the WLE variable obtains a p-value of -0.453, so H_{WLE} is rejected, indicating that WLE does not significantly affect economic growth in East Kalimantan. The finding contradicts the findings of Adika & Rahmawati (2021), Arifin (2018), Aurelya et al. (2022), Ernawati (2022), Hidayah & Rahmawati (2020), Infarizki et al. (2020), Rachmawati & Wibowo (2016), and Firmansyah & Sihalo (2021), reporting that WLE had a positive effect on economic growth in the region. However, the finding of this study aligns with previous studies showing that WLE harms economic growth in several areas (Azizi, 2020; Irvan et al., 2021; Nainggolan & Soleman, 2022; Padang et al., 2019; Roseana, 2022).

The East Kalimantan regional government and local health agencies should consider the findings of this study to enhance women's health in the area. Healthcare standards can be improved by expanding Public Health Centers and enhancing human resources services in the health sector, ensuring comprehensive care for women. As highlighted by Mulasari (2015), given the significant participation of women in economic activities, enhancing women's health is imperative as it directly correlates with economic productivity. Amory (2019) and Sulisto et al. (2023) further emphasized that higher women's health quality leads to increased productivity in economic activities, benefiting both upstream and downstream sectors. Conversely, declining women's health quality diminishes work productivity and adversely affects the regional economy.

The research findings underscore the inadequate role of women in East Kalimantan's economic growth across various sectors, including development, professional participation, education, and health. This deficiency stems from gender inequality and a patriarchal, discriminatory societal culture that elevates men's roles, consequently impeding economic growth. The East Kalimantan Local Government and its affiliated agencies should collaborate to devise programs promoting gender equality in all cities and regencies of East Kalimantan. They can allocate balanced funds from the State Budget to address various aspects directly impacting gender development. As the implementers of local government initiatives, the East Kalimantan Regional Government can formulate local policies and regulations that support the role of women in various life domains, thereby enhancing family welfare, regional economic prosperity and reducing gender inequality.

E. CONCLUSION

Research on women's participation in economic growth in East Kalimantan yielded several conclusions. The results of the study using panel data regression reveal that only the gender empowerment index (GEI) has a significant effect on economic growth in East Kalimantan. On the other hand, other variables (GDI, PWP, MYSW, and WLE) do not affect economic growth in East Kalimantan. The lack of women's role in economic, educational, and health aspects contributes to GDI's insignificant effect on economic growth. This condition harms economic development, among other variables, namely PWP, MYSW, and WLE. This finding implies that gender inequality remains between men and women in various sectors, namely the economy, health, and education. This is evidenced by the fact that male employment is

significantly higher than female employment, and male students attend school at a higher rate than female students.

The study proposes several strategies or recommendations for consideration by public policymakers, aiming to contribute scientifically to the people of East Kalimantan, especially to enhance women's participation in the economy. Firstly, it suggests improving the involvement of the Local Government in East Kalimantan to raise awareness of gender equality in the political sphere, ensuring at least 30% representation of women in parliament. Increased expression can help counter patriarchal mindsets, fostering more inclusive legislation that addresses the needs of women and children. Secondly, the government should revise and strengthen various regulations supporting gender equality to foster fair, equitable, and non-discriminatory gender relations across all aspects of life, including health, employment, politics, education, and marriage.

Thirdly, prioritizing and improving the quality of education, especially for girls, is crucial to fostering creativity and skills and eliminating educational disparities. Education serves to dismantle patriarchal norms and outdated cultural beliefs, such as the notion that "girls belong in the kitchen," empowering women to pursue diverse career paths. Additionally, government and private sectors should offer education and training programs tailored to the female workforce, enabling them to thrive in formal and informal sectors while combating workplace discrimination.

Fourthly, enhancing women's roles can help mitigate gender inequality through various means: (a) improving women's access to information and support services for issues like sexual violence, family planning, and domestic abuse; (b) developing specialized facilities and infrastructure catering to women's needs, such as breastfeeding rooms, menstrual leave policies, and women-friendly transportation options; (c) promoting women's economic empowerment through initiatives like establishing MSMEs; and (d) strengthening women-focused programs and institutions across all sectors. The Local Government and stakeholders in East Kalimantan need to intensify coordination efforts in planning and implementing regulations related to gender equality to narrow the gender gap, achieve the fifth Sustainable Development Goal (SDG), and boost regional economic growth.

Future studies could explore additional independent variables, such as female workforce participation rates, women's salaries, or expenditure patterns, to enrich the economic literature on women's participation. Furthermore, employing diverse analytical methodologies would provide a more comprehensive understanding of the variations in analysis outcomes.

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REFERENCES

- Abidin, A. Z., Arif, M., & Abroroh, S. A. (2022). Studi Keterlibatan Perempuan dalam Lembaga Legislatif dalam Indeks Pembangunan Gender di Provinsi Jawa Barat. *Journal of Economics Research and Policy Studies*, 2(1), 23–36. <https://doi.org/10.53088/jerps.v2i1.385>
- Adika, N. D., & Rahmawati, F. (2021). Analisis Indikator Ketimpangan Gender dan Relevansinya terhadap Pertumbuhan Ekonomi Inklusif di Indonesia. *Ecoplan*, 4(2), 151–162. <https://doi.org/10.20527/ecoplan.v4i2.400>
- Amory, J. D. S. (2019). Peranan Gender Perempuan dalam Pembangunan di Sulawesi Barat Tahun 2016-2018. *GROWTH: Jurnal Ilmiah Ekonomi Pembangunan*, 1(1), 1–15.

- Arifin, S. (2018). Kesetaraan Gender dan Pertumbuhan Ekonomi di Indonesia. *Kajian*, 23(1), 27–41. <https://doi.org/10.22212/kajian.v23i1.1872>
- Aurelya, T., Nurhayati, N., & Purba, S. F. (2022). Pengaruh Kondisi Sektor Kesehatan terhadap Pertumbuhan Ekonomi di Indonesia. *Jurnal STEI Ekonomi*, 31(02), 83–92. <https://doi.org/10.36406/jemi.v31i02.752>
- Azizi, M. I. (2020). *Determinan Pekerja Perempuan terhadap Pertumbuhan Ekonomi*. Jember: Universitas Jember
- Baltagi, B. H. (2021). *Econometric Analysis of Panel Data* (6th ed.). New York: Springer. <https://doi.org/10.1007/978-3-030-53953-5>
- Boediono. (2008). *Ekonomi Moneter* (3rd ed.). Yogyakarta: BPFE.
- BPS-Statistics Indonesia. (2022a). *Gender Development Index*. Jakarta: BPS-Statistics Indonesia. Retrieved from <https://www.bps.go.id/indicator/40/463/1/indeks-pembangunan-gender-ipg-.html>
- BPS-Statistics Indonesia. (2022b). *Gender Empowerment Index*. Jakarta: BPS-Statistics Indonesia. Retrieved from <https://www.bps.go.id/indicator/40/468/1/indeks-pemberdayaan-gender-idg-.html>
- BPS-Statistics Indonesia. (2022c). *Life Expectancy at Birth, 2010-2022*. BPS-Statistics Indonesia. Retrieved from <https://www.bps.go.id/indicator/26/414/1/-new-method-umur-harapan-hidup-saat-lahir-uhh-.html>
- BPS-Statistics Indonesia. (2022d). *Mean Years of Schooling (MYS) by Gender (Year)*. Jakarta: BPS-Statistics Indonesia. Retrieved from <https://www.bps.go.id/indicator/40/459/1/rata-rata-lama-sekolah-rls-menurut-jenis-kelamin.html>
- BPS-Statistics Indonesia. (2022e). *Women as Professionals (Percent)*. Jakarta: BPS-Statistics Indonesia. Retrieved from <https://www.bps.go.id/indicator/40/466/1/perempuan-sebagai-tenaga-profesional.html>
- BPS-Statistics of East Kalimantan Province. (2022). *Laju Pertumbuhan PDRB Kabupaten Kota Atas Dasar Harga Konstan*. Samarinda: BPS-Statistics of East Kalimantan Province. Retrieved from <https://kaltim.bps.go.id/subject/157/produk-domestik-regional-bruto--kabupaten-kota-.html#subjekViewTab3>
- BPS-Statistics of East Kalimantan Province. (2023). *Population Aged 15 Years and Over Who Worked During the Previous Week by Sex 2019-2021*. Samarinda: BPS-Statistics of East Kalimantan Province. Retrieved from <https://kaltim.bps.go.id/subject/6/employment.html#subjekViewTab3.html>
- Buterin, V., Fajdetić, B., & Funarić, B. (2023). Understanding the Macroeconomic Effects of Female Participation in the Labour Market. *Economies*, 11(11), 280. <https://doi.org/10.3390/economies11110280>
- Cahyaningrum, E. A. (2022). *Kontribusi Perempuan dalam Pertumbuhan Ekonomi di Kawasan Metropolitan Gerbangkertosusila Tahun 2017-2020*. Surakarta: Universitas Muhammadiyah Surakarta.
- Daud, N., & Soleman, R. (2020). Effects of Fiscal Decentralization on Economic Growth and Human Development Index in the Indonesian Local Governments. *Management Science Letters*, 3975–3980. <https://doi.org/10.5267/j.msl.2020.7.012>
- Ernawati. (2022). *Kontribusi Perempuan terhadap Perekonomian Di Wilayah Karesidenan Semarang Tahun 2016-2020*. Surakarta: Universitas Muhammadiyah Surakarta
- Firmansyah, C. A., & Sihaloho, E. D. (2021). The Effects of Women Empowerment on Indonesia's Regional Economic Growth. *Jurnal Ekonomi Pembangunan: Kajian Masalah Ekonomi dan Pembangunan*, 22(1), 12–21. <https://doi.org/10.23917/jep.v22i1.11298>
- Frederich, R., Nurhayati, & Purba, S. F. (2023). Peranan Pendidikan Dalam Meningkatkan Pertumbuhan Ekonomi di Indonesia. *Jurnal Ilmiah Ekonomi Bisnis*, 28(1), 69–83. <https://doi.org/10.35760/eb.2023.v28i1.7227>

- Hidayah, Z. M., & Rahmawati, F. (2020). Menelusuri Relasi Indikator Indeks Pembangunan Gender terhadap Pertumbuhan Ekonomi. *EcceS: Economics, Social, and Development Studies*, 7(1), 110–129.
- Infarizki, A. Y., Jalunggono, G., & Laut, L. T. (2020). Analisis Pengaruh Ketimpangan Gender terhadap Produk Domestik Regional Bruto di Jawa Tengah Tahun 2010-2018. *Dinamic: Directory Journal of Economic*, 2(2), 528–547. <https://doi.org/10.31002/dinamic.v2i2.1387>
- Irvan, I., Wahab, A., & Qarina, Q. (2021). Analisis Pengaruh Ketimpangan Gender terhadap Pertumbuhan Ekonomi di Sulawesi Selatan. *ICOR: Journal of Regional Economics*, 2(3), 63–76.
- Kurnianingsih, F., Mahadiansar, Putri, R. A., & Azizi, O. R. (2022). Perspektif Analisis Indeks Pemberdayaan Gender Kota Tanjungpinang dalam Masa Pandemi Covid-19. *Jurnal Ilmu Sosial Dan Humaniora*, 11(1), 45–55. <https://doi.org/10.23887/jish.v11i1.37594>
- Lusiarista, & Arif, M. (2022). Peran Perempuan terhadap Pertumbuhan Ekonomi di Karesidenan Pati Periode 2015-2020. *Social Science Studies*, 2(3), 197–214. <https://doi.org/10.47153/sss23.3792022>
- Ministry of Women's Empowerment and Child Protection. (2021). *Pemberdayaan manusia berbasis gender 2021*. Kementerian Pemberdayaan Perempuan Dan Perlindungan Anak. Retrieved from <https://www.kemenpppa.go.id/lib/uploads/list/50a46-pembangunan-manusia-berbasis-gender-2020.pdf>
- Mirziyoyeva, Z., & Salahodjaev, R. (2023). Does Representation of Women in Parliament Promote Economic Growth? Considering Evidence from Europe and Central Asia. *Frontiers in Political Science*, 5, 1120287. <https://doi.org/10.3389/fpos.2023.1120287>
- Mulasari, F. D. (2015). Peran Gender Perempuan terhadap Pertumbuhan Ekonomi di Provinsi Jawa Tengah tahun 2008-2012. *Economics Development Analysis Journal*, 4(2), 254–263. <https://doi.org/10.15294/edaj.v4i3.14832>
- Nainggolan, B., & Soleman, R. (2022). Pembangunan Berwawasan Gender dalam Pertumbuhan Ekonomi Indonesia dan Perspektif Maqashid Syariah Jasser Auda. *IQTISHADUNA: Jurnal Ilmiah Ekonomi Kita*, 11(2), 153–168.
- Nazmi, L., & Jamal, A. (2018). Pengaruh Ketimpangan Gender terhadap Pertumbuhan Ekonomi di Indonesia. *Jurnal Ilmiah Mahasiswa (JIM)*, 3(4), 740–750.
- Nova, M. A. (2022). Peran Perempuan dalam Pembangunan Desa (Studi Femenisme dan Gender pada Perempuan Desa Blang Krueng Aceh Besar). *Jurnal Al-Ukhwah*, 1(1), 1–13.
- Novtaviana, W. (2020). *Pengaruh Indeks Pembangunan Gender dan Indeks Pemberdayaan Gender terhadap Pertumbuhan Ekonomi (PDRB) di Indonesia tahun 2014-2018*. Surabaya: Universitas Islam Negeri Sunan Ampel Surabaya
- Nursini, N., & Syahrul, S. (2022). Tinjauan Peran Kualitas Gender dalam Pembangunan Ekonomi. *Jurnal Ekonomika Dan Dinamika Sosial*, 1(2), 14–27.
- Padang, D. M., Anis, A., & Ariusni. (2019). Analisis Pengaruh Kesetaraan Gender terhadap Pertumbuhan Ekonomi di Sumatera Barat. *Jurnal Kajian Ekonomi Dan Pembangunan*, 1(3), 969–976.
- Pertiwi, S. A. P. D. (2022). *Analisis Pengaruh Pemberdayaan Perempuan terhadap Pertumbuhan Ekonomi Regional: Bukti Data Panel di Indonesia tahun 2017-2021*. Yogyakarta: Universitas Atma Jaya Yogyakarta
- Purba, S. F., & Wahyuningsi, M. (2023). The 5th Sustainable Development Goal: Women's Participation in West Nusa Tenggara's Economic Growth. *Prosiding Seminar Nasional LPPM UMMAT II*, 71–82.
- Rachmawati, P., & Wibowo, W. (2016). Pemodelan Peran Perempuan terhadap Pertumbuhan Ekonomi di Jawa Timur Tahun 2010-2014 menggunakan Regresi Data Panel. *Jurnal Sains Dan Seni ITS*, 5(2), 305–310.

- Rajagukguk, W. (2015). Determinan Perempuan Menduduki Posisi Tenaga Profesional di Indonesia. *Jurnal Ketenagakerjaan*, 10(1), 173–189.
- Roseana, N. V. (2022). *Peran Perempuan terhadap Pembangunan Ekonomi di Provinsi Kepulauan Riau tahun 2017-2020*. Surakarta: Universitas Muhammadiyah Surakarta
- Salsabila, D., & Hendrawan, M. Y. (2021). Analisis Kondisi Pemberdayaan Gender di Indonesia Tahun 2020 dengan Agglomerative Hierarchical Clustering dan Biplot, 2021(1), 204–213. <https://doi.org/10.34123/semnasoffstat.v2021i1.839>
- Sari, C. P. (2021). Gender Inequality: Dampaknya terhadap Pendapatan Per Kapita (Studi Kasus 33 Provinsi di Indonesia 2011-2019). *Berdikari: Jurnal Ekonomi dan Statistik Indonesia*, 1(1), 47–52. <https://doi.org/10.11594/jesi.01.01.06>
- Sari, R. M., & Arif, M. (2022). *Women's Emancipation in their Contribution to Economic Development in the Surakarta Residency Region 2016-2020*. 482–502. Retrieved from <http://repository.urecol.org/index.php/proceeding/article/view/2100>
- Setyaningrum, R. P., Norisanti, N., Fahlevi, M., Aljuaid, M., & Grabowska, S. (2023). Women and Entrepreneurship for Economic Growth in Indonesia. *Frontiers in Psychology*, 13, 975709. <https://doi.org/10.3389/fpsyg.2022.975709>
- Sitorus, A. V. Y. (2016). Dampak Ketimpangan Gender terhadap Pertumbuhan Ekonomi di Indonesia. *Sosio Informa: Kajian Permasalahan Sosial dan Usaha Kesejahteraan Sosial*, 2(1), 89–101. <https://doi.org/10.33007/inf.v2i1.190>
- Sulistiyowati, S., & Agusalm, L. (2023). Covid-19, Gender Inequality, and Economic Growth: An Empirical Study in Indonesia. *Sosio Informa*, 9(2), 173–196. <https://doi.org/10.31595/inf.v9i2.3298>
- Sulisto, D., Nurhayati, N., Syafri, S., Purba, S. F., & Aritonang, K. B. (2023). Does Women's Role Have an Influence on Economy Growth in Indonesia? *Economics Development Analysis Journal*, 12(3), 281–292. <https://doi.org/10.15294/edaj.v12i3.67081>
- Todaro, M. P., & Smith, S. C. (2012). *Economic Development* (11th ed.). New York: Pearson.
- Yuliarmi, N. N., & Marhaeni, A. A. I. N. (2019). *Metode Riset Jilid 2* (1st ed.). Denpasar: CV. Sastra Utama.