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The Impact of Gender Inequality, Financial Inclusion on Economic Growth in Vietnam

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ABSTRACT

Gender inequality and its impact on economic growth present significant global challenges, particularly concerning Vietnam's sustainable development. This study utilized the Fixed Effect (FE), Random Effect (RE), and Generalized Least Squares (GLS) methods and analyzed provincial-level data from 2017 to 2020 to explore this relationship in Vietnam. The issue of gender inequality is crucial for Vietnam in formulating effective strategies to achieve Sustainable Development Goals (SDGs). Findings indicate that gender inequality negatively affects economic growth, with increases in the gender wage gap correlating to a decline in the growth rate of the Gross Regional Domestic Product (GRDP). Moreover, the study unexpectedly reveals that multidimensional poverty and corruption hinder GRDP growth, while financial inclusion positively influences provincial economic growth. Notably, financial inclusion serves as a moderating variable between gender inequality and economic growth; higher financial inclusion in provinces correlates with a more significant negative impact of the gender wage gap on provincial GRDP growth. Addressing gender inequality through improved financial inclusion may be essential for enhancing economic growth in Vietnam. Provinces with higher levels of financial inclusion require targeted policies to address gender inequality to boost regional economic growth. In these regions, an increase in gender inequality is likely to have a more harmful impact on the growth rate of GRDP than in other areas.

Keywords: Gender inequality, Economic growth, Financial inclusion, Vietnam.

Introduction

Economic growth is a significant goal of countries worldwide. A higher per capita income will allow people to enjoy better services such as education and health care, ensure nutrition, increase opportunities for social services, and affirm their position in the community. Studies show that economic growth is driven by many factors (Barro, 1996; Chirwa & Odhiambo, 2016). Among the various traditional socio-economic elements that have been researched, the internal capacity of a country, especially its human resources, is crucial. However, global productivity growth and human development are slowing. Women's full and productive participation in the workforce and decent work for all are essential for inclusive and sustainable economic growth (ILO, 2017). While women comprise half of the population, they remain an underutilized resource for economic development.

From both theoretical and practical perspectives, it has long been recognized that gender inequality plays an important role in economic growth. However, whether this impact is positive or negative is controversial. Gender inequality and discrimination are often associated with women, but anyone can experience discrimination or inequality based on their gender (Parziale, 2008). Many studies agree that gender inequality benefits economic growth (Perrin, 2022). In particular, Seguino's (2000) study emphasized this impact on industrialized and export-oriented countries. However, when repeating this study with global data, Weichselbaumer and Winter-Ebmer (2005) found no evidence to support such results. Similarly, several other empirical studies indicate that increasing wages will hinder gender inequality economic growth in both developed and developing countries (Klasen & Lamanna, 2009; Cavalcanti & Tavares, 2016). Therefore, more research is needed to examine the impact of gender inequality on economic growth.

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Without exception, the gender gap and economic growth have been a major concern for a developing country in the export-oriented industrialization stage like Vietnam in recent years.

According to data from the General Statistics Office of Vietnam (GSO), its per capita income increased 2.4 times between 2011 and 2020. During 2017-2019, Vietnam maintained an economic growth rate of approximately 7%/year. Although in 2020, the growth rate decreased to 2.91%, the lowest level in 2011-2020, this is still a remarkable result for Vietnam in the context of its global economic impact. of the Covid-19 pandemic (GSO, 2021a).

UN-Women (2021) shows that on the Global Gender Gap Index published by the World Economic Forum, Vietnam is ranked 65 to 87 out of 156 countries considered. In particular, the Economic Opportunity and Participation component index reached a high level, often in the group of 33 highest countries, and continuously improved. Vietnam faces a serious problem: the gender gap shows that male workers have an average salary of 28.9% higher than female workers in 2021 (GSO, 2021b). This has prompted the Vietnamese government to seek dual solutions to promote economic growth and improve gender equality.

In that context, studies for Vietnam are still quite limited. Therefore, this study focuses on assessing the impact of gender inequality on economic growth in 2017 - 2020 to provide empirical evidence for Vietnam.

The next part of the study will provide a literature review of economic growth and gender inequality. Section 3 presents data and methodology, Section 4 presents the estimation results and discussions, and Section 5 draws general conclusions and proposes some recommendations.

Literature Review

Studies on the relationship between gender inequality and economic growth yield diverse results.

Most studies indicate that gender inequality in many aspects will limit economic growth:

Gender inequality viewed from the perspective of the wage gap shows that increasing the wage gap between men and women limits economic growth (Mitra-Kahn & Mitra-Kahn, 2008; Schober & Winter-Ebmer, 2011). Studies have found that when female workers receive lower wages than male workers, the production capacity of the entire economy will be reduced because female workers contribute a large share of labor in the overall economy. Cavalcanti and Tavares (2016) find that a 50% increase in the wage gap between men and women reduces long-term per capita income by 35% by 15.4% in OECD countries and 17.5% in other developing countries.

Galor and Weli (1996) said that when women receive low wages or lack the motivation to participate in labor, they will gradually hesitate and significantly reduce their participation in economic activities. The consequence of reduced labor participation is that reducing the savings rate in the economy, reducing economic growth. Many other empirical studies also agree with this point of view when comparing the North African region with the East Asian region (Klasen & Lamanna, 2009).

Studies on gender inequality from a broader perspective - the participation in general economic activities of both genders - also show similar results. Gender gaps in economic participation have been shown to lead to large GDP losses in countries of all income levels (Stotsky, 2006; Elborgh-Woytek *et al*., 2013). Economic growth losses are explained by inefficient resource allocation in the context of limited high-quality human resources (Lee, 2023).

Besides, gender inequality in education also gives negative empirical results on the impact of inequality on economic growth (Klasen & Lamanna, 2009). More specifically, many studies suggest that when women's educational level increases, it will also positively correlate with economic growth (Barro & Lee, 1994; Perotti, 1996). Increased gender segregation in education and the workplace will significantly limit economic growth (Klasen & Lamanna, 2009).

The second view is that increased gender equality will help promote economic growth (Perrin, 2022). Seguino (2000) argues that women's low wages in industry supported the expansion of the manufacturing sector. A country's industrial production, especially its exports, will benefit from women having lower wages in an export-oriented sector. The study found that gender inequality in wage differentials between male and female workers is positively associated with economic growth in "semi-industrialized export-oriented economies" from 1975 to 1995. Accordingly, increasing exports motivates manufacturers to invest more in expanding, and improving profitability is the basic cause of economic growth in South Asian countries (Blecker & Seguino, 2012). According to this line of thinking, economic growth is encouraged mainly through growth from export activities (Busse & Spielmann, 2006). Therefore, improving gender inequality does not necessarily contribute to economic development (Duflo, 2012).

Besides gender inequality, studies also show the impact of financial inclusion on economic growth. Many studies show that financial inclusion positively impacts economic growth (Ain *et al.*, 2020; Van *et al.*, 2021). In addition, poverty is also considered a factor affecting economic growth through several impact mechanisms. First, poverty reduces investment in education and health, thereby reducing human capital - an important resource of economic growth (Lopez & Serven, 2009). Second, poverty can increase population growth and thereby slow economic growth (Perkins *et al.*, 2013; Ravallion, 2015).

The findings from both theoretical and experimental studies show considerable diversity and inconsistency. Due to data limitations, this research relies on gender inequality statistics as published by the General Statistics Office of Vietnam.

Hypothesis 01: Gender inequality has a negatively significant impact on the economic growth in Vietnam

Overview of the Role of Financial Inclusion in the Relationship Between Gender Wage Inequality and Economic Growth

While a universal definition of FI has not yet been established, it is generally understood as the process of ensuring that individuals have convenient access to and can effectively use financial services offered by formal financial institutions in a timely, adequate, and affordable manner, particularly for those who are financially disadvantaged (Joshi *et al*., 2014). Financial inclusion is typically defined as the accessibility of a wide array of financial products and services and the proportion of individuals and businesses that utilize these offerings (Kim, 2016). Notably, the financial services mentioned in these studies often include savings, credit, insurance, and payment options (World Bank, 2018). FI can be evaluated using a variety of metrics, with the most common indicators including access to financial resources such as banking services and the prevalence of ATM card ownership (Sethi & Sethy, 2019; Huang & Zhang, 2020).

The diverse scales used to measure financial inclusion and its relationship with economic scale continue to be a topic of ongoing discussion in the literature. Research shows that financial inclusion significantly impacts the interplay between the gender wage gap and the economic scale.

First, many studies indicate that the expansion of financial inclusion (FI) can enhance economic impact from two key perspectives: (i) by augmenting employment opportunities and the capacity of female workers within the labor market, thereby promoting the economic scale, and (ii) by improving the financial literacy of female workers, which in turn fosters their contributions to economic development and overall economic expansion.

Women encounter various challenges in obtaining adequate financing for their businesses, which restricts their entrepreneurial potential (Marlow & Patton, 2005). Johnson and Arnold (2012) emphasize that financial inclusion is intricately connected to employment opportunities. The OECD (2013) report indicates that financial inclusion is closely linked to income-earning potential. Limited access to financial products and services prevents women from fully capitalizing on market opportunities (Porter *et al*., 2015). In many countries, women typically demonstrate lower average financial literacy compared to men (Grohmann, 2016). If the gender gap in access to formal financial resources persistently widens, sustainable economic growth is unlikely to occur (Hendricks, 2019). Consequently, the widening gender gap in access to finance poses a threat to economic growth, as it hampers women's ability to secure essential financial resources.

Numerous studies have indicated that gender inequality restricts women's access to financial education, adversely affecting economic growth (Baptiste *et al*., 2021). One possible explanation is that financial education—defined as the understanding of financial products and services, the ability to make informed financial decisions, manage risks, and enhance overall well-being is considerably higher among working men than among working women, even when controlling for factors such as age, marital status, and risk tolerance (Kar-Ming *et al*., 2015). Furthermore, men within households are more likely to make financial decisions, resulting in greater financial knowledge accumulation. As such, women and men with the same educational qualifications as their spouses tend to share an equivalent degree of financial responsibility (Fonseca *et al*., 2011).

Second, researches indicate that improving financial inclusion can enhance the conditions for female workers, thereby fostering their contribution to economic growth. While the studies are not definitive, existing literature generally suggests that increased participation of women in income-generating activities leads to an improved quality of life for

them and their families. Women tend to have a better grasp of daily expenses, which enables them to better support their households and enhance their income (Swamy, 2013; Koçakoğlu NÖ *et al*., 2023). This dynamic may also encourage more women to engage with the formal financial system. According to Seguino and Floro (2003), a one percentage point increase in the female share of wages correlates with a 0.25% rise in aggregate savings as a percentage of GDP. This finding implies a greater inclination among women to save, potentially resulting in higher domestic savings when income is redistributed from men to women. Such increases in domestic savings can be leveraged through the financial sector, thereby making capital more accessible for businesses.

Hypothesis 02: Financial inclusion significantly impacts the relationship between gender inequality and economic growth.

In addition, poverty is also considered a factor affecting economic growth through several impact mechanisms. First, poverty reduces investment in education and health, thereby reducing human capital - an important resource of economic growth (Lopez & Serven, 2009). Second, poverty can increase population growth and thereby slow economic growth (Perkins *et al*., 2013; Ravallion, 2015; Roy *et al*., 2023).

Numerous economic researchers concur that institutions significantly influence economic growth (Rodrik, 2004). They argue that robust institutions are essential for safeguarding property rights, ensuring effective law enforcement, and establishing efficient bureaucracies (Ferrini, 2012). Institutional indicators, such as political stability, play a crucial role in shaping economic growth, as discussed by Hirschman (1994). Moreover, Drury *et al*. (2006) highlighted the critical impact of corruption levels and democratic governance on economic development. The presence of effective institutions not only fosters the equitable distribution of resources but also enhances the overall efficacy of governance and development initiatives.

Hypothesis 03: Multidimensional poverty has a negatively significant impact on the economic growth in Vietnam

Hypothesis 04: Institutional quality has a positively significant impact on the economic growth in Vietnam.

Materials and Methods

Model and Data

This study uses the following model to estimate the impact of gender inequality on economic growth in Vietnam:

$$GGRDP_{it} = \alpha_0 + \alpha_1 GAP_{it} + \alpha_2 POV_{it} + \alpha_3 FI_{it} + \alpha_4 PAPI4_{it} + v_{it} \quad (1)$$

To examine the moderating role of financial inclusion on the relationship between the gender wage gap and economic growth, we will rely on the following equation:

$$GGRDP_{it} = \beta_0 + \beta_1 GAP_{it} + \beta_2 POV_{it} + \beta_3 FI_{it} + \beta_4 GAP\_FI_{it} + \beta_5 PAPI4_{it} + u_{it} \quad (2)$$

Where:

$GGRDP_{it}$ is the measure of the provincial economic growth rate of province i at time t;

GAP_{it} is the measure of the gender inequality in province i at a time t;

POV_{it} is the measure of the multidimensional poverty rate in province i at time t;

FI_{it} is the measure of the financial inclusion index in province i at time t;

$PAPI4_{it}$ is the measure of the control of corruption in province i at time t;

GAP_FI_{it} is an interaction variable, calculated by multiplying GAP by FI in province i at time t.

α_i and β_i are the estimation coefficients; v_{it} and u_{it} are the error terms.

i (=1, 2, ..., *N*) is the number of cross-sections, and *t* (= 1,2,..., *T*) is the number of time series.

This study uses provincial-level data from all 63 provinces in Vietnam for the period 2017-2020 collected from the General Statistics Office of Vietnam and several government agencies, specifically as follows:

Data on the economic growth rate and multidimensional poverty of 63 provinces are collected from the General Statistics Office of Vietnam.

The province's economic growth (GGRDP) is calculated based on the Gross Regional Domestic Product of the provinces from 2017 to 2020 in the Statistical Yearbook published officially by the General Statistics Office of Vietnam.

The multidimensional poverty (POV) is determined based on the multidimensional poverty threshold applied in Vietnam for the period 2017-2020.

Gender inequality (GAP) is assessed through the wage gap (W_GAP) between men and women, using percentage indices. The General Statistics Office of Vietnam publishes gender statistics in Vietnam for the period 2017-2020 in the book "Gender Statistics in Vietnam 2020".

The provincial financial inclusion index (FI) is estimated from the Vietnam Household Living Standard Survey (VHLSS). This study calculates FI by using the method of Van *et al*. (2021) as shown in the Eq. 3:

$$FI_{jt} = \frac{\sum_{n=1}^{N_{jt}} \sum_{i=1}^{Nq} A_{in}}{N_{jt} x N_q} \quad (3)$$

Where FI_{jt} is the financial inclusion index in province j in year t; A_{in} represents the answer of the n^{th} household to the i^{th} question. A_{in} takes the value of 1 or 0, corresponding to whether the household uses or does not use financial services; N_{jt} is the number of households surveyed in province j in year t. Nq is the number of questions used. Since the responses only take on the value 0 or 1, the financial inclusion index (FI) takes on a value from 0 to 1. A larger FI index reflects a higher level of financial inclusion in the province. VHLSS is conducted in even years, so the FI index of 2017 and 2019 is determined by averaging the FI index of the before and after consecutive years.

PAPI4 is an index that assesses the level of corruption control among local authorities, reflecting the institutional quality of a province. It is part of the Vietnam Provincial Governance and Public Administration Performance Index (PAPI), a governance initiative established by the United Nations Development Program in 2009.

Table 1 below presents the descriptive statistics for the variables utilized in the study. The dataset included 252 observations from authoritative sources in Vietnam spanning 2017 to 2020 and encompassing 63 provinces.

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GGRDP	252	7.107	5.161	-4.290	67.000
W_GAP	252	34.456	10.151	6.300	66.300
FI	252	0.130	0.043	0.055	0.285
POV	252	9.411	9.822	0.000	50.200
PAPI4	252	6.580	0.549	4.360	8.190

Source: Authors' calculation from the provincial data

Methodology

Given the characteristics of the data with a relatively short time dimension, this study chooses to use the fixed effects model (FE), the random effects model (RE), or the pooled OLS through appropriate tests. Specifically, the initial phase involves employing the OLS method to estimate the model and check errors. The process includes verifying the appropriateness of the functional form, identifying omitted variables, and detecting heteroskedasticity and multicollinearity. The estimation may be biased or inconsistent if the model contains errors or the error term is correlated with explanatory variables. Subsequently, the study assesses whether the FE or RE model outperforms the pooled OLS. If the FE or RE model is preferred, the model's errors are subjected to further testing, and if necessary, a generalized least square estimation (GLS) will be applied.

The model selection and verification procedure comprises four key steps: First, the correlation between variables is evaluated to identify multicollinearity using the Pearson test or the VIF variance exaggeration index. Second, the F

test is executed to differentiate between the FE/RE and OLS models. Third, the Hausman test determines whether the FE or RE model is the most appropriate. In the last step, when evaluating a selected fixed effects (FE) or random effects (RE) model, it is important to assess its errors to determine if the generalized least squares (GLS) estimation is necessary.

Results and Discussion

The Impact of Gender Inequality on Economic Growth

Table 2 below shows the results of the Pearson test.

Table 2. Results of Pearson Correlation

	GRDP	W_GAP	FI	POV	PAPI4
GGRDP	1				
W_GAP	-0.3585	1			
FI	0.5728	-0.4627	1		
POV	-0.6322	0.3663	-0.4547	1	
PAPI4	-0.0364	-0.0836	-0.0752	-0.2475	1

Source: Authors' calculation from the provincial data

The results of the Pearson correlation analysis indicate that the correlation between the independent variables is minimal. The insignificant correlation coefficient values imply no evidence of multicollinearity among the independent variables. As a result, it can be inferred that the use of independent variables in this model is justified. Testing results from **Table 3** show that the OLS model is less appropriate than the FE or RE model (F-test result with P = 0.0000). Additionally, the Hausman test reveals that the FE model fits more than the RE model (P = 0.0012). The Wald test with P = 0.0000 indicates that heteroskedasticity persists. Then, GLS was used to estimate the impact of gender wage inequality and other factors on economic growth.

Table 3. Estimated results of the impact of gender wage inequality on economic growth

Dependent Variable: GGRDP	**FE (SE)**	**RE (SE)**	**GLS (SE)**
W_GAP	-0.003*** (0.000)	-0.003*** (0.000)	-0.002*** (0.001)
POV	-0.015*** (0.002)	-0.017*** (0.001)	-0.042*** (0.002)
FI	1.300*** (0.197)	-1.314*** (0.209)	2.400*** (0.346)
PAPI4	0.064*** (0.011)	0.056*** (0.011)	-0.049*** (0.016)
_cons	10.326* (0.099)	10.404** (0.136)	11.148*** (0.139)
F test	F(4, 247) = 67.18 Prob>F = 0.0000		
Hausman test	Ho: difference in coefficients not systematic Chi 2(4) = 18.07 Prob>chi2 = 0.0012		
Wald test	H0: sigma(i)^2 = sigma^2 for all i Chi2(63)=21932.35 Prob>chi2 = 0.0000		

Note: Standard errors are in parentheses; (***) p<0.01; (**) p<0.05; (*) p <0.1.
Source: Estimation result from the panel data.

In **Table 3**, local economic growth is influenced by gender wage inequality, multidimensional poverty, financial inclusion, and control of corruption.

A 1 percent increase in the multidimensional poverty rate will reduce local GDP by 0.042 percentage points. The findings of this study strongly support hypothesis (3) for Vietnam between 2017 and 2020. The evidence shows that rising multidimensional poverty rates significantly hinder economic growth. This aligns with existing literature indicating that poverty adversely affects economic development, highlighting the need for targeted interventions to address poverty as a crucial factor for sustainable growth (Perkins *et al*., 2013; Ravallion, 2015; Zakaev *et al*., 2023). Surprisingly, a 1-unit increase in corruption control will reduce economic growth by about 0.049 percentage points. This suggests that Vietnam's push to fight corruption during this period could impact its economic growth targets. This finding stands in opposition to Hypothesis 4.

During this period, reforms and anti-corruption strategies are implemented more rigorously. However, the short-term consequence is that inspections cause resources or disbursements to stagnate, negatively affecting economic growth.

Additionally, increasing gender wage gaps will reduce local economic growth. A one percentage point increase in women's wages relative to men's wages will reduce growth by about 0.002 percentage points.

The findings of this study provide empirical support for hypothesis (1), indicating that within the context of Vietnam from 2017 to 2020, an increase in gender inequality is associated with a reduction in overall economic growth. This suggests that addressing gender disparities may be essential for sustaining and enhancing economic growth in the region.

This result aligns with previous studies (Schober & Winter-Ebmer, 2011). However, our findings do not support the idea that increasing gender inequality in wages promotes economic growth (Perrin, 2022). It's worth noting that this impact in Vietnam is relatively small (0.04 percentage points) compared to the research results in other developing countries of about 0.34 percentage points (Cavalcanti & Tavares, 2016). This suggests that the contribution of women to economic growth in Vietnam is still relatively limited compared to other developing countries. It turns out that gender gaps in wages might result from education, especially in formal jobs where employers prefer educated workers. In turn, barriers to female employment or a pay gap may lead parents to believe that educating girls is not worthwhile, causing a decrease in demand for female education and creating a gender gap in education. It is concerned that addressing this impact across generations will pose a significant challenge for Vietnam in the future. At the same time, gender inequality in wages can hurt long-term economic growth and social development.

The Role of Financial Inclusion in the Relationship Between Gender Wage Inequality and Economic Growth

Testing results from **Table 4** show that the OLS model is less appropriate than the FE or RE model (F-test result with P = 0,0000). Additionally, the Hausman test reveals that the FE model fits more than the RE model (P = 0,0027). The Wald test with P = 0,0000 indicates that heteroskedasticity persists. Then, GLS was used to estimate the impact of gender wage inequality and other factors on economic growth.

Table 4. Estimated results of the impact of gender wage inequality on economic growth

Dependent Variable: GGRDP	FE (SE)	RE (SE)	GLS (SE)
W_GAP	-0.001 (0.002)	-0.001 (0.002)	-0.005* (0.003)
GAP_FI	-0.028* (0.015)	-0.031* (0.016)	-0.056* (0.030)
POV	-0.015*** (0.002)	-0.017*** (0.002)	-0.042*** (0.002)
FI	2.225*** (0.548)	2.355*** (0.581)	4.414*** (1.192)
PAPI4	0.065*** (0.011)	0.057*** (0.011)	-0.041*** (0.017)
_cons	10.199*** (0.121)	10.26** (0.154)	10.809*** (0.207)

F test	F(5, 246) = 56.77 Prob>F = 0.0000
Hausman test	Ho: difference in coefficients not systematic Chi 2(5) = 18.23 Prob>chi2 = 0.0027
Wald test	H0: sigma(i)^2 = sigma^2 for all i Chi2(63)=23014.64 Prob>chi2 = 0.0000

Note: Standard errors are in parentheses; (***) p<0.01; (**) p<0.05; (*) p <0.1.
Source: Estimation result from the panel data.

Table 4 indicates that from 2017 to 2020 in Vietnam, the gender wage gap, multidimensional poverty, financial inclusion, and corruption all influenced the growth rate of provincial GRDP when utilizing Generalized Least Squares (GLS). The findings reveal that the gender wage gap, multidimensional poverty, and corruption adversely affect the growth rate of GRDP, whereas financial inclusion contributes positively to the province's economic growth.

The results indicate that if the impact of the FI variable on economic growth equals zero, then a one-percentage-point increase in the gender wage gap will decrease the economic growth of the corresponding province by approximately 0.005 percentage points. Conversely, suppose the W_GAP variable does not affect the economic growth of the economy. In that case, a one-percentage-point increase in financial inclusion will boost the economic growth rate by about 4.414 percentage points.

If the impact of the FI variable equals one, then a one percentage point increase in the gender wage gap will decrease the GGRDP size by 0.061 percentage points.

If the impact of the FI variable equals two, a one percentage point increase in the gender wage gap will reduce the GGRDP size by 0.117 percentage points.

Similarly, if the impact of the FI variable equals three, a one percentage point increase in the gender wage gap will lead to a decrease in the GGRDP size by 0.173 percentage points.

The findings of this study provide support for hypothesis (2), indicating its validity within the context of Vietnam during the period from 2017 to 2020. Specifically, the data suggest that financial inclusion serves as a moderating variable in the relationship between gender inequality and economic growth in Vietnam. This highlights the critical role that financial inclusion plays in mitigating the adverse effects of gender disparities on the country's economic growth.

These results align with findings from previous studies (Schober & Winter-Ebmer, 2011).

Additionally, a higher financial inclusion index in the provinces correlates with a more pronounced negative effect of the gender wage gap on the provincial growth rate of GRDP.

Provinces with a higher level of financial inclusion require targeted policies to address gender wage inequality to enhance regional economic growth. In these areas, rising gender wage inequality is likely to have a more detrimental effect on the growth rate of GRDP than in other regions. This issue can be observed through various phenomena in Vietnam from 2017 to 2020 as follows:

First, the rise in gender wage inequality amidst the advancement of financial inclusion may indicate that while overall financial access has improved in the province, men still enjoy greater access than women. This trend in Vietnam mirrors findings observed in numerous countries worldwide (Presbitero *et al*., 2014; Henderson *et al*., 2015; İlhan *et al*., 2022).

Second, women's access to financial services and resources is notably weaker than that of men, which consequently diminishes the overall growth rate of the GRDP. This underscores the growing significance of female labor in driving economic growth. These findings align with those of various prior studies (Hendricks, 2019; Baptiste *et al*., 2021; Emekekwue *et al*., 2022).

Third, in less developed areas of financial inclusion, the wage gap between male and female workers negatively impacts the GRDP, albeit to a lesser degree. However, the trend toward promoting financial inclusion is unavoidable. Consequently, these regions must allocate resources and implement effective policies to mitigate the adverse effects of gender wage inequality on economic growth as they advance financial inclusion efforts.

Conclusion

This research uses provincial data from 2017-2020 to estimate the impact of gender inequality on economic growth in Vietnam. The results from a generalized least square estimation show that gender inequality between male and female laborers had a restrictive effect on the economic growth in provinces in Vietnam. The findings underscore the essential role of women in driving economic progress and emphasize the need for specific programs, policies, and interventions to uplift women's earning potential and wages to stimulate local economic development.

The study also produced some surprising results: multidimensional poverty, and corruption adversely affect the growth rate of GRDP, whereas financial inclusion contributes positively to the province's economic development. Provinces with a higher level of financial inclusion require targeted policies to address gender wage inequality to enhance regional economic growth. In these areas, rising gender wage inequality is likely to have a more detrimental effect on GRDP than in other regions.

Provinces with higher levels of financial inclusion should implement targeted policies to address the gender wage gap. Likewise, provinces with lower levels of financial inclusion need to develop suitable resources and solutions to tackle this issue. By doing so, we can enhance the positive effects of reducing the gender wage gap while mitigating its negative impact on economic growth.

Limitations and Dimensions for Future Research

The primary limitation of this study is that it was conducted within the timeframe of 2017 to 2020. This limitation arises from the fact that Vietnam's multidimensional poverty was officially assessed in 2016; before this, poverty measurements were based solely on income or expenditure criteria. Furthermore, from 2021 onwards, Vietnam has been significantly impacted by the COVID-19 pandemic, which has distorted data for this period and hindered our ability to accurately evaluate the impact of gender inequality on economic growth. Additionally, information regarding financial inclusion is somewhat limited, requiring us to derive data from the Vietnam Household Living Standards Survey (VHLSS). Given these constraints, we aspire to further investigate this topic in the future and gather more comprehensive data to conduct long-term empirical research on this issue.

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References

Ain, N., Sabir, S., & Asghar, N. (2020). Financial inclusion and economic growth: empirical evidence from selected developing economies. *Review of Economics and Development Studies, 6*(1), 179-203.

Baptiste, J., Obuke, O., & Oyedokun, O. (2021). Global financial inclusion and gender pay gap in developed and developing countries. *Available at SSRN 4664016*. doi:10.2139/ssrn.4664016

Barro, R. J. (1996). Determinants of economic growth: a cross-country empirical study. *NBER Working Paper 5698.*

Blecker, R. A., & Seguino, S. (2012). Macroeconomic effects of reducing gender wage inequality in an export-oriented, semi-industrialized economy. In *The Feminist Economics of Trade* (pp. 109-132). Routledge.

Busse, M., & Spielmann, C. (2006). Gender inequality and trade. *Review of International Economics, 14*(3), 362-379. doi:10.1111/j.1467-9396.2006.00589.x

Cavalcanti, T., & Tavares, J. (2016). The output cost of gender discrimination: a model-based macroeconomics estimate. *The Economic Journal, 126*(590), 109-134. doi:10.1111/ecoj.12303

Chirwa, T. G., & Odhiambo, N. M. (2016). Macroeconomic determinants of economic growth: a review of international literature. *Southeast European Journal of Economics and Business, 11*(2), 33-47.

Drury, A. C., Krieckhaus, J., & Lusztig, M. (2006). Corruption, democracy, and economic growth. *International Political Science Review*, *27*(2), 121-136. doi:10.1177/0192512106061423

Duflo, E. (2012). Women empowerment and economic development. *Journal of Economic Literature*, *50*(4), 1051-1079. doi:10.1257/jel.50.4.1051

Elborgh-Woytek, M. K., Newiak, M. M., Kochhar, M. K., Fabrizio, M. S., Kpodar, M. K., Wingender, M. P., Clements, M. B. J., & Schwartz, M. G. (2013). *Women, work, and the economy: macroeconomic gains from gender equity*. International Monetary Fund.

Emekekwue, A. S., Ugwu, M. C., Ejikeugwu, C. P., Nwobodo, D. C., Ujam, N. T., Okezie, U. M., Iroha, I. R., & Esimone, C. O. (2022). Prevalence and antibiogram of ESBL-positive uropathogenic *Escherichia coli* in pregnant women in Onitsha Metropolis, Nigeria. *International Journal of Pharmaceutical and Phytopharmacological Research*, *12*(6), 8-18. doi:10.51847/x5e62APEMI

Ferrini, L. (2012). *The Importance of Institutions to Economic Development*. World Development Report. New York: Oxford University Press.

Fonseca, R., Mullen, K., Zamarro, G., & Zissimopoulos, J. (2011). What explains the gender gap in financial literacy? The role of household decision making. *The Journal of Consumer Affairs*, *46*(1), 90-106. doi:10.1111/j.1745-6606.2011.01221.x

Grohmann, A. (2016). The gender gap in financial literacy: income, education, and experience offer only partial explanations. *DIW Boletín Económico*, *6*(7), 531-537. https://www.econstor.eu/handle/10419/148080.

GSO (2021a). Viet Nam economy in 2020 was the growth of a year full of bravery. Available from: https://www.gso.gov.vn/en/data-and-statistics/2021/01/viet-nam-economy-in-2020-the-growth-of-a-year-with-full-of-bravery/.

GSO (2021b). *Gender statistics in Vietnam 2020*. Statistical Publishing House, Vietnam.

Henderson, L., Herring, C., Horton, H. D., & Thomas, M. (2015). Credit where credit is due? Race, gender, and discrimination in the credit scores of business startups. *The Review of Black Political Economy*, *42*(4), 459-479. doi:10.1007/s12114-015-9215-4

Hendriks, S. (2019). The role of financial inclusion in driving women's economic empowerment. *Development in Practice*, *29*(8), 1029-1038. doi:10.1080/09614524.2019.1660308

Hirschman, A. O. (1994). The on-and-off connection between political and economic progress. *Proceedings of the Hundred and Sixth Annual Meeting of the American Economic Association*, *84*(2), 343-348. https://www.jstor.org/stable/2117856.

Huang, Y., & Zhang, Y. (2020). Financial inclusion and urban-rural income inequality: long-run and short-run relationships. *Emerging Markets Finance and Trade*, *56*(2), 457-471. doi:10.1080/1540496X.2018.1562896

İlhan, N., Telli, S., Temel, B., & Aştı, T. (2022). Investigating the sexual satisfaction mediating role in the relationship between health literacy and self-care of men with diabetes and women's marital satisfaction. *Journal of Integrative Nursing and Palliative Care*, *3*, 19-25. doi:10.51847/sFjL3OLpqg

ILO - International Labour Organization (2017). *World Employment Social Outlook*.

Johnson, S., & Arnold, S. (2012). Inclusive financial markets: is transformation underway in Kenya? *Development Policy Review*, *30*(6), 719-748. doi:10.1111/j.1467-7679.2012.00596.x

Joshi, V. K., Singh, M. R., & Jain, S. (2014). Financial inclusion for sustainable development through Pradhan Mantri Jan-Dhan Yojana. *Professional Panorama: An International Journal of Applied Management and Technology*, 125-132. https://web.archive.org/web/20180410061655id_/http://www.professionalpanorama.in/wp-content/uploads/2015/02/14sonal-ji.pdf.

Kar-Ming, Y., Wu, A., Chan, W. S., & Chou, K. L. (2015). Gender differences in financial literacy among Hong Kong workers. *Educational Gerontology*, *41*(4), 315-326. doi:10.1080/03601277.2014.966548

Kim, J. H. (2016). A study on the effect of financial inclusion on the relationship between income inequality and economic growth. *Emerging Markets Finance Trade*, *52*(2), 498-512. doi:10.1080/1540496X.2016.1110467

Klasen, S., & Lamanna, F. (2009). The impact of gender inequality in education and employment on economic growth: new evidence for a panel of countries. *Feminist Economics*, *15*(3), 91-132. doi:10.1080/13545700902893106

Koçakoğlu, N. Ö., Candan, S., & Güllü, M. (2023). Morphological characterization of the male reproductive system of *Mylabris cernyi* Pan and Bologna, 2014 (Coleoptera: Meloidae). *Entomology and Applied Science Letters*, *10*(3), 33-41. doi:10.51847/UHEzG4Ullx

Lee, M. (2023). Allocation of female talent and cross-country productivity differences. *The Economic Journal*, *134*(664), 3333-3359. doi:10.1093/ej/ueae056

Lopez, H., & Serven, L. (2009). Too poor to grow. *World Bank Policy Research Working Paper*, 5012. https://ssrn.com/abstract=1447205.

Marlow, S., & Patton, D. (2005). All credit to men? Entrepreneurship, finance, and gender. *Entrepreneurship: Theory and Practice*, *29*(6), 717-735. doi:10.1111/j.1540-6520.2005.00105.x

Mitra-Kahn, B., & Mitra-Kahn, T. (2008). Gender wage gaps and growth: what goes up must come down. In *International Feminist Economics Association workshop on 'Inequality, Development, and Growth* (pp. 18-20).

OECD (2013). *Women and financial literacy: OECD/INFE evidence, survey and policy*.

Parziale, A. (2008). Encyclopedia of business ethics and society. SAGE Publications, Inc.

Perkins, D. H., Radelet, S., Lindauer, D. L., & Block, S. A. (2013). *Economics of development*. W.W. Norton Company.

Perotti, R. (1996). Growth, income distribution, and democracy: what the data say. *Journal of Economic Growth*, *1*, 149-187. doi:10.1007/BF00138861

Perrin, F. (2022). Can the historical gender gap index deepen our understanding of economic development? *Journal of Demographic Economics*, *88*(3), 379-417. doi:10.1017/dem.2020.34

Porter, B., Widjaja, N., & Nowacka, K. (2015). Why technology matters for advancing women's financial inclusion. *Organization for economic cooperation and development. The OECD Observer*, (303), 33-34. https://www.proquest.com/scholarly-journals/why-technology-matters-advancing-womens-financial/docview/1774330925/se-2.

Presbitero, A. F., Rabellotti, R., & Piras, C. (2014). Barking up the wrong tree? Measuring gender gaps in firm's access to finance. *The Journal of Development Studies*, *50*(10), 1430-1444. doi:10.1080/00220388.2014.940914

Ravallion, M. (2015). *The economics of poverty: history, measurement, and policy*. Oxford University Press.

Rodrik, D. (2004). *Institutions and economic performance - getting institutions right*. IFO DICE Report, IFO Institute - Leibniz Institute for Economic Research at the University of Munich, pp. 10-15.

Roy, P. K., Lalchuangkima, F., Gupta, B., Zonuntluangi, Z., Laldinchhana, L., Lalhlenmawia, H., & Sawant, S. D. (2023). Green synthesis of silver nanoparticles with *Picrasma javanica* extract shows enhanced wound healing in Wistar rats. *Bulletin of Pioneer Research in Medical and Clinical Sciences*, *2*(1), 35-48. doi:10.51847/6wXPZcGzxu

Schober, T., & Winter-Ebmer, R. (2011). Gender wage inequality and economic growth: is there a puzzle?—A comment. *World Development*, *39*(8), 1476-1484. doi:10.1016/j.worlddev.2011.05.001

Sethi, D., & Sethy, S. K. (2019). Financial inclusion matters for economic growth in India: some evidence from cointegration analysis. *International Journal of Social Economics*, *46*(1), 132-151. doi:10.1108/IJSE-10-2017-0444

Stotsky, J. G. (2006). Gender and its relevance to macroeconomic policy: a survey. *IMF Working Paper*, No. 06/233. https://ssrn.com/abstract=941295.

Swamy, V. (2013). Financial inclusion, gender dimension, and economic impact on poor households. *World Development*, *56*, 1-15. doi:10.1016/j.worlddev.2013.10.019

UN-Women. (2021). *Country gender equality profile Viet Nam 2021*. UN Women, Vietnam.

Van, L. T. H., Vo, A. T., Nguyen, N. T., & Vo, D. H. (2021). Financial inclusion and economic growth: an international evidence. *Emerging Markets Finance and Trade*, *57*(1), 239-263. doi:10.1080/1540496X.2019.1697672

World Bank (2018). *World development report 2018: Learning to realize education's promise.*

Zakaev, T. T., Bakrieva, M. V., Alkhazova, R. T., Girkina, D. B., Chagarova, A. Y., & Polyanskaya, A. A. (2023). Cardiovascular safety in the treatment of chronic rheumatic pathologies. *International Journal of Pharmaceutical Research and Allied Sciences, 12*(2), 54-57. doi:10.51847/wXAjWjcJY7