

# **EXPLORE THE ROLES OF FEMALE ENTREPRENEURSHIP IN PROMOTING ECONOMIC GROWTH IN ASIA: A PANEL DATA ANALYSIS**

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Submitted: 06-01-2024, Revised: 12-02-2024, Accepted: 10-04-2024

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## **ABSTRACT**

*In Asia, there has been a notable surge in the representation of women in leadership roles and entrepreneurial endeavours, aligning with the increasing acknowledgement of women's importance in politics and the economy. It is predicted that the future development and economic prosperity of Asia will heavily rely on the advancement of female entrepreneurship and empowerment. This research aims to provide empirical evidence on the correlation between female entrepreneurship and economic advancement within the diverse landscape of Asia context, using panel data spanning from 1998 to 2021 across 47 Asian countries. The findings of fixed-effect regression reveal a consistently positive association between women's entrepreneurial activities and economic progress across all Asian economies, encompassing both developed and developing nations. These findings are pivotal for crafting tailored policies aimed at enhancing female participation in entrepreneurship, thereby catalyzing economic growth and advancing towards the most potential in terms of socio-economic conditions.*

**Keywords:** *female entrepreneurship; economic development; Asia*

## **1. INTRODUCTION**

Asia's increasing investment and its deepening integration into global trade, finance, talent, and innovation networks represent significant trends (Tonby et al., 2019) (Tonby et al., 2019). By April 2023, Asia ranked second globally in the number of unicorns, indicating a notable surge in entrepreneurial activities (Statista Research Department, 2023). This underscores Asia's position as a central entrepreneurial hub, crucial for economic growth and resilience, as new businesses drive job creation, higher incomes, and societal advancement through innovation (Tonby et al., 2019).

Franzke et al. (2022) claim that the rise in female entrepreneurs and leaders in Asia is a reflection of the increasing political and social importance of women. . A study commissioned by Nikkei Asia revealed that women in Asia collectively possessed more wealth in 2021/2022 than in any other region except North America, surpassing even Western European women, with their wealth growing at an unprecedented pace (Raman, 2022). Moreover, Asia accounts for more than 40% of Fortune's 2023 list of the 100 most powerful businesswomen outside of America (Emma & Joseph, 2023). Despite these advancements, women in Asia face gender disparities influenced by sociopolitical factors such as religion, culture, and governmental policies (Elam et al., 2022). Traditional gender norms and legal barriers persist, affecting millions of Asian women and emphasizing the need for deeper understanding and targeted strategies to support female entrepreneurship (Franzke & Froese, 2019; World Bank, 2023; Wu, Richard, et al., 2021; Wu, Triana, et al., 2021).

As highlighted by Stokes et al. (2010), the term "entrepreneurship" has been in use for centuries, shaping the trajectory of modern economic and social development. However, despite its

historical significance, research on entrepreneurship faces significant challenges due to the absence of a standardized definition across various studies (Bull & Willard, 1993; Shane et al., 2003). When viewed through an economic lens, entrepreneurship typically refers to the process of initiating a new venture and assuming associated risks in pursuit of potential profits derived from exploiting market opportunities, such as addressing unmet customer needs (Gutterman, 2020).

Lawal et al. (2016) conducted an extensive review of various theories in entrepreneurship, drawing from disciplines like economics, psychology, sociology, anthropology, and management. Economic theories of entrepreneurship illuminate the factors that foster entrepreneurial activities. Classical theory, for instance, positions entrepreneurs as central figures in the production and distribution of goods within competitive markets, advocating principles like free trade, specialization, and competition. However, critics argue that it overlooks the disruptive role entrepreneurs play in established markets. Neoclassical theory defines entrepreneurship as integrating capital and labor to meet customer needs, regardless of gender. Opportunity-based theories emphasize identifying environmental opportunities, often driven by changing consumer preferences or technological advancements. Resource-based theories highlight accessing resources like capital and personnel to identify and pursue entrepreneurial opportunities (Alvarez & Busenitz, 2001; Davidsson & Honig, 2003).

Defining the realm of female entrepreneurship poses its own set of challenges, mirroring the complexities encountered in defining entrepreneurship at large. The literature on economics often overlooks gender, resulting in a lack of consensus regarding terms such as "women's entrepreneurship" or "female entrepreneurship." Nonetheless, insights can be gleaned from the broader concept of entrepreneurship. Various entities have proposed definitions. According to Reynolds et al. (1999), the Global Entrepreneurship Monitor (GEM) defines entrepreneurship as any endeavor involving the establishment of a new business or venture, regardless of gender, and can be carried out by an individual, group, or established business. Examples of such endeavors include self-employment, founding a new enterprise, or expanding an existing one. In contrast, the Organization for Economic Cooperation and Development (OECD) delineates female entrepreneurship as women owning and managing their own businesses, encompassing sole proprietorships as well as those with employees.

In this study, the author delves into the impact of female entrepreneurship on economic growth in Asian nations, alongside investigating the influence of gender disparities and discriminatory legal frameworks on women's entrepreneurial and career prospects. The rationale behind exploring these themes will be elucidated in subsequent sections. Given the scarcity of gender-disaggregated data on female entrepreneurship across all Asian countries in the current dataset, selecting the most suitable proxy indicator for female entrepreneurship becomes pivotal for analyzing its economic effects. The author gives priority to data from the Global Entrepreneurship Monitor (GEM) and the World Bank's Women, Business, and the Law (WBL) index. GEM provides insights into female Total Entrepreneurial Activity (TEA), facilitating the examination of the impacts of female entrepreneurship on various factors, while the WBL index sheds light on legal gender discrimination in entrepreneurial pursuits and other aspects of women's careers. These datasets encompass a substantial portion of Asian economies and are updated in the latest report and database for 2022. Furthermore, the dearth of gender-disaggregated data on entrepreneurship in Asian economies underscores the necessity for further research in these domains.

The rest of this paper is as follows: Section 2 presents the literature review and hypotheses development, while the research method is outlined in Section 3, including the data sources utilized and the model adopted for analysis. Section 4 summarizes and discusses the results before we conclude in Section 5.

## **2. RESEARCH METHOD**

### **Female Entrepreneurship and Economic Development**

Analysts consistently stress entrepreneurship's pivotal role in understanding economic development. Acs & Virgill (2010) highlight a strong correlation between entrepreneurship and economic growth, noting regional disparities in economic progress attributed to varying levels of entrepreneurial activity. They further note that in developing nations, policymakers recognize entrepreneurship's significance, initiating efforts to alleviate constraints and address market deficiencies to enhance market efficiency (Acs & Virgill, 2010). Governments of leading emerging and advanced economies prioritize entrepreneurship due to its positive impacts on wealth creation and job generation. This focus is expected to boost productivity and foster innovation, enhancing competitiveness and fostering sustained economic growth (Audretsch & Keilbach, 2007; Doran et al., 2018; Galindo & Méndez, 2014). Additionally, entrepreneurial activity, by promoting innovation and increased competition, contributes not only to sustained economic growth and improved living standards but also to reducing income inequality and promoting social justice and fairness (Stoica et al., 2020). Entrepreneurship is widely recognized as a critical driver of economic growth across all stages of a country's economic development (Gutterman, 2020). Acs et al. (2006) outline three phases of economic development that nations typically transition through: factor-driven, efficiency-driven, and innovation-driven.

H1: Female entrepreneurship has a positive relationship with economic growth

### **Regulations support Female Entrepreneurship and Economic Development**

Numerous studies have explored the adverse effects of legal gender discrimination on women's entrepreneurship and career prospects. Despite the economic independence and job creation opportunities offered by female entrepreneurship, global disparities persist in access to opportunities and barriers to realizing women's full potential (Burga et al., 2022). Suriyamurthi et al. (2009) underscore the challenges encountered by women entrepreneurs in developing economies and advocate for collaborative efforts between governments and financial institutions to support women in overcoming these hurdles. Recognizing and appreciating the contributions of female entrepreneurs is essential in addressing these challenges and carries significant implications for the global economy. Additionally, cultural norms and ethical values often constrain women's roles in entering the workforce and launching ventures across various regions worldwide. The study utilizes five indicators represented legal gender equality in women's entrepreneurship and career opportunities from the World Bank's Women, Business, and the Law: FEI, FPYI, FWI, FPHI, FMI as shown in Table 1. Higher scores on these indicators signify greater gender equality within countries' legal frameworks.

H2: Laws prohibiting gender discrimination in female entrepreneurship and careers have positive impacts on economic growth

### **Other factors and Economic Development**

Foreign Direct Investment (FDI) refers to investment inflows aimed at acquiring a significant management interest in enterprises operating in foreign economies, typically comprising equity capital, reinvested earnings, and other long-term and short-term capital. Research consistently indicates the positive impact of FDI on economic growth, subject to certain conditions. Scholars

such as Al Nasser & Soydemir (2011) and Hermes & Lensink (2003) stress the importance of a well-developed financial system and local factors like technology gap and educational attainment in maximizing FDI's benefits. Li & Liu (2005) highlight the dynamic relationship between FDI and economic growth, particularly in developing nations. Additionally, Kang (2012) emphasizes the significance of financial market activity in host countries as a prerequisite for FDI to bolster economic growth. While FDI accompanied by technological advancements may initially impede growth in developing countries, pairing FDI with investments in human capital yields substantial positive effects.

The entire value of products and services imported and exported as a percentage of GDP is known as trade openness (TRO). Trade openness and economic growth are positively correlated, according to a number of research (Yeboah et al., 2012). Keho (2017) highlights the complimentary nature of trade openness with capital formation, confirming its significant positive influence on economic growth in the short and long run. Additional data is shown by Karras (2008), who suggests that a 10% increase in trade can result in a 0.25–0.3% increase in the real growth rate of GDP per capita. Dao (2015) also emphasizes how trade liberalization promotes economic expansion. The author anticipates that this study will confirm the beneficial impact of trade openness on economic growth in light of these consistent findings.

Government Final Consumption Expenditure (GFCE) encompasses government expenditures on goods, services, and national defense, excluding military expenditures considered part of government capital formation. The impact of GFCE on economic growth is debated. Dowrick (1996) suggests a non-monotonic relationship, while Onuorah (2018) observe a positive impact in their studies in the context of Nigeria. However, Ceesay et al. (2022) challenges the conventional perspective, finding no significant impact in the Gambia. These varied findings suggest the need for further investigation.

Inflation (INF) represents the annual percentage change in the cost of acquiring a basket of goods and services for consumers. Research on its impact on economic growth yields mixed findings. Behera (2014) identifies a positive correlation, while others suggest a more complex relationship influenced by factors such as inflation levels and country context. Given these divergent findings, the author anticipates varied impacts of inflation on economic growth.

Population Density (POPD) measures the number of people per square kilometer of land area. Research indicates a positive influence of population density on economic growth, although the relationship is complex. While Rachmawati (2017) and Deole (2014) find significant effects, Yegorov (2015) notes potential resource constraints, and Aidi et al. (2016) highlights the strain on resources and increased costs of providing public goods associated with higher population density.

Analyzing data from 47 Asian countries from 1998 to 2021, this study examines the influence of women's entrepreneurship on economic growth. Baltagi (2021) highlights that panel data analysis provides certain benefits over time series or cross-sectional data. It first makes it possible to take into account unobserved factors. Second, panel data has less collinearity, more variability, and better information. For panel data, the fixed effects, random effects and pooled OLS models are popular estimate techniques.

#### Dependent variable

According to Chikh-Amnache & Mekhzoumi (2023), GDPppe (gross domestic product per person employed) is the dependent variable that was chosen for this study since it is a stand-in

for economic growth. GDP per person employed is a measure of gross domestic product divided by total employment and is converted to 2017 constant international dollars using Purchasing Power Parity (PPP) values. It is derived from the World Bank's World Development Indicator. While Waseem (2018) suggests GDP per capita for measuring economic growth in the context of opportunity-driven female entrepreneurship and a supportive business environment, Chikh-Annache & Mekhzoumi (2023), and Mekhzoumi & Gharbi (2021) argue in favor of GDP per employed person. This metric reflects workforce productivity efficiency, providing insights into the contribution of women-led businesses to overall economic productivity. Therefore, utilizing GDP per employed person as the dependent variable enables a deeper understanding of the impact of female entrepreneurship on economic growth, integrating it with other independent variables. Further details regarding the data source and unit of the dependent variable are outlined in Table 1.

#### Independent variables

In this study, female entrepreneurship is operationalized using two primary proxies: (1) Female Total early-stage Entrepreneurship Activity (FTEA), sourced from the Global Entrepreneurship Monitor (GEM), and (2) the assessment of legal gender discrimination towards women's entrepreneurship and career opportunities, utilizing five independent variables extracted from the Women, Business and the Law (WBL) dataset by the World Bank. Furthermore, the study incorporates five control variables: FDI, TRO, GFCE, INF, and POPD as shown in Table 1.

Consider the fitting models of the form

$$y_{it} = \alpha + \beta X_{it} + v_i + \epsilon_{it} \quad (1)$$

The error term in this model is  $v_i + \epsilon_{it}$  while  $v_i$  is the unit-specific error term; its value is constant for any given unit, but it varies between units.  $\epsilon_{it}$  is the "usual" error term with the typical characteristics (mean 0, homoskedastic, uncorrelated with itself, and uncorrelated with ).

If (1) is true, it must also be true that:

$$\bar{y}_i = \alpha + \beta \bar{X}_i + v_i + \bar{\epsilon}_i \quad (2)$$

where  $\bar{y}_i = \sum_t y_{it} / T_i$ ,  $\bar{X}_i = \sum_t X_{it} / T_i$ , and  $\bar{\epsilon}_i = \sum_t \epsilon_{it} / T_i$ . Subtracting (2) from (1), it must be equally true that:

$$(y_{it} - \bar{y}_i) = \beta(X_{it} - \bar{X}_i) + (\epsilon_{it} - \bar{\epsilon}_i) \quad (3)$$

These three equations provide the basis for estimating  $\beta$ . In particular, fixed-effects estimator amounts to using OLS to perform the estimation of (3). Between-effects estimator amounts to using OLS to perform the estimation of (2). Random-effects estimator is a matrix weighted average of the estimates produced by the between and within estimators. In particular, the random-effects estimator turns out to be equivalent to estimation of:

$$(y_{it} - \theta \bar{y}_i) = (1 - \theta)\alpha + (X_{it} - \theta \bar{X}_i)\beta + \{(1 - \theta)v_i + (\epsilon_{it} - \theta \bar{\epsilon}_i)\} \quad (4)$$

where  $\theta$  is a function of  $\sigma_v^2$  and  $\sigma_\epsilon^2$ . If  $\sigma_v^2 = 0$ , meaning that  $v_i$  is always 0,  $\theta = 0$  and (1) can be estimated by OLS directly. Alternatively, if  $\sigma_\epsilon^2 = 0$ , meaning that  $\epsilon_{it}$  is 0,  $\theta = 1$  and the within estimator returns all the information available.

We follow Park (2011) in choosing an appropriate regression model. First, pooled regression model (POLS), random effect model (RE model), and fixed-effect model (FE model) are carried out to obtain the results in Table 2. The Breusch-Pagan test (LM Test) was used to check

whether POLS is suitable. If the POLS is not supported, the Hausman test could be helpful to decide between FE model and RE model.

The two regression models in this study are as follows:

$$GDPppe_{i,t} = \beta_0 + \beta_1 FTEA_{i,t} + \beta_2 FDI_{i,t} + \beta_3 TRO_{i,t} + \beta_4 GFCE_{i,t} + \beta_5 INF_{i,t} + \beta_6 POPD_{i,t} + \varepsilon_{i,t} \quad (I)$$

$$GDPppe_{i,t} = \beta_0 + \beta_1 FEI_{i,t} + \beta_2 FPYI_{i,t} + \beta_3 FWI_{i,t} + \beta_4 FPHI_{i,t} + \beta_5 FMI_{i,t} + \beta_6 FDI_{i,t} + \beta_7 TRO_{i,t} + \beta_8 GFCE_{i,t} + \beta_9 INF_{i,t} + \beta_{10} POPD_{i,t} + \varepsilon_{i,t} \quad (II)$$

Table 1. List of variables used in the analysis

Variable	Meaning	Source	Unit	Expected sign	Previous studies
<i>Dependent variable</i>					
GDPppe	Gross Domestic Product per person employed	World Bank Group	constant 2017 PPP dollars		Mekhzoum & Gharbi (2021); Chikh-Amnache & Mekhzoumi (2023)
<i>Independent variables</i>					
FTEA	Female Total Early-stage Entrepreneurship Activity is defined as the percentage of the 18-64 population who are either a nascent entrepreneur or owner-manager of a new business.	Global Entrepreneurship Monitor <sup>1</sup>	%	+	Mekhzoum & Gharbi, (2021); Morched & Jarboui (2018); Waseem (2018)
FEI	The Female Entrepreneurship Indicator (FEI) assesses constraints on women starting and running a business. A score below 100 indicates constraints in entrepreneurship for women.	World Bank: Women, Business and the Law <sup>2</sup>	scale 1-100	+	Chikh-Amnache & Mekhzoumi (2023); Sajjad et al. (2020); Burga et al. (2022); Suriyamarthi et al. (2009)
FPYI	The Female Pay Indicator (FPYI) evaluates laws concerning occupational segregation and the gender wage gap. A score below 100 indicates the presence of restrictive laws and regulations affecting a woman's ability to earn equal pay for work of equal value and her capacity to work in the same sectors and industries as men.		scale 1-100	+	
FMI	The Female Marriage Indicator assesses legal restrictions concerning marriage and divorce. A score below 100 suggests the presence of legal constraints related to marriage, obedience, divorce, and domestic violence.		scale 1-100	+	
FPHI	The Female Parenthood Indicator scrutinizes laws impacting women's work after pregnancy, encompassing regulations on		scale 1-100	+	

<sup>1</sup> <https://www.gemconsortium.org/wiki/1154#:~:text=Female%2FMale%20TEA%20Ratio%3A%20Percentage,percentage%20for%20the%20male%20counterparts>

<sup>2</sup> <https://genderdata.worldbank.org/indicators/sg-law-idx-en>

	maternity, paternity, parental leave, and dismissal of pregnant workers. A score below 100 indicates constraints in parenthood laws.				
FWI	The Female Workplace Indicator examines laws influencing women's decisions to enter the labor market, covering women's legal capacity and ability to work, as well as workplace protections against discrimination and sexual harassment. A score below 100 indicates constraints in workplace laws.		scale 1-100	+	
<i>Control variables</i>					
FDI	Foreign direct investment: Foreign direct investment, net inflows (% of GDP)	World Bank Group	% of GDP	+	Nasser (2010); Li & Liu (2005); Kang (2011)
TRO	Trade openness is calculated as the sum of exports and imports of goods and services, divided by gross domestic product (GDP).		% of GDP	+	Yeboah (2012); Keho (2017); Karras (2008); Dao (2014)
GFCE	Government final consumption expenditure represents all government current expenditures for purchases of goods and services, including compensation of employees, expressed as a percentage of GDP.		% of GDP	+/-	Mekhzoum & Gharbi (2021); Ceesay (2022); Onuorah (2018)
INF	Inflation refers to the general increase in the prices of goods and services over time.		%	+/-	(Agarwal & Baron, 2019; Behera, 2014)
POPD	Population density is calculated as the number of people per square kilometer of land area.		Number/km2	+	(Deole, 2014; Rachmawati, 2017; Yegorov, 2015)

### 3. RESULTS AND DISCUSSIONS

In this section, we will delve into the model regressions and present the corresponding test results, thereby providing valuable insights into the relationship within our dataset. Table 2 provides results of the POLS model, RE model and FE model, respectively, for the linkage between female entrepreneurship and other factors with the economic growth in Asia. The Breusch-Pagan test does not support using POLS among three regression, whereas the Hausman test provide the evidence that FE model fits the given data most (see results at the end of Table 2). Table 2. POLS, RE model, FE model regressions and test results of Female Total Early-stage Entrepreneurship Activity.

Table 2. POLS, RE model, FE model regressions and test results of Female Total Early-stage Entrepreneurship Activity

VARIABLES	(1) ftea-POLS	(2) ftea-RE	(3) ftea-FE
Female Total Early-stage Entrepreneurship Activity (%)	-0.1218 (0.215)	0.1502* (0.082)	0.1935** (0.086)
Foreign direct investment (% of GDP)	0.0056*** (0.001)	0.0001 (0.001)	-0.0001 (0.001)
Trade openness (% of GDP)	0.0067*** (0.001)	0.0034*** (0.001)	0.0031*** (0.001)
Government final consumption expenditure (% of GDP)	0.0004*** (0.000)	0.0005*** (0.000)	0.0005*** (0.000)
Inflation rate (%)	-0.0054 (0.005)	-0.0020* (0.001)	-0.0021* (0.001)
Population Density (log)	0.1340*** (0.026)	-0.0081 (0.079)	-0.2086 (0.147)
Constant	9.2897*** (0.232)	9.9709*** (0.414)	10.9620*** (0.689)
Observations	224	224	224
R-squared	0.186		0.224
Number of id		29	29
Breusch-Pagan test	$\chi^2(1) = 744.37; p = 0.000$		
Hausman test	$\chi^2(5) = 7.30; p = 0.1989$		

Robust standard errors in parentheses; \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

By checking Breusch-Pagan test and Hausman test to choose appropriate model, random effect is preferred over the POLS and fixed effect estimations for examining the relationship of female entrepreneurship and other factors with economic growth.

Similarly, results for POLS, RE and FE of the model explaining relationship between legal gender discrimination toward women' entrepreneurship and career opportunities and other factors on economic growth (model 2) is reported in Table 3. Results of Breusch-Pagan and Hausman test suport the use of fixed effect estimation over the others.

Table 3. POLS, RE model, FE model regressions and test results of legal gender discrimination toward women' entrepreneurship and career opportunities  
 Source: Author's calculation by STATA 17

VARIABLES	(1)	(2)	(3)
	law-pols	law-re	law-fe
Female Entrepreneurship Indicator (1-100 points)	0.0048 (0.004)	0.0065*** (0.001)	0.0064*** (0.001)
Female Pay Indicator (1-100 points)	-0.0002 (0.001)	0.0034*** (0.000)	0.0033*** (0.000)
Female Workplace Indicator (1-100 points)	-0.0000 (0.001)	0.0020*** (0.000)	0.0021*** (0.000)
Female Parenthood Indicator (1-100 points)	0.0040*** (0.001)	0.0027*** (0.001)	0.0029*** (0.001)
Female Marriage Indicator (1-100 points)	-0.0145*** (0.001)	0.0044*** (0.001)	0.0051*** (0.001)
Foreign direct investment (% of GDP)	0.0051*** (0.001)	-0.0014*** (0.000)	-0.0015*** (0.000)
Trade openness (% of GDP)	0.0061*** (0.000)	0.0007* (0.000)	0.0005 (0.000)
Government final consumption expenditure (% of GDP)	0.0008*** (0.000)	0.0005*** (0.000)	0.0005*** (0.000)
Inflation rate (%)	-0.0074 (0.005)	-0.0004 (0.001)	-0.0003 (0.001)
Population Density (log)	0.0194 (0.017)	-0.0360 (0.049)	-0.1244** (0.059)
Constant	10.0159*** (0.284)	9.2098*** (0.265)	9.5802*** (0.276)
Observations	834	834	834
R-squared	0.315		0.547
Number of id		41	41
Robust standard errors in parentheses; *** p<0.01, ** p<0.05, * p<0.1			

The study revealed the positive influence of female entrepreneurship on the economic growth of Asian economies. Regression findings presented in Table 2 (Column 2) demonstrate that Female Total early-stage Entrepreneurship Activity (FTEA) correlates positively with Gross Domestic Product per person employed (GDPppe), suggesting that female entrepreneurship stimulates the economic expansion of Asian nations. Notably, FTEA exhibits a statistically significant impact on GDPppe at the 5% significance level. Specifically, a 1% rise in FTEA corresponds to a 0.15% increase in GDPppe. For clarity, FTEA denotes the proportion of women in the working-age population (18-64) actively involved in business startups, encompassing both nascent entrepreneurs and owner-managers of new firms within 42 months of establishment. Greater numbers of female entrepreneurs in early-stage enterprises are indicated by higher FTEA values. This result, in contrast to the conclusions of Morched and Jarboui (2018) and Baumol (1990), is consistent with earlier studies by Chikh-Amnache and Mekhzoumi (2023), Sajjad et al. (2020), and Waseem (2018), demonstrating the positive influence of female entrepreneurship on economic growth.



The Female Entrepreneurship Indicator (FEI) exhibits a significantly positive effect on the economic growth of Asian nations. At the 1% level of significance, an increase of 10 scores in FEI, such as moving from 90 to 100, results in a 0.064% increase in Gross Domestic Product per person employed (GDPppe). This implies that countries with more supportive regulations for female entrepreneurship tend to experience stronger economic growth.

The findings from Table 3, Column 3, suggest a positive association between legal gender discrimination affecting women's entrepreneurship and career opportunities - including FPI, FWI, FPHI, and FMI - and economic growth. Notably, FMI demonstrates the most significant impact on economic growth ( $\beta_{FMI} = 0.0051$ ;  $p < 0.01$ ). This implies that legislation in Asian countries prohibiting constraints on women's marriage, divorce, remarriage, and domestic violence can incentivize women to establish their own businesses, thereby driving economic expansion.

Franzke et al. (2022) shed light on the prevailing scenario in emerging Asian economies where women still encounter barriers to entrepreneurship due to limited educational and career prospects resulting from early or forced marriages. Additionally, Ojediran & Anderson (2020) underscore the influence of cultural norms, religious beliefs, and family values on Asian women's employment decisions. Institutionalized patriarchal cultures often perpetuate surveillance, obedience, compliance, and gender disparities. Despite policy discourse on female entrepreneurship and growth, women-owned enterprises continue to face impediments (Chikh-Annache & Mekhzoumi, 2023). Hence, regulatory frameworks in Asian economies need strengthening to support women, particularly concerning marriage-related aspects, to foster the most conducive economic environment.

Payment discrimination is one of important factors should be taken into account ( $\beta_{FPI} = 0.0033$ ;  $p < 0.01$ ). The results show that if there is better regulations/laws support a women's ability to earn equal pay for work of equal value and her ability to work in the same sector and industries as men, the economic growth will increase better.

The positive association between Asian countries' economic growth and the Female Parenthood Indicator (FPHI) at the 1% level of significance ( $\beta_{FPHI} = 0.0029$ ;  $p < 0.01$ ) suggests that laws prohibiting discrimination against women's employment before, during, and after childbirth can encourage them to pursue entrepreneurship, thereby enhancing economic growth. This indicates that countries with more favorable legal systems regarding women's parenthood can achieve the greatest possible boost in economic growth. For instance, if women are allowed to return to their jobs after 14 weeks of paid maternity leave, they are more likely to remain in the workforce and be more committed to their work, as they may feel valued and supported in one of the most significant aspects of their lives—parenting their child. Such laws can encourage more women to participate in the workforce, ultimately leading to increased economic growth in Asian countries. Despite some progress, the OECD (2021) has identified persistent workplace sex discrimination against women in Southeast Asia. Certain laws create obstacles for women to work in specific industries or receive equal pay, while inadequate workplace protections and limited maternity and paternity leave programs exacerbate the issue. Only half of Southeast Asian countries offer paid paternity leave; it is primarily available to full-time employees. For example, Indonesia only allows two days of paternity leave, but Myanmar and Singapore offer two weeks (Chikh-Annache & Mekhzoumi, 2023). These legal provisions contribute to gender disparities in parenting responsibilities and unpaid childcare, potentially impeding economic growth and development if left unaddressed.

In summary, countries striving to bolster economic growth and enhance gender equality within their legal systems should prioritize increasing the Female Parenthood Indicator (FPHI). This approach represents a feasible strategy for achieving these dual objectives.

From the foregoing results and discussions, both hypotheses proposed in this paper are supported.

#### **4. CONCLUSIONS AND SUGGESTIONS**

Women entrepreneurs significantly contribute to economic growth, social development, and sustainable futures globally. They serve as role models for aspiring entrepreneurs worldwide (Al Mamun et al., 2019). Research in Asia, covering 47 countries, demonstrates the positive impact of female entrepreneurship on both developed and developing economies. Gender development positively influences economic growth, indicating that greater gender equality correlates with stronger economies. Addressing gender imbalances requires societal awareness and government policies promoting gender equality. Laws prohibiting gender discrimination in parenthood, marriage, and the workplace are associated with economic growth. However, factors like entrepreneurship and pay show insignificant relationships with economic growth. Control variables such as Foreign Direct Investment, Government Final Consumption Expenditure, Trade openness, Inflation, and Population Density are included in the analysis, utilizing fixed effects regression models.

Women entrepreneurs significantly contribute to the economies of developing nations, generating jobs, revenue, and community benefits. Government support for female businesses is crucial for economic growth and development. Increased female entrepreneurship in Asian countries can empower women economically and enhance career opportunities, benefiting families and communities. Policies such as family responsibility laws and affordable childcare enable women to balance work and family responsibilities. Addressing the unequal distribution of domestic work and implementing equal pay for equal effort are essential for women's empowerment in the workplace. Specific programs to assist women during economic crises like the COVID-19 pandemic are necessary, utilizing information and communication technology to facilitate their development. Collaboration among various stakeholders is essential to maximize women's entrepreneurship and economic empowerment in the region. Investing in youth is vital for a nation's success and prosperity.

In summary, the study's findings offer valuable insights for countries to formulate policies aimed at increasing women's participation in entrepreneurship, thus fostering economic growth and advancing social conditions. However, the empirical work faces limitations, such as data heterogeneity and the use of static panel regression methods. Homogenized data and dynamic panel models could enhance the validity of future analyses. Nonetheless, despite these limitations, the study's conclusions remain significant, providing a foundation for countries and businesses to shape future development strategies promoting female entrepreneurship and reducing gender discrimination, ultimately contributing to economic progress.

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