

## The Role of Economic Freedom in Integrating Developing Asian Countries into Global Value Chains

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### Abstract

The world economy is increasingly more globalized and Global Value Chains (GVCs) played a greater role in international trade and production which provides opportunities for economic growth and development. This paper examines the linkages between economic freedom and Global Value Chains. The developing nations in Asia need to have the ability to integrate themselves in GVCs in order to gain access to higher-value activities in GVCs. The objective of this study is to see the impact of the Economic Freedom Index, Female Labor Force Participation Rate and the Global Competitiveness Index (GCI) in Asian countries considered as developing economies by the IMF on the countries' position in GVCs measured using value-added indicators. The presence of the Global Competitiveness Index (GCI) variable can indicate the role of government, consistency of policies, infrastructure and institutional formation, which is correlated in the level of Economic Freedom of developing nations. This paper uses the Data Panel regression model consisting of multiple indicators of all the variables used from 25 developing countries in Asia from 2009 to 2017. Analysis indicates that the variables have an overall positive relationship with the level of integration of the countries into GVCs002E

**Keywords:** *Global value chains, economic freedom, Global Competitiveness Index, Female Labor-Force Participation Index.*

**JEL Classification:** C23, F15, F62

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### INTRODUCTION

The increase in the presence of Global Value Chains (GVCs) has been considered as one of the most important factors of rapid economic growth. GVCs simply describes how the country's participation in the global production of goods and services. The fragmentation of production processes associated with the rise of GVCs allows firms in developing countries to participate in international trade without developing the full range of vertical capabilities across the chains. The ability to embrace GVCs has been considered a key factor to determine the convergence between incomes of developing countries with the high income of developed countries.

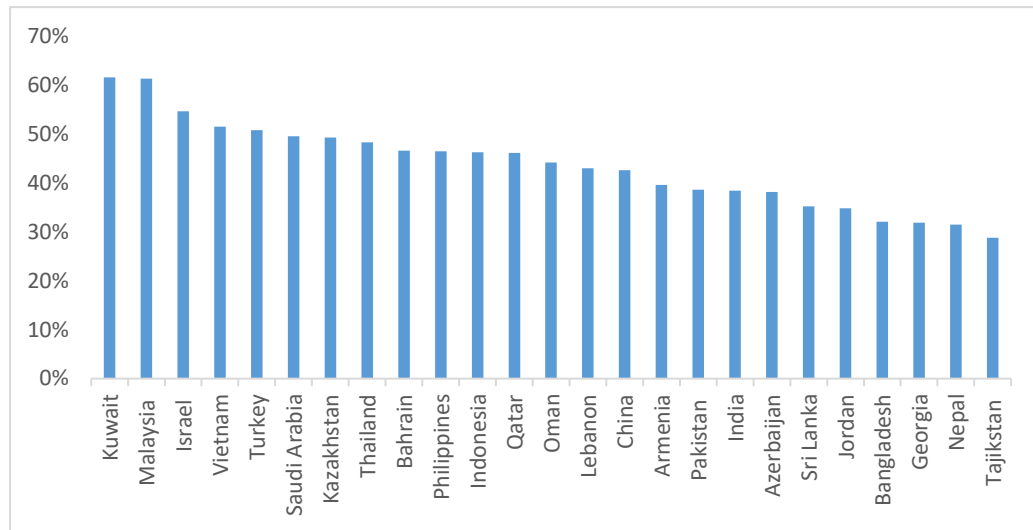


Figure 1. Global Value Chains Participation Index of Selected Asian Countries (%)

Source: (UNCTAD-Eora Global Value Chains Database, 2019)

Firms as a business entity on the country considered as microeconomic variables that are expected to integrate into the supply chains. By opening access to new - and often higher-value - markets, participation in GVCs offers emerging economies an opportunity to add more value within the firms as the local industries. The GVCs' participation is measured by the indicator of "vertical specialization" (Bems, Johnson, & Yi, 2011). The measurement is divided into two terms. The first is the domestic value-added which is used as inputs as exports in the third country, also known as forward participation. The second is the foreign intermediate value-added embodied in exports of a country, also known as backward participation. International cooperation has so far delivered uneven openness in goods and services (Adeniyi, Omisakin, Egwaikhide, & Oyinlola, 2012).

Trade liberalization is overdue in agriculture and services, and some industrial goods remain restricted in certain markets and by non-tariff measures. Faced by the poorest countries, trade agreements have reduced the goods tariffs but not the tariffs these countries impose on their imports. Special and differential treatment for developing countries has accommodated sluggish reform, ultimately inhibiting GVCs' participation and integration into the global economy shown in Figure 1.

To coherently support development goals, efforts must be broadened to help the country participation in its broader national economic development agenda; build internal capacity and generate linkages with the local economy; and create more and better jobs to reduce unemployment and improve working conditions. Therefore, the way to come up and link to the GVCs matters that bring long-term sustainable welfare gains. This form can be found by enlarging the size of the market stimulates the efficient allocation of resources, increase human capital and mobility of labor, diversifies production and improves the manufacturing sector, improves infrastructure and develops related activities.

Economic freedom easily explains that a country's success is reflected in economic growth in general. The success of a country is not absolutely determined by the wealth of natural resources and geographical conditions. Many economic

theories expand this relationship by increasing the chances of society in the economy. This can be created with the important role of the government in shaping policies not limited to massive infrastructure development but also on the policy that empowers individuals and firms with more choices.

To overcome the constraints of a small domestic market, liberalizing trade at home and negotiating trade liberalization abroad can limit the domestic demand and local inputs. Improving transportation and communication infrastructure and introducing competition in these services can address the disadvantage of a remote location. And participating in deep integration agreements that spur reform as well as technical and financial assistance can improve domestic institutions. Infusion GVCs alone does not necessarily translate into positive development gains from trade, and in fact, can be adverse and exploitative for developing countries (Barrientos, Gereffi, & Rossi, 2011).

How to improve the participation of developing Asian countries so it could be the appropriate opportunities to integrate their position on global value chains? If it is connected to firm participation, the visible solution might be the added value through innovation supported by entrepreneurship. Entrepreneurial development is a field that saddles its recipients with skills on how to be employable and useful to society at large. Therefore, with any given level of entrepreneurial effort or level of investment in physical capital, societies with more economic freedom generate more wealth and economic growth from those investments (Ifeanyi Okoli & Ifeanyi Okoli, 2013).

“If you educate a man, you educate an individual. But if you educate a woman, you educate a nation”, Dr. James Kwegyir – Aggrey. Investing in women’s economic empowerment sets a direct path towards gender equality, poverty eradication, and inclusive economic growth (Women, n.d.). Women make enormous contributions to economies whether in business as entrepreneurs or employees. It seems very cliché that what comes up in this study is how to increase the role of women. But in fact, the data shows a decline in women's participation over the last few years.

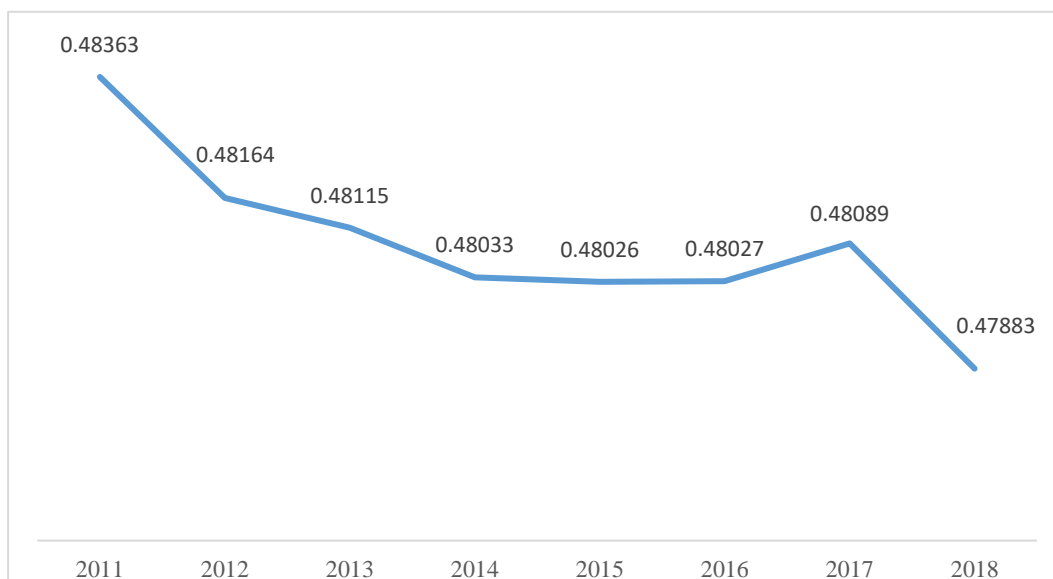


Figure 2. Female Labor Participation Rate (World)  
 Source: The World Bank, 2019

This study analyzes the potential of Asian countries' participation in Global Value Chains through economic integration. Considering the previous research attempt to understand the interaction among countries on international trade (Meng Bo, Yong Fang, 2012). Using the data panel of several Asian countries shows how relevant economic freedom is to the countries' integration on the chain's value. Some research has already showed the theoretical relationship between economic freedom and GVC integration, thus this study intends to provide a more empirical evidence. Like the remainder, the paper determines the Global Competitiveness Index as the percentage of countries' participation between backward participation and upward participation. In turn, it depends on how productive the countries use their available resources. This paper is also not limited to the important role of the institution but also suggests the role female labor force participation. While previous research focused on specific sector such as tourism (Reis, Cornelia Staritz, 2013), horticultural culture as the buyer-driven export sectors (Barrientos, Knorringa, Evers, Visser, & Opondo, 2016), etc. While earlier research about GVC focused more on economic and competitive issues, recent attention in GVC research is given to new topics such as social dimensions, including gender. Female participation in the labor force is shown by how much added value produced that's been said to bring the sustainability value in the firm's activities.

### **The Importance of Economic Freedom**

If the institutions of economic freedom can be related to economic growth at the macro-level, can the same relation be found at the micro-level, thus giving a link in the form of the country' participation? Today's successful economies, for instance, US by the surveys of US Business owners by the National Federation of Independent Business (OECD, 2016) indicate that the single most important problem on business making is 'Regulation', and "taxes" with "competition" and even "poor sales" a distant third and fourth concern.

Increasingly, political, regulatory and cultural institutions play an important role in the country' participation. A greater understanding and awareness of how these institutional forces alter the motives, processes, and outcomes for opportunities, business initiation, and sustainable growth to better inform entrepreneurship research, teaching and policy (Bradley & Klein, 2016). To introduce economic freedom, this paper uses the economic freedom index which contains measures of institutional quality. The index is an attempt to measure to what extent an economy can be characterized as a market economy (Hall & Lawson, 2014).

Entrepreneurship and innovation are widely regarded as an important basis for competitive advantage in a rapidly changing international business environment, enhancing capabilities for sustainable business growth, economic activity and the wealth of nations. Entrepreneurship relates to the discovery, evaluation and exploitation of opportunities in the process of business start-up, creation and growth. Innovations relate to the development, adoption, and exploitation of value-added activities in economic and social areas; a key for competitiveness and growth (Crossan & Apaydin, 2010)

Political economics explained that the government is the player of institutions. Institutions are usually defined as the rules of the game. Institutions may be informal or formal. Informal institutions, for instance, includes the customs,

norms, and social networks, while formal institutions include the political and economic prerequisites such as policy, judiciary, and bureaucracy (Gereffi & Lee, 2016). Both formal and informal institutions have a common line that is highly influential for the incentive structure in a society and hence affect economic performance (Casson, Della Giusta, & Kambhampati, 2010).

It also should be noted that a composite index like the economic freedom index can always be criticized since such a great variety of variables are included. Hence, the weights of each variable but also the selection of which variables are included and not included could always be discussed (Hall & Lawson, 2014). Since the paper use the Economic Freedom Index based on The Heritage Foundation data, Economic freedom is divided into 3 elements such as access to sound money, freedom to trade internationally and Regulation of Credit, Labor, and Business (Kolb, 2018). Based on the index published in Economic Freedom of The World, there are forty-two data points are used to construct a summary index and to measure the degree of economic freedom in three main areas such as:

### ***Access to Sound Money***

To establish and develop domestic entrepreneurship, it's a must for the country to have a stable monetary environment. Access to sound money includes money supply growth, inflation variability, recent inflation rate, and freedom to own foreign currency and bank accounts domestically and abroad. The entrepreneurship is indicated as someone who handles uncertainty related to financial stability since it influences the possibility to calculate future relative prices and hence, expected real profit opportunities for a potential entrepreneur. This variable shows how an entrepreneur introduced. It hasn't become taboo for an entrepreneur who is called a "risk-lover". The impact may be much larger on risk-averse entrepreneurs such as necessity-based entrepreneurship. Previous evidence on the relationship between sound money and entrepreneurship must be regarded as rather scarce. The previously mentioned study found that access to sound money is positively correlated with entrepreneurship.

### ***Freedom to Trade Internationally***

The area freedom to trade internationally includes measures of taxes on international trade, regulatory trade barriers, size of the trade sector, the difference between the official exchange rate and international capital market controls. The opportunities to engage in international trade influence the potential market for domestic entrepreneurs. It also reflects the costs associated with engaging in international trade. Access to international markets clearly affects the possibilities to gain benefits from economies of scale. Since there is no specific restriction to access the international market, it can be particularly important for domestic entrepreneurs to distribute their specialized products. There is a negative relationship between barriers to the international competition which measured by trade barriers and entrepreneurship (Ghosh, 2017).

### ***Regulation of Credit, Labor, and Business***

Regulation of credit, labor and business include various aspects. On credit market regulations is about the easiness of entrepreneurship to get the credit, measures of ownership, etc. Regarding labor market regulations includes measures

of ease of hiring workers the extent of unemployment benefits. Last for the business regulations measures, for example, the ease of starting a business and bureaucracy associated with initiating business.

Regulation refers to the minimum capital requirements needed to start a business, labor market regulations and the administrative cost in terms of the time and procedures required to start a business. Based on previous study, show the minimum capital requirements needed to start a business and labor market regulations tend to lower entrepreneurship rates. For the administrative cost associated with starting a new business does on the other hand not influence the rate of entrepreneurship.

The worst situation of bureaucratic quality tends to lower the level of entrepreneurship. Related to the entry regulations that also seem to have negative effects on entrepreneurship (Audretsch & Link, 2012). Also found that labor market regulations in terms of for example unemployment benefits, employee protections, and labor union power has negative effects on the self-employment rate which relates to global entrepreneurship (Verheul, Thurik, Grilo, & Van der Zwan, 2012). Regarding the credit market regulations, there are several entrepreneurs who even have good track records and personal wealth which maybe could be trusted to pay faster and comply with the rules does not necessarily imply easiness to get loans from the bank. The problems are rather than potential entrepreneurs perceive problems regarding getting access, which may influence the decisions by potential entrepreneurs.

### **Global Competitiveness Index**

The Global Competitiveness Index (GCI) is a set of indexes that ranks countries' competitiveness in the yearly Global Competitiveness Report published by the World Economic Forum which defined competitiveness as "the set of institutions, policies, and factors that determine the level of productivity of a country". The Global Competitiveness Index measures the set of institutions, policies, and factors that set the sustainable current and medium-term levels of economic prosperity. The countries are scored based on quantitative findings from international agencies with adding qualitative assessment from specialists and senior corporate executives (Forum, 2019).

One of the twelve pillars of competitiveness, as defined by the World Economic Forum, is Institutions. The institutional circumstances of a country depending on the efficiency and the performance of both public and private stakeholders. The quality of the public institutions within a country is determined by the legal and administrative structure within which economic actors and governments interact, these structures also have a significant impact to competitiveness (World Economic Forum, 2016)

Insertions in GVC depend on the local economic conditions, one of these conditions is the institutions which include tax and labor laws, subsidies, educations, and policies of innovations that can determine industry growth and development (Gereffi & Fernandez-Stark, 2011). Considering that institutions are an important component of competitiveness and the Global Competitiveness Index, a country that has a high GCI score could reflect the high quality of institutional condition of the country, which in turn should positively affect the GVC participation of the country.

Innovation and sophistication factors are some of the pillars that consist of the Global Competitiveness Index. As the economy of a nation develops and adopting higher levels of technologies, businesses in these economies have to design and develop cutting-edge products and technologies to maintain their advantage and move to a higher level of value-added production. Business sophistication concerns the overall quality of business networks and the individual businesses' quality in their operations and strategies. The higher the interconnectedness of companies and suppliers, the more efficient they become, which increases the opportunity for innovation and reduces barriers of entry to new businesses.

Innovation as a basis of development and in all economies is also a determinant of competitiveness. Companies obtain a competitive advantage with the help of innovation activities and maintain this competitiveness through continuous development which also increases the national competitiveness (Dogan, 2016). As better entrepreneurship in an economy promotes higher innovation and improvements in efficiency, this also leads to a higher competitiveness index of a country.

### **Global Value Chains**

A single firm rarely produces everything that it needs from raw materials to the end product that it sells to the consumers. The firm relies on other firms to provide its intermediate materials, creating inter-firm relations and value chains that involve design, production, marketing, distribution, and support to the final consumer. The increase of globalization and international trade has spread these value chains into covering multiple countries, thus the term Global Value Chains (GVCs).

The understanding of GVCs can give explanations of the interconnection of a country's economy to the global economy and give policymakers new insights about industry and trade. The insertion of low-income countries into GVCs is vital for their development, as GVCs help workers and firms in developing countries to integrate into the global economy which could promote national economic development, capacity building, more and better jobs which can alleviate poverty and unemployment (Gereffi & Fernandez-Stark, 2011). Rather than building from scratch, it is easier and provides more opportunities for firms in developing nations to join in existing global production networks. Therefore, it is no longer whether to participate in the global economy, but how to do so efficiently and gainfully.

The next question is how GVC participation is measured. One important - and one of the first - measurement of GVC participation is the "vertical specialization" indicator which measures the value of imported inputs within the exports of a country, also known as the backward participation in the value chain or upstream links (Bems et al., 2011). The literature also added the percentage of exports used as imported inputs in other countries' exports, also known as the forward participation in the value chain or downstream links. These two measures were then combined and refined where GVC participation index is the sum of the share of IV in gross export and the share of FV in gross export where IV is the domestic value-added which is used as inputs in another country or forward participation, FV is the value-added from foreign countries embodied in gross export or backward participation (Koopman, Powers, Wang, & Wei, 2012).

The measures of backward and forward participation indicate two different conditions. A country that predominantly assembling intermediaries into final products for exports will have higher backward participation and lower forward participation, while a country that mostly exports intermediaries to assembler countries will have higher forward participation and lower backward participation (Kowalski, Gonzalez, Ragoussis, & Ugarte, 2015).

In order to calculate GVC participation index, we will use the UNCTAD-Eora Global Value Chains Database, which provides the time-series data for Foreign Value-added (FVA) and Indirect Value-added (DVX). FVA is the foreign value-added used as intermediaries for exports which correlates with FV and DVX is the domestic value-added used as inputs in other countries which correlates with IV. The database also provided the formula of GVC participation that we will use as the sum of FVA and DVX.

$$\text{GVC} = \text{FVA} + \text{DVX}$$

As we have defined the benefits of participation in GVCs for developing nations, in this paper, we will focus in the developing nations in Asia. There is an increase of integration between developing regions in Asia over time, particularly South East Asia is an increasingly important destination for intermediaries' exports from Africa and the Middle East. In this study, we will use the list of developing economies from the International Monetary Fund's World Economic Outlook.

### **Female Labor Force Participation Rate**

GVCs are ingrained within the economic, social, and institutional dynamics. The social context determines the labor availability and its skill levels, such as female labor force participation that is defined as the proportion of females in the labor force and the population of working – age females (Gereffi & Fernandez-Stark, 2011). Higher female labor participation would increase the amount of available labor in a country. Institutional factors have a direct and indirect effect on the female economic role, which can be identified in several social institutions (Stephan, Uhlaner, & Stride, 2015).

### ***Family code***

The family code is a system of formal and informal laws, customs, traditions that could hamper female economic participation. One phenomenon that is relevant to this is early marriage, where it is not the females who have control over their marriage and household foundations, but it is the parents and the disproportionately older husbands.

### ***Physical Integrity***

The physical integrity of females is how much females have control or say over their physical bodies. Institutions that uphold physical integrity can be seen through the existence and enforcement of laws that punish physical violence against females.

### ***Civil Liberties***

Civil liberties of Female is how much freedom Female in a country enjoys which include freedom to participate in politics, freedom to express their opinions, and other basic human rights.

### ***Ownership Rights***

Female's ownership rights are significantly relevant to females' participation in the economy in which such quality can be measured by their access to loans, the right to own property and land. Well-planned policy options should be based on, and driven and justified by, a theory of change: a set of assumptions about how exactly the policy action will lead to the desired result. Effective policy options are likely to be those that are able to address the factors that create the problem while taking into account the specific situation of female in each of the three target groups which are:

1. Factors related to skill supply through education and training, most notably the educational and training choices of female, the availability of different educational training choices for Female, and the quality of education and training;
2. Factors related to employment, particularly in working conditions and attitudes of employers towards female;
3. Factor related to cultural attitudes towards female employment and working male.

While there is a positive relationship between female labor-force participation rate and economic development, it's not directly forwarded and consistent at the country level. Since there is considerably more variation across developing countries on female participation than on the male.

What really matters with female labor-force participation? Over the last two decades, the global female labor force participation rate has remained fairly stable, slightly decreased for the female working-age population, from 52,2 % in 1992 to 51,4 % in 2012. As more females enter the labor force, the economy can grow faster in line with higher labor inputs. Supported by the country's development, female's capabilities typically improve, while social constraints are weakened, which enables females to engage work outside the home (Fernández, 2013).

To support the country's participation in Global Value Chains, should female labor force participation be used or optimized, in this situation is needed institutional context. The institutional context here needs the role of government in the form of policy which empowers women to participate more in the labor force. Forms of empowerment can be done at any age range to be ready to face the economic situation. However, when viewed from the context of state participation in Global Value Chains (GVCs), government policy should specifically target women at the age of early education. If the policy targets are met, it is certain to be able to increase women's participation in the labor force and even increase state participation in Global Value Chains (GVCs).

### **METHOD**

The data observed in this research are Global Value Chains (GVC), Global Competitiveness Index, female labor participation rate and The Index of Economic Freedom. The source of The Global Value Chains (GVC) is from UNCTAD-Eora

database. The source of The Global Competitiveness Index (GCI) and female labor participation rate is from World Bank database. The source of Index of Economic Freedom is from The Heritage database. All the data is collected from 25 Developing Asian countries (Armenia, Azerbaijan, Bahrain, Bangladesh, China, Georgia, India, Indonesia, Israel, Jordan, Kazakhstan, Kuwait, Lebanon, Malaysia, Nepal, Oman, Pakistan, Philippines, Qatar, Saudi Arabia, Sri Lanka, Tajikistan, Thailand, Turkey and Vietnam from 2009 to 2017.

The Global Value Chains (GVC) is transformed from a monetary based value into a Log Value through log transformations because GVC is a skewed data. Log transformation is used fulfil the normality, constant variance assumption in this statistical analysis and to make a non-linear relationship more linear.

### **Asian Countries Regression Models**

The Asian country's regression model is determined to be using the random effect model from the previous Hausman test. The correlation of these variables in the model is analyzed using a random effect model. A random effect model assumes that the entity's error term doesn't any correlation with the predictors that allows for the time-invariant variables to act as an explanatory role of the variables. The random effect model of this research is constructed as such:

$$\log \text{GVC}_{it} = \beta_1 + \beta_2 \text{GCI}_{it} + \beta_3 \text{IEF}_{it} + \beta_4 \text{FLPR}_{it} + \mu_{it} + \epsilon_{it}$$

where:

Log_GVC	: Global Value Chains (log (GVC_Value))
GCI	: Global Competitiveness Index (Index)
IEF	: Index of Economic Freedom (Index)
FLPR	: Female labor participation rate (%)
i	: Cross section unit
t	: Time series unit
$\mu_{it}$	: Between-entity error
$\epsilon_{it}$	: Within-entity error

### **The Hausman Test**

The Hausman test (also called the Durbin-Wu-Hausman (DWH) test) is a statistical test to detect endogenous regressors / predictors variables in a regression model. An endogenous variable has values that are affected or determined by other variables in the same system, having an endogenous regressors in a model will cause OLS (ordinary least squares estimators) to fail. One of the assumptions of OLS is that there is no correlation between the error term and the predictor variable thus having an endogenous variable will contradict this assumption. To decide the best regression model, we need to figure out if our predictor variables are endogenous, this is the main function of the Hausman test. In a panel data analysis, the Hausman test is used to determine the use of fixed effect or random effect model. The interpretation of the test is straight forward, if the p-value is less than 0.05 than reject the null hypothesis, in Stata this means that we will use the fixed effect model if the p-value is less than 0.05, otherwise we will use the random effect model.

## RESULTS AND DISCUSSION

In this research, the data is constructed into a panel data and the data are tested using the Hausman test to determine the usage of fixed effect or random effect in each regression model. The Hausman results as such:

Table 1. Hausman Test Result

VARIABLES	COEFICCEINTS			
	Re(b)	Fe(B)	Delta(b-B)	S.E
IEF_INDEX_ISOLATE	0.0044138	0.0051418	0.0007281	0.005408
GCI_INDEX	0.2443803	0.2262624	0.0131179	0.0099392
FLPR	0.0083412	0.0089936	0.006524	
Chi2	3.50			
Prob>chi2	0.3204			

Source: STATA 14

The Hausman test model resulted the p-value of 0.324, this is larger than 0.05 (>0.05), thus the null hypothesis is rejected (fixed effect). We can conclude that the best regression model based on the Hausman test for the data set is the random effect model.

### Regression Analysis

Using the random effect model, the result shows that there are positive and significant correlations between GVC participation, Global Competitiveness Index, Index of Economic Freedom and female labor participation rate. The Index of Economic Freedom variable is significant at a 10% significance level, on the other hand the Global Competitiveness Index and Freedom and female labor participation rate are both significant at a 1% significance level. The rho of 0.99887 means that 99.887% of the variance is due to differences across panels (intraclass correlation). The R squared of 0.3155 means that the model can be explained by 31.55% of the variables in the model and the rest, 68.45% of the models is explained by the variables outside the model.

Table 2. Random Effect Model Regression Results

VARIABLES	LOG_GVC
IEF_INDEX_ISOLATE	0.00441* (0.00267)
GCI_INDEX	0.244*** (0.0368)
FLPR	0.00834*** (0.00279)
Constant	8.434*** (0.223)
Observations	223
Number of country_1	25

Standard errors in parentheses  
\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

## **Discussion**

Based on the results of regression using random effects, an increase in one unit of the Index of Economic Freedom will increase the participation of sample countries by 0.442 percent. This can be strengthened by previous research on the level of state participation in Global Value Chains which explains the trade and investment flows. It is known that reducing tariffs and other trade barriers, one of them, the economic freedom and enlargement of the European Union have influenced their participation in Global Value Chains (Kersan-Škabić, 2019). Specifically, previous research was conducted in several Asian countries such as Kazakhstan, Papua New Guinea, the Philippines, and Sri Lanka. The research implicitly stated that the index of economic freedom as one of the success factors to facilitate Small - Medium Enterprises' effective participation in Global Value Chain.

Policymakers are increasingly turning to Global Value Chains as a mean of driving development, including generating employment and rising incomes. Since the gender issues are closely related to access and benefits by participating in Global Value Chains. Based on the regression analysis, we found that the Female Labor Participation Rate (FLPR) shows a positive correlation. It also determines that an increase of 1 percentage of the female labor participation rate will increase Global Value Chains by 0,837 %. The previous study proved the prominent role female workers play in many export-oriented industries integrated into Global Value Chains leads to claims that Global Value Chains participation results in positive development benefits for women in developing countries (Bamber & Staritz, 2016).

The regression result shows GCI\_INDEX of 0.2443803 means that an increase in a single unit in the Global Competitiveness Index will increase the Global Value Chains participation by 27.68%. Note that the Global Competitiveness Index have an index range from 0 – 7. Therefore, there is a positive relationship between the Global Value Chains participation and the Global Competitiveness Index of a country. This is affirming the statement by (Pathikonda & Farole, 2017) in a World Bank publication which argues that countries' competitiveness is an important factor that drives countries' participation in the Global Value Chains. The fragmentation of production allows multinational firms to build global production networks by taking advantage of differences in comparative advantage across nations and choose the most competitive nations for each activity.

## **CONCLUSION**

The purpose of this study was to investigate the correlation between Index of Economic Freedom (IEF), Global Competitiveness Index (GCI), Female Labor-Force Participation Rate (FLFPR) and participation of developing Asia countries in Global Value Chains (GVCs). To this end, correlation tests have been performed using panel data regression with a random effect models to test the consistency. The data availability from all variables made the investigation to cover 25 developing Asian countries across 9 years from 2009 to 2017.

This study found that there is a relationship between the Global Value Chain participation of Asian countries with the several economic indicators that we used. The result of this study shows that the Index of Economic Freedom, the Global

Competitiveness Index, and the Female Labor Participation Rate of an Asian country positively and significantly correlates with the Global Value Chain participation of the country. An increase in employment opportunities for women not necessarily lead to reduce inequalities, such as gender gaps and gender-specific constraints to integrate the country's participation into GVCs.

However, this study uses relatively rudimentary variables in its analysis. The variables of Index of Economic Freedom and Global Competitiveness Index are used to represent a country's level of economic freedom and level of competitiveness respectively. Both indexes are calculated from various factors and variables that are not shown in the analysis and both give an image of a country's quality of institutions. Further research might do well to use more specified factors that also represent or constitute a country's level of economic freedom and competitiveness.

An increase in employment opportunities for women not necessarily lead to reduced inequalities, such as gender gaps and gender-specific constraints, to increase the country's participation in GVCs. Therefore, it might need more comprehensive research that specifically relates gender work equality with GVC participation.

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