

## THE EFFECT OF GENDER AND THE INTERNET ON THE LEVEL OF CORRUPTION IN ASEAN 5 (1997-2019)

**Indah Susilowati**

Faculty of Economics and Business, Diponegoro University, Semarang  
Email: indah-susilowati@rocketmail.com

**Olivia Fachrunnisa**

Department Management, Faculty of Economics Unissula Semarang  
Email: olivia.fachrunnisa@unissula.ac.id

**Nugroho SBM**

Faculty of Economics and Business, Diponegoro University, Semarang  
Email: nugroho.sbm@gmail.com

Received: November 2020; Accepted: December 2020; Available online: January 2021

### Abstract

The level of corruption in ASEAN countries, especially ASEAN 5, namely Indonesia, Malaysia, Thailand, Vietnam, and the Philippines, although gradually declining but still in the high category. This study aims to analyze the factors that influence the level of corruption in ASEAN-5 countries (Indonesia, Malaysia, Thailand, Vietnam, and the Philippines). The level of corruption is proxied using the Corruption Perception Index (CPI), while the independent variable is internet users, and gender is proxied by female labor force participation and male labor force participation. The results show that the increasing number of internet users will reduce the level of corruption as indicated by the increased CPI value. As for gender, increasing female labor force participation will reduce the level of corruption, but the opposite result is shown by the participation of the male labor force. The policy implication of this study is the need to expand the use of the internet and provide wider opportunities for women to work, especially in public offices, to reduce the level of corruption.

**Keywords:** Gender, Internet; Level of Corruption; ASEAN 5.

### Abstrak

*Tingkat korupsi di negara-negara ASEAN khususnya ASEAN 5 yaitu Indonesia, Malaysia, Thailand, Vietnam, dan Filipina meskipun berangsur menurun tetapi masih masuk kategori tinggi. Penelitian ini bertujuan untuk menganalisis factor-faktor yang mempengaruhi tingkat korupsi di negara-negara ASEAN-5 (Indonesia, Malaysia, Thailand, Vietnam, dan Filipina). Tingkat korupsi diproksi menggunakan Corruption Perception Index (CPI), sedangkan variabel independennya adalah pengguna internet, dan gender yang diproksi oleh partisipasi angkatan kerja wanita dan partisipasi angkatan kerja laki-laki. Hasil menunjukkan bahwa semakin meningkatnya pengguna internet maka akan menekan tingkat korupsi ditunjukkan dengan nilai CPI yang meningkat. Sedangkan untuk gender, meningkatnya partisipasi angkatan kerja wanita akan menekan tingkat korupsi, tetapi hasil sebaliknya ditunjukkan oleh partisipasi Angkatan kerja laki-laki. Implikasi kebijakan dari hasil studi ini adalah perlunya perluasan penggunaan internet dan pemberian kesempatan yang lebih luas kepada wanita untuk bekerja khususnya di jabatan publik untuk menekan tingkat korupsi.*

**Kata Kunci:** Gender; Internet; Tingkat Korupsi; ASEAN 5.

**How to Cite:** Susilowati, I., Fachrunnisa, O., & SBM, N. (2021). The Effect of Gender and the Internet on the Level of Corruption in ASEAN 5 (1997-2019). *Media Ekonomi dan Manajemen*, 36(1), 1-10. doi: <http://dx.doi.org/10.24856/mem.v36i1.1811>.

## INTRODUCTION

The level of corruption in ASEAN countries, especially ASEAN 5, namely Indonesia, Malaysia, Thailand, Vietnam, and the Philippines, although gradually declining but still in the high category. Indonesia's corruption perception index in 2019 is ranked fourth in Southeast Asia. The score obtained by Indonesia was 40 points, up 2 points from 2018 which amounted to 38. Malaysia's Corruption Perception Index in 2018 increased from 48 to 53 in 2019. Thailand in 2018 was 36 and remained 36 in 2019. Vietnam in 2018 was 33 and increased to 36 in 2019. Philippines in 2018 was 36 down to 34 in 2019.

Although ASEAN 5 countries as described have succeeded in increasing their Corruption Perception Index - which means that the level of corruption is decreasing - the level of corruption in these countries is still high. As it is known, the Corruption Perceptions Index, issued by the International Transparency Organization, is between 0 and 100. The greater the Corruption Perception Index (CPI), the lower the level of corruption in a country. However, to say that a country that is free or free from corruption, according to the standards of the International Transparency Organization, the Corruption Perception Index score must be 80 and above. So, it can be said that the level of corruption in ASEAN 5 countries is still quite high.

There are several factors that influence the level of corruption in Indonesia. Two factors that affect it are gender and internet usage.

Several studies have shown that in terms of gender, women are less corrupt than men (Swamy et al., 2001; Debski et al, 2018; and Bowman and Gilligan,2008). The argument of this preposition based on the facts that: first, women mostly do household chores and rarely live in a broad social environment, so they do not know and understand the culture of corruption in jobs outside of household work; and

second, most women are not the head of the household so they do not have an income burden to meet family needs so they do not seek extra income by engaging in corruption (Swamy, et al, 2001). But several studies also have shown that there were no differences between men and women in corrupt behaviour. So, it is important to reconfirm about the effect of gender on corruption.

Meanwhile, the increasingly widespread use of the internet in society will increase the transparency of government budgets and policies so that the public can control them so that it is hoped that the level of corruption will decrease (Klitgard , 1991; Andersen et al., 2010; Lio et al, 2011; Merhi and Ahluwalia, 2018; and Hunady, 2019).

This study aims to analyze the impact of gender and internet use on the level of corruption in ASEAN 5 countries, namely Indonesia, Malaysia, Thailand, Vietnam, and the Philippines.

## LITERATURE REVIEW

### The Effect of Gender on Corruption

Gender affects the level of corruption in a country. Women are more intolerant of corruption than men. There are several factors why women are more intolerant of corruption than men. First, women mostly do household chores and rarely live in a broad social environment, so they do not know and understand the culture of corruption in jobs outside of household work. Second, most women are not the head of the household so they do not have an income burden to meet family needs so they do not seek extra income by engaging in corruption.

Swamy et al. (2001) analyzed the effect of gender (women and men) on bribery behavior by company managers. The study was conducted with 1,717 male managers and 502 female managers in the state of Georgia as respondents. The results

showed that female managers had a smaller tendency to be involved in bribery (both in paying and receiving bribes).

Debski et al. (2018) obtained empirical findings on the negative relationship between women's participation in politics and the labor market, on the level of corruption in 177 countries from 1998 to 2014. The results show that the level of women's participation in politics and the labor market is indirectly associated with lower corruption.

Alhassan-Alolo (2007) analyzed the influence of gender (women and men) on corrupt behavior within the police and the Ministry of Education. The research was carried out in Ghana. Research respondents were 78 men and 57 women who worked in the police and the Ministry of Education. The results showed that there was no difference in corrupt behavior between female and male employees in the two government agencies when they were faced with the same network and opportunity to commit corruption..

Alatas et al. (2009) re-examined the effect of gender differences on corrupt behavior. The research was conducted in India (Delhi), Australia (Melbourne), Indonesia (Jakarta), and Singapore. The results show that women tend to be less corrupt than men in Australia. Meanwhile, in India, Indonesia, and Singapore, there are no differences in corrupt behavior between men and women. So, the phenomenon of differences in the behavior of women and men is not common in the world but will depend on the local culture.

Bowman and Gilligan (2008) analyzed the influence of gender on corrupt behavior in Australia. Research respondents were 300 people consisting of 129 men and 171 women. The results showed that women were more intolerant of corruption than their male counterparts.

Cheung and Fernandez (2001) analyzed the influence of gender on corruption levels in the US. The research

was conducted in US states during the period 1986 to 2000 using panel data and fixed effect regression analysis tools. The results showed that gender had no effect on the level of corruption.

SBM (2012) analyzed the effect of GDP, Female Population, Education, Level of Economic Globalization on the Level of Corruption in Indonesia. Study time period 1998-2010. The analysis tool used is multiple regression. The results showed that GDP has a positive effect on the level of corruption, meaning that the higher the level of welfare the higher the level of corruption. The level of education, as measured by the level of literacy, has a negative effect on the level of corruption, meaning that the higher the education level of the population the lower the level of corruption. The number of women population harms the level of corruption, meaning that the more female population, the lower the level of corruption. The level of openness or globalization of the Indonesian economy has no effect on the level of corruption in Indonesia.

SBM (2012) in his doctoral dissertation (unpublished) analyzed the factors that influence the amount of bribes given by medium and large companies in Central Java. The study took a sample of 100 medium and large companies in Central Java. The analysis tool used is multiple regression. The results of the analysis show that the factors that have a significant effect on the number of bribes given by medium and large companies in Central Java are the time to process permits, the age of the company, the compatibility between the number of bribes and the preferential treatment received by the company, the location of the company, the level of competition faced by the company, public services used by the company, and the level of education of the manager. While the variables: the amount of tax paid by the company, the number of permits the company must have, the company scale, company ownership,

the company's market orientation, the line of business, local conditions, the gender of the manager, and tax exemptions, do not have a significant effect on the number of bribes paid by the company.

### **The Effect of the Internet on the Level of Corruption**

Klitgard (1991) using the Principal-Agent approach or theory stated that corruption can occur because of the asymmetric information between the Principal and the Agent. As exemplified by the principal is government employees and agents are the public. Government employees know bureaucracy and administration better than society. So that here occurs asymmetric information. Based on this asymmetric information, government employees take advantage of it by attracting bribes to the people they serve in public service. To overcome this problem, the internet is used to reduce the asymmetric information. The application of using the internet to reduce asymmetric information between principals (government employees) and agents (public or society) in the case of providing public goods and services is by implementing E-Government.

According to Andersen et al. (2010) there are several reasons why the internet can prevent corruption. First, currently the internet is the main source of information throughout the world, including information about the corrupt behavior of public officials. Thus, public officials will be more afraid of corruption because the internet can quickly spread information about their corrupt behavior throughout the world. Second, the internet is also used to design public services online (Online) or known as E-Government which reduces physical personal contact between public officials and the public in public services, thereby reducing the incidence of bribery and corruption. Third, the use of the internet for public services requires standardization and efficiency of procedures, thereby reducing the

complexity of the bureaucracy and thereby reducing the level of corruption.

Several studies have been conducted to analyze the impact of internet use on a country's level of corruption. Andersen et al. (2010) by taking cases in the United States and other countries using the dependent variable change (delta) the level of corruption and the independent variable change (delta) internet use. The results show that internet use has a negative effect on the level of corruption.

The study of Lio et al. (2011) by taking locations in 70 countries in the 1998-2005 period with the dynamic panel data analysis method found that the use of the internet reduced the level of corruption even though the effect was not large.

Another study, namely the Merhi and Ahluwalia Study (2018), took place in 69 countries. The independent variables used that affect the level of corruption are the capability of the legal system that regulates information technology, government policies, and visions related to information technology, or maturity in information technology diffusion. The results showed that all of the independent variables had a negative effect on the level of corruption.

Hunady's (2019) study took place in European Union countries. The independent variable used is internet usage and the dependent variable is the level of corruption. The results showed that internet use had a negative effect on the level of corruption.

## **RESEARCH METHOD**

### **Types and Sources of Data**

The data used in this study are secondary data collected from several sources. Secondary data used in this study is data from ASEAN 5 countries (Indonesia, Malaysia, Thailand, Vietnam, and the Philippines) which includes data: Corruption Perceptions Index obtained from Transparency International, as well as

the Number of Female Workforce and Number of Male Workforce obtained from the World Bank.

**Analytical Tools and Empirical Models**

The analysis tool used is multiple linear regression with panel data, namely a combination of time series and cross section data. In determining the panel data model, there are three possibilities for Common Effect Model, Fixed Effect Model, and Random Effect Model. To choose between the Common Effect Model and the Fixed Effect Model, the Chow test is used (Greene, 2003). And to test the use of the Fixed Effect Model and the Random Effect Model, the Hausman Test is used (Hausman, 1978). After that, the detection of deviations from the classical assumptions is carried out (normality detection, heteroscedasticity detection, multicollinearity detection, and autocorrelation detection). Then the coefficient of determination ( $R^2$ ) will be calculated. Furthermore, the F test will be carried out and finally the t test.

The model or multiple linear regression equation used in this study is:

$$CORRUPT_{it} = \beta_0 + \beta_1 \text{LnINTERNET}_{it} + \beta_2 \text{LnWLF}_{it} + \beta_3 \text{LnMLF}_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

Information:

CORRUPT = Corruption level proxied by Corruption Perception Index

INTERNET = Number of internet users

WLF = the number of women in the workforce

MLF = the number of male labor force

Ln = Natural Logarithm

$i$  = *cross section* (Indonesia, Malaysia, Thailand, Vietnam, Phillipines)

$t$  = *time series* (1997-2019)

$\varepsilon$  = error

**RESULT AND DISCUSSION**

**Model Selection**

Model selection is done by using the Chow Test and Hausman Test. The results of the Chow and Hausman test can be seen in Table 1. From Table 1 it can be seen that the value of the Probability Cross-section Chi-square is 0.05 then the Fixed Effect model is chosen, and the value of the Chi-square Probability is 0.05 then the Fixed Effect model is selected.

**Regression Results**

The discussion of the regression results consists of the detection of deviations from various classical assumptions, namely normality detection, heteroscedasticity detection, multicollinearity detection, and autocorrelation detection. Then also displayed the coefficient of determination ( $R^2$ ), F test, and t test. These results are shown in Table 2.

**Table 1.** Chow Test and Hausman Test

<b>Chow Test (Pooled vs Fixed Effect)</b>	<b>Effects Test</b>	<b>Statistic</b>	<b>d.f.</b>	<b>Prob.</b>
	Cross-section F	20.144084	(4,107)	0.0000
	Cross-section Chi-square	64.556062	4	0.0000
<b>Hausman Test (Fixed Effect vs Random Effect)</b>	<b>Chi-Sq. Statistic</b>	<b>Chi-Sq. d.f.</b>	<b>Prob.</b>	
	16.061085	3	0.0011	

Source: E-views 8

**Table 2. Fixed Effect Panel Regression**

Variable	Coefficient	Std. Error	t-Statistic	Glejser test (Prob)	VIF
Ln Internet User	1.382	0.414	3.339***	0.426	1.041
Ln Labor Force Participation, Female	35.401	14.146	2.502**	0.096	9.495
Ln Labor Force Participation, Male	-39.160	18.763	-2.087**	0.172	9.653
C	88.000	106.841	0.824	0.609	
R-squared	0.834				
Adjusted R-squared	0.823				
F-statistic	76.904				
Prob(F-statistic)	0.000				
DW stat	1.665				
Prob(Jarque-Bera)	0.553				

\*\*significant by  $\alpha$  : 5%; \*\*\*significant by  $\alpha$  : 1%

### Classical Assumption Deviation Detection

#### Normality Detection

For the Jarque-Bera probability value is 0.553 ( $> 0.05$ ), this indicates that the data is normally distributed.

#### Heteroscedasticity Detection

Table 2 shows that the panel data regression equation does not occur heteroscedasticity, because after performing the Glejser test the independent variable is not significant at  $\alpha$ : 5% of the absolute value of the residuals.

#### Multicollinearity Detection

Table 2 shows that the VIF for all variables is less than 10 ( $<10$ ). This shows that there is no multicollinearity between variables.

#### Autocorrelation Detection

Autocorrelation detection was performed using the Durbin Watson Test. The results from Table 2 show that the Durbin-Watson test results are 1,665. The dL value is 1,444 and dU is 1,727. Because The DW test value is greater than DL and smaller than dU, there is no autocorrelation (Gujarati, 2006).

### Coefficient of Determination ( $R^2$ )

The results of the calculation show that the adjusted coefficient of determination is 0.823. This means that the ups and downs of corruption levels in ASEAN 5 countries (Indonesia, Malaysia, Thailand, Vietnam, and the Philippines) can be explained by the ups and downs of internet users, the number of women in the workforce, and the number of men in the workforce.

#### F test

F test probability value is 0.00 or less than 0.05. This means that the number of internet users, the number of women in the workforce, and the number of men in the workforce simultaneously affect the level of corruption in ASEAN 5 countries (Indonesia, Malaysia, Thailand, Vietnam, and the Philippines).

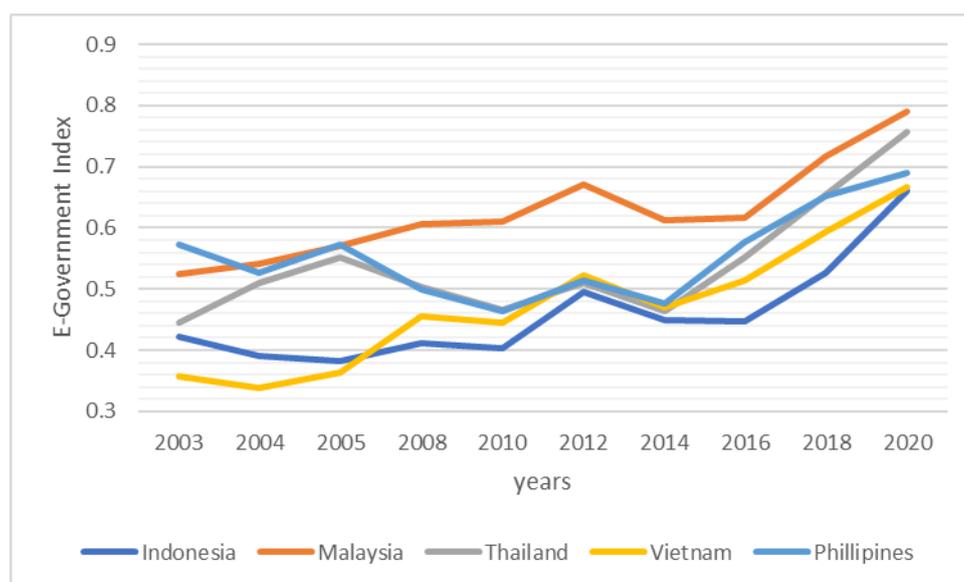
#### t Test

The number of Internet users has a significant and positive effect on the Corruption Perception Index. Or in other words, the greater the number of internet users, the more the Corruption Perception Index will increase. This means that the greater the number of internet users, the

lower the level of corruption (because the higher the Corruption Perception Index means the lower the level of corruption). These results are consistent with the research of Lio et al. (2011), Merhi and Ahluwalia (2018), and Hunady (2019). This result is also following the opinion of Andersen et al. (2010) that the improvement of technology, especially the internet, can reduce moral hazard because the information is more open and the speed of distribution is higher. On the other hand, the use of the internet also suppresses bribery because the intensity of direct meetings between principals and agents will be minimal because services are carried out online or what is known as E-Government. In terms of E-Government data, the five countries show a relatively increasing trend from year to year as shown in Figure 1.

Women's Labor Force participation has a significant and positive effect on the Corruption Perception Index. On the other hand, Male Labor Force Participation has a significant and negative effect on the Corruption Perception Index. This suggests that an increase in the percentage of the female workforce will reduce corruption,

whereas an increase in male labor force participation will increase corruption. This is in line with research conducted by Debski et al. (2018) and Swamy et al. (2001). However, there are some studies that do not match this research. Research by Frank et al. (2011) concluded that women are not always more intrinsically honest or reject corruption than men. Gangadharan et al. (2016) also found that female leaders were more fraudulent than their male counterparts in Indian villages, the reason being the anticipation that men would be less cooperative with them. Swamy et al. (2001) stated that it could be that gender influence on the level of corruption due to gender differences in social status, means that women are indeed less involved in socio-economic activities in the wider community and are more likely to do household domestic work so that women's knowledge of how to engage in corrupt activities is very lacking and not because genetically women are more honest. However, many other studies show that many women who hold public office are more honest than men, which can reduce the level of corruption in a country or place.

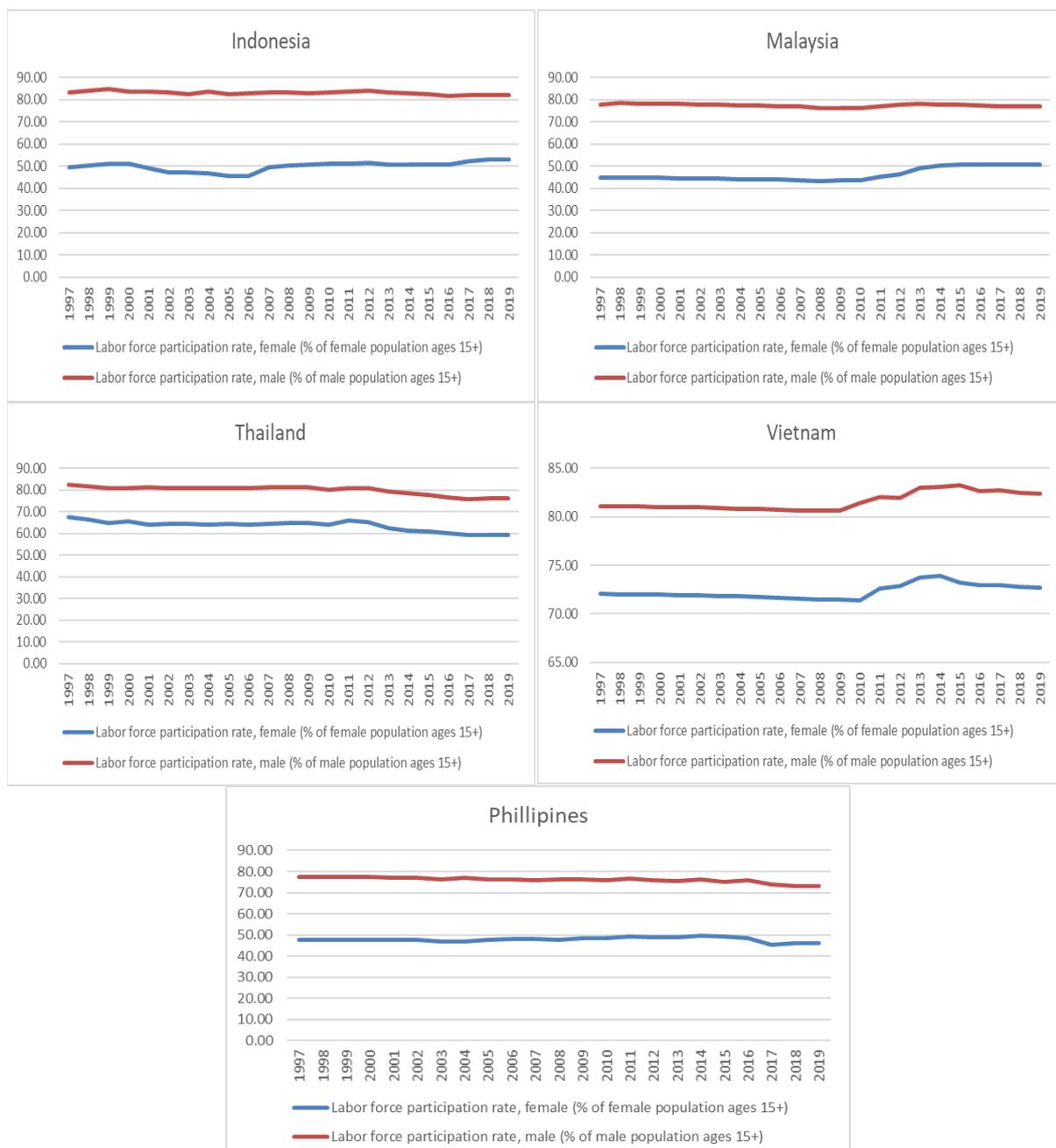


Source: United Nation

**Figure 1.** E Government Index ASEAN-5 2003-2020

Figure 2 shows that in ASEAN-5 countries, the male labor force participation is still far above the female labor force participation, except in Thailand and Vietnam where the percentage difference is not too far. Because of the significant role of women in suppressing the level of

corruption, gender equality needs to be considered in the self-actualization of doing work, meaning that women are given the rights as men in doing work and are given the right of nature as women. So that there is no discrimination between female and male workers.



Source: World Bank

**Figure 2.** Participation of Men and Women Workforce in ASEAN 5 1997-2019

## CONCLUSION AND RECOMMENDATION

The results show that increasing internet users will decrease the level of corruption. We know that the development of the internet is very rapid in all aspects of life, so it is necessary to maximize the system, especially services so that transparency and supervision can be created to reduce moral hazard, on the other hand, it will be more efficient in terms of distance and time to minimize the intensity of direct meetings which minimize bribery behavior.

Gender has a significant effect on the level of corruption where the participation of the female labor force will reduce the level of corruption and conversely, the participation of the male labor force actually increases the level of corruption, so it must be careful to use it to make decisions. Because it could be the influence of gender on the level of corruption due to gender differences in a social status where men have higher social status so that they can be involved in all activities in the wider community, while women are considered only fit to do domestic work in the household. This resulted in a lack of knowledge of women on how to be involved in corrupt activities, their lack of ability to make decisions regarding corruption activities, their lack of access to corrupt activities (Swamy et al., 2001). Nonetheless, several other studies have shown that it is true that women who hold public office are more honest than men. The policy implication of the results of this study is that gender equality in work needs to be improved, so that women get the same rights as men in terms of work, especially for public positions. The hope is that they are more honest than men so that the level of corruption can be reduced.

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