THE EFFECTS OF FEMALE EMPOWERMENT ON CORRUPTION: A CROSS COUNTRY ANALYSIS

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ABSTRACT

This study examines the relationship between corruption and gender equality at the country level across the world by testing the hypothesis that corruption is negatively related to the percentage of women in national parliaments in a cross-section of countries in 2015. Many gender-based studies and scholars in international organizations suggest that women are less corrupt than men, which leads to the gender-based approach to fight corruption. However, strong counterarguments have been made against this claim. While it is definitely the right call for governments to increase gender equality, it is also crucial to know if gender equality and corruption are associated if they want to make effective policies to fight corruption. The regression results in this study suggest that the share of women in national parliaments is not correlated with the level of corruption in countries. Neither is gender equality in general. Economic development, level of democracy and political stability are, however, significantly negatively related to the level of corruption in countries. Hence the international organizations and national governments should not see promoting female official in national parliaments or increasing gender equality as a solution to fight corruption.
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INTRODUCTION

Corruption is both a major cause and result of many global problems, especially in the developing countries. Therefore, it is very much interlinked with other issues like poverty and gender inequality etc. For years scholars and policymakers have been trying to find way to lower corruption. Although the reasons why corruption is more rampant in some countries than others remain a question to be answered, in recent years, many gender-based studies suggest that a possible solution can be women empowerment because women are more trustworthy and less corrupt than men. In other words, increase gender equality, especially through the way of increasing female participation in the public sector, could help to build cleaner governments.

Aside from the psychological factors that may cause women to view corruption differently from men, the fact that women are more vulnerable to social issues makes women more often the victims of corruption, which could eventually make women have lower tolerance of corruption. One example would be poverty. According to the UN, the great majority of the 1 billion people in poverty are female. Therefore, as people can be hurt by corruption not only as a whole at national level, but also in their daily dealings with education, health and other basic public services, in which women are often the more vulnerable group due to their overrepresentation of the poorest. In other words, although global problems and public policies affect both women and men, gender inequality may cause women to
be more exposed to certain problems than men. Hence, it is reasonable to draw a link between gender and corruption based on the assumption that women have lower tolerance of corruption.

As shown in figure 1, half of the top ten most gender equal countries also ranked top ten of the least corrupt countries in 2015.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Global Gender Gap Index</th>
<th>Country/Territory</th>
<th>Corruption Perceptions Index</th>
<th>Country/Territory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Iceland</td>
<td>Iceland</td>
<td>Denmark</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Norway</td>
<td>Norway</td>
<td>Finland</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Finland</td>
<td>Finland</td>
<td>Sweden</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Sweden</td>
<td>Sweden</td>
<td>New Zealand</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Ireland</td>
<td>Ireland</td>
<td>Netherlands</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Rwanda</td>
<td>Rwanda</td>
<td>Norway</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Philppines</td>
<td>Philippines</td>
<td>Switzerland</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Switzerland</td>
<td>Switzerland</td>
<td>Singapore</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Slovenia</td>
<td>Slovenia</td>
<td>Canada</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>New Zealand</td>
<td>New Zealand</td>
<td>Germany/Luxembourg</td>
<td></td>
</tr>
</tbody>
</table>

**Figure 1:** Source: World Economic Forum and Transparency International

Although there are also some obvious exceptions like Japan, which ranked 18th on the Corruption Perceptions Index and 101st on the Global Gender Gap Index, figure 1 suggests that while the direction of causality is undetermined, gender equality and corruption may likely be related.

Making the linkage between gender and corruption could help to develop better understanding of practices in the areas and make more effective public policies to target them. Therefore, the aim of this paper is to examine if gender equality and corruption is interlinked through a rigorous analytic model with both qualitative
and quantitative studies. Additionally, if there is a correlation between the two, which is a driving factor behind the other. In other words, does higher gender equality corruption lead to lower corruption or is it the other way around? Policymakers would be able to make more effective policies by knowing the possible correlation and direction of the correlation.

The following sections include a literature review of corruption and gender equality, data and econometric methods used to determine the correlation between corruption and gender equality, the regression results and lastly a discussion of the findings and policy implications.

**LITERATURE REVIEW**

Corruption is not a new phenomenon. However, it has attracted more attention internationally since the 1990s, especially from the academic and international development fields due to its pernicious impacts. Scholars realized that corruption not only undermines democracy and civil society, raises cost for government (Elliott, 1997 and Rose-Ackerman, 1999), but also hampers economic development and growth (Ades and DiTella, 1997 and Goudie and Stasavage, 1997). In other words, corruption aggravates and even causes a number of social problems, especially poverty. In addition, cost of corruption has increased with the spread of globalization. It hampers development greatly, in particular through international trade and transition of national economy (Tanzi, 1998).

Scholars have tried to find the causes of corruption for years. Some studies
suggest that legal system and regime type are closely related to corruption
(Sandholtz and Taagepera, 2005, Drury, et al, 2006, O’Connor and Fischer, 2012 and
Treisman, 2015). More specifically, those studies claim that common law systems
and civil law systems have different impacts on corruption due to their different
origins. Compare to civil law systems, common law systems could improve various
aspects of government performance including reducing corruption. In addition,
whether the government is democratic is also associated with corruption. The higher
levels of democracy are believed to be associated with less corruption. Some studies
suggest that culture, especially religion, can influence corruption as people would
have different views of it (Drury, et al, 2006, O’Connor and Fischer, 2012 and
Treisman, 2015). For example, certain culture may be more tolerant of giving and
receiving gifts regardless of the conflict of interests. Scholars and policymakers have
tried to find the solutions of corruption by looking for its causes. The exact causes of
corruption are still undetermined yet. However, in the process of finding solutions
of corruption, scholars in the major international organizations came up with a new
approach.

In the late 1990s and early 2000s, the World Bank became the pioneer on
gender-based approaches to fight corruption. The basic hypothesis is that women
are less corrupt than men, based on many early gender-based behavior studies.
Those studies show that women have higher standard of ethical behaviors (Glover et
al, 1997 and Reiss and Mitra, 1998), and have higher scores on integrity tests (Ones
and Viswesvaran, 1998).

Consistent with those social science studies, scholars from the World Bank in studies of over 100 countries they selected from Europe, Africa and Asia found that higher female participation rate in government is associated with lower level of corruption (Dollar, Fisman and Gatti, 1999). A few years later, follow up World Bank studies found that women are less involved in bribery than men, and countries with higher female participation rate in public life have cleaner governments and business, and therefore enjoy more productive economies (Mason and King, 2001 and Swamy et al, 2001). Inspired by those key papers published in late 1990s and early 2000s, many started to examine the association between gender equality and corruption.

Some studies suggest that gender-based behaviors and moral standards are not the only reason women deal with corruption differently than men. Instead they believe that the unequal power relations between women and men make women the more vulnerable group to corruption, which ultimately leads to different reaction of corruption (Hossain et al, 2010, Seeing Beyond the State, 2012, Chene and Fagan, 2014 and Gender and Corruption, 2015). Key findings from those studies have categorized the following main areas in which women are subjected to corruption and affected by it differently from men:

- **Access to basic public service and financial resources**: corruption in public service affects women disproportionately more than men because women are
not only the majority of the poorest, but also usually the ones taking care of children and elderly. Therefore, women need to deal with corruption more often than men when they try to get access to basic services like education, health and credit etc. In addition, corruption reduces public revenue, which often would result in lowering spending on basic public services like education and healthcare, making women more vulnerable to corruption than men.

- **Engagement in decision-making, especially in politics**: even without hard statistical evidence, it seems clear that there are still more men in power than women in most countries. Therefore, those who are already in power, more often male, are more likely to promote men rather than women to leadership positions. Due to the unbalanced relationship of male and female in the society, women have less access to the network that is pivotal to become decision makers.

- **Law enforcement in providing legal protection from violence and abuse**: women are often the victims of certain violence and crimes instead of perpetrators. Examples include but not limited to rape and human trafficking. In other words, corruption in judiciary branch and police department would enforce existing discriminatory practices by failing to provide legal protection to women.

- **Situations where negligence may hurt women more than men**: women do not just form the majority of poor but also the larger portion of refugees and
displaced population in conflicts and natural disasters. In those situations often
time most aid workers and peacekeepers are male, giving rise to opportunities
for corruption. For example, women are likely to be asked pay briberies in the
form of sexual favors in those situations.

Although women and men are subject to the same forms of corruption in
many ways, it is quite obvious that due to the unequal power relations and gendered
vulnerability, women are not only more exposed to corruption, but can also be hurt
in more ways than men. For example, the use of sex as an exchange in bribery, the
use of honor and shame as leverage to extort women, are both different forms of
corruption but tend to be unrecognized (Chene and Fagan, 2014). It is natural for
women to have lower tolerance for corruption than men since women are hurt by
corruption more easily and deeply than men.

As a result of these studies and reports, policymakers started to see that
promoting gender equality, especially female participation in politics, was a way to
minimize corruption. However, belief of this gender-based approach to fight
corruption has not gone unchallenged, saying the conclusions are draw from
inadequate evidence and fallacious reasoning (Sung, 2003, Goetz, 2007, Alatas et al,
counterargument of fairer system theory to the fairer sex theory, claiming that the
instead of gender, democratic institutions is the one influencing corruption. Later,
other cross-country studies also questioned the accuracy of the earlier findings. For
example, the selection of countries in those early studies is primarily composed of western countries (Sung, 2003 and Alatas et al, 2009). Some scholars contend that the correlation between gender and corruption is invalid because higher level of gender equality and lower level of corruption can both be attributed to the level of democracy (Sung, 2003, Goetz, 2007 and Esarey and Chirillo, 2013). In democracy, commitment to equality and citizen rights facilitate women’s entry into decision-making body while the government system ensures check and balance of power, which in essence prevents corruption (Sung, 2012).

In addition to institutional factors, some scholars also made the argument of culture differences being a factor behind gender-based behaviors towards corruption. More specifically, they suggest that Asian countries are less likely to have gender differences in tolerance of corruption due to the culture differences (Alatas et al, 2009). Interestingly, this also applies to the Asian countries in Swamy’s sample, though the whole sample supports the fairer sex theory, which claims that women are less corrupt than men (2001).

Other findings also suggest that women in different countries may have different levels of tolerance of corruption due to the fact that women are more risk averse than men (Alatas et al, 2009 and Esarey and Chirillo, 2013). In other words, the corruption gender gap may be culture specific. While in democratic countries women would have lower tolerance of corruption than men, there will be less visible corruption gender gap in countries where the culture or system prohibits people
There is no doubt that women and men are different in many ways, which contributes to their seeing corruption in different perspectives. Studies have found negative correlation between gender equality and corruption, but failed to examine it in more detail. As a result, the direction of causality, if there is any, is also in question. For example, are women inherently less corrupt, or is the governing system the precondition behind the conclusion that higher female participation rate in public service leads to lower level of corruption. Many developing countries are promoting the gender-based strategy due to the World Bank’s endorsement (Sung, 2012). Those policies would not be effective if gender equality is in fact not directly linked to corruption.

While it is true that corruption has different impacts on women than men, it does not necessarily mean that women would have lower tolerance of corruption than men. In other words, whether increasing the share of female officials in public sector or gender equality in the society is a solution to fight corruption remains unclear. Thus, this study will examine the corruption gender gap relationship through cross-country analysis with different factors on gender equality and corruption.

**HYPOTHESIS**

**Corruption is negatively related to percentage of women in national parliaments in a cross-section of countries in 2015.**
REGRESSION MODEL and DATA SOURCES

The model is as follows:

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \varepsilon \]

Where:

\( Y = \text{corr\_index}: \) Corruption level, measured by Corruption Perceptions Index: 0 (most corrupt) to 100 (least corrupt).

\( X_1 = \text{lh\_pct}: \) share of women in national parliaments.

\( X_2 = \text{gengap\_index}: \) Gender Gap Index: 0 (most unequal) to 1 (most equal).

\( X_3 = \ln\text{GDP\_per\_cap}: \) Economic development level, measured by the natural logarithm of GDP per capita.

\( X_4 = \text{democ\_index}: \) Democracy level, measured by Democracy Index: 0 (least democratic) to 10 (most democratic).

\( X_5 = \text{polistab\_index}: \) Political stability level, measured by Political Stability Index: -2.5 (least stable) to 2.5 (most stable).

\( X_6 = \text{pctpop\_fem}: \) Percentage of women in population.

\( X_7 = \text{Asian\_cou}: \) Indicator variable for whether a country is an Asian country.

\( X_8 = \text{adv\_eco}: \) Indicator variable for whether a country is an advanced economy

\( X_9 = \text{pctpop\_fem\_lh\_pct}: \) Interaction term of share of all women in total population and share of women in national parliaments.

\( \varepsilon = \) unexplained variance, error term

\( \beta_0 = Y\text{-intercept} \)
\[ \beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7, \beta_8, \beta_9 = \text{coefficients of respective independent variable} \]

**Table 1. Primary variable definitions, predicted relationships and justification**

<table>
<thead>
<tr>
<th>Dependent Variable</th>
<th>Definition</th>
<th>Variable Name</th>
<th>Expected Sign</th>
<th>Source</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Y)</td>
<td>Corruption level, measure by Corruption Perceptions Index: 0 (most corrupt) to 100 (least corrupt)</td>
<td>corr_index</td>
<td></td>
<td>Transparency International</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Independent Variable</th>
<th>Definition</th>
<th>Variable Name</th>
<th>Expected Sign</th>
<th>Source</th>
<th>Justification</th>
</tr>
</thead>
<tbody>
<tr>
<td>(X_4)</td>
<td>Democracy, measured by Democracy Index: 0 (least democratic) to 10 (most democratic)</td>
<td>democ_index</td>
<td>+</td>
<td>Economist Intelligence Unit</td>
<td>Esarey and Chirillo, 2013, Sung, 2012.</td>
</tr>
<tr>
<td>(X_5)</td>
<td>Political stability, measured by Political Stability Index: -2.5(least stable) to 2.5 (most stable)</td>
<td>polistab_index</td>
<td>+</td>
<td>World Bank</td>
<td>Sung, 2012.</td>
</tr>
<tr>
<td>(X_6)</td>
<td>Percentage of all women in total population</td>
<td>pctpop_fem</td>
<td>+</td>
<td>World Bank</td>
<td>Sung, 2012.</td>
</tr>
<tr>
<td>(X_8)</td>
<td>Indicator variable for whether a country is an advanced economy</td>
<td>adv_eco</td>
<td>+</td>
<td>World Bank</td>
<td>Stensola, et al. 20115</td>
</tr>
<tr>
<td>(X_9)</td>
<td>Interaction term of share of all women in total population and share of women in national parliaments</td>
<td>pctpopfem_lhpct</td>
<td>+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This model examines the correlation between corruption and gender equality, along with other variables that may influence the level of corruption. While most studies use the percentage of women in parliament as the gender equality variable (Swamy et al, 2001, Esarey and Chirillo, 2013, Dollar et al, 1999, Sung, 2012), this paper will also use Gender Gap Index, a more comprehensive index on gender equality. This will help governments decide whether to focus on gender equality in
the parliaments or in the whole society, as possible ways to lower corruption.

Among other variables, a very important one is the level of democracy. As the counterargument of fairer sex theory claiming women are less corrupt than men, it is also referred as fairer system theory (Sung, 2012). Along with the level of democracy, scholars also believe that political stability in countries is correlated with corruption (Dollar et al, 1999, Sung, 2012, Esarey and Chirillo, 2013). Other factors important to level of corruption as noted in the literature review before like GDP per capital, share of women in population and life expectancy are also included in the model (Sung, 2012). Some studies used fixed effects model to choose countries based on their level of economic development when examining the data (Stensota, et al. 2015). Hence a dummy variable of advanced economy is also included to measure the economic development of countries. Lastly, several studies have mentioned specially that Asian countries do not have the corruption gender gap (Dollar et al, 1999, Alatas et al, 2009 and Swamy et al, 2001). Therefore this dummy variable of Asian country is included in the model.

**REGRESSION ANALYSIS**

Before examining the relationship between corruption and gender inequality formally through regression analysis, a statistical overview of the relationship is presented.
Table 2. Average country corruption index rank percentage of female participation rate in national parliaments and gender gap index in 2015

<table>
<thead>
<tr>
<th>Country</th>
<th>Corruption Index¹</th>
<th>% of Women in National Parliaments²</th>
<th>Gender Gap Index³</th>
<th>No. of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>All countries</td>
<td>42.57</td>
<td>22.03</td>
<td>0.70</td>
<td>168</td>
</tr>
<tr>
<td>High (Corruption index 8-30)</td>
<td>22.71</td>
<td>19.26</td>
<td>0.67</td>
<td>52</td>
</tr>
<tr>
<td>Medium (Corruption index 31-55)</td>
<td>40.53</td>
<td>21.85</td>
<td>0.69</td>
<td>78</td>
</tr>
<tr>
<td>Low (Corruption index 56-98)</td>
<td>73.08</td>
<td>26.51</td>
<td>0.74</td>
<td>38</td>
</tr>
</tbody>
</table>

Corruption index: scale of 0-100 where 0=highest level of perceived corruption and 100=lowest level of perceived corruption. The index is from the Transparency International, which used a number of available sources that capture the perceptions of corruption to calculate the index.

Gender gap index: scale of 0-1 where 0=least gender equal and 1=most gender equal. The index is from the World Economic Forum and measures gender equality in the following four areas: economic participation and opportunity, educational attainment, health and survival and political empowerment.

Table 2 shows that on average that lower corrupt countries tend to have higher share of women in national parliaments and women tend to be less disadvantaged overall. On average, the least corrupt countries have 7.25 percentage points and 4.68 percentage points more women working in national parliaments than the most corrupt and medium corrupt countries, respectively. In other words, higher female participation rate in national parliaments is associated with much lower level of corruption.

¹ Transparency International
² Inter-Parliamentary Union
³ World Economic Forum
Table 3. Average country corruption index rank, percentage of female participation rate in national parliaments and gender gap index for Asian countries and non-Asian countries in 2015

<table>
<thead>
<tr>
<th>Country</th>
<th>Corruption Index</th>
<th>% of Women in National Parliaments</th>
<th>Gender Gap Index</th>
<th>No. of Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian countries</td>
<td>38.16</td>
<td>17.81</td>
<td>0.66</td>
<td>57</td>
</tr>
<tr>
<td>High (Corruption index 8-30)</td>
<td>22.92</td>
<td>20.52</td>
<td>0.65</td>
<td>24</td>
</tr>
<tr>
<td>Medium (Corruption index 31-55)</td>
<td>41.04</td>
<td>15.88</td>
<td>0.66</td>
<td>23</td>
</tr>
<tr>
<td>Low (Corruption index 56-98)</td>
<td>68.1</td>
<td>15.35</td>
<td>0.68</td>
<td>10</td>
</tr>
<tr>
<td>Non-Asian countries</td>
<td>44.84</td>
<td>24.12</td>
<td>0.72</td>
<td>111</td>
</tr>
<tr>
<td>High (Corruption index 8-30)</td>
<td>22.54</td>
<td>18.18</td>
<td>0.69</td>
<td>28</td>
</tr>
<tr>
<td>Medium (Corruption index 31-55)</td>
<td>40.31</td>
<td>24.42</td>
<td>0.70</td>
<td>54</td>
</tr>
<tr>
<td>Low (Corruption index 56-98)</td>
<td>74.79</td>
<td>29.12</td>
<td>0.76</td>
<td>29</td>
</tr>
</tbody>
</table>

Corruption index: scale of 0-100 where 0=highest level of perceived corruption and 100=lowest level of perceived corruption. The index is from the Transparency International, which used a number of available sources that capture the perceptions of corruption to calculate the index.

Gender gap index: scale of 0-1 where 0=least gender equal and 1=most gender equal. The index is from the World Economic Forum and measures gender equality in the following four areas: economic participation and opportunity, educational attainment, health and survival and political empowerment.

Some studies (Alatas et al, 2009 and Swamy, 2001) claim that in Asian countries, women and men have the same level of tolerance of corruption. Consistent with this claim, table 3 suggest that among Asian countries, on average, although lower corruption tend to help gender equality, it is not necessarily associated with higher share of women in national parliaments. On the other hand, the negative correlation between corruption and share of women in national parliaments is clear in non-Asian
countries. Table 3 also shows that on average, Asian countries are more corrupt and less gender equal than non-Asian countries. However, it is not surprising that on average, most Asian countries have lower female participation rate in national parliaments considering the fact that most Islamic countries are in Asia and women are generally not active in political life in those countries. Some of the Islamic countries even have no female presence in national parliaments.

Table 4. Average country corruption index, percentage of female participation rate in national parliaments and gender gap index in 2015

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Scholars, who do not believe in the fairer sex theory, argue that the democratic

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4 In order to make gender gap index easier to compare in the same chart, all gender gap index is multiplied by 10.
government is what really links with the level of corruption in countries, not discrimination against women (Sung, 2003, Alatas et al, 2009 and Esarey and Chirillo, 2013). Since the level of democracy is often times linked with the level of economic development, it is reasonable to also question the correlation between economic development and corruption in countries. Therefore, chart 1 presents the cross comparison of countries by dividing them into groups based on their economic development and level of democracy.

Table 4 supports the fairer system argument by showing that on average, full democracies are not only less corrupt, but also have the higher female participation rate in national parliaments and scored higher on gender gap index. However, among the 28 advanced economies, 20 of them are also considered as the only full democracies in the world. Consequently, on average, the advanced economies are also much less corrupt, have a lot higher female participation rate in national parliaments and are more gender equal than the rest of the world.

Table 2, 3 and 4 show that interestingly, although on average, full democracies follow the fairer sex theory by having the cleanest government, highest female participation rate in national parliaments and scoring highest gender gap index, Asian countries do not. Asian countries have the least women working in national parliaments and scored lowest on gender gap index, but are not the most corrupt group of countries. In summary, table 2, 3 and 4 show a consistent correlation between corruption and female participation rate and gender equality across the
world except in Asian countries. Therefore the question remains unanswered, could have more women in national parliaments or calling for greater gender equality lead to less corruption?

**Table 5. Regression results, dependent variable is corruption**

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>(1) Dependent Variable: Corruption index (All countries)</th>
<th>(2) Dependent Variable: Corruption index (Asian countries)</th>
<th>(3) Dependent Variable: Corruption index (Non-Asian countries)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of women in national parliament</td>
<td>0.0755 (0.0751)</td>
<td>1.214 (1.280)</td>
<td>-3.962 (-0.887)</td>
</tr>
<tr>
<td>Gender gap index</td>
<td>0.149 (0.00671)</td>
<td>-77.31* (-1.900)</td>
<td>20.87 (0.712)</td>
</tr>
<tr>
<td>Log GDP per capital</td>
<td>3.202*** (3.142)</td>
<td>4.422*** (2.286)</td>
<td>0.738 (0.509)</td>
</tr>
<tr>
<td>Democracy index</td>
<td>2.317*** (3.004)</td>
<td>1.988*** (1.853)</td>
<td>3.621*** (2.943)</td>
</tr>
<tr>
<td>Political stability index</td>
<td>7.109*** (4.933)</td>
<td>6.102*** (3.186)</td>
<td>7.597*** (3.682)</td>
</tr>
<tr>
<td>% of women in total population</td>
<td>-0.746** (-2.079)</td>
<td>-0.389 (-1.016)</td>
<td>-0.629 (-0.276)</td>
</tr>
<tr>
<td>Asian Country</td>
<td>1.421 (0.599)</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Advanced economy</td>
<td>14.16*** (4.507)</td>
<td>19.67*** (2.366)</td>
<td>14.96*** (4.110)</td>
</tr>
<tr>
<td>Interaction of % of women in national parliament and % of women in total population</td>
<td>-0.00102 (-0.0507)</td>
<td>-0.0242 (-1.156)</td>
<td>0.0783 (0.889)</td>
</tr>
<tr>
<td>Constant</td>
<td>38.55 (1.570)</td>
<td>64.42* (1.878)</td>
<td>30.83 (0.281)</td>
</tr>
<tr>
<td>Observations</td>
<td>118</td>
<td>31</td>
<td>87</td>
</tr>
<tr>
<td>R-squared</td>
<td>0.819</td>
<td>0.858</td>
<td>0.843</td>
</tr>
<tr>
<td>F-Statistic</td>
<td>54.2</td>
<td>16.56</td>
<td>52.27</td>
</tr>
</tbody>
</table>

Table 5 presents the results of the regression analysis of female participation rate in national parliaments on corruption index across the world.\(^5\) Column 2 and column 3 show the results for Asian countries and non-Asian countries, respectively.

\(^5\) As shown in appendix 1, the model has no multicollinearity problem. Additionally, as shown in appendix 2, the model has no heteroscedasticity problem either.
The results confirm that female participation rate in national parliaments and
corruption index are positively related, but not statistically significant. That is, the
regression results do not support the hypothesis that female participation rate in
national parliaments and level of corruption in countries are significantly negatively
related. In addition, the results show that gender equality index, namely gender
equality status in general, is not related to the corruption level in countries across the
world.

Democracy index, political stability and whether the country is advanced
economy are all important predictors of corruption for countries, including both
Asian and non-Asian countries. On average, across the world, one point increase in
political stability index leads to a 7 point increase in corruption index, significantly lower
corruption. One possible reason for the significant improvement could be the fact
that stable governments tend to have better rule of law that helps to enforce and
ensure more transparency in governments. The level of economic development is
also usually positively correlated with political stability. Therefore, not surprisingly,
each dollar of log GDP per capita adds, on average, 3 points to countries’ corruption
index, significantly lower corruption. Additionally, relative to non-advanced economies,
advanced economies score 14 points higher on corruption index. In other words, the
results suggest that the richer a country gets, the less corrupt it is.

The findings support the fairer system theory (Sung, 2003, Alatas et al, 2009 and
Esarey and Chirillo, 2013). Political stability and democratic government do not only
lead to higher economic development, but also better rule of law that makes corruption a higher risk decision. The fairer sex theory that was proposed by scholars (Dollar, Fisman and Gatti, 1999, Mason and King, 2001, Swamy et al, 2001, Hossain et al, 2010, Seeing Beyond the State, 2012, Chene and Fagan, 2014 and Gender and Corruption, 2015), mostly from international organization like the World Bank, was not strong enough to serve as evidence to make related public policies.

Another interesting finding is the correlation between share of women in total population and corruption. The negative coefficient suggests that greater share of women in total population appears to lead to lower corruption index. In other words, having more women in total population actually increases the level of corruption in countries. One possible reason for this might be that the share of women in population includes all female, even children. Meanwhile, developing countries tend to have larger family size and more children.

The regression model has a degree of mis-specification problem. In order to minimize the problem, the model tried to include independent variables including percentage of Protestants, dummy variables of former British colony and common law system that have been used in some studies (Treisman, 2000 and Stensota, et al. 2015). However, including those variables did not help to advance the model. Therefore they have been dropped and were not included in the final regression model.

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6 See appendix for details
POLICY RECOMMENDATION/CONCLUSION

Gender equality has improved significantly since the late 1990s globally. Women now are able to enjoy the same rights as men in most countries, by law, at least. It is also true in most cases, that the level of gender equality in a country is associated with development in many other aspects of that country. However, it does not mean gender equality is always the means to the better end. The findings in this study suggest that although on average, countries with higher percentage of women in national parliaments are less corrupt, having more women working in national parliaments is not correlated with lower level of corruption in countries across the world. Meanwhile, the correlation between gender equality index and corruption level suggests that higher gender equality is not linked to less corruption in countries either.

The findings in this study support the fairer system theory that was proposed as counterargument of the fairer sex theory by some scholars since the early 2000 (Sung, 2003 Goetz, 2007, Alatas et al, 2009 and Esarey and Chirillo, 2013). The fairer sex theory was brought up and supported by international organizations, especially the World Bank. Many policies in developing countries were made under the influence these international organizations. While encouraging female participation in political life and increasing gender equality both are certainly just and necessary steps towards a better society, it is also important to recognize that they do not in
themselves offer an effective solution to corruption. On the other hand, the findings in this study show a clear tendency of less corrupt countries having more women working in national parliaments and higher gender equality. In other words, the factors that make a country less corrupt likely are also the ones that make the country more gender equal.

The findings in this study support this by showing that economic development, political stability and democratic institutions are the best solutions to corruption. On one hand, political stability and democratic institutions ensure the economic activities and female rights. On the other hand, more developed a country is, likely more gender equal it gets because women have more opportunities to participate in all kinds of activities. For example, women are physically weaker than men, which gives women more disadvantages in developing countries as they would have more difficulties to find works that would allow women to achieve financial independence, the foundation of true gender equality.

Promoting gender equality and empowering women are definitely noble enterprises that both international organizations and national governments should keep doing. However, it is also important for them to reevaluate those two as a policy option to solve corruption. After all, it is not women, or at least not just women, in national parliaments or the society as a whole that make a less corrupt government, but the political stability, democratic institutions and economic development of the country that reduce and prevent corruption. Policymakers, in particular, should take
those into account if they want to effectively reduce corruption in the country.
WORKS CITED


APPENDIX: SUPPLEMENTARY TABLES

Table A1. Pairwise correlations between independent variables (significant at 5%)

<table>
<thead>
<tr>
<th></th>
<th>lh_pct</th>
<th>gengap_index</th>
<th>lnGDPperc</th>
<th>democ_index</th>
<th>polistab_index</th>
<th>pctpop_fem</th>
<th>Asian_cou</th>
<th>adv_eco</th>
<th>pctpopfem_lhptc</th>
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</thead>
<tbody>
<tr>
<td>lh_pct</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>gengap_index</td>
<td>0.6125</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.00002</td>
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</tr>
<tr>
<td>lnGDPperc</td>
<td>0.0697</td>
<td>0.4025</td>
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<td>democ_index</td>
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<td>0.5994</td>
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<td>1</td>
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<tr>
<td>polistab_index</td>
<td>0.1589</td>
<td>0.5103</td>
<td>0.6569</td>
<td>0.578</td>
<td>1</td>
<td></td>
<td></td>
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<tr>
<td>pctpop_fem</td>
<td>0.2666</td>
<td>0.3042</td>
<td>-0.1892</td>
<td>0.3396</td>
<td>-0.0535</td>
<td>1</td>
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<td>Asian_cou</td>
<td>-0.381</td>
<td>-0.3607</td>
<td>-0.0003</td>
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<tr>
<td>pctpopfem_lhptc</td>
<td>0.9957</td>
<td>0.625</td>
<td>0.0587</td>
<td>0.232</td>
<td>0.1589</td>
<td>0.3274</td>
<td>-0.4019</td>
<td>0.3218</td>
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</tbody>
</table>

*Besides the interaction term, there is no variable has a correlation that is over 0.8, which means the model has no multicollinearity problem.

Table A2. Heteroscedasticity test

```
estat imtest
```

Cameron & Trivedi's decomposition of IM-test

<table>
<thead>
<tr>
<th>Source</th>
<th>chi2</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heteroskedasticity</td>
<td>62.26</td>
<td>51</td>
<td>0.1341</td>
</tr>
<tr>
<td>Skewness</td>
<td>19.85</td>
<td>9</td>
<td>0.0189</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>0.28</td>
<td>1</td>
<td>0.5967</td>
</tr>
<tr>
<td>Total</td>
<td>82.39</td>
<td>61</td>
<td>0.0355</td>
</tr>
</tbody>
</table>

* The White’s Test result shows that the model has no heteroscedasticity problem.
Table A3. Linktest and Ramsey REST test using powers of the fitted values of corr_index (all countries)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>Number of obs = 134</th>
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</thead>
<tbody>
<tr>
<td>Model</td>
<td>47645.8871</td>
<td>2</td>
<td>23822.9435</td>
<td></td>
</tr>
<tr>
<td>Residual</td>
<td>8523.54575</td>
<td>131</td>
<td>65.0652347</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56169.4328</td>
<td>133</td>
<td>422.326563</td>
<td></td>
</tr>
</tbody>
</table>

| corr_index | Coef.    | Std. Err. | t   | P>|t| | [95% Conf. Interval] |
|------------|----------|-----------|-----|------|----------------------|
| _hat       | 0.5745207 | 0.1930614 | 2.96| 0.004| 0.1910167 - 0.9580247 |
| _hatsq     | 0.0042828 | 0.0019154 | 2.24| 0.027| 0.0004938 - 0.0080719 |
| _cons      | 8.941276  | 4.381862  | 2.04| 0.043| 0.2729071 - 17.60964  |

Ramsey RESET test using powers of the fitted values of corr_index

Ho: model has no omitted variables

F(3, 121) = 4.32
Prob > F = 0.0062

*The Linktest and Ramsey RESET test result show that the model has specification errors, which could be caused by omitted variables.*