



Low Wage of Civil Servant and National Cultures: How They Relate to Corruption?

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“Corruption ought not to be an inevitable product of democracy.”

Mahatma Gandhi

ABSTRACT

This paper discussed two determining factors of corruption which are (1) low wage of civil servants and (2) national cultures. The author emphasized on the causal relationship between corruption and these two variables. This paper showed how to measure the corruption behavior and how to quantify the national cultures. Also it proposed fair wage-corruption model which it can be argued that low wages of civil servants could be explained as the cause of corruption. Furthermore, the author proposed three theoretical models which explained the relationship of corruption, namely low wage of civil servant and national cultures.

Keywords: Corruption, Low wage, National Culture

Introduction

The quotation of Gandhi about corruption reflects the real instinct of human being and the nature of society. Though we are in the free world or democracy country, we still recognize the existence of corruption. In general, we always expect that corruption should be eliminated entirely yet it might be the daydream because it is human nature. Moreover, some societies seem to accept this behavior.

Although economists attempt to explain corruption as one of the incentives in the economy, several economists argue that corruption has mostly been a matter of political science and sociology. However, the paper of

Susan Rose Ackerman in 1975, *The Economics of Corruption*, created the new research area regarding the relationship between economics and corruption hence the economics of corruption tries to apply economic tools to the analysis of corruption.

Currently, Faizul Latif Chowdhury (2008) refers to JSTOR database that it can search more than 3,000 articles which the word, corruption, appeared in the title, and at least 500 of which focus directly on different aspects relating to corruption by using economic framework. For this reason, Chowdhury has categorized the economic analyses of corruption into 14 broad categories.²

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² 14 categories consist of economic causes of corruption / rent seeking in the public offices, including judiciary/ corruption as an economic behavior/ demand and supply of corruption, optimal level of corruption, optimal level of bribery and efficiency of the market in corruption/ impact of corruption on the competitiveness in the market for goods and services/ measurement of the level of corruption, comparative country studies/ corruption in different economic activities/ sources of corruption/ corruption in private sector/ impact of corruption on economic growth, national development and level of poverty/ welfare impact of corruption/ factors affecting corruption/ relation between corruption and other economic social cultural aspects/ economic factors relating to anticorruption programs.

Likewise, economists, such as Mark Levin, Ann O. Kruger and Francis Lui, who are interested in Economics of Corruption, attempt to approve corruption under microeconomic theoretical aspects as principal-agent problem, game theoretical approaches toward corruption, rent seeking behavior, and free riding. Similarly, the macroeconomists, such as Paolo Mauro, Vito Tanzi and Shang Jin Wei, attempt to link the corruption with macroeconomic- variables that the estimation of corruption has affected economic development.

The motivation of this research is the author's interest in economic causes of corruption as mentioned in Chowdhury (2008); however, many economists believe that there are many causes of corruption. For example, Arvind Jain (2001) concludes that existence of corruption requires three components to co-exist, i.e. more discretionary power, economic rents and the weakness of legal/judicial system. Therefore, corruption occurs when higher rents are related to the misuse of discretionary powers as well as flawed legal/judicial. On the other hand, Johann Graf Lambsdorff (2005) clarifies the causes of corruption in eight sources, i.e. government size and decentralization, institutional quality, low level competition among private firms, poor recruitment and low salaries in public sector, less press freedom and judicial, democracy and political system, cultural determinants, and finally the impact of gender on corruption.

In this paper, the author focuses on two factors of corruption, low wage of civil servants and national cultures that might be the causes of corruption. For this reason, the author emphasizes on the relationship between corruption and those two variables which corruption is the dependent variable while both factors are independent variables.

This paper is organized as follows. The next section discussed how to measure the

corruption behavior that we make use of the corruption perception index (CPI) to evaluate the corruption activities. In section III, the author proposes the fair wage-corruption model that it could explain the relationship between civil servant wages and corruption. Section IV clarified how to quantify the national cultures that the author utilizes the Hofstede score to explain the characteristics of national cultures. The last section showed models for analyzing the relationship between corruption and those two variables using the linear regression analysis. In addition, this paper discussed the contribution or improvement of the study.

How to measure the corruption behavior

Initially, the difficulty of this paper is the measurement of corruption behavior. Shang-Jin Wei (1999) mentions several indices to measure the corruption such as Business International index (BI), International Country Risk Guide index (ICRG), Global Competitiveness Report index (CGR) and Transparency International index (TI). For Business International Index, Paulo Mauro (1995) utilizes it as subjective indices of corruption while Phillip Keefer and Stephen Knack (1995) employ the ICRG to examine the impact of government institution on investment and growth for 97 countries over the 1974 to 1989 period. This index measures the quality of governments such as rule of law, corruption activities, expropriation risk, risk of contract repudiation by the government, and the quality of the bureaucracy. For the latter index known as CPI or Corruption Perception Index, it is similar to the corruption measurement that is based on a non-profit organization like the Transparency International founded to fight corruption around the world. This organization defines corruption as "the abuse of entrusted power for private given".

Transparency International has launched CPI since 1995. It ranks countries on a scale of 0 to 10 that most corrupt countries close to 0 and

most honest at 10. This annual index is based on surveys of businesspeople, risk analyst, and the public. Johann Graf Lambsdorff, who created this index, attempted to develop the reliable CPI. Early CPI used opinion surveys, but currently the Transparency organization requires at least three available sources in order to rank a country in the CPI. For this reason, CPI is a composite index or “a poll of polls” that this organization utilizes the data from several sources such as Asian Development Bank (ADB), African Development Bank (AFDB), Country Policy and Institutional Assessment or CPIA of World Bank, International Institute for Management Development (IMD), World Economic Forum (WEF), etc.

In the methodology of the 2007 corruption perception index, Johann Graf Lambsdorff (2007), provides 14 sources to include in the 2007 CPI, originating from 12 independent institutions. However, it seems that all sources generally apply a definition of corruption as “the misuse of public power for private benefit”, for instance, bribing of public officials, kickbacks of public procurement, or embezzlement of public funds. Hence, these sources attempt to assess the extent of corruption among public officials and politicians in the countries. The survey questions that these sources have been asked are summarized in Table 1.

Table 1 Twelve independent institutions that provide the data for generating CPI.

Sources	Survey subject questions	Who was surveyed	Criteria
ADB, AFDB and the CPIA	Ineffective audits, Conflicts of interest, Policies being biased towards narrow interests, Policies distorted by corruption, and Public resources diverted to private gain	Country teams, experts inside and outside the bank	Scale from 1 (bad) to 6 (good)
EIU Economic Intelligence Unit	Incidence of corruption and defines corruption as the misuse of public officer for personal (or party political) in term of financial gain	Expert staff assessment	Scale from 0 (very low incidence of corruption) and 4 (very high incidence of corruption)
FH Freedom House	Extent of corruption as practiced in governments, as perceived by the public and as reported in the media, as well as the implementation of anticorruption initiatives	Assessment by experts originating or resident in the respective country.	
IMD International Institute for Management Development	Bribing and corruption prevail or do not prevail in the economy.	Elite businesspeople	
MIG Merchant International Group	Corruption, ranging from bribery of government ministers to inducements payable to the “humblest clerk”	Expert staff and network of local correspondents	

PERC Political & Economic Risk Consultancy	How serious do you consider the problem of corruption to be in the public sector?	Expatriate business people	Scale from 0 (good) to 10 (bad)
UNECA United Nations Economic Commission for Africa	“Corruption Control”. This includes aspects related to corruption in the legislature, judiciary, and at the executive level, as well as in tax collection.		
WEF World Economic Forum	Undocumented extra payments or bribes connected with various government functions	Senior business leaders; domestic and international companies	
BTI Bertelsmann Foundation	The government’s capacity to punish and contain corruption	Network of local correspondents and experts inside and outside the organization	
GI Global Insight, formerly World Markets Research Centre	The likelihood of encountering corrupt officials, ranging from petty bureaucratic corruption to grand political corruption	Expert staff assessment	

From table 1, the surveyed question focuses on the corruption perception of respondents in each country. However, Johann Graf Lambsdorff (2007) attempts to eliminate some bias especially “home country bias” so he separates two groups of sources to evaluate the extent of corruption in countries done by non resident expert and resident business.

The first group consists of ADB, AFDB, BTI, CPIA EIU, MIG and GI which institute a network of local correspondents and guide the resulting quantitative assessments by coordination and discussion with staff members at their headquarters. These non-residents, often located in the western hemisphere such as North America and Western Europe, are influential in turning in their experienced perception with regard to foreign countries.

For the second group, IMD, FH, PERC, UNECA and WEF, gathers assessments made by residents with respect to the performance of their home country. These respondents are partly nationals but sometimes also resident expatriates from multinational firms.

However, each of the sources uses its own scaling system thus the data need to be standardized before each country’s mean value can be determined. The next step of CPI methodology is to determine the mean value for a country and standardization; however, this index attempts to combine sources that have different distribution while there is some information loss in this technique. Thus it allows all reported scores to remain within the range of CPI between 0 and 10. Further Lambsdorff uses a beta transformation to perform on scores that it could increase the standard deviation among

all countries included the CPI and avoids the process by which the matching percentiles technique results in a smaller deviation from year to year. After that, all values for country are averaged to determine a country's score. Hence, the CPI score and rank are accompanied by the number of sources, high-low range standard deviation and confidence range for each country.

For confidence range, it seems to be that Lambsdorff started to calculate in 2002 that a 90% confidence range is established, where there is 5% probability that the value is below and 5% probability that the value is above this confidence range.

The corruption perception index has been developed since 1995 especially the reliable index; however, Transparency International, non-government organization, attempts to draw on this index to reflect the level at which corruption is perceived by public as affecting their lives. Furthermore, this organization makes an effort to fight the corruption problem by developing various indices as bribe payers index (BPI) or global corruption barometer with the intention of sending the message of global corruption. For this reason, Hendrik Van den berg (2001) believes that this index probably is the best available information on corruption around the world.

However, corruption perception index has been criticized as the perception of a selected few since it overlooks the perception of wider population and emphasizes on perception of the experts. In addition, some have viewed that this index analyzes a "mere perception" and the method followed in preparing the index could not measure institutional corruption. This observation corresponds with Hossein Zillur Rahman, a Bangladeshi economist, who criticizes

this method that it is more important to look into the causes of corruption, to look at whole perspective. Similarly, Francisco Javier (2007) identifies four main problems of this index, i.e., the perception problem, the error problem, the insufficiency problem and the actionable problem.

Even though this index seems to be assaulted particularly its trustworthiness, nowadays this index has been utilized in research area especially "The economics of corruption". For example, the empirical studies of Shang-Jin Wei³ employ CPI to investigate the relationship between corruption and capital flows while Hiren Sarkar and M. Aynul Hasan (2001) use CPI to find the impact of corruption on the efficiency of investment. Interestingly, these studies are cross section analysis that researchers attempt to employ CPI to study the relationship between corruption and other economic variables; however, the time series analysis of CPI is rarely used in corruption research.

The fair wage - corruption model

Intuitively, we always perceive that low wages of civil servants could be explained the causes of corruption. If government official is inadequately paid, the temptation to corrupt or take bribery might be greater. Hence, Becker and Stigler (1974) suggest the anticorruption policy regarding to increase public sector wages that government should pay the official wage above the official's opportunity wage. This approach is to ensure that the government official will behave honestly. However, more empirical studies are required to confirm the relationship between high wages and low corruption level.

³ Shang-Jin Wei, World Bank economist, interests in corruption research area especially the relationship between corruption and economic variables such as How taxing is corruption on international investors?(1997) , Does corruption relieve foreign investors of the burden

of taxes and capital control? (1999), Corruption in economic development: Beneficial Grease, Minor Annoyance, or Major Obstacle?, and Corruption, composition of capital flows, and currency crises (2000).

However, the pioneering paper about the relationship between wage and corruption seems to be the study of Caroline Van Rijckeghem and Beatrice Weder in 1997. They attempted to study the concept of fair wages that they utilized the international country risk guide (ICRG) as the corruption index. They found that under fair wages model empirical evidence points to a negative relationship between corruption and wages. Thus, civil service wages are significant determinant of corruption.

However, in cross-countries studies, Rauch and Evans (2000) and Treisman (2000) find no robust evidence that higher wages prevent corruption. On the other hand, the replenished study of Van Rijckeghem and Weder in 2001 still confirms this relationship vigorously that they examine the existence of a wage-corruption tradeoff using data on public sector wages for low income economies.

For this paper, the author picks the fair wage-corruption that it is used in the study of Van Rijckeghem and Weder (1997) to explain in this study.

Initially, Van Rijckeghem and Weder (1997) set up the fair wage-effort hypothesis as follows:

$$e = f (I/W^*) = f ((W+N) / W^*) \quad \dots(1)$$

Where, e represents effort, the author shows actual income, W^* is fair wage, N represents nonpecuniary payment and W is the wage paid by the employer.

Van Rijckeghem and Weder (1997) mentions to the experimental evidence of Walster, Walster and Berscheid (1997) that workers adjust effort or actual wage if there is a disparity between wage and the fair wage. For corruption, they assume that it can be realized as an adjustment in non pecuniary payment, N . Subsequently, Van Rijckeghem and Weder (1997) explain the term of effort in the function of expected income as follows:

$$e = f (EI / EI^*) \quad \dots(2)$$

Where EI represents actual and targeted income whereas EI^* shows the fair expected income. They mention to the concept of law enforcement that Becker and Stigler (1974) give explanation that civil servants maximize a stream of expected income thus they attempt to balance the benefits from corrupt behavior against the penalties when they might be caught and punished. Further these penalties are presumed to include the sack and other penalties. Hence, the cost of penalty equals to the wage differential with the private sector plus bribes foregone also other penalties. We can explain these relations as follows:

$$EI = (1-P(C)) (CB+Wg) + P(C) (Wp- f) \quad \dots(3)$$

From (3), EI is become the expected income, $P(C)$ is the probability of detection followed by punishment, C is the number of corruption activities as continuous variables, Wg is the wages in the government whereas Wp is the wages in the private sector, B represents the level of bribe, and f shows other penalties as job loss that they might be in the jail terms. However, this equation could be explained in two cases, i.e. when corruption is not detected and when it is detected.

In case of non detection, it means that $P(C)$ is zero thus the expected income will be income from bribery or CB plus the government wage. On the other hand, the complete detected corruption, $P(C)$ equals to 1, therefore the expected income will be the private wage minus penalties, f .

For simplicity, however, we can adjust the probability of detection or $P(C)$ and the number of corruption activities or C in term of the probability of detection for single corrupt act or p . Thus this adjustment could be explained as $P = pC$ that we substitute it into (3).

$$EI = (1-pC) (CB+Wg) + pC (Wp- f) \quad \dots(4)$$

From (4), Van Rijckeghem and Weder (1997) utilize it as the groundwork analysis to explain the fair wage corruption hypothesis that workers choose levels of corruption in an effort to reach $EI = EI^*$. Thus we conclude fair wage corruption model as follows:

$$EI = (1-pC) (CB+Wg) + pC (Wp- f) = EI^* \quad \dots(5)$$

From (5), it could be explained that a function of government wages, Wg , relative to fair income or EI^* . Thus the corruption will be eliminated, $C = 0$, when $Wg = EI^*$ that means the government pays the fair wage for civil servants.

However, civil servant still corrupts, $C > 0$, when the income from corruption (CB) plus the government wage (Wg) is greater than the caught cost; $CB+Wg > Wp-f$. Thus the income of dishonest civil servant exceeds the disparity between the fair wages and the government wage or $EI^* - Wg$. This fraud performance could be interpreted that corrupt civil servant necessitates the compensation for the possibility of sack or losing job.

How to quantify the national cultures

Generally corruption seems to be involved the social cultures especially some societies seem to accept the culture of giving bribe and graft as the facilitation cost. Hence, cultural factors have influenced on the corruption; however, these factors are rather difficult to measure. La Porta et al. (1997) studied the relationship between trust and corruption in 33 countries which they found that trust has a significant negative impact on corruption. Thus, more trust of people in society might encourage the decrease in corruption

In addition, the study of La Porta et al. (1997) extends the role of religion in contributory

to the level of corruption. They found that the religion role as Catholic, Eastern Orthodox and the Muslim should help decrease corruption. Similarly, Treisman (2000) confirms the strong relation of religion and corruption that he attempts to relate corruption to the percentage of Protestants in the total population in 64 countries. His result shows a highly significant negative effect between percentage of Protestants and corruption implying that more Protestants might reduce corruption. However, the study of Paldam (2001) emphasizes 11 different groups of religions and the level of corruption. He concludes that corruption is low in the reform Christianity and ethnic religions while the higher level of corruption can be found in countries with a large influence of pre-reform Christianity, Islam, Buddhism and Hinduism.

For the relationship between family unit and corruption, Lipset and Lenz (2000) produce a scale to measure "familism" and then examine the relationship between familism and corruption. Their data on familism is the percentage of respondents from the World Values Survey agreeing that regardless of the qualities and faults of one's parents, a person must always love and respect them. The second point measures the percentage of people who think that divorce is unforgivable. They found that the measure of familism is robustly related to corruption.

Sandholtz and Taagepera (2005) attempt to prove the relationship between corruption and two cultural dimensions from the World Values Survey conducted between 1995 and 2001. The first dimension measures traditional versus secular-rational authority attitudes. This compares traditional religious values and secularism. The second dimension associates to survival versus self-expression. This measures which people are focused on personal and economic security, or on personal self-

expression and quality of life. African and Muslim countries have traditional attitudes, and a high extent of “survival” due to their low income. They found that Protestant countries are oriented towards self-expression and have material attitudes. Former communist countries have a secular tradition, but once more a high level of “survival” due to their low income. They still feel anxious and miserable. However, respondents from Latin America, U.S.A., Ireland, Canada and Australia are dedicated to self-expression, but have some traditional attitudes towards authority. These countries join the faith in god with the feeling of safety and happiness.

For this paper, the author proposes the Hofstede score to quantify the social and national cultures as following table 2. This index is developed by Geert Hofstede the anthropology professor from Masstricht University in Netherland. Hofstede’s study reveals that there is national and regional cultural grouping that affect the behavior of societies. He has identified and rated five dimensions of national cultures that the score is between 0 and 120. His five dimensions of culture consist of power distance, individualism, masculinity, uncertainty avoidance and long term orientation.

The first aspect is the power distance that it reflects the degree to which a culture believes how institutional and organization power should be equally or unequally and how the decisions of the power holders should be challenged or accepted. This aspect might be showed by the seniority or hierarchy of the society thus small power distance is reflected that power is distributed equally which expect and accept power relations that people relate to one another more as equals regardless of formal positions to reflect the democratic society e.g. U.S.A., Denmark, Austria, Israel, New Zealand and etc. Conversely, the large power distance shows that the power relations are based on where

they are situated in certain formal or hierarchical position to reflect the autocratic or patronage society e.g. South East Asia countries as Malaysia, Philippines, Indonesia also Thailand. However, Hofstede constructs the Power Distance Index (PDI) to measure the power distance of each society that if PDI is near to 120, it’s showed the large power distance or unequally distributed power in society. In contrast, if PDI is closed to 0, it could be explained the small power distance or equally distributed power in society.

For the second dimension, the individualism could be referred that the people are expected to stand up by themselves or self sustain and to choose their own relationships. The individualism is contrasted with the collectivism that collectivistic cultures tend to be group oriented. On the other hand, people in individualistic cultures do not perceive the member of in-group or out-group. Thus, Hofstede creates the individualism index (IDV) to explain the individualism of each society that if IDV is closed to 120, it’s showed the individualism of society, for example the IDV of U.S.A. is 91 that is one of the most individualistic. However, if IDV is near to 0, it could be collectivism as the IDV of Guatemala is only 6.

The third element of national cultures is the masculinity-femininity that it indicates the value placed on traditionally male or female values. For the masculinity cultures, they value competitiveness, assertiveness, ambition, and the accumulation of wealth whereas feminine cultures seem to value on the associations and quality of life. Hence, Hofstede develops the MAS index or masculinity index to measure the competitiveness and assertiveness of gender that if MAS is closed to 120, it reflects the masculinity society as MAS of Japan is 95 which it’s the most masculine society. Conversely, if MAS index is near 0, it could be interpreted the leaded feminine society as the MAS of Sweden is only 5.

For the fourth dimension, it is the uncertainty avoidance, which reflects that the members of society try to deal with apprehension by minimizing uncertainty. Hofstede produces the uncertainty avoidance index or UAI that if this index is closed to 120, the national cultures attempt to avoid the risk thus they might generate more rules and laws to prevent uncertainty. On the other hand, if UAI is near to 0, the national cultures seem to be non anxiety about risk.

Last of all, the long term orientation is described the importance of time between the

present and future. In long term oriented societies, they value the firmness, thrift and tolerance; however, the short term oriented society's value the present time as respect for tradition, reciprocation of greeting also favors and gifts. Hofstede creates the LTO index or long term orientation index to compute the value of time in each society. Thus, if LTO is closed to 120, the national cultures emphasize the future time. Conversely, if LTO is near to 0, the national cultures consider only present time.

Table 2 Hofstede scores and five cultural dimensions in 2003

Country	PDI	IDV	MAS	UAI	LTO
Arab World	80	38	52	68	
Argentina	49	46	56	86	
Australia	36	90	61	51	31
Austria	11	55	79	70	
Bangladesh	80	20	55	60	40
Belgium	65	75	54	94	
Brazil	69	38	49	76	65
Bulgaria	70	30	40	85	
Canada	39	80	52	48	23
Chile	63	23	28	86	
China	80	20	66	30	118
Colombia	67	13	64	80	
Costa Rica	35	15	21	86	
Czech Republic	57	58	57	74	13
Denmark	18	74	16	23	
East Africa	64	27	41	52	25
Ecuador	78	8	63	67	
El Salvador	66	19	40	94	
Estonia	40	60	30	60	
Finland	33	63	26	59	
France	68	71	43	86	
Germany	35	67	66	65	31
Greece	60	35	57	112	
Guatemala	95	6	37	101	
Hong Kong	68	25	57	29	96
Hungary	46	80	88	82	50
India	77	48	56	40	61
Indonesia	78	14	46	48	
Iran	58	41	43	59	
Ireland	28	70	68	35	
Israel	13	54	47	81	
Italy	50	76	70	75	

Country	PDI	IDV	MAS	UAI	LTO
Jamaica	45	39	68	13	
Japan	54	46	95	92	80
Luxembourg	40	60	50	70	
Malaysia	104	26	50	36	
Malta	56	59	47	96	
Mexico	81	30	69	82	
Morocco	70	46	53	68	
Netherlands	38	80	14	53	44
New Zealand	22	79	58	49	30
Norway	31	69	8	50	20
Pakistan	55	14	50	70	0
Panama	95	11	44	86	
Peru	64	16	42	87	
Philippines	94	32	64	44	19
Poland	68	60	64	93	32
Portugal	63	27	31	104	
Romania	90	30	42	90	
Russia	93	39	36	95	
Singapore	74	20	48	8	48
Slovakia	104	52	110	51	38
South Africa	49	65	63	49	
South Korea	60	18	39	85	75
Spain	57	51	42	86	
Surinam	85	47	37	92	
Sweden	31	71	5	29	33
Switzerland	34	68	70	58	
Taiwan	58	17	45	69	87
Thailand	64	20	34	64	56
Trinidad	47	16	58	55	
Turkey	66	37	45	85	
United Kingdom	35	89	66	35	25
United States	40	91	62	46	29
Uruguay	61	36	38	100	
Venezuela	81	12	73	76	
Vietnam	70	20	40	30	80
West Africa	77	20	46	54	16

Note; Arab world consists of; Egypt, Iraq, Lebanon, Libya, Saudi Arabia and United Arab Emirates
East Africa consists of; Ethiopia, Kenya, Tanzania and Zambia
West Africa consists of; Ghana, Nigeria, Sierra Leone

Table 2 shows the Hofstede scores and five cultural dimensions of each nation that this score is the updated survey in 2003. However, Bryan Hutsted employed Hofstede dataset of 1997. Hutsted (1999) links the culture and corruption in a sample of 44 countries and the power distance shows positive effect with the

level of corruption. For the uncertainty avoidance, he found that it might be expected to lower corruption thus the lessening of corruption level may involve the reducing of uncertainty level.

Models of this study

Analytical framework

For this paper, my research question is how low wage of civil servants and national

cultures relate to the corruption; therefore I determine that both factors as the independent variables while corruption depends on them. Hence, I set up the framework of this study as follows;

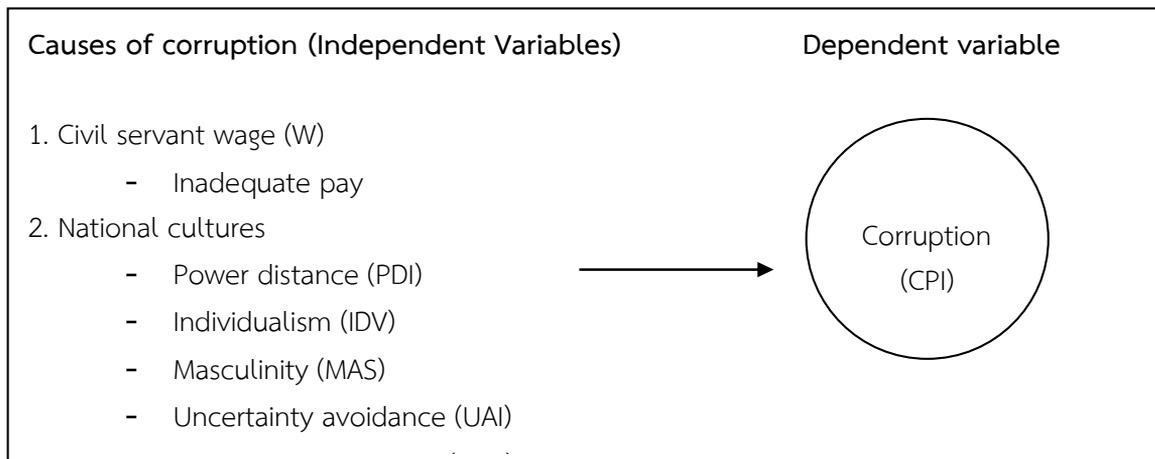


Figure 1 Analytical framework of this study

This study is tracked the methodology of Van Rijckeghem and Weder (1997); however, the difference of this study is the corruption measurement that Van Rijckeghem and Weder (1997) employed the corruption index based on surveys by Political Risk Service or known as International Country Risk Guide or ICRG index.

For corruption measurement in this study, I utilize the corruption perception index or CPI for the period 1998-2007 as the representative of corruption.

However, civil servant wages and type of government officials of each country seems to be different. Hence, I make use of the relative wage concept as the ratio of government wages relative to manufacturing wages which it's employed in the study of Van Rijckeghem and Weder (1997). The reason of using manufacturing wages is that the manufacturing sector has the advantage of individual worker relatively as good

as across countries in term of skill content. Similarly, I still anchor the definition of civil servants of each country as the study of Van Rijckeghem and Weder (1997); however, my study covers the wage data in 35 developing countries⁴ over the period 1998-2007.

For national cultures, the author uses the five cultural dimensions of Hofstede scores that these are the updated survey in 2003.

Models

For this study, the author analyzes these relations under linear regression analysis by using the ordinary least square (OLS) to explain the relationships. However, I split them into three models as follows;

Model 1: The relationship between corruption and civil servant wages

$$CPI = f(\text{Ratio of civil servant wages relative to manufacturing wage})$$

⁴ The wage data are gathered from statistical yearbooks and central bank bulletins. For sample countries, I select 35 developing countries, i.e. Argentina, Bangladesh, Brazil, Bulgaria, China, Columbia, Costa Rica, Czech Republic, Ecuador, El Salvador, Egypt, Ghana, Guatemala, Hungary, India,

Indonesia, Iran, Mexico, Morocco, Malaysia, Nigeria, Pakistan, Panama, Peru, Philippines, Poland, Portugal, Romania, Russia, Slovakia, Thailand, Turkey, Uruguay, Venezuela, and Vietnam.

From the first model, the hypothesis is that less corruption or more transparency society is positively related to civil servant wages relative to the manufacturing wage. Thus, the equation should be as follows;

$$CPI = \alpha + \beta W + \mu \quad \dots(6)$$

Where CPI represents the corruption perception index of 35 countries in 1998-2007, W is the ratio of civil servant wages relative to manufacturing sector. Thus the expected sign of W should be positive ($\beta > 0$). For this reason, we could imply that the increasing of W affect the rising CPI hence the increasing of civil servant wages has been influenced the reducing corruption.

Model 2: The relationship between corruption and national cultures

$$CPI = f(PDI, IDV, MAS, UAI, LTO)$$

From the second model, the author utilizes five indices of Hofstede to explain the corruption which my hypothesizes are;

- The less corruption or more transparency society is negatively related to the power distance.
- The less corruption or more transparency society is positively related to the individualism.
- The less corruption or more transparency society is negatively related to the masculinity.
- The less corruption or more transparency society is negatively related to the uncertainty avoidance.
- The less corruption or more transparency society is negatively related to the long term orientation.

$$CPI = \alpha + \gamma PDI + \delta IDV + \epsilon MAS + \eta UAI + \theta LTO + \mu \quad \dots(7)$$

The equation 7 shows the relationship between corruption and national cultures that I select five dimensions from Hofstede study. Initially, the expected sign of PDI should be negative ($\gamma < 0$) which we interpret that large power distance might affect to reduce the transparency or cause more corruption. For example, the large power distance reflects the seniority and patronage of society thus these factors might originate the corruption especially in Asian society. On the other hand, the expected sign of IDV should be positive ($\delta > 0$) implying that more individualism or less collectivism supports the transparency or reduce corruption in the society. However, the expected sign of masculinity, uncertainty avoidance and long term orientation should be negative ($\epsilon < 0$, $\eta < 0$ and $\theta < 0$) to reflect that more masculinity, more uncertainty avoidance and more long term orientation may reduce the transparency and thus increase corruption in the society.

Model 3: The relationship between corruption and civil servant wages also national cultures. In this model, I integrate both factors thus the function should be;

$$CPI = f(W, PDI, IDV, MAS, UAI, LTO)$$

$$CPI = \alpha + \beta W + \gamma PDI + \delta IDV + \epsilon MAS + \eta UAI + \theta LTO + \mu \quad \dots(8)$$

From this equation, the expected sign of independent variables could be explained as following table 3.

Table 3 The expected sign of coefficients in the equation 8

Independent Variables	The expected sign of coefficients
Ratio of civil servant wages relative to manufacturing wage	$\beta > 0$
Power distance	$\gamma < 0$
Individualism	$\delta > 0$
Masculinity	$\epsilon < 0$
Uncertainty avoidance	$\eta < 0$
Long term orientation	$\theta < 0$

Contribution of this study

Though this study might follow Van Rijckeghem and Weder (1997), the corruption measurement is different from their study. I select the CPI since currently this index seems to be popular in the research area of economics of corruption further this index is still reflected the degree of transparency in each country. In addition, the study of Van Rijckeghem and Weder (1997) might not concentrate on the impact of cultural determinants on the corruption; however, national cultures seem to be one of the main causes to explain the corruption.

For the policy makers, they could utilize results from this study for anticorruption policy. For example, the government might raise civil servant wages equally private employee wages when the result confirms that increasing of W affect the rising CPI thus the increasing of civil servant wages has been influenced the reducing corruption. However, the policy makers might consider the national cultures that they still have an effect on the level of corruption. For instance, when the result verifies that the large power distance in society might not encourage the transparency, policy makers should design the new power distance in the bureaucracy such as reducing the hierarchical positions of government organizations.

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