**People’s WTP in DI Yogyakarta Province to Support Financing for Eradicating Corruption and Its Determinants**

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**Abstract**

The amount of Willingness to Pay (WTP) is useful for policy makers to reduce crime rates. It has implications for greater financial burdens for citizens as well as additional tax costs that can be used to reduce existing crime. This study aims to reveal the WTP of people in DIY in order to reduce corruption in DIY as well as various factors that influence it.

The data used are primary data obtained from 350 community samples based on status in the age of the workforce. They are obtained from the survey through purposive proportional sampling from the population of 5 districts/cities in DI Yogyakarta. Adopting the Contingent Valuation Method, this study seeks to obtain the willingness to pay of the respondents to reduce corruption in DI Yogyakarta. Furthermore, it also reveals how various factors influence the WTP utilizing OLS method and maximum likelihood in the econometrics approach.

On average, the nominal of the WTP to support the eradication of corruption is Rp. 137.5 thousand. While we generalize the nominal based on the population of the workforce in DIY which is 2,191,742 as much as the status of the respondent, therefore we can collect about Rp301,258billion a year. Almost the all various factors, namely various individual, socio-economic, regional conditions related to corruption, victims and perpetrators of corruption, as well as the impact of corruption and commitment influence probability to pay for eradicating corruption. Only regional conditions has no influence on the probability. The age of respondents positively influence the probability of willing to pay to reduce corruption. Family income also influences the possibility to pay. Furthermore, the widow status has a greater probability of paying than while he is a single. Of the various factors of conditions in the region, No conditions of the regional related to corruption can influence the possibility of paying. While he is as a victim of corruption of his own friend, he has the probability 51% lower; while the offender as his close relative, he has the probability 17% higher; while the offender as his not far relative, he has the probability 21% higher; while the offender as the others, he has the probability 19% higher. In the opposite, while he has partner in corruption as his close friend, he has probability 27% higher; while he has partner in corruption as others, he has probability 59% lower. The more obedient in paying taxes as a vehicle payment, the more likely it is to pay to eradicate corruption. This shows that the willingness to pay is in line with their compliance in paying taxes while the payment channeled through a tax payment mechanism. However, it’s unfortunately that their willingness to pay for reducing is not in line with the individual commitments.

Keywords: willingness to pay, corruption, contingent valuation method

# INTRODUCTION

As an extraordinary crime, there is a strong relationship between corruption and increased poverty and income inequality (The World Bank, 2000). Increasing income for tax collectors in the short term, long-term corruption will reduce tax revenue revenue (Fjeldstad & Tungodden, 2003). Negative consequences for the economy due to corruption were also stated by Lambsdorff including income inequality, decreased productivity, decreased capital stock due to decreased investment, misallocation of the public sector, and market distortion (Lambsdorff, 2006).

Crime rate is measured by how many occurrences per 100,000 population in one year. During the period 2013-2015, the number of crime or criminal acts in Indonesia fluctuated. Data from the National Police Headquarters shows the number of crime events (total crime) in 2013 as many as 342,084 cases, decreased to as many as 325,317 cases in 2014 and increased in 2015 to 352,936 cases. The crime rate in Indonesia per 100,000 population is estimated at 140 people in 2013, 131 people in 2014, and 140 people in 2015 (Sub Direktorat Statistik Politik dan Keamanan, 2016).

In 2013-2015, the incidence of crime in DIY was reported increasing to 6,727, 7,135 and 9,692, respectively in 2013-2015 (Sub Direktorat Statistik Politik dan Keamanan, 2016). With this incident, the crime rates in DIY are 191, 201, and 266 during this period. Therefore, during this period there was an increase in crime rates by 39.3% or an average of 19.6% per year.

In 2015, crimes reported in DIY amounted to 9,692. From the existing population, the crime rate that occurs is 266. This figure is certainly higher than the average crime rate in Indonesia (Sub Direktorat Statistik Politik dan Keamanan, 2016).

Crime events other than leaving costs for victims, crimes will increase costs for other communities. Psychologically the community becomes burdened with fear that the phenomenon of evil will befall on him. The intended crime is not excluded for corruption crimes. With the existence of a culture of corruption, especially in bureaucrats, people will anticipate with greater costs. If this is not handled, the costs will increase.

This ability to pay is known as Willingness to Pay (WTP). It is a measure used through the Contingent Valuation (CV) and Choice Experiment (CE) techniques to see how much the value of a benefit from something that has no market value (Hanley, Philip, MacMillan, & Wright, 2001). This quantity is important to measure the amount of costs such as conservation and management of scarcity of an animal (Hanley, Philip, MacMillan, & Wright, 2001), water quality improvement (Hite, Hudson, & Intarapapong, 2002), reduction of crime ( (Soeiro & Moreira, 2009)), (Bishop & Murphy, Estimating the Willingness to Pay to Avoid Violent Crime: A Dynamic Approach, 2011) and (Ambrey, Fleming, & Manning, 2012)), connecting electrical connections (Abdullah & Jeanty, 2009), reduction bullying in schools (Persson & Svensson, 2012), even for hedonic prices of a product (Bishop & Timmins, Hedonic Prices and Implicit Markets: Estimating Marginal Willingness to Pay for Differentiated Products Without Instrumental Variables, 2011) and others.

In Soeiro's (2009) study, this study revealed that female students have a WTP greater than men in reducing crime and aversive behavior along with the amount of PAPs that can be paid. Students in certain fields have WTP levels that are significantly different from students in other fields. Students with a background in Economics and Management have WTP levels greater than Arts, Sports, and Law, even these last three fields are still smaller than students in Health.

Bishop and Murphy in 2011 found that each individual was able to give $472 to avoid a 10% increase in crime rates. In addition it was revealed that as a community of 100,000 residents there were able to provide $ 278,870 per year (Bishop & Murphy, Estimating the Willingness to Pay to Avoid Violent Crime: A Dynamic Approach, 2011).

Ambrey said that the WTP obtained showed that crime related to assets resulted in reduced satisfaction of enjoying life. On average, per capita WTP that can be paid annually are $ 1,236 in New South Wales (Ambrey, Fleming, & Manning, 2012).

Crime has various negative impacts on the economy. Various attempts are made in order to reduce crime. For this step complex information, it is needed especially on its impact which has no market value. The WTP quantity is the amount used in the CV technique to obtain this important information. This WTP exploartion is useful as a consideration for policy makers to reduce the level of crime that befalls the people of Yogyakarta.

Based on these problems, the purpose of this study is to find out how much the WTP of the people of Yogyakarta for reducing corruption. Furthermore, this research will also reveal how the influence of the determinants of the size of the community's WTP in reducing crime in the form of acts of corruption.

# LITERATURE REVIEW

## Decision Theory and Game Theory in Crime

Pradiptyo argues that there are two main approaches in analyzing crime (Pradiptyo, Korupsi di Indonesia: Perspektif Ilmu Ekonomi, 2009). The two approaches are analysis decision theory and game theory. The approach to decision theory was pioneered by Becker in 1968 and the approach to game theory was pioneered by Tsebelis in 1989.

The decision theory approach is carried out by observing the magnitude of the benefits of hope and the probability of success or failure in crime attempt. If the expected benefits are greater than the expected costs incurred then the perpetrators of the crime will choose to commit the crime and vice versa. Becker suggested two ways to create a deterrent effect on perpetrators of crime, namely 1). Apply a high detection ability but give a light sentence to the perpetrators of crime, and 2). A low detection ability but provide a high intensity of punishment to the perpetrators of crime. Becker recommends the first choice with consideration instead of the second choice that will create greater social costs (Pradiptyo, 2009).

The game theory approach is to apply the interaction strategies of the players in the game. In real life the perpetrators of this game such as law enforcement and perpetrators of crime. This approach is said to be better because it pays attention to the strategies of both parties, namely law enforcers and perpetrators of crime rather than decision theories that only pay attention to the strategies carried out by law enforcers from the side of the perpetrators of the crime but do not accommodate the strategies chosen by the authorities by observing possible strategies that will be carried out by the perpetrators crime (Pradiptyo, 2009). In this theory, the perpetrators of crime will pay attention to law enforcement strategies and vice versa.

## Various Factors Affecting Crime

In research conducted by Levitt, there are various factors that can affect the occurrence of a decrease in crime. These factors include: 1) an increase in the number of police, 2) an increase in the population of imprisoned people, 3) an epidemic recession from cocaine, and 4) legalization of abortion. Many empirical studies state that there is a strong relationship between the legalization of abortion and the decline in crime. Furthermore, the existence of these rules results in broader outcomes including reduced infant mortality, reduced single parents, and reduced use of drugs (Levitt, 2004).

However, there are seven main factors that are theoretically very strong but in a real or practical level do not show their role in reducing crime (Levitt, 2004). These factors include 1). Strengthening the Economy in the 1990s, 2). Demographic Change, 3). Better Policy Strategies, 4). Rules for Control of Weapons, 5). Rules for Control of Weapons, and 6). Laws that Allow the Use of Hidden Weapons, and 7). Increasing the Use of the Death Penalty.

The World Health Organization (WHO) proposes an ecological model that shows the root causes of violence which can be illustrated in a hierarchical fashion as follows:



**Figure 1**

**The Ecological Model of the Root of the Problem of Violence (WHO, 2002)**

In a study conducted by Buonanno and Montolio, the factors that influenced crime are divided into three main aspects, namely the variables for explaining crime, sociodemographic variables, and socioeconomic variables. This deterrence variable determines the expectation return of the crime. The sociodemographic variables included were the presentation of male productive age (15-29), the portion of the population living in the provincial city, and the portion of the foreign population. Whereas socioeconomic variables include GDP per capita, GDP growth, unemployment rates, and the portion of the population that attends senior secondary and tertiary education (Buonanno & Montolio, 2008).

Garoupa conducts research on moral values ​​in general equilibrium in analyzing the economy of a crime (Garoupa, 1998). This research is aimed at answering criticism about the irrelevance of internalizing norms in supporting the honesty of the people. So that, government intervention is required by law enforcement. But unfortunately this method is very high cost and should be reduced. For this reason, investment in education is needed in instilling existing norms. In addition it is necessary to provide subsidies when the effectiveness of law enforcement is hampered by unemployment.

## Cost of Crime

Brand and Price suggest that the costs that can be calculated are related to criminal offenses including explicit costs and implicit costs (Brand & Price, 2000). These costs become one that is known as the social cost of crime concept. This fee covers the first cost is the cost in anticipation of crime which consists of security expenses and insurance expenses. Second, the cost as a consequence of crime, which consists of damaged or lost material assets, loss of productivity, emotional and physical impact due to crime, victim services, and health services. Next is the cost in response to crime, these costs include costs incurred in the criminal justice system including the costs of law enforcement by the police.

Furthermore, Dubourg et al revises the concept of social costs (Dubourg, Hamed, & Thorns, 2005). These improvements include the calculation of criminal costs incurred by individuals, calculations in the justice system, especially in determining penalties, multipliers in calculating criminal volumes, and the inclusion of more up-to-date data in calculating social costs. The major impact in the revision of this calculation is the reduction in costs resulting in injury to victims (both physical and psychological) as well as increasing costs due to crime other than that. Health costs and lost productivity have also increased due to this revision.

## 

## Willingness to Pay

Actually there are many valuation methods used to value something that has no market value (Soeiro, 2009). Thaler in 1978 used the hedonic price methodology method only this method has many weaknesses in the context of crime. Then Cohen in 1988 started by using the crime jury award to get a more realistic value. Other methods are also developed such as transfer values from other contexts and QALY (Quality Adjusted Life Year). Furthermore, Contingent Valuation (CV) was used in the context of criminality in 1999, which was previously used in the environmental sphere by Davis in 1961. Other alternative methods used were using a shadow price by Moore and Sheperd in 2006. From these methods, Soeiro (2009) assume that CV is considered as the method that can provide the most solutions to the weaknesses of existing methods.

# METHODOLOGY

## Data and Methods Used

The data used in this study are primary data obtained from samples through purposive proportional sampling from the population in DIY. This data was obtained using an instrument in the form of a questionnaire distributed for interviews with respondents from various status by labor force. Adopting the Contingent Valuation Method, we can get the ability to pay of the respondents to support reduce the level of crime expressed through the answers in the survey conducted. Furthermore, to find out how the influence of various determinants of the size of the WTP, the econometric approach is used with linear models and non-linear models (ordered probit)

The unit of analysis used in this study is the individual unit of society. The population in Yogyakarta is estimated to be 3.8 million people in 2018. As stated by Bartlett et al (Bartlett, Kotrlik, & Higins , 2001), the number of samples needed in this study is 119 for an error rate of 5% or 209 for the level of the desired error is 1%.

For this study, 350 people are as the sample. This large amount is used to anticipate that the data variants can be sufficient so that the estimation can produce better parameters. The data in this study are a mixture of categories, those are discrete, ordered, and continuous. From this number, the sample are distributed proportionally randomly to the population in the regency/city in DIY, the employment status, and the location of the urban village.

## The Model

We utilize the descriptive quantitative for obtaining the nominal of WTP, econometrics model are used to examine the influence of various factors on the amount of WTP will also be revealed. The model used to form the WTP function modified from Teixera and Soeiro's research can be described as the following function (Teixera & Soeiro, 2013):

WTP = f(INTi, SOSECVILi, EXPi, COSTCRi) (3)

Then, the function is formed to econometrics models:

WTP=α + β1INTi + β2SECVILi+ EXPi + β3iCOSTCRi....... (4)

WTPcat=α + β1INTi + β2SECVILi+ EXPi+ β3iCOSTCRi....... (5)

These two equations are used as two estimation models in determining the determinants of WTP. While the third model is model (5) which is estimated using the maximum likelihood method with the probit model. Where, specifically, the variables are following descriptions:

WTP: willingness to pay, how much is the ability of respondents to be able to pay in order to reduce crime.

INTi: various internal characteristics such as age, regency / city origin, gender, family income, number of dependent family members, occupation, education level, marital status.

SECVILi: various factors related to regional conditions of corruption such as the behavior of corrupt public officials, the corrupt behavior of private sector employees, the corrupt behavior of parlementer/politicians, infrastructure, public services, and the level of trust related to efforts to reduce corruption.

EXPi: various factors related to personal experience related corruption, nature of corruption activities, type of corruption, perpetrators of corruption, partner of corruption, time of the incident.

COSTCRi: various factors related to the costs of crime such as psychological damage experienced, direct and indirect costs experienced, concerns about corruption, commitment to non-corruption, and compliance with contributions related to taxes.

## Variable Operational Definition

More detailed, the variables used are in the model:

WTP is divided into WTPcat, WTPbi, and WTPnom

WTPnom: willingness to pay in Rp unit, indicate how much is the ability of respondents to pay for reducing crime.

WTPbi: WTP in the category of willing or not, WTPbi=1 while he is willing and WTPbi=0 for the else.

WTPcat: in the category, 0 = no and in the willingness category according to the Rupiah level, while there are 7 levels

### Then various internal factors

Age: how old is the respondent, in years

Loc: the origin of regencies / cities in DIY, namely Sleman (SLE), Bantul(BTL), Yogya City(YOG), KulonProgo(KPG), and Gunung Kidul(GKD)

Sex: the sex type of the respondent, 0 for women and 1 for men.

IncFam: income from family (in Rp)

NumFam: number of dependent family members

Occ: type of work

Edu: the ultimate education level

Famstat: marital status category

### Various conditions related to corruption

corbeh: perception of corrupt behavior in the area

coroff: perception of corrupt behavior of public officials in the area

corpri: perception of private sector corruption behavior in the regions

corpar: perception of parliamentary corruption behavior in the regions

infcor: perception of infrastructure in the regions related to corruption

pubserv: perception of public services in the area related to corruption

trustcor: perception of the level of trust in the area related to corruption

### Various personal experience factors

Expcor: experience experiencing criminality or not, 0 for never and 1 for ever

Catcor: the category of the nature of involvement with corruption, active or passive

Typecor: 6 types of corruption in accordance with the corruption law (6 major categories of corruption)

Partcoract: who is a partner of corruption when active in corruption

Partcorpasv: who is a partner of corruption when passive in corruption

Timecor: time of corruption

While the variable crime costs used include:

PsyEff: level of psychological impact

Dicost: direct costs (Rp)

Indicost: indirect costs (Rp)

Fearcor: level of concern for corruption

Selfcom: perception of commitment to corruption

taxcom: ability to pay when there is a policy of raising taxes to finance expenditures in controlling and reducing crime, 0 if not able and there are 3 levels of will.

# RESULT AND DISCUSSION

## Data Descriptive Statistics

From the primary data that can be collected 350 respondents from the city districts in DIY, the data description statistics are as follows.

**Table 1 Statistic Descriptive of Categorical Variables**

|  |  |  |
| --- | --- | --- |
| **SAMPLE** | | |
| **DISTRICTS/CITIES** | **FREQ** | **%** |
| BTL | 93 | 26.57 |
| GKD | 69 | 19.71 |
| KPG | 38 | 10.86 |
| SLE | 112 | 32.00 |
| YOG | 38 | 10.86 |
| **TOTAL** | **350** | **100.00** |
| **SEX TYPES** | | |
| LK | 161 | 46.00 |
| PR | 189 | 54.00 |
| **TOTAL** | **350** | **100.00** |
| **FAMILY INCOME PER MONTH** | | |
| 1. < Rp1.2million | 72 | 20.57 |
| 2. Rp1.2million to <Rp2million | 104 | 29.71 |
| 3. Rp2million to <Rp3million | 79 | 22.57 |
| 4. Rp3million to <Rp5million | 54 | 15.43 |
| 5. Rp5million to <Rp10million | 33 | 9.43 |
| 6. > Rp10million | 8 | 2.29 |
| **TOTAL** | **350** | **100.00** |
| **NUMBER OF MEMBER FAMILY** | | |
| 0 | 77 | 22.00 |
| 1 | 65 | 18.57 |
| 2 | 88 | 25.14 |
| 3 | 62 | 17.71 |
| 4 | 35 | 10.00 |
| 5 | 16 | 4.57 |
| 6 | 3 | 0.86 |
| 7 | 4 | 1.14 |
| **TOTAL** | **350** | **100.00** |
| **STATUS OCCUPATION** | | |
| a. No job | 7 | 2.00 |
| b. TNI/Polri |  |  |
| c. member of DPR |  |  |
| d. senior manager | 4 | 1.14 |
| e. Professional | 22 | 6.29 |
| f. Technician/rekan professional | 3 | 0.86 |
| g. Panitera |  |  |
| h. Worker of Services and Trading Sector | 101 | 28.86 |
| i. Skilled Worker in Agricultural | 15 | 4.29 |
| j. Worker Carft and Creative Sector | 6 | 1.71 |
| k. Machine and Fabric Operator | 3 | 0.86 |
| l. Others | 189 | 54.00 |
| **TOTAL** | **350** | **100.00** |
| **LEVEL OF HEAD OF FAMILY EDUCATION** | | |
| 1. not pass elementary school | 6 | 1.71 |
| 2. SD | 23 | 6.57 |
| 3. SMP | 41 | 11.71 |
| 4. SMA | 161 | 46.00 |
| 5. DIPLOMA | 35 | 10.00 |
| 6. S1 | 78 | 22.29 |
| 7.S2 | 6 | 1.71 |
| 8.S3 | 0 | 0.00 |
| **TOTAL** | **350** | **100.00** |
| **FAMILY STATUS** | | |
| a. not married | 76 | 21.71 |
| b. Widow | 15 | 4.29 |
| c. Widower | 3 | 0.86 |
| d. married | 256 | 73.14 |
| **TOTAL** | **350** | **100.00** |
| **RELATION WITH PUBLIC OFFICER** | | |
| No | 30 | 8.57 |
| Yes | 320 | 91.43 |
| **TOTAL** | **350** | **100.00** |
| **EXPERIENCED TO BE ASKED OR GIVING SOMETHING TO PUBLIC OFFICER** | | |
| No | 138 | 39.43 |
| Yes | 212 | 60.57 |
| **TOTAL** | **350** | **100.00** |
| **ACTIVE OR PASSIVE DOING CORRUPTION** | | |
| Passive | 173 | 81.60 |
| Active | 39 | 18.40 |
| **TOTAL** | **212** | **100.00** |
| **TYPES OF CORRUPTION** | | |
| A. State Financial Loss | 18 | 6.67 |
| B. Bribe | 104 | 38.52 |
| C. Embezzlement | 7 | 2.59 |
| D. Ilegal Levies | 9 | 3.33 |
| E. Cheating | 52 | 19.26 |
| F. Conflict of interest in Procurement | 12 | 4.44 |
| G. Gratification | 68 | 25.19 |
| **TOTAL** | **270** | **100.00** |
| **TYME OF CORRUPTION** | | |
| 1. less than 1 month | 4 | 1.14 |
| 2. less 6 months | 18 | 5.14 |
| 3. 6 months-12 months | 18 | 5.14 |
| 4. 1-5 years | 115 | 32.57 |
| 5. >5 years | 57 | 16.29 |
| 6. never | 138 | 39.71 |
| **TOTAL** | **350** | **100.00** |
| **PSYCHOLOGICAL IMPACT** | | |
| 0 | 328 | 93.71 |
| Low | 18 | 5.14 |
| Moderat | 3 | 0.86 |
| Heavy | 1 | 0.29 |
| **TOTAL** | **350** | **100.00** |
| **LEVEL OF WORRY** | | |
| 1. Not worry | 40 | 11.43 |
| 2. Little worried | 124 | 35.43 |
| 3. Worried | 148 | 42.29 |
| 4. Very worried | 38 | 10.86 |
| **TOTAL** | **350** | **100.00** |
| **WTP CATEGORY** | | |
| 1. not willing | 122 | 34.86 |
| 2. pay less Rp600thousand | 206 | 58.86 |
| 3. Rp600thousand to <Rp1.2million | 19 | 5.43 |
| 4. Rp1.2million to <Rp2million | 0 | 0.00 |
| 5. Rp2million to <Rp3million | 2 | 0.57 |
| 6. Rp3million to <Rp5million | 1 | 0.29 |
| 7. Rp5million sd <Rp10million | **0** | **0.00** |
| 8. more Rp10million | 0 | 0.00 |
| **TOTAL** | **350** | **100.00** |
| **COMPLIENCE OF CONTRIBUTING IN TAX PAYMENT** | | |
| 1. Will not pay | 103 | 29.43 |
| 1. Will pay less the amount | 36 | 10.29 |
| 1. Will pay the same amount | 192 | 54.86 |
| 1. Will pay bigger | 19 | 5.43 |
| **TOTAL** | **350** | **100.00** |

**Tabel 2 Descriptive Statistics Ratio Variable**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Variable** | **Keterangan/Satuan** | **Obs** | **Mean** | **Std. Dev.** | **Min** | **Max** |
| **incfam** | Family Income (Rp) | 350 | 2,843,228 | 2,645,001 | 0 | 17,000,000 |
| **Age** | Age/Tahun | 350 | 38.68 | 13.29 | 18.00 | 84.00 |
| **avecorbehv** | General Corruption (1-4) | 350 | 2.87 | 0.64 | 1.43 | 4.00 |
| **avecoroff** | Public Service Corruption (1-4) | 350 | 2.83 | 0.69 | 1.33 | 4.00 |
| **avecorpri** | Private Corruption (1-4) | 350 | 2.85 | 0.72 | 1.33 | 4.00 |
| **avecorpar** | Parliemantary Corruption (1-4) | 350 | 2.79 | 0.70 | 1.00 | 4.00 |
| **avecorins** | Institution Corruption (1-4) | 350 | 2.82 | 0.53 | 1.35 | 4.00 |
| **procorcon** | Improvement in Red. Corruption (1-3) | 350 | 2.04 | 0.77 | 1.00 | 3.00 |
| **aveinfcor** | Infrastructure Corruption (1-5) | 350 | 3.74 | 0.80 | 2.00 | 5.00 |
| **avepubserv** | Public service (1-5) | 350 | 3.46 | 0.78 | 1.50 | 5.00 |
| **avetrustcor** | Public trust (1-5) | 350 | 3.51 | 0.84 | 1.00 | 5.00 |
| **dicost** | Direct Cost (Rp) | 184 | 2,187,484 | 18,800,000 | 25,000 | 250,000,000 |
| **indicost** | Indirect Cost (Rp) | 109 | 4,466,835 | 26,200,000 | 50,000 | 250,000,000 |
| **wtpnom** | WTP nominal(Rp) | 350 | 137,451.40 | 326,611.10 | 0 | 3,600,000 |
| **aveselfcom** | Self Commitment (1-5) | 350 | 4.25 | 0.49 | 2.00 | 5.00 |

Of the total sample, 350 respondents, the largest sample came from Sleman (SLE) which the portion is 32%. The smallest respondents are from Yogyakarta City (YOG) and Kab. Kulon Progo (KPG) with total respondents at 10.86%. The respondents obtained based on the portion of the population as a workforce. Where the gender of respondents who were netted was a number of men (LK) by 46%. The average age of the all respondents is 38.68 years.

Based on the existing socio-economic, the largest amount of family income comes from second group with a category income of IDR1.2million to less IDR2million, about 29.71%. Where the average family income of Rp2.8million. The largest number of family dependents is the number of dependents of 2 family members at 25.14%. Of this total, 28.86% of people working in services and sales.

The largest respondents came from among the people with the level of education of family heads as high school graduates at 46%. Respondents mostly with the status of marriage that is married by 73%.

From the survey results, the majority of respondents have indeed dealt with public officials, namely 91.43% of which 61% of them have been asked or given goods or money to officers. Where most of these actions were carried out with a passive nature or because it is initiated by the officers in advance, it is 82%.

From the activities of giving or being asked for money by respondents to the officers, most of them are carried out with the aim of achieving procedures (71%). Moreover, the purpose is for getting the best treatment (10%). The composition is illustrated on the next figure.

**Figure 2 Goal of Giving or Asking Illegal Levies**

While other objectives are mentioned as the following table.

**Table 3 Other Purposes of Giving or Being Asked for Money or Goods**

|  |  |
| --- | --- |
| **Purposes** | **Freq** |
| Because Officers Ask Directly | 1 |
| Meeting Personal Needs | 1 |
| Project Winning | 1 |
| Influence People's Choice | 1 |
| Traffic Violation | 1 |
| Feeling Uncomfortable With Friends | 1 |
| So Not to Move | 1 |
| Thank-you note | 1 |

Of the respondents, there were 270 types of corruption that were divided into 7 major categories of corruption. Of the respondents who were involved in corrupt activities either active or passive, the most types of corruption were bribes, amounting to 38.52% and gratuities is about 25.19%. There were also 2.59% incidents involved in embezzlement in office. Where, of the various types of corruption that occurred, most of them were carried out more than 1 year to 5 last years.

With the current conditions, the majority of respondents said they worry about the incidence of corruption in DIY, amounting to 42%. Only 11% of respondents feel no worry about the conditions. In addition, in general, respondents stated that the condition of the regions in DIY is relatively fixed about corruption, no more improvement. It means that it does not increase or decrease corruption based on existing perceptions.

From the perceptions, corruption behavior by public officials is rated 2.83 or is considered rare. Corruption behavior by the private sector is rated 2.85 or considered to also occur. Corruption behavior by the parliament is also considered rare with a score of 2.79. While corrupt behavior of the existing institutions is valued at 2.82 or is rare. From this data, it is generally assumed that corrupt behavior by public or private officials is considered rare.

The condition of the regions based on infrastructure for combating corruption has a value of 3.74 or is considered Good. Whereas the condition of public services in fighting corruption is valued at 3.46 or it is considered sufficient. While public confidence in the eradication of corruption in DIY is considered good with a score 3.51.

As a result of the incident there were 5% of respondents who experienced mild psychological impact. The rest mostly did not experience psychological effects, about 93%.

Of the respondents who had been involved in corrupt activities, on average they experienced a direct loss of Rp2,187 million and an indirect loss of Rp4,467 million.

From the all conditions, the respondents feel that on average they say that there is no improvement in eradicating corruption in the regions.

From the overall existing average nominal WTP obtained from respondents to support the eradication of corruption amounted to Rp137.5 thousand. It was found that the majority stated their ability to pay in accordance with the existing provisions if included as a tax that is equal to 55%. Only 5% said they would pay more than specified if payment was made as a tax. The respondents indicated that on average respondents expressed a good commitment to participate in eradicating corruption.

The total population of DIY with the age of the workforce is 2,191,742 people. Based on the WTP data collected, we can do generalizations based on the workforce population in DIY as the respondent's status, then funds will be collected in the amount of Rp301.258billion in a year. This is a number large enough to support eradicating corruption in DIY.

## Problems and Conditions of Corruption in Regencies/Cities in DIY

From the primary data collected in the regions, we get that the important problems to be solved in the districts/cities in DIY are as follows.

**Figure 3 Problems in Regency/Cities in DIY**

**Figure 4 Other Problems in DIY**

Based on Figure 3 about the problems that exist in the district/city in DIY, the 3 most important problems to be solved are Health, Education, and Unemployment. While issues that are considered not so important in areas in DIY are Religious Conflict, Political Instability, and Communal or Ethnic Conflict. Which of the other problems mentioned by respondents, which is mentioned most often is mutual cooperation (Gotong Royong) and environmental cleanliness.

**Figure 5 Problem Comparasion Among Districts/Cities in DIY**

**Figure 6 Comparison of Corruption Behavior in Districts/Cities in DIY**

Based on Figure 5, a comparison of the problem scores in the Kab / Kota in DIY shows that based on the interests of the existing problems, the most important problem should be solved based on the perception of respondents that there are problems that exist in the City of Yogyakarta (YOG). From the available data, all problems raised, respondents from Kab. Kulon Progo (KPG) considers that the existing problems are considered to be the least important compared to those that occur in other districts/cities.

Based on Figure 6, the comparison of corruption between districts/cities in DIY, with perceptions using a scale of 1-4, shows the greater the better the culture in order to eradicate corruption. From the comparison, the Kab. Kulon Progo is the most superior among other districts/cities. Whereas the area with the lowest corruption behavior value among others is Yogyakarta City. This shows that the local government and the private sector in Kulon Progo have performed well and have the best anti-corruption behavior among other districts/cities.

Based on Figure 7, the institutional corrupt behavior in the Districts/Cities in DIY shows that the best behavior is in 3 institutions, those are Universities, Schools, and Public Facilities (Electricity, Irrigation, and Sanitation). While the institutions considered the most corrupt by respondents in districts/cities in DIY are DPR/DPD, Central Government, and Driver License Services. These three institutions are considered the most frequent corruption.

**Figure 7 Corruption Level of Institutions Districts/Cities di DIY**

Based on available data, figure 8, the most progressive development of corruption eradication occurred in District Gunung Kidul. Whereas the district considered to be the least progressive in eradicating corruption is Bantul. Although there are differences in scores between one district/city and the others, in general there is no significant difference among the five districts/cities. The data available on average it is said that corruption in the regions in the category of relative fixed, we can say It does not increase or decrease.

**Fidure 8 Progressiveness of Eradicating Corrupiton of Districts/Cities in DIY**

In addition to the existing conditions, this study also reveals a variety of factors that can determine the condition of corruption of the five districts/cities in DIY. The various conditions include the condition of public services, the condition of facilities and infrastructure, as well as the condition of the public trust in eradicating corruption in their respective regions. This is explained in full in Figure 9.

Furthermore, the figure 9 shows how the relationship between the various conditions that exist with the size of the WTP of the people in each region. At a glance, the magnitude of the WTP is positively related to the existing conditions. It's just seen that specifically in Kab. Sleman shows the opposite trend. Although the three conditions are relatively high among others, the people show a low willingness to contribute funds to eradicate corruption.

**Figure 9 Various Conditions that Support the Eradication of Corruption and WTP of Districts/Cities in DIY**

Furthermore, from the available data, figure 10 shows the relationship between the amount of costs incurred either directly or indirectly from acts of corruption against victims/partners from the community with the average size of WTP who want to contribute to reducing corruption in the regions. It is hoped that the greater the cost, the greater the nominal of the WTP owned by the community. This arises on the grounds that the greater the costs caused by corruption and burdening the community will encourage the community to be moved to fight for it by contributing financially so that the burden will disappear which will ultimately also reduce the burden on the existing community.

From the available data, the researchers found that the people of Gunung Kidul and Kulon Progo has a pattern that is reversed from our proper expectations. For Gunung Kidul and Kulon Progo, people from these two regions have a strong desire to help eliminate corruption, which is indicated by the average size of the WTP of the people, although both costs due to corruption are relatively low compared to the burden received by communities from other regions.

**Figure 10 Direct and Indirect Costs due to Corruption and WTP of Districts/Cities in DIY**

From the available data, figure 11, result show relationship between community commitment and the size of the WTP. From this figure, we can conclude at a glance that the commitment to eradicate corruption is reflected in the size of the WTP sought by the community. It shows the higher the commitment held by the community, the greater the nominal of WTP to be given. There is one interesting thing from the survey, although Kulon Progo has a relatively low commitment compared to the community in other regions, but the people in this district have the second highest willingness to pay after the people in Yogyakarta City.

**Figure 11 Individual Commitments to Eradicate Corruption and WTP of Districts/Cities in DIY**

## Model Estimation of WTP

**Table 4 Marginal Effects of Independent Variables**

|  |  |
| --- | --- |
| **Variabel** | **dy/dx** |
| **Individual Factors** | |
| Sle | .0336 |
| Btl | -.1006 |
| Gkd | -.1581 |
| Kpg | .0635 |
| Age | **-.0061\*** |
| M | .0076 |
| **Socio-Economic Factors** | |
| Incfam | **5.78e-08\*\*\*** |
| Numfam | -.0357 |
| Edu | -.0203 |
| Statfamb | **.1917\*\*\*** |
| Statfamc | .1707 |
| Statfamd | .0883 |
| **Regional Condition Factors Regarding Corruption** | |
| Avecorroff | -.0104 |
| Avecorrpri | .1212 |
| Avecorrpar | -.0440 |
| Aveinfcor | -.0197 |
| Avepubserv | .0428 |
| Avetrustcor | .0270 |
| **Victim Status, Partner, Time in Corruption Factors** | |
| Vicpartcor | -.0046 |
| Offknl | -.0304 |
| Offtmn | **-.5097\*** |
| Offknt | **.1749\*** |
| Offkjh | **.2045\*\*\*** |
| Offoth | **.1896\*** |
| partknl | -.1735 |
| parttmn | **.2680\*\*\*** |
| Partknt | -.0086 |
| Partkjh | -.3050 |
| Partoth | **-.5915\*** |
| Timecor | -.0226 |
| **Impact of Corruption and the Commitment** | |
| Psyimp | .0744 |
| Dicost | -2.11e-08 |
| Indicost | 2.03e-08 |
| Fearcor | .0268 |
| Taxcom | **.5055\*\*\*** |
| Aveselfcom | -.0049 |
| **Probit regression** Number of obs = 350 LR chi2(36) = 299.01 Prob > chi2 = 0.0000  Log likelihood = -76.7891 Pseudo R2 = 0.6607 | |

Based on the estimation of the model, table 4, we obtain marginal effects that are described as the following results.

### Individual Factors

Of the various individual factors that exist, only age can affect the probability of a willingness to pay. If the age is older, the less likely it is to be willing to pay in order to reduce corruption. Where if the age increases by 1 year, the probability to pay will decrease on average by 0.6%.

### Socio-Economic Factors

Of the various socioeconomic factors that exist, the amount of family income and marital status affects the probability of willingness to pay. While the factor of the number of dependent family member and education does not affect the amount of possibility to pay. If the family income gets bigger, the greater the possibility to pay in order to reduce corruption. In addition, the widow's marital status has a greater probability of paying than if he is single.

The estimation results can be interpreted that if the family income increases Rp1 million, the possibility to pay will increase by 5.7%. Besides that in terms of marital status, widow marital status has the greatest possibility among other marital statuses. If the individual is a widow, then the possibility to pay is 19% higher than the single person.

### Regional Condition Factors Regarding Corruption

Based on estimation results, there is no factor of regional conditions influence the probability of paying. Various conditions such as corrupt behavior of public servants, parliament, private sector, and institutions do not affect the willingness to pay. In addition, the condition of facilities and infrastructure, public services, and the level of trust to eradicate corruption do not affect the possibility of paying.

### Victim Status, Partner, Time in Corruption Factors

Based on the estimation results, from various factors of victims and perpetrators of corruption, who is the perpetrator of corruption and who is the partner of corruption influence on the possibility of paying. While various other factors, such as the status of victims or perpetrators of corruption, and the time of corruption activities experience do not affect the possibility of paying.

If the perpetrators of the corruption are started by them whose status are friends, then he is likely to pay 51% less than if they are foreigners. In addition, if they are close relative then it is possible to pay 17% more than if they are foreigners. While they are distant relative then the possibility to pay is 20% higher than if they are foreigners. While they are the other offenders then the possibility to pay is 19% higher than if they are foreigners

In another side, while the partners in corruption are his own friend then the probability to pay is 26.8% higher than the partner is a stranger. While Others then he has probability to pay 59% less than stranger.

### Factors of Corruption's Impact and Commitment to Eradicate Corruption

From the estimation results, based on various existing impact and commitment factors, only compliance in paying taxes to reduce corruption affects the probability of paying. While various other factors such as psychological effects, direct or indirect costs of corruption, the level of fear, and self commitment for eradicating corruption do not affect the probability of paying.

The effect of compliance along with the possibility to pay, the more obedient in paying taxes as a vehicle payment, the more likely it is to pay to eradicate corruption. If individual compliance increases by 1 level, the possibility of paying increases by 50.8%. This shows that the willingness to pay is in line with their compliance in paying taxes if the payment channel is through a tax payment mechanism. It's just unfortunate that their willingness to pay to reduce corruption is not in line with their commitments.

# CONCLUSION

## WTP of DIY People

Based on the discussion carried out previously regarding the magnitude of the WTP of the people of DIY in reducing corruption, the researchers reached the following conclusions.

* Average nominal WTP obtained from respondents to support the eradication of corruption amounted to Rp137.5thousand.
* Based on the WTP data collected, if a generalization is made based on the workforce population in DIY which is 2,191,742 as the status of the respondent, then funds will be collected in the amount of Rp301,258billion in a year. This is a huge monetary size in DIY to support eradicating corruption in DIY.
* The highest average WTP was obtained from the people of Yogyakarta City with a nominal value of Rp207.11 thousand. Whereas the lowest average nominal was obtained from the Sleman people with a nominal value of IDR 102.95thousand.
* A quite unique thing was obtained from the people of Kulon Progo, although the conditions are the best among the regions, the lowest cost of corruption, however they also have the highest average WTP after Yogyakarta City.

## Determinants of WTP

Based on the estimation of the determinants of the willingness to pay, the researcher gets the following conclusion.

* Various factors exist, namely various individual factors, socioeconomic, regional conditions related to corruption, victim status and corruption actors, as well as the impact of corruption and commitment to eradicate corruption.
* From the various individual factors, only age can affect the probability of a willingness to pay. If the age is older, the less likely it is to be willing to pay in order to reduce corruption.
* From the various socioeconomic factors that exist, the amount of family income and marital status affects the probability of willingness to pay. If the family income gets bigger, the greater the possibility to pay in order to reduce corruption. In addition, the widow's marital status has a greater probability of paying than while he is single.
* From various factors in various conditions in the region, there is no factor that influences the possibility to pay.
* From the various factors of victims and perpetrators of corruption, who the perpetrator of corruption is and who the partner of corruption is influences the possibility of paying. While he is as a victim of corruption of his own friend, he has the probability 51% lower; while the offender as his close relative, he has the probability 17% higher; while the offender as his not far relative, he has the probability 21% higher; while the offender as the others, he has the probability 19% higher. In the opposite, while he has partner in corruption as his close friend, he has probability 27% higher; while he has partner in corruption as others, he has probability 59% lower.
* Based on various impact factors and existing commitments, only compliance in paying taxes to reduce corruption affects the probability of paying. The effect of compliance along with the possibility to pay, the more obedient in paying taxes as a vehicle payment, the more likely it is to pay to eradicate corruption. This shows that the willingness to pay is in line with their compliance in paying taxes if the payment channel is through a tax payment mechanism. It's just unfortunate that their willingness to pay to reduce corruption is not in line with the commitments.

## Policy Recommendations

Based on the results obtained from the objectives of this study, the researcher can recommend several things as follows.

* The average nominal WTP shows that the community support is quite high in combating corruption. More than that, the eradication of corruption can also rely on local wisdom that exists where for example, Kab. Kulon Progo, despite its good condition, is also able to contribute more to the fight against corruption.
* The government can further examine various factors that can influence the amount of PAPs from the community in helping reduce corruption. For example, the willingness of the community to pay in order to reduce corruption depends on the amount of family income, meaning that the greater the income the more willing the community is to help financially reduce corruption.

# DAFTAR PUSTAKA

Abdullah, S., & Jeanty, P. W. (2009). Demand for Electricity Connection in Rural Areas: The Case of Kenya. *Bath Economics Research Papers No. 26/09, Department of Economics, University of Bath.*

Ambrey, C. L., Fleming, C. M., & Manning, M. (2012, January). The life satisfaction approach to estimating the cost of crime: An individual’s willingness-to-pay for crime reduction. *Discussion Papers Economics No. 2013-01 ISSN 1837-7750*.

Bartlett, J. E., Kotrlik, J., & Higins , C. (2001). Organizational Research: Determining Appropriate Sample Size in Survey Research. *Information Technology, Learning, and Performance Journal, Vol. 19, No. 1, Spring* .

Bishop, K. C., & Murphy, A. D. (2011). Estimating the Willingness to Pay to Avoid Violent Crime: A Dynamic Approach. *American Economic Review: Papers & Proceedings 2011*, 625–629.

Bishop, K. C., & Timmins, C. (2011). Hedonic Prices and Implicit Markets: Estimating Marginal Willingness to Pay for Differentiated Products Without Instrumental Variables. *Working Paper 17611 NATIONAL BUREAU OF ECONOMIC RESEARCH, 1050 Massach*.

Brand, S., & Price, R. (2000). *The economic and social costs of crime.* London: Home Office Research Study 217.

Buonanno, P., & Montolio, D. (2008). Identifying the Socio-economic and Demographic Determinants of Crime across Spanish Provinces. *International Review of Law and Economics 28.2*, 89-97.

Cerro, A. M., & Meloni, O. (2000). Determinant of the Crime Rate in Argetina in the 90’s. *Estudios de Economia, diciembri, ano, vol/27, numero 002, Universidad de Chile, Santiago Chile*, hal. 297-311.

Dubourg, R., Hamed, J., & Thorns, J. (2005). Developments in the estimates of the costs of crime in England and Wales. Dalam *The economic and social costs of crime against individuals and households 2003/04: Home Office Online Report 30/05.* London: Home Office.

Fjeldstad, O.-H., & Tungodden, B. (2003). Fiskal Corruption: A Vice or a Virtue? *World Development Vol. 31, No. 8*, 1459–1467.

Garoupa, N. M. (1998). The Role of Moral Values in the Economic Analysis of Crime: A General Equilibrium Approah. *Universitat Pompeu Fabra Economics Working Paper No. 245.*

Han, L., Bandyopadhyay, S., & Bhatta, S. (2011). Determinants of Violent and Property crimes in England: A Panel Data Analysis. *Discussion Papers 10-26r, Department of Economics, University of Birmingham.*

Hanley, N., Philip, L., MacMillan, D., & Wright, R. (2001). *Willingness to pay for the conservation and management of wild geese in Scotland.* Edinburgh: Scottish Executive Central Research Unit.

Hite, D., Hudson, D., & Intarapapong, W. (2002). Willingness to Pay for Water Quality Improvements: The Case of Precision Application Technology. *Journal ofAgricultural and Resource Economics 27(2) Western Agricultural Economics Association*, 433-449.

Joewono, T. B. (2009). Exploring the Willingness and Ability to Pay for Paratransit in Bandung, Indonesia. *Journal of Public Transportation, Vol. 12, No. 2*.

Jogja.tribunnews.com. (2016, 09 04). Fenomena Klitih Meresahkan Masyarakat Yogya. Yogyakarta.

JPNN.com. (2013, April 16). *Rayakan Ultah, Kopassus Panen Dukungan JK Harapkan Mahkamah Militer Pertimbangkan Sisi Moral Penyerang LP Cebongan.* Dipetik April 17, 2013, dari JPNN.com

Kompas.com. (2017, 03 14). Ini Kronologi Aksi "Klitih" di Yogyakarta yang Tewaskan Pelajar SMP. Jakarta.

Lambsdorff, J. G. (2006). Causes and consequences of corruption: What do we know from a cross-section of countries? Dalam S. R. Ackerman, *International Handbook on the Economics of Corruption.* Cheltenham: Edward Elgar Publishing Limited.

Levitt, S. D. (2004). Understanding Why Crime Fell in the 1990s: Four Factors That explain the Decline and Six That Do Not. *The Journal of Economic Perspectives, Vol. 18, No. 1*, 163-190.

Persson, M., & Svensson, M. (2012). The Willingness to Pay to Reduce School Bullying. *Karlstad University Working Papers in Economics, 2012 / 3, Dept. of Economics, Karlstad University*.

Prabowo, D. (2013, April 12). *Komnas HAM Akan Panggil Komandan Grup II Kopassus.* Dipetik april 17, 2013, dari Kompas.com

Pradiptyo, R. (2007). Does Punishment Matter? A Refinement of the Inspection Game. *Review of Law and Economics, 3:2*.

Pradiptyo, R. (2009). Korupsi di Indonesia: Perspektif Ilmu Ekonomi. Dalam Wijayanto, & R. Zachrie, *Korupsi dan Mengkorupsi di Indonesia.* Jakarta: Gramedia.

Public Safety Canada. (2011). *Crime Prevention through Social Development.* Dipetik 06 22, 2011, dari http://www.publicsafety.gc.ca

Sihombing, I. (2013, April 16). *Pascainsiden Cebongan, Massa Hadiahi Kopassus Tumpeng Raksasa.* Dipetik April 17, 2013, dari Metrotvnews.com

Soeiro, M., & Moreira, M. (2009, September). *Willingness to pay for violent crime reduction: a contingent valuation study for higher education students.* Porto: Faculdade de Economia da Universidade do Porto.

Sub Direktorat Statistik Politik dan Keamanan. (2016). *Statistik Kriminal 2016.* Jakarta: BPS.

Teixera, A. A., & Soeiro, M. (2013). Determinants of Student's Willingness to Pay for Violent Crime Reduction. *The Singapore Economic Review, Vol. 58, No. 4 (2013) 1350027*, 1350027.

The World Bank. (2000). *Anticorruption in Transition A Contribution to the Policy Debate.* Washington, D.C.: The World Bank.

Triyana, B. (2010, December 20). *Petrus: Kisah Gelap Orba.* Dipetik 04 20, 2013, dari Historia.co.id

Weatherburn, D. (1992). Economic Adversity and Crime. *Trends & Issues in crime and criminal, justiceAustralian Institute of Criminology*.