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**Economic Valuation of Urban  
Informal Activities:  
Case Study of Flea Markets in  
Bandung Municipality**

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# **Economic Valuation of Urban Informal Activities: Case Study of Flea Markets in Bandung Municipality<sup>1</sup>**

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## **Abstract**

*This study analyzes some social economic aspects of informal activities using case study of flea markets in Bandung Municipality. The objectives are to provide a description of the information we collected during our field survey, and report our findings on the Willingness to Pay (WTP) of people who are doing informal business in the flea markets under study on some services. We use Censored Regression Model to estimate WTP for some relevant services (general user charge, waste disposal services, security, and congestion) in the flea market. We found two important determinants of WTP, which are the amount of working capital, and the ownership of the merchandise.*

*Keywords: flea market, informal activity, WTP*

## **1. Introduction**

In the context of economic development, issues related to activities in the informal sector has always been on a public debate (ILO (2000), Blackman, Newbold, and Cook (2000), Schneider and Enste (2000), Angelini and Hirose (2004)). Increasing informal activities are associated with social pressures in urban areas. The social pressures are driven, among others, by population growth (both naturally or from migration) which in turn increases the supply of labour excessively.

Growth in urban labour force, unfortunately, is not accompanied by an adequate increase of employment. For Indonesian case, this situation has been exacerbated by decreasing employment elasticity of economic growth over time. Without any proper policy responses, the resulting unemployment may lead to more severe

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social problems such as security, waste, traffic, and other socio-economic and environmental problems. What is obvious is that increasing informal activities have been the natural consequences of this development.

This study aims to analyze some socio-economic aspects of informal activities using case study of flea markets in Bandung Municipality. This paper is part of that bigger study, and some results reported here are tentative.

According to Van Den berg (2001), informal activity is an attempt to carry out mutually beneficial transactions *despite* rules, laws, or other institutions that restrict them. In effect, informal activity is *rent-evading* activity. The results of *rent-evading* activity depend on the institutions, or incentives, that establish the relative costs and benefits of engaging in formal and informal activity, in other words informal activity is making the best of bad institutions.

In this paper, the objectives are to provide a description of the information we collected during our field survey, and report our findings on the Willingness to Pay (WTP) of people who are doing informal business in the flea markets under study on some services such as security, waste disposal, and general services (user charges). We also question the WTP to compensate the cost of congestion, which usually happens during the activities of the flea markets.

It is expected that the result of this study can be used for better policy formulation carried out by local government in regulating informal activities. In addition, by knowing the WTP of the informal sellers and street vendors to pay for some relevant services, the government will have better information related to potential revenue raised from informal activities.

## 2. Methodology and Data

The WTP calculation is inferred from the response of the respondents on the questioner that is already structured. The questions are on the willingness to pay for some services in question and their socio-economic characteristics. The WTP is analysed using descriptive analysis and econometrics. On the econometrics, censored regression is used in an attempt to explain the determinants of the WTP, because a sample in which information on the regressand is available only for some observations (Gujarati, 2003). The econometric model is formulated as follow:

$$WTP_i^* = \beta'X_i + u_i \sim N(0, \sigma^2)$$

where:

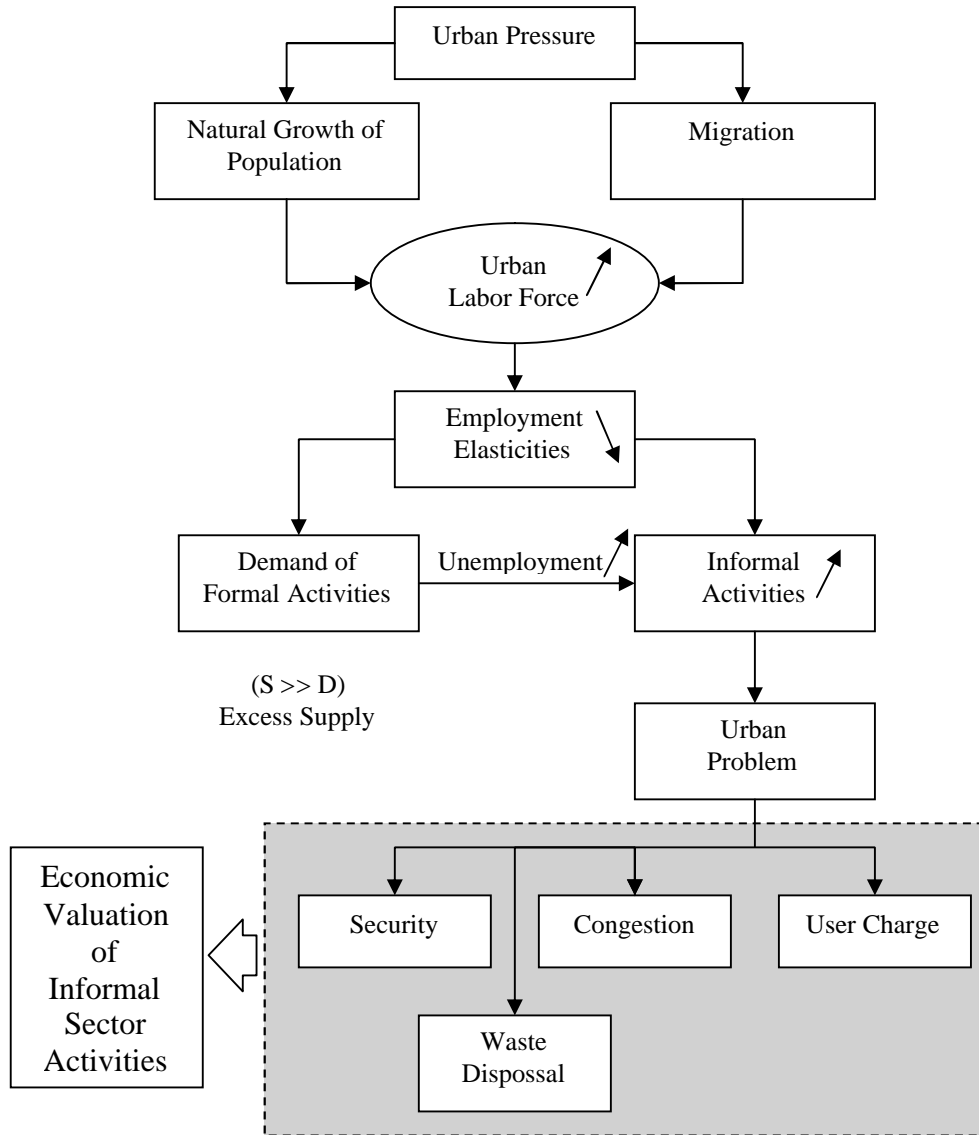
$$- WTP_i^* \begin{cases} WTP_i^* & \beta'X_i + u_i > 0 \text{ (if the respondent is willing to pay )} \\ 0 & \text{(if the respondent is not willing to pay)} \end{cases}$$

-  $X_i$  = Variables that determine the WTP

WTP\* is censored at WTP=0 we will call this kind of response variable a corner solution outcome (Woodridge, 2002). Based on the above definition, WTP will be greater than zero if the respondent is willing to pay, and will have a zero value if he/she is not willing to pay. The possibility of this kind of responses call for censored regressions.

Figure 1 represents the analytical framework in our study to analyze some social economic aspects of informal activities in Bandung municipality.

**Figure 1.**  
**Analytical Framework**



**Table 1.**  
**Population and Labor Force Condition in Bandung Municipality**

Year	Population	Working age	Labor force	Working	Looking for jobs	Open unemployment (%)
2002	2,142,194	1,842,051	940,491	835,992	104,499	11.11
2003	2,228,268	1,859,674	981,008	841,786	139,222	14.19
2004	2,232,624	1,890,108	1,012,176	869,022	143,154	14.14
2005	2,270,970	1,867,889	1,027,012	878,590	148,422	14.45

Source: BPS, 2002-2005

**Table 2**  
**Formal Labor Market in Bandung Municipality**

Year	Registration (1)	Vacancy (2)	Placement (3)	Ratio (3)/(1) (Percent)
2001	15,235	2,851	891	5.85
2002	19,554	2,294	947	4.84
2003	15,732	1,879	1,419	9.02
2004	42,275	2,218	2,211	5.23
2005	29,190	1,548	1,429	4.90

Source: Bandung in Figure, 2005

Table 1 and table 2 represent more or less the situation represented in figure 1. Population pressures eventually led to a higher rate of open unemployment. This condition is worsened by the inability of the formal sector to absorb the available labor force (as can be seen from the low ratio of the job seekers placements to registration). These situations (the low labor absorption and low employment elasticity of formal sector) indicate the existence of transfer of labor from formal to informal sector. This transfer explains the increasing level of informal activities in Bandung Municipality.

According to 2006 regional labor force survey (SUSEDA), 38% of employed labor force in Bandung Municipality work in the informal sector (table 3). This situation clearly indicates the importance of the informal sector in absorbing labor force. The situation provides relevance to any study that attempts to measure the economic value of informal activities. The knowledge of this aspect is of strategic value in the process of urban development planning.

**Table 3**  
**Working Population above 10 Years Age by Age**  
**and Main Employment Status in Bandung Municipality, 2006.**

Age Group	Employment status					Formal Sector (3+4)	Informal Sector (1+2+5)	% Informal Sector	Total
	1	2	3	4	5				
(a)	(b)	I	(d)	(e)	(f)	(g)	(h)	(i)	(j)
10-14	-	-	-	1,582	-	1,582	-	-	1,582
15-19	2,206	-	764	24,347	2,579	25,111	4,785	16	29,896
20-24	12,321	1,192	360	77,841	4,150	78,201	17,663	18	95,864
25-29	19,488	4,046	3,609	84,714	5,589	88,323	29,123	25	117,446
30-34	27,970	9,215	3,294	74,087	4,215	77,381	41,400	35	118,781
35-39	40,969	11,430	4,106	63,531	3,959	67,637	56,358	45	123,995
40-44	31,785	13,083	6,714	55,606	4,160	62,320	49,028	44	111,348
45-49	30,667	7,995	5,703	48,261	4,023	53,964	42,685	44	96,649
50-54	22,763	7,423	4,304	38,997	3,114	43,301	33,300	43	76,601
55-59	12,044	3,708	2,649	14,141	1,899	16,790	17,651	51	34,441
60-64	8,880	3,746	1,826	5,008	1,548	6,834	14,174	67	21,008
65-69	4,362	1,036	472	2,014	488	2,486	5,886	70	8,372
70-74	3,200	1,305	632	1,783	-	2,415	4,505	65	6,920
75+	1,344	206	586	877	197	1,463	1,747	54	3,210
<b>Total</b>	<b>217,999</b>	<b>64,385</b>	<b>35,019</b>	<b>492,789</b>	<b>35,921</b>	<b>527,808</b>	<b>318,305</b>	<b>38</b>	<b>846,113</b>

- Note: 1. Self employed  
2. Self employed assisted by unpaid labor  
3. Self employed assisted by paid labor  
4. Formal workers (salary earning)  
5. Unpaid workers

Source: Regional Labor Force Survey, 2006

### **Respondent's Characteristics**

In this study, a total of 1,401 respondents are selected from some important area of flea markets in Bandung Municipality. That is, Gasibu (Diponegoro-Surapati street), Metro (Sukarno-Hatta Street), Pasteur (Dr. Junjunan Street), Pusdai (Supratman Street), Salman (Ganesha Street), and Samsat (Sukarno-Hatta Street). The composition of the sample can be seen from Table 4.

**Table 4.**  
**Number of Respondent by location**

Location	Number of Respondent
Gasibu	551
Metro	208
Pasteur	134
Pusdai	120
Salman	92
Samsat	296
Total	1401

Source: Author calculation

From the sample collected, we describe some important aspects of their characteristic as follows.

### **Education**

The average years of schooling in the sample are 10.39 years, which is more or less equivalent to a senior high school. There are minor variations across the sites of the flea market. In general, however, we can say that sellers in the flea markets of Bandung Municipality has relatively a high degree of education (at least junior high school).

### **Age**

We also found that the average age of the sellers is 33.8 years old, which falls in a productive age group. This indicates that doing business in the flea markets is a source of employment for urban productive population who cannot be absorbed in the formal sector.

### **Household Size**

Household size or number of family members indicates the economic burden of the seller. Data from the sample collected suggests that, on average, sellers in the flea market have to support two family members (excluding himself). There are only minor variations across the site of the flea markets. In other words, most of the sellers are new family, which consists of one spouse and one child.

**Table 5.**  
**Respondent's Demographic Characteristics of the Flea Market by Location**

<b>Location</b>	<b>Years of Schooling (year)</b>	<b>Number of Dependant (person)</b>	<b>Age (year)</b>
(All)	10.39	1.97	33.78
Gasibu	10.44	1.81	33.75
Metro	10.85	1.92	32.17
Pasteur	9.52	2.07	34.40
Pusdai	10.62	1.96	33.64
Salman	10.78	2.18	33.05
Samsat	10.16	2.20	34.97

Source: author calculation

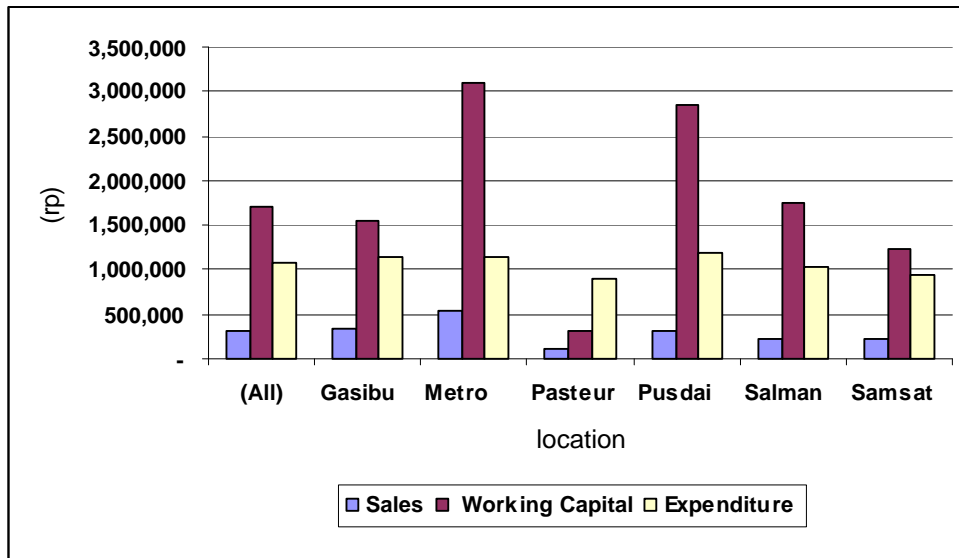
### **Business Profile**

The information on business profile consists of information on sales, working capital, and cost (or expenditure). The average sale of sample businesses in the flea market is Rp. 318,886. Out of the 6 flea market under study, businesses in the Metro area have the highest sales (Rp. 549,339) and that in Pasteur area has the smallest sales (Rp. 120,485).

Another indicator is working capital. The average working capital is Rp. 1,713,467. In general, the working capital is used for more than one activity. A seller in Metro area has the higher working capital (more than 3 million rupiahs), and a seller in Pasteur area has the smallest working capital.

Average monthly business expenditure of the sample is Rp. 1,076,445. Out of the 6 location, sellers at Pusdai have the highest expenditure while sellers at Pasteur have the lowest expenditure.

**Figure 2.**  
**Business Profile of Respondent by Location**



Source: author calculation

### 3. Informal Services and their WTP

In this paper, we focus on finding out the willingness to pay of sellers on some services they need to pay when doing their activities (except the one related to congestion). The WTP that we aim to infer is:

- 1) Security
- 2) Waste disposal
- 3) User charge
- 4) Compensating for traffic congestion created by the flea market

Only item 3 (user charge) is formally incurred by the sellers.

User charge is the fee paid by the sellers to local government for using the area to sell their merchandise. The fee is formally collected by the local government. Waste disposal is charged unofficially by local communities in the area surrounding the market. Most of the time, paying this fee to them does not guarantee the service they promised. Security moreover, is paid to some people that claim that they can take care of the security in the area. Mostly they are just some “preman”, i.e. unemployed people who ask for money by force, otherwise their security is not guaranteed (criminal threat).

Based on the non-parametric analysis conducted, it is suggested that there are different characteristics among different location of flea market (Appendix table-A1). We used this as a basis to analyze the WTP difference across location.

We use censored regression to analyze the determinants of WTPs, and use GLM standard errors to correct for heteroscedasticity. We impose the GLM condition that the (true) variance of  $y_i$  is proportional to the variance of the distribution used to specify the log likelihood. Tabel-6 shows the average WTP for the 4 items, while tables A2 to A7 in the appendix show similar analysis for each location individually.

For the overall locations we surveyed, there are two main determinants of WTP (for any of the 4 items) i.e., working capital and the type of the stock of merchandise the seller own. In general, the amount of working capital and sellers' ownership of the merchandise stocks have a positive impact on their willingness to pay for the services.

When we divide the sample into locations, it turns out that that the above strong relationship does not hold anymore. That is, the relationship between working capital and the stock ownership become less significant in determining the sellers WTP. It may be the case that there are some unobserved location specific variables that is not captured by the model.

**Tabel 6**  
**ML\_Censored Normal with GLM Standard Errors (prob. in parenthesis):**  
**for All Location**

<b>Variables</b>	<b>Securities</b>	<b>Congestion</b>	<b>Waste Disposal</b>	<b>User Charge</b>
C	304.3786 (0.0107)	-378.2172 (0.0160)	375.8716 (0.0002)	1093.769 (0.0000)
Households head	-52.87648 (0.2842)	78.89554 (0.1818)	-14.29846 (0.7453)	-17.43327 (0.8440)
Working Capital	5.47E-05 (0.0001)	1.07E-05 (0.2736)	6.96E-05 (0.0000)	9.72E-05 (0.0015)
Income	8.32E-05 (0.2889)	7.45E-05 (0.0002)	0.000106 (0.1993)	0.000214 (0.1762)
Years of Schooling	29.28567 (0.0036)	9.045072 (0.4525)	14.39504 (0.0932)	-6.176252 (0.7595)
Ownership of Merchandise	97.24584 (0.0768)	83.51567 (0.3112)	30.57267 (0.4961)	-218.8966 (0.0493)
Log likelihood	-9946.267	-5826.655	-10364.23	-10836.11
Left censored obs	203	757	120	183
Total obs	1401	1401	1401	1401
Average WTP	903.033	356.4954	807.173	1342.898
Average Actual Pay	1842.539	1277.620	863.435	952.566

Source: Author's calculation based on Survey

The survey also suggests that, except for WTP for general user charge, the average WTP and the actual amount that the sellers pay are different. Of those services where the actual pay is higher than their WTP, there is an indication that there are some other unofficial costs incurred to the sellers. The money goes to informal institutions other than local government. This is a clear indication that formal institutions have not done their job very well, so that the revenue potentials are captured by informal institutions.

Another possible explanation for this is that sellers' willingness to pay may be higher if the rule of law can be enforced. If the government wants to get more revenues from informal activities, it needs to give people who are involved in informal activities more certainty, protection, and proper services. The revenue the government gets can be used to finance activities to reduce the externalities created by the presence of the flea markets.

#### **4. Concluding Remarks**

We conduct a survey of 1,401 sellers at 6 different locations of flea markets, which represent important activities of the informal sectors, in Bandung municipality. The demographic profile of the sellers, for example, they are mostly at their productive working age, relatively highly educated, and small family size, may confirm that informal activities in general, and flea markets in particular, are an alternative place to work for the new labor force who cannot be absorbed by the formal sector.

We found two important determinants of WTP for some relevant services (general user charge, waste disposal services, security, and congestion) in the flea market; the amount of working capital, and the ownership of the merchandise. Both of these factors affect sellers WTP for the relevant services positively.

There are potentials for the government to collect revenues from the informal activities at the flea market. However, the local government needs to provide what the sellers need, among others, reducing the unofficial costs that the sellers pay, and providing what is needed by the sellers. When the government, at this stage of development, cannot remove or reduce the informal activities, it would be more efficient and equitable to accommodate the informal activities.

## References

- Angelini, John; Kenichi Hirose (2004). *Extension of Social Security Coverage for the Informal Economy in Indonesia: Surveys in the Urban and Rural Informal Economy*, Working Paper No. 11, ILO, Subregional Office for South-East Asia and the Pacific, Manila, Philippines.
- Bagdja Muljarijadi (2003)., *Kondisi Ketenagakerjaan di Indonesia Berdasarkan Status Pekerjaan Dimasa Krisis Ekonomi*, Jurnal Kependudukan Padjadjaran, Vol. 5, No.1.
- Bateman, Ian. J, et all (2002)., *Economic Valuation with Stated Preference Techniques : A Manual*, Edward Elgar, Cheltenham, UK.
- Blackman. A, S. Newbold, J-S Shih, and J. Cook, (2000), “*The Benefits and Cost of Informal Sector Pollution Control: Mexican Brick Kilns*”, Resources for Future Discussion Papers, tersedia di <http://www.rff.org>
- Damodar, Gujarati (2004)., *Basic Econometrics, Fouth Edition*, McGraw-Hill
- Harris, J. R. ; M. P. Todaro (1970)., *Migration, Unemployment and Development: A Two-Sector Analysis*, American Economic Review.
- International Labour Office (2000)., *Employment and social protection in the informal sector*. GB.277/ESP/1/2.
- Marjo-Riitta Liimatainen (2002)., *Informal Economy Series Training and Skills Acquisition in the Informal Sector: A Literature Review*, the 90<sup>th</sup> International Labour Conference international Labor Office – Geneva
- Olson Jr., Mancur (1996)., *Big Bills Left onf The sidewalk: Why Some Nations Are Rich and Others Poor*, Journal of Economics Perspectives, Vol. 10(2).
- Schneider, Friedrich; Dominick H. Enste (2000)., *Shadow Economies: Size, Causes, and Concequences*, Journal of Economic Literature, Vol 38(1).
- Todaro, M. P.(1969)., *A Model of Labor Migration and Urban Unemployment in Less Developed Countries*, American Economic Review.
- Todaro, M. P.; Stephen C. Smith (2006)., *Economic Development, 9<sup>th</sup> Edition*, Pearson Addison Wesley.
- UNDP; BPS; Bappenas (2004)., *The Economics of Democracy, Financing Human Development in Indonesia*, Indonesian Human Development Report.
- Van den Berg, Hendrik (2001)., *Economic Growth and Development: An Analysis of Our Greatest economics Achievements and Our Most Exciting Challenges*, McGraw-Hill, Singapore.
- Wooldridge, Jeffrey M. (2003)., *Econometric Analysis of Cross Section and Panel Data, Second Edition*, The MIT Press, Cambridge.

## Appendix:

### Table A-1 Non Parametric Statistics

#### Compare Mean for n-Sample Test Kruskal-Wallis Test:

Kruskal-Wallis Test on Expenditure

coding_exp	N	Median	Ave Rank	Z
1	551	1000000	730.6	2.20
2	208	1000000	748.7	1.84
3	134	850000	633.2	-2.04
4	120	1000000	742.5	1.17
5	92	950000	679.7	-0.52
6	296	850000	632.9	-3.26
Overall	1401		701.0	

H = 19.49 DF = 5 P = 0.002

H = 19.75 DF = 5 P = 0.001 (adjusted for ties)

Kruskal-Wallis Test on Sales

coding_exp	N	Median	Ave Rank	Z
1	551	150000	695.6	-0.40
2	208	400000	923.0	8.58
3	134	100000	397.8	-9.12
4	120	200000	736.9	1.02
5	92	187500	696.0	-0.12
6	296	192000	679.2	-1.04
Overall	1401		701.0	

H = 139.82 DF = 5 P = 0.000

H = 140.66 DF = 5 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Education

coding_exp	N	Median	Ave Rank	Z
1	551	12.000	711.2	0.76
2	208	12.000	768.8	2.62
3	134	9.000	569.1	-3.97
4	120	12.000	731.6	0.87
5	92	12.000	756.1	1.35
6	296	12.000	664.6	-1.74
Overall	1401		701.0	

H = 25.22 DF = 5 P = 0.000

H = 30.00 DF = 5 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on WTP Waste Disposal

coding_exp	N	Median	Ave Rank	Z
1	551	1000.0	733.4	2.42
2	208	1000.0	932.6	8.95
3	134	500.0	572.0	-3.88
4	120	1000.0	778.1	2.18
5	92	500.0	633.3	-1.66
6	296	500.0	526.1	-8.38
Overall	1401		701.0	

H = 147.57 DF = 5 P = 0.000  
H = 173.77 DF = 5 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Charge

coding_exp	N	Median	Ave Rank	Z
1	551	1000	703.0	0.15
2	208	1000	838.1	5.30
3	134	1000	618.3	-2.49
4	120	1500	828.8	3.62
5	92	1000	688.6	-0.30
6	296	1000	590.4	-5.30
Overall	1401		701.0	

H = 63.68 DF = 5 P = 0.000  
H = 67.86 DF = 5 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Congestion

coding_exp	N	Median	Ave Rank	Z
1	551	0.000000000	732.1	2.31
2	208	0.000000000	632.0	-2.66
3	134	0.000000000	598.4	-3.09
4	120	5.00000E+02	831.4	3.69
5	92	0.000000000	715.5	0.36
6	296	0.000000000	680.7	-0.97
Overall	1401		701.0	

H = 31.25 DF = 5 P = 0.000  
H = 38.12 DF = 5 P = 0.000 (adjusted for ties)

Kruskal-Wallis Test on Security

coding_exp	N	Median	Ave Rank	Z
1	551	1000.0	722.3	1.59
2	208	1000.0	858.8	6.10
3	134	500.0	536.4	-4.95
4	120	1000.0	764.2	1.79
5	92	1000.0	720.3	0.47
6	296	1000.0	593.4	-5.15
Overall	1401		701.0	

H = 79.44 DF = 5 P = 0.000  
H = 95.97 DF = 5 P = 0.000 (adjusted for ties)

**Tabel-A2****ML\_Censored Normal with GLM Standard Errors (prob in parenthesis) (prob in parenthesis) in Gasibu**

Variables	Securities	Congestion	Waste Disposal	User Charge
C	518.0698 (0.0037)	-330.5807 (0.1423)	499.1265 (0.0013)	1284.007 (0.0036)
Households head	30.40900 (0.6519)	85.63357 (0.3506)	86.57025 (0.2177)	331.6470 (0.0822)
Working Capital	3.72E-05 (0.0191)	4.41E-05 (0.0100)	8.54E-05 (0.0143)	0.000221 (0.0124)
Income	3.23E-06 (0.8933)	5.49E-05 (0.0917)	-2.79E-05 (0.2054)	0.000112 (0.5433)
Years of Schooling	13.86938 (0.4145)	18.21865 (0.3349)	5.733597 (0.6347)	-60.95600 (0.1228)
Ownership of Merchandise	123.3610 (0.1084)	-46.74472 (0.6733)	66.79665 (0.3273)	-73.18894 (0.7108)
Log likelihood	-3834.251	-2383.817	-3981.856	-4192.362
Left censored obs	86	286	64	95
Total obs	551	551	551	551
Average WTP	899.8185	395.6443	810.2541	1464.428
Average Actual Pay	2126.887	1366.359	907.767	1131.788

**Tabel-A3****ML\_Censored Normal with GLM Standard Errors (prob in parenthesis) in Soekarno-Hatta**

Variables	Securities	Congestion	Waste Disposal	User Charge
C	483.5862 (0.0131)	348.8353 (0.1186)	99.75041 (0.5241)	515.8151 (0.0558)
Households head	34.79113 (0.6291)	27.56820 (0.7483)	-1.051432 (0.9861)	94.95783 (0.3635)
Working Capital	-1.40E-05 (0.6460)	-1.87E-05 (0.5535)	-9.15E-06 (0.7579)	8.58E-05 (0.0168)
Income	-0.000147 (0.0533)	-9.13E-05 (0.2932)	0.000280 (0.2061)	-6.93E-06 (0.9273)
Years of Schooling	13.15546 (0.3297)	-33.04181 (0.0585)	-0.323025 (0.9718)	6.325797 (0.7243)
Ownership of Merchandise	173.5247 (0.2439)	120.8790 (0.4359)	231.8114 (0.0031)	154.3759 (0.4724)
Log likelihood	-1906.556	-1225.551	-1990.451	-2086.786
Left censored obs	57	154	33	44
Total obs	296	296	296	296
Average WTP	698.3108	294.2568	582.7703	944.9324
Average Actual Pay	1536.149	1042.553	833.3333	805.9361

**Tabel-A4****ML\_Censored Normal with GLM Standard Errors (prob in parenthesis) in Metro**

Variables	Securities	Congestion	Waste Disposal	User Charge
C	263.9322 (0.5291)	-46.02964 (0.9211)	341.2229 (0.4525)	1779.312 (0.0030)
Households head	-140.4787 (0.3419)	163.1623 (0.3104)	69.98753 (0.6305)	-571.0426 (0.0137)
Working Capital	4.44E-05 (0.0823)	-2.12E-05 (0.3442)	5.17E-05 (0.0474)	8.73E-06 (0.8003)
Income	0.000113 (0.2762)	3.64E-05 (0.6910)	0.000290 (0.0045)	0.000126 (0.5185)
Years of Schooling	45.58409 (0.1596)	-46.28919 (0.2023)	15.23177 (0.7052)	19.71718 (0.6915)
Ownership of Merchandise	225.0444 (0.2521)	200.4521 (0.4033)	136.0448 (0.4463)	-302.5140 (0.3979)
Log likelihood	-1552.815	-670.2876	-1593.139	-1597.914
Left censored obs	25	136	19	29
Total obs	208	208	208	208
Average WTP	1203.846	269.2308	1199.519	1721.154
Average Actual Pay	1836.634	1162.5	758.9286	910.7143

**Tabel-A5****ML\_Censored Normal with GLM Standard Errors (prob in parenthesis) in Pasteur**

Variables	Securities	Congestion	Waste Disposal	User Charge
C	157.048 (0.3069)	-1372.597 (0.0013)	414.7569 (0.0000)	764.9005 (0.0001)
Households head	-28.93042 (0.5647)	-32.47858 (0.8032)	-97.81834 (0.0220)	163.4005 (0.0157)
Working Capital	4.11E-05 (0.3693)	0.000439 (0.0256)	-2.77E-05 (0.3416)	-0.000309 (0.0000)
Income	0.000160 (0.0902)	0.000534 (0.0163)	0.000123 (0.0592)	4.36E-06 (0.9629)
Years of Schooling	36.03557 (0.0002)	59.26293 (0.0695)	14.30684 (0.0607)	11.53589 (0.4036)
Ownership of Merchandise	25.9370 (0.7101)	35.41836 (0.8264)	53.46493 (0.2646)	61.93098 (0.5291)
Log likelihood	-903.1890	-452.5417	-905.9355	-979.6807
Left censored obs	8	82	0	1
Total obs	134	134	134	134
Average WTP	664.1791	211.194	629.1045	950
Average Actual Pay	1228.571	968.75	817.6471	783.1776

**Tabel-A6****ML\_Censored Normal with GLM Standard Errors (prob in parenthesis) in PUSDAI**

Variables	Securities	Congestion	Waste Disposal	User Charge
C	-123.2040 (0.8207)	-421.8048 (0.5294)	763.5358 (0.3280)	763.5358 (0.3280)
Households head	-201.5638 (0.3478)	363.2442 (0.1635)	-201.6757 (0.4181)	-201.6757 (0.4181)
Working Capital	6.92E-06 (0.8215)	-2.01E-05 (0.4828)	9.54E-06 (0.7081)	9.54E-06 (0.7081)
Income	0.000538 (0.0000)	0.000138 (0.0976)	0.000564 (0.0000)	0.000564 (0.0000)
Years of Schooling	30.15698 (0.5320)	-17.68468 (0.7538)	44.04698 (0.5395)	44.04698 (0.5395)
Ownership of Merchandise	425.6024 (0.1392)	648.0430 (0.0439)	-189.2304 (0.4301)	-189.2304 (0.4301)
Log likelihood	-910.0196	-660.6402	-990.7138	-990.7138
Left censored obs	14	47	6	6
Total obs	120	120	120	120
Average WTP	1162.5	629.5833	925	1691.667
Average Actual Pay	1146.552	833.3333	750	832.3944

**Tabel-A7****ML\_Censored Normal with QML (Huber/White) standard errors & covariance (prob in parenthesis) in Salman**

Variables	Securities	Congestion	Waste Disposal	User Charge
C	217.9892 (0.5733)	-1784.478 (0.0061)	269.9412 (0.2202)	1125.954 (0.0128)
Households head	-60.09968 (0.6991)	-203.5800 (0.3832)	-37.01845 (0.6792)	-0.622724 (0.9972)
Working Capital	1.37E-0 (0.6981)	5.67E-05 (0.2141)	5.43E-05 (0.1052)	8.27E-05 (0.0834)
Income	0.00014 (0.3267)	2.51E-05 (0.8603)	8.07E-05 (0.4256)	6.38E-05 (0.7029)
Years of Schooling	67.29690 (0.0527)	106.798 (0.0437)	28.2729 (0.1078)	-6.250732 (0.8905)
Ownership of Merchandise	-240.8296 (0.4074)	645.1928 (0.0785)	-7.333092 (0.9548)	-164.0303 (0.4326)
Log likelihood	-641.3138	-359.8464	-678.0821	-698.0101
Left censored obs	13	52	3	8
Total obs	92	92	92	92
Average WTP	910.3261	375	729.3478	1157.609
Average Actual Pay	2133.333	1722.222	1124.242	685.4839