Lampiran 1 : Data Panel Penelitian

PROVINSI	TAHUN	Volume air yang dialirkan (dalam satuan ribu m^3)	Jumlah Karyawan Perusahaan Air Bersih	Jumlah Perusahaan Air Bersih	Jumlah Pelanggan Perusahaan Air Bersih
DKI Jakarta	2012	369.203	3079	7	805160
DKI Jakarta	2013	369.440	2895	7	809522
DKI Jakarta	2014	323.244	2854	7	820251
DKI Jakarta	2015	451.614	2659	7	837776
DKI Jakarta	2016	451.614	2659	7	837776
DKI Jakarta	2017	494.295	2508	8	858.147
DKI Jakarta	2018	499.301	2256	8	884.935
DKI Jakarta	2019	511.855	2198	8	885.353
DKI Jakarta	2020	494.518	2226	8	896.782
DKI Jakarta	2021	495.417	2210	8	918.369
Jawa Barat	2012	303.721	6551	23	1189249
Jawa Barat	2013	247.968	6343	22	1411853
Jawa Barat	2014	312.993	6540	22	1364622
Jawa Barat	2015	338.706	6392	22	1278987
Jawa Barat	2016	338.706	6392	22	1278987
Jawa Barat	2017	367.688	6680	22	1.456.191
Jawa Barat	2018	395.581	7160	22	1.623.594
Jawa Barat	2019	384.202	7670	22	1.831.042
Jawa Barat	2020	419.502	7562	22	1.878.000
Jawa Barat	2021	413.526	7738	22	2.005.845
Jawa Tengah	2012	266.993	5135	41	1200072
Jawa Tengah	2013	283.336	5452	41	1275162
Jawa Tengah	2014	305.526	5496	41	1361421
Jawa Tengah	2015	394.527	5909	41	1448984
Jawa Tengah	2016	394.527	5909	41	1448984
Jawa Tengah	2017	351.272	5739	41	1.431.474
Jawa Tengah	2018	398.425	6242	42	1.634.201
Jawa Tengah	2019	451.564	6425	42	1.765.894
Jawa Tengah	2020	485.528	6347	42	1.804.587
Jawa Tengah	2021	511.207	6628	42	1.867.464

D.I. Yogyakarta	2012	23.699	736	6	129659
D.I. Yogyakarta	2013	20.870	737	6	133121
D.I. Yogyakarta	2014	25.596	693	6	140796
D.I. Yogyakarta	2015	27.299	693	6	147645
D.I. Yogyakarta	2016	27.299	693	6	147645
D.I. Yogyakarta	2017	34.673	821	6	161.917
D.I. Yogyakarta	2018	37.224	807	6	170.346
D.I. Yogyakarta	2019	41.421	805	6	180.598
D.I. Yogyakarta	2020	47.283	841	6	191.558
D.I. Yogyakarta	2021	48.303	838	6	207.261
Jawa Timur	2012	398.568	6493	38	1432272
Jawa Timur	2013	435.745	6638	38	1557030
Jawa Timur	2014	452.749	6461	38	1629663
Jawa Timur	2015	634.826	6300	38	1776421
Jawa Timur	2016	634.826	6300	38	1776421
Jawa Timur	2017	628.422	6729	38	2.009.625
Jawa Timur	2018	656.903	6966	38	1.910.407
Jawa Timur	2019	731.229	6672	38	2.132.347
Jawa Timur	2020	721.847	6363	38	2.203.955
Jawa Timur	2021	737.083	6444	38	2.377.295
Banten	2012	151.949	1019	6	203897
Banten	2013	206.305	1838	9	251301
Banten	2014	196.970	1198	9	238103
Banten	2015	228.983	1204	8	246957
Banten	2016	228.983	1204	8	246957
Banten	2017	202.021	1249	9	275.473
Banten	2018	226.883	1310	8	291.681
Banten	2019	225.860	1279	8	311.318
Banten	2020	240.019	1383	8	355.754
Banten	2021	236.878	1365	8	386.443

Lampiran 2 : Hasil Analisis Deskriptif

	VOL	STAFF	CUST	JML
Mean	338945.3	3998.883	1038909.	20.51667
Median	359480.0	4107.000	1053809.	15.50000
Maximum	737083.0	7738.000	2377295.	42.00000
Minimum	20870.00	693.0000	129659.0	6.000000
Std. Dev.	193455.4	2573.328	685722.6	14.72861
Skewness	0.037910	-0.049592	0.055303	0.388161
Kurtosis	2.452795	1.249348	1.668151	1.399453
Jarque-Bera	0.762954	7.686546	4.465136	7.911062
Probability	0.682852	0.021423	0.107253	0.019148
Sum	20336715	239933.0	62334550	1231.000
Sum Sq. Dev.	2.21E+12	3.91E+08	2.77E+13	12798.98
Observations	60	60	60	60

Lampiran 3 : Hasil Uji Chow

Redundant Fixed Effects Tests

Equation: Untitled

Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	42.600302	(5,51)	0.0000
Cross-section Chi-square	98.647751	5	0.0000

Cross-section fixed effects test equation:

Dependent Variable: VOL

Method: Panel Least Squares

Date: 08/28/23 Time: 13:57

Sample: 2012 2021

Periods included: 10

Cross-sections included: 6

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	120896.1	19120.93	6.322708	0.0000
STAFF	-79.30950	13.16573	-6.023935	0.0000
CUST	0.563133	0.049436	11.39118	0.0000
JML	-2429.525	1348.140	-1.802130	0.0769

Root MSE	76611.63	R-squared	0.840512
Mean dependent var	338945.3	Adjusted R-squared	0.831968
S.D. dependent var	193455.4	S.E. of regression	79300.57
Akaike info criterion	25.46422	Sum squared resid	3.52E+11
Schwarz criterion	25.60384	Log likelihood	-759.9266
Hannan-Quinn criter.	25.51883	F-statistic	98.37484
Durbin-Watson stat	0.491557	Prob(F-statistic)	0.000000

Lampiran 4 : Hasil Uji Hausman

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	10.842095	3	0.0126

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
STAFF	-66.094023	-64.479224	75.567917	0.8526
CUST	0.361373	0.375406	0.000058	0.0665
JML	29277.224496	3947.859753	100044987.26752 3	0.0113

Cross-section random effects test equation:
Dependent Variable: VOL
Method: Panel Least Squares
Date: 08/28/23 Time: 14:01
Sample: 2012 2021
Periods included: 10
Cross-sections included: 6
Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-372856.8	215457.1	-1.730539	0.0896
STAFF	-66.09402	17.80871	-3.711332	0.0005
CUST	0.361373	0.032415	11.14841	0.0000
JML	29277.22	10403.35	2.814211	0.0069

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	33672.59	R-squared	0.969190
Mean dependent var	338945.3	Adjusted R-squared	0.964357
S.D. dependent var	193455.4	S.E. of regression	36523.06
Akaike info criterion	23.98676	Sum squared resid	6.80E+10
Schwarz criterion	24.30091	Log likelihood	-710.6027
Hannan-Quinn criter.	24.10964	F-statistic	200.5388
Durbin-Watson stat	1.616211	Prob(F-statistic)	0.000000

Lampiran 5 : Hasil Uji LM

Lagrange Multiplier Tests for Random Effects

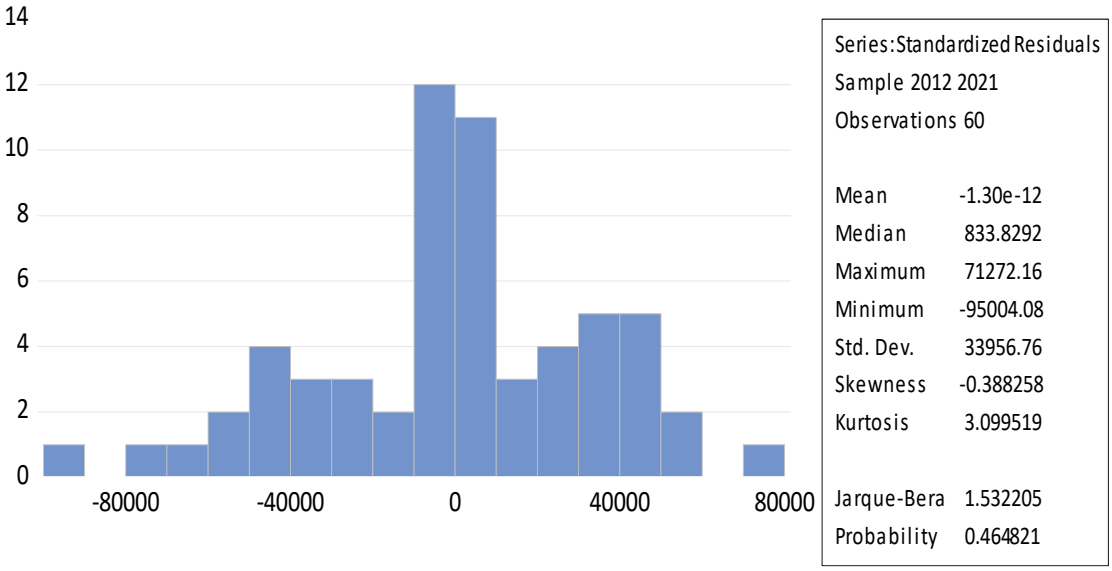
Null hypotheses: No effects

Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided

(all others) alternatives

	Test Hypothesis		
	Cross-section	Time	Both
Breusch-Pagan	80.15344	0.031238	80.18468
	(0.0000)	(0.8597)	(0.0000)
Honda	8.952845	-0.176744	6.205641
	(0.0000)	(0.5701)	(0.0000)
King-Wu	8.952845	-0.176744	7.072621
	(0.0000)	(0.5701)	(0.0000)
Standardized Honda	14.86084	-0.002545	4.941343
	(0.0000)	(0.5010)	(0.0000)
Standardized King-Wu	14.86084	-0.002545	6.580729
	(0.0000)	(0.5010)	(0.0000)
Gourieroux, et al.	--	--	80.15344
			(0.0000)

Lampiran 6 : Hasil Uji Normalitas



Lampiran 7 : Hasil Uji Autokorelasi

Dependent Variable: VOL

Method: Panel Least Squares

Date: 08/28/23 Time: 13:52

Sample: 2012 2021

Periods included: 10

Cross-sections included: 6

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-372856.8	215457.1	-1.730539	0.0896
STAFF	-66.09402	17.80871	-3.711332	0.0005
CUST	0.361373	0.032415	11.14841	0.0000
JML	29277.22	10403.35	2.814211	0.0069

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	33672.59	R-squared	0.969190
Mean dependent var	338945.3	Adjusted R-squared	0.964357
S.D. dependent var	193455.4	S.E. of regression	36523.06
Akaike info criterion	23.98676	Sum squared resid	6.80E+10
Schwarz criterion	24.30091	Log likelihood	-710.6027
Hannan-Quinn criter.	24.10964	F-statistic	200.5388
Durbin-Watson stat	1.616211	Prob(F-statistic)	0.000000

Lampiran 8 : Hasil Uji Heteroskedastisitas

Dependent Variable: RESABS

Method: Panel Least Squares

Date: 07/04/23 Time: 23:41

Sample: 2012 2021

Periods included: 10

Cross-sections included: 6

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STAFF	5.226441	3.202556	1.631959	0.1083
CUST	-0.002940	0.012025	-0.244520	0.8077
JML	-16.47849	327.9344	-0.050249	0.9601
C	8180.467	4651.155	1.758803	0.0841

Root MSE	18635.73	R-squared	0.267314
Mean dependent var	25687.49	Adjusted R-squared	0.228063
S.D. dependent var	21955.19	S.E. of regression	19289.82
Akaike info criterion	22.63688	Sum squared resid	2.08E+10
Schwarz criterion	22.77651	Log likelihood	-675.1065
Hannan-Quinn criter.	22.69150	F-statistic	6.810385
Durbin-Watson stat	2.088366	Prob(F-statistic)	0.000540

Lampiran 9 : Hasil Uji Multikolinieritas

Dependent Variable: VOL

Method: Panel Least Squares

Date: 07/05/23 Time: 00:21

Sample: 2012 2021

Periods included: 10

Cross-sections included: 6

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-372856.8	215457.1	-1.730539	0.0896
STAFF	-66.09402	17.80871	-3.711332	0.0005
CUST	0.361373	0.032415	11.14841	0.0000
JML	29277.22	10403.35	2.814211	0.0069

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	33672.59	R-squared	0.969190
Mean dependent var	338945.3	Adjusted R-squared	0.964357
S.D. dependent var	193455.4	S.E. of regression	36523.06
Akaike info criterion	23.98676	Sum squared resid	6.80E+10
Schwarz criterion	24.30091	Log likelihood	-710.6027
Hannan-Quinn criter.	24.10964	F-statistic	200.5388
Durbin-Watson stat	1.616211	Prob(F-statistic)	0.000000

Dependent Variable: STAFF

Method: Panel Least Squares

Date: 07/05/23 Time: 00:26

Sample: 2012 2021

Periods included: 10

Cross-sections included: 6

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CUST	0.003094	0.000282	10.97460	0.0000
JML	25.84735	13.12371	1.969516	0.0538
C	254.6557	189.3850	1.344645	0.1841

Root MSE	777.5991	R-squared	0.907142
Mean dependent var	3998.883	Adjusted R-squared	0.903884
S.D. dependent var	2573.328	S.E. of regression	797.7999
Akaike info criterion	16.25030	Sum squared resid	36279624
Schwarz criterion	16.35502	Log likelihood	-484.5090
Hannan-Quinn criter.	16.29126	F-statistic	278.4193
Durbin-Watson stat	0.143526	Prob(F-statistic)	0.000000

Dependent Variable: CUST

Method: Panel Least Squares

Date: 07/05/23 Time: 00:30

Sample: 2012 2021

Periods included: 10

Cross-sections included: 6

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STAFF	219.4133	19.99284	10.97460	0.0000
JML	6941.837	3493.074	1.987315	0.0517
C	19077.67	51168.19	0.372842	0.7106

Root MSE	207089.5	R-squared	0.907249
Mean dependent var	1038909.	Adjusted R-squared	0.903995
S.D. dependent var	685722.6	S.E. of regression	212469.3
Akaike info criterion	27.41969	Sum squared resid	2.57E+12
Schwarz criterion	27.52441	Log likelihood	-819.5907
Hannan-Quinn criter.	27.46065	F-statistic	278.7744
Durbin-Watson stat	0.183215	Prob(F-statistic)	0.000000

Dependent Variable: JML

Method: Panel Least Squares

Date: 07/05/23 Time: 00:32

Sample: 2012 2021

Periods included: 10

Cross-sections included: 6

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
STAFF	0.002465	0.001252	1.969516	0.0538
CUST	9.33E-06	4.70E-06	1.987315	0.0517
C	0.961336	1.874289	0.512907	0.6100

Root MSE	7.593912	R-squared	0.729662
Mean dependent var	20.51667	Adjusted R-squared	0.720177
S.D. dependent var	14.72861	S.E. of regression	7.791189
Akaike info criterion	6.992571	Sum squared resid	3460.050
Schwarz criterion	7.097288	Log likelihood	-206.7771
Hannan-Quinn criter.	7.033531	F-statistic	76.92364
Durbin-Watson stat	0.024559	Prob(F-statistic)	0.000000

Lampiran 10 : Hasil Uji Analisis Data

Dependent Variable: VOL

Method: Panel Least Squares

Date: 07/08/23 Time: 22:10

Sample: 2012 2021

Periods included: 10

Cross-sections included: 6

Total panel (balanced) observations: 60

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-372856.8	215457.1	-1.730539	0.0896
STAFF	-66.09402	17.80871	-3.711332	0.0005
CUST	0.361373	0.032415	11.14841	0.0000
JML	29277.22	10403.35	2.814211	0.0069

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	33672.59	R-squared	0.969190
Mean dependent var	338945.3	Adjusted R-squared	0.964357
S.D. dependent var	193455.4	S.E. of regression	36523.06
Akaike info criterion	23.98676	Sum squared resid	6.80E+10
Schwarz criterion	24.30091	Log likelihood	-710.6027
Hannan-Quinn criter.	24.10964	F-statistic	200.5388
Durbin-Watson stat	1.616211	Prob(F-statistic)	0.000000