

Analysis of Performance Indicators (PI) in Guidelines for the Management and Assessment of Drinking Water Services in F.Y.2012

Drinking Water Utilities in all over Japan: 91PIs

Bulk Water Supply Services in all over Japan:55PIs

Japan Water Research Center

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1 Purpose

“Guidelines for the Management and Assessment of Drinking Water Services” were adopted as a standard of the Japan Water Works Association (JWWA) on 17 January in 2005, followed by “Commentary on Guidelines for the Management and Assessment of Drinking Water Services” in October 2005. Thanks to the Guidelines, drinking water utilities are now able to assess their own situations objectively, analyze various issues they are facing, and try to solve them to improve their services. For this reason, the Guidelines need to be widely read and used by water utilities.

Since 2005 the Japan Water Research Center (JWRC) has created histograms about Performance Indicators (PIs) that are specified in the Guidelines. The histograms are available on our website and we hope that they will help utilities with their self-analysis and setting objectives.

2 Abstract

2.1 Water Utilities and PI Calculation

PIs were calculated for drinking water utilities and bulk water suppliers. Small-scale water utilities and private water suppliers were not included. The data of water utilities are as of March 31, 2013.

2.2 Analysis of PI

PIs are calculated based on “Drinking Water Statistics 2012”, which were published by JWWA. The equations in histograms are taken from the Guidelines for Drinking Water Services. Please refer to the Guidelines to know the definition of each term in the equations.

2.3 Work

(1) Creation of 2012 PIs histograms of water utilities in Japan

Drinking water utilities: 91 PIs

Bulk water suppliers: 55 PIs

(2) Calculation of percentiles

Note:

The average exchange rate in F.Y.2012 (From April 2012 to March 2013) between JPY (Japanese Yen) and USD (U.S. Dollar) was 1,000 to 12.37.

3 Histograms of Utilities in Japan

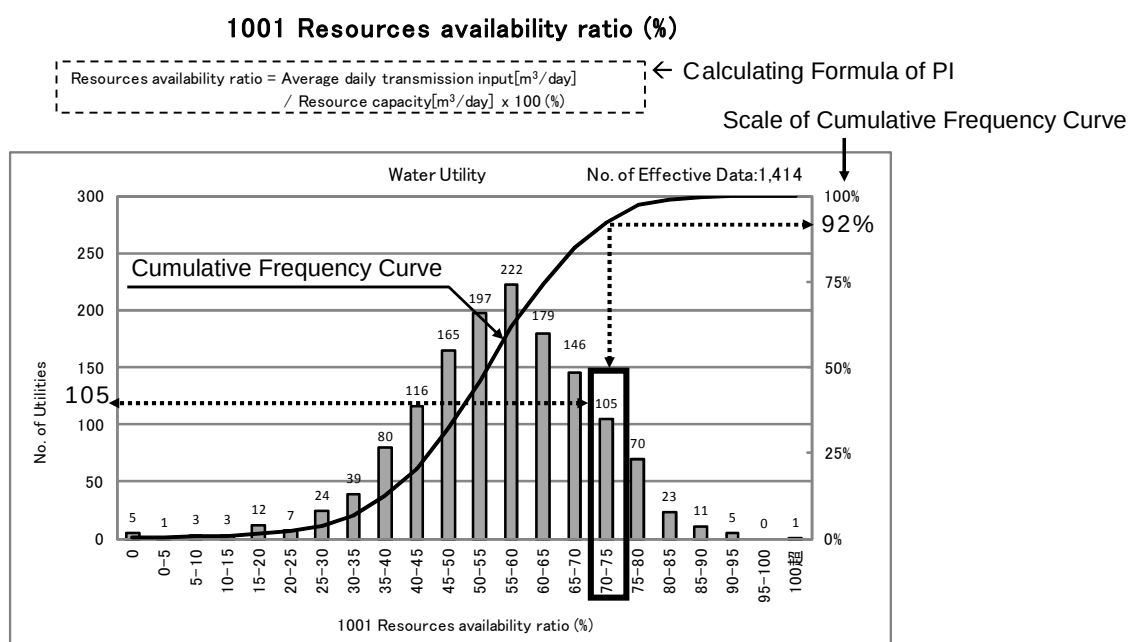
List of PIs

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Performance Indicator (PI)		BW	Page
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"BW" means Bulk Water Supply.

How to read histograms



The horizontal axis represents PI values (at 5% regular intervals in the above example) and the left vertical axis represents the number of utilities. For instance, this graph shows that there are 105 water utilities whose resource availability ratio falls between 70% and 75% ($70\% < \text{PI} \leq 75\%$).

The curved line in the graph is a cumulative frequency curve and its scale is shown on the right vertical axis. The percentage represents the ratio of utilities within certain ranges of PI values.

Some data in Drinking Water Statistics are not available (blank) because respondents did not provide answers. Currently, we count such data as zero. Therefore, when they have effective denominators, their PI values necessarily become zero. Also, you may notice that the number of water utilities (denominators) is different among PIs. This is because some denominators—which were either zero or not answered (blank)—could not be used for calculations and thus were not included.

The two tables on the right show PI values from 2007 to 2012 (top) and PI values by population served in 2012 (down). For instance, as for the 5% value in 2012 in the top table, the PI value 32.6 belongs to the utility that comes in at 71th (5%) place when all the PI values of 1,414 utilities are arranged from lowest value to highest

[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2007	75.9	64.2	56.3	47.9	33.1
2008	75.8	63.7	55.6	47.4	32.1
2009	75.5	64.1	55.4	47.2	32.4
2010	76.9	64.8	56.5	47.8	33.1
2011	76.8	64.8	56.2	47.3	32.7
2012	77.3	65.2	56.2	46.6	32.6

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	75.7	62.0	50.1	39.1	18.9
1-3	76.5	63.7	53.6	45.9	35.7
3-10	78.1	67.7	58.4	51.5	40.3
10-50	77.1	69.3	60.6	53.2	41.4
50<	79.4	64.2	59.4	56.1	43.8

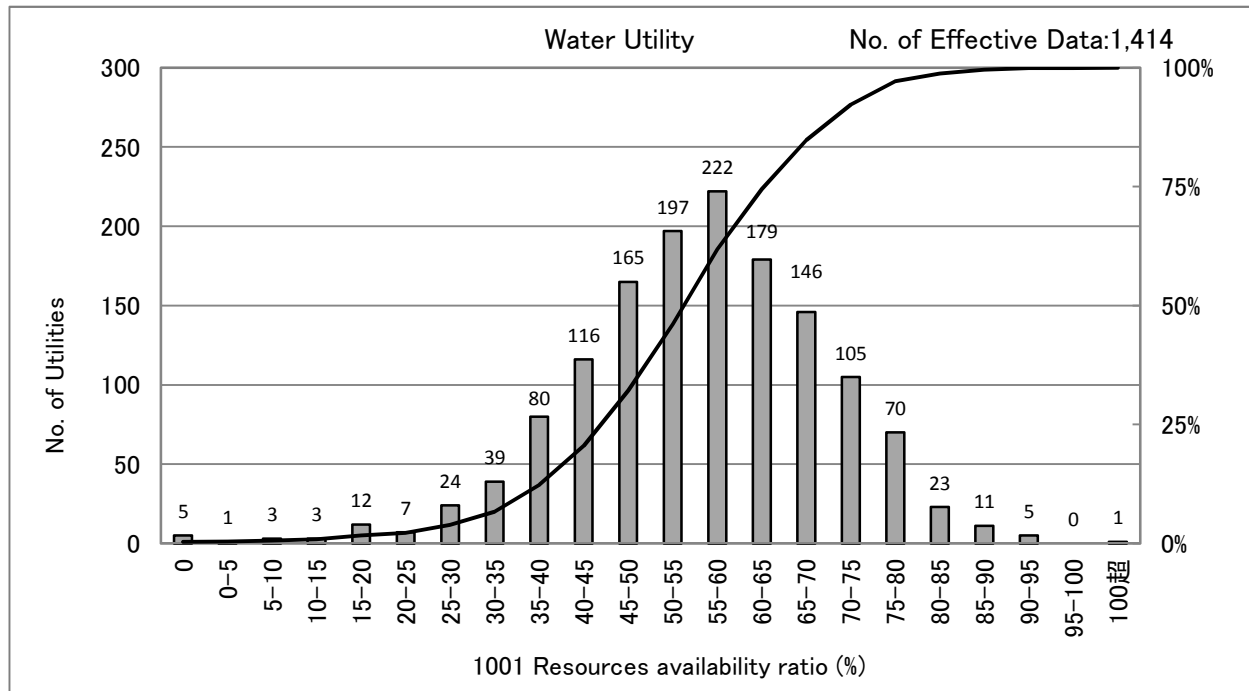
× 10,000people

value. The 50% value (56.2) points to the intermediate value, which is the PI value of 707th utility that comes in the middle of 1,414 utilities.

The 50% value is not a national average. As mentioned before, some of the data in Drinking Water Statistics are not available or appropriate to use. Another concern of the Statistics is that sometimes they contain extreme values due to miscalculations by respondents that just seem too big or too small. Since our PI values are based on Drinking Water Statistics, we use all those data for our calculations. Considering the uncertainty of some of their data, however, we use the term intermediate value rather than mean value because we are not sure whether it is the actual national average.

1001 Resources availability ratio (%)

Resources availability ratio = Average daily transmission input[m³/day]
/ Resource capacity[m³/day] x 100 (%)



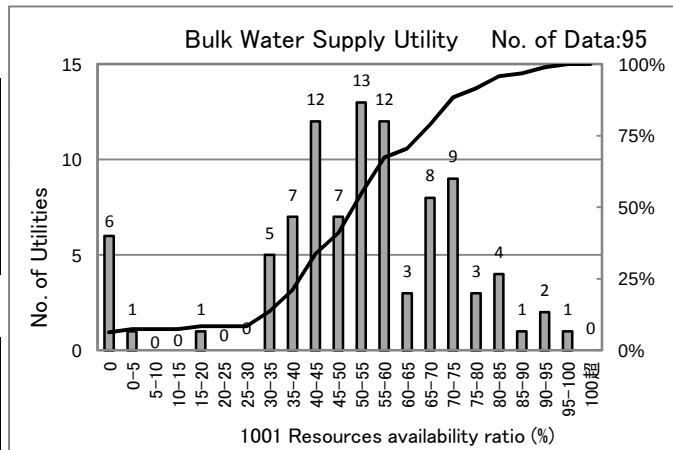
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	75.8	63.7	55.6	47.4	32.1
2009	75.5	64.1	55.4	47.2	32.4
2010	76.9	64.8	56.5	47.8	33.1
2011	76.8	64.8	56.2	47.3	32.7
2012	77.3	65.2	56.2	46.6	32.6

Population supplied (F.Y.2012)

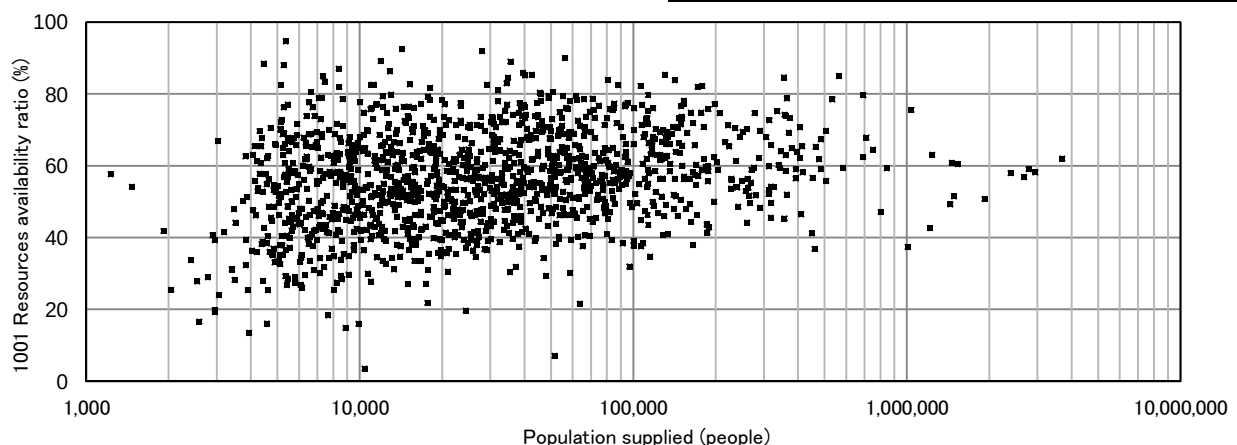
People	95%	75%	50%	25%	5%
<=1	74.4	62.0	50.1	39.1	18.9
1-3	76.5	63.7	53.6	45.9	35.7
3-10	78.1	67.7	58.4	51.5	40.3
10-50	77.1	69.3	60.6	53.2	41.4
50<	79.4	64.2	59.4	56.1	43.8

× 10,000people



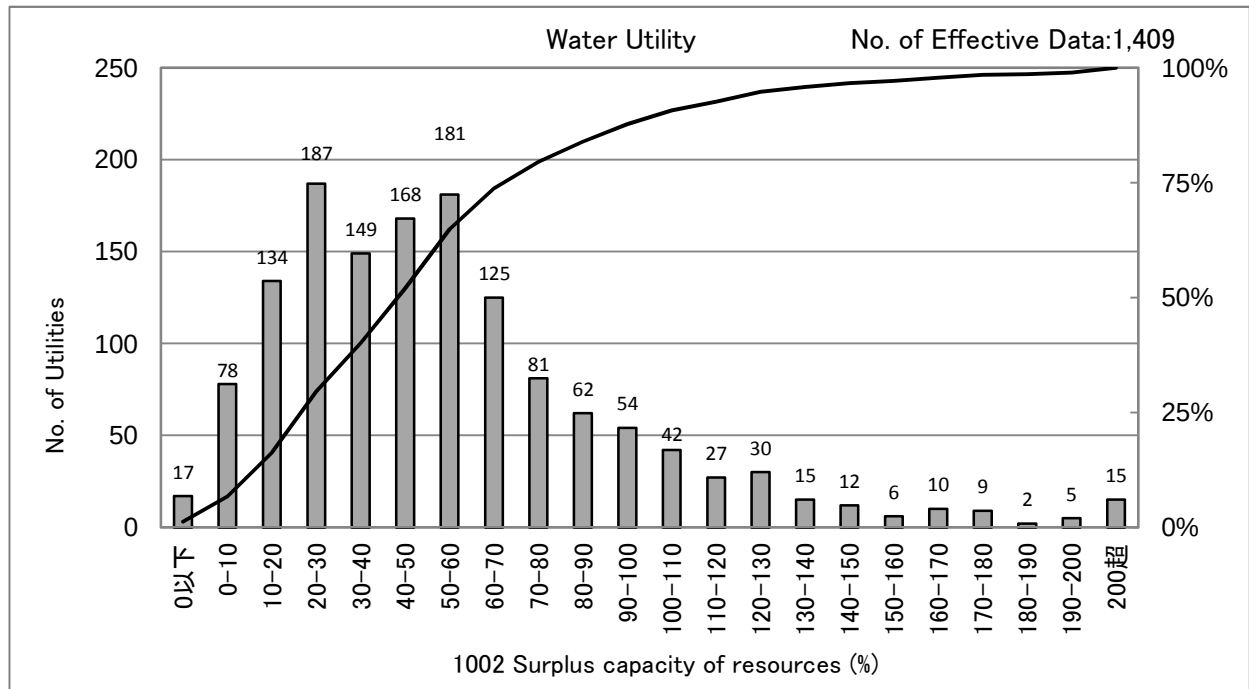
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	82.7	63.8	52.2	41.4	0.0
	2010	82.0	64.4	51.4	40.6	0.0
	2011	81.3	64.3	53.5	40.6	0.0
	2012	82.2	67.3	53.9	42.1	0.0

[Scatter Plot]



1002 Surplus capacity of resources (%)

Surplus capacity of resources = $\{(\text{Resource capacity}[\text{m}^3/\text{day}] / \text{Maximum daily transmission input}[\text{m}^3/\text{day}]) - 1\} \times 100 (\%)$



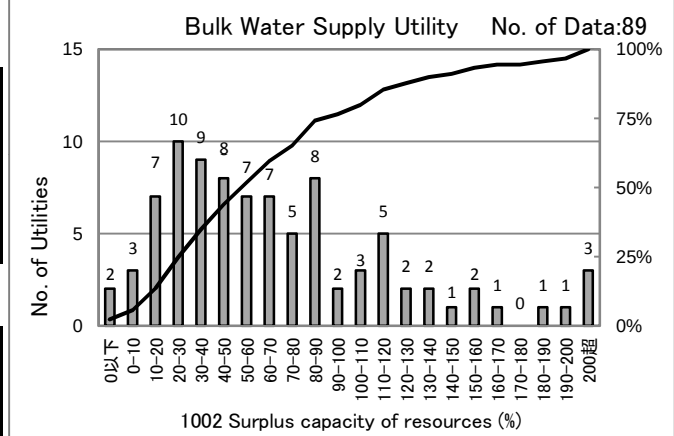
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	130.9	70.4	46.2	27.7	7.9
2009	131.0	73.3	48.7	29.2	10.2
2010	126.1	66.5	44.7	25.2	6.6
2011	128.0	70.0	46.2	25.4	7.5
2012	131.9	71.9	48.3	26.3	8.2

Population supplied (F.Y.2012)

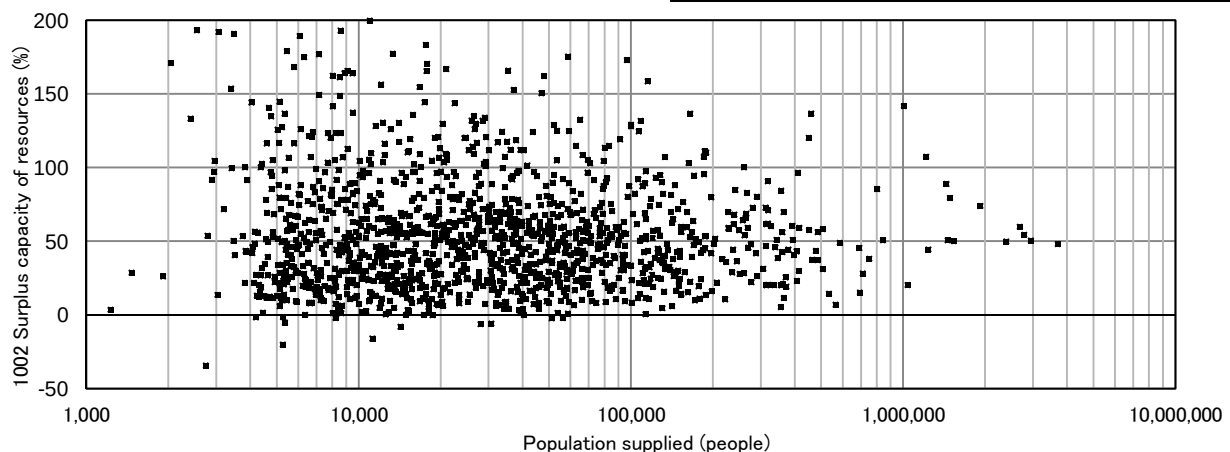
People	95%	75%	50%	25%	5%
<=1	177.8	85.1	48.1	23.8	7.1
1-3	129.9	76.1	50.5	27.4	7.8
3-10	112.1	65.6	47.2	26.8	8.1
10-50	107.5	66.4	44.7	28.3	11.6
50<	102.9	59.5	50.3	39.7	14.6

× 10,000people



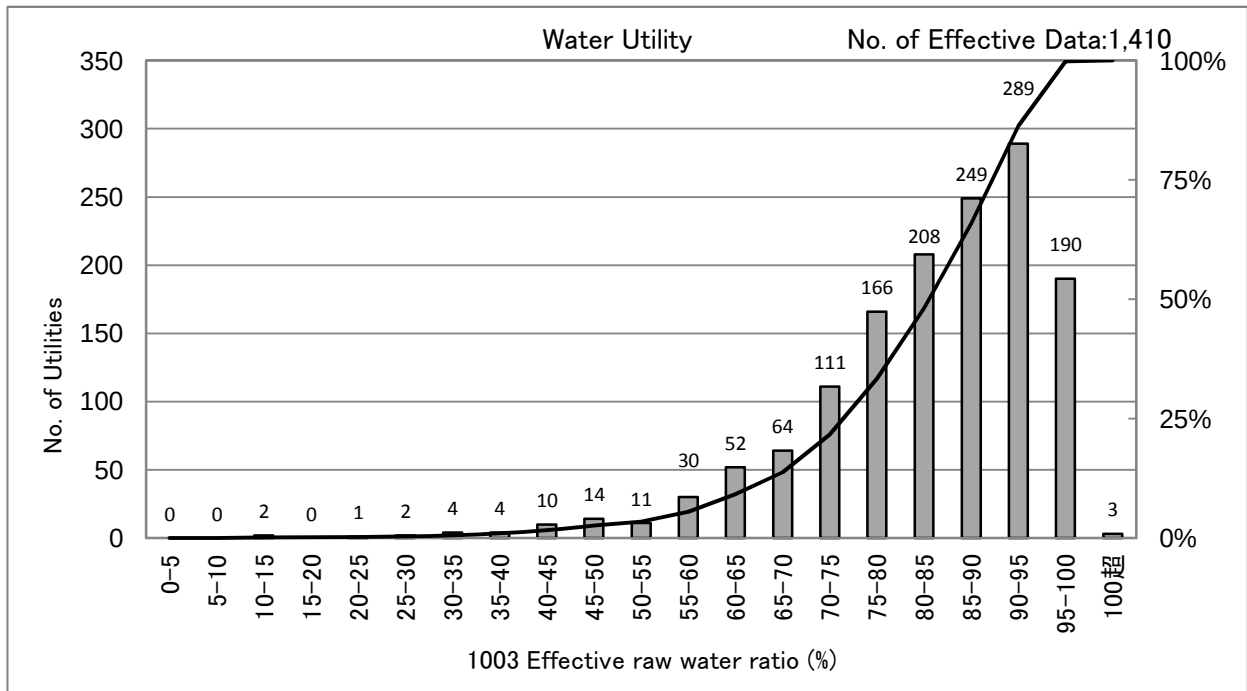
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	170.2	93.6	62.3	33.4	8.7
Supply Utility	2010	158.2	90.1	56.7	34.7	7.4
	2011	166.3	97.1	59.8	31.5	13.0
	2012	178.2	90.6	56.4	30.2	9.4

[Scatter Plot]



1003 Effective raw water ratio (%)

Effective raw water ratio = Annual effective volume[m³/day] / Annual intake volume[m³/day] x 100 (%)



[Percentile Value] Water Utility

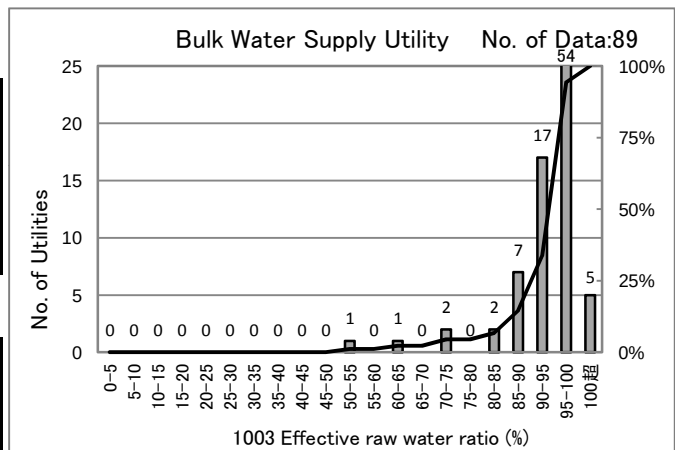
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	97.9	92.3	86.3	78.4	61.6
2009	97.8	92.3	86.1	78.0	62.0
2010	97.7	92.3	86.3	78.2	61.9
2011	97.5	92.1	85.2	76.4	59.2
2012	97.6	92.2	85.7	76.8	59.1

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	96.0	87.3	77.2	66.1	45.8
1-3	97.4	89.7	82.8	75.9	60.3
3-10	97.1	93.0	87.8	81.5	67.6
10-50	98.1	95.7	92.7	87.5	80.4
50<	96.8	94.1	92.8	90.9	86.8

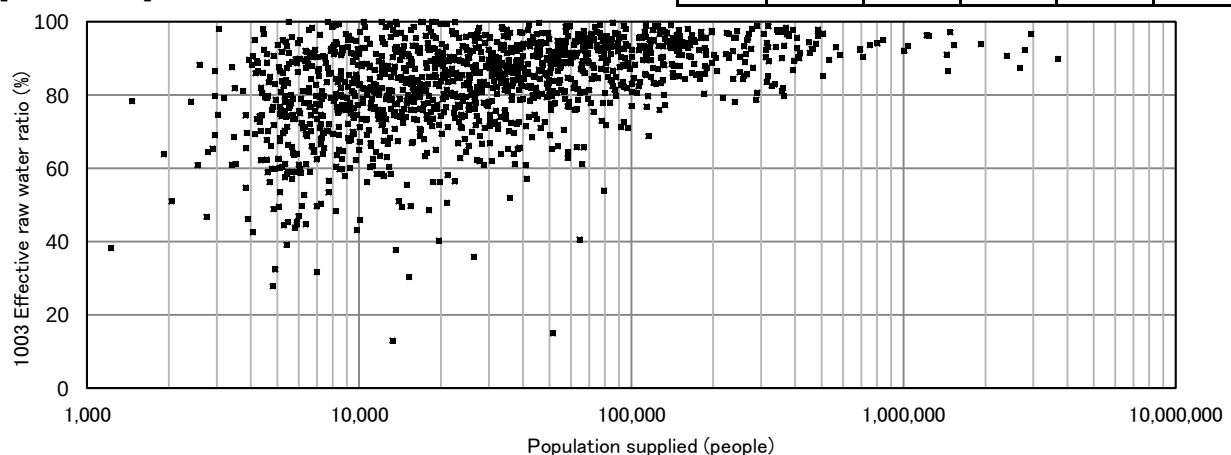
× 10,000people



[Percentile Value]
Bulk Water
Supply Utility

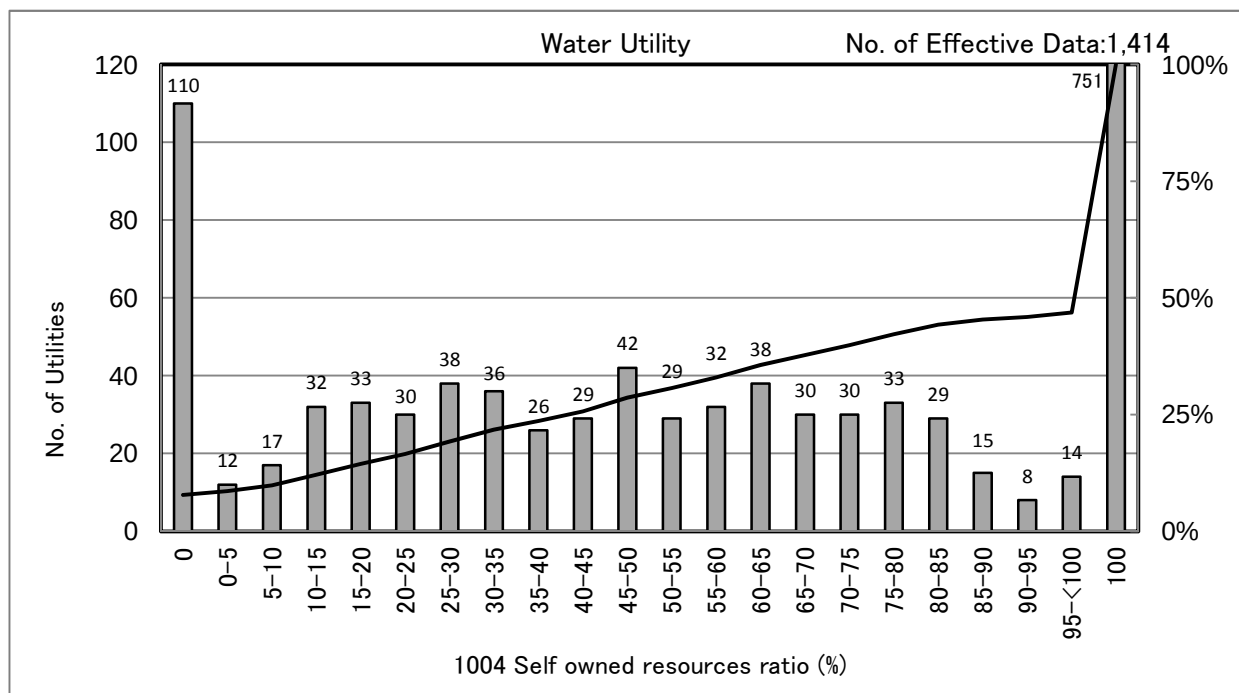
F.Y.	95%	75%	50%	25%	5%
2009	99.9	98.6	96.5	93.1	84.9
2010	100.0	98.5	96.8	93.6	82.4
2011	100.0	98.7	96.6	93.1	83.5
2012	100.1	98.7	96.6	93.4	81.8

[Scatter Plot]



1004 Self owned resources ratio (%)

Self owned resources ratio = Self owned resource capacity[m³/day]
/ Total resource capacity[m³/day] x 100 (%)



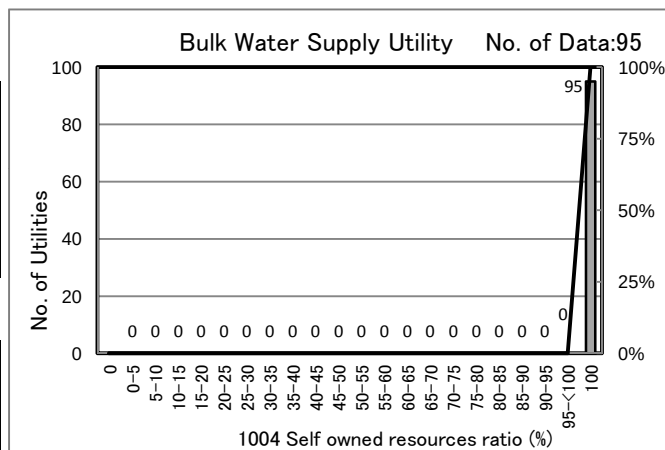
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	100.0	100.0	100.0	42.2	0.0
2009	100.0	100.0	100.0	42.2	0.0
2010	100.0	100.0	100.0	42.5	0.0
2011	100.0	100.0	100.0	41.5	0.0
2012	100.0	100.0	100.0	43.0	0.0

Population supplied (F.Y.2012)

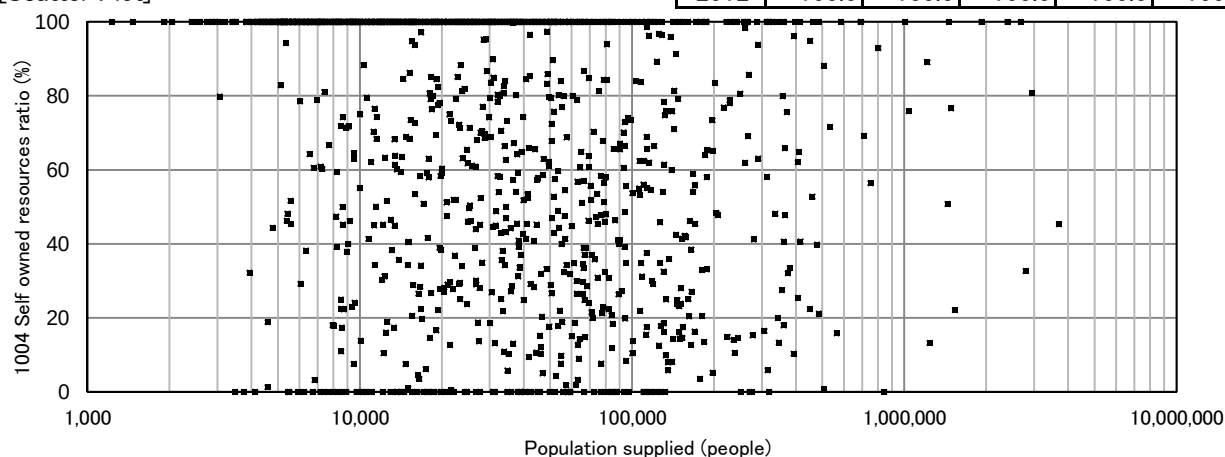
People	95%	75%	50%	25%	5%
<=1	100.0	100.0	100.0	100.0	0.0
1-3	100.0	100.0	100.0	51.9	0.0
3-10	100.0	100.0	66.9	31.4	0.0
10-50	100.0	100.0	57.1	21.8	0.0
50<	100.0	100.0	78.7	46.7	3.9

× 10,000people



[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	100.0	100.0	100.0	100.0	100.0
	2010	100.0	100.0	100.0	100.0	100.0
	2011	100.0	100.0	100.0	100.0	100.0
	2012	100.0	100.0	100.0	100.0	100.0

[Scatter Plot]

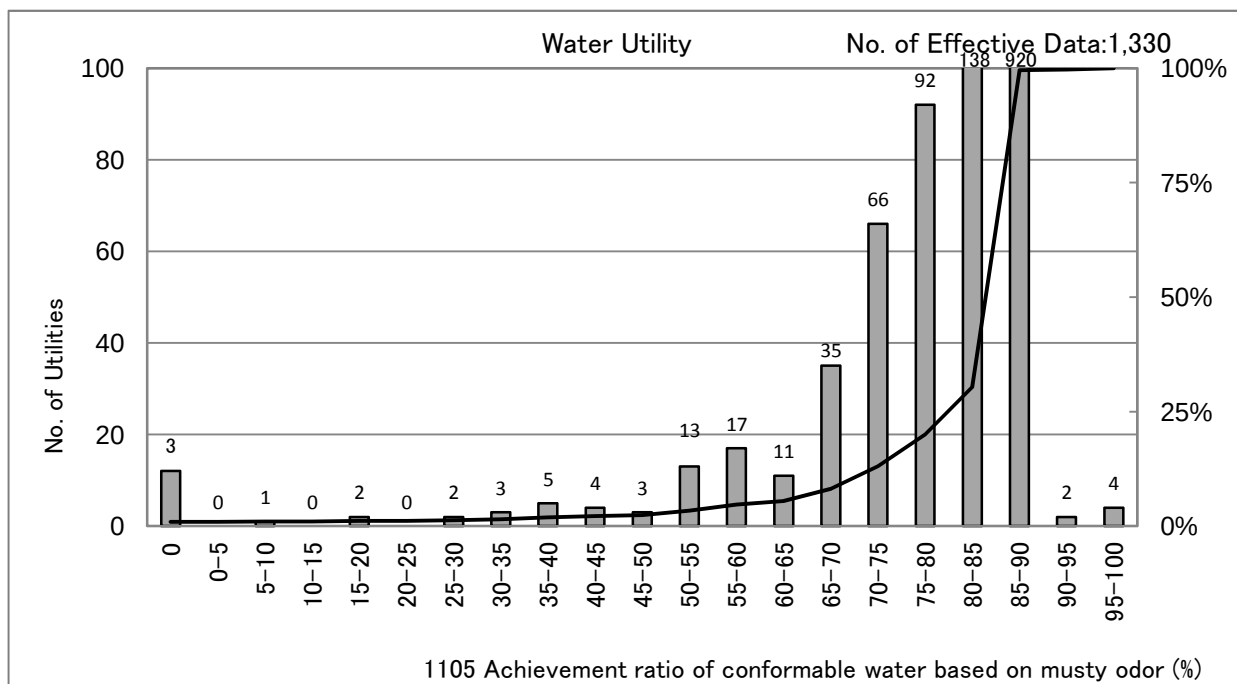


1105 Achievement ratio of conformable water based on musty odor (%)

Achievement ratio of conformable water based on musty odor =

$\{(1 - \text{Maximum Geosmin concentration} / \text{Standard Geosmin concentration})$

$+ (1 - \text{Maximum 2-MIB concentration} / \text{Standard 2-MIB concentration})\} / 2 \times 100 (\%)$



[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	90	90	90	80	52
2009	90	90	90	80	55
2010	90	90	90	80	60
2011	90	90	90	85	65
2012	90	90	90	85	65

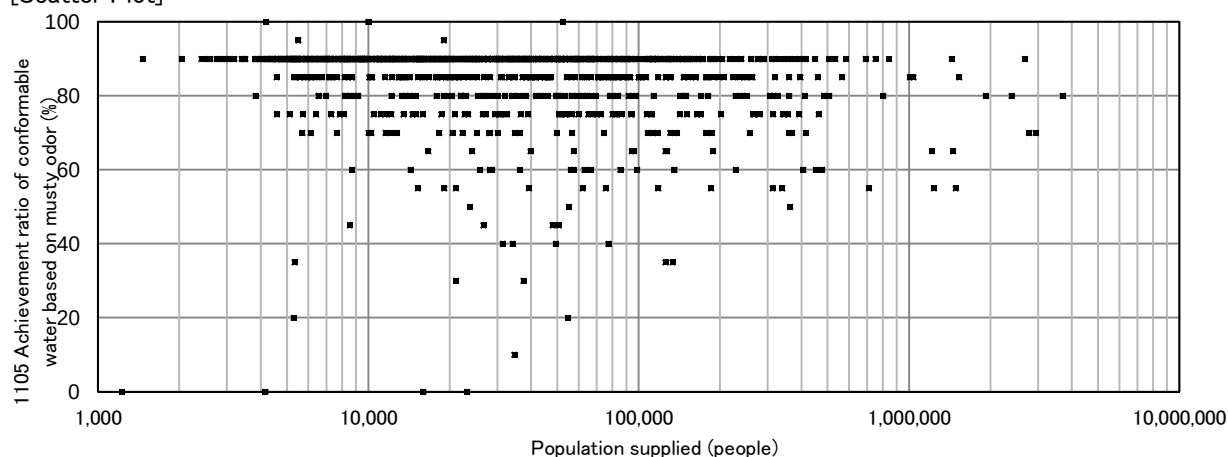
Measurement Material	Water Quality Std.
Geosmin	0.00001mg/L
2-Methylisoborneol (2-MIB)	0.00001mg/L

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	90.0	90.0	90.0	90.0	75.0
1-3	90.0	90.0	90.0	85.0	70.0
3-10	90.0	90.0	90.0	85.0	60.0
10-50	90.0	90.0	90.0	80.0	60.0
50<	90.0	90.0	85.0	72.5	55.0

× 10,000people

[Scatter Plot]

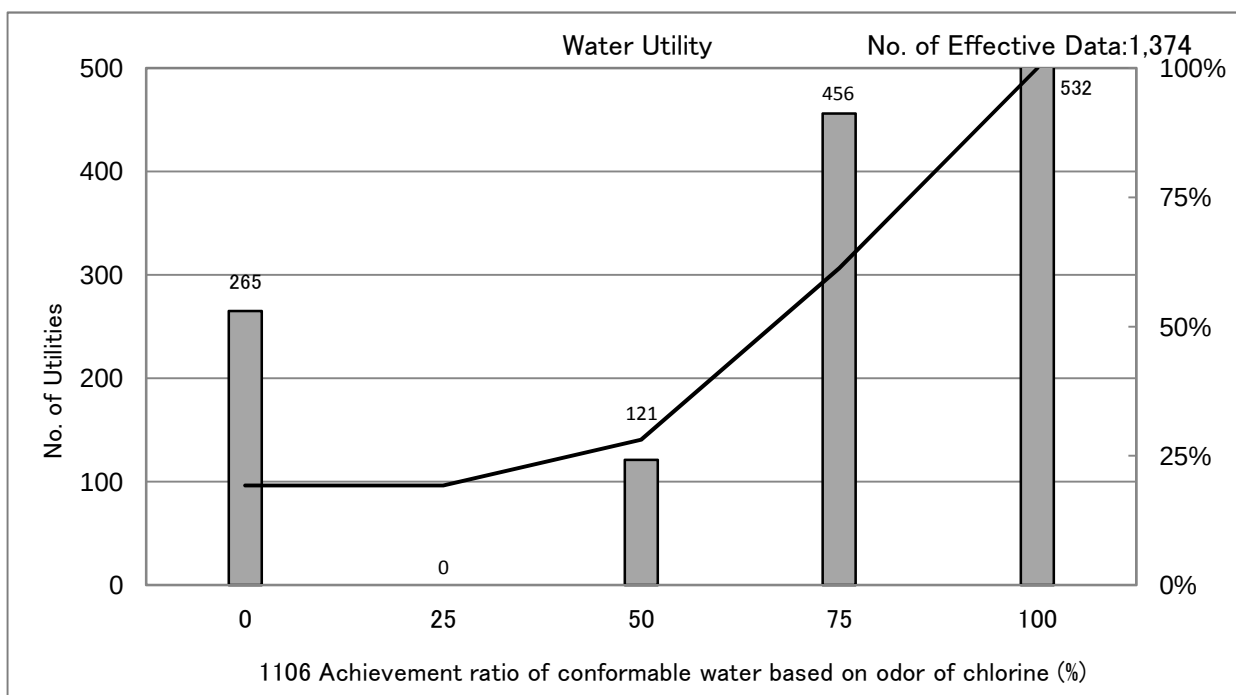


1106 Achievement ratio of conformable water based on odor of chlorine (%)

Achievement ratio of conformable water based on odor of chlorine = $\{1 - (\text{Maximum residual chlorine concentration} - \text{Target residual chlorine concentration}) / \text{Target residual chlorine concentration}\} \times 100 (\%)$

If a calculated value is less than 0%, this PI value is 0%.

If a calculated value is more than 100%, this PI value is 100%.



[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	100	100	75	25	0
2009	100	100	75	25	0
2010	100	100	75	25	0
2011	100	100	75	25	0
2012	100	100	75	25	0

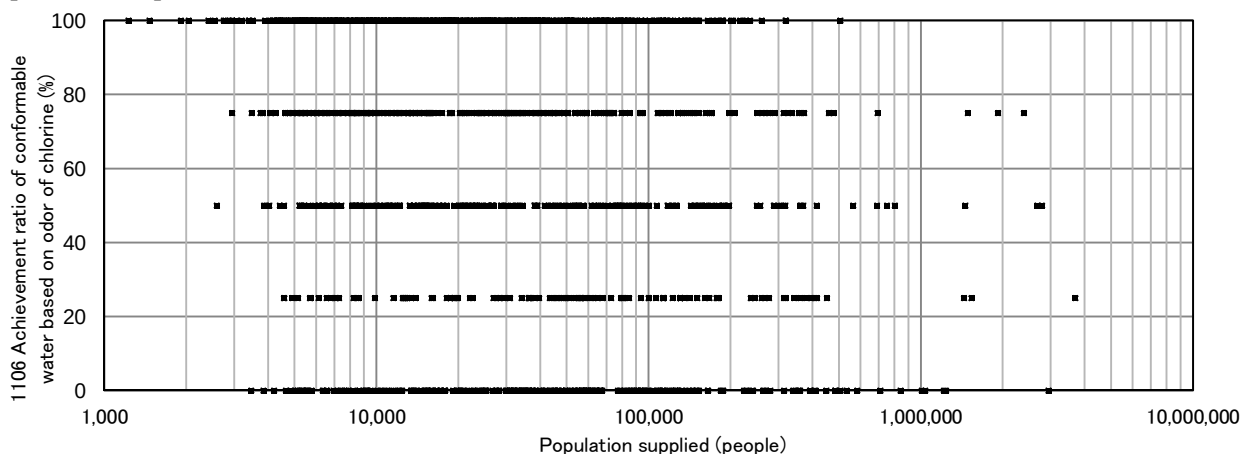
Measurement Material	Target
Residual Chlorine	0.4mg/L

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	100	100	100	50	0
1-3	100	100	75	50	0
3-10	100	100	75	25	0
10-50	100	75	50	0	0
50<	75	50	25	0	0

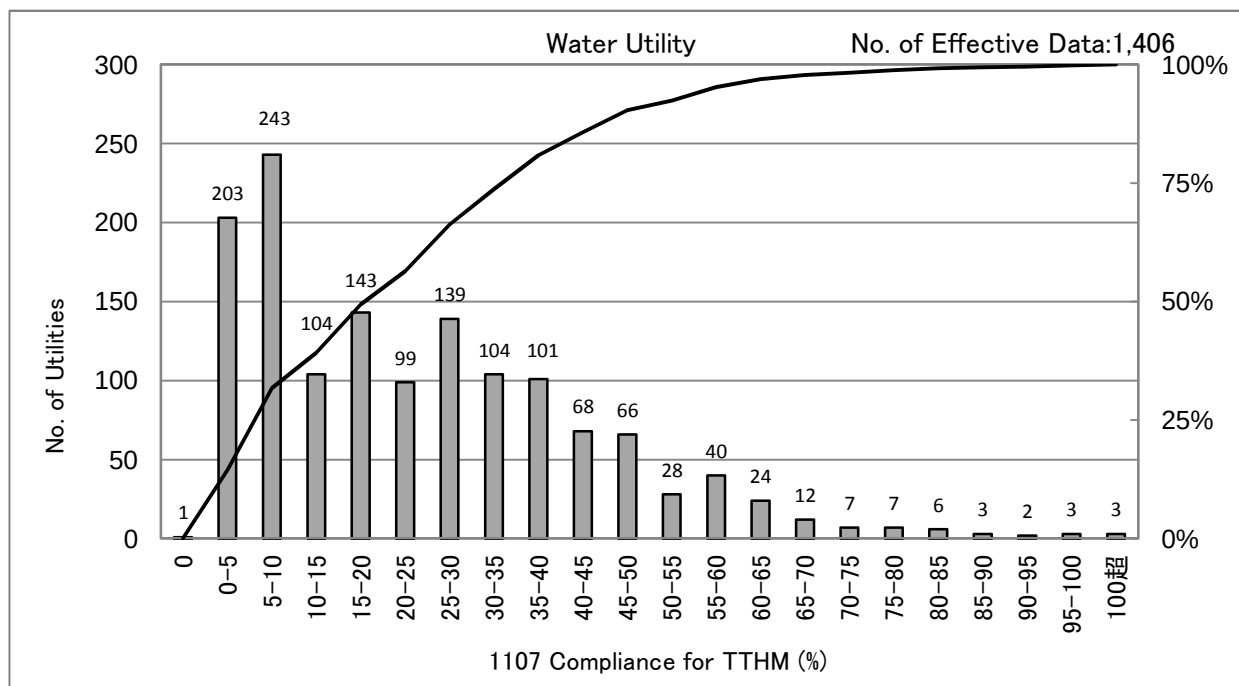
× 10,000people

[Scatter Plot]



1107 Compliance for TTHM (%)

Compliance for TTHM = Maximum TTHM concentration / Standard TTHM concentration x 100 (%)



[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	60	37	20	10	1
2009	61	36	21	10	1
2010	62	37	21	10	1
2011	61	36	21	10	1
2012	60	36	21	10	1

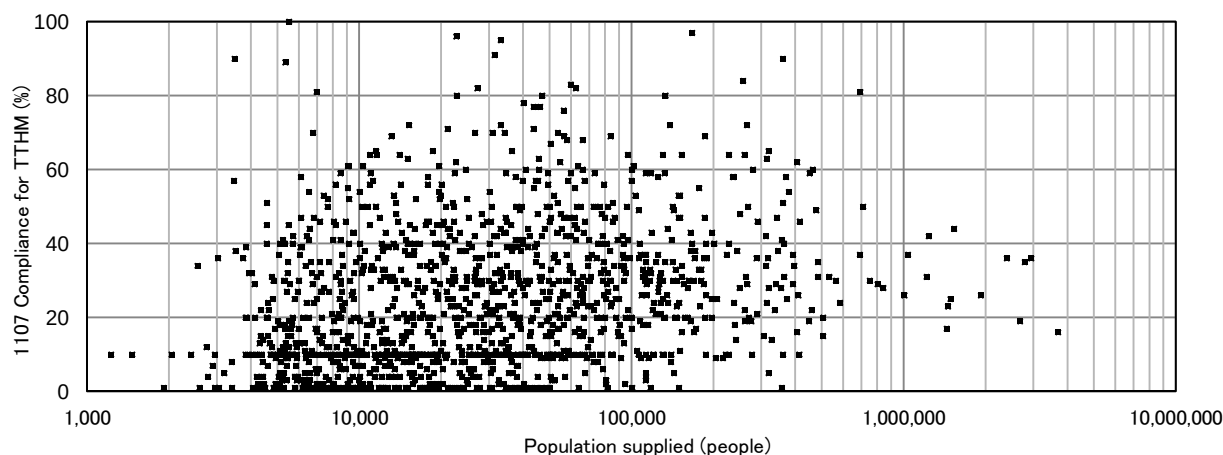
Measurement Material	Water Quality Std.
Total Trihalomethane (TTHM)	0.1mg/L

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	52	27	11	5	1
1-3	56	34	18	10	1
3-10	64	41	27	12	2
10-50	64	42	30	20	9
50<	49	36	30	24	16

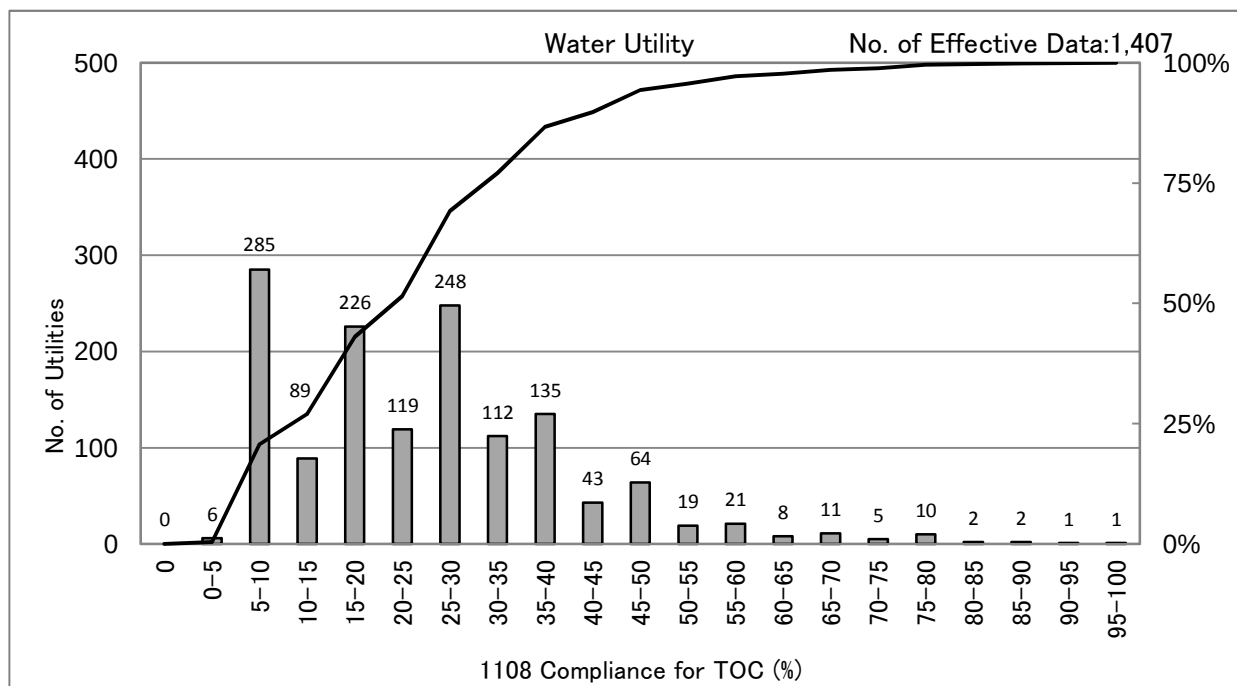
× 10,000people

[Scatter Plot]



1108 Compliance for TOC (%)

Compliance for TOC = Maximum TOC concentration / Standard TOC concentration x 100 (%)



[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	34	22	16	10	7
2009	57	37	23	17	10
2010	53	33	23	13	10
2011	53	33	23	13	10
2012	53	33	23	13	10

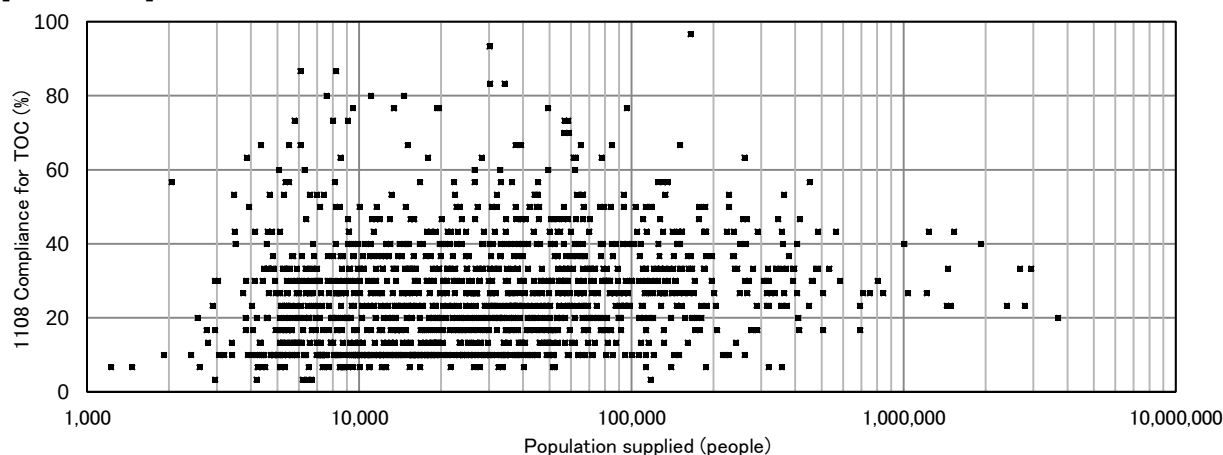
Measurement Material	Water Quality Std.
Total Organic Carbon (TOC)	3mg/L

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	55	30	20	10	7
1-3	50	33	20	10	10
3-10	57	37	27	17	10
10-50	53	40	30	23	10
50<	43	33	27	23	18

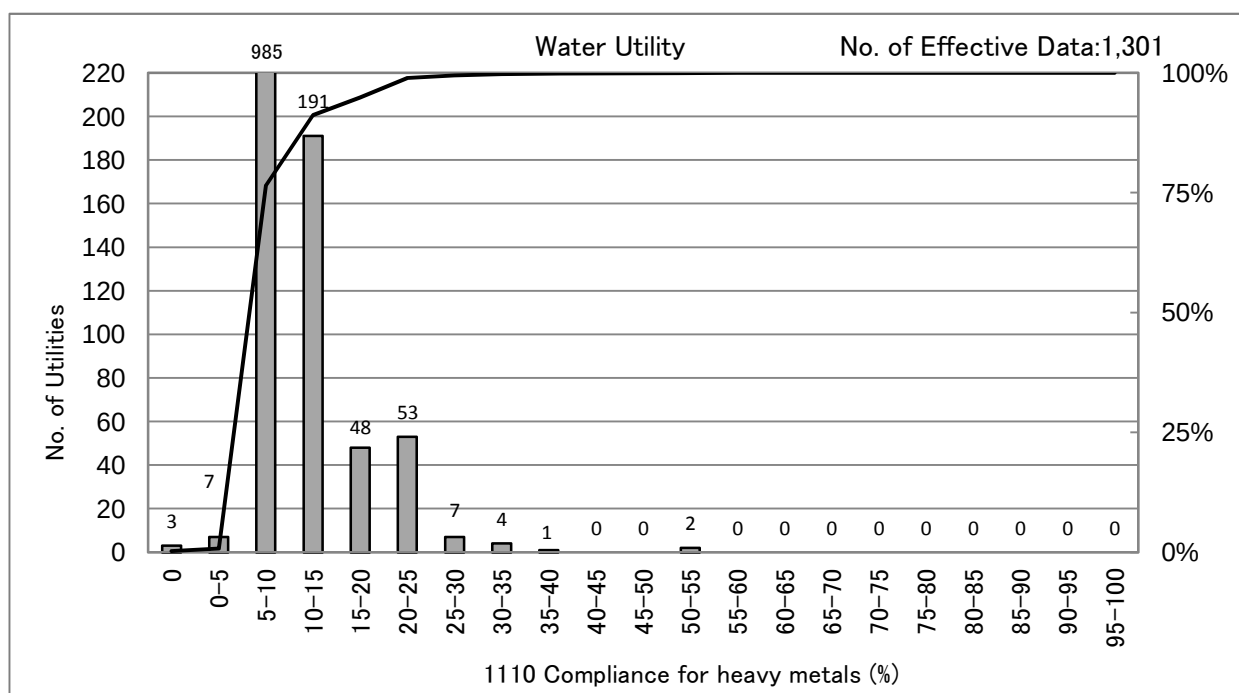
× 10,000people

[Scatter Plot]



1110 Compliance for heavy metals (%)

Compliance for heavy metals = $\sum$ (Maximum concentration of each heavy metal / Target concentration of each heavy metal) / 6 x 100 (%)



[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	14	8	6	6	6
2009	16	8	6	6	6
2010	23	11	8	8	8
2011	23	11	8	8	8
2012	21	9	8	8	8

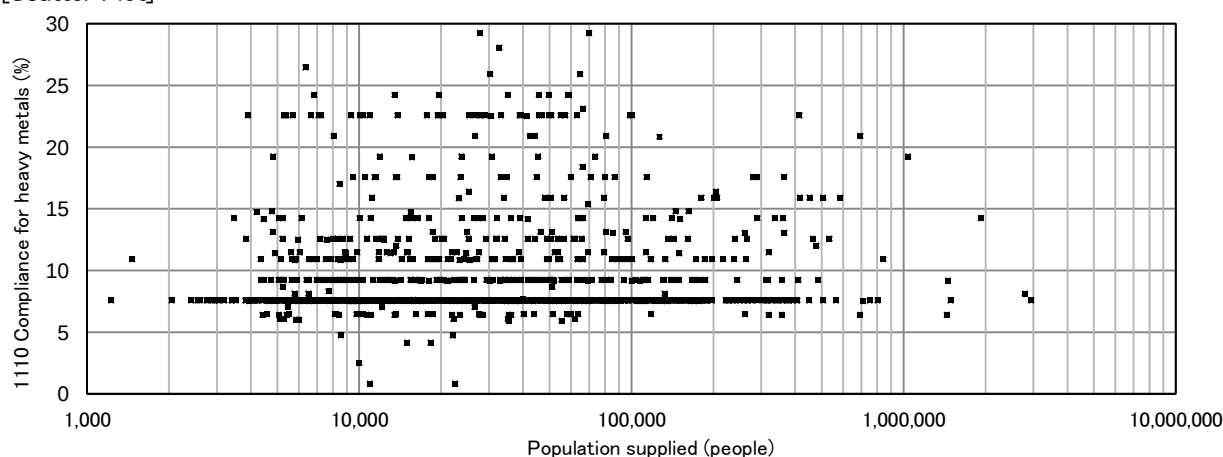
Heavy Metals	Water Quality Std.
Cadmium and its compounds	0.003mg/L
Mercury and its compounds	0.0005mg/L
Selenium and its compounds	0.01mg/L
Lead and its compounds	0.01mg/L
Arsenic and its compounds	0.01mg/L
Hexavalent chromium	0.05mg/L

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	18	9	8	8	7
1-3	19	9	8	8	6
3-10	23	11	8	8	8
10-50	16	9	8	8	8
50<	19	13	8	8	6

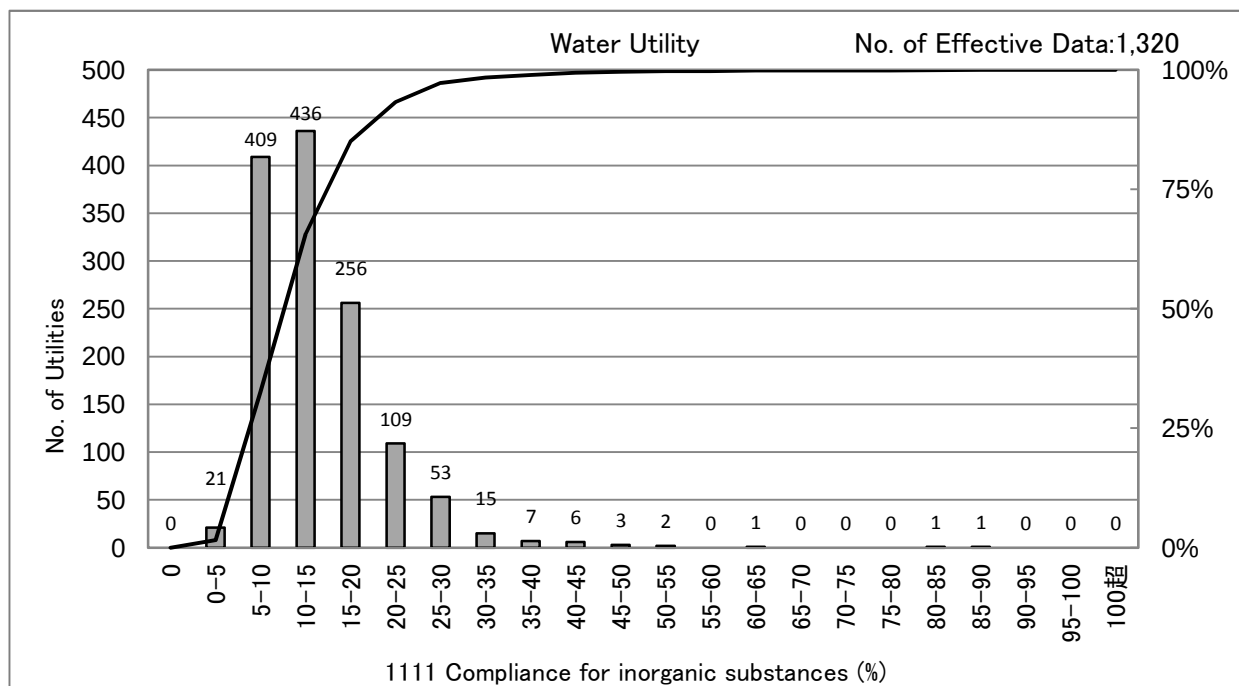
× 10,000people

[Scatter Plot]



1111 Compliance for inorganic substances (%)

Compliance for inorganic substances = $\sum (\text{Maximum concentration of each inorganic substance} / \text{Target concentration of each inorganic substance}) / 6 \times 100 (\%)$



[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	30	19	15	11	8
2009	29	19	14	11	7
2010	30	19	14	11	7
2011	28	17	12	9	6
2012	26	17	12	9	6

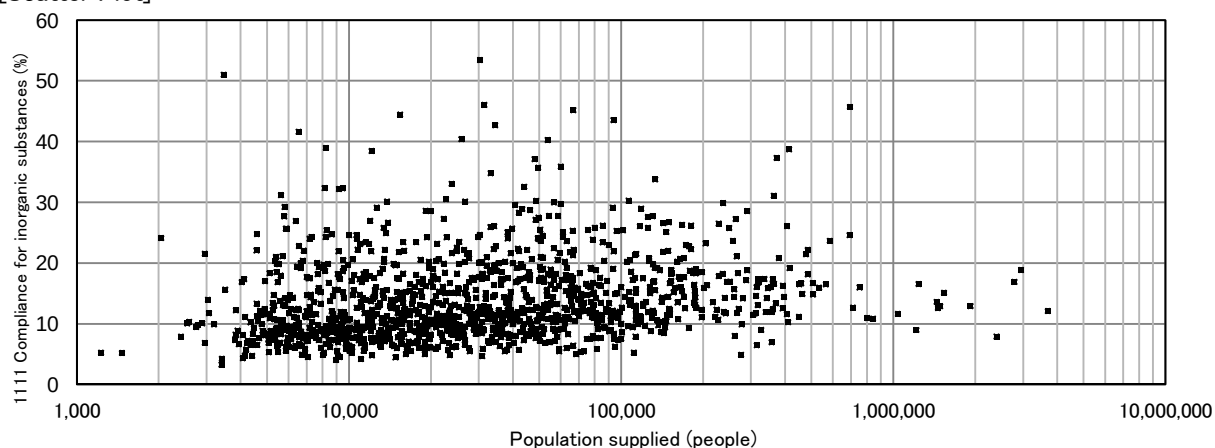
Inorganic Substances	Water Quality Std.
Aluminum and its compounds	0.2mg/L
Chloride ion	200mg/L
Calcium & Magnesium (Solidity)	300mg/L
Iron and its compounds	0.3mg/L
Manganese and its compounds	0.05mg/L
Sodium and its compounds	200mg/L

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	25	14	10	8	5
1-3	24	16	11	9	6
3-10	28	18	13	10	7
10-50	27	19	16	12	9
50<	24	17	15	12	9

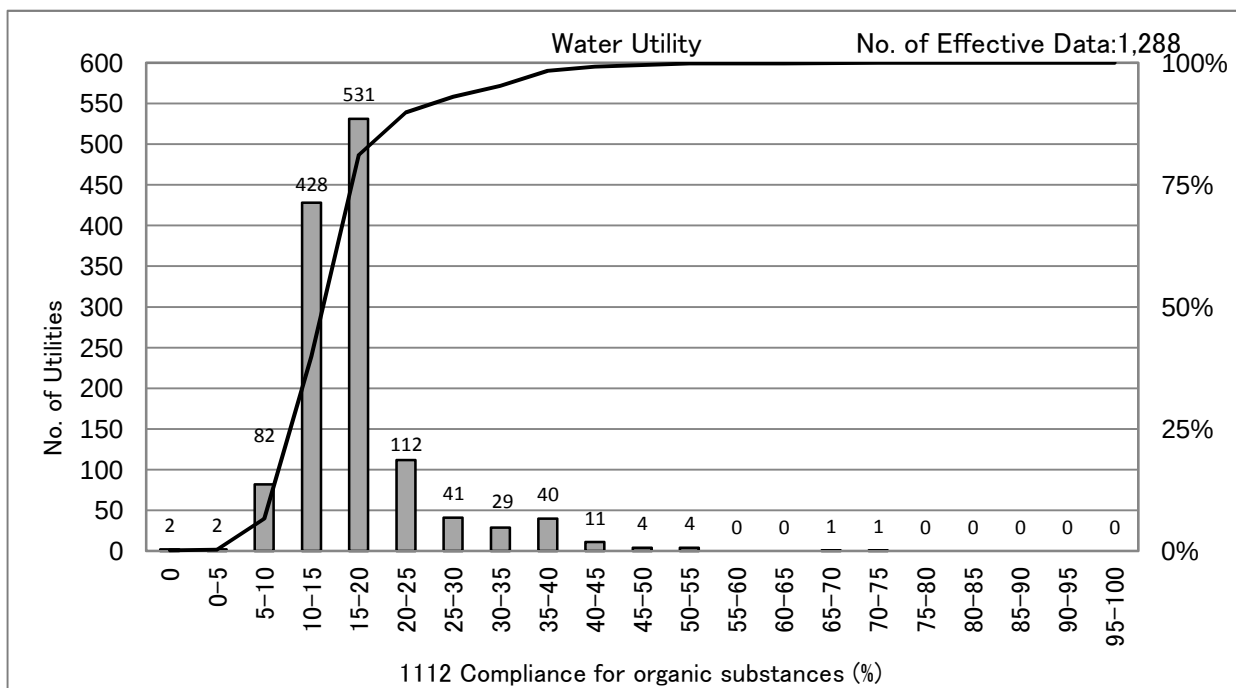
× 10,000people

[Scatter Plot]



1112 Compliance for organic substances (%)

Compliance for organic substances = $\sum$ (Maximum concentration of each organic substance / Target concentration of each organic substance) / 4 x 100 (%)



[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	39	21	16	15	13
2009	36	20	16	15	13
2010	33	19	16	14	13
2011	34	18	16	14	13
2012	35	18	16	14	10

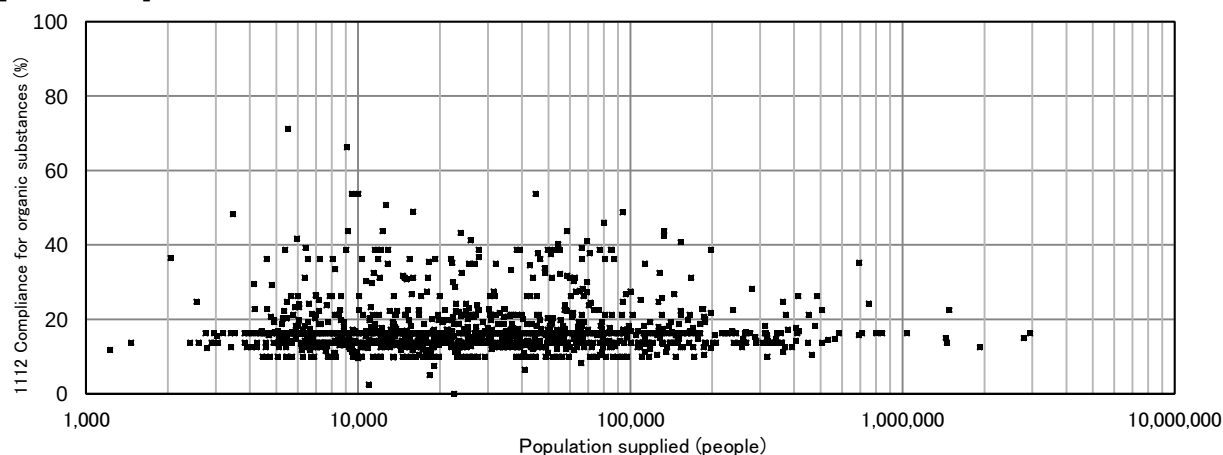
Organic Substances	Water Quality Std.
Anionic surface active agents	0.2mg/L
Nonionic surface active agents	0.02mg/L
Phenols	0.005mg/L
Color	5 degrees

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	32	16	16	14	10
1-3	35	18	16	14	10
3-10	36	19	16	14	10
10-50	26	17	16	14	11
50<	25	16	16	15	11

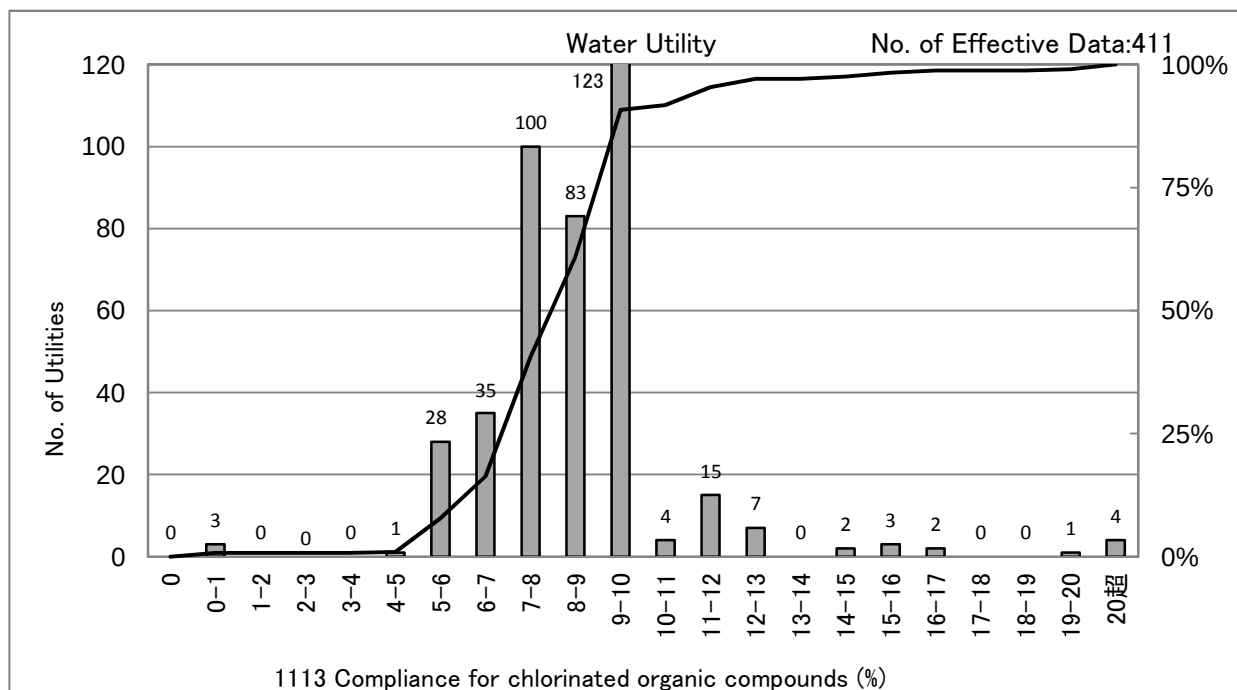
× 10,000people

[Scatter Plot]



1113 Compliance for chlorinated organic compounds (%)

Compliance for chlorinated organic compounds = $\sum (\text{Maximum concentration of each chlorinated organic compound} / \text{Target concentration of each chlorinated organic compound}) / 8 \times 100 (\%)$



[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	10	10	9	7	5
2009	10	10	8	6	5
2010	10	10	9	6	5
2011	13	10	9	7	6
2012	12	10	9	7	6

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	10	9	8	7	6
1-3	12	10	9	8	7
3-10	13	10	9	7	7
10-50	12	10	8	7	6
50<	10	10	8	7	6

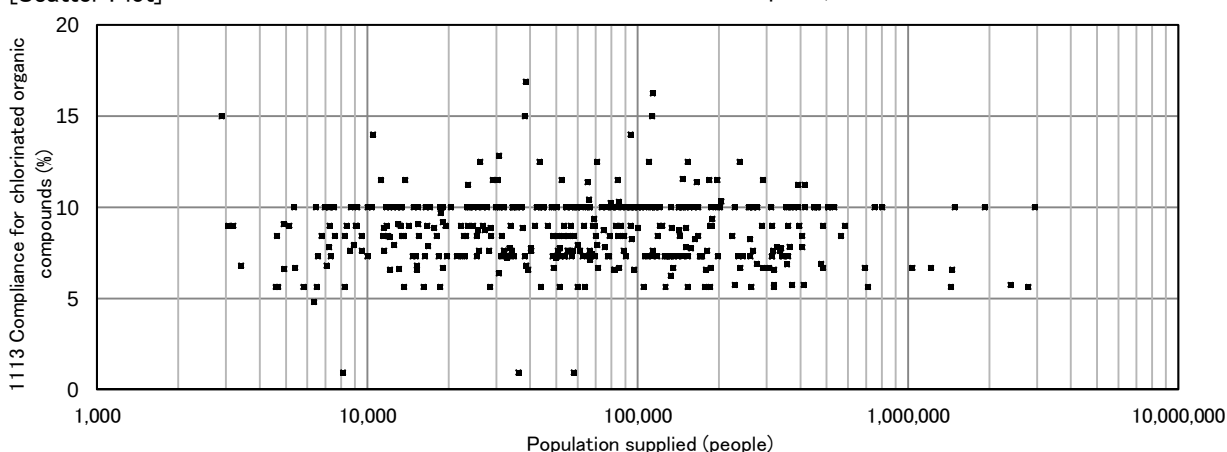
× 10,000 people

Chlorinated Organic Compounds	Water Quality Std.
Carbon Tetrachloride	0.002mg/L
1,1-Dichloroethylene	* ¹ 0.1mg/L
Dichloromethane	0.02mg/L
cis-1,2-Dichloroethylene and trans-1,2-Dichloroethylene	0.04mg/L
Tetrachloroethylene	0.01mg/L
Trichloroethylene	0.01mg/L
Benzene	0.01mg/L
1,2-Dichloroethane	* ¹ 0.004mg/L

*¹ Values of 1,1-Dichloroethylene and 1,2-Dichloroethane are the target values for water quality management.

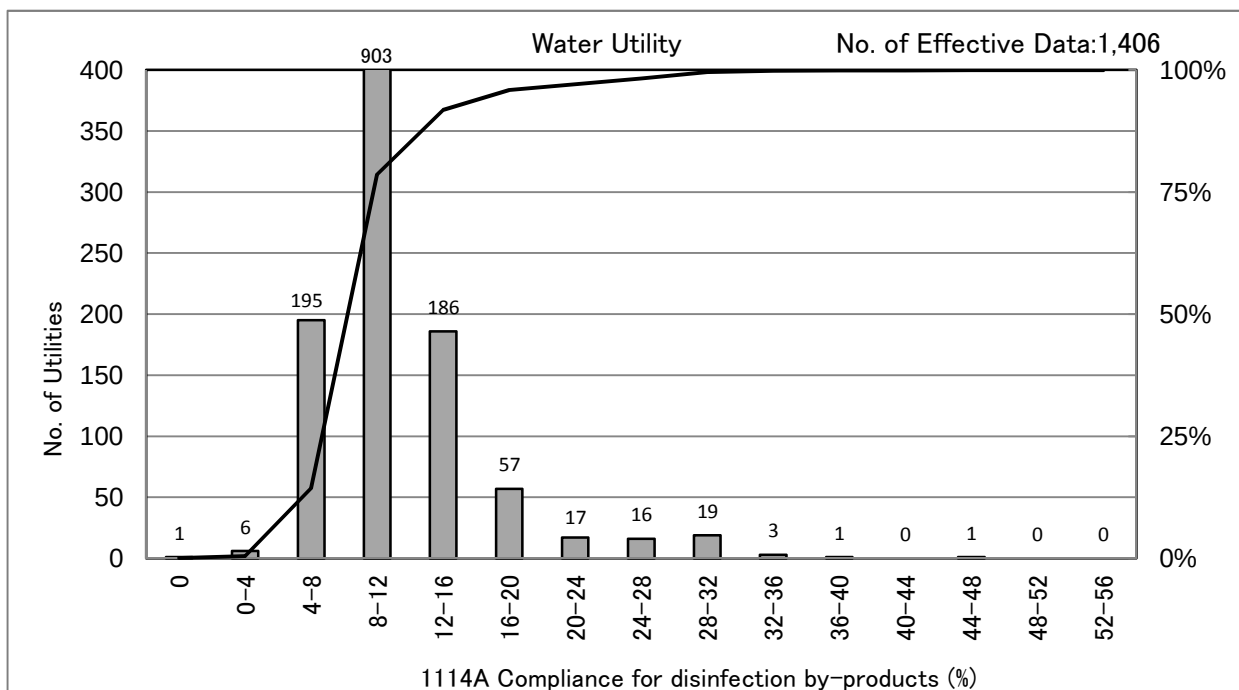
* 1,1,2-Trichloroethane was removed from the targets for water quality management on April 1, 2010.

[Scatter Plot]



1114A Compliance for disinfection by-products (%)

Compliance for disinfection by-products (include Chloric acid) = $\sum (\text{Maximum concentration of each disinfection by-product} / \text{Target concentration of each disinfection by-product}) \times 100 (\%)$



[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	26	17	12	10	8
2009	25	16	12	10	8
2010	19	12	10	10	6
2011	19	12	10	10	6
2012	19	12	10	10	6

Disinfection By-Products	Water Quality Std.
Bromic acid	0.01mg/L
Chloroacetic acid	0.02mg/L
Dichloroacetic acid	0.04mg/L
Trichloroacetic acid	0.2mg/L
Formaldehyde	0.08mg/L
Chloric acid	0.6mg/L

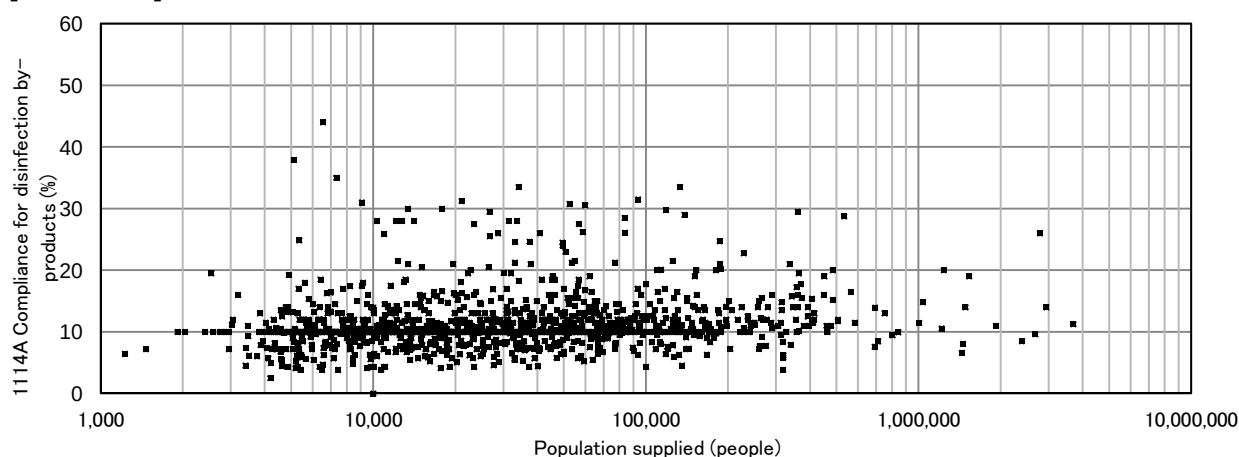
Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	16	11	10	9	5
1-3	18	11	10	10	6
3-10	21	12	10	10	7
10-50	20	14	11	10	7
50<	25	14	11	10	8

× 10,000people

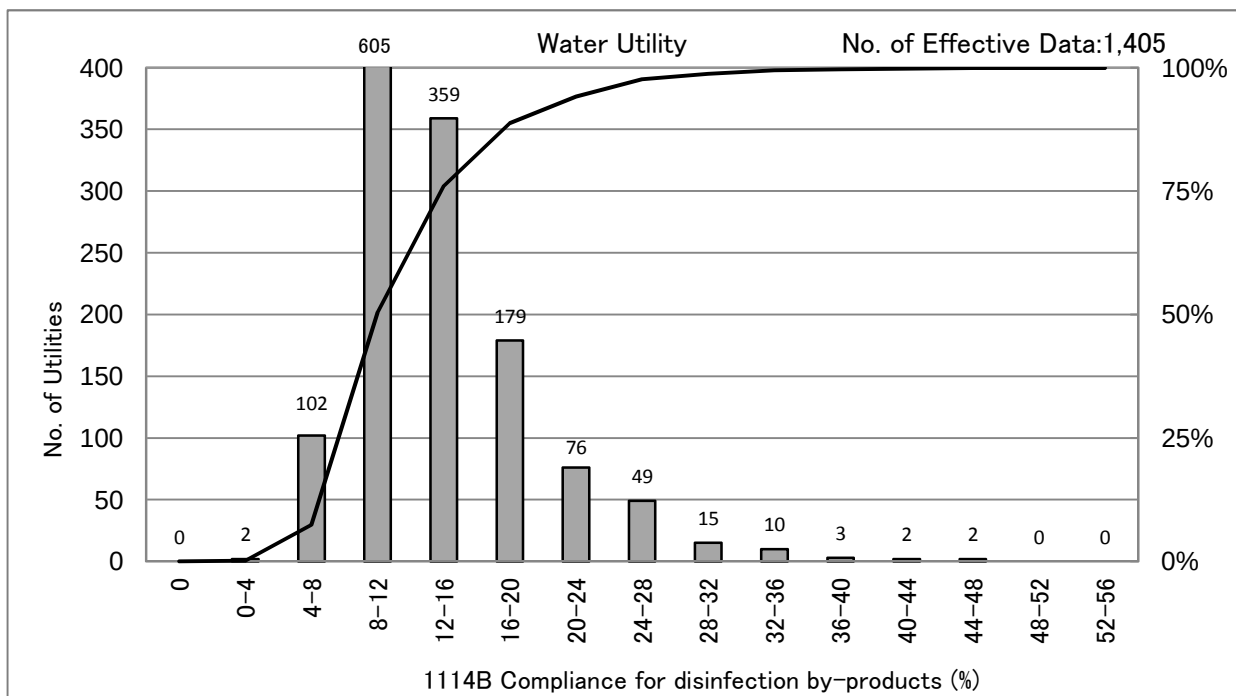
* Chloric acid was added to the water quality standards on April 1, 2008.

[Scatter Plot]



1114B Compliance for disinfection by-products (%)

Compliance for disinfection by-products (not include Chloric acid) = $\sum (\text{Maximum concentration of each disinfection by-product} / \text{Target concentration of each disinfection by-product}) / 5 \times 100 (\%)$



[Percentile Value] Water Utility

Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	20	13	10	10	6
2009	20	12	10	10	6
2010	25	16	12	10	8
2011	25	16	12	10	8
2012	25	16	12	10	8

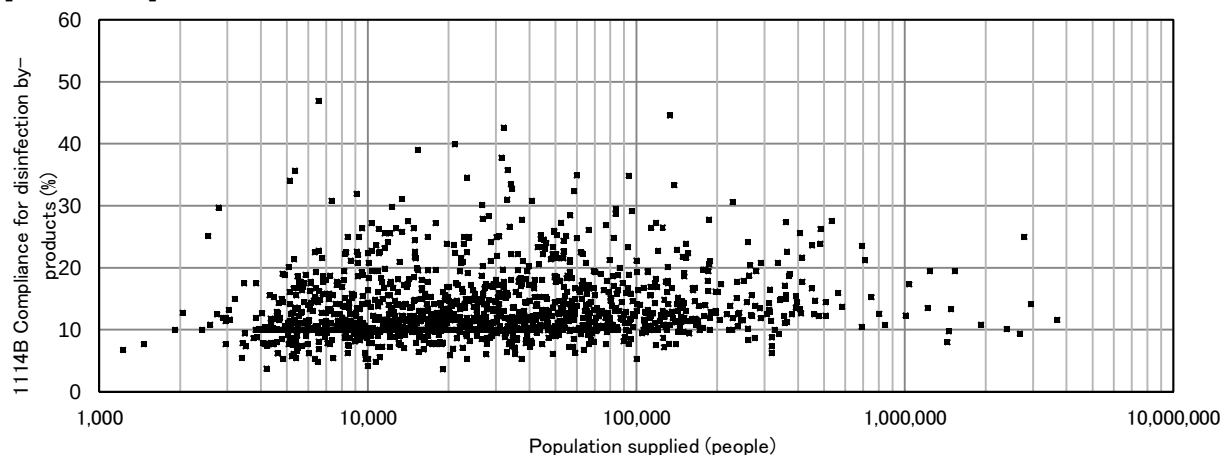
Disinfection By-Products	Water Quality Std.
Bromic acid	0.01mg/L
Chloroacetic acid	0.02mg/L
Dichloroacetic acid	0.04mg/L
Trichloroacetic acid	0.2mg/L
Formaldehyde	0.08mg/L

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	22	14	11	10	7
1-3	25	15	12	10	8
3-10	26	17	13	10	8
10-50	24	17	13	11	9
50<	25	17	13	11	9

× 10,000people

[Scatter Plot]

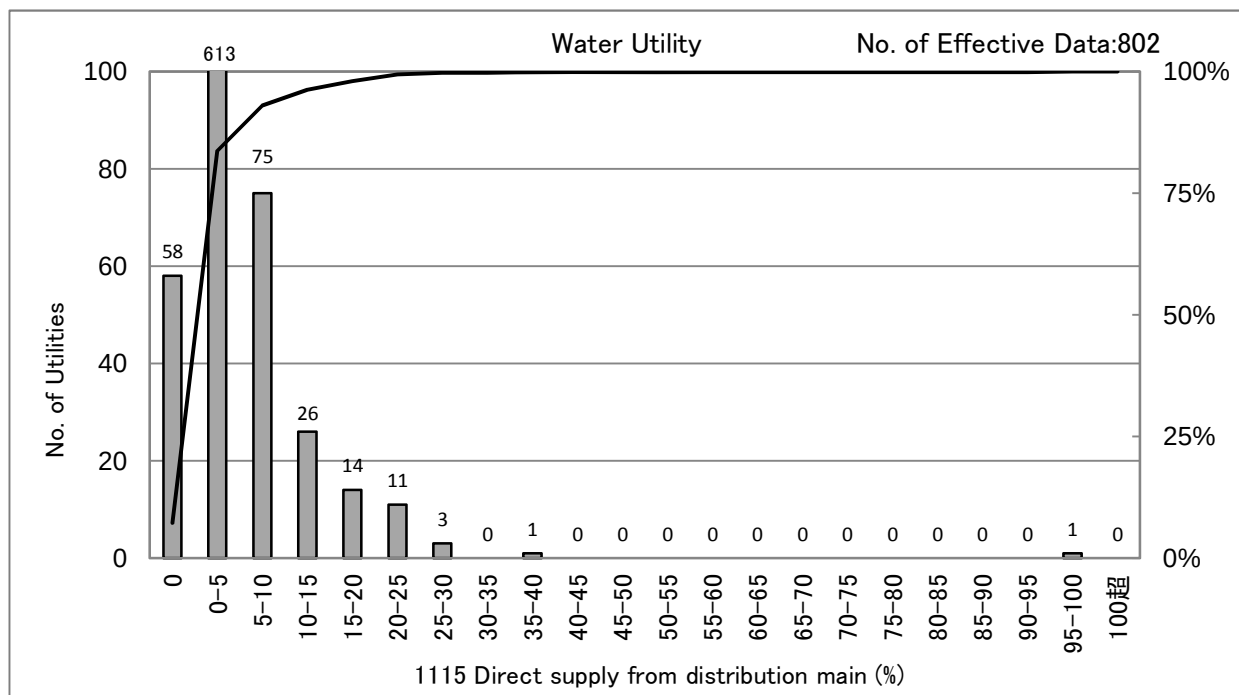


[Reference Data] 1115 Direct supply from distribution main (%)

Direct supply from distribution main = Number of direct connection users [case]

/ Total number of users [case] x 100 (%)

This PI intends for buildings more than 3rd floor.



[Percentile Value] Water Utility

Fiscal year

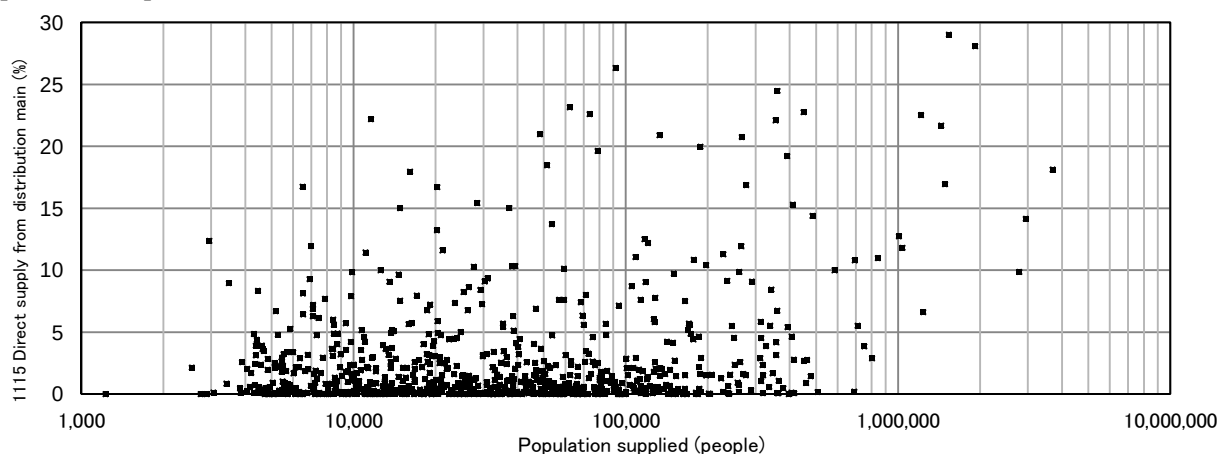
F.Y.	95%	75%	50%	25%	5%
2008	11.2	2.9	0.8	0.2	0.0
2009	11.6	2.9	0.9	0.2	0.0
2010	11.6	3.0	0.9	0.2	0.0
2011	11.6	3.0	0.9	0.1	0.0
2012	11.9	3.1	0.9	0.1	0.0

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	8.3	3.2	0.9	0.1	0.0
1-3	9.9	2.9	0.9	0.1	0.0
3-10	9.1	2.0	0.6	0.1	0.0
10-50	16.2	4.8	1.6	0.4	0.0
50<	28.2	17.5	11.0	6.1	0.2

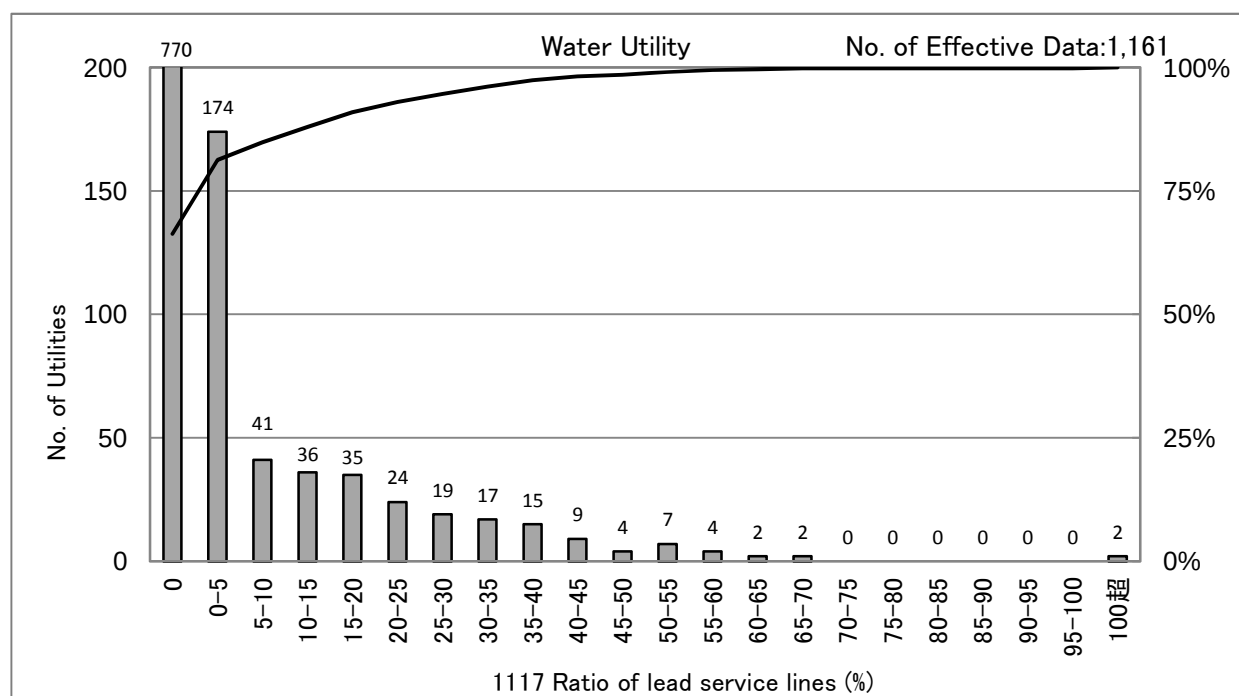
× 10,000people

[Scatter Plot]



1117 Ratio of lead service lines (%)

Ratio of lead service lines = Number of lead service lines in use [case]
/ Number of service lines [case] x 100 (%)



[Percentile Value] Water Utility

Fiscal year

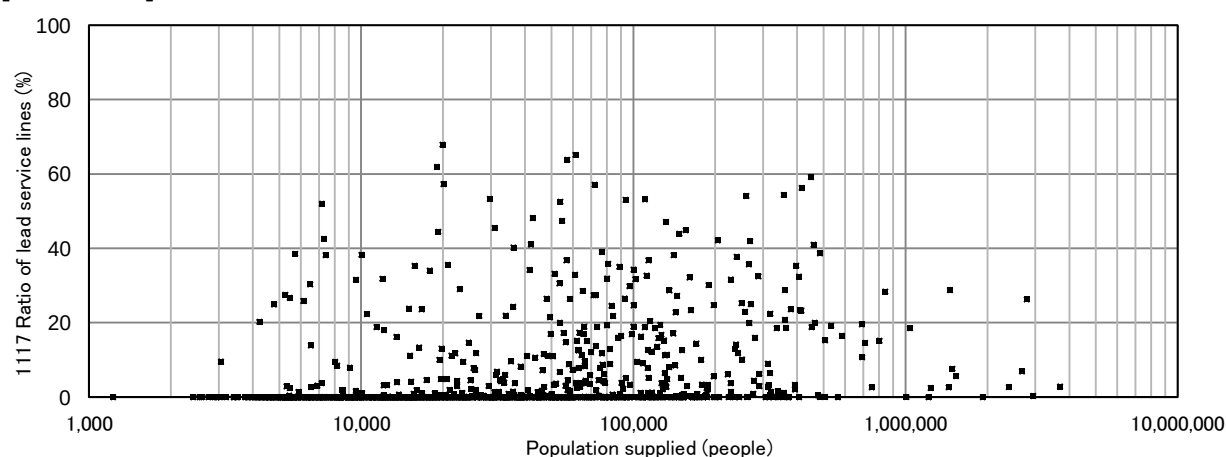
F.Y.	95%	75%	50%	25%	5%
2008	36.4	3.2	0.0	0.0	0.0
2009	34.8	2.6	0.0	0.0	0.0
2010	33.6	2.1	0.0	0.0	0.0
2011	32.2	1.9	0.0	0.0	0.0
2012	31.6	1.7	0.0	0.0	0.0

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	9.4	0.0	0.0	0.0	0.0
1-3	18.7	0.0	0.0	0.0	0.0
3-10	32.1	3.9	0.0	0.0	0.0
10-50	41.6	18.6	2.2	0.0	0.0
50<	27.9	16.2	6.3	1.2	0.0

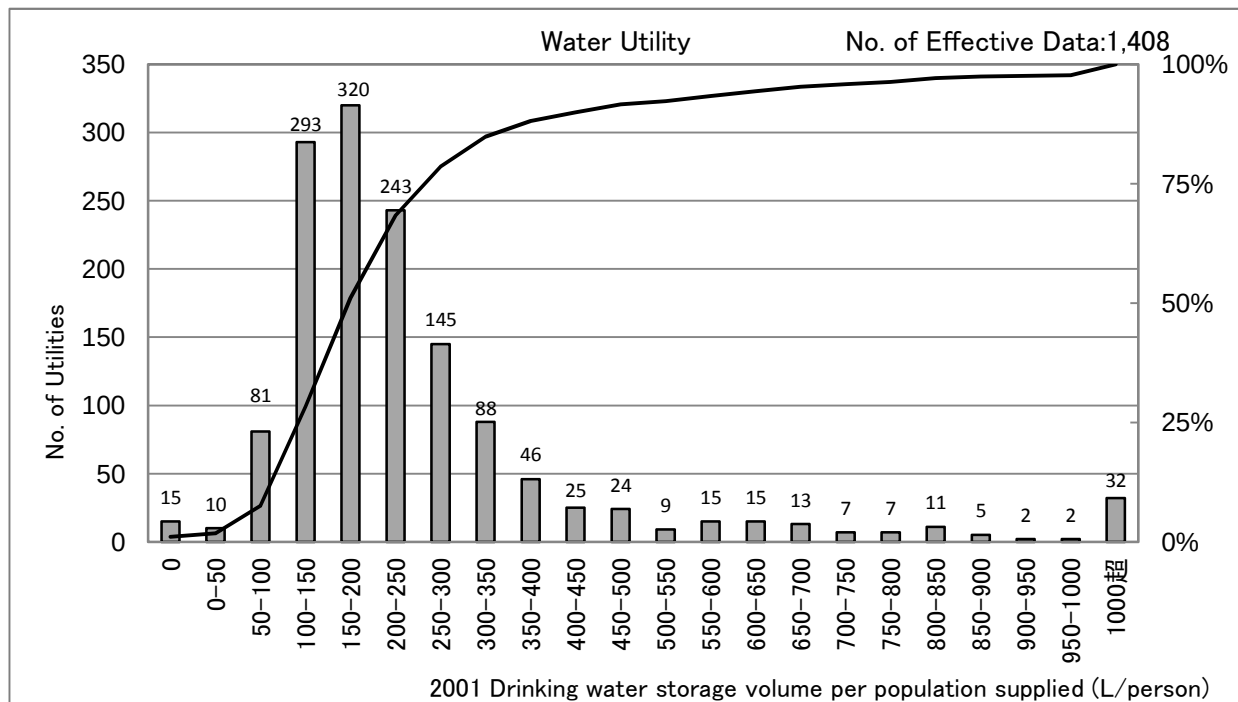
× 10,000people

[Scatter Plot]



2001 Drinking water storage volume per population supplied (L/person)

Drinking water storage volume per population supplied = (Total service reservoir capacity (except emergency reservoirs)[m³] × 1/2 + Emergency reservoir capacity[m³] / Service population[person] × 1,000 (L/person)



[Percentile Value] Water Utility

Fiscal year

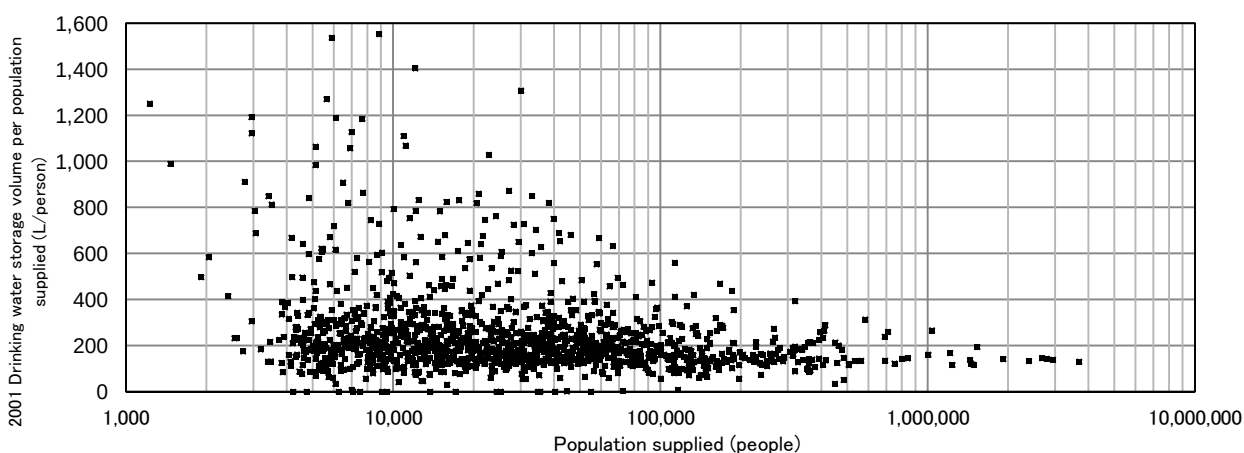
F.Y.	95%	75%	50%	25%	5%
2008	692	280	194	142	86
2009	674	280	196	143	90
2010	656	280	196	144	91
2011	669	280	198	144	91
2012	675	280	198	143	87

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	1,261	363	229	165	86
1-3	651	293	211	149	88
3-10	469	254	195	150	97
10-50	295	201	152	125	80
50<	264	156	138	130	116

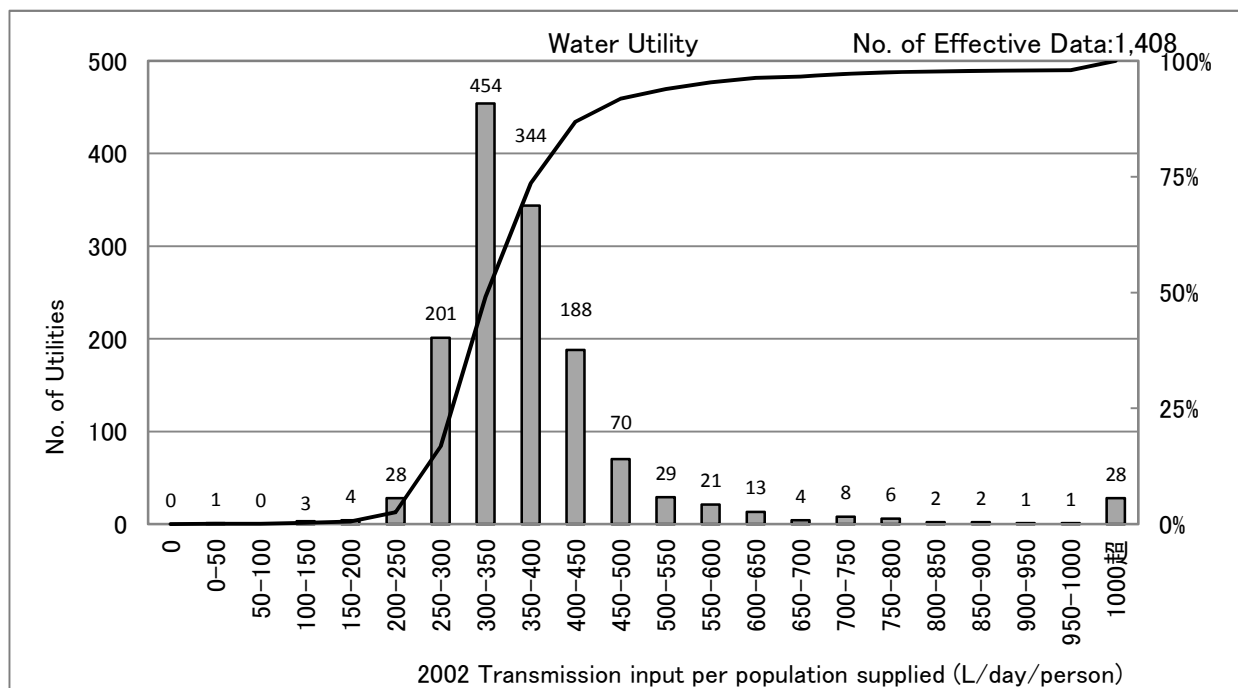
× 10,000people

[Scatter Plot]



2002 Transmission input per population supplied (L/day/person)

Transmission input per population supplied = Average daily transmission input[m³/day]
/ Service population[person] x 1,000 (L/day/person)



[Percentile Value] Water Utility

Fiscal year

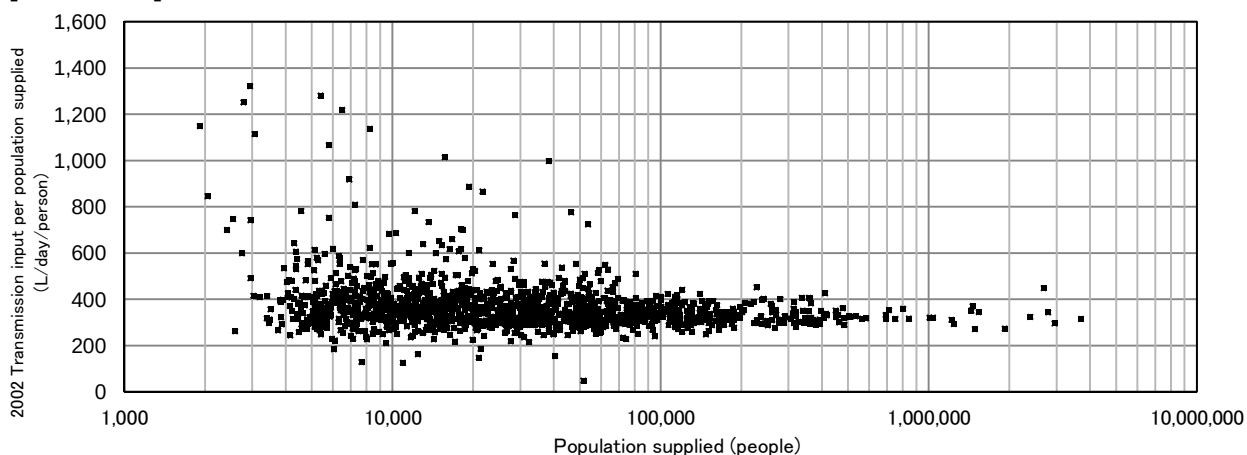
F.Y.	95%	75%	50%	25%	5%
2008	602	407	352	312	261
2009	597	403	349	312	265
2010	588	409	353	315	269
2011	581	404	352	311	267
2012	577	404	352	311	267

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	1,531	459	380	323	263
1-3	568	417	363	310	265
3-10	476	389	342	309	267
10-50	404	360	332	309	281
50<	368	341	323	316	279

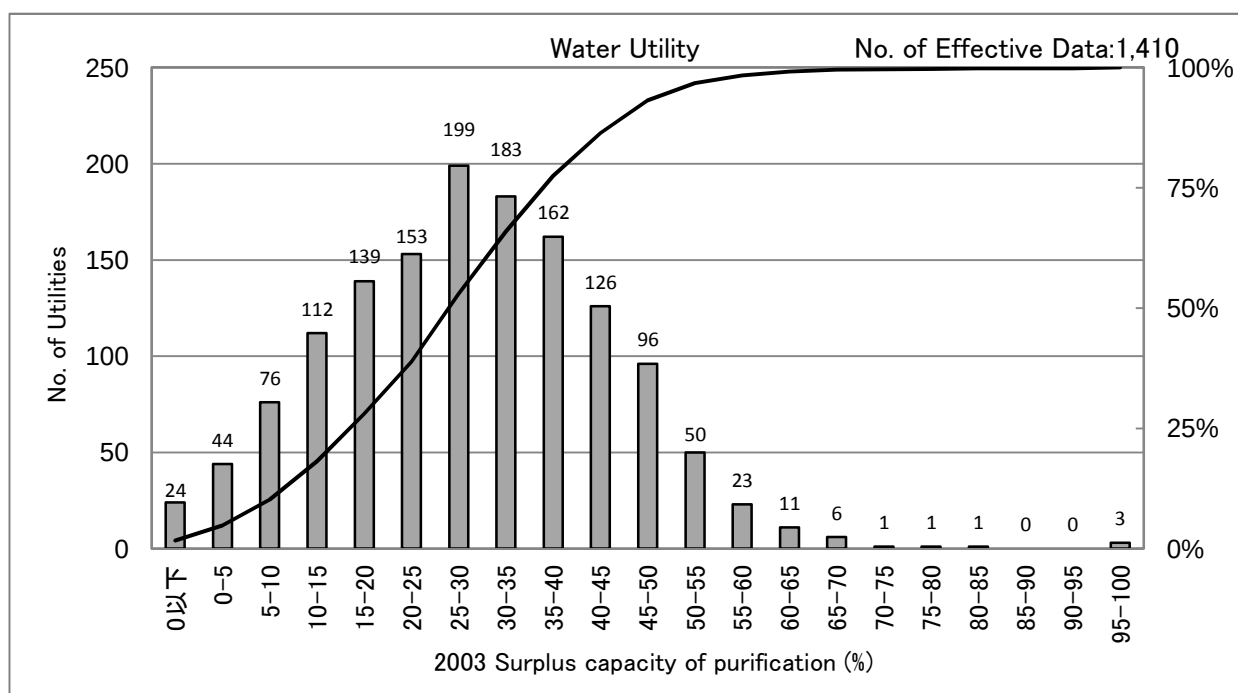
x 10,000people

[Scatter Plot]



2003 Surplus capacity of purification (%)

Surplus capacity of purification = $\{(\text{Daily treatment capacity}[\text{m}^3/\text{day}] - \text{Maximum daily treatment capacity}[\text{m}^3/\text{day}]) / \text{Daily treatment capacity}[\text{m}^3/\text{day}]\} \times 100 (\%)$



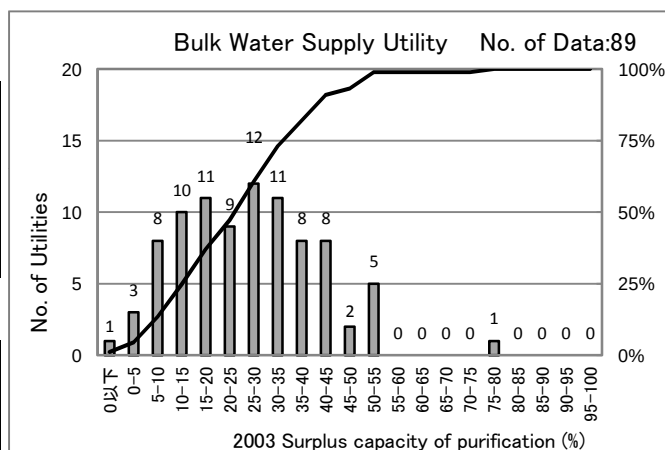
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	51.1	36.5	27.4	17.5	4.3
2009	52.1	38.1	28.3	18.5	6.1
2010	50.5	36.7	26.6	16.7	2.7
2011	51.9	37.9	27.2	17.0	3.4
2012	52.8	39.0	29.0	18.7	5.5

Population supplied (F.Y.2012)

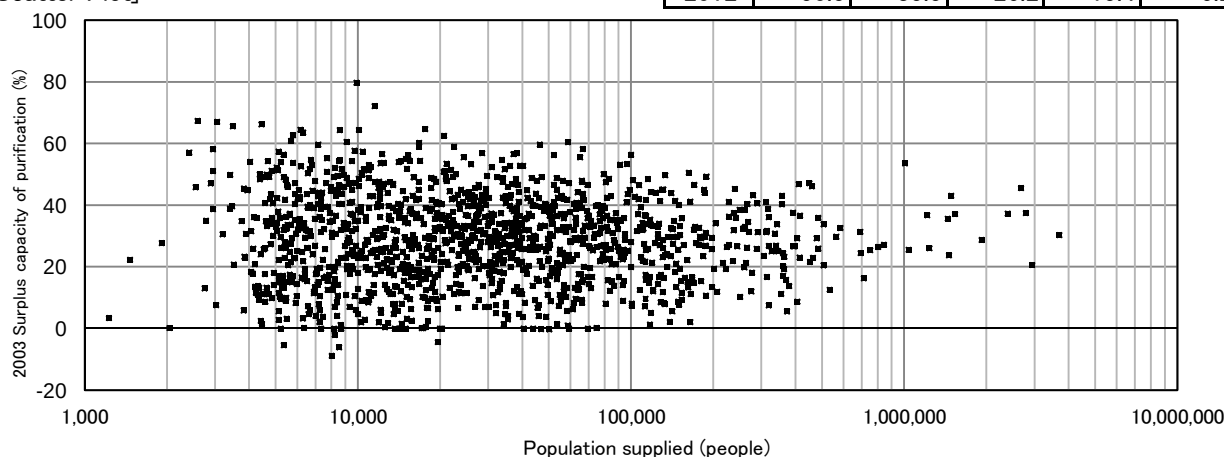
People	95%	75%	50%	25%	5%
<=1	58.7	43.4	30.8	16.9	3.1
1-3	53.1	39.5	28.9	19.2	5.2
3-10	48.7	37.3	29.0	20.0	6.9
10-50	46.2	35.0	27.1	17.4	7.9
50<	45.0	36.5	30.1	25.5	17.3

× 10,000people



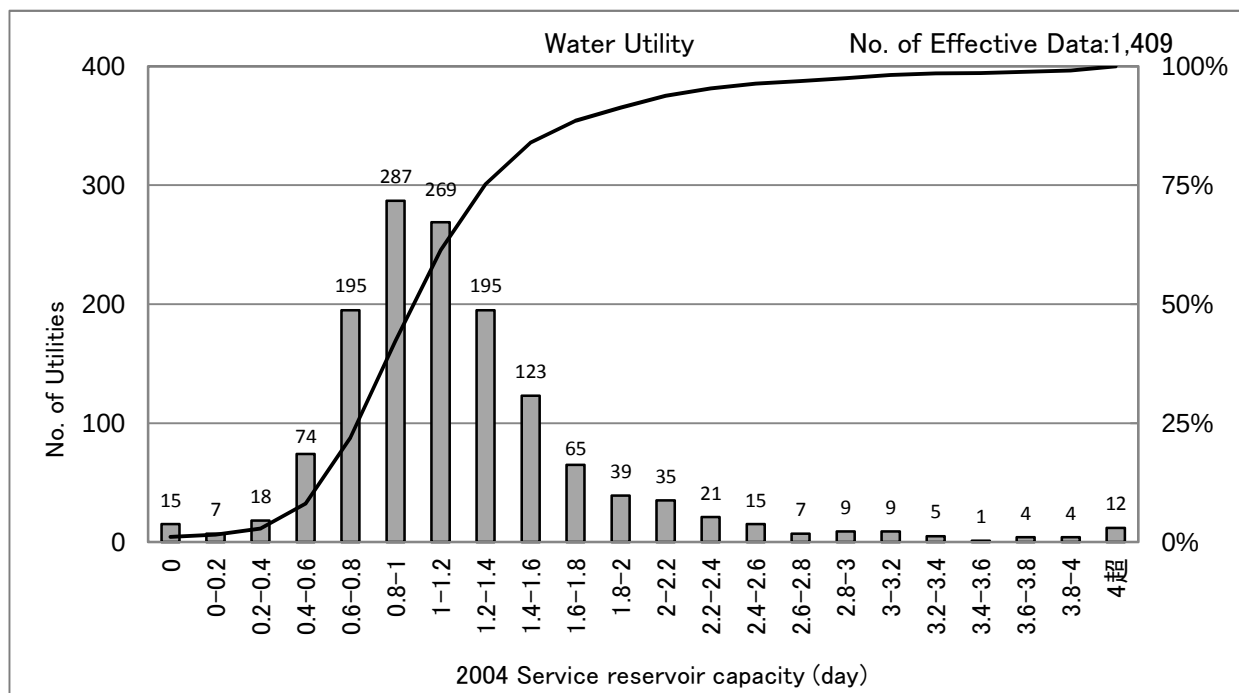
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	49.6	36.6	26.5	16.5	4.4
Supply Utility	2010	49.2	34.5	24.4	12.4	3.6
	2011	50.4	34.8	24.6	15.9	5.9
	2012	50.5	35.5	26.2	15.4	6.2

[Scatter Plot]



2004 Service reservoir capacity (day)

Service reservoir capacity = Total service reservoir capacity[m³
/ Average daily transmission input[m³/day] (day)



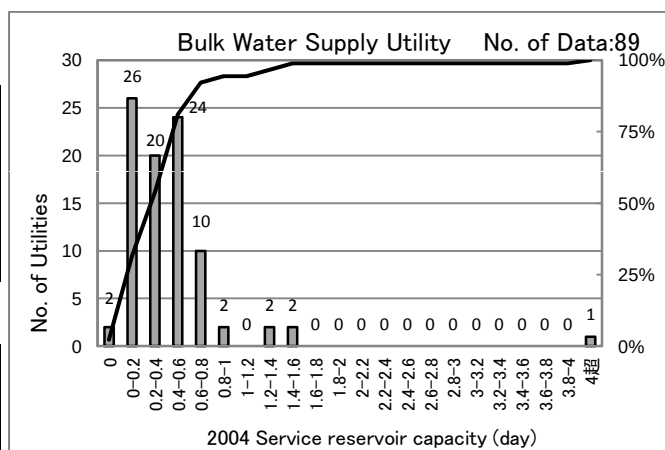
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	2.30	1.36	1.05	0.80	0.51
2009	2.25	1.37	1.06	0.81	0.52
2010	2.22	1.35	1.05	0.82	0.53
2011	2.36	1.39	1.08	0.83	0.52
2012	2.36	1.39	1.08	0.83	0.51

Population supplied (F.Y.2012)

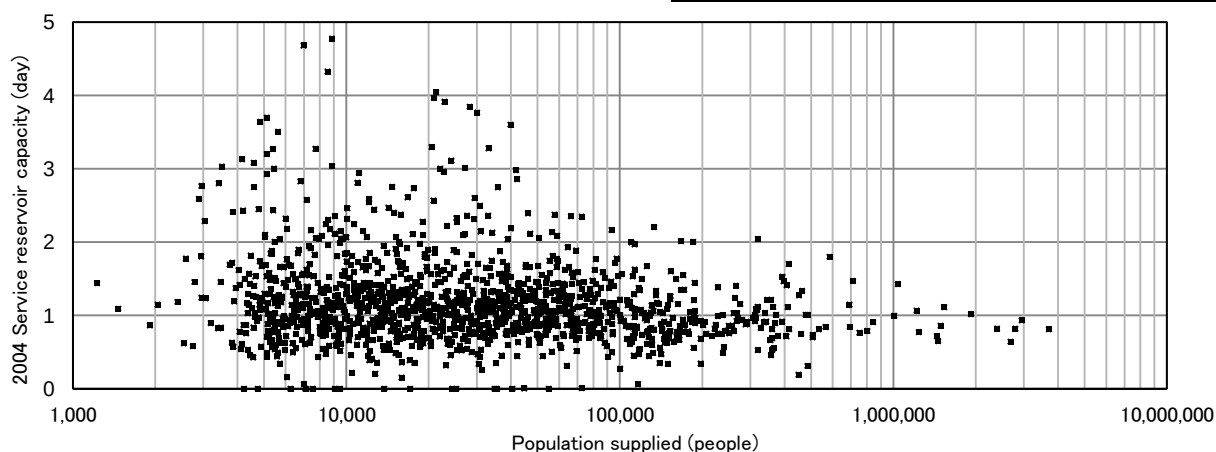
People	95%	75%	50%	25%	5%
<=1	3.03	1.56	1.18	0.87	0.49
1-3	2.46	1.45	1.13	0.85	0.52
3-10	2.07	1.33	1.07	0.87	0.57
10-50	1.57	1.10	0.91	0.75	0.47
50<	1.46	1.01	0.83	0.78	0.66

× 10,000people



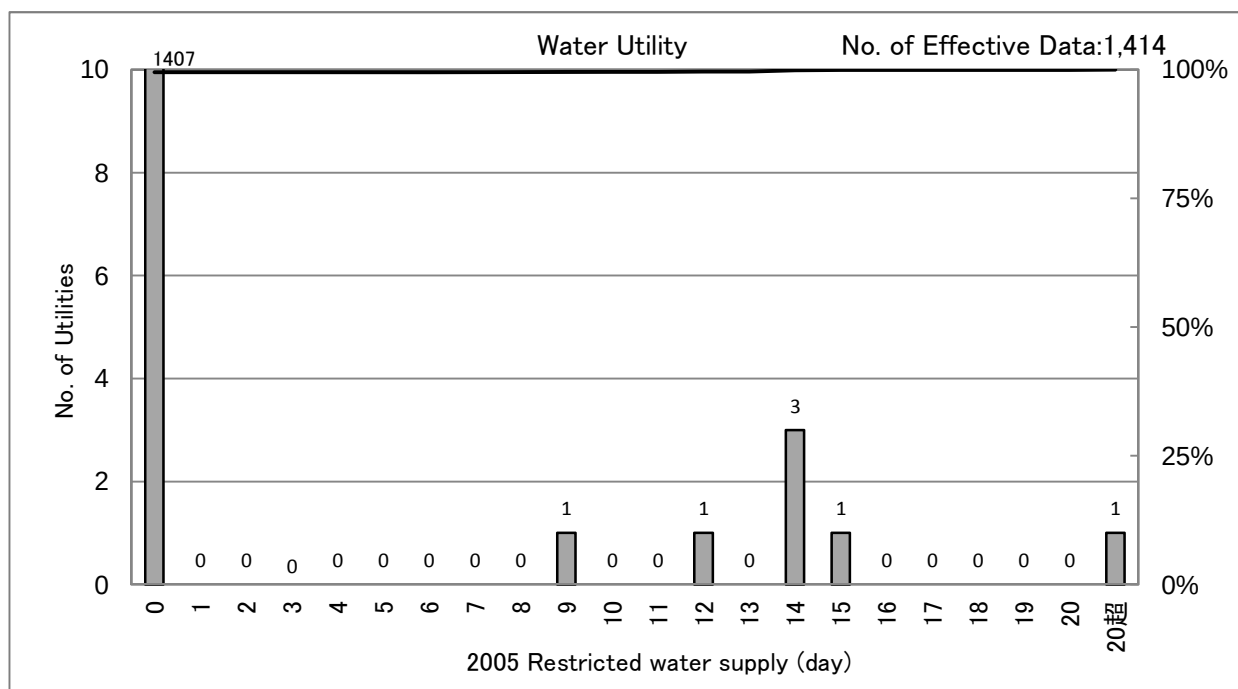
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	1.12	0.58	0.38	0.17	0.08
Supply Utility	2010	1.10	0.57	0.39	0.18	0.10
	2011	1.13	0.55	0.38	0.18	0.10
	2012	1.12	0.55	0.37	0.16	0.08

[Scatter Plot]



2005 Restricted water supply (day)

Restricted water supply = Number of restricted service days per year (day)



[Percentile Value] Water Utility

Fiscal year

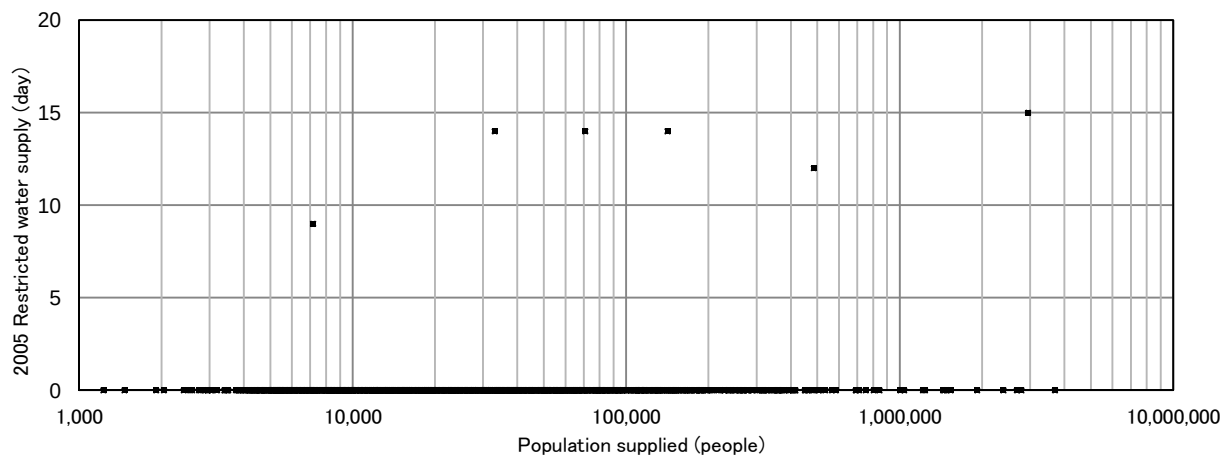
F.Y.	95%	75%	50%	25%	5%
2008	0	0	0	0	0
2009	0	0	0	0	0
2010	0	0	0	0	0
2011	0	0	0	0	0
2012	0	0	0	0	0

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	0	0	0	0	0
1-3	0	0	0	0	0
3-10	0	0	0	0	0
10-50	0	0	0	0	0
50<	0	0	0	0	0

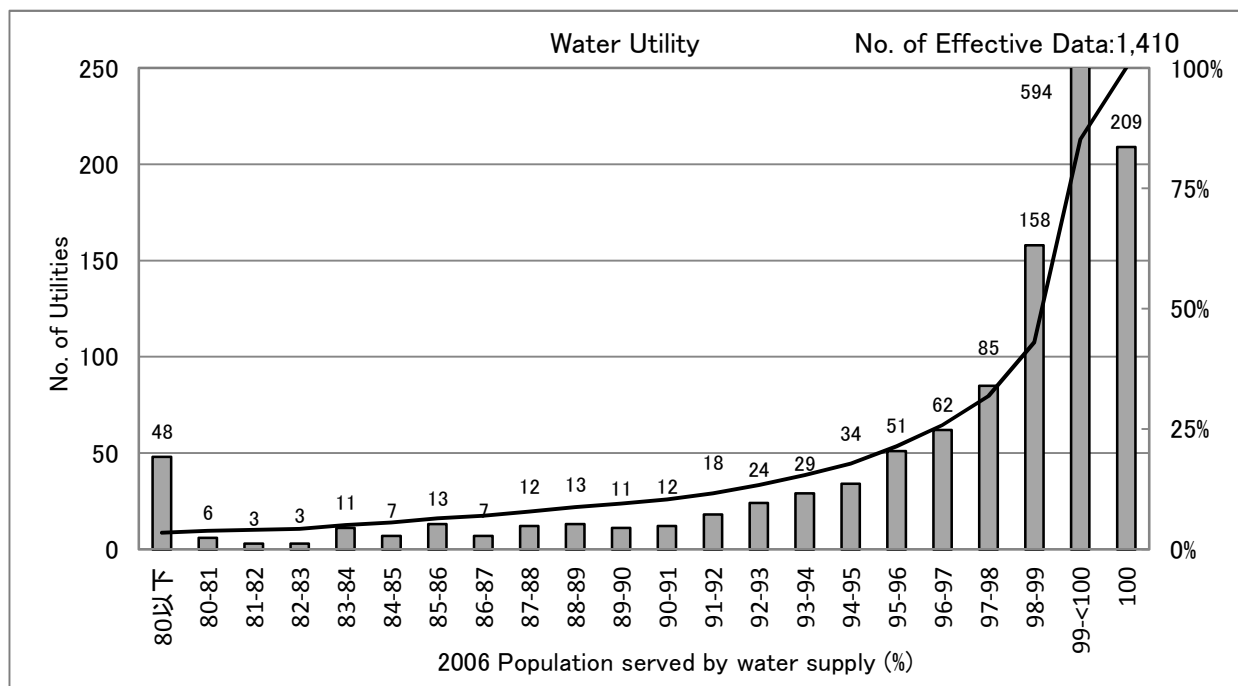
× 10,000people

[Scatter Plot]



2006 Population served by water supply (%)

Population served by water supply = Service population[person]
/ Service area population[person] x 100 (%)



[Percentile Value] Water Utility

Fiscal year

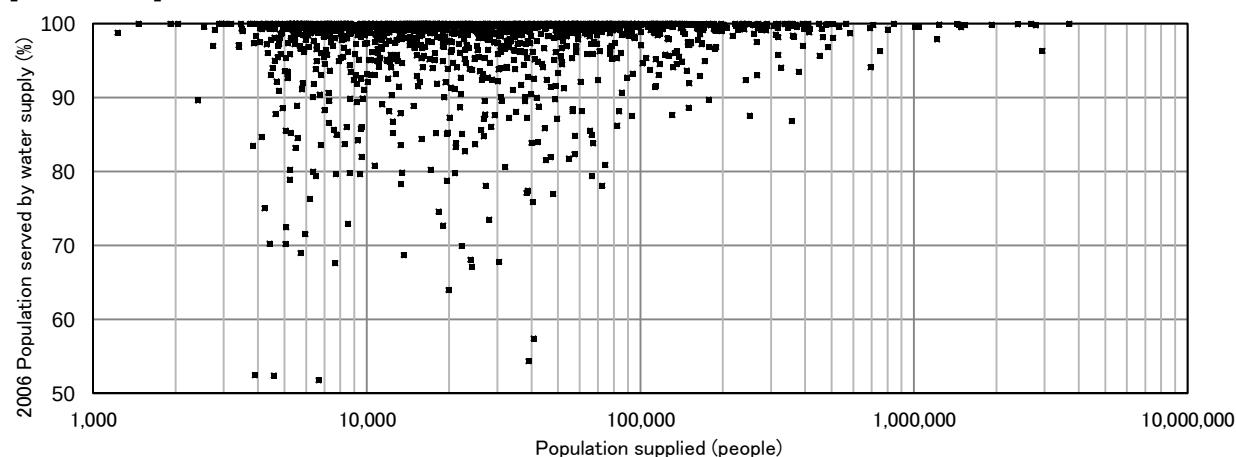
F.Y.	95%	75%	50%	25%	5%
2008	100.0	99.9	99.3	96.7	83.1
2009	100.0	99.9	99.3	96.8	83.2
2010	100.0	99.9	99.3	96.7	83.9
2011	100.0	99.9	99.3	96.7	84.1
2012	100.0	99.9	99.3	96.9	84.1

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	100.0	99.9	99.2	95.5	72.8
1-3	100.0	99.8	99.1	96.4	84.8
3-10	100.0	99.9	99.4	97.3	85.7
10-50	100.0	99.9	99.7	98.2	93.0
50<	100.0	99.9	99.8	99.3	96.3

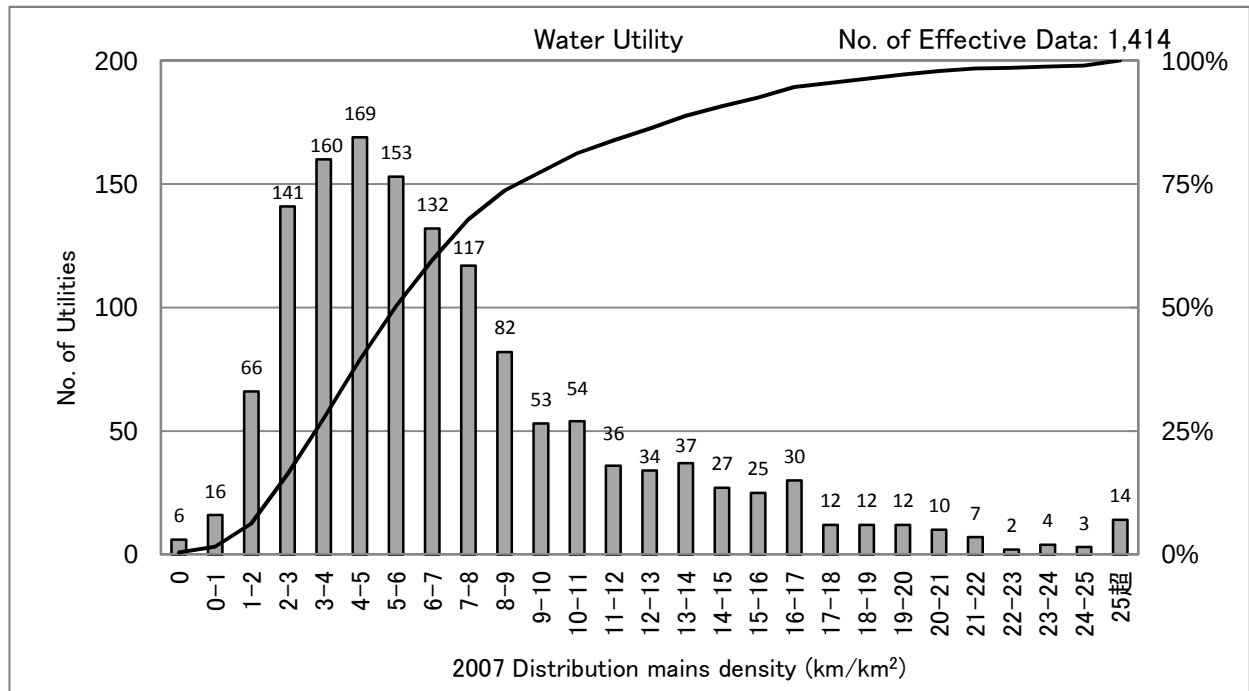
× 10,000people

[Scatter Plot]



2007 Distribution mains density (km/km²)

Distribution mains density = Distribution pipe length[km] / Service area[km²] (km/km²)



[Percentile Value] Water Utility

Fiscal year

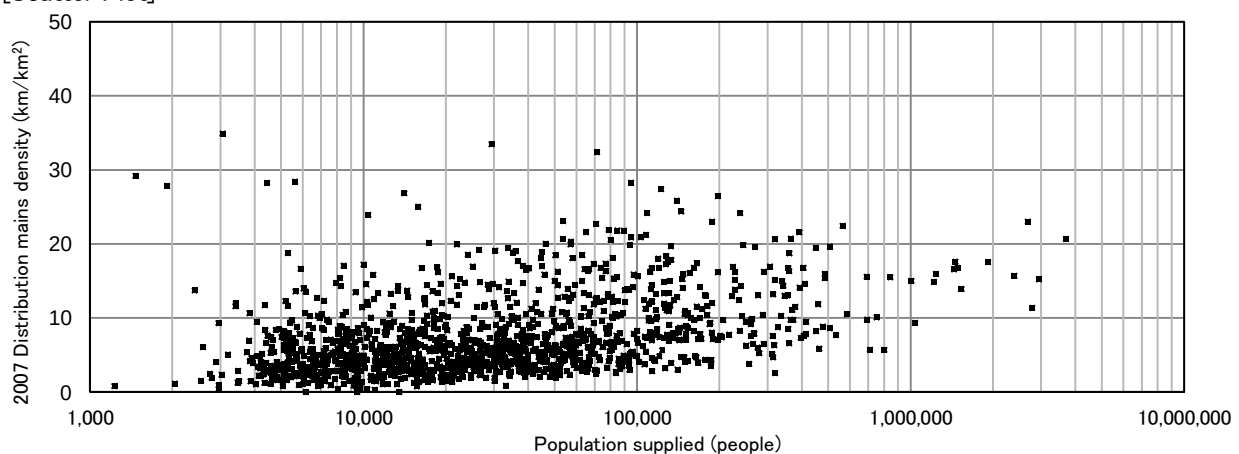
F.Y.	95%	75%	50%	25%	5%
2008	16.8	9.1	5.7	3.6	1.7
2009	17.1	9.2	5.8	3.7	1.8
2010	17.1	9.3	5.9	3.7	1.8
2011	17.2	9.3	5.9	3.8	1.9
2012	17.3	9.3	6.0	3.8	1.8

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	13.4	7.0	4.5	2.7	1.1
1-3	14.4	7.5	5.2	3.4	1.8
3-10	18.5	10.2	6.3	4.3	2.7
10-50	20.8	14.2	9.9	7.3	4.1
50<	22.2	17.4	15.4	10.2	6.2

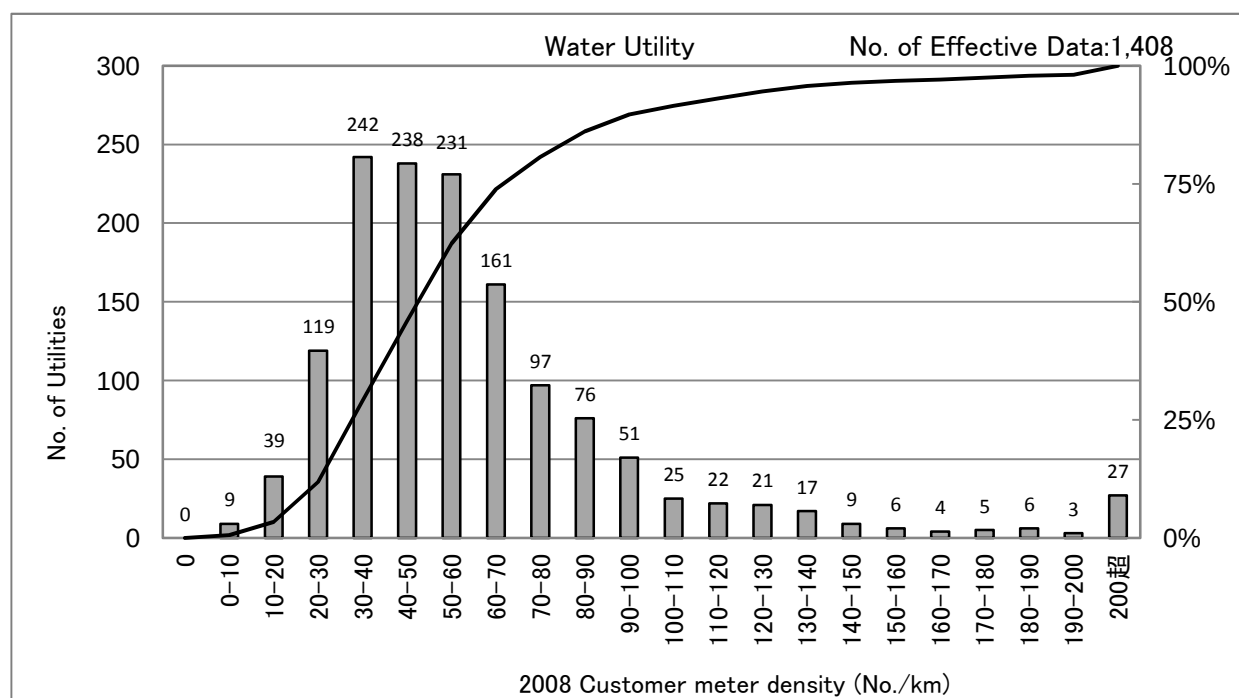
× 10,000people

[Scatter Plot]



2008 Customer meter density (No./km)

Customer meter density = Number of water meters[No.] / Distribution pipe length[km] (No./km)



[Percentile Value] Water Utility

Fiscal year

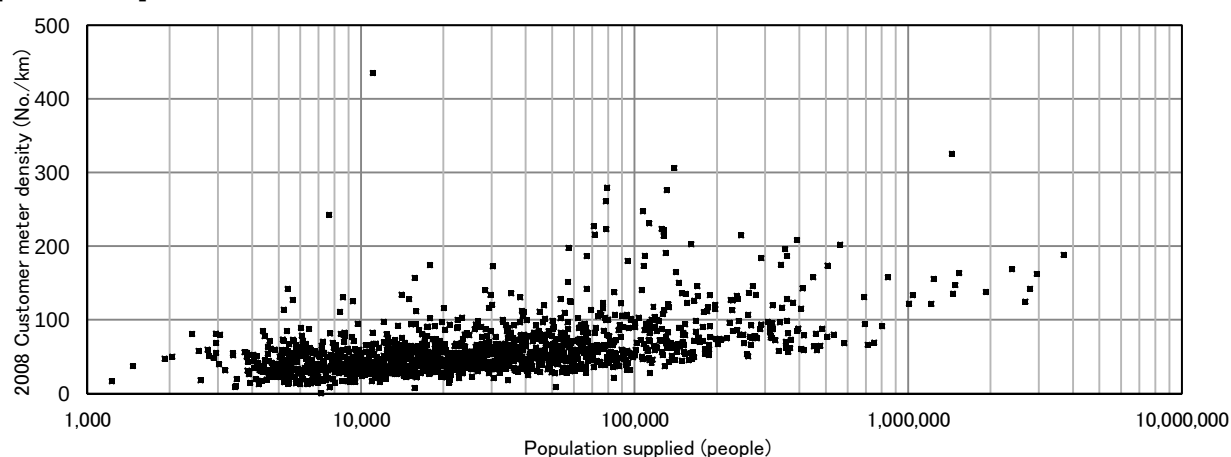
F.Y.	95%	75%	50%	25%	5%
2008	130	72	52	38	22
2009	132	71	53	38	23
2010	133	71	52	38	22
2011	133	71	52	38	23
2012	134	71	53	38	23

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	81	54	39	29	15
1-3	94	60	46	36	25
3-10	124	76	57	45	32
10-50	196	111	81	65	47
50<	251	163	137	101	69

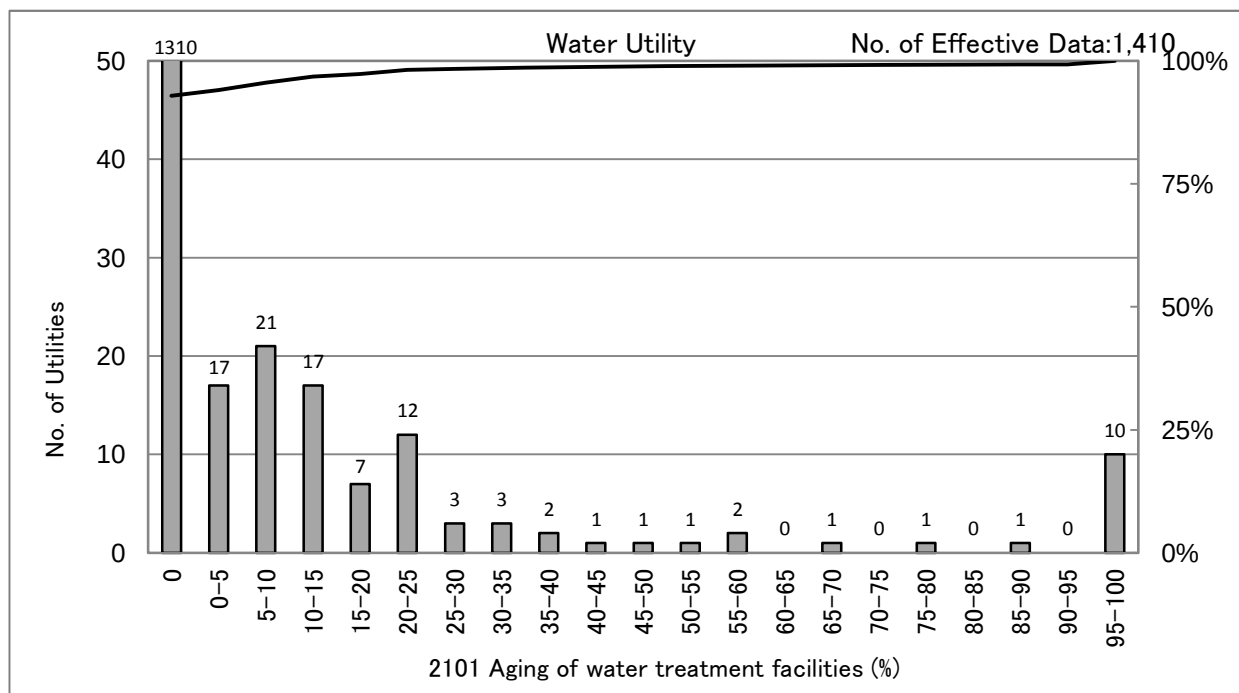
× 10,000people

[Scatter Plot]



2101 Aging of water treatment facilities (%)

Aging of water treatment facilities = Capacity of purification facilities exceeding statutory
useful life[m³/day] / Capacity of all purification facilities[m³/day] x 100 (%)



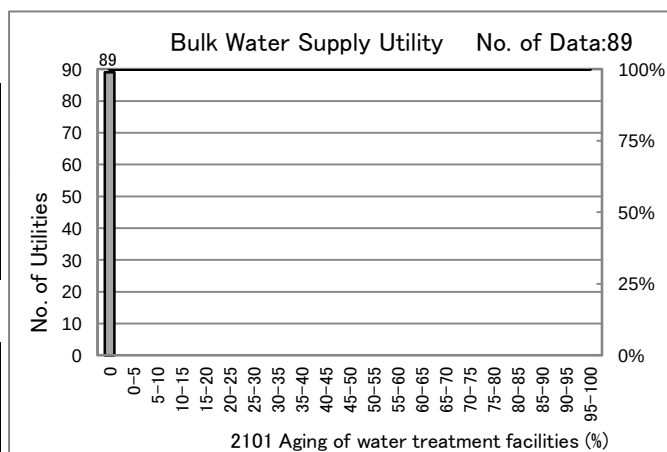
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	8.6	0.0	0.0	0.0	0.0
2009	8.5	0.0	0.0	0.0	0.0
2010	7.9	0.0	0.0	0.0	0.0
2011	7.5	0.0	0.0	0.0	0.0
2012	7.9	0.0	0.0	0.0	0.0

Population supplied (F.Y.2012)

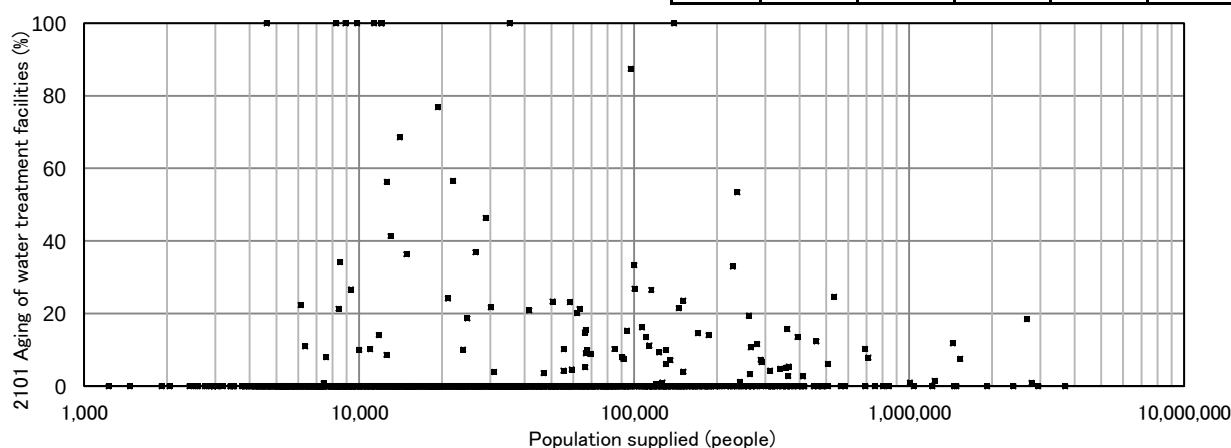
People	95%	75%	50%	25%	5%
<=1	0.0	0.0	0.0	0.0	0.0
1-3	0.0	0.0	0.0	0.0	0.0
3-10	4.5	0.0	0.0	0.0	0.0
10-50	14.7	0.0	0.0	0.0	0.0
50<	16.8	6.3	0.0	0.0	0.0

× 10,000people



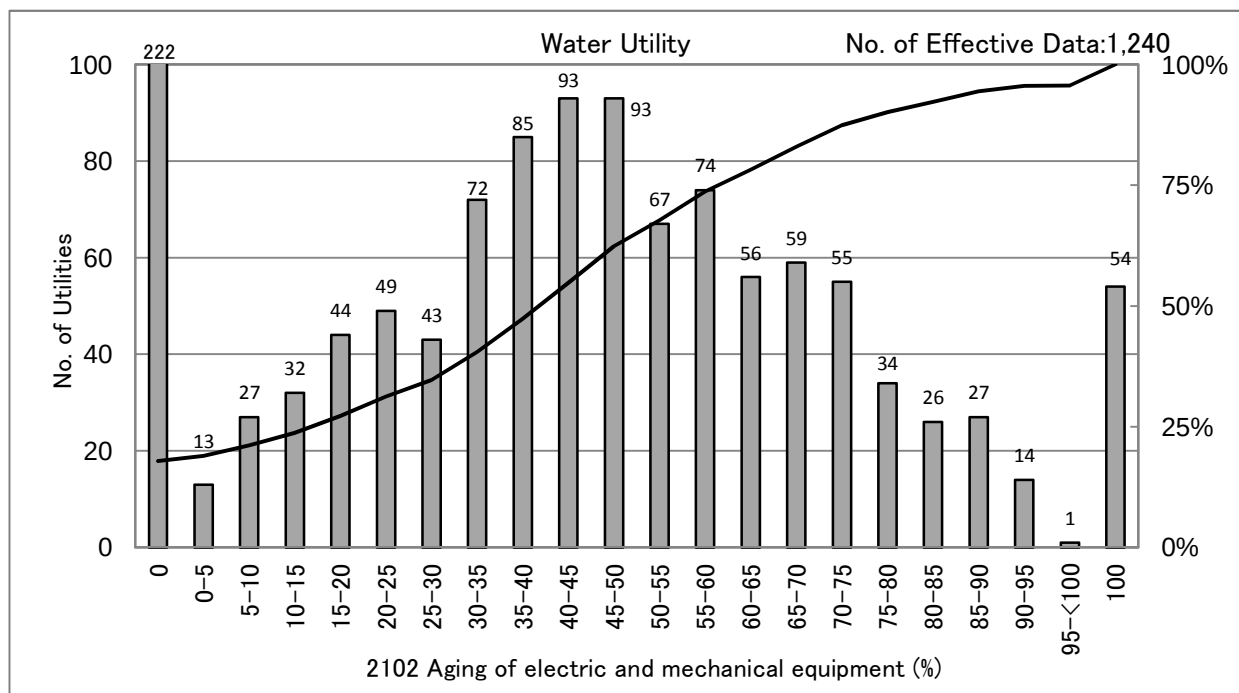
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	0.0	0.0	0.0	0.0	0.0
Supply Utility	2010	0.0	0.0	0.0	0.0	0.0
	2011	0.0	0.0	0.0	0.0	0.0
	2012	0.0	0.0	0.0	0.0	0.0

[Scatter Plot]



2102 Aging of electric and mechanical equipment (%)

Aging of electric and mechanical equipment = Number of electric and mechanical equipment exceeding life cycle[No.] / Total number of electric and mechanical equipment[No.] x 100 (%)



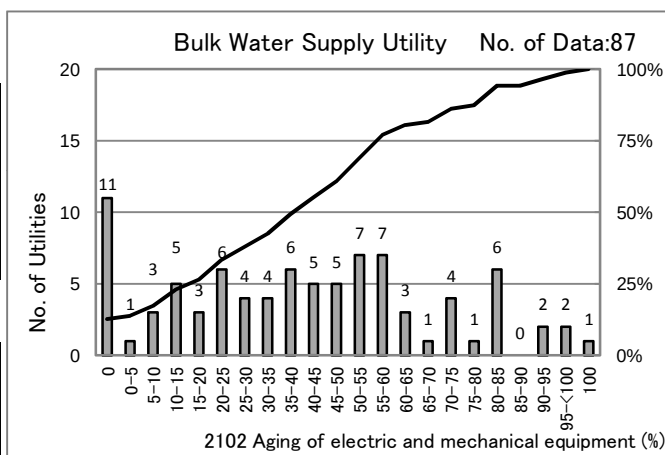
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	90.0	61.8	41.2	18.3	0.0
2009	90.2	61.8	41.7	19.0	0.0
2010	91.4	61.2	42.1	18.8	0.0
2011	92.4	62.5	42.2	18.2	0.0
2012	91.9	61.6	42.4	18.2	0.0

Population supplied (F.Y.2012)

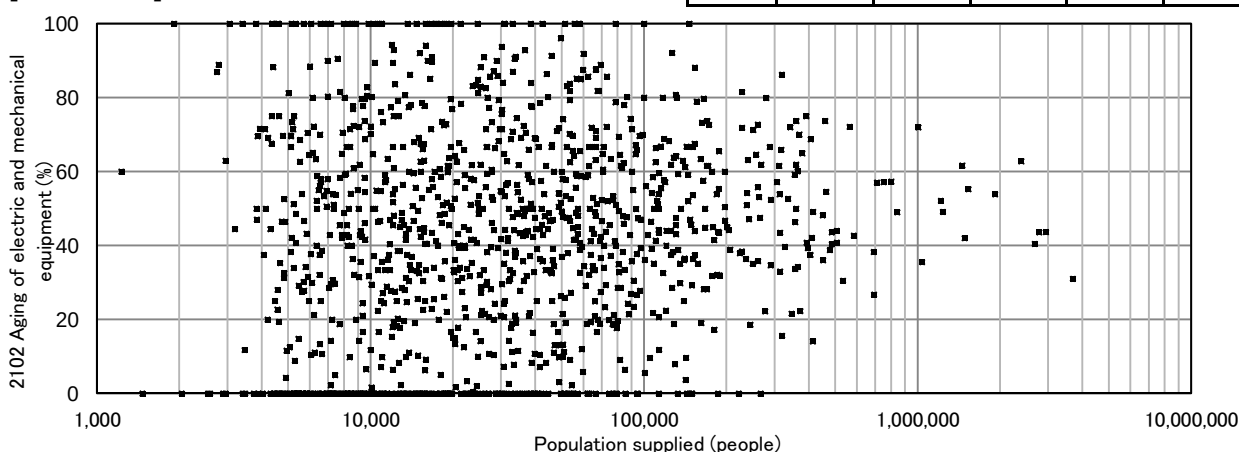
People	95%	75%	50%	25%	5%
<=1	100.0	63.0	32.1	0.0	0.0
1-3	92.9	61.5	40.0	15.0	0.0
3-10	87.6	61.6	44.0	23.4	0.0
10-50	80.0	61.8	47.1	35.9	3.8
50<	70.1	57.1	44.0	40.5	30.6

× 10,000people



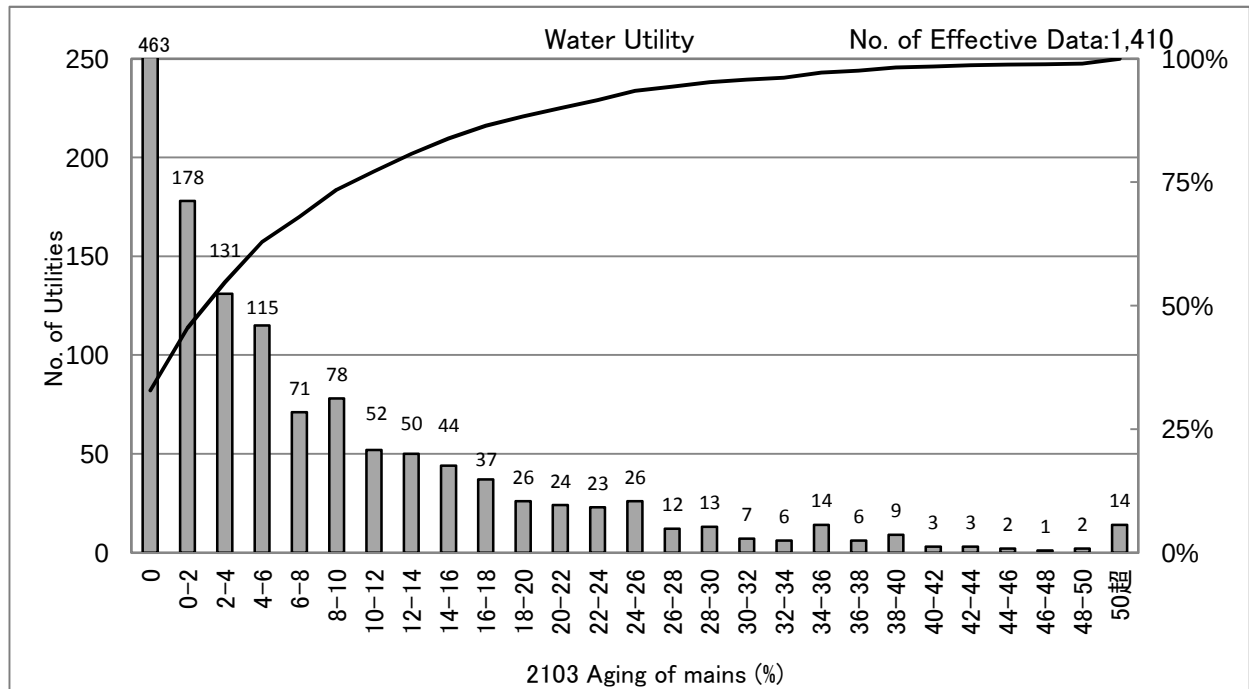
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	78.9	56.2	33.7	11.3	0.0
	2010	77.8	56.8	36.4	15.9	0.0
	2011	83.9	58.9	42.2	12.4	0.0
	2012	88.4	59.5	40.6	20.0	0.0

[Scatter Plot]



2103 Aging of mains (%)

Aging of mains = Length of pipelines exceeding statutory useful life[km]
/ Total pipeline length[km] x 100 (%)



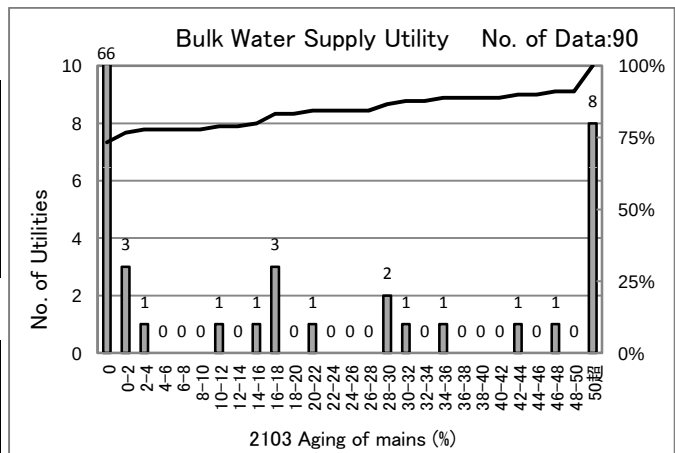
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	24.5	6.9	0.8	0.0	0.0
2009	24.3	7.0	1.2	0.0	0.0
2010	25.5	8.1	1.4	0.0	0.0
2011	26.6	8.8	2.2	0.0	0.0
2012	29.6	10.7	2.9	0.0	0.0

Population supplied (F.Y.2012)

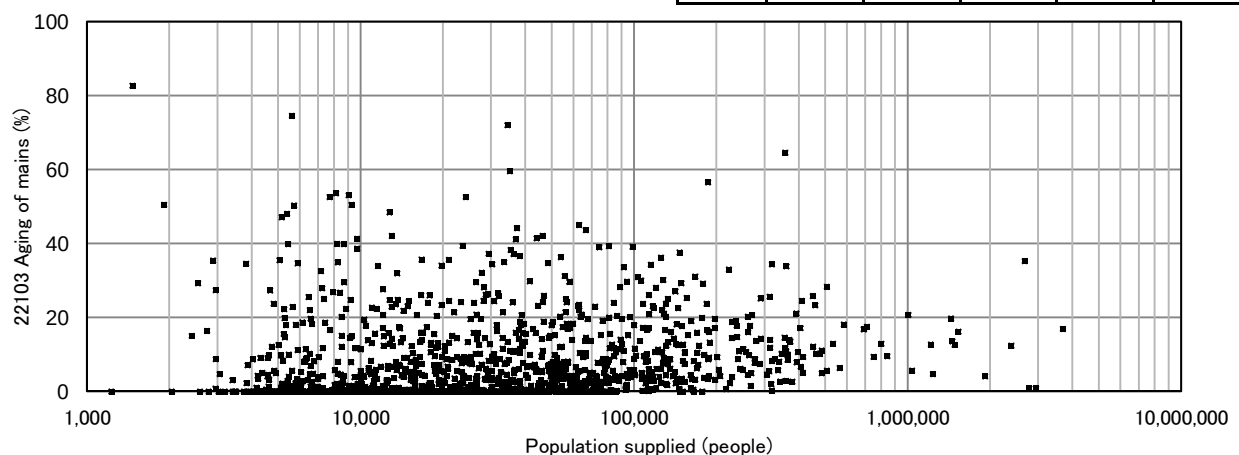
People	95%	75%	50%	25%	5%
<=1	35.1	5.2	0.0	0.0	0.0
1-3	24.5	7.9	0.9	0.0	0.0
3-10	29.8	11.0	3.7	0.2	0.0
10-50	30.2	17.1	9.7	4.4	0.6
50<	26.4	16.9	12.8	6.9	1.7

× 10,000people



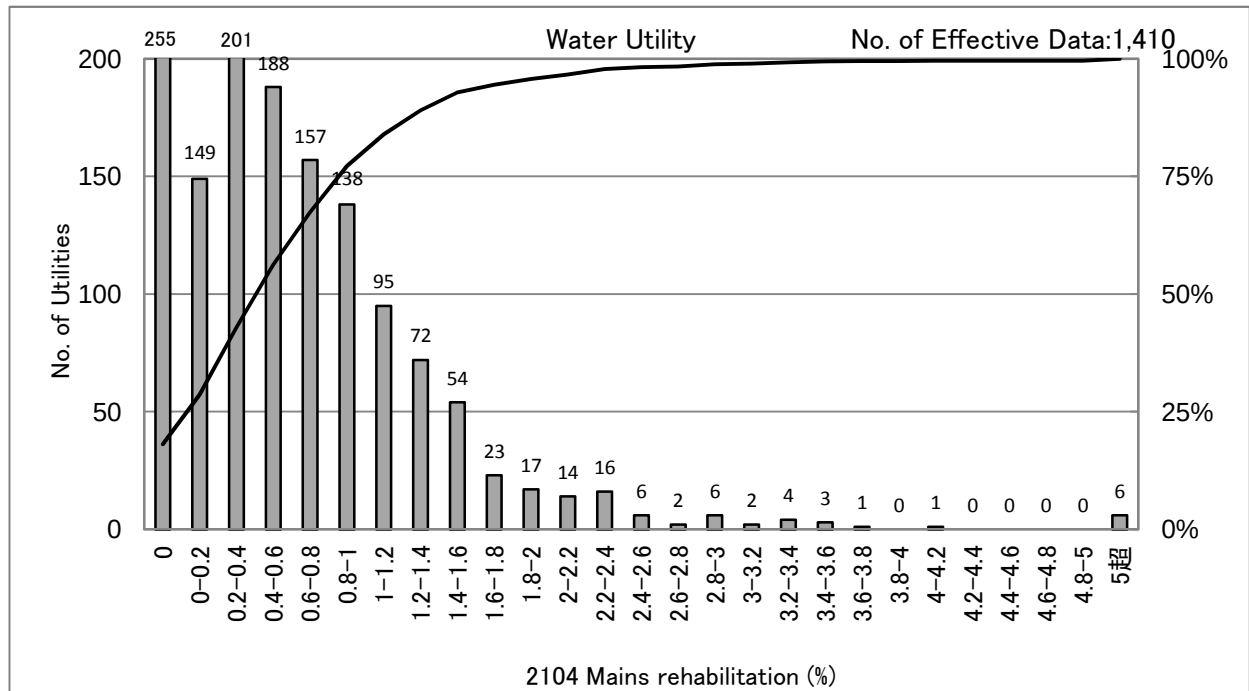
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	48.2	0.0	0.0	0.0	0.0
Supply Utility	2010	50.0	0.0	0.0	0.0	0.0
	2011	61.1	0.0	0.0	0.0	0.0
	2012	61.7	0.1	0.0	0.0	0.0

[Scatter Plot]



2104 Mains rehabilitation (%)

Mains rehabilitation = Length of replaced pipelines[km]
/ Total pipeline length[km] x 100 (%)



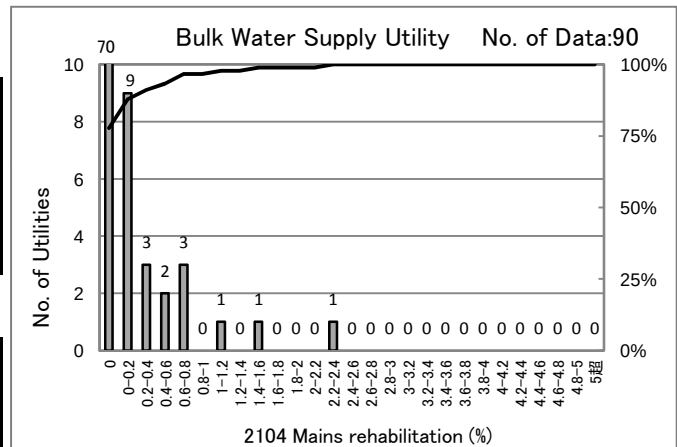
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	2.57	1.21	0.59	0.10	0.00
2009	2.36	1.16	0.57	0.10	0.00
2010	2.09	1.05	0.58	0.11	0.00
2011	1.98	1.00	0.52	0.11	0.00
2012	1.87	0.94	0.50	0.12	0.00

Population supplied (F.Y.2012)

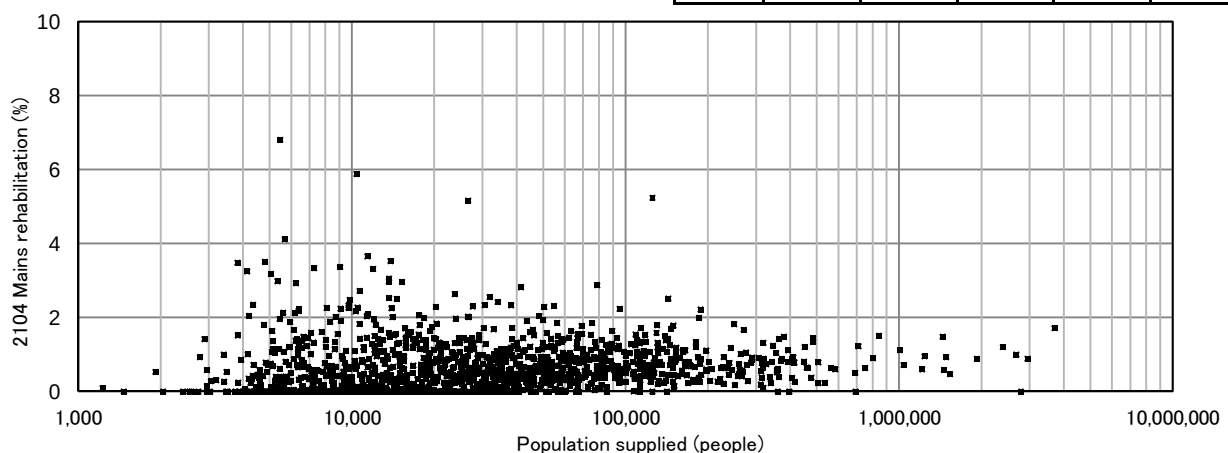
People	95%	75%	50%	25%	5%
<=1	2.24	0.68	0.14	0.00	0.00
1-3	2.01	1.02	0.45	0.09	0.00
3-10	1.62	0.94	0.56	0.32	0.00
10-50	1.59	1.05	0.74	0.47	0.17
50<	1.66	1.09	0.84	0.59	0.06

× 10,000people



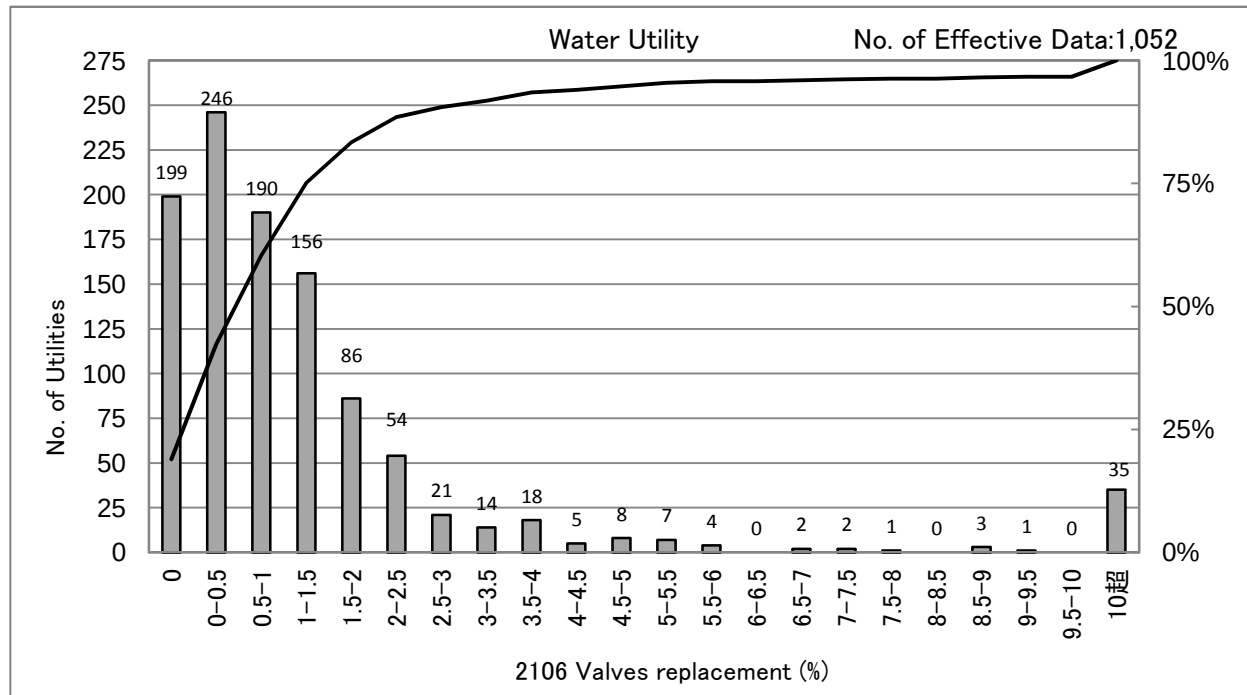
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	0.3	0.0	0.0	0.0	0.0
Supply Utility	2010	0.3	0.0	0.0	0.0	0.0
	2011	0.5	0.0	0.0	0.0	0.0
	2012	0.7	0.0	0.0	0.0	0.0

[Scatter Plot]



2106 Valves replacement (%)

Valves replacement = Number of replaced valves[No.]
/ Total number of existing valves[No.] x 100 (%)



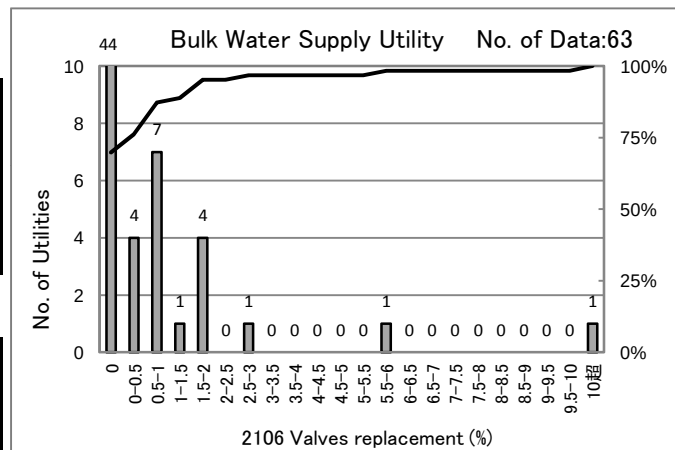
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	7.08	1.91	0.89	0.25	0.00
2009	6.17	1.94	0.90	0.25	0.00
2010	5.87	1.64	0.72	0.22	0.00
2011	4.55	1.53	0.65	0.17	0.00
2012	5.12	1.49	0.66	0.16	0.00

Population supplied (F.Y.2012)

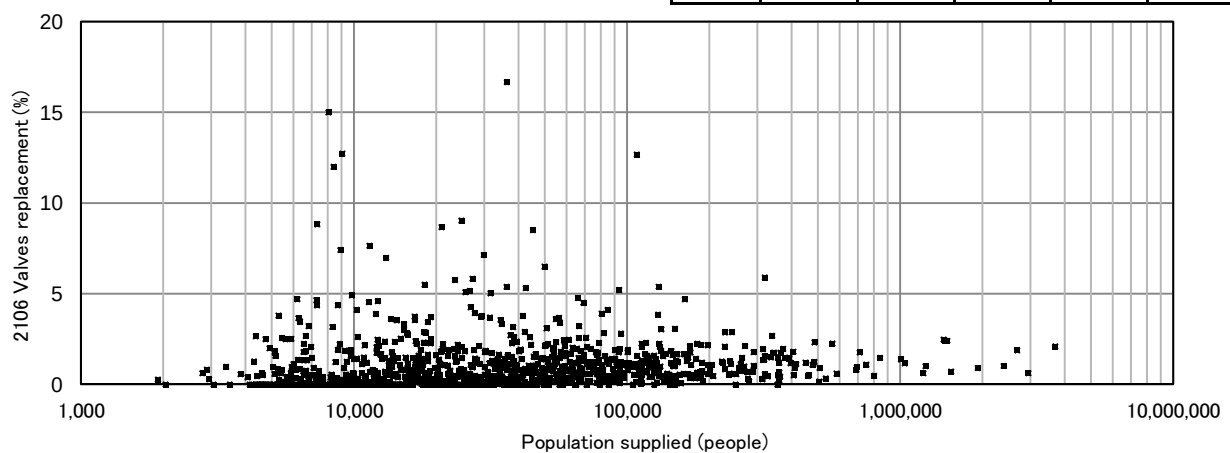
People	95%	75%	50%	25%	5%
<=1	11.68	1.18	0.21	0.00	0.00
1-3	8.84	1.62	0.58	0.08	0.00
3-10	3.74	1.45	0.77	0.27	0.00
10-50	2.89	1.57	1.04	0.53	0.11
50<	2.47	1.88	1.02	0.71	0.36

× 10,000people



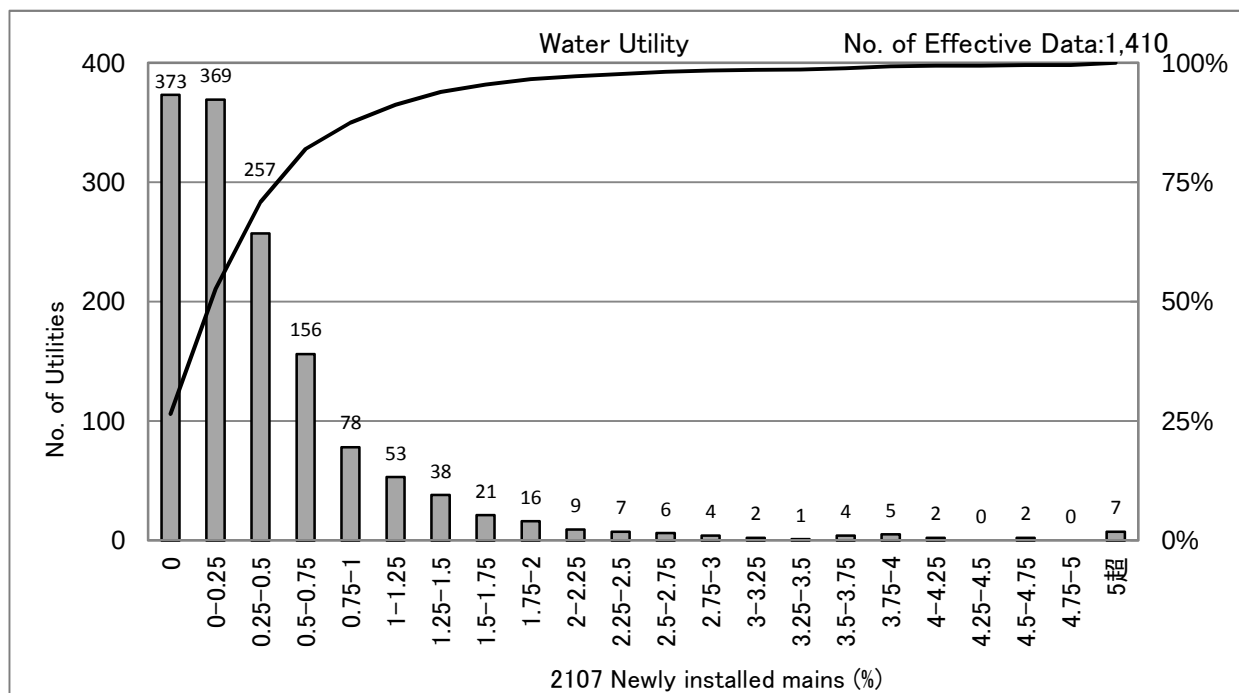
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	1.49	0.14	0.00	0.00	0.00
Supply Utility	2010	2.64	0.29	0.00	0.00	0.00
	2011	3.65	0.32	0.00	0.00	0.00
	2012	1.89	0.24	0.00	0.00	0.00

[Scatter Plot]



2107 Newly installed mains (%)

Newly installed mains = Length of newly installed pipelines[km]
/ Total pipeline length[km] x 100 (%)



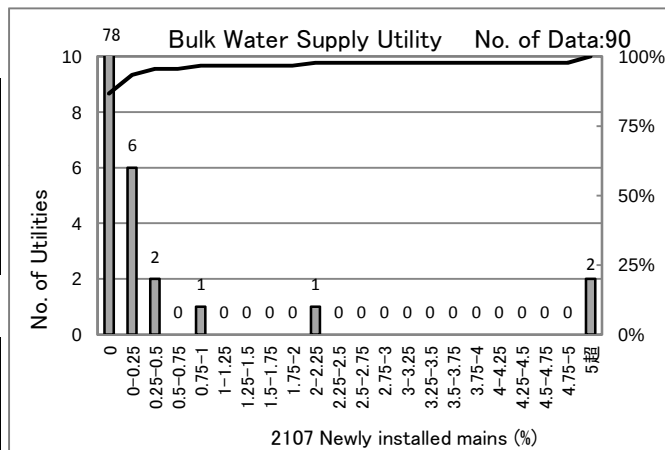
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	2.68	0.85	0.33	0.00	0.00
2009	2.08	0.71	0.29	0.00	0.00
2010	1.92	0.61	0.24	0.00	0.00
2011	1.77	0.55	0.22	0.00	0.00
2012	1.67	0.59	0.23	0.00	0.00

Population supplied (F.Y.2012)

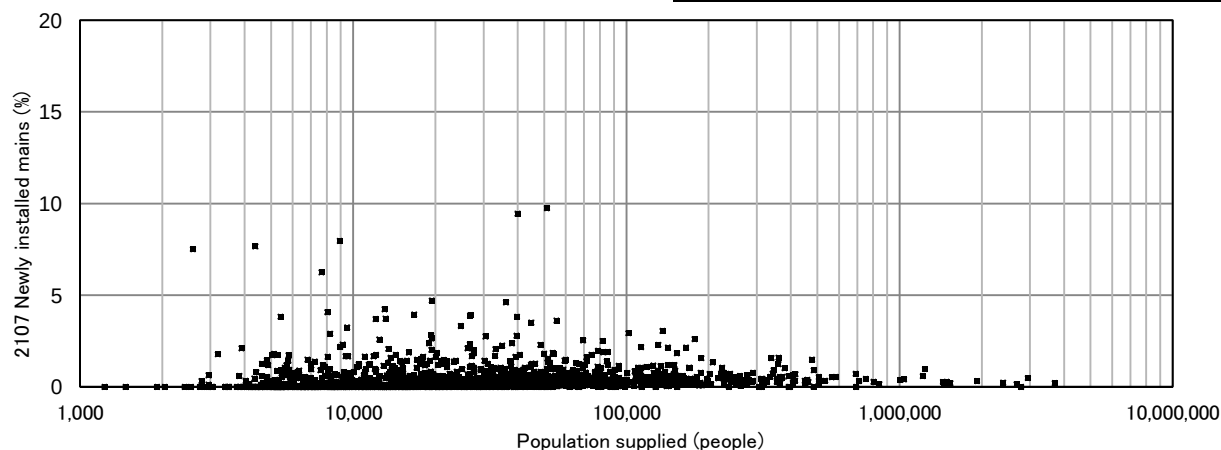
People	95%	75%	50%	25%	5%
<=1	1.65	0.31	0.00	0.00	0.00
1-3	1.75	0.58	0.20	0.00	0.00
3-10	1.78	0.71	0.34	0.13	0.00
10-50	1.57	0.62	0.37	0.20	0.05
50<	0.68	0.47	0.32	0.21	0.03

× 10,000people



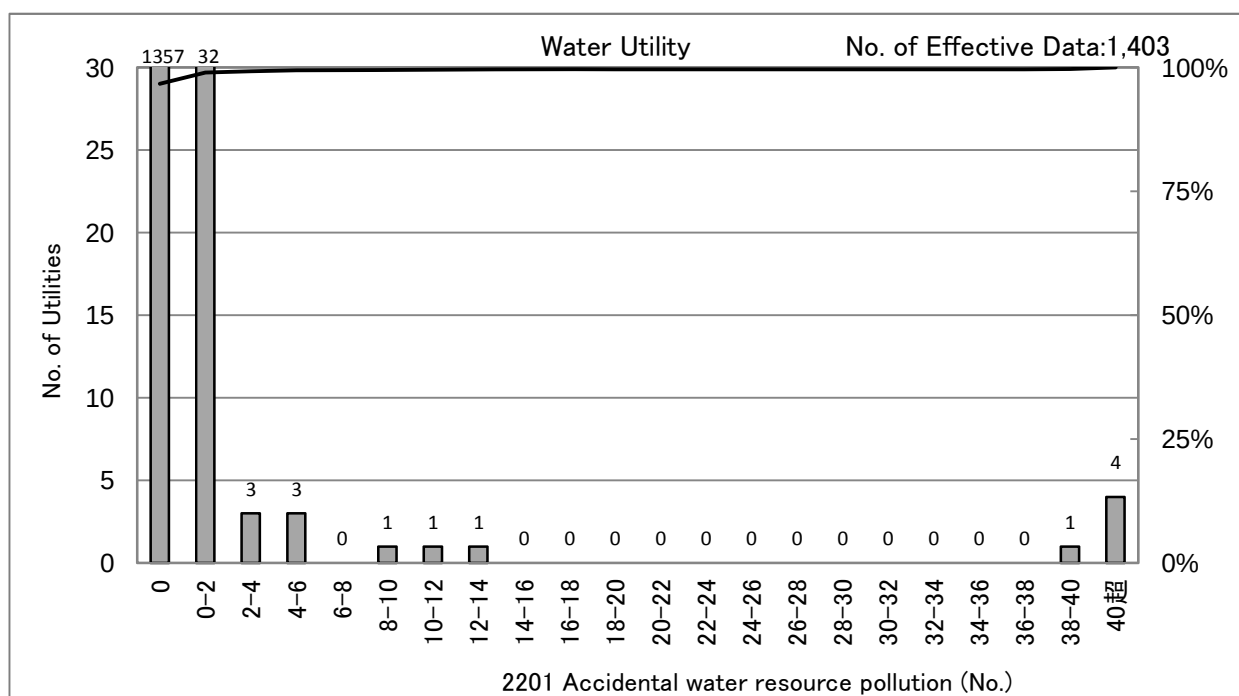
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	2.77	0.00	0.00	0.00	0.00
	2010	2.35	0.00	0.00	0.00	0.00
	2011	1.68	0.00	0.00	0.00	0.00
	2012	0.39	0.00	0.00	0.00	0.00

[Scatter Plot]



2201 Accidental water resource pollution (No.)

Accidental water resource pollution = Number of water pollution accidents per year (No.)



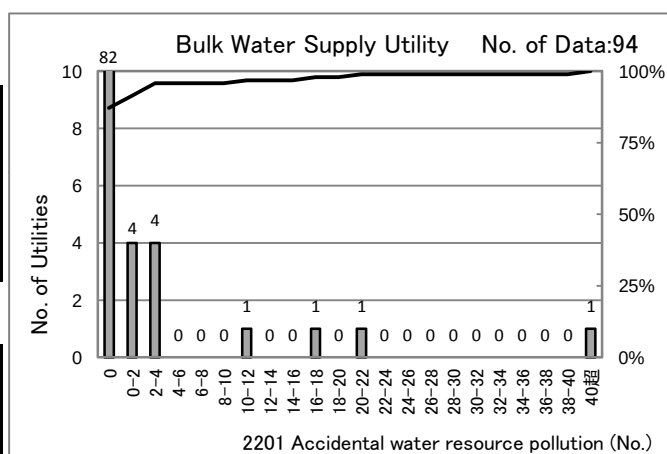
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	0	0	0	0	0
2009	0	0	0	0	0
2010	0	0	0	0	0
2011	0	0	0	0	0
2012	0	0	0	0	0

Population supplied (F.Y.2012)

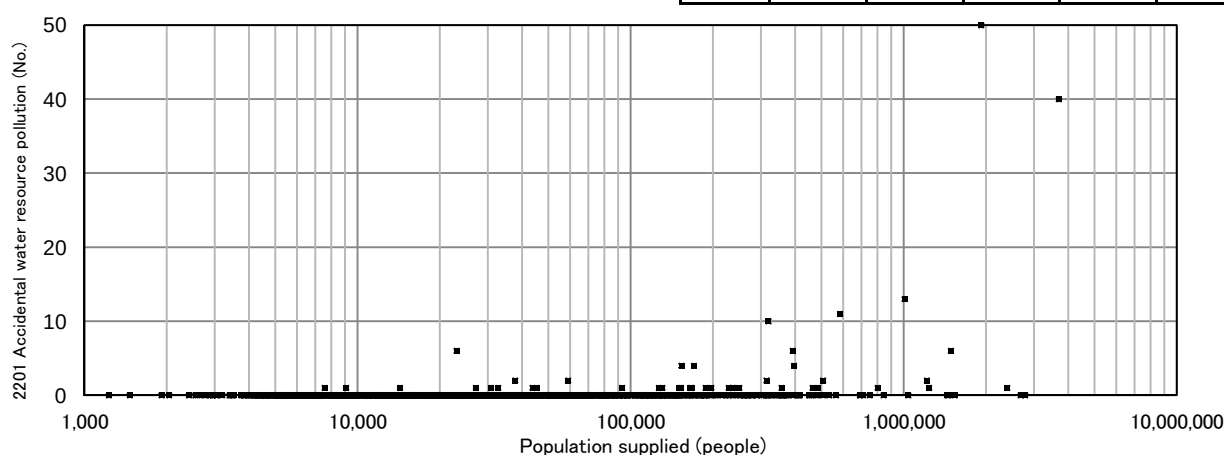
People	95%	75%	50%	25%	5%
<=1	0	0	0	0	0
1-3	0	0	0	0	0
3-10	0	0	0	0	0
10-50	1	0	0	0	0
50<	133	5	0	0	0

× 10,000people



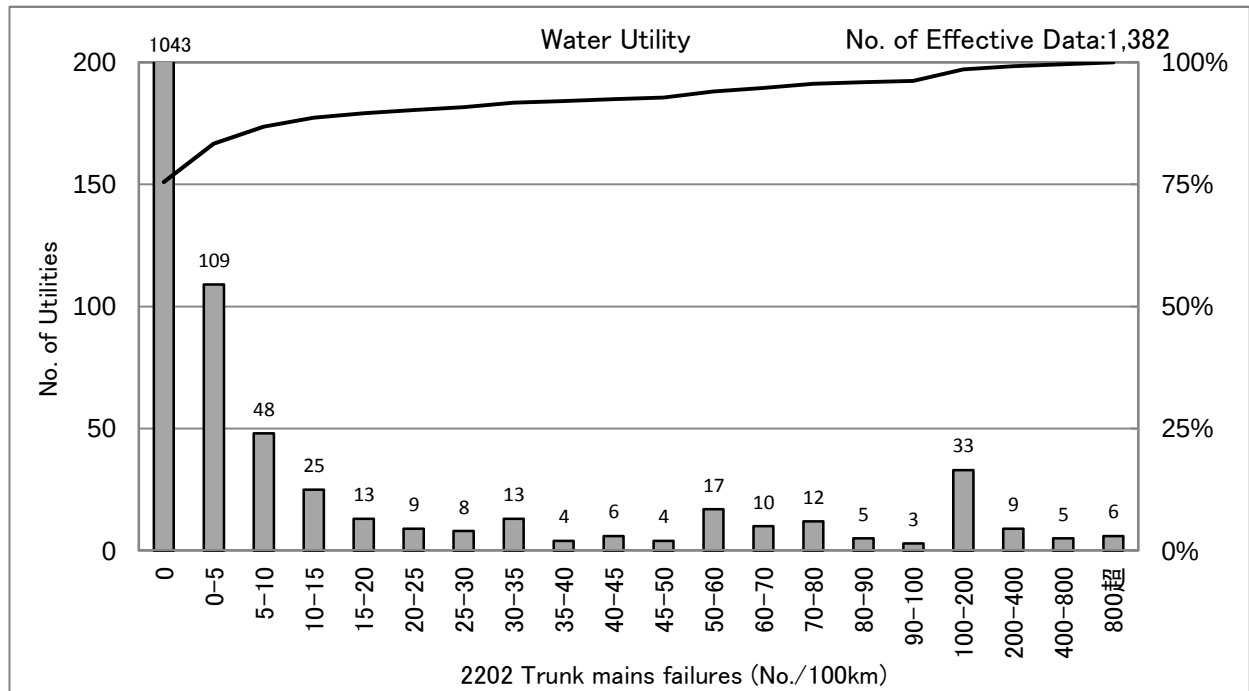
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	8	0	0	0	0
Supply Utility	2010	7	0	0	0	0
	2011	9	0	0	0	0
	2012	3	0	0	0	0

[Scatter Plot]



2202 Trunk mains failures (No./100km)

Trunk mains failures = Number of mains failures[No.]
/ Total mains length[km] x 100 (No./100km)



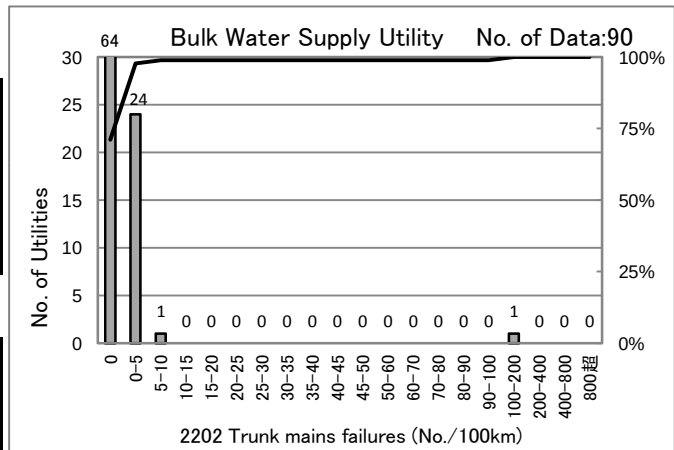
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	92.2	0.8	0.0	0.0	0.0
2009	79.3	0.2	0.0	0.0	0.0
2010	89.2	1.9	0.0	0.0	0.0
2011	73.0	0.2	0.0	0.0	0.0
2012	73.1	0.0	0.0	0.0	0.0

Population supplied (F.Y.2012)

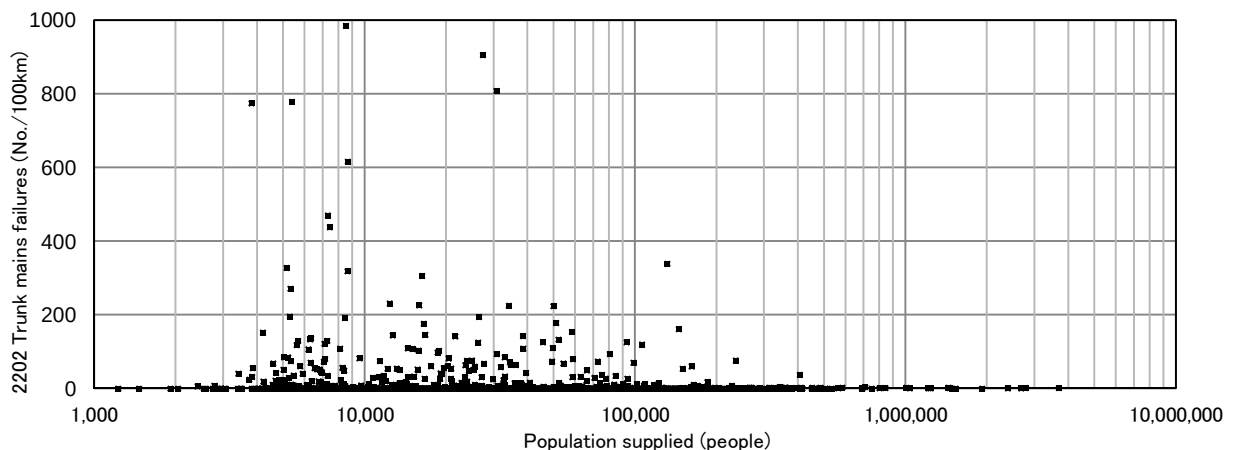
People	95%	75%	50%	25%	5%
<=1	120.8	1.6	0.0	0.0	0.0
1-3	65.6	0.0	0.0	0.0	0.0
3-10	67.2	0.0	0.0	0.0	0.0
10-50	11.2	0.8	0.0	0.0	0.0
50<	2.4	0.9	0.5	0.0	0.0

× 10,000people



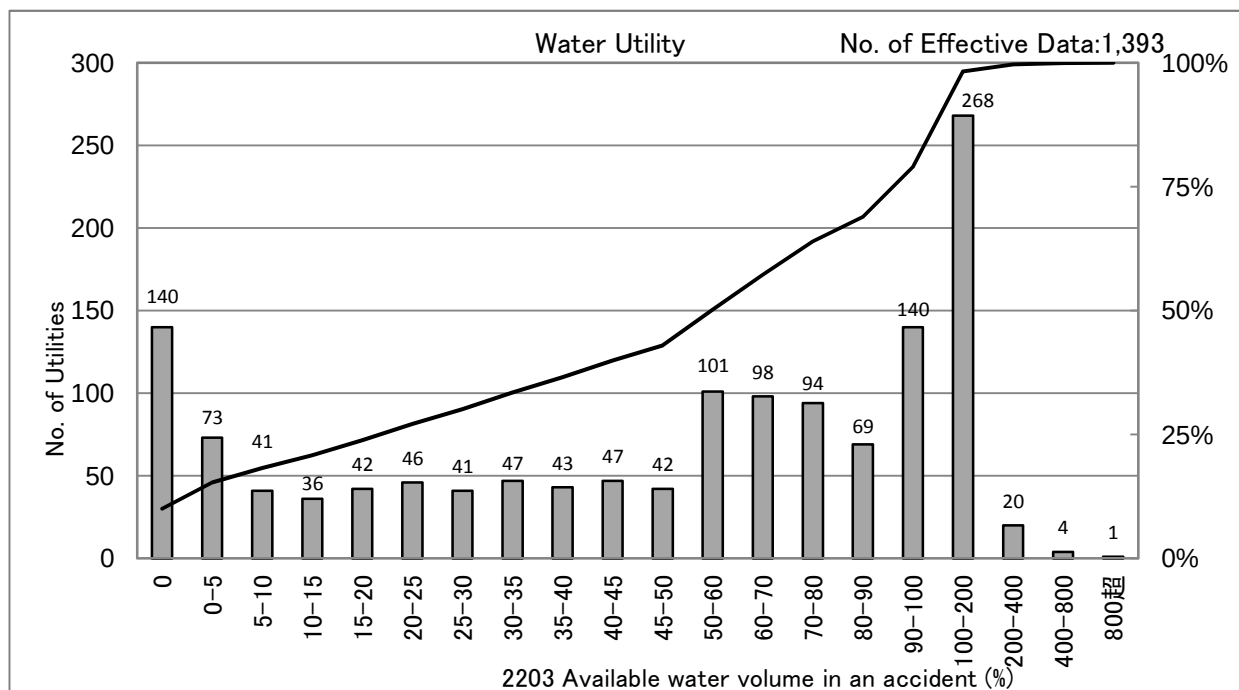
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	3.1	0.3	0.0	0.0	0.0
Supply Utility	2010	3.2	1.0	0.0	0.0	0.0
	2011	2.4	0.4	0.0	0.0	0.0
	2012	2.3	0.4	0.0	0.0	0.0

[Scatter Plot]



2203 Available water volume in an accident (%)

Available water volume in an accident = Reduced transmission input[m³/day]
/ Average daily transmission input[m³/day] x 100 (%)



[Percentile Value] Water Utility

Fiscal year

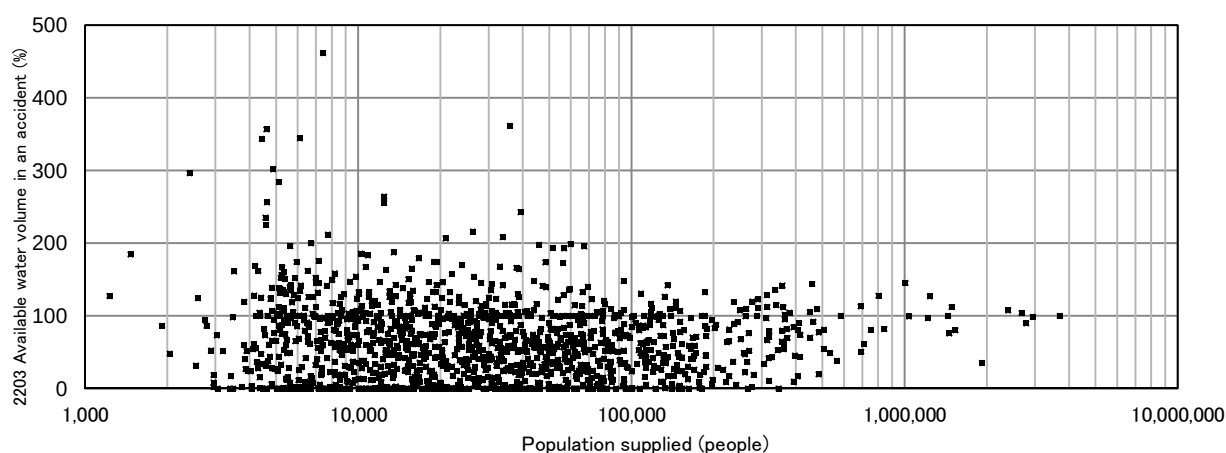
F.Y.	95%	75%	50%	25%	5%
2008	148.2	94.4	52.5	8.3	0.0
2009	150.7	96.2	56.4	14.8	0.0
2010	151.8	98.9	58.6	20.2	0.0
2011	150.8	98.4	59.1	21.7	0.0
2012	149.4	99.2	59.7	22.2	0.0

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	198.8	104.7	71.0	18.5	0.0
1-3	146.1	97.8	59.7	19.8	0.0
3-10	136.3	83.4	51.6	20.3	0.0
10-50	119.6	91.9	61.4	29.5	0.2
50<	127.6	103.0	97.7	76.9	40.8

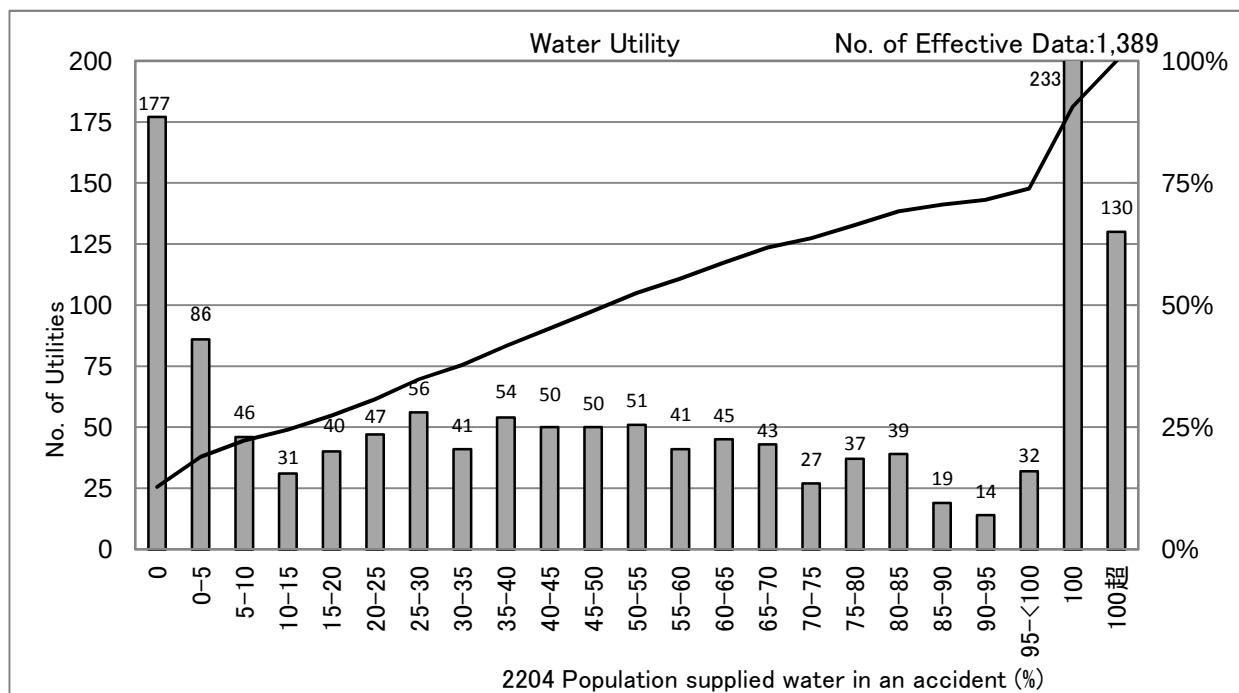
× 10,000people

[Scatter Plot]



2204 Population supplied water in an accident (%)

Population supplied water in an accident = Accident-affected population[person]
/ Service population[person] x 100 (%)



[Percentile Value] Water Utility

Fiscal year

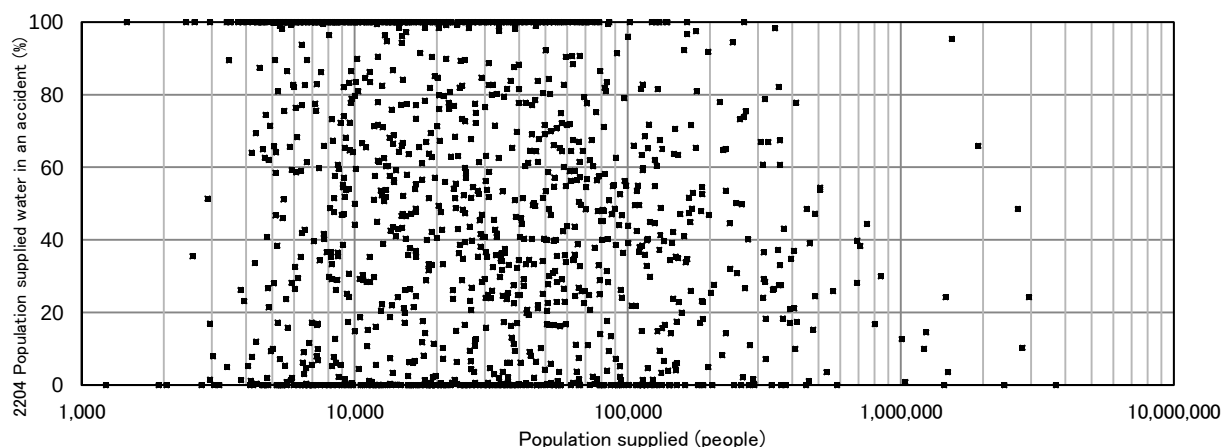
F.Y.	95%	75%	50%	25%	5%
2008	100.1	96.2	42.2	0.9	0.0
2009	101.1	98.0	45.4	7.5	0.0
2010	101.2	99.8	49.6	12.4	0.0
2011	101.2	99.9	50.7	12.3	0.0
2012	101.8	100.0	51.9	16.2	0.0

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	102.9	100.0	72.4	15.1	0.0
1-3	101.9	100.0	60.3	20.6	0.0
3-10	101.8	85.5	46.8	16.9	0.0
10-50	100.0	64.5	37.3	14.4	0.0
50<	63.1	39.5	20.5	3.6	0.0

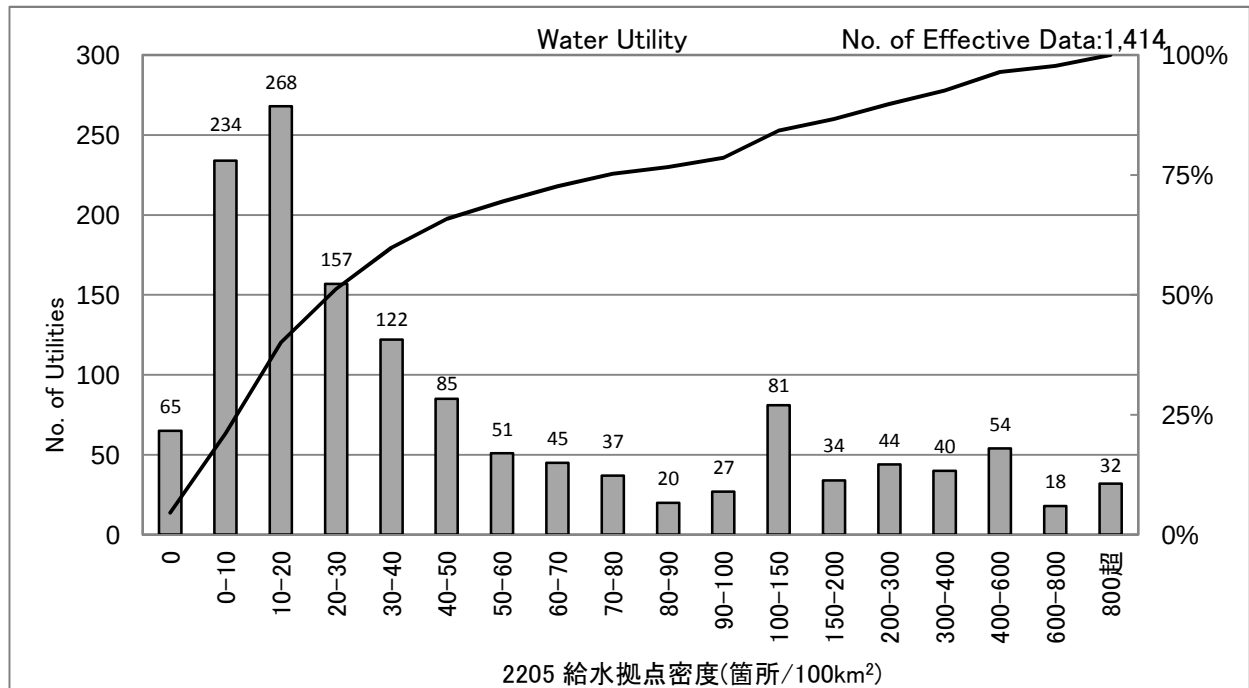
× 10,000people

[Scatter Plot]



2205 Water supply points density in emergency (No./100km²)

Water supply points density in emergency = Number of distribution and emergency reservoirs[No.]
/ Service area[km²] x 100 (No./100km²)



[Percentile Value] Water Utility

Fiscal year

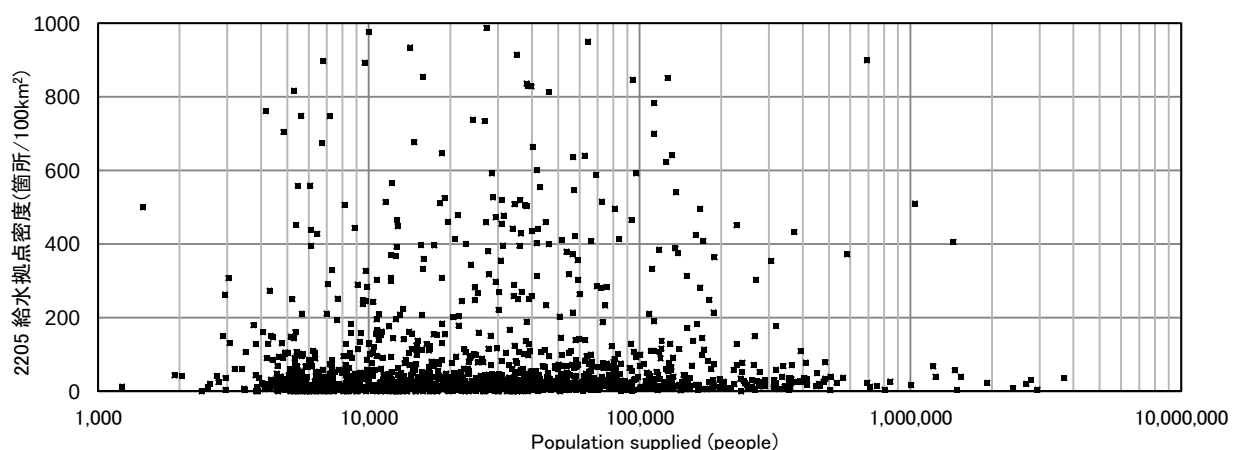
F.Y.	95%	75%	50%	25%	5%
2008	524.7	83.4	27.4	10.0	0.0
2009	512.5	84.0	28.2	11.4	0.0
2010	507.3	80.5	28.0	11.7	0.0
2011	510.9	80.9	28.3	11.9	0.9
2012	501.0	78.5	28.3	11.9	1.7

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	576.3	90.0	32.1	10.7	0.0
1-3	460.6	79.2	26.5	11.8	0.0
3-10	507.0	75.8	29.0	12.7	4.0
10-50	425.5	75.2	27.3	13.3	6.3
50<	484.4	40.3	25.7	15.0	4.7

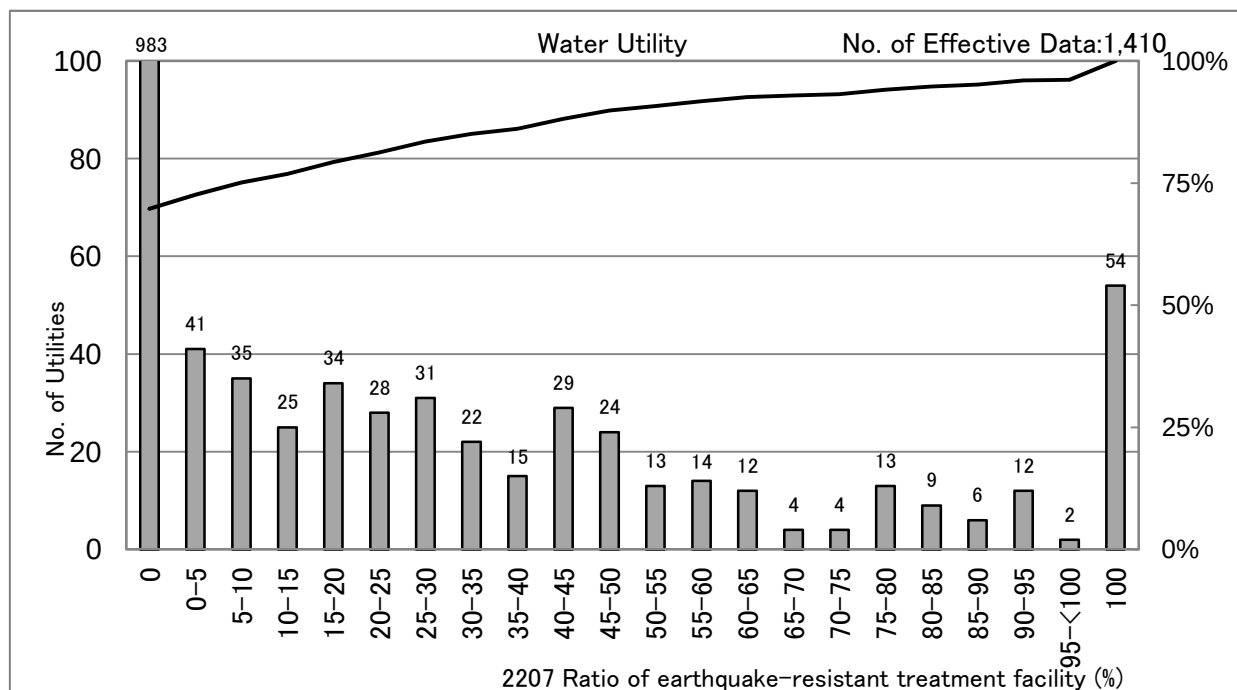
× 10,000people

[Scatter Plot]



2207 Ratio of earthquake-resistant treatment facility (%)

Ratio of earthquake-resistant treatment facility = Capacity of earthquake-resistant purification facilities[m³/day] / Capacity of all purification facilities[m³/day] x 100 (%)



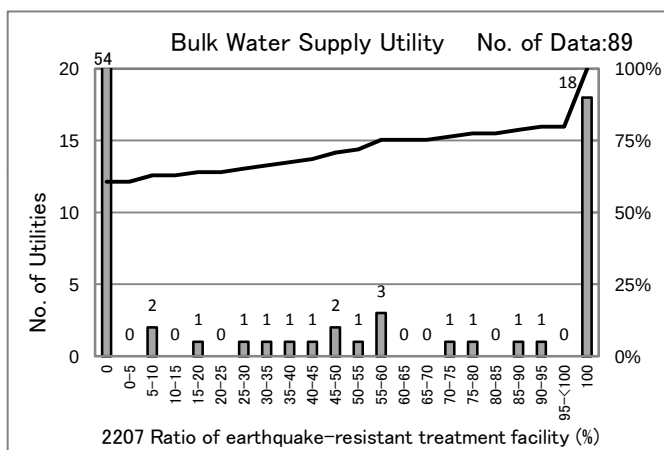
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	69.7	0.0	0.0	0.0	0.0
2009	72.2	0.0	0.0	0.0	0.0
2010	81.6	2.8	0.0	0.0	0.0
2011	83.2	6.9	0.0	0.0	0.0
2012	87.9	10.0	0.0	0.0	0.0

Population supplied (F.Y.2012)

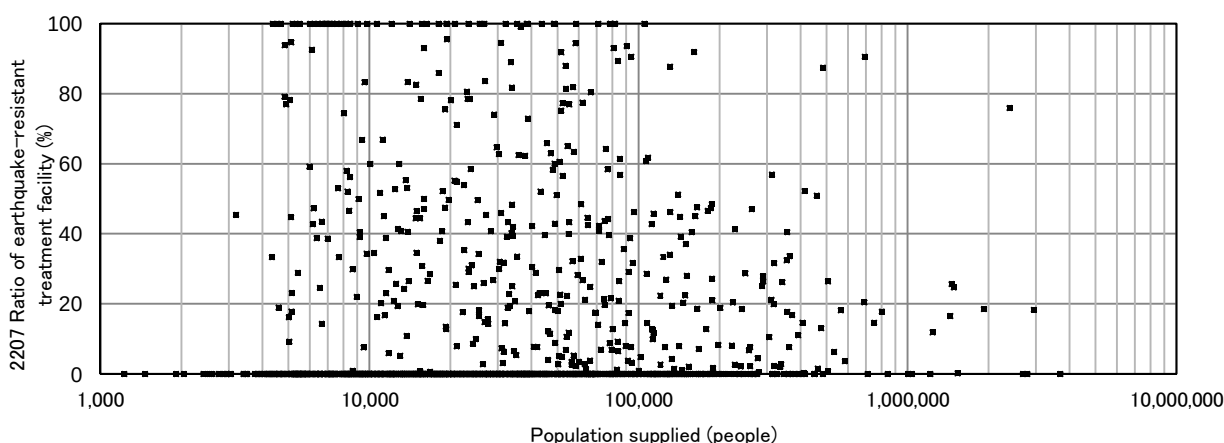
People	95%	75%	50%	25%	5%
<=1	100.0	0.0	0.0	0.0	0.0
1-3	78.6	0.0	0.0	0.0	0.0
3-10	89.2	19.5	0.0	0.0	0.0
10-50	48.6	18.0	0.0	0.0	0.0
50<	63.5	18.5	9.1	0.0	0.0

x 10,000people



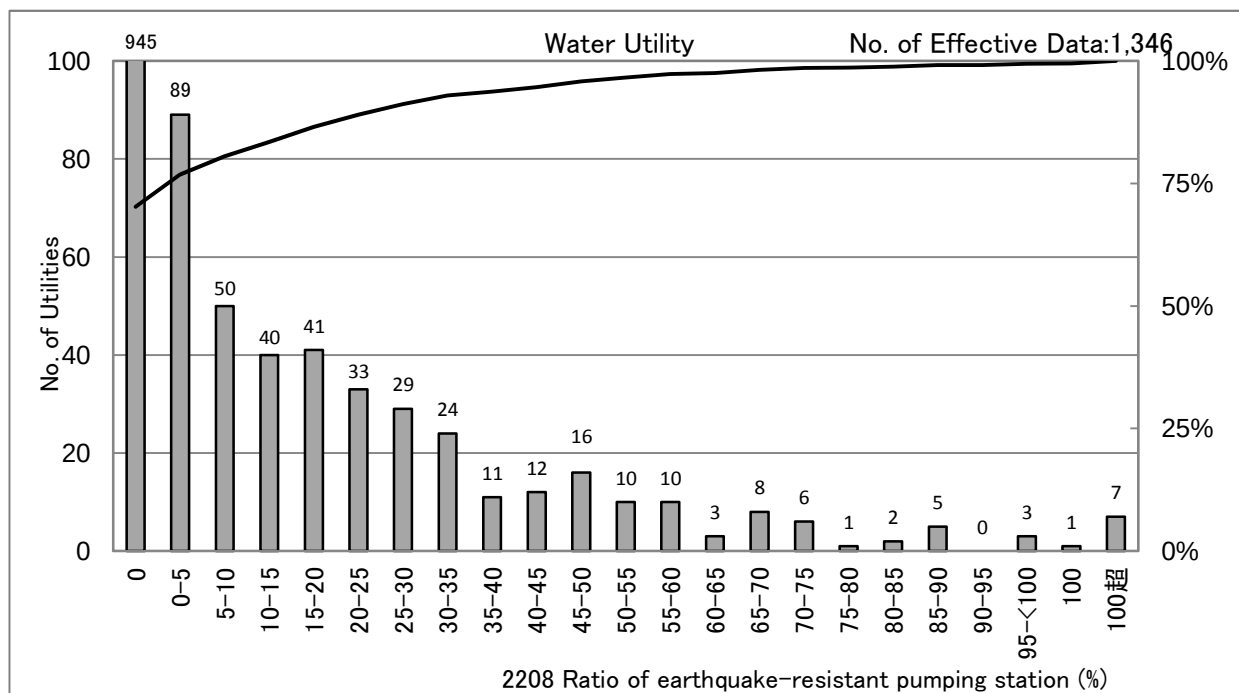
[Percentile Value]	F.Y.	95%値	75%値	50%値	25%値	5%値
Bulk Water Supply Utility	2009	100.0	33.2	0.0	0.0	0.0
	2010	100.0	47.6	0.0	0.0	0.0
	2011	100.0	55.5	0.0	0.0	0.0
	2012	100.0	56.1	0.0	0.0	0.0

[Scatter Plot]



2208 Ratio of earthquake-resistant pumping station (%)

Ratio of earthquake-resistant pumping station = Capacity of earthquake-resistant pump stations[m³/day] / Capacity of all pump stations[m³/day] x 100 (%)



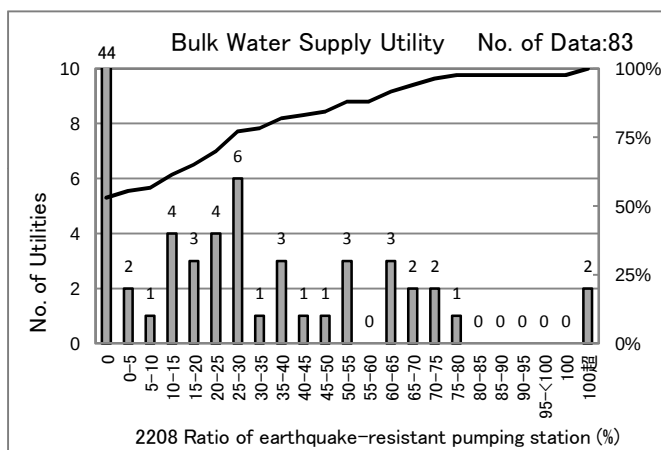
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	30.0	0.0	0.0	0.0	0.0
2009	36.9	0.0	0.0	0.0	0.0
2010	42.3	1.1	0.0	0.0	0.0
2011	45.8	2.5	0.0	0.0	0.0
2012	46.3	3.5	0.0	0.0	0.0

Population supplied (F.Y.2012)

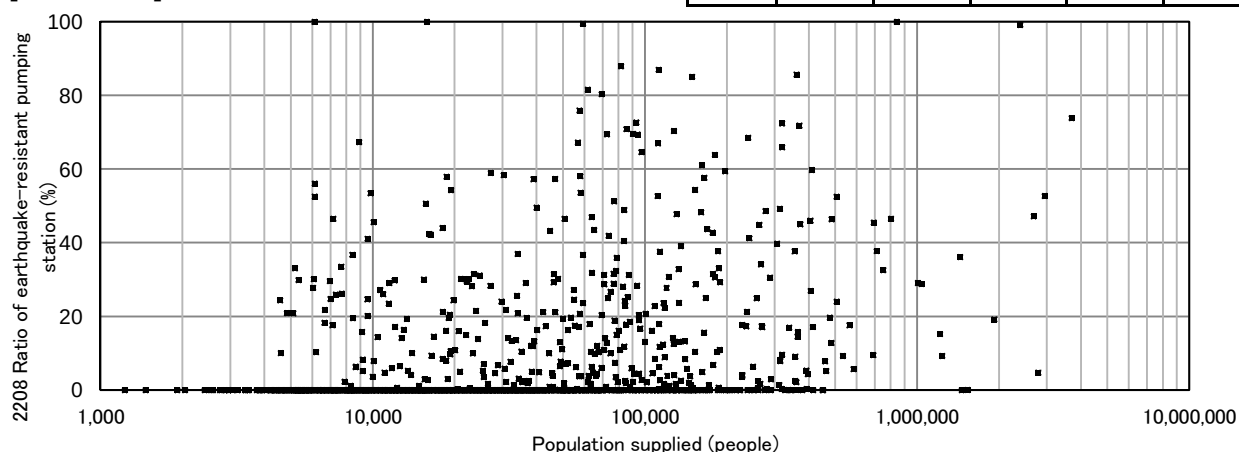
People	95%	75%	50%	25%	5%
<=1	25.6	0.0	0.0	0.0	0.0
1-3	27.4	0.0	0.0	0.0	0.0
3-10	57.3	8.8	0.0	0.0	0.0
10-50	61.4	21.0	2.4	0.0	0.0
50<	97.2	47.2	29.1	9.5	1.0

× 10,000people



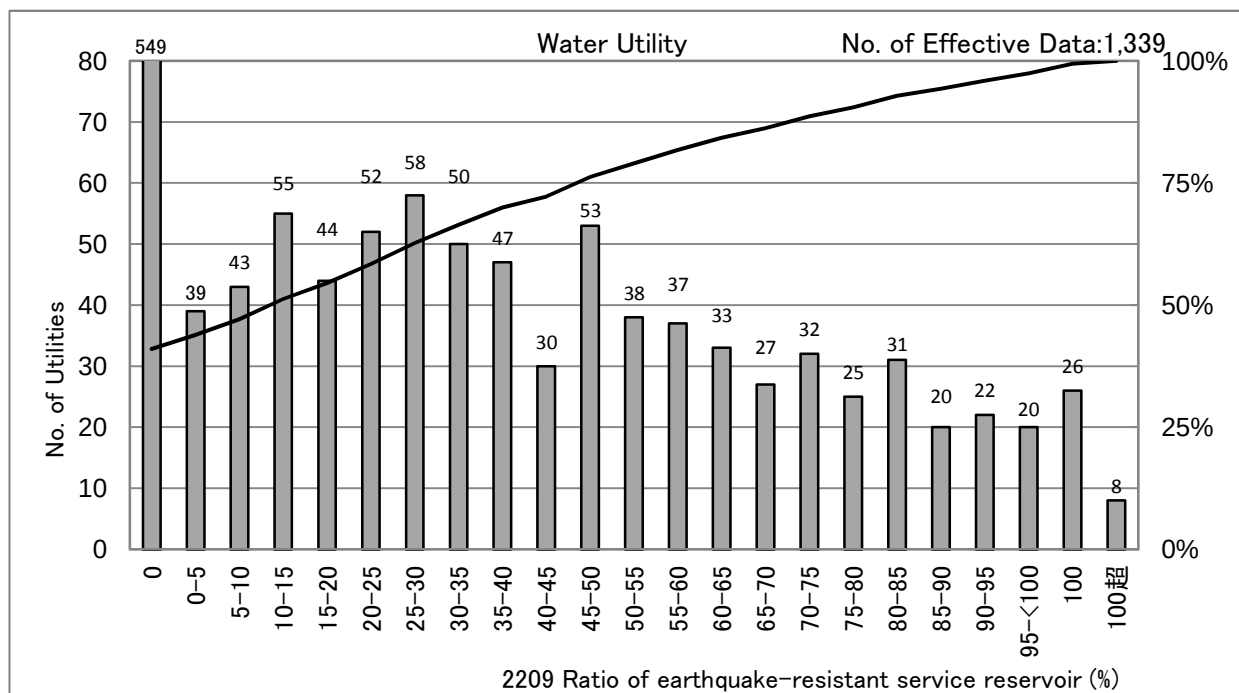
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	70.4	29.1	0.0	0.0	0.0
	2010	73.2	29.7	0.0	0.0	0.0
	2011	73.5	28.6	0.0	0.0	0.0
	2012	73.5	28.6	0.0	0.0	0.0

[Scatter Plot]



2209 Ratio of earthquake-resistant service reservoir (%)

Ratio of earthquake-resistant service reservoir = Capacity of earthquake-resistant service reservoirs[m³] / Capacity of all service reservoirs[m³] x 100 (%)



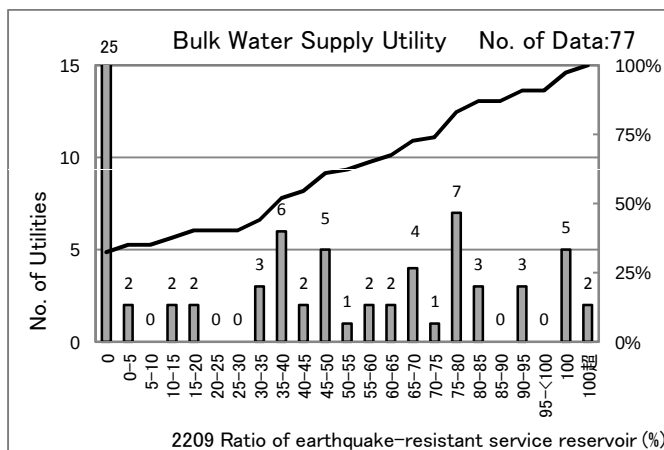
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	81.3	29.1	0.0	0.0	0.0
2009	85.6	34.4	0.0	0.0	0.0
2010	86.6	39.4	3.3	0.0	0.0
2011	89.7	44.9	8.3	0.0	0.0
2012	91.6	48.3	13.5	0.0	0.0

Population supplied (F.Y.2012)

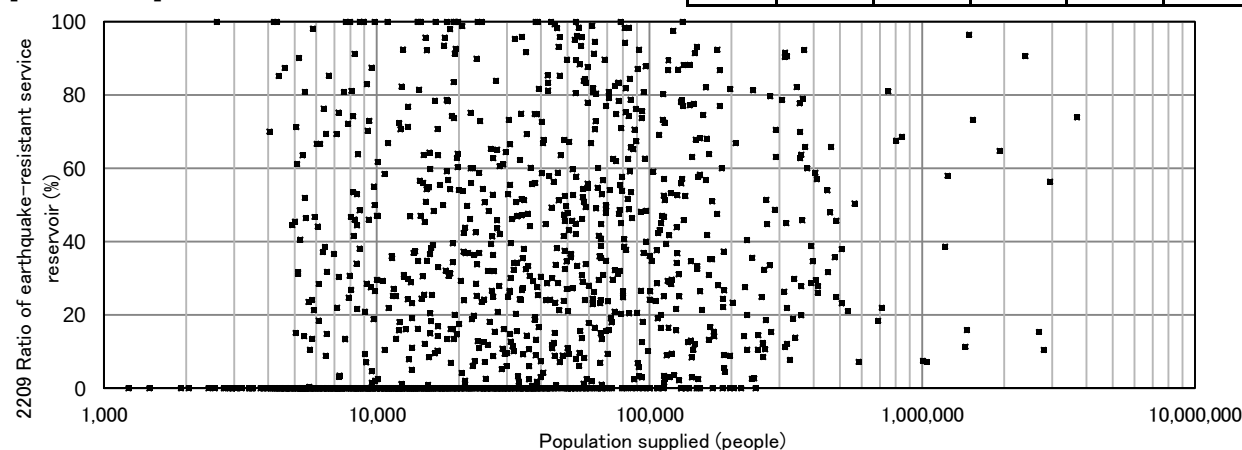
People	95%	75%	50%	25%	5%
<=1	85.3	18.9	0.0	0.0	0.0
1-3	92.8	36.9	0.0	0.0	0.0
3-10	94.4	56.0	28.6	0.0	0.0
10-50	88.5	59.1	32.5	13.4	0.0
50<	95.0	68.4	44.6	16.5	7.3

× 10,000people



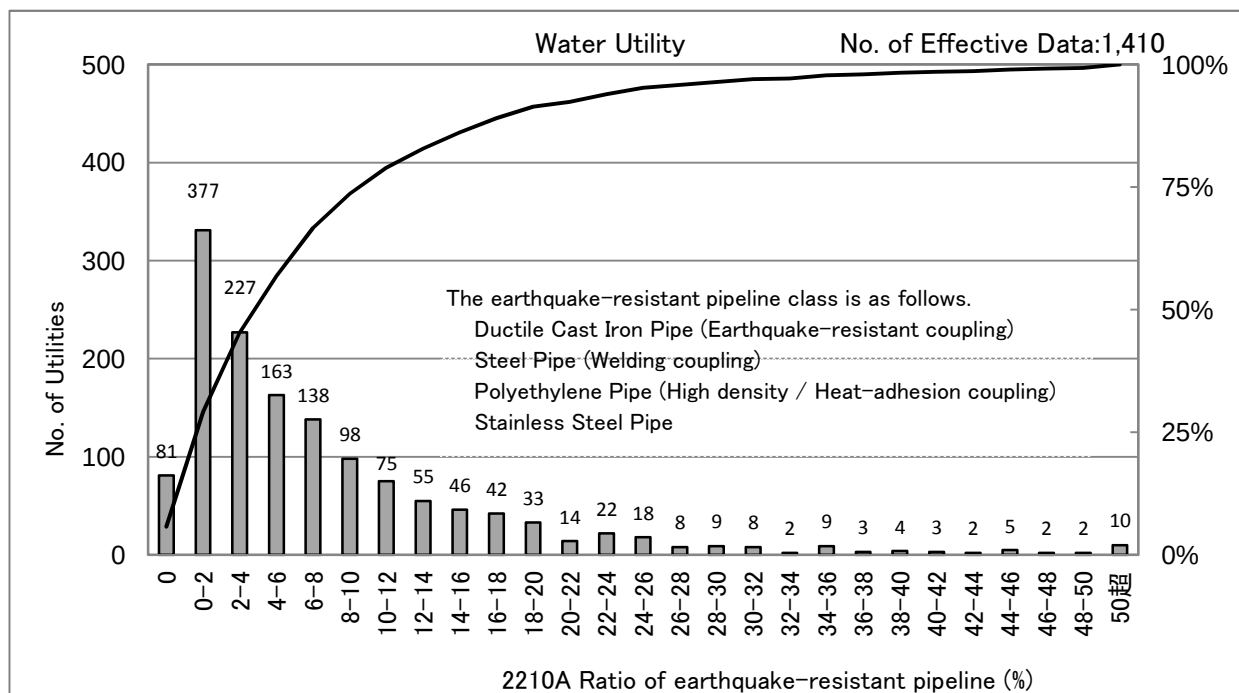
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	87.1	52.4	0.0	0.0	0.0
Supply Utility	2010	84.5	68.0	11.1	0.0	0.0
	2011	100.0	68.4	37.7	0.0	0.0
	2012	100.0	75.1	39.3	0.0	0.0

[Scatter Plot]



2210A Ratio of earthquake-resistant pipeline (%)

Ratio of earthquake-resistant pipeline = Length of earthquake-resistant pipelines[km]
/ Total pipeline length[km] x 100 (%)



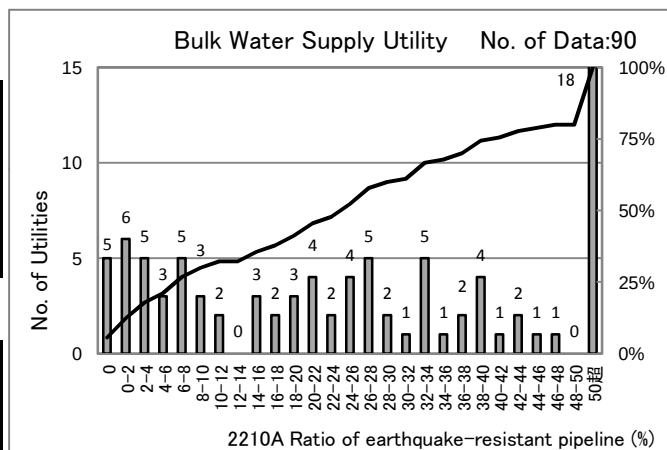
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	23.0	6.5	1.9	0.3	0.0
2009	22.9	7.4	2.7	0.6	0.0
2010	23.8	8.6	3.4	0.8	0.0
2011	24.7	9.6	4.1	1.2	0.0
2012	25.1	10.6	4.7	1.4	0.0

Population supplied (F.Y.2012)

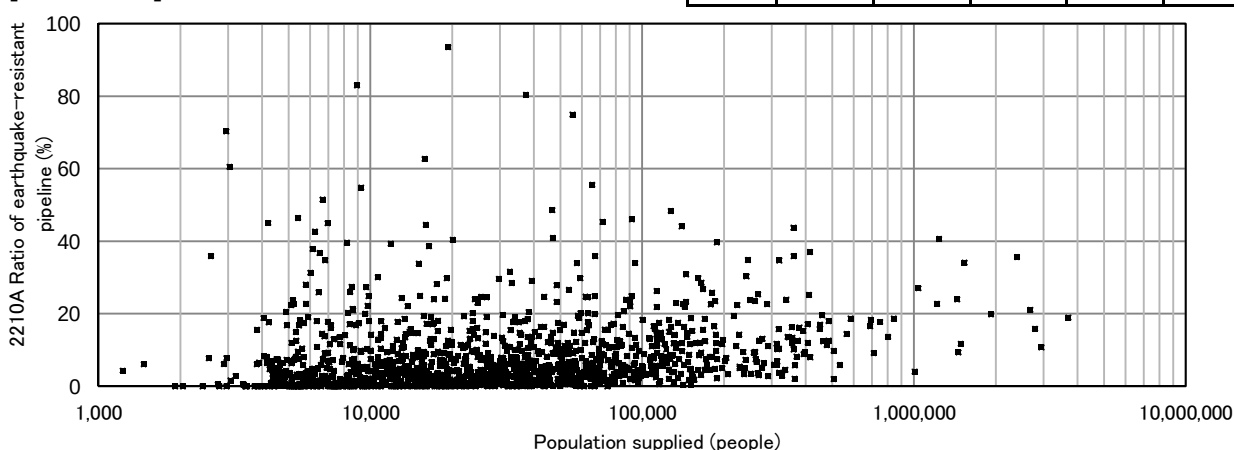
People	95%	75%	50%	25%	5%
<=1	27.7	7.5	2.4	0.3	0.0
1-3	19.4	8.0	3.6	1.0	0.0
3-10	24.3	10.4	5.4	2.5	0.2
10-50	29.9	15.4	10.0	5.6	2.2
50<	35.3	22.4	18.1	11.0	4.5

× 10,000people



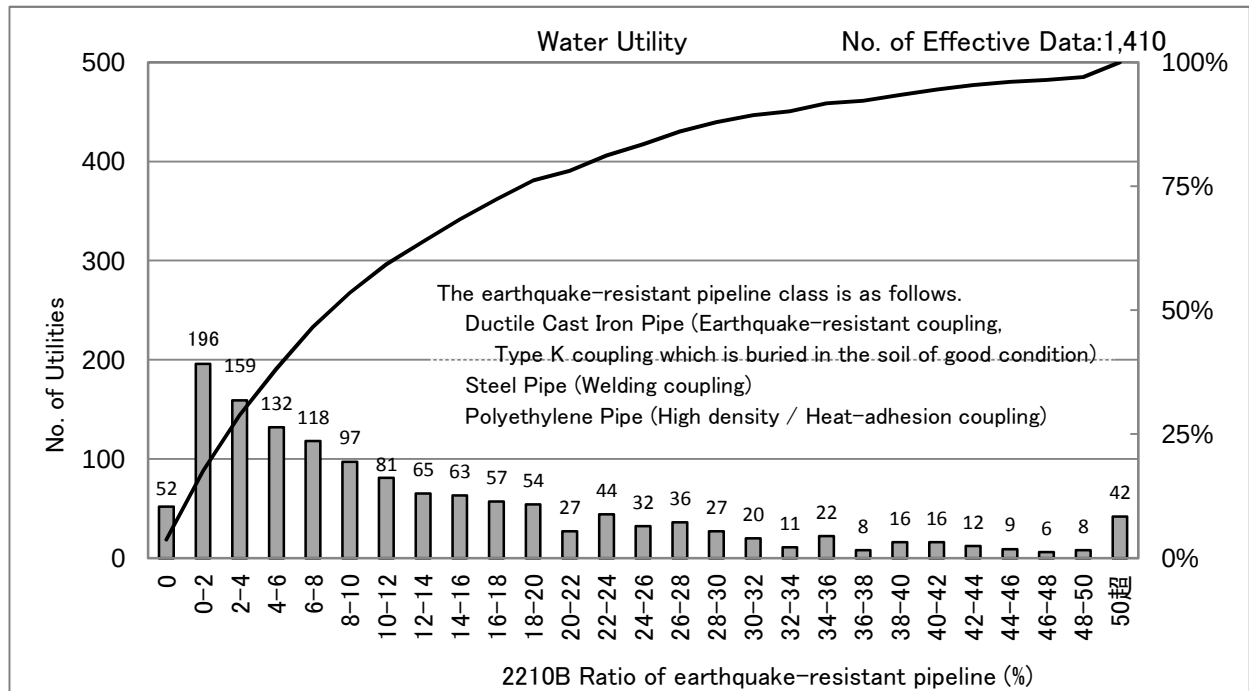
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	61.0	37.6	20.4	4.8	0.0
Supply Utility	2010	43.8	32.4	16.9	3.4	0.0
	2011	41.4	31.7	18.8	4.9	0.0
	2012	38.3	26.7	17.5	4.9	0.0

[Scatter Plot]



2210B Ratio of earthquake-resistant pipeline (%)

Ratio of earthquake-resistant pipeline = Length of earthquake-resistant pipelines[km]
/ Total pipeline length[km] x 100 (%)



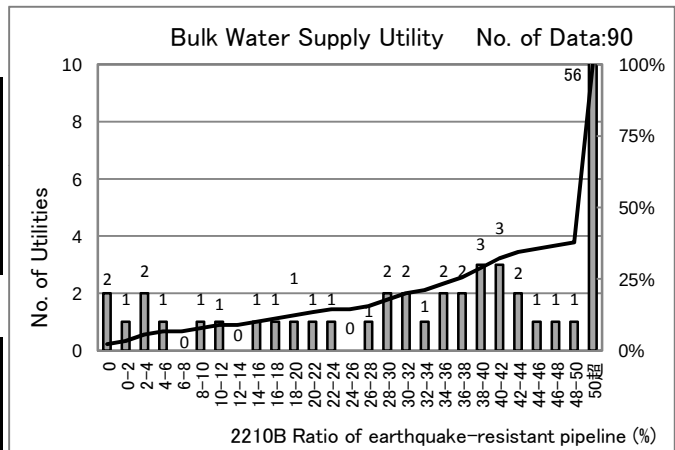
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	34.9	10.6	3.2	0.5	0.0
2009	42.5	15.7	5.8	1.5	0.0
2010	41.7	17.2	7.0	2.4	0.0
2011	42.3	18.2	8.2	2.9	0.1
2012	42.9	19.4	8.9	3.4	0.1

Population supplied (F.Y.2012)

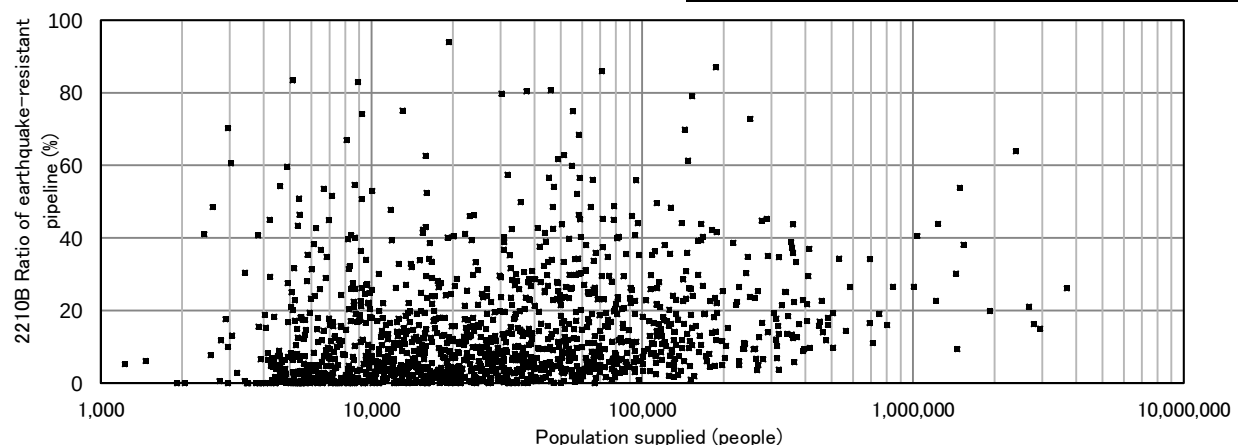
People	95%	75%	50%	25%	5%
<=1	45.0	16.9	5.1	0.7	0.0
1-3	32.9	13.7	6.4	2.7	0.2
3-10	46.2	23.7	10.5	4.6	0.8
10-50	43.9	23.9	15.5	9.5	3.8
50<	51.4	33.5	24.4	16.4	10.1

× 10,000people



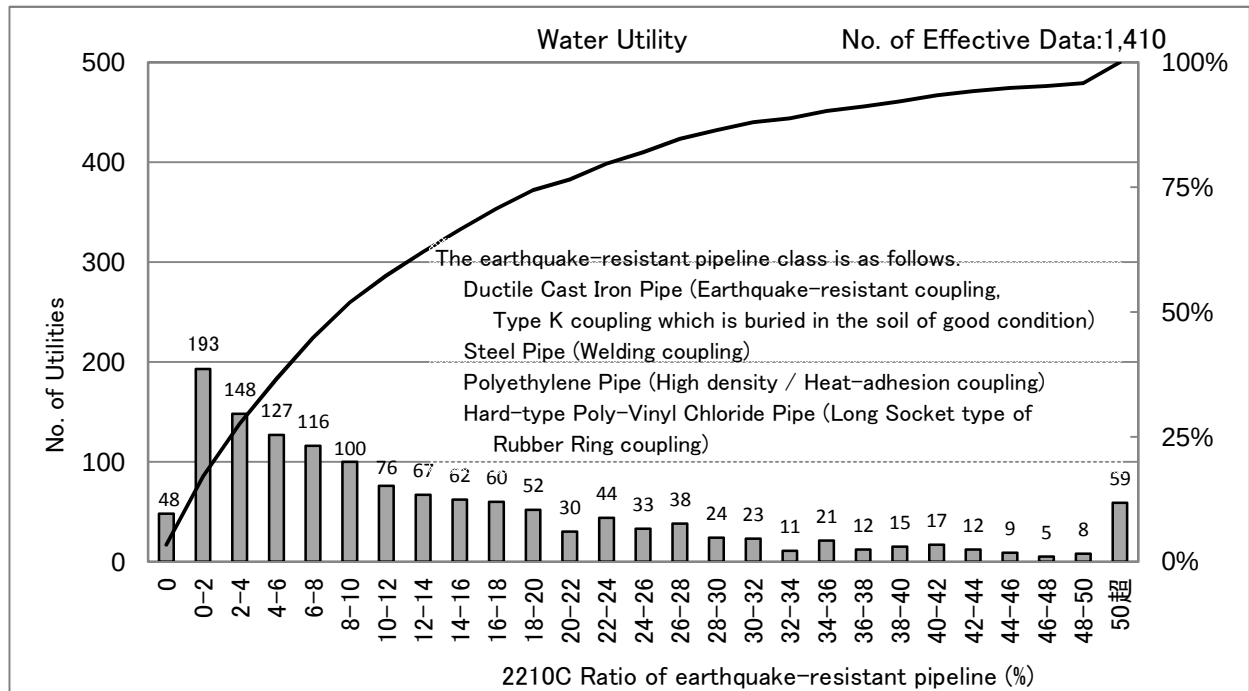
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	100.0	79.7	46.7	23.9	0.7
Supply Utility	2010	100.0	79.8	52.1	30.7	2.9
	2011	100.0	79.9	59.9	35.1	2.9
	2012	100.0	80.4	61.1	37.9	3.8

[Scatter Plot]



2210C Ratio of earthquake-resistant pipeline (%)

Ratio of earthquake-resistant pipeline = Length of earthquake-resistant pipelines[km]
/ Total pipeline length[km] x 100 (%)



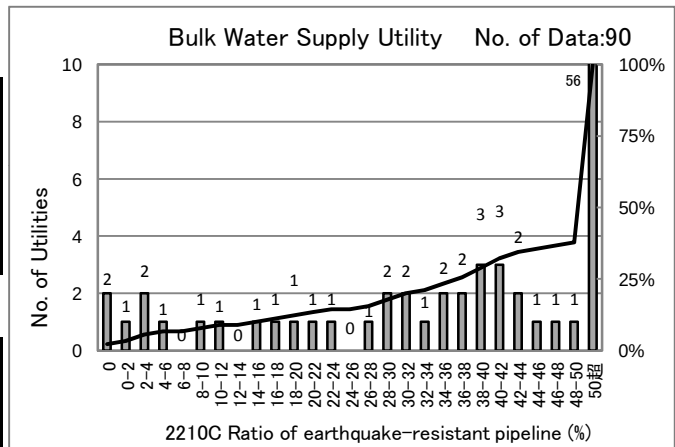
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	42.0	11.4	3.5	0.6	0.0
2009	46.7	16.8	6.3	1.6	0.0
2010	46.9	18.1	7.4	2.5	0.0
2011	45.4	19.2	8.7	3.0	0.1
2012	46.1	20.8	9.5	3.6	0.2

Population supplied (F.Y.2012)

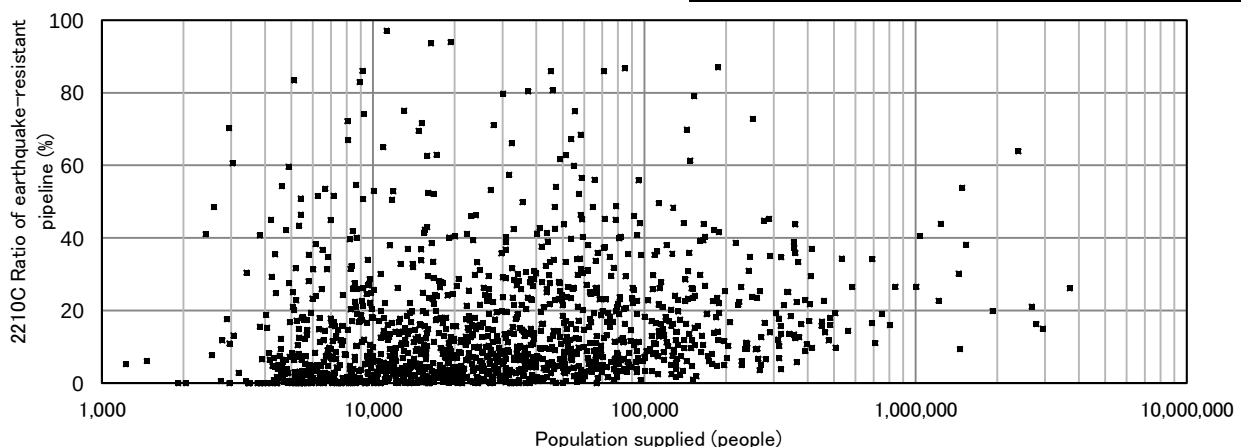
People	95%	75%	50%	25%	5%
<=1	48.7	17.1	5.3	0.9	0.0
1-3	41.2	15.7	7.2	2.9	0.3
3-10	48.7	24.1	11.1	4.9	0.8
10-50	43.9	23.9	15.8	9.5	3.8
50<	51.4	33.5	24.4	16.4	10.1

× 10,000people



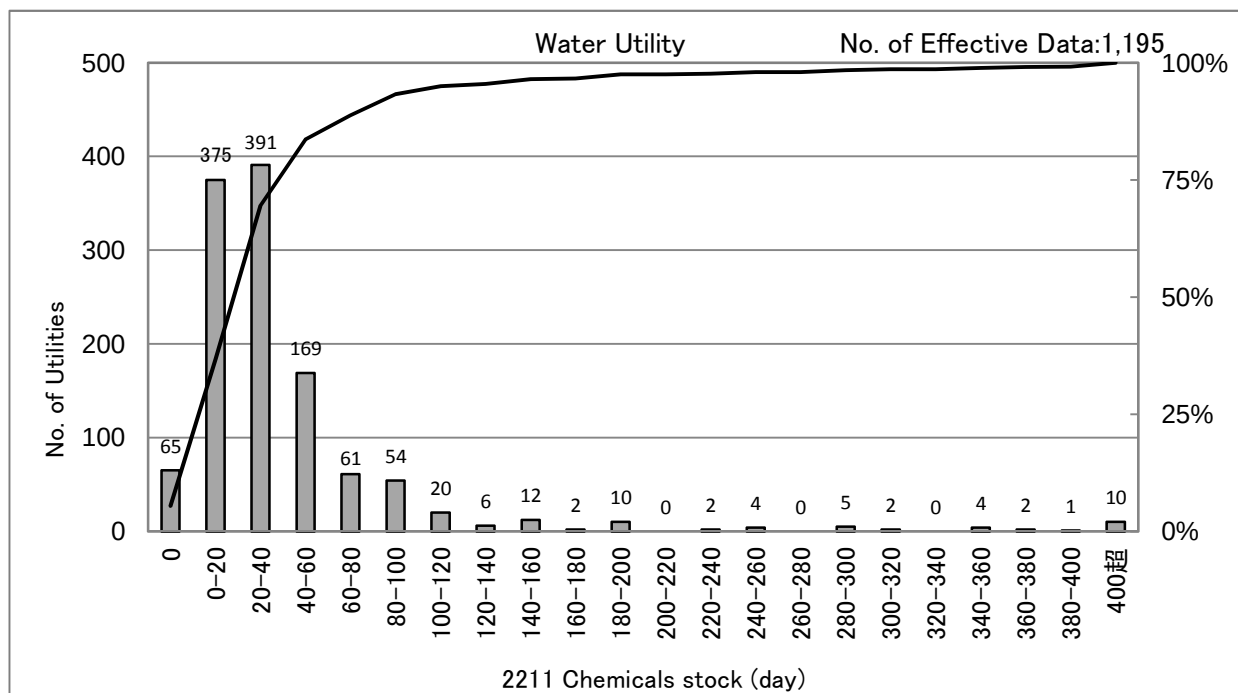
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	100.0	79.7	46.7	23.9	0.7
Supply Utility	2010	100.0	79.8	52.1	30.7	2.9
	2011	100.0	79.9	59.9	35.1	2.9
	2012	100.0	80.4	61.1	37.9	3.8

[Scatter Plot]



2211 Chemicals stock (day)

Chemicals stock = Average chemical stock[t or kL]
/ Daily consumption[t or kL] (day)



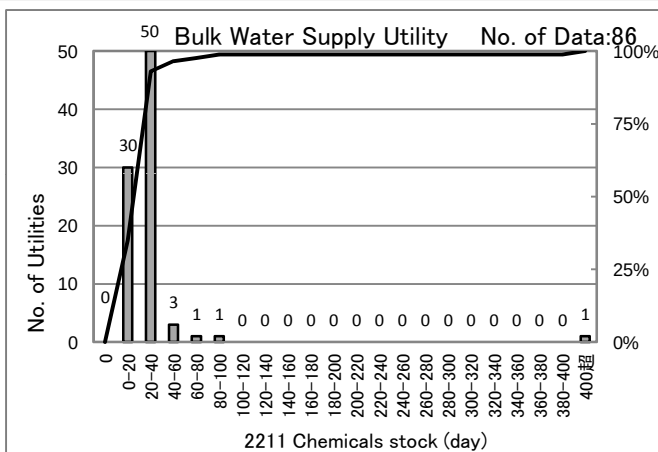
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	121.2	50.0	27.5	13.6	0.0
2009	130.0	50.0	28.0	13.5	0.0
2010	116.8	48.7	26.7	13.3	0.0
2011	132.4	49.4	26.8	14.0	0.0
2012	121.2	50.0	27.3	15.0	0.0

Population supplied (F.Y.2012)

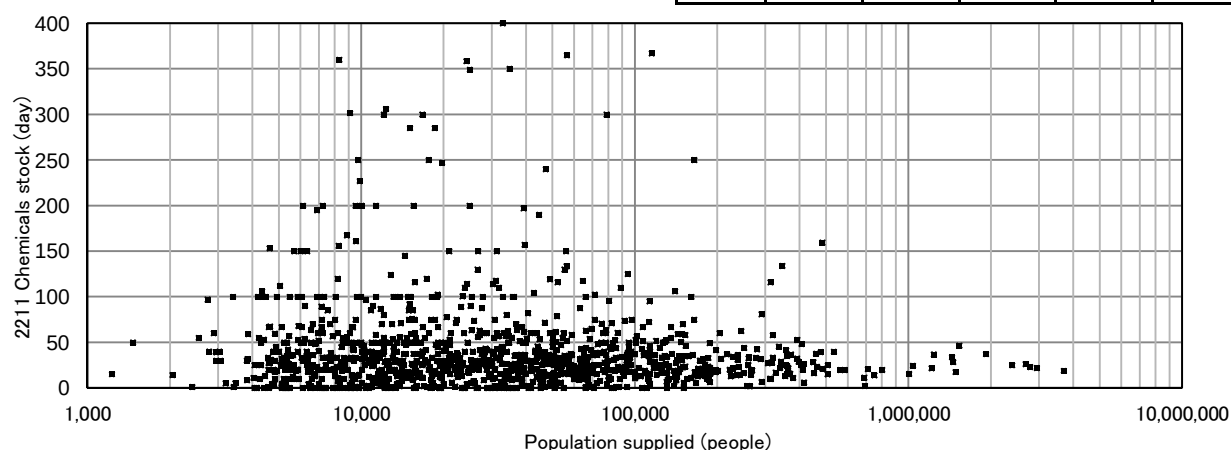
People	95%	75%	50%	25%	5%
<=1	165.4	56.9	30.0	11.0	0.0
1-3	141.3	50.0	30.0	15.0	0.0
3-10	114.6	44.4	26.4	14.6	0.2
10-50	80.6	38.3	25.1	16.1	5.7
50<	39.4	26.2	21.7	17.5	11.9

× 10,000people



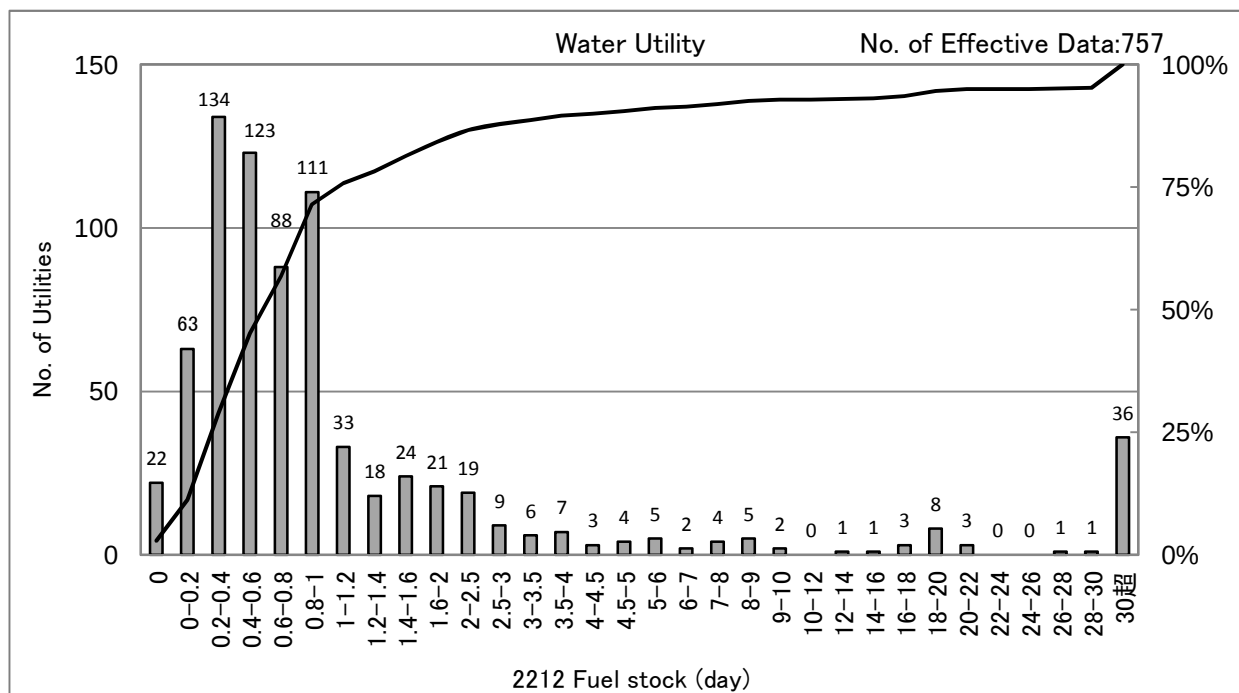
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	45.7	33.2	22.8	16.7	5.8
Supply Utility	2010	44.6	31.7	23.3	16.8	6.9
	2011	44.6	30.6	24.6	17.7	10.2
	2012	43.7	30.6	23.9	16.7	9.8

[Scatter Plot]



2212 Fuel stock (day)

Fuel stock = Average fuel stock[t or kL]
/ Daily consumption[t/day or kL/day] (day)



[Percentile Value] Water Utility

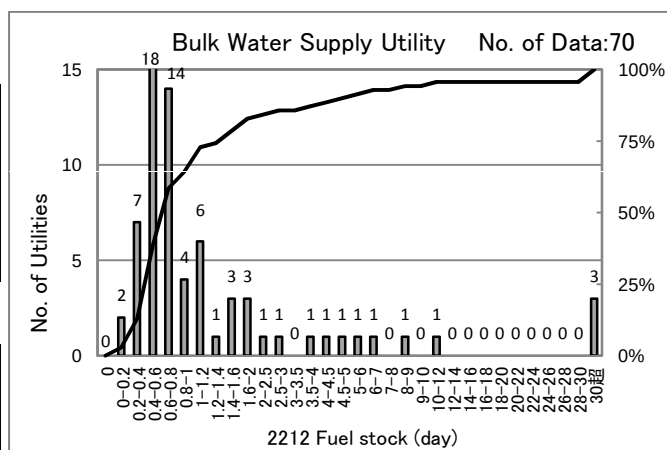
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	60.0	1.5	0.7	0.3	0.1
2009	33.8	1.2	0.7	0.3	0.1
2010	30.8	1.3	0.7	0.3	0.1
2011	24.4	1.2	0.7	0.4	0.1
2012	23.1	1.1	0.7	0.4	0.1

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	60.7	1.5	0.8	0.4	0.1
1-3	39.3	1.1	0.6	0.3	0.0
3-10	8.4	1.1	0.6	0.4	0.1
10-50	59.4	1.1	0.6	0.4	0.2
50<	2.8	1.4	1.0	0.5	0.2

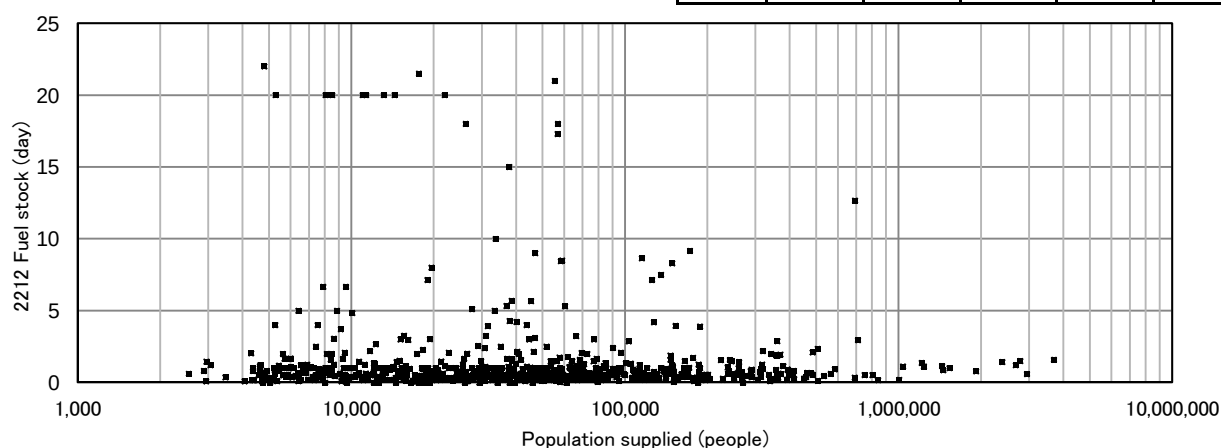
× 10,000people



[Percentile Value]
Bulk Water Supply Utility

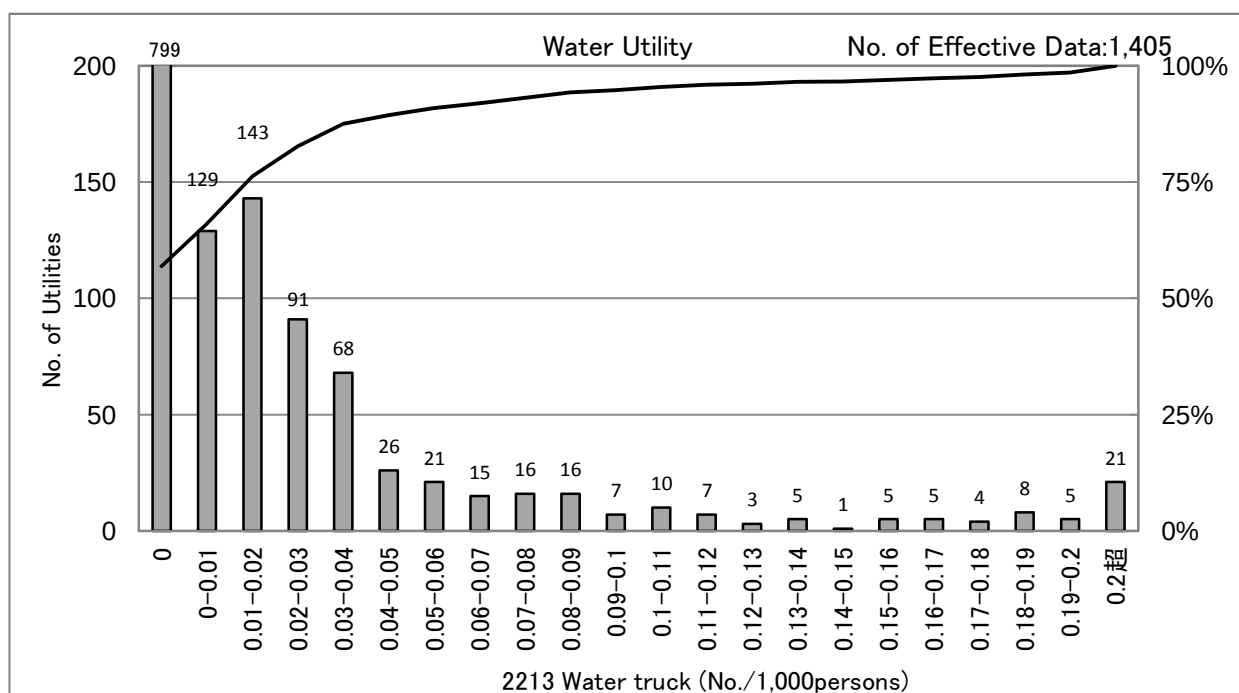
F.Y.	95%	75%	50%	25%	5%
2009	21.0	1.4	0.8	0.5	0.3
2010	21.0	1.4	0.7	0.5	0.3
2011	16.2	1.4	0.8	0.6	0.4
2012	9.7	1.4	0.7	0.5	0.3

[Scatter Plot]



2213 Water truck (No./1,000persons)

Water truck = Number of water trucks[No.]
/ Service population[person] x 1,000 (No./1,000persons)



[Percentile Value] Water Utility

Fiscal year

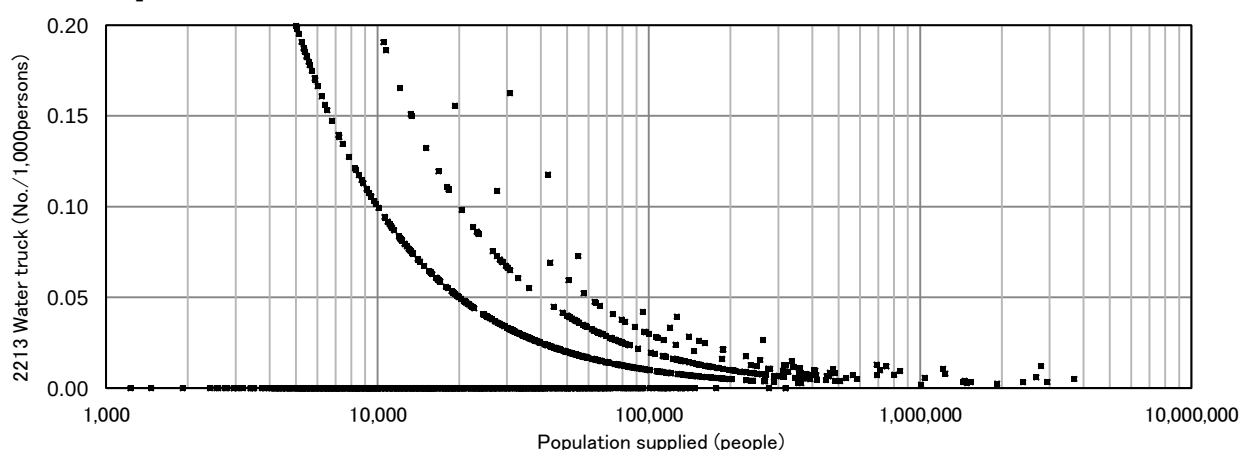
F.Y.	95%	75%	50%	25%	5%
2008	0.10	0.01	0.00	0.00	0.00
2009	0.09	0.01	0.00	0.00	0.00
2010	0.10	0.01	0.00	0.00	0.00
2011	0.09	0.02	0.00	0.00	0.00
2012	0.11	0.02	0.00	0.00	0.00

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	0.21	0.00	0.00	0.00	0.00
1-3	0.09	0.04	0.00	0.00	0.00
3-10	0.04	0.03	0.01	0.00	0.00
10-50	0.02	0.01	0.01	0.01	0.00
50<	0.01	0.01	0.01	0.00	0.00

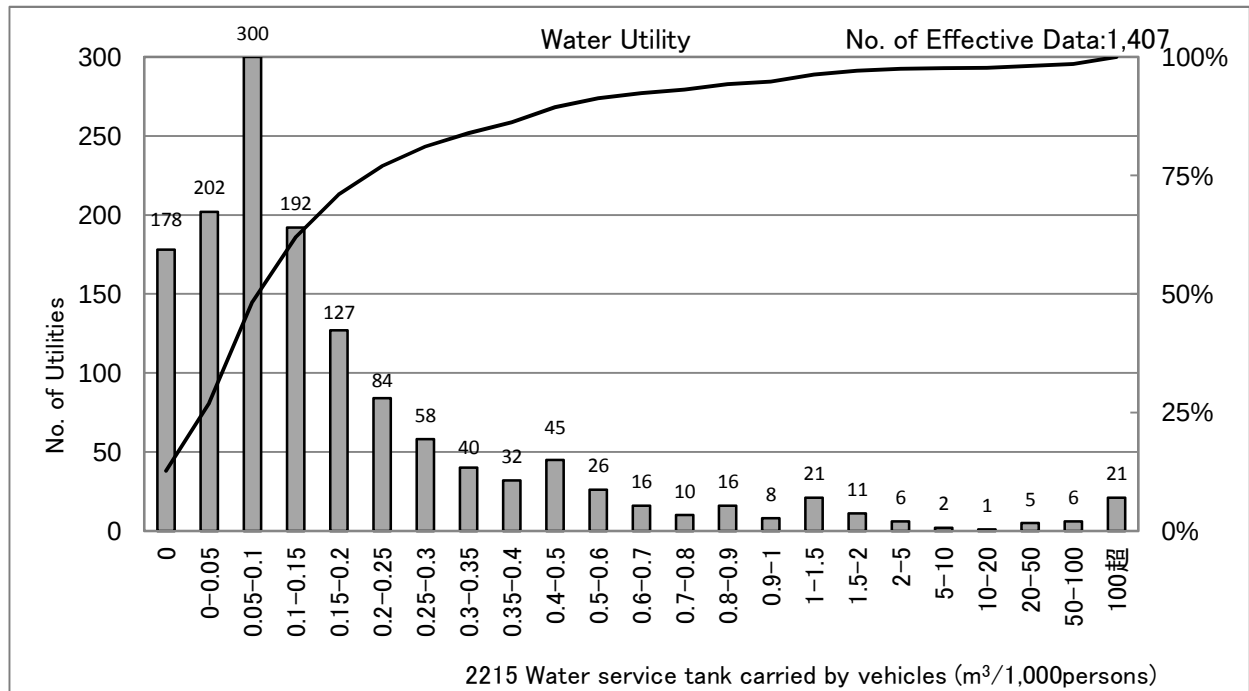
× 10,000people

[Scatter Plot]



2215 Water service tank carried by vehicles (m³/1,000persons)

Water service tank carried by vehicles = Total capacity of on-vehicle service tanks[m³]
/ Service Population[person] x 1,000 (m³/1,000persons)



[Percentile Value] Water Utility

Fiscal year

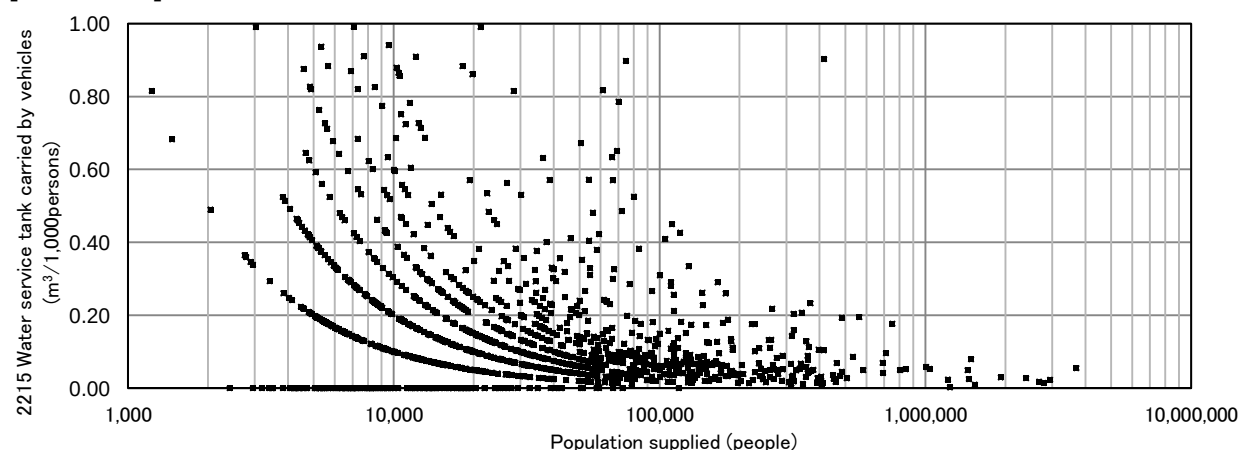
F.Y.	95%	75%	50%	25%	5%
2008	3.40	0.22	0.10	0.04	0.00
2009	1.23	0.22	0.10	0.04	0.00
2010	1.13	0.22	0.10	0.04	0.00
2011	1.04	0.22	0.10	0.04	0.00
2012	1.04	0.23	0.10	0.05	0.00

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	1.79	0.43	0.20	0.00	0.00
1-3	1.05	0.25	0.13	0.07	0.00
3-10	0.51	0.15	0.09	0.05	0.02
10-50	0.28	0.11	0.06	0.04	0.02
50<	0.16	0.06	0.05	0.02	0.01

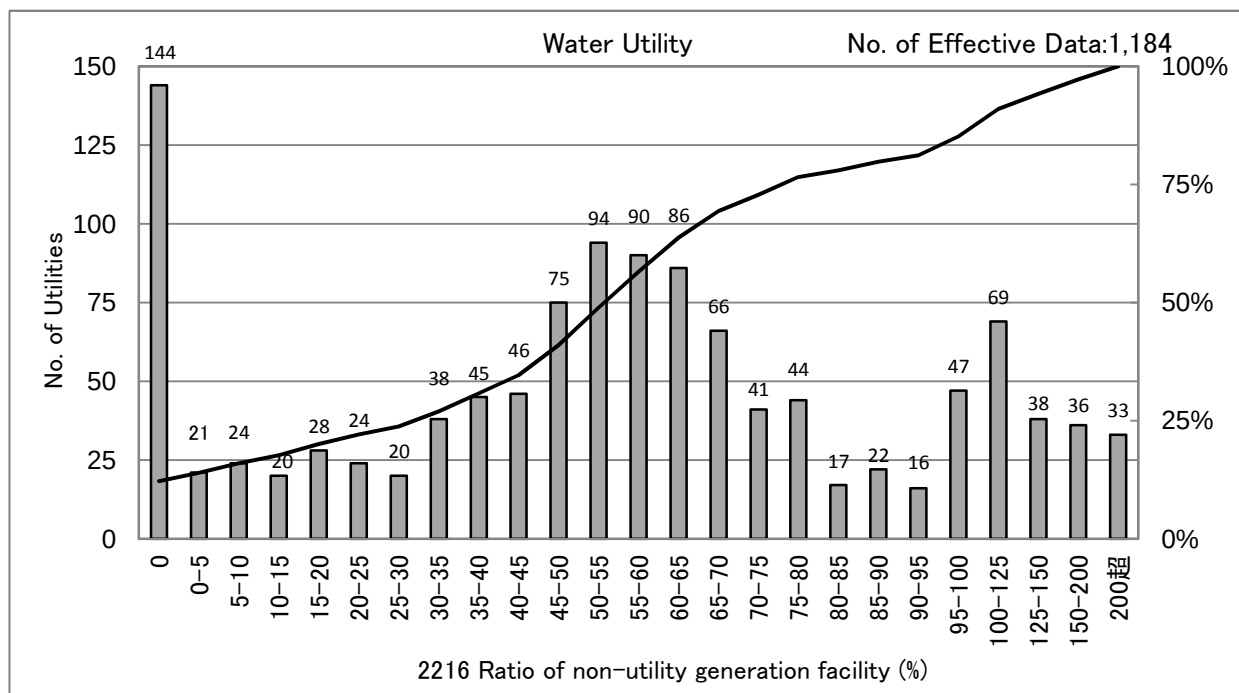
× 10,000people

[Scatter Plot]



2216 Ratio of non-utility generation facility (%)

Ratio of non-utility generation facility = On-site generation power[kW]
/ Total generation power[kW] x 100 (%)



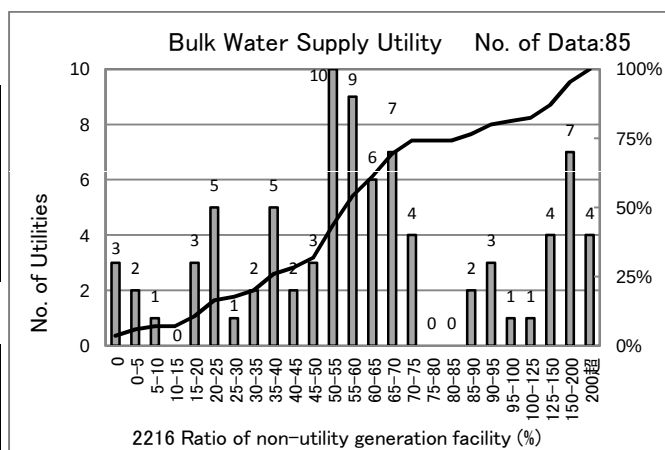
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	160.6	80.0	54.7	30.3	0.0
2009	156.3	77.3	53.6	28.9	0.0
2010	156.5	76.9	54.0	29.4	0.0
2011	156.3	77.3	54.7	30.7	0.0
2012	160.6	78.2	55.5	32.1	0.0

Population supplied (F.Y.2012)

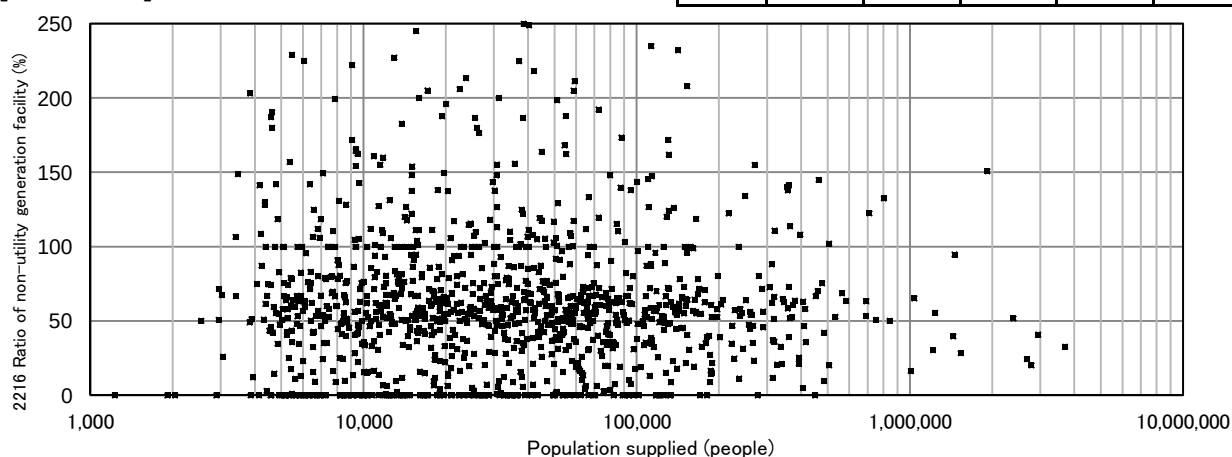
People	95%	75%	50%	25%	5%
<=1	167.7	79.4	53.3	12.3	0.0
1-3	177.0	81.6	56.9	29.7	0.0
3-10	163.0	75.9	55.8	35.8	0.0
10-50	142.1	71.7	55.5	35.8	0.0
50<	130.5	65.2	51.7	32.0	20.1

× 10,000people



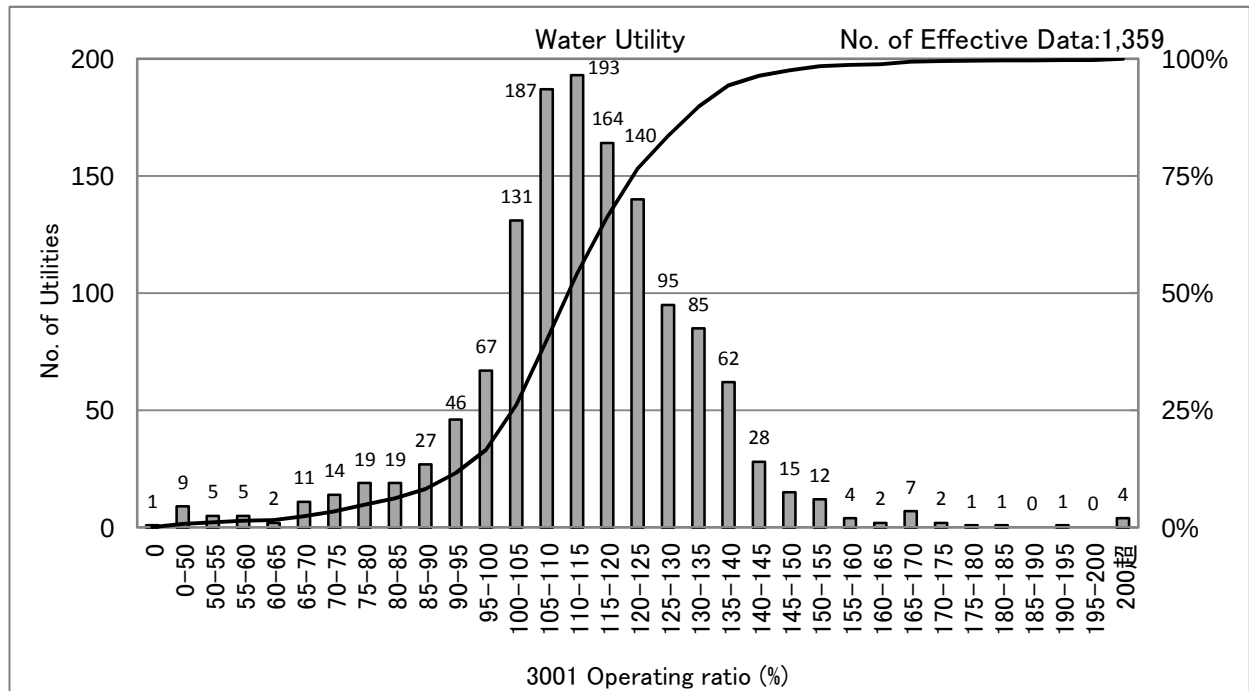
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	235.6	100.3	57.8	37.1	3.8
Supply Utility	2010	237.0	93.7	58.7	38.3	3.6
	2011	239.0	97.1	59.3	42.8	18.9
	2012	190.7	85.4	57.7	40.0	4.1

[Scatter Plot]



3001 Operating ratio (%)

$$\text{Operating ratio} = \frac{\text{Operating income[yen]}}{\text{Operating expenses[yen]}} \times 100 (\%)$$



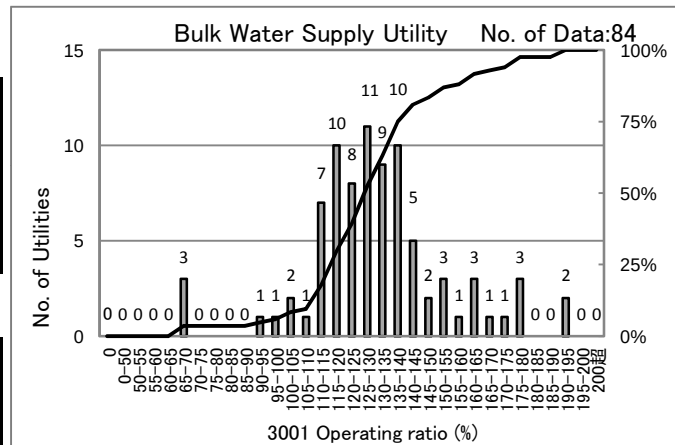
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	147.4	129.1	115.8	106.0	82.9
2009	147.0	127.2	115.2	104.9	81.4
2010	146.7	127.3	116.6	106.8	84.3
2011	143.5	125.1	114.1	104.5	78.4
2012	141.2	124.0	113.5	104.6	80.8

Population supplied (F.Y.2012)

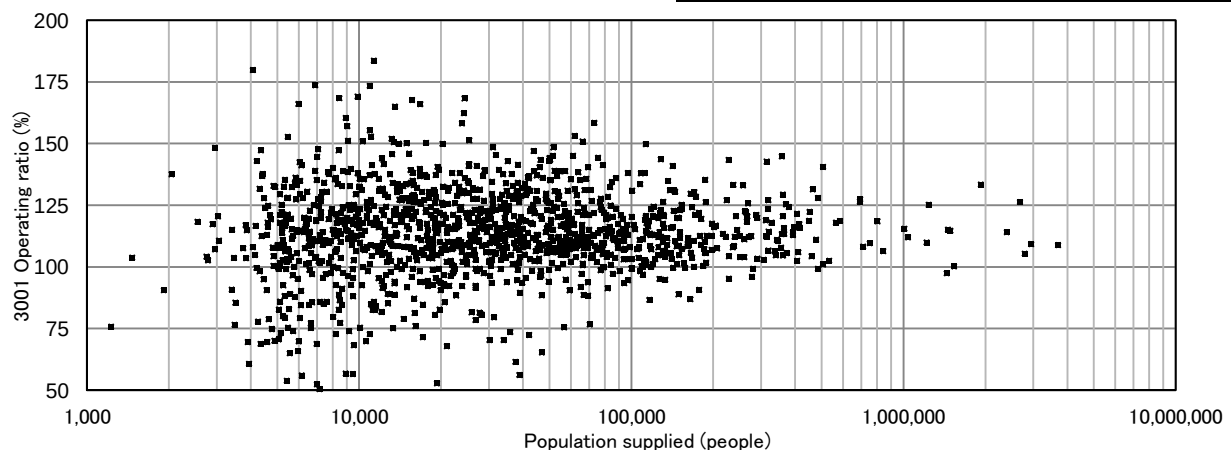
People	95%	75%	50%	25%	5%
<=1	147.3	123.2	111.4	97.4	64.8
1-3	145.4	127.8	116.0	104.7	83.0
3-10	139.0	123.7	113.4	107.0	93.7
10-50	133.7	120.7	112.7	105.7	99.3
50<	132.0	118.7	113.1	108.5	100.5

× 10,000people



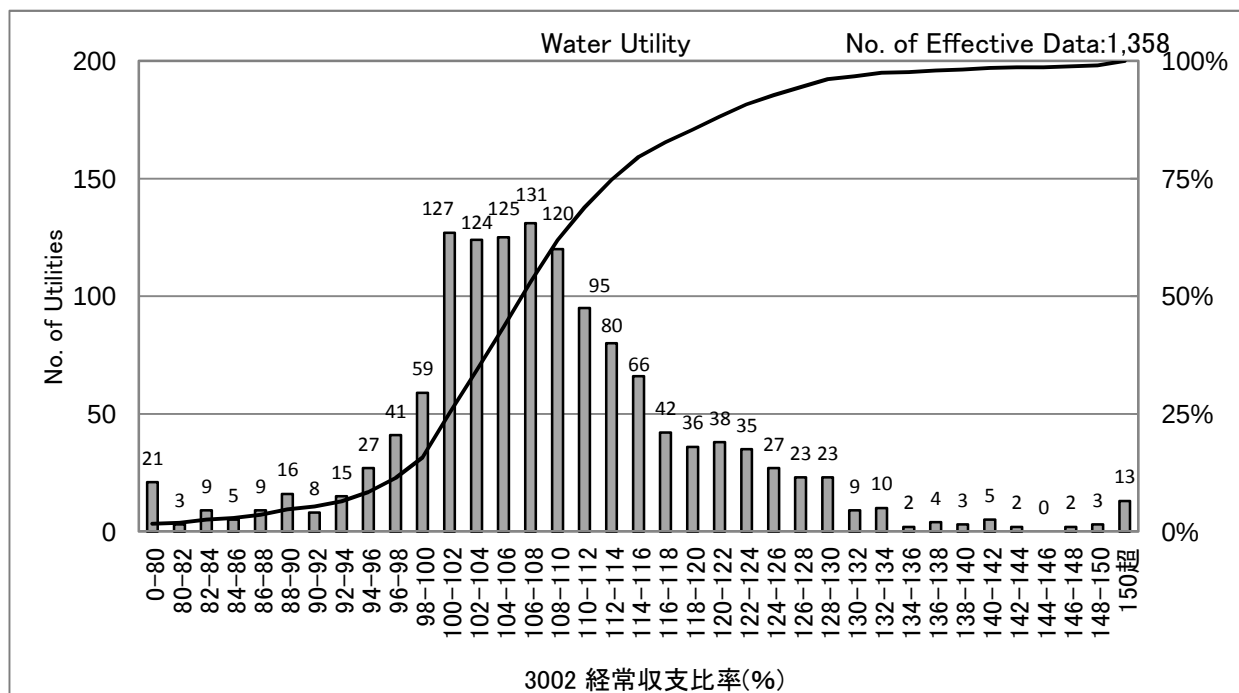
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	173.0	147.5	133.1	116.8	102.7
Supply Utility	2010	168.0	145.3	135.0	117.0	101.2
	2011	169.0	143.5	129.5	115.4	89.0
	2012	175.5	140.4	128.6	118.3	97.7

[Scatter Plot]



3002 Ratio of current expense to current income (%)

Ratio of current expense to current income = (Operating income[yen] + Non-operating income[yen])
/ (Operating expenses[yen] + Non-operating expenses[yen]) x 100 (%)



[Percentile Value] Water Utility

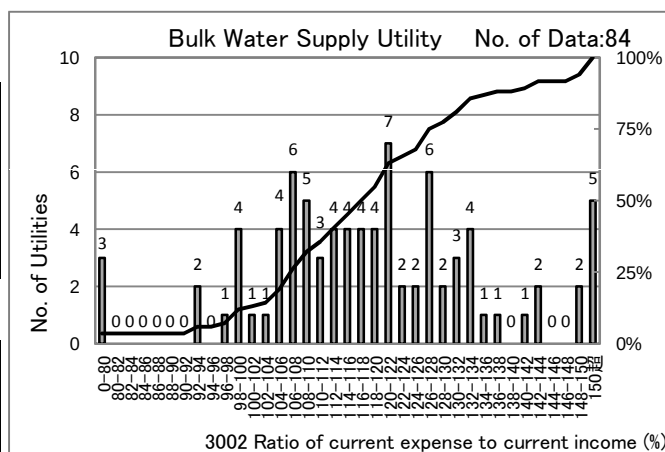
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	131.9	113.5	106.6	101.5	91.3
2009	131.0	114.1	106.9	101.6	92.1
2010	132.6	115.6	109.0	103.2	93.8
2011	129.0	114.2	107.3	101.9	90.7
2012	128.4	114.0	107.3	102.0	91.2

Population supplied (F.Y.2012)

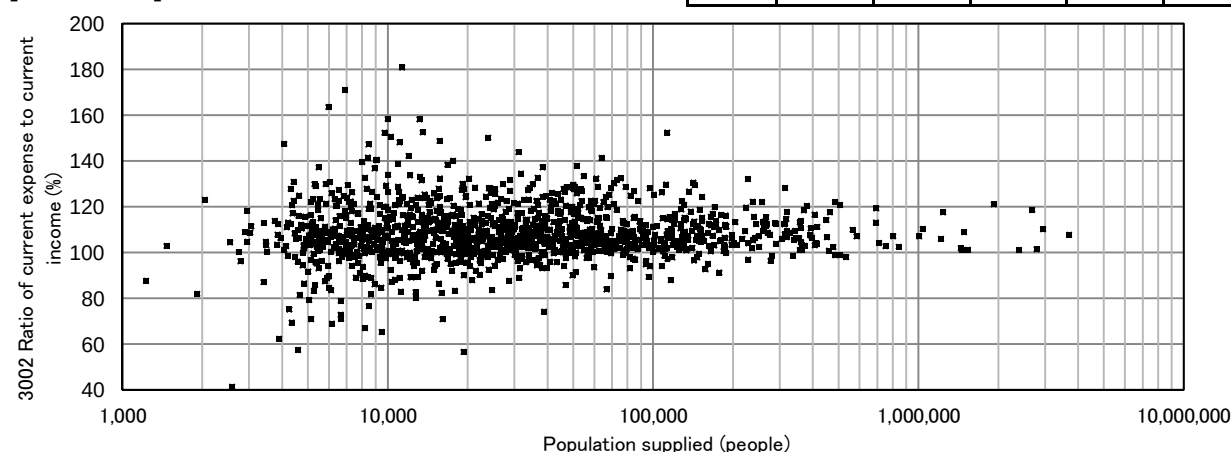
People	95%	75%	50%	25%	5%
<=1	133.0	113.1	106.3	100.2	76.5
1-3	128.7	115.3	108.3	101.0	92.1
3-10	128.0	114.0	107.3	102.8	96.2
10-50	122.6	113.4	107.7	103.8	97.9
50<	120.5	110.3	107.1	102.1	99.4

× 10,000people



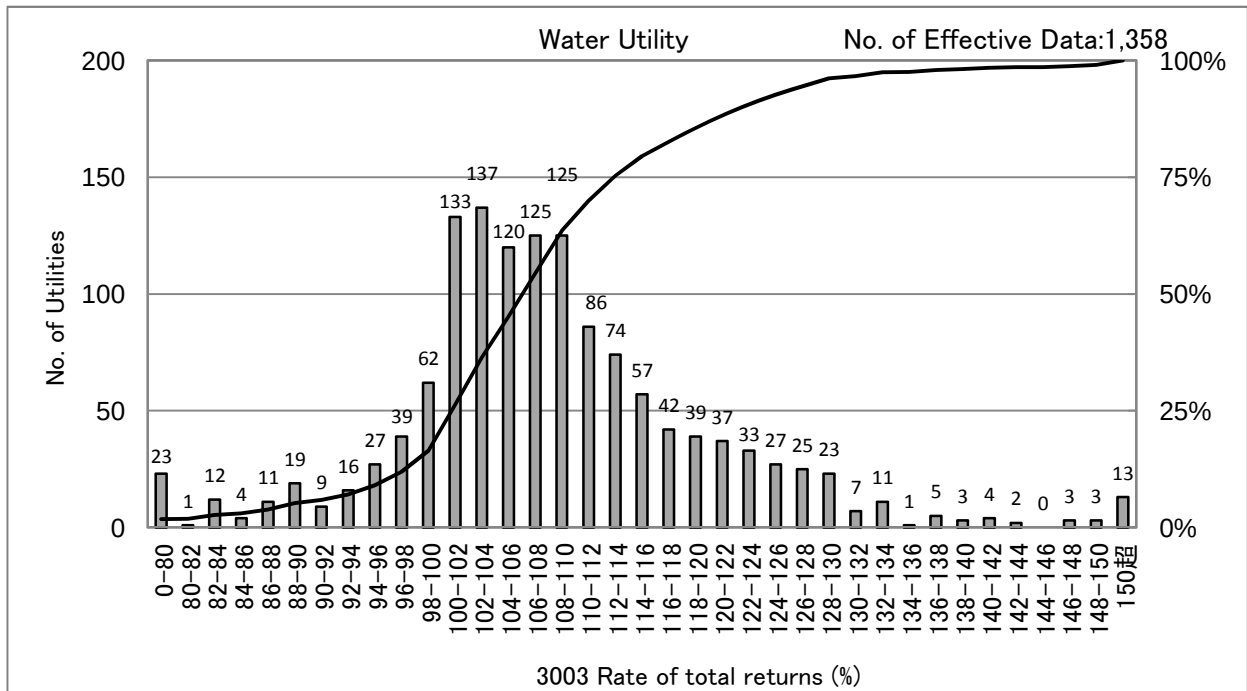
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	149.3	129.2	116.0	104.6	91.6
	2010	147.8	129.9	116.4	107.2	93.6
	2011	150.1	131.3	116.0	105.8	90.0
	2012	151.1	127.7	118.1	107.8	93.9

[Scatter Plot]



3003 Rate of total returns (%)

$$\text{Rate of total returns} = \frac{\text{Gross income}[\text{yen}]}{\text{Gross expenses}[\text{yen}]} \times 100 (\%)$$



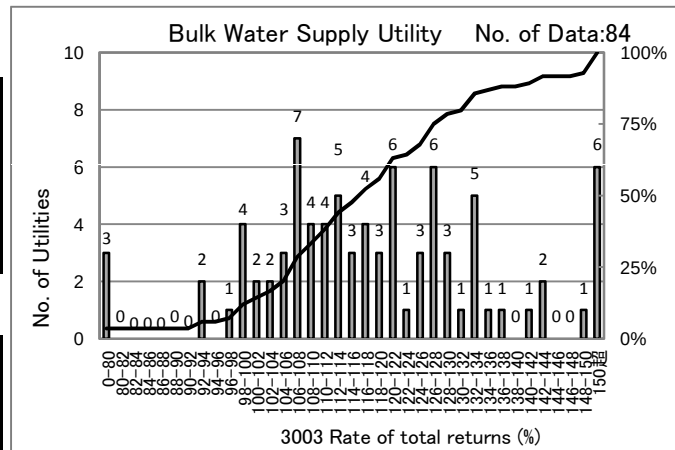
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	131.3	113.3	106.3	101.4	90.6
2009	130.3	114.0	106.7	101.4	91.9
2010	132.5	115.3	108.5	102.7	93.4
2011	128.7	113.9	106.9	101.6	88.9
2012	128.3	113.8	107.1	101.7	89.9

Population supplied (F.Y.2012)

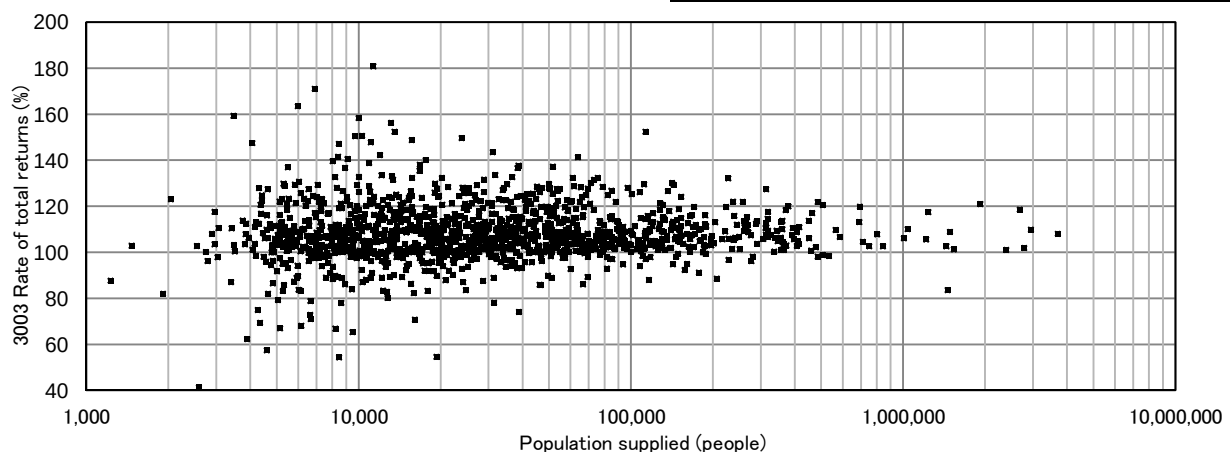
People	95%	75%	50%	25%	5%
<=1	132.9	113.1	106.0	100.0	74.9
1-3	129.1	115.1	107.9	100.7	90.5
3-10	127.9	114.1	107.2	102.5	96.4
10-50	122.2	112.7	107.4	103.6	97.8
50<	120.4	110.0	107.3	102.6	98.6

× 10,000people



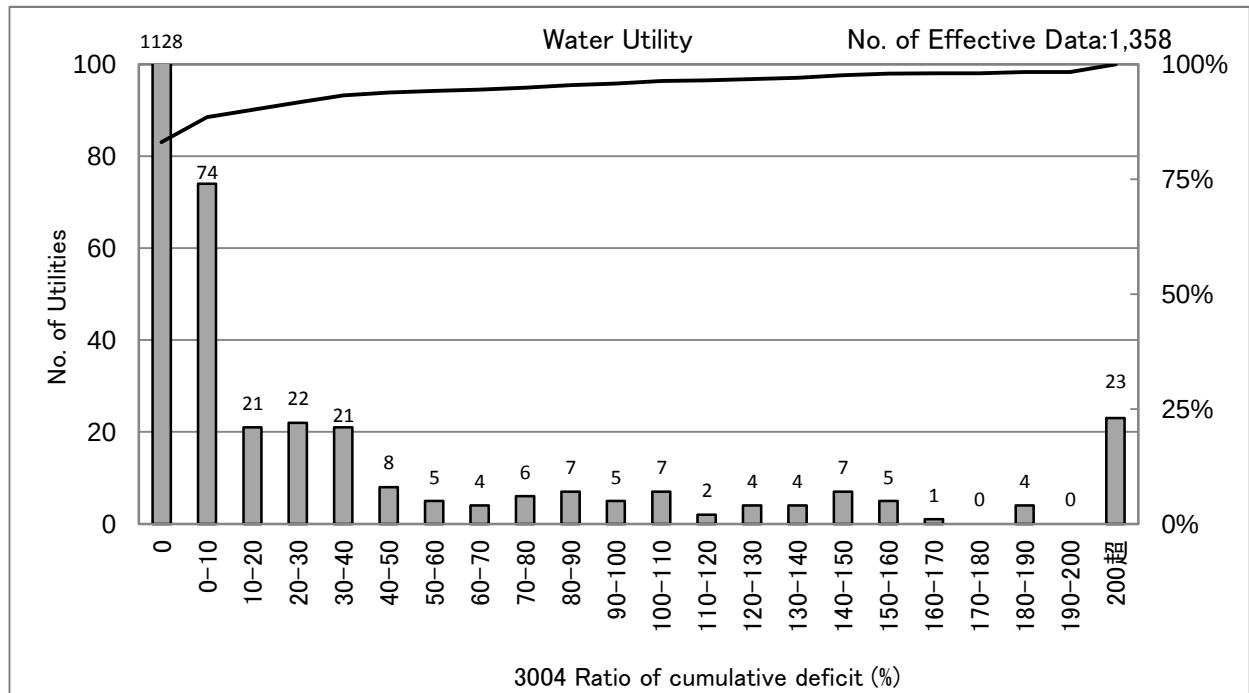
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	149.3	129.1	116.6	104.6	91.6
Supply Utility	2010	147.6	129.0	114.3	104.7	91.6
	2011	149.9	130.4	114.2	103.9	76.4
	2012	151.0	127.3	117.0	107.3	94.5

[Scatter Plot]



3004 Ratio of cumulative deficit (%)

Ratio of cumulative deficit = Cumulative deficit[yen]
/ (Operating income[yen] - Commissioned work income[yen]) x 100 (%)



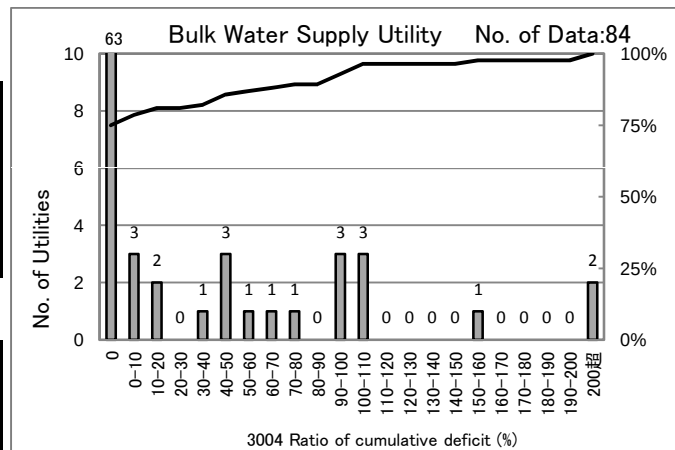
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	69.6	0.0	0.0	0.0	0.0
2009	60.2	0.0	0.0	0.0	0.0
2010	60.8	0.0	0.0	0.0	0.0
2011	81.3	0.0	0.0	0.0	0.0
2012	80.9	0.0	0.0	0.0	0.0

Population supplied (F.Y.2012)

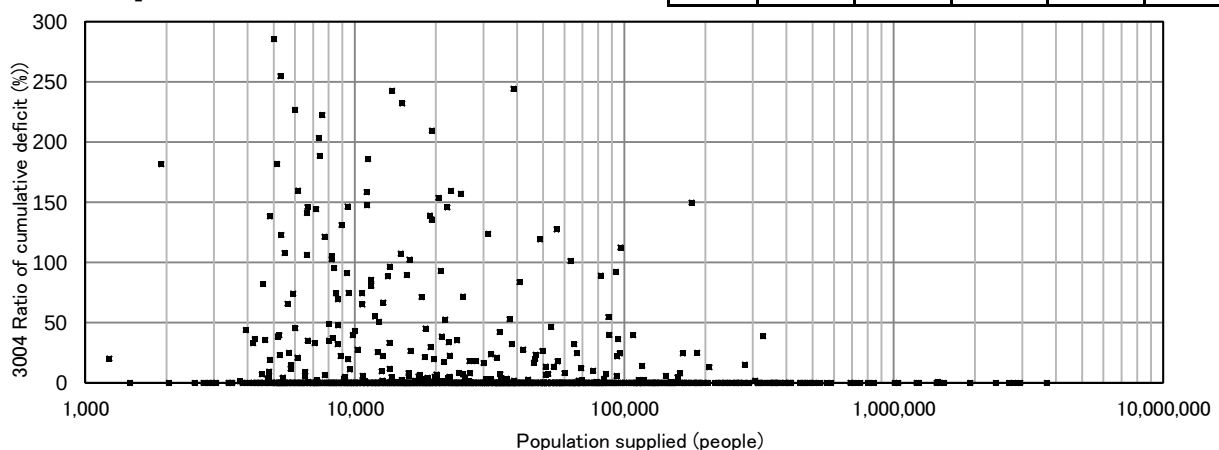
People	95%	75%	50%	25%	5%
<=1	205.4	2.7	0.0	0.0	0.0
1-3	84.7	0.0	0.0	0.0	0.0
3-10	24.1	0.0	0.0	0.0	0.0
10-50	4.5	0.0	0.0	0.0	0.0
50<	0.0	0.0	0.0	0.0	0.0

× 10,000people



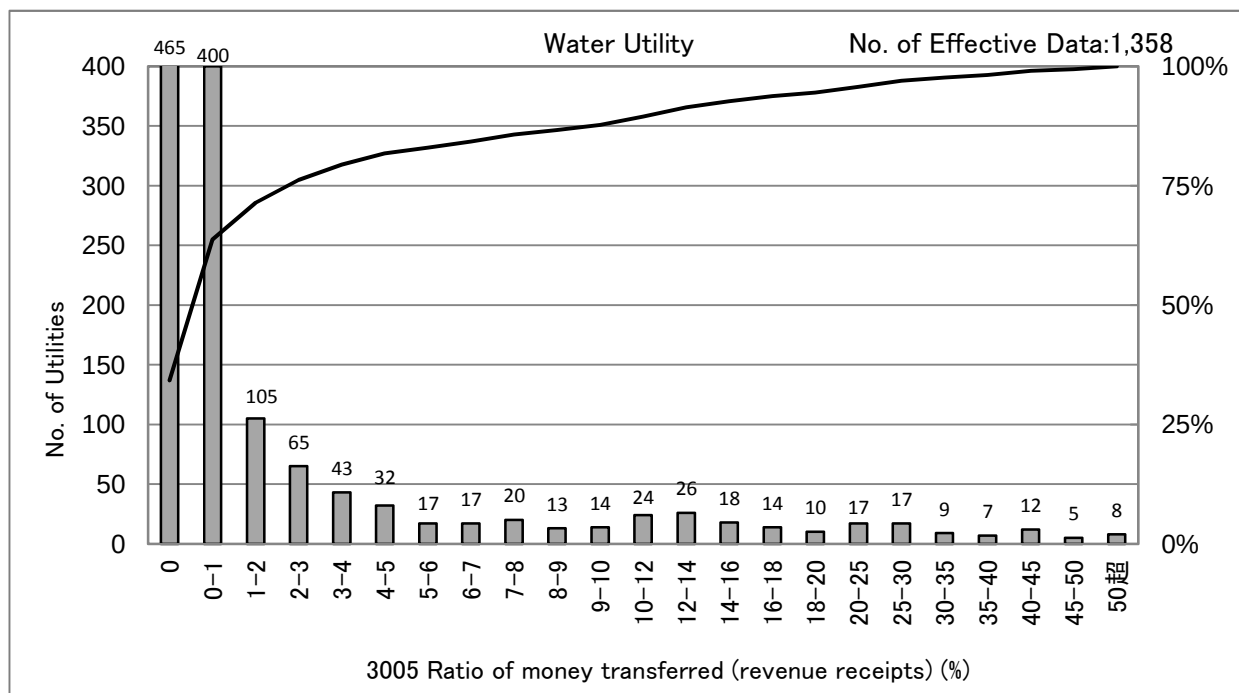
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	154.5	0.0	0.0	0.0	0.0
Supply Utility	2010	128.3	0.0	0.0	0.0	0.0
	2011	115.9	0.0	0.0	0.0	0.0
	2012	103.6	0.1	0.0	0.0	0.0

[Scatter Plot]



3005 Ratio of money transferred (revenue receipts) (%)

$$\text{Ratio of money transferred (revenue receipts)} = \frac{\text{Transferred money[yen]} / \text{Revenue receipts[yen]} \times 100 (\%)}{}$$



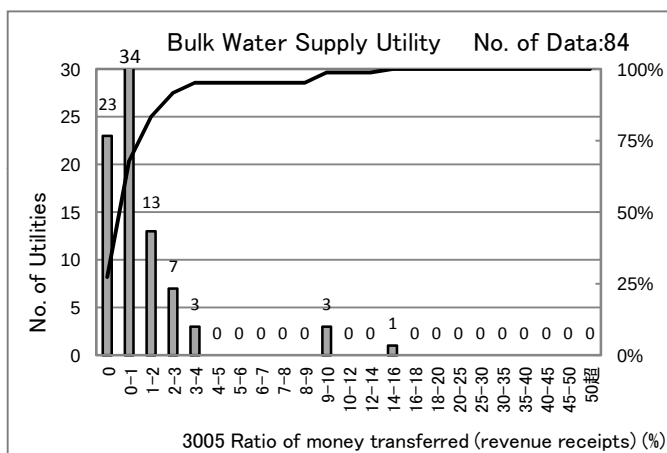
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	24.1	3.1	0.1	0.0	0.0
2009	26.3	3.2	0.2	0.0	0.0
2010	23.5	2.7	0.2	0.0	0.0
2011	23.5	3.0	0.3	0.0	0.0
2012	21.4	2.7	0.3	0.0	0.0

Population supplied (F.Y.2012)

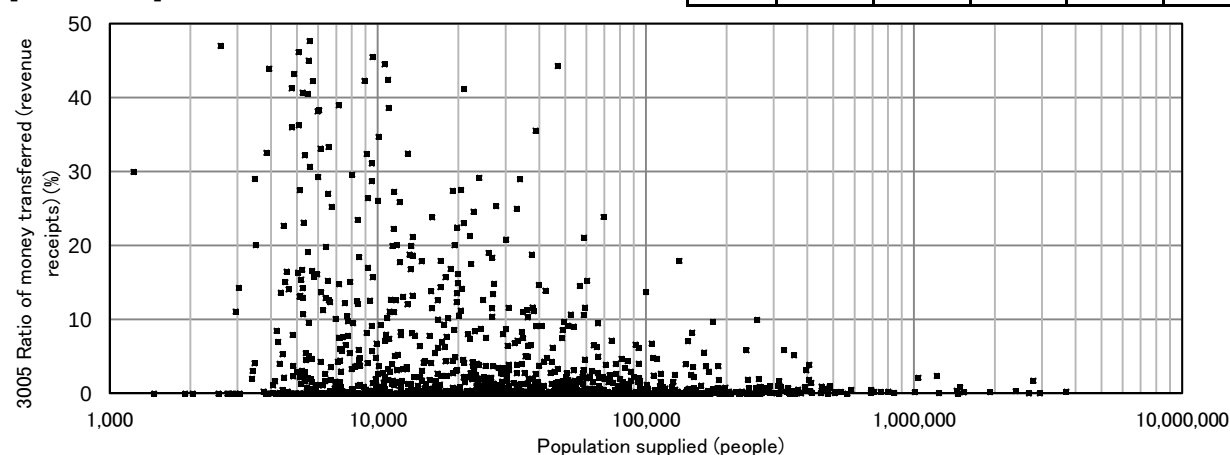
People	95%	75%	50%	25%	5%
<=1	40.7	9.9	0.7	0.0	0.0
1-3	21.3	3.7	0.4	0.0	0.0
3-10	10.7	1.7	0.2	0.0	0.0
10-50	4.8	0.7	0.2	0.0	0.0
50<	2.1	0.4	0.2	0.1	0.0

× 10,000people



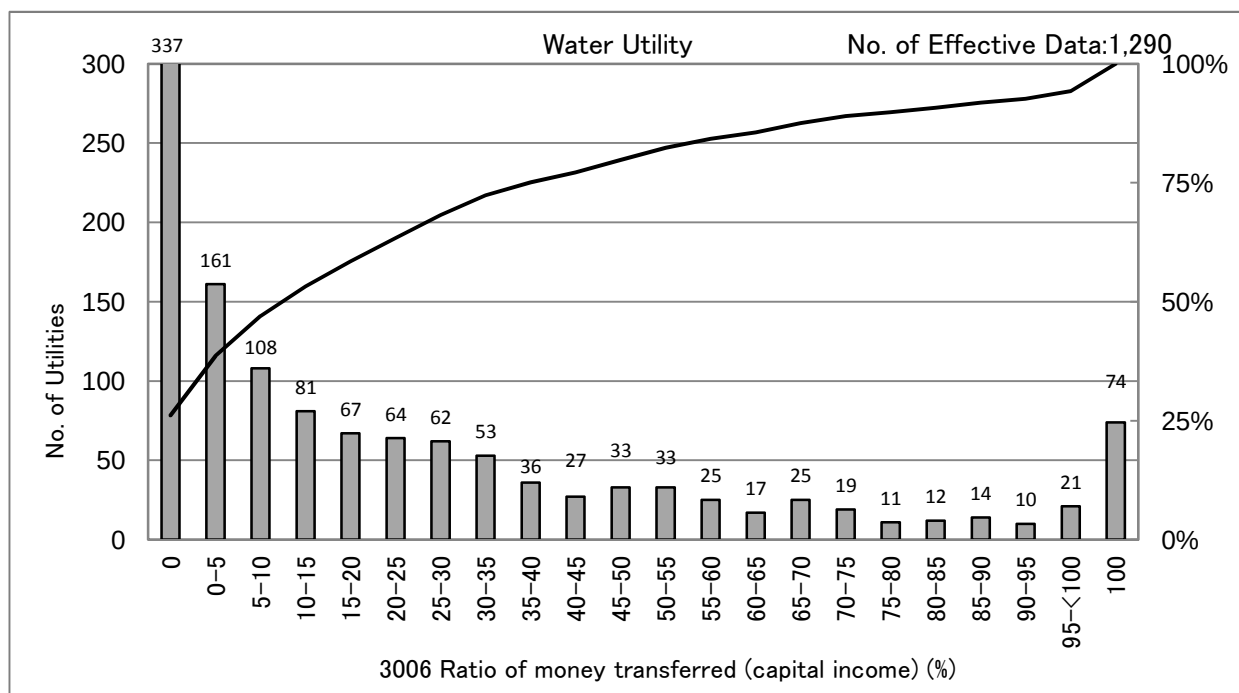
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	11.7	2.9	0.9	0.0	0.0
Supply Utility	2010	11.1	2.2	0.8	0.0	0.0
	2011	4.1	1.8	0.6	0.0	0.0
	2012	3.6	1.3	0.4	0.0	0.0

[Scatter Plot]



3006 Ratio of money transferred (capital income) (%)

Ratio of money transferred (capital income) = Transferred money on capital accounts[yen]
/ Capital income[yen] x 100 (%)



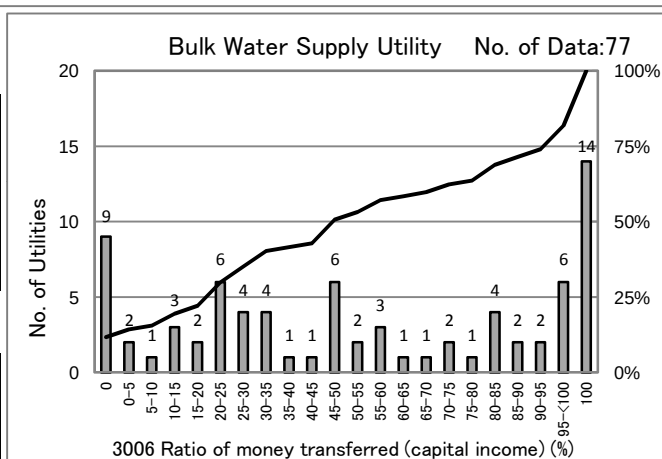
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	92.7	25.8	6.6	0.0	0.0
2009	98.5	38.8	12.6	0.8	0.0
2010	100.0	46.7	16.9	1.3	0.0
2011	100.0	46.0	13.9	0.6	0.0
2012	100.0	39.6	12.2	0.0	0.0

Population supplied (F.Y.2012)

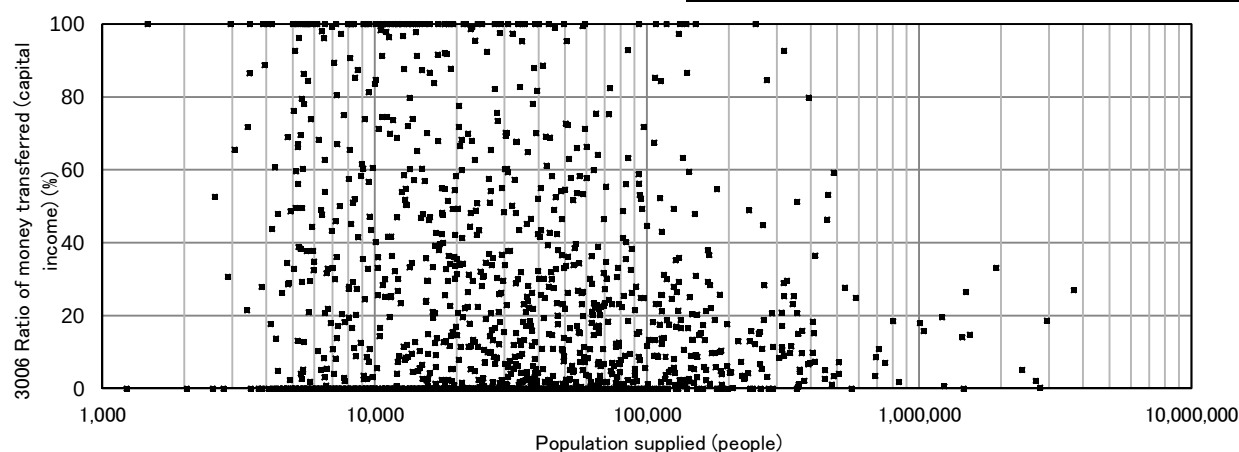
People	95%	75%	50%	25%	5%
<=1	100.0	57.5	12.6	0.0	0.0
1-3	100.0	49.3	14.5	0.0	0.0
3-10	81.2	33.7	11.1	1.2	0.0
10-50	84.6	23.6	11.1	3.2	0.0
50<	27.5	19.3	12.5	3.6	0.1

× 10,000people



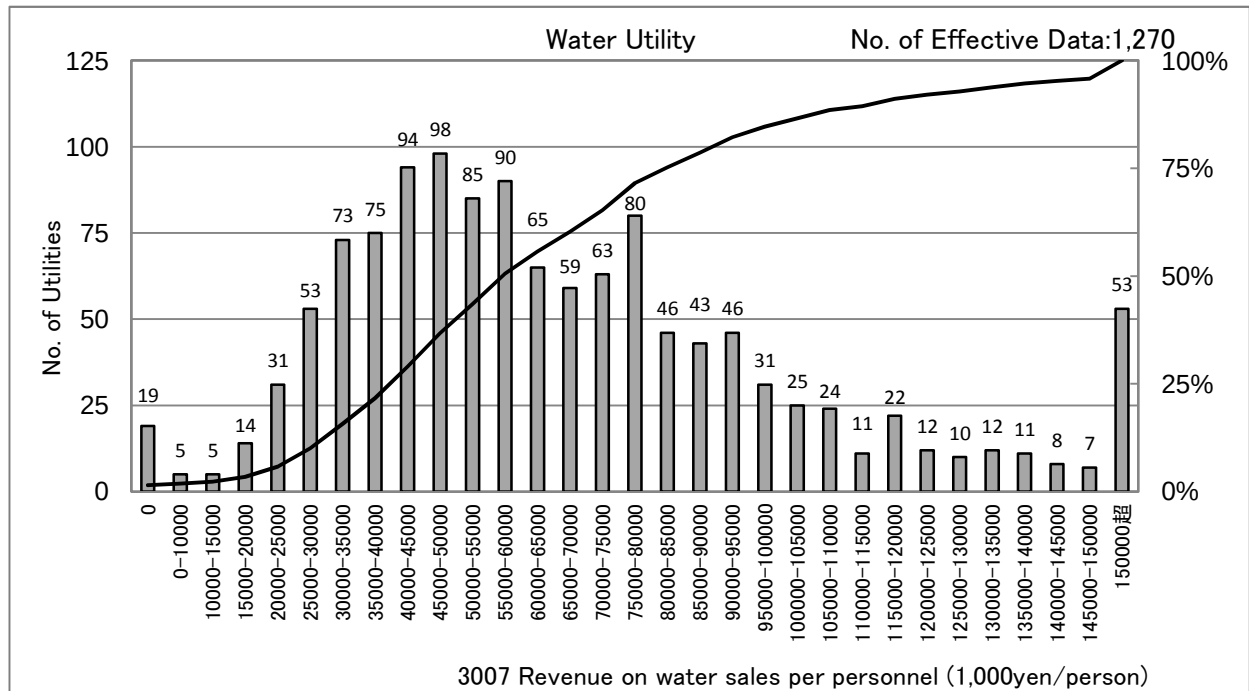
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	100.0	81.8	41.8	20.2	0.0
Supply Utility	2010	100.0	95.0	49.1	13.2	0.0
	2011	100.0	98.0	51.9	15.5	0.0
	2012	100.0	97.1	49.5	21.2	0.0

[Scatter Plot]



3007 Revenue on water sales per personnel (1,000yen/person)

Revenue on water sales per personnel = Water supply revenue[yen] / Number of staff members
on profit and loss account[person] / 1,000 (1,000yen/person)



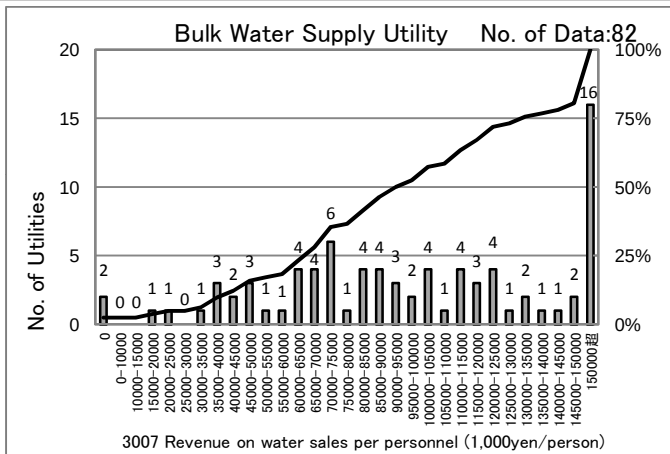
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	124,736	76,474	54,534	39,597	24,176
2009	123,904	77,953	55,144	40,392	24,486
2010	132,216	80,624	57,539	41,783	24,425
2011	130,608	81,742	58,303	41,270	23,765
2012	143,342	84,902	59,513	42,591	23,783

Population supplied (F.Y.2012)

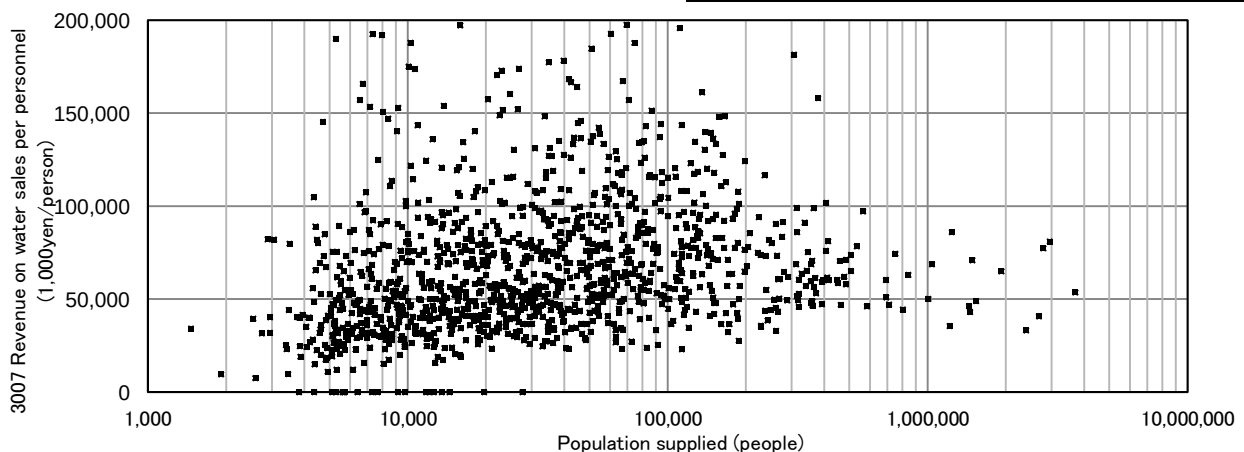
People	95%	75%	50%	25%	5%
<=1	108,125	61,750	42,243	29,443	6,750
1-3	149,498	79,598	55,606	39,976	25,784
3-10	149,875	97,117	70,993	51,577	32,928
10-50	139,615	92,634	71,310	54,762	38,248
50<	85,486	74,302	61,716	46,453	36,880

× 10,000people



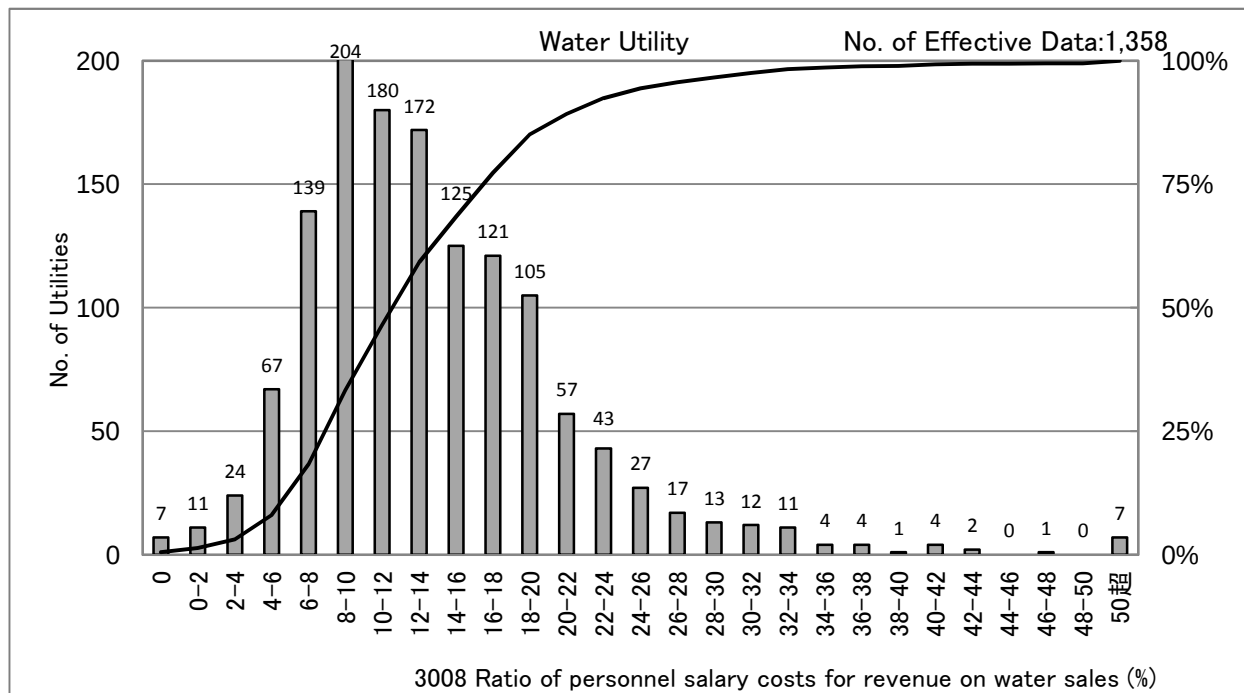
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	214,519	127,577	93,263	62,772	24,632
Supply Utility	2010	221,455	125,587	95,277	65,117	25,479
	2011	210,424	124,441	92,820	65,199	32,210
	2012	219,582	134,112	93,744	66,302	31,564

[Scatter Plot]



3008 Ratio of personnel salary costs for revenue on water sales (%)

Ratio of personnel salary costs for revenue on water sales = Labor cost[yen]
/ Water supply revenue[yen] x 100 (%)



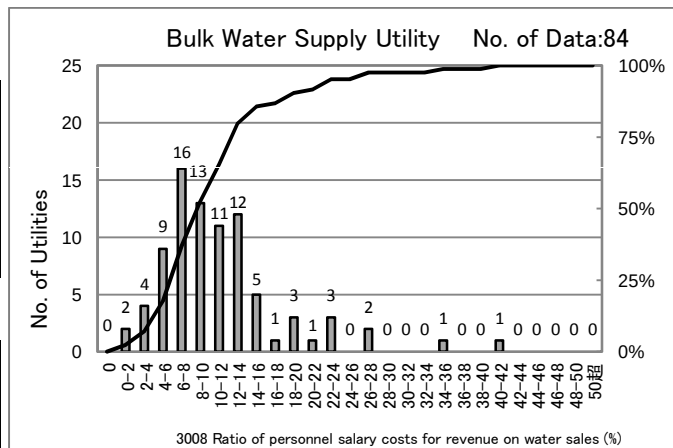
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	29.7	19.4	14.1	10.0	5.8
2009	29.1	18.8	13.7	9.9	5.7
2010	27.7	17.9	13.2	9.3	5.3
2011	27.8	18.0	12.8	9.1	5.3
2012	26.6	17.4	12.6	8.9	5.0

Population supplied (F.Y.2012)

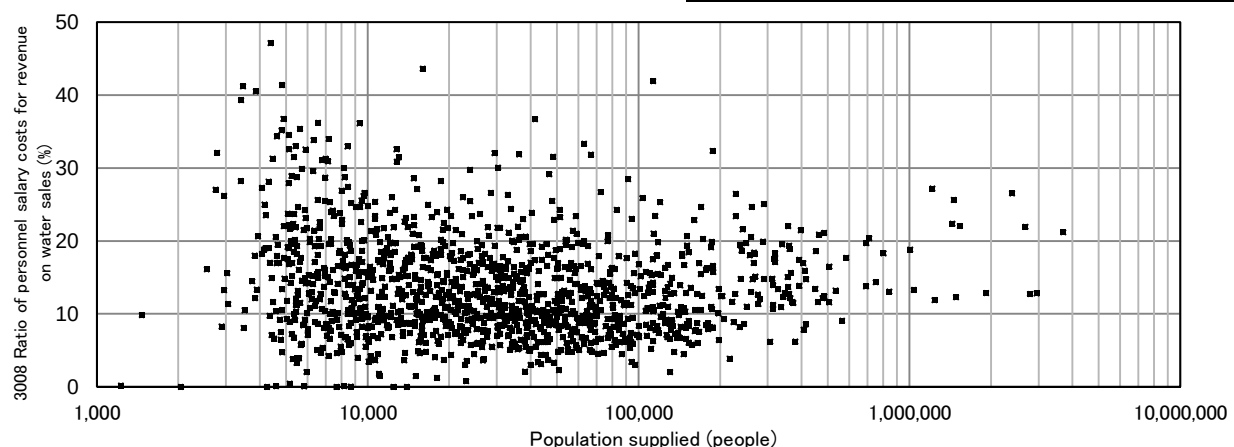
People	95%	75%	50%	25%	5%
<=1	35.5	21.8	15.1	9.9	4.0
1-3	23.7	17.2	12.7	9.1	4.6
3-10	21.9	14.9	10.7	8.2	5.0
10-50	22.9	16.7	12.7	8.7	6.3
50<	26.3	21.0	15.4	12.8	11.1

× 10,000people



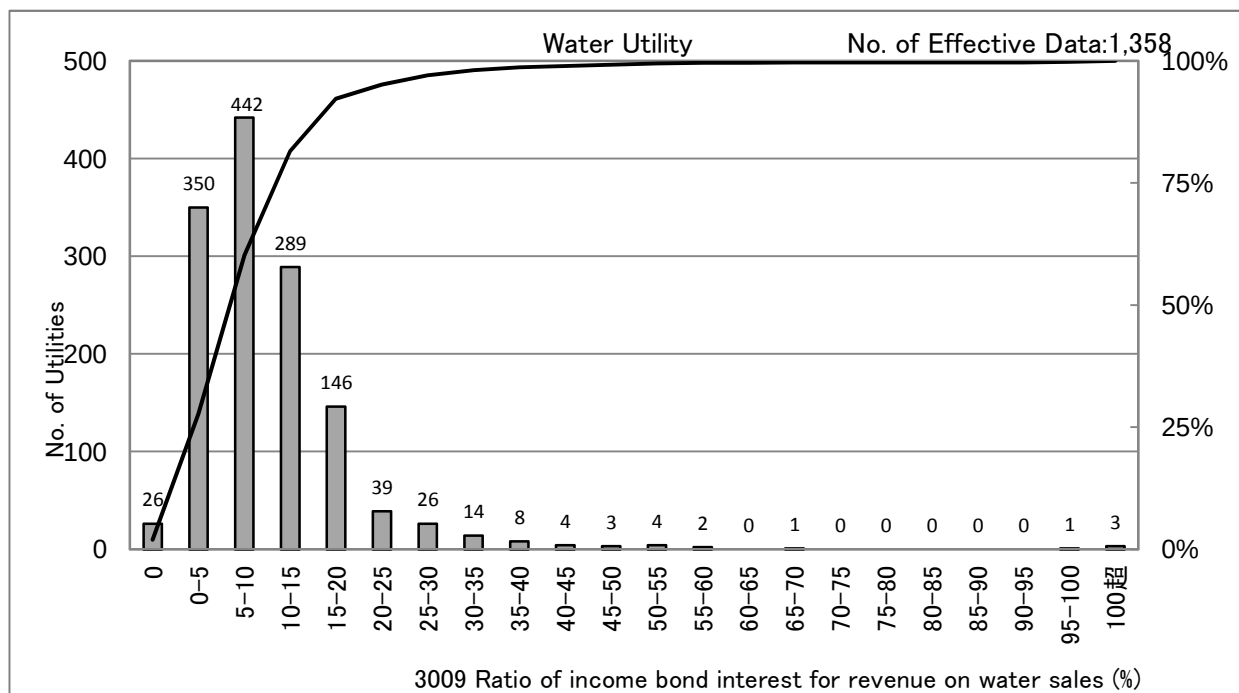
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	25.6	14.1	9.2	6.7	3.2
Supply Utility	2010	23.4	13.3	10.1	7.2	4.0
	2011	23.6	13.4	9.8	7.2	4.2
	2012	23.0	13.0	9.3	7.1	3.9

[Scatter Plot]



3009 Ratio of income bond interest for revenue on water sales (%)

Ratio of income bond interest for revenue on water sales = Interest on corporate bonds[yen]
/ Water supply revenue[yen] x 100 (%)



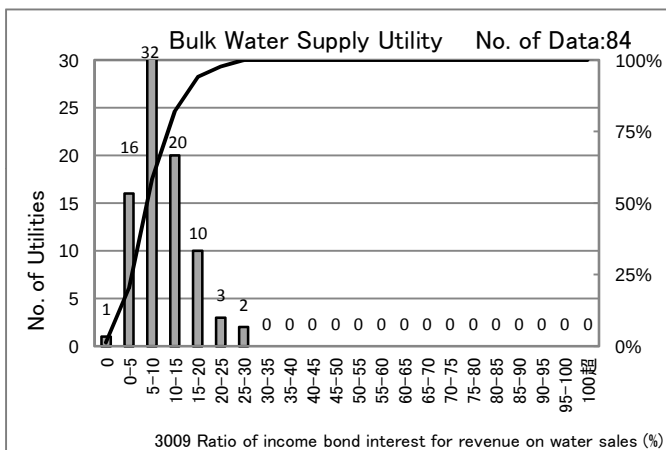
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	31.3	17.2	11.0	6.4	1.1
2009	28.3	15.3	10.0	5.5	1.1
2010	24.9	14.2	9.2	5.1	0.9
2011	24.8	13.7	8.8	5.0	0.8
2012	24.3	13.0	8.3	4.7	0.9

Population supplied (F.Y.2012)

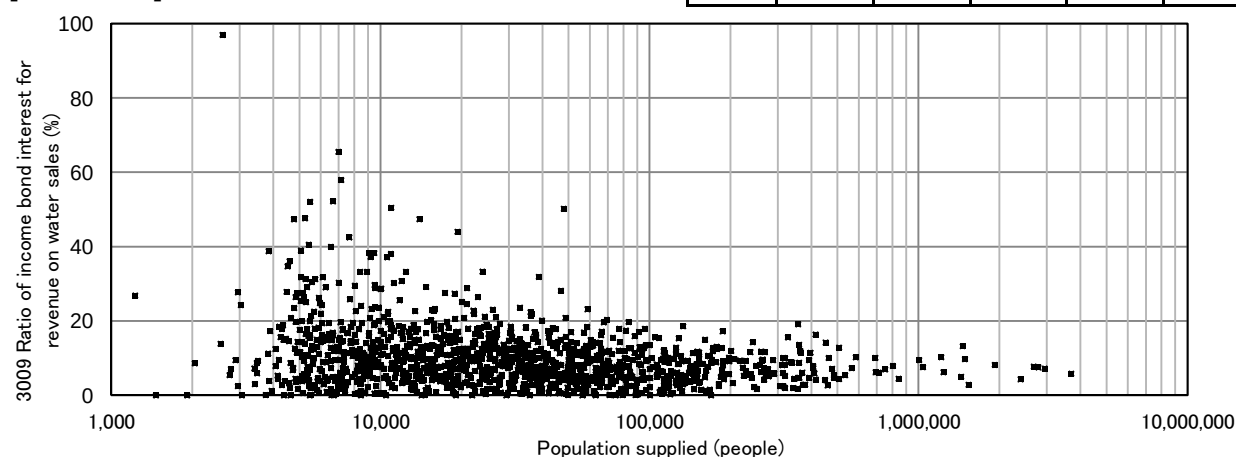
People	95%	75%	50%	25%	5%
<=1	38.3	17.7	10.7	4.5	0.0
1-3	23.0	14.7	9.7	5.5	1.1
3-10	17.7	11.6	7.6	4.5	1.1
10-50	14.2	9.5	6.2	4.1	1.3
50<	12.2	9.2	7.3	5.5	3.3

× 10,000people



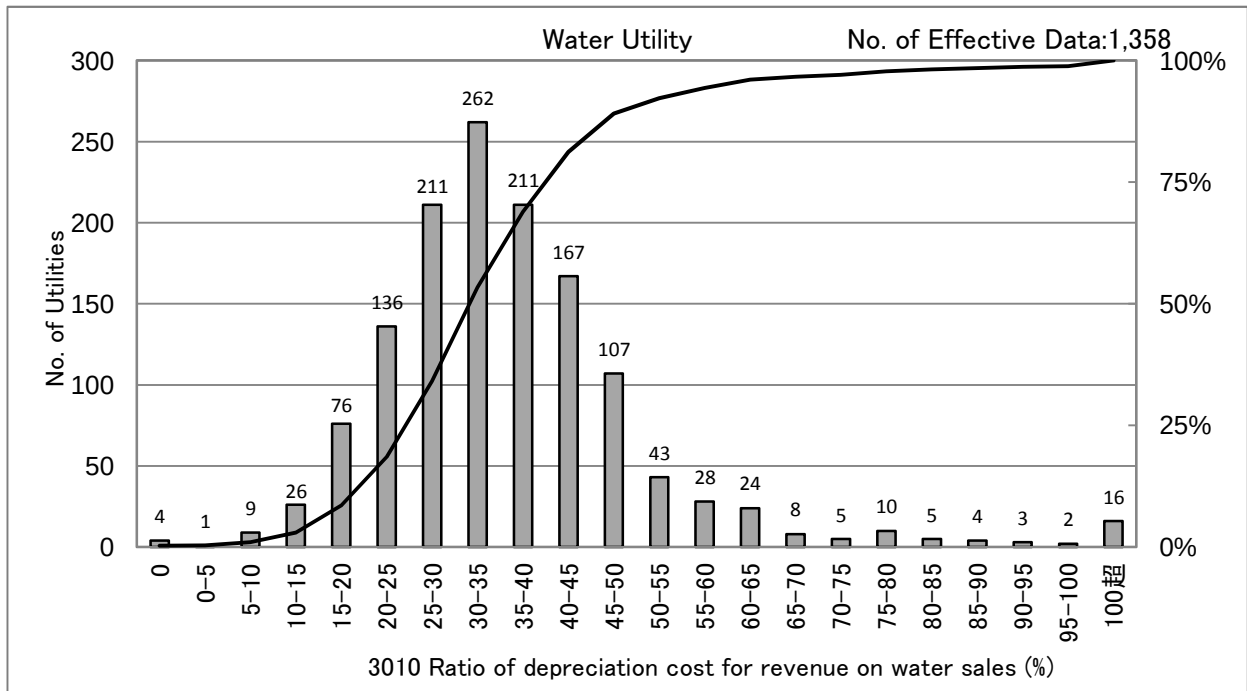
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	23.7	17.8	12.3	8.1	2.3
Supply Utility	2010	22.0	15.9	11.1	7.4	2.2
	2011	23.2	13.9	10.0	6.8	2.2
	2012	20.9	12.9	8.8	5.6	2.0

[Scatter Plot]



3010 Ratio of depreciation cost for revenue on water sales (%)

Ratio of depreciation cost for revenue on water sales = Depreciation cost[yen]
/ Water supply revenue[yen] x 100 (%)



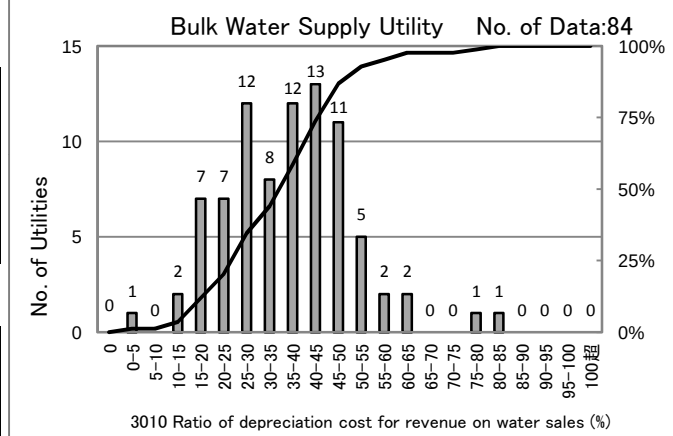
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	58.0	39.7	31.9	24.7	16.0
2009	58.6	40.4	32.6	25.6	16.1
2010	59.9	40.3	32.9	25.6	16.0
2011	62.6	41.4	33.6	26.6	16.7
2012	61.6	41.7	34.2	27.1	16.6

Population supplied (F.Y.2012)

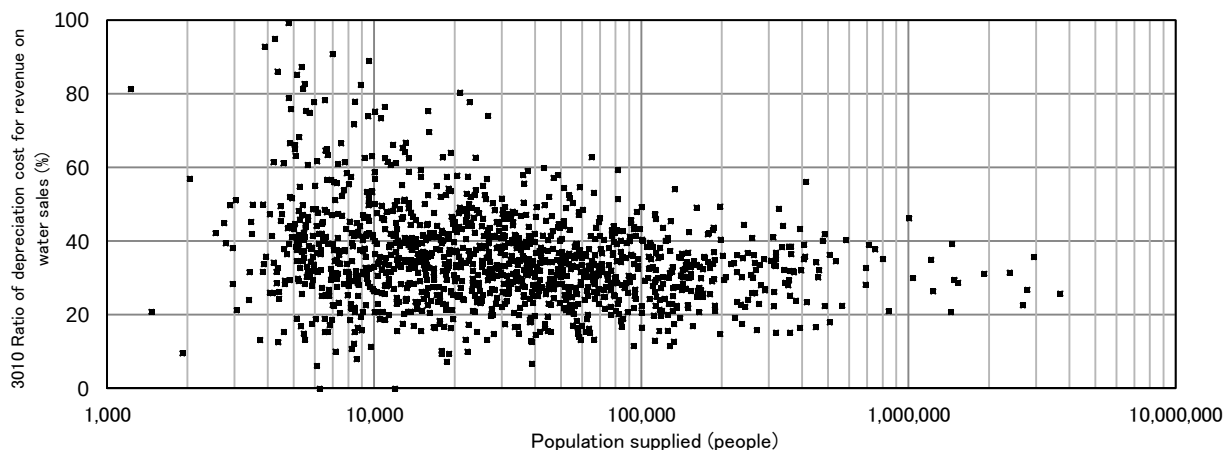
People	95%	75%	50%	25%	5%
<=1	91.0	48.6	38.3	29.2	14.8
1-3	61.1	44.2	36.5	28.1	18.4
3-10	49.6	39.4	32.8	26.9	16.9
10-50	44.2	35.8	30.9	25.0	16.5
50<	40.0	35.6	30.6	25.9	20.8

× 10,000people



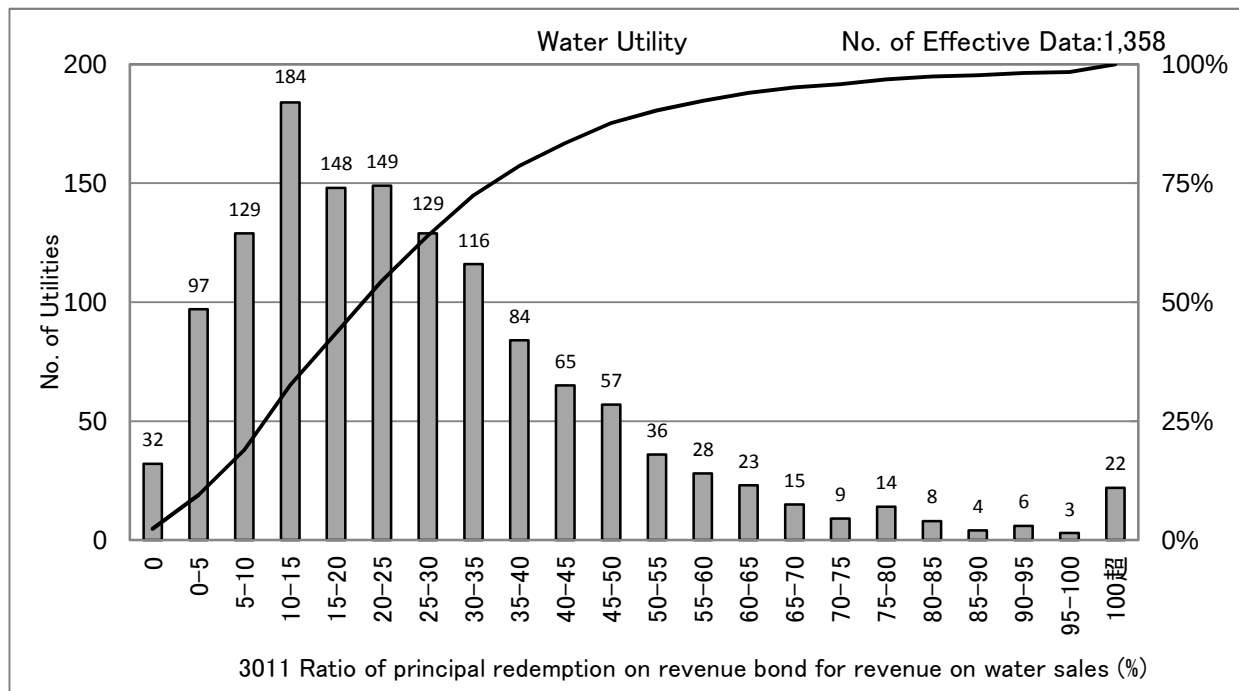
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	61.2	44.3	35.5	27.2	17.0
Supply Utility	2010	57.3	45.0	36.9	28.0	16.6
	2011	59.5	46.2	38.4	27.1	16.3
	2012	58.4	45.4	37.8	26.5	16.8

[Scatter Plot]



3011 Ratio of principal redemption on revenue bond for revenue on water sales (%)

Ratio of principal redemption on revenue bond for revenue on water sales = Redemption money[yen]
/ Water supply revenue[yen] x 100 (%)



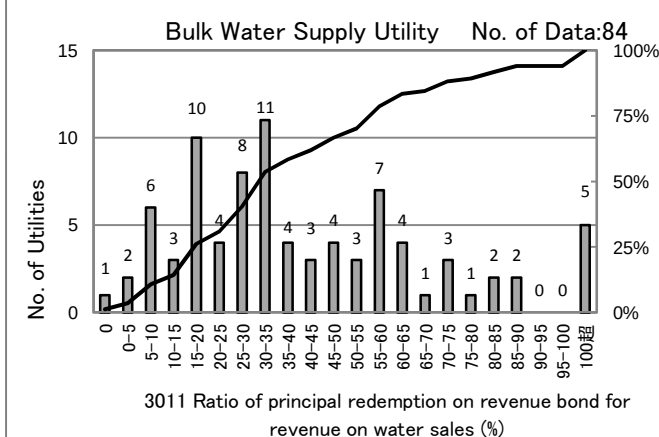
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	133.6	57.0	30.4	15.6	3.6
2009	99.7	42.3	23.7	12.6	2.2
2010	60.6	35.2	22.1	11.8	2.2
2011	59.8	34.5	21.4	11.9	2.1
2012	69.6	37.2	22.6	12.4	2.0

Population supplied (F.Y.2012)

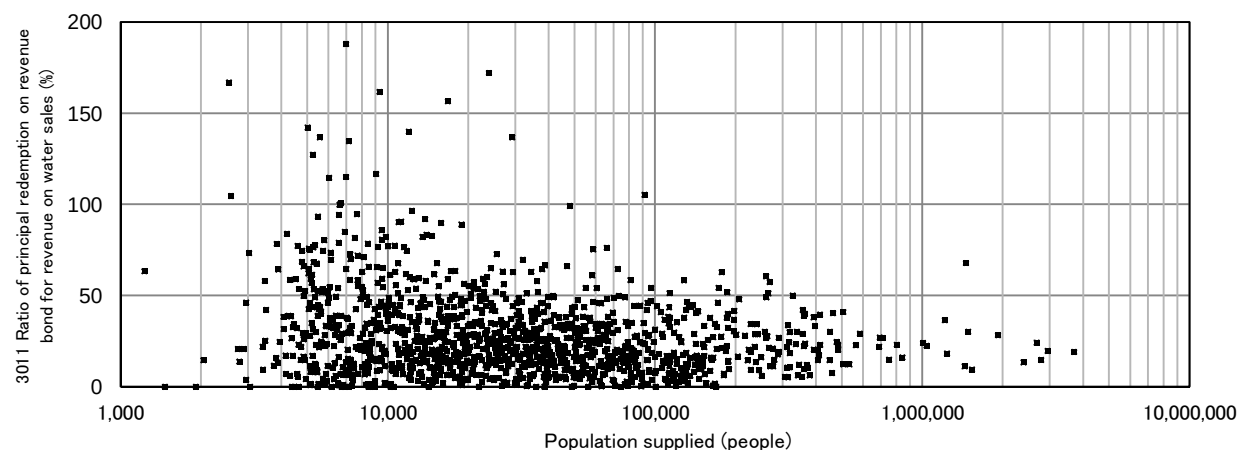
People	95%	75%	50%	25%	5%
<=1	99.9	52.5	29.3	11.4	0.0
1-3	67.1	40.5	25.1	14.0	3.7
3-10	49.3	31.9	20.7	12.2	2.8
10-50	48.0	30.2	17.6	10.4	3.4
50<	39.9	27.0	22.3	14.7	11.3

× 10,000people



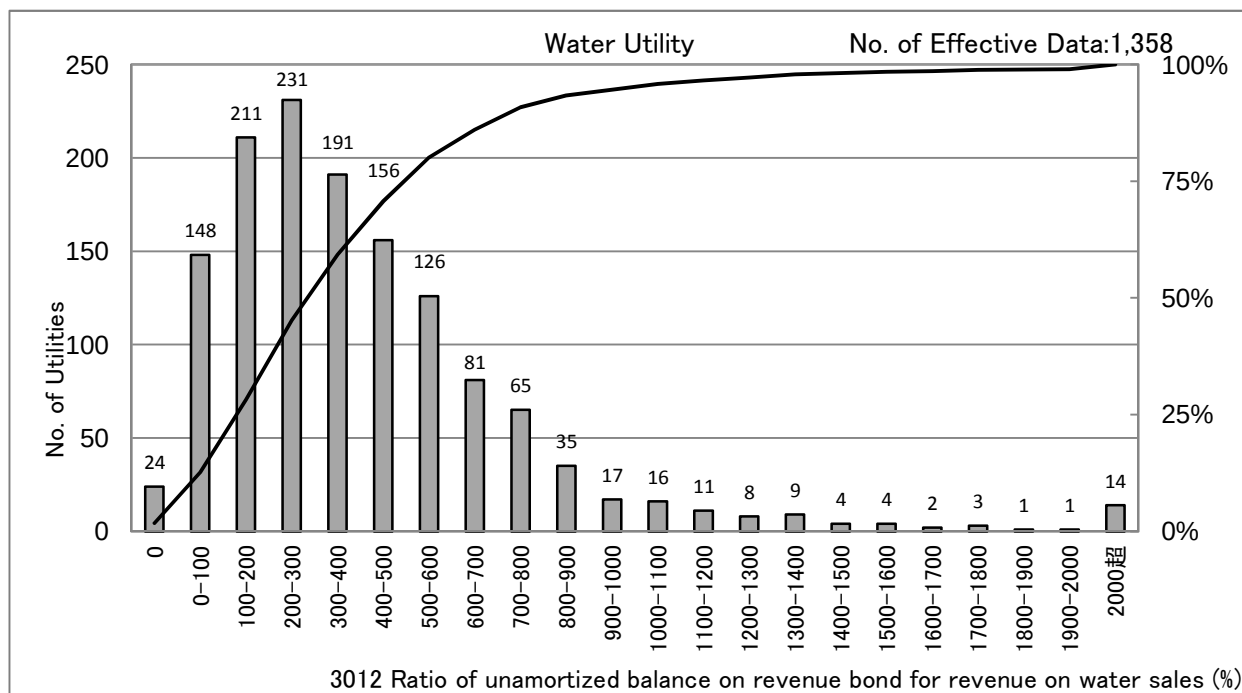
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	125.7	56.6	34.5	20.4	7.3
Supply Utility	2010	99.1	58.2	38.3	23.2	6.7
	2011	97.6	53.6	35.7	21.4	6.0
	2012	123.5	58.7	33.1	19.4	7.1

[Scatter Plot]



3012 Ratio of unamortized balance on revenue bond for revenue on water sales (%)

Ratio of unamortized balance on revenue bond for revenue on water sales = Corporate bond
balance[yen] / Water supply revenue[yen] x 100 (%)



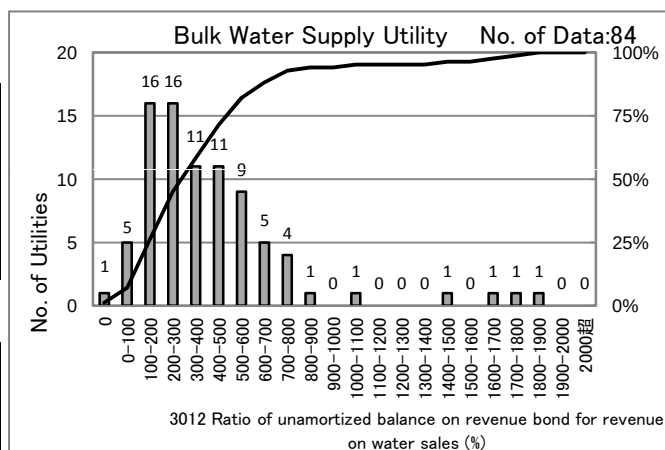
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	1,044.7	576.3	367.8	200.6	36.4
2009	1,019.5	570.7	357.4	196.6	37.5
2010	1,009.7	559.1	340.7	188.8	36.5
2011	1,012.8	555.0	337.4	186.2	37.3
2012	1,016.5	542.6	330.2	178.3	35.5

Population supplied (F.Y.2012)

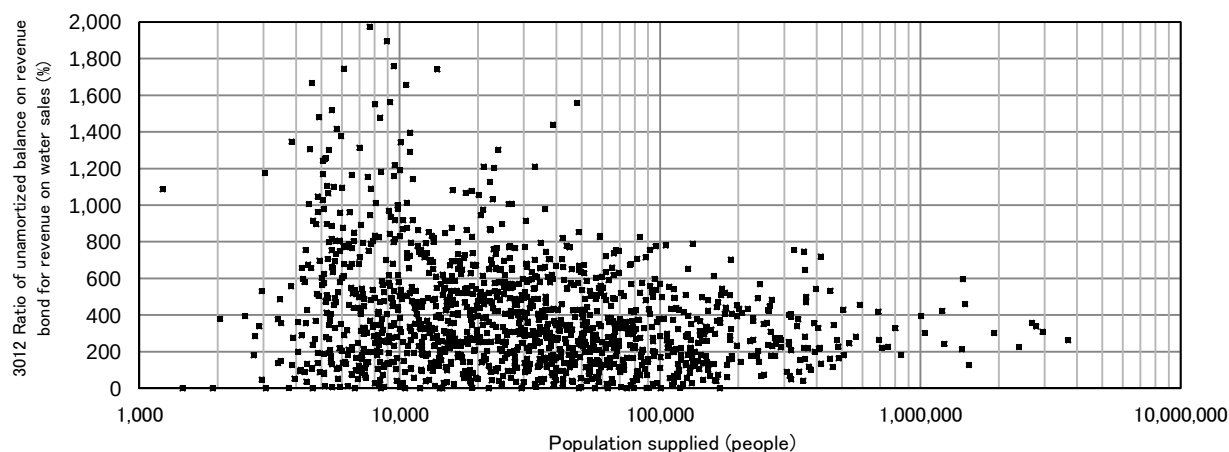
People	95%	75%	50%	25%	5%
<=1	1,676.0	780.9	427.6	185.9	9.6
1-3	970.1	578.5	390.7	217.6	41.7
3-10	731.5	489.2	301.5	163.3	34.5
10-50	555.8	391.3	248.9	144.0	42.1
50<	459.4	386.1	293.1	226.0	141.4

× 10,000people



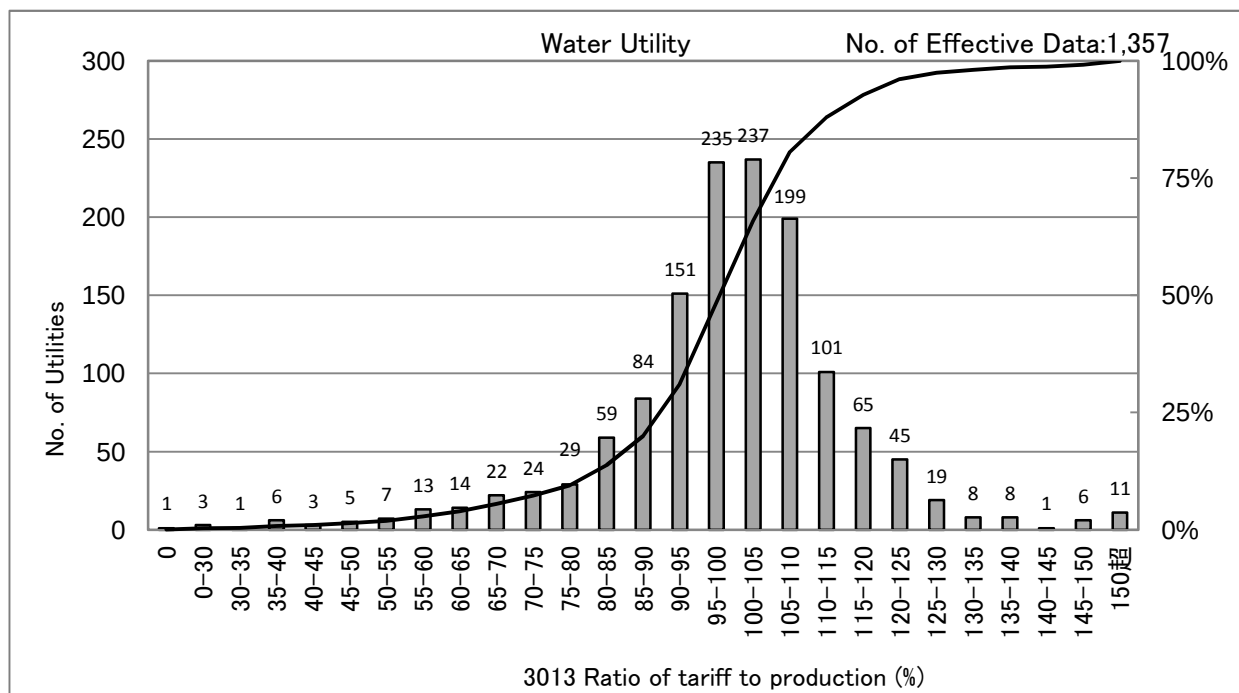
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	1,162.1	617.4	410.6	280.9	134.3
	2010	1,154.3	571.6	380.6	260.1	113.7
	2011	1,092.6	549.3	363.3	238.7	117.8
	2012	1,002.7	535.6	340.8	198.3	52.9

[Scatter Plot]



3013 Ratio of tariff to production (%)

Ratio of tariff to production = Water supply rate[m³/day]
/ Water supply cost[m³/day] x 100 (%)



[Percentile Value] Water Utility

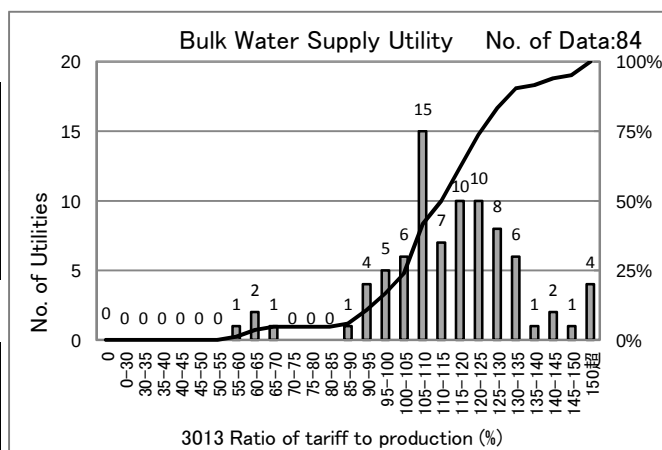
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	126.6	107.3	99.5	91.5	66.9
2009	125.6	107.6	99.9	92.0	67.0
2010	126.8	109.6	101.9	94.0	69.6
2011	124.7	108.3	100.1	92.4	66.3
2012	123.5	107.9	100.4	92.7	69.1

Population supplied (F.Y.2012)

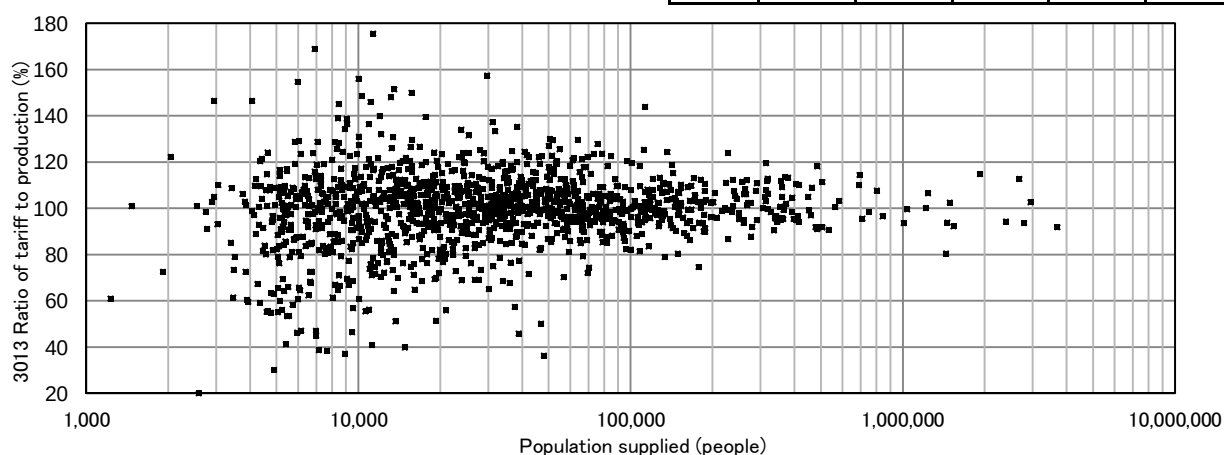
People	95%	75%	50%	25%	5%
<=1	128.8	107.9	98.7	83.5	53.0
1-3	125.0	109.4	100.8	91.3	71.8
3-10	121.6	107.3	100.6	95.2	82.8
10-50	113.7	107.1	100.7	96.1	88.9
50<	114.0	105.7	99.1	93.7	91.0

x 10,000people



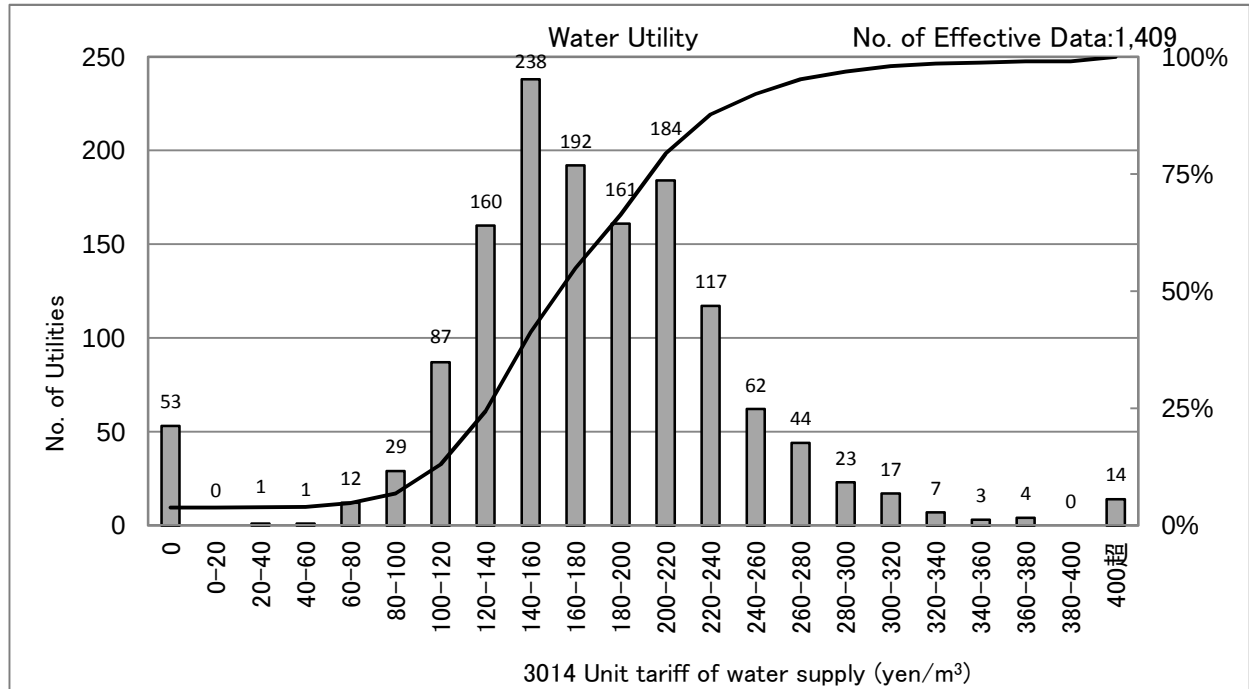
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	140.7	125.6	110.6	101.4	89.1
Supply Utility	2010	144.3	125.9	111.5	103.0	88.3
	2011	141.2	125.5	109.6	101.1	81.0
	2012	146.6	126.1	114.0	105.3	88.4

[Scatter Plot]



3014 Unit tariff of water supply (yen/m³)

$$\text{Unit tariff of water supply} = \frac{\text{Water supply revenue}[\text{yen}]}{\text{Revenue water volume}[\text{m}^3] \times 100} \quad (\text{yen/m}^3)$$



[Percentile Value] Water Utility

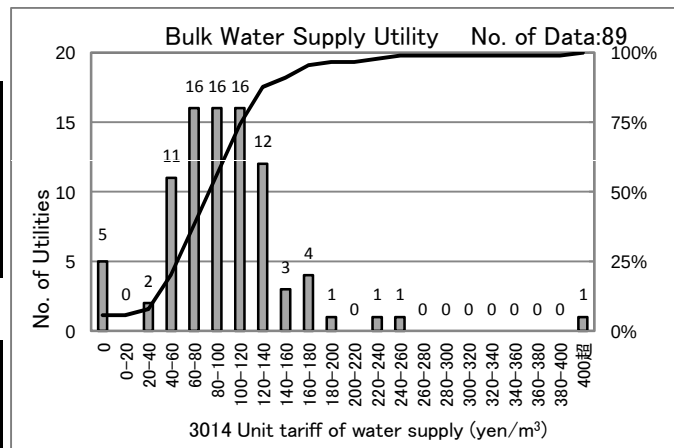
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	281.9	213.8	172.9	140.2	81.4
2009	281.5	213.6	172.6	139.4	81.1
2010	279.1	213.1	171.7	139.6	78.9
2011	277.2	212.2	171.5	140.6	80.4
2012	277.7	213.4	172.0	140.8	81.6

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	328.8	233.3	185.1	136.7	0.0
1-3	272.4	216.4	175.4	140.0	80.3
3-10	262.5	210.4	172.8	143.5	106.6
10-50	236.8	187.9	162.3	140.9	111.6
50<	214.4	178.9	163.6	152.3	131.8

× 10,000people

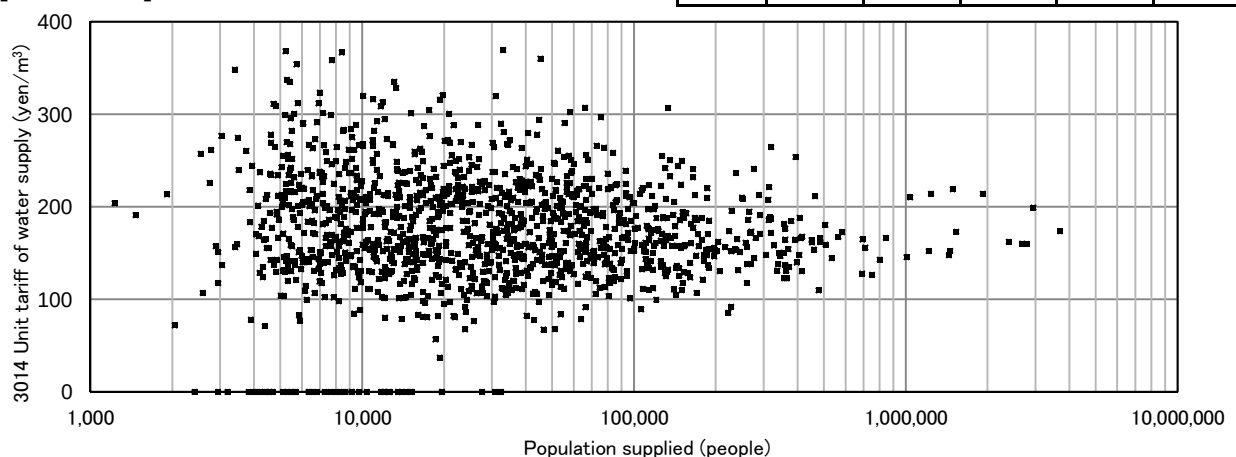


[Percentile Value]

Bulk Water Supply Utility

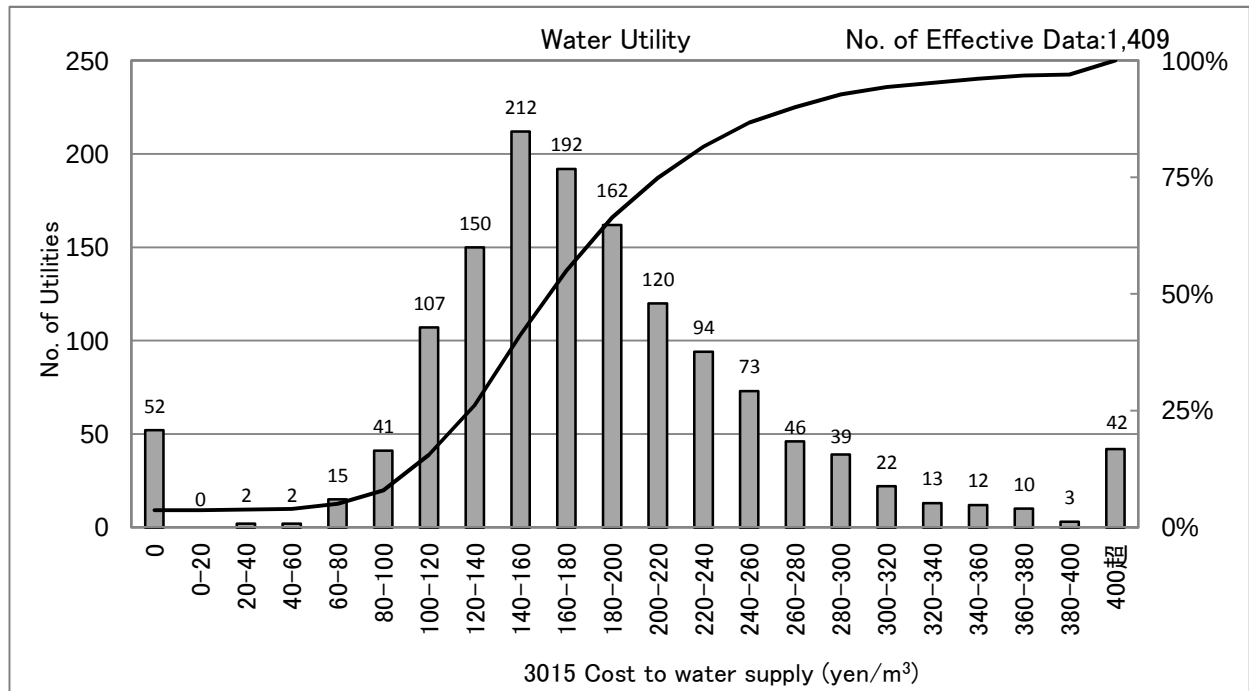
F.Y.	95%	75%	50%	25%	5%
2009	189.2	134.4	101.1	68.2	12.1
2010	173.8	125.2	99.0	68.0	8.8
2011	174.8	120.6	92.8	67.9	8.8
2012	177.2	121.3	93.3	67.3	8.8

[Scatter Plot]



3015 Cost to water supply (yen/m³)

Cost to water supply = {Ordinary expenses[yen] - (Commissioned work cost + Unused material and article costs + Auxiliary service cost)[yen]} / Revenue water volume[m³] (yen/m³)



[Percentile Value] Water Utility

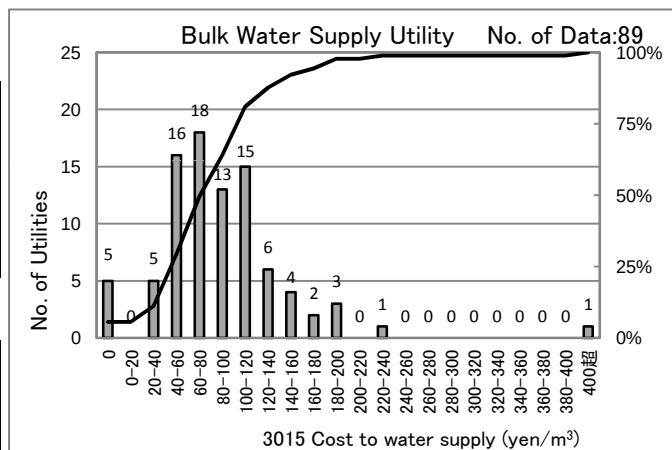
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	346.4	222.7	172.5	136.6	77.0
2009	350.1	220.0	171.7	136.5	80.0
2010	328.2	215.4	169.6	134.0	71.2
2011	346.8	219.7	172.6	135.8	74.9
2012	333.8	220.2	172.0	137.2	79.5

Population supplied (F.Y.2012)

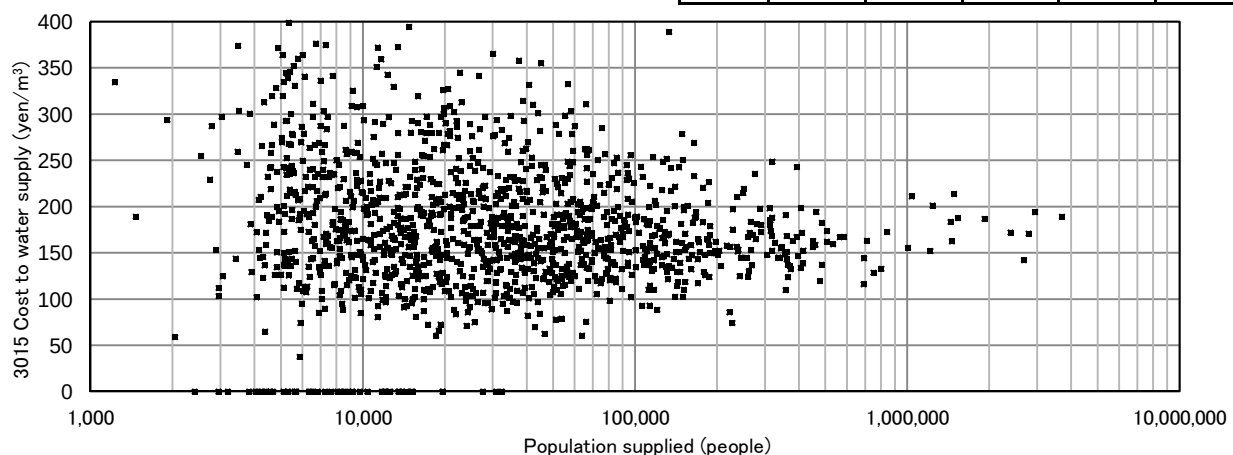
People	95%	75%	50%	25%	5%
<=1	492.9	260.0	192.0	135.6	0.0
1-3	312.7	221.3	175.3	132.5	75.0
3-10	284.1	208.6	169.9	139.8	102.6
10-50	242.5	183.5	158.8	142.3	110.2
50<	208.6	187.5	169.1	156.5	129.8

× 10,000people



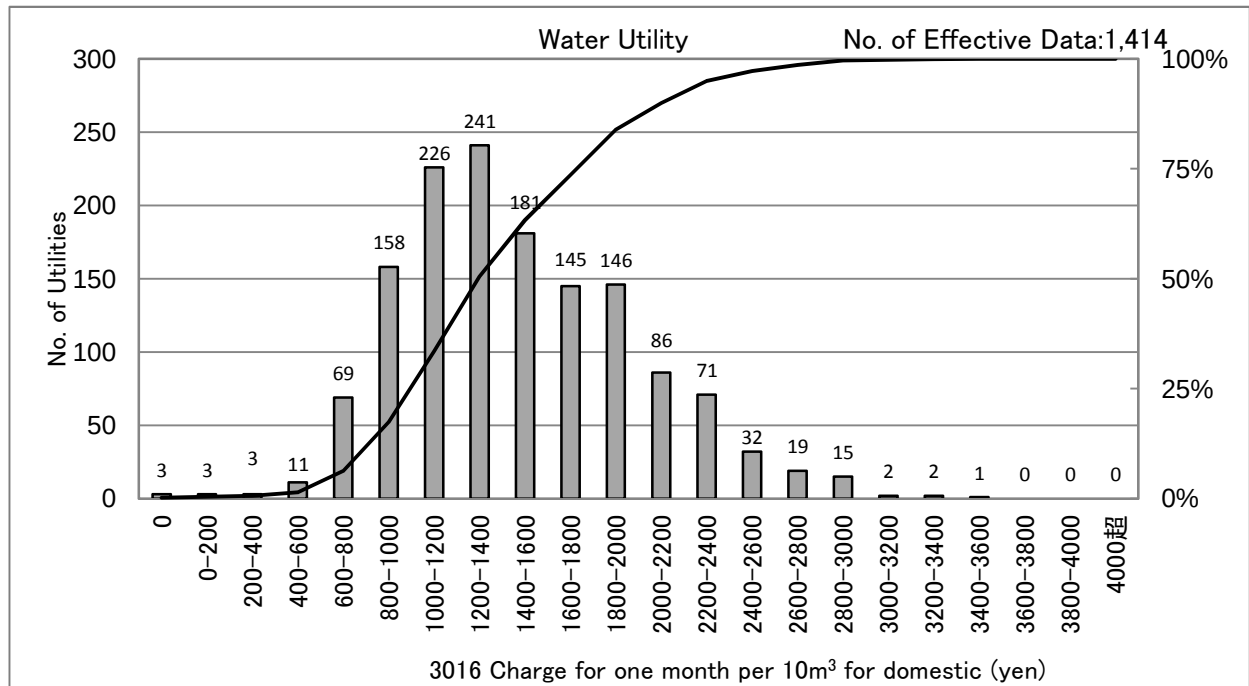
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	185.1	123.5	82.7	61.6	16.0
Supply Utility	2010	175.7	114.9	82.5	59.3	10.8
	2011	177.0	112.1	84.8	58.8	10.9
	2012	177.6	115.0	80.3	55.1	10.6

[Scatter Plot]



2016 Charge for one month per 10m³ for domestic (yen)

Charge for one month per 10m³ for domestic = Monthly minimum charge (13mm diameter)[yen]
+ Meter rate per 10m³[yen] (yen)



[Percentile Value] Water Utility

Fiscal year

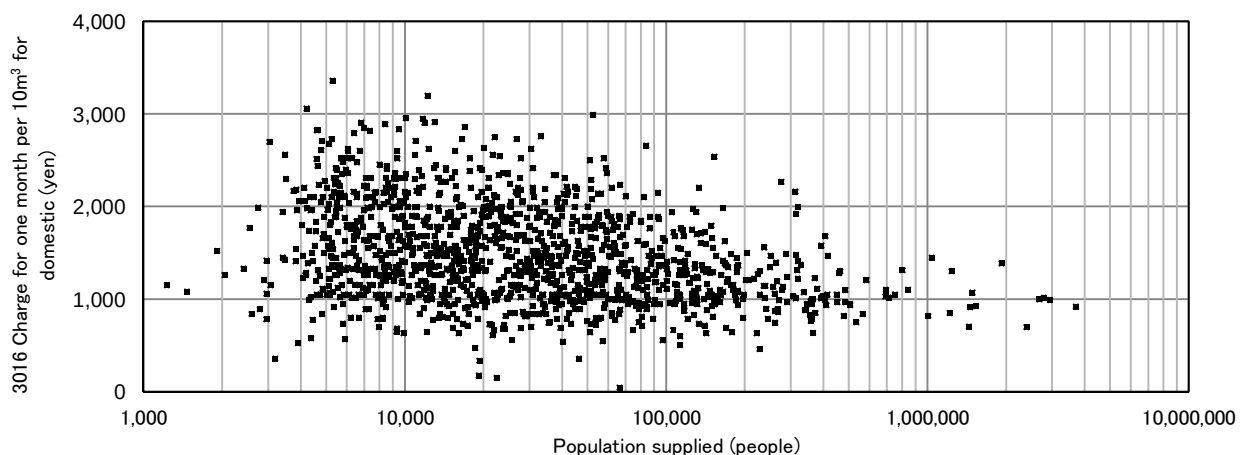
F.Y.	95%	75%	50%	25%	5%
2008	2,411	1,820	1,365	1,050	676
2009	2,415	1,837	1,386	1,080	777
2010	2,400	1,829	1,370	1,070	777
2011	2,400	1,840	1,396	1,080	782
2012	2,404	1,840	1,396	1,080	782

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	2,636	2,100	1,638	1,260	800
1-3	2,415	1,895	1,530	1,150	782
3-10	2,190	1,748	1,361	1,050	787
10-50	1,801	1,365	1,134	977	734
50<	1,368	1,094	1,006	915	715

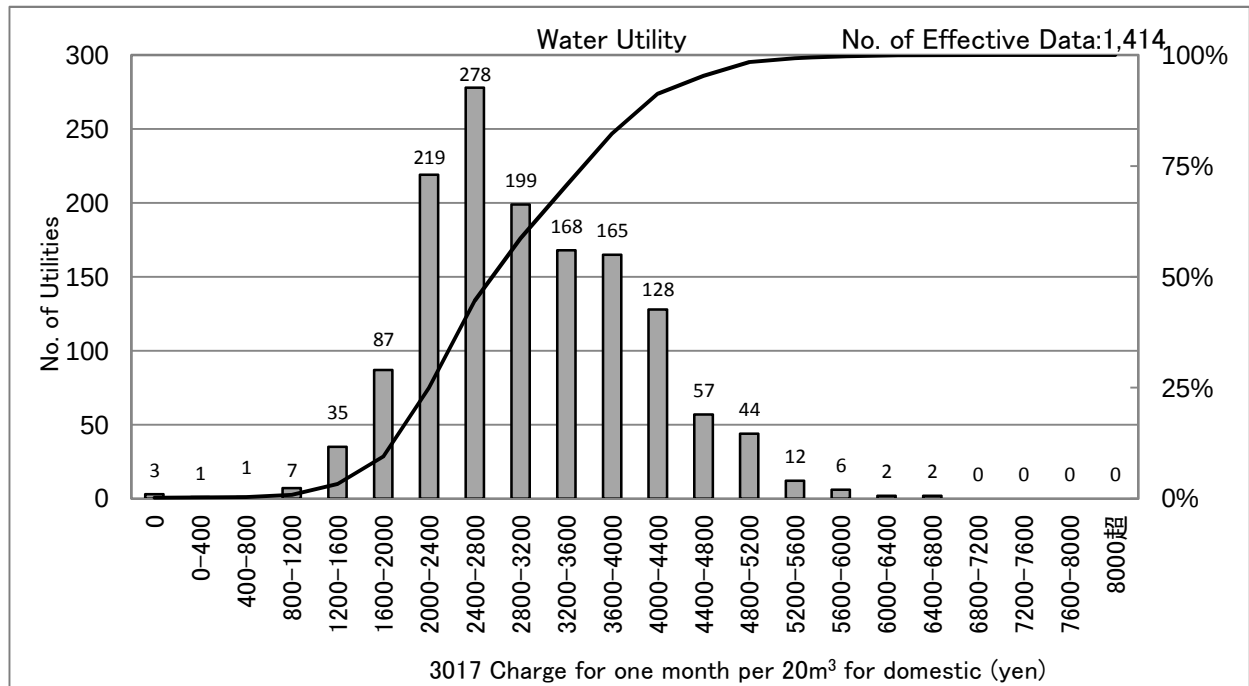
× 10,000people

[Scatter Plot]



2017 Charge for one month per 20m³ for domestic (yen)

Charge for one month per 20m³ for domestic = Monthly minimum charge (13mm diameter)[yen]
+ Meter rate per 20m³[yen] (yen)



[Percentile Value] Water Utility

Fiscal year

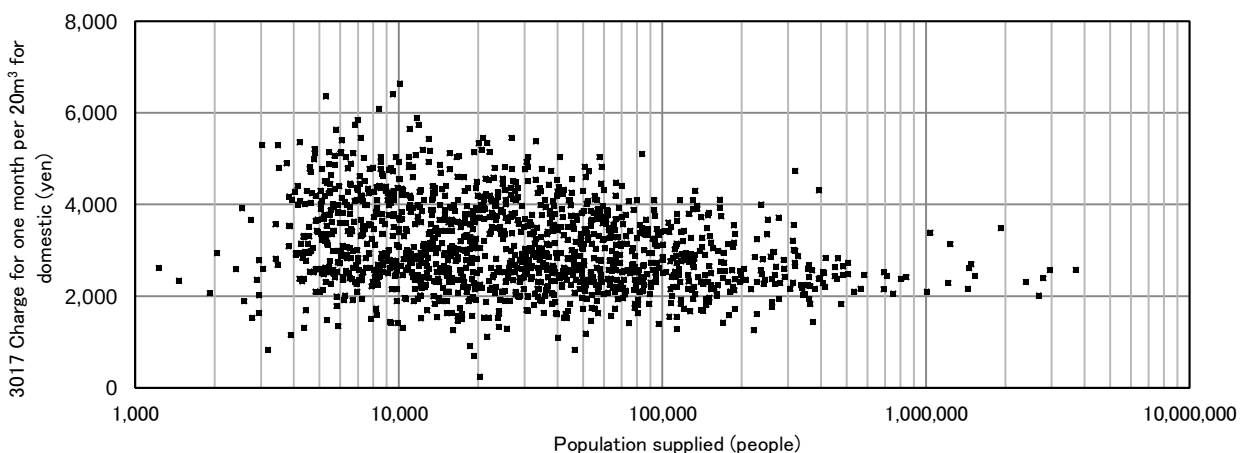
F.Y.	95%	75%	50%	25%	5%
2008	4,780	3,727	2,940	2,382	1,680
2009	4,784	3,727	2,940	2,385	1,732
2010	4,776	3,727	2,929	2,383	1,732
2011	4,774	3,759	2,940	2,404	1,732
2012	4,780	3,763	2,940	2,405	1,732

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	5,046	4,179	3,351	2,580	1,869
1-3	4,870	3,916	3,055	2,446	1,670
3-10	4,427	3,517	2,872	2,364	1,738
10-50	3,901	2,993	2,545	2,219	1,700
50<	3,328	2,576	2,431	2,195	2,069

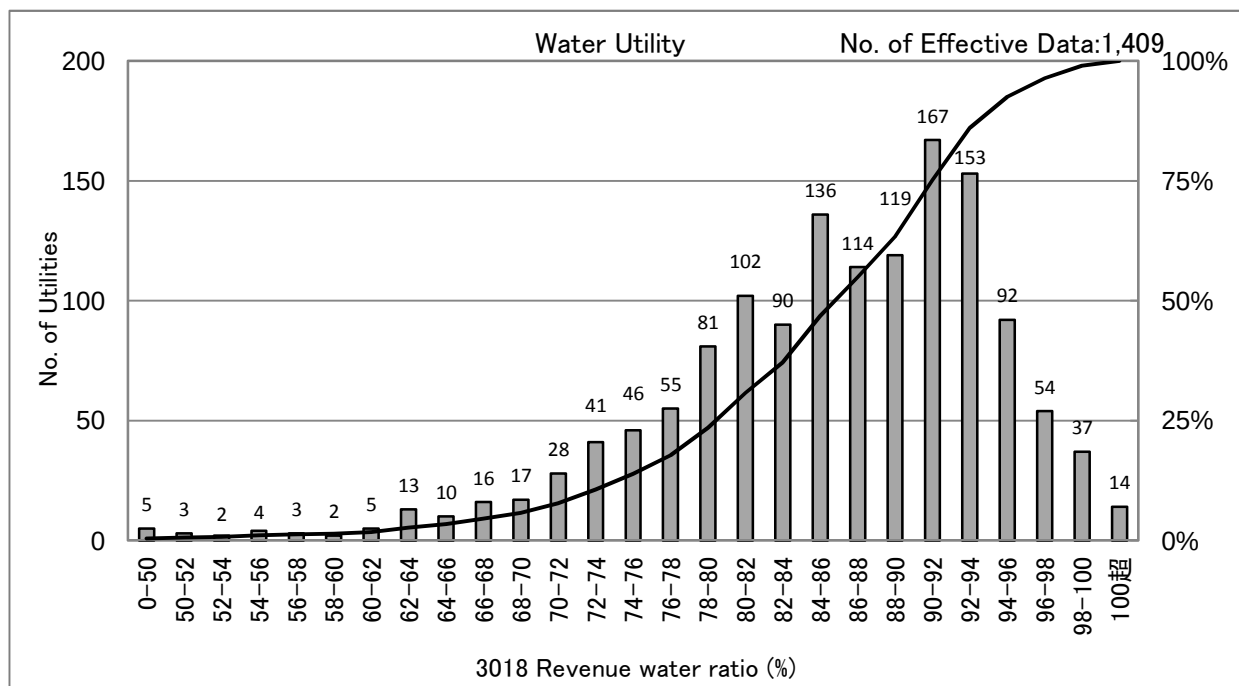
× 10,000people

[Scatter Plot]



3018 Revenue water ratio (%)

$$\text{Revenue water ratio} = \frac{\text{Revenue water volume}[\text{m}^3]}{\text{Supply volume}[\text{m}^3]} \times 100 (\%)$$



[Percentile Value] Water Utility

Fiscal year

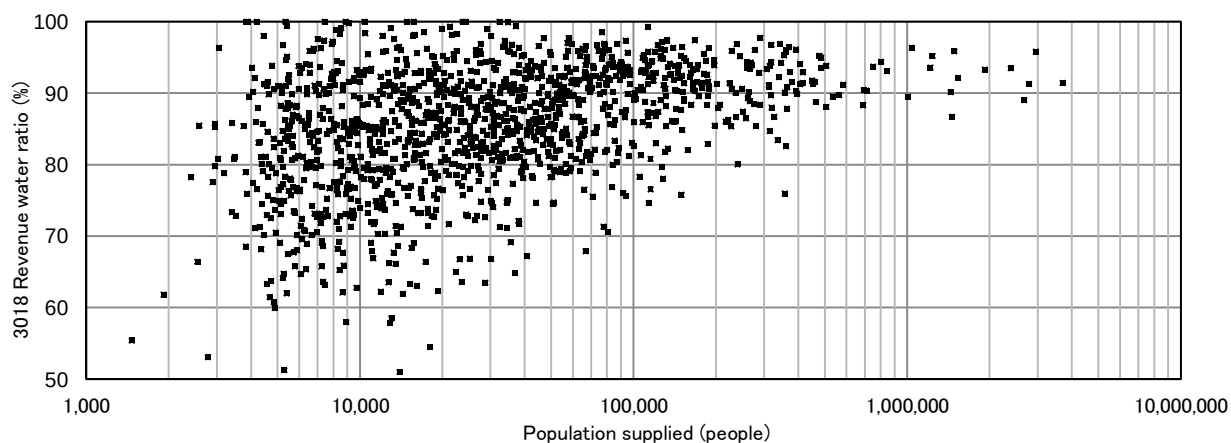
F.Y.	95%	75%	50%	25%	5%
2008	97.1	92.2	87.1	81.1	70.1
2009	97.0	92.0	87.0	81.2	70.8
2010	97.0	92.1	87.1	81.1	69.9
2011	96.8	91.9	86.5	79.8	68.1
2012	96.9	91.9	86.7	80.5	68.8

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	97.8	88.3	81.8	74.5	61.7
1-3	97.6	90.4	85.0	79.1	68.4
3-10	96.7	92.3	88.1	83.1	75.6
10-50	96.9	94.2	91.5	88.5	81.8
50<	96.3	93.8	91.8	89.8	88.2

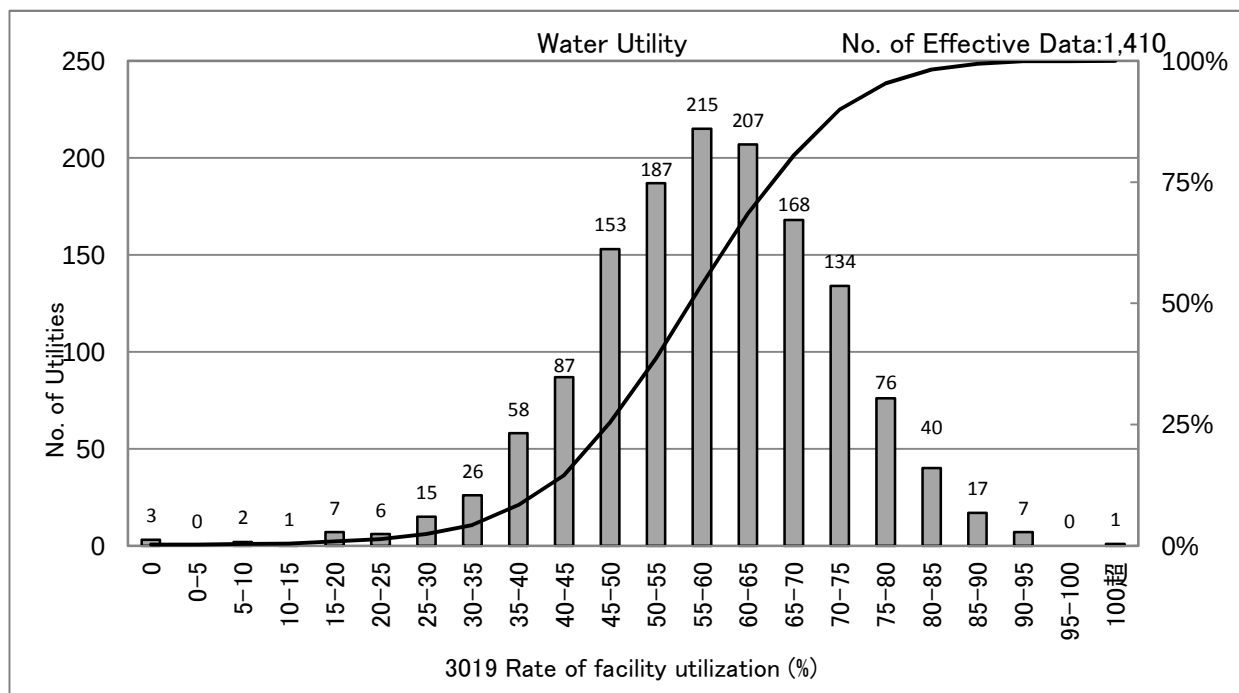
× 10,000people

[Scatter Plot]



3019 Rate of facility utilization (%)

Rate of facility utilization = Average daily supply[m³/day]
/ Daily capacity[m³/day] x 100 (%)



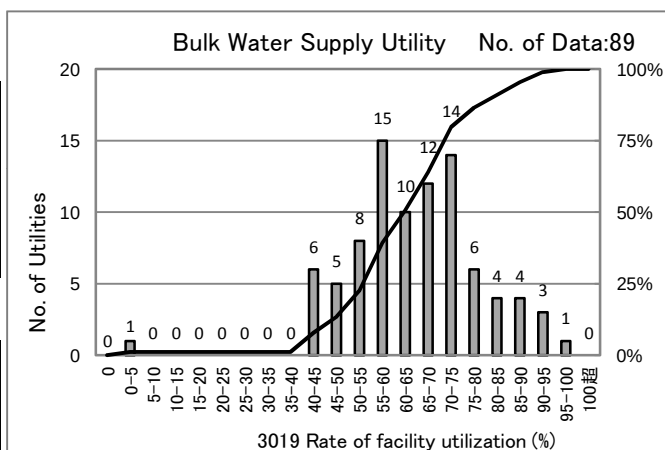
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	79.1	68.0	60.1	51.2	37.0
2009	78.8	67.3	59.3	50.1	36.9
2010	79.1	68.0	59.8	50.6	37.3
2011	79.2	67.5	59.2	50.2	36.5
2012	79.4	67.5	58.8	49.9	36.3

Population supplied (F.Y.2012)

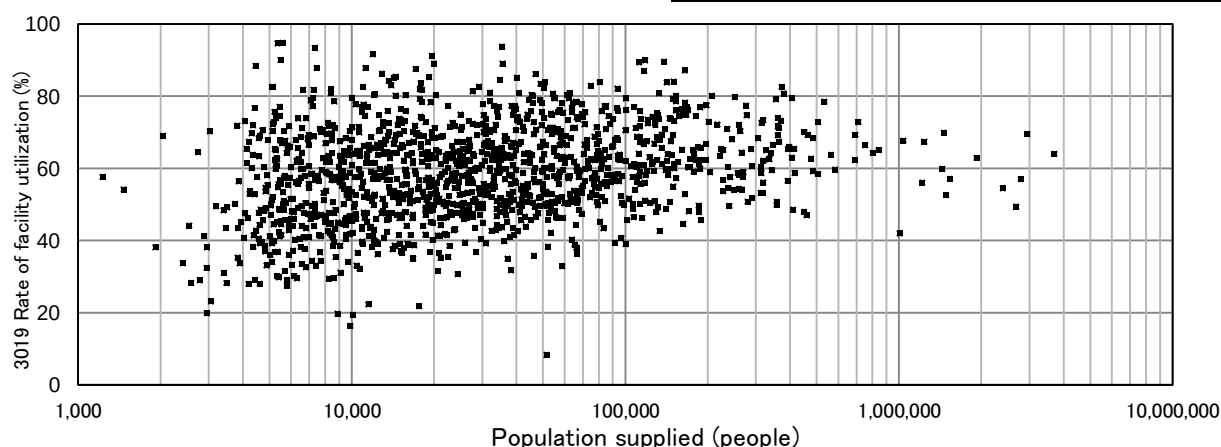
People	95%	75%	50%	25%	5%
<=1	76.9	63.3	52.7	41.6	27.1
1-3	80.2	65.9	57.5	49.1	38.5
3-10	79.2	69.4	60.2	52.8	43.4
10-50	80.2	72.5	64.0	58.1	48.0
50<	72.8	67.6	63.4	57.5	50.2

× 10,000people



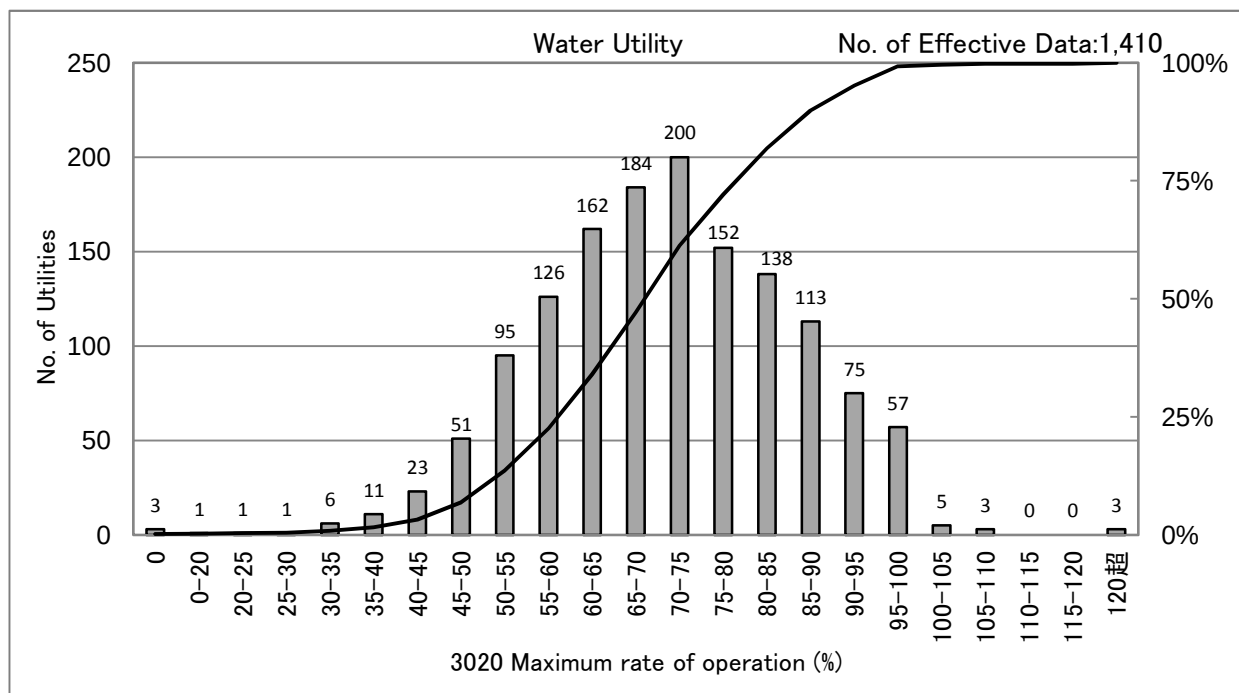
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	90.1	74.0	64.7	55.7	44.2
Supply Utility	2010	89.5	74.5	65.0	55.4	43.2
	2011	89.0	73.0	63.3	56.1	43.0
	2012	89.4	73.5	64.7	55.2	42.7

[Scatter Plot]



3020 Maximum rate of operation (%)

Maximum rate of operation = Maximum daily supply[m³/day]
/ Daily capacity[m³/day] x 100 (%)



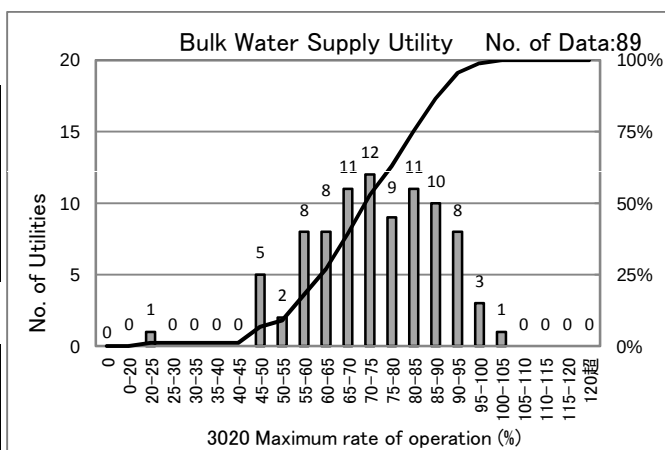
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	95.7	82.5	72.6	63.5	48.9
2009	93.9	81.5	71.7	61.9	47.9
2010	97.3	83.3	73.4	63.3	49.5
2011	95.4	83.1	73.5	63.7	50.7
2012	94.5	81.3	71.0	61.0	47.2

Population supplied (F.Y.2012)

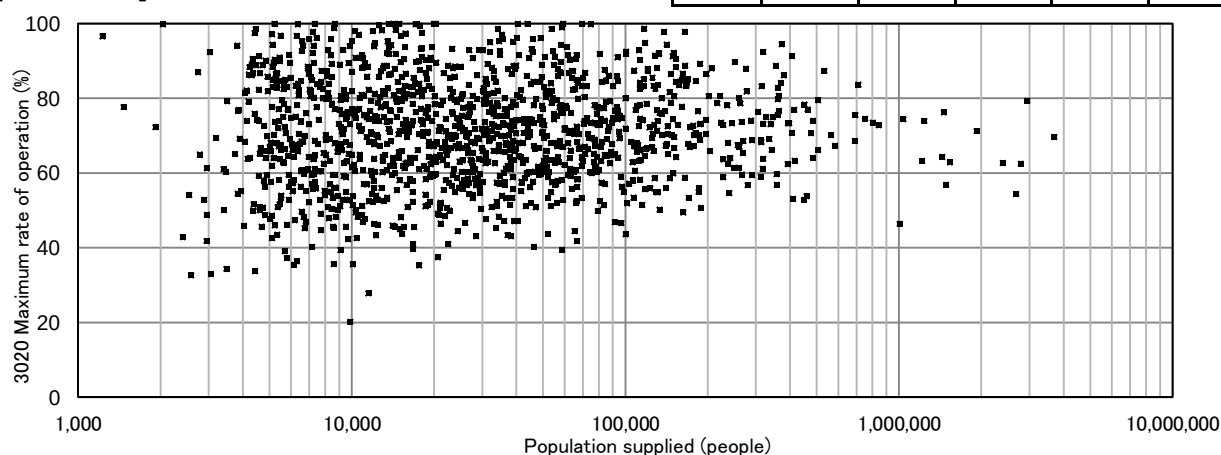
People	95%	75%	50%	25%	5%
<=1	96.9	83.1	69.2	56.6	41.3
1-3	94.8	80.8	71.1	60.5	46.9
3-10	93.1	80.0	71.0	62.7	51.3
10-50	92.1	82.6	72.9	65.0	53.8
50<	82.7	74.5	69.9	63.5	55.0

x 10,000people



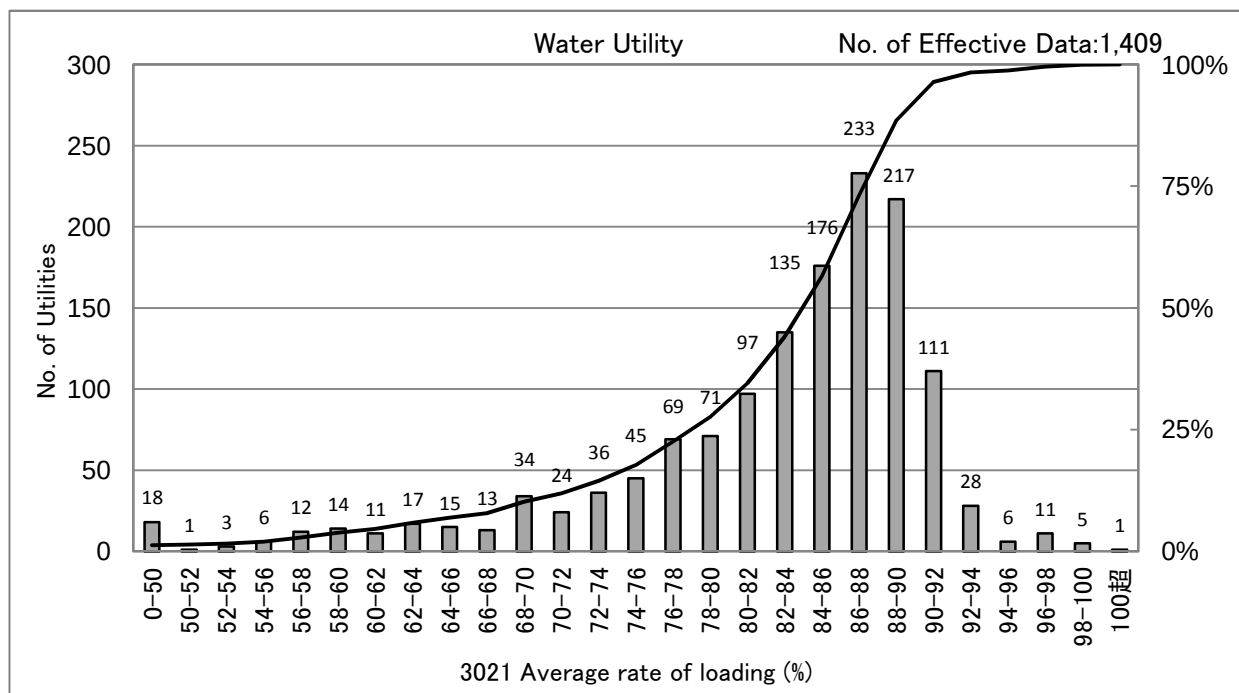
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	95.6	83.5	73.5	63.4	50.4
Supply Utility	2010	96.4	87.6	75.6	65.5	50.8
	2011	94.1	84.1	75.4	65.2	49.6
	2012	93.8	84.6	73.8	64.5	49.5

[Scatter Plot]



3021 Average rate of loading (%)

Average rate of loading = Average daily supply[m³/day]
/ Maximum daily supply[m³/day] x 100 (%)



[Percentile Value] Water Utility

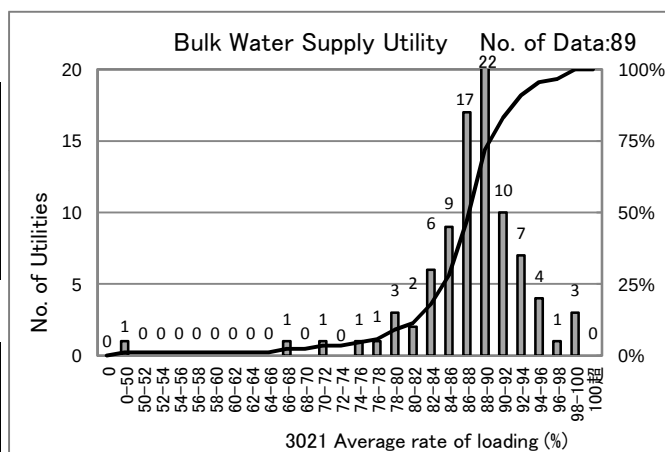
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	90.6	87.3	83.7	77.7	63.1
2009	91.0	88.3	85.0	78.6	63.0
2010	90.5	87.5	83.5	77.4	61.3
2011	90.3	87.3	83.9	77.6	61.9
2012	91.6	88.2	85.0	79.0	62.5

Population supplied (F.Y.2012)

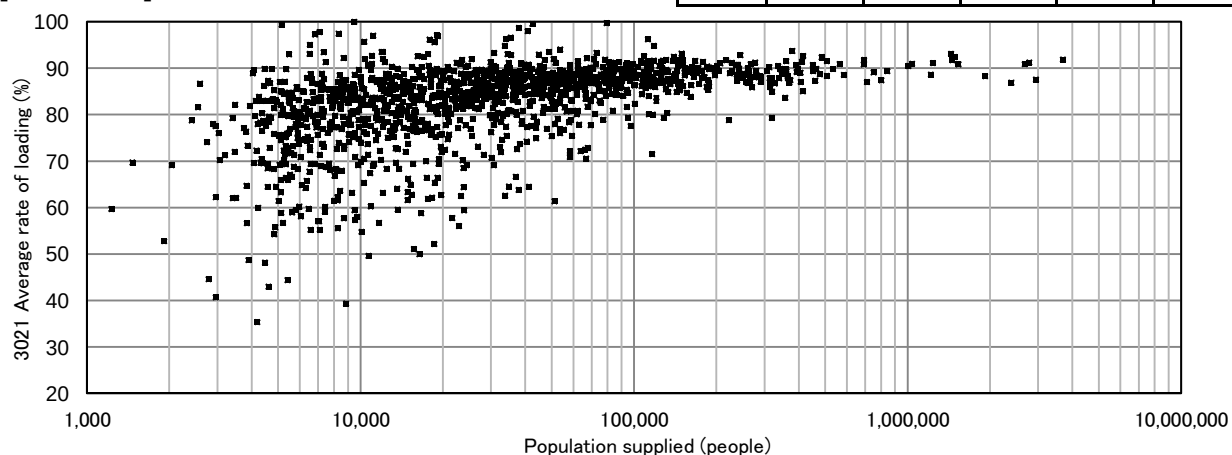
People	95%	75%	50%	25%	5%
<=1	88.8	83.5	78.0	69.4	54.8
1-3	90.8	86.9	83.6	78.3	64.4
3-10	91.4	88.7	86.7	83.5	74.8
10-50	91.9	90.1	88.8	87.0	83.6
50<	92.3	91.2	90.8	88.6	87.1

× 10,000people



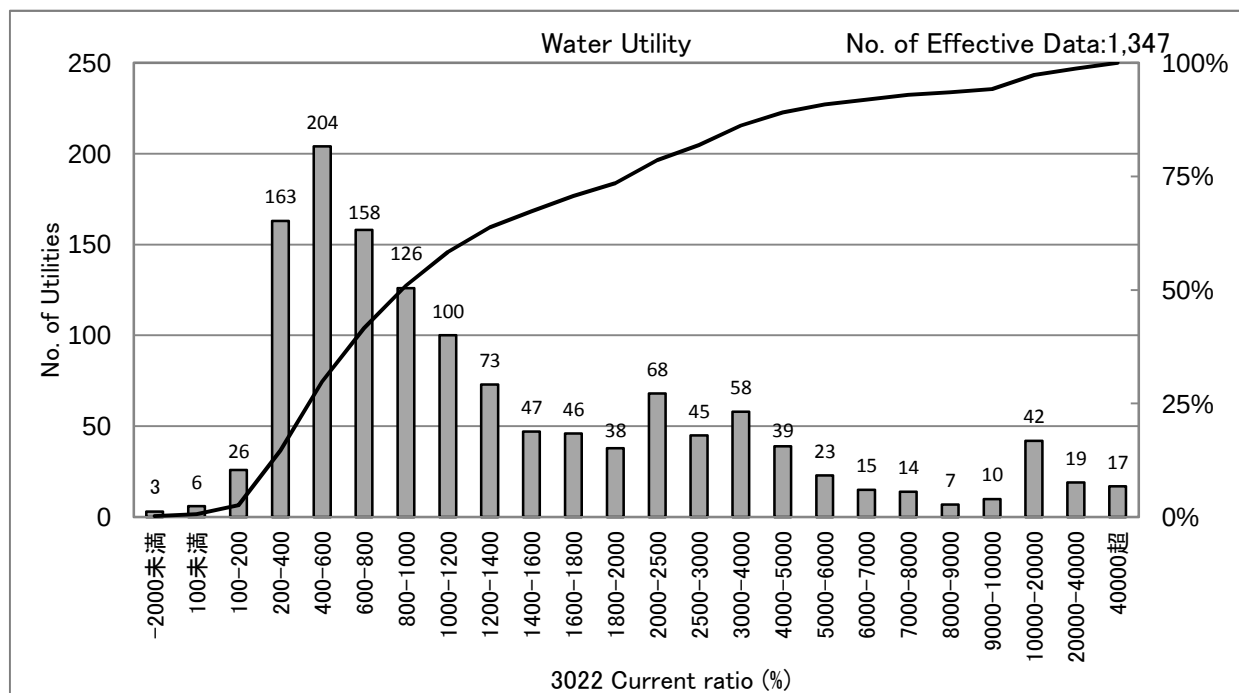
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	96.3	90.5	87.8	84.7	76.4
Supply Utility	2010	95.7	89.7	87.1	84.3	75.0
	2011	95.7	89.4	87.5	84.3	74.9
	2012	95.5	90.3	88.2	85.4	77.6

[Scatter Plot]



3022 Current ratio (%)

$$\text{Current ratio} = \frac{\text{Current assets}[\text{yen}]}{\text{Current liabilities}[\text{yen}]} \times 100 (\%)$$



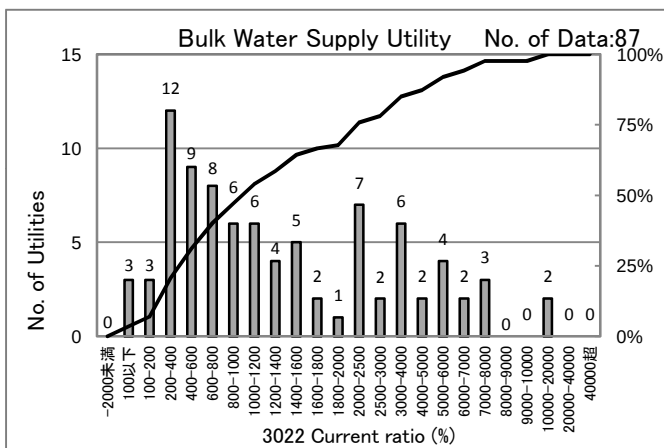
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	11,660.1	2,199.6	932.8	484.5	203.9
2009	9,193.5	2,128.3	970.2	479.7	218.0
2010	9,703.6	2,007.6	956.1	516.9	239.8
2011	12,289.3	2,187.8	1,005.8	524.4	243.8
2012	10,810.2	2,188.1	973.1	532.5	257.2

Population supplied (F.Y.2012)

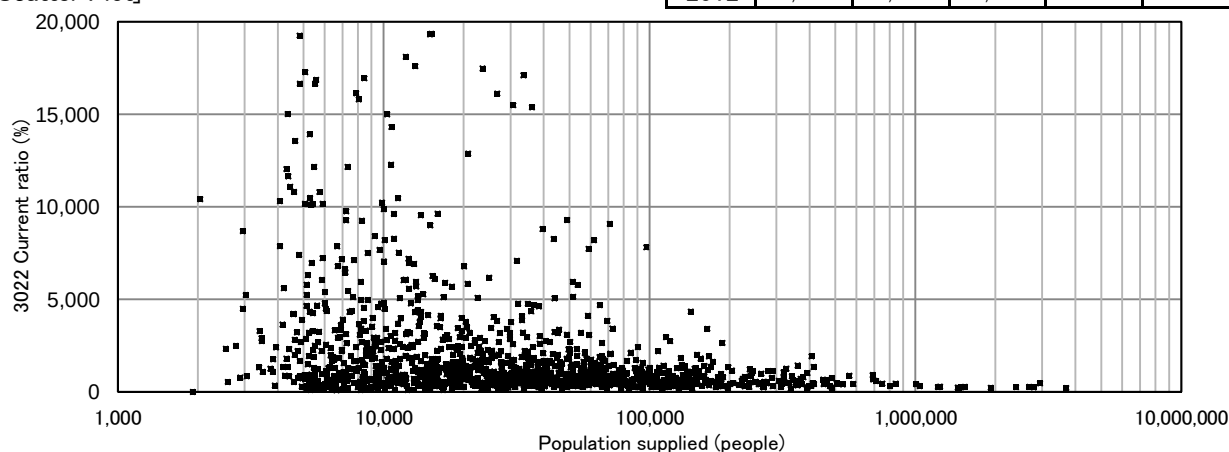
People	95%	75%	50%	25%	5%
<=1	25,877.8	5,398.1	2,011.8	783.6	224.6
1-3	12,013.0	2,756.5	1,264.7	647.9	250.4
3-10	4,275.4	1,452.6	873.5	528.4	316.0
10-50	1,817.3	959.8	595.9	424.2	267.6
50<	829.2	455.7	321.4	258.3	235.1

× 10,000people



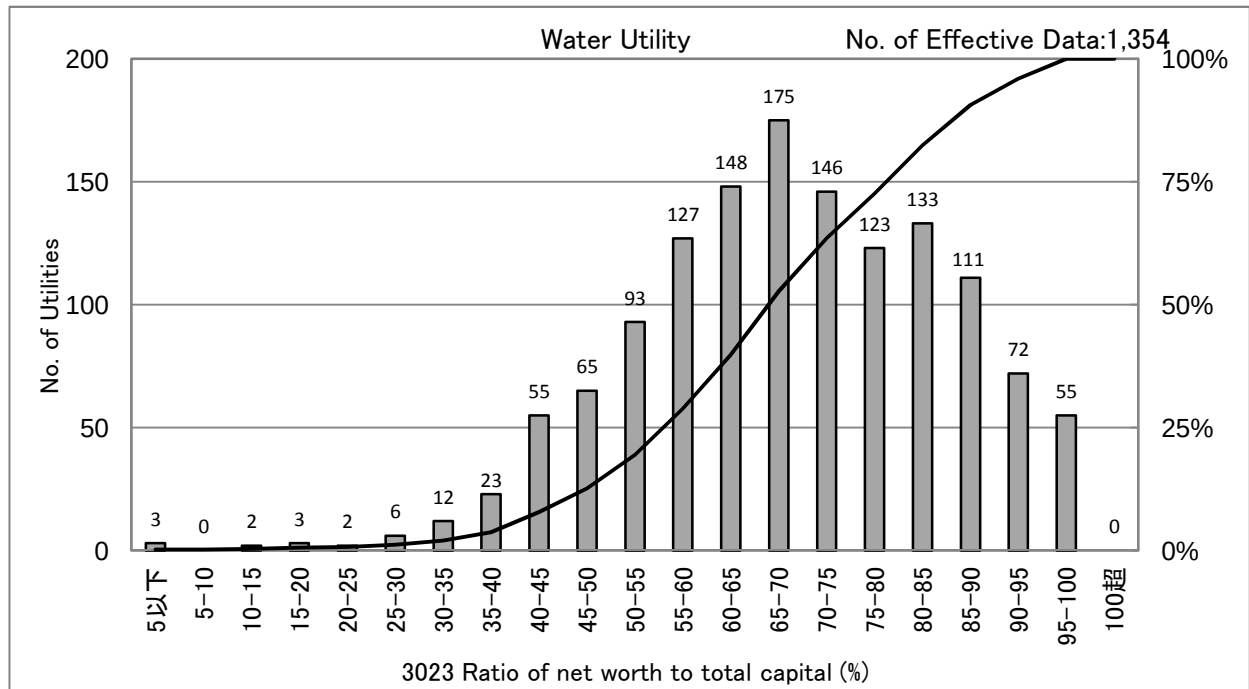
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	14,580.8	2,591.7	1,092.0	539.5	119.4
Supply Utility	2010	9,139.0	2,489.9	920.1	491.4	141.3
	2011	13,140.0	3,122.3	1,102.9	568.5	161.6
	2012	6,890.6	2,377.3	1,108.0	551.9	189.2

[Scatter Plot]



3023 Ratio of net worth to total capital (%)

$$\text{Ratio of net worth to total capital} = \frac{(\text{Owned capital}[\text{yen}] + \text{Surplus}[\text{yen}])}{\text{Total of liabilities and capital}[\text{yen}]} \times 100 (\%)$$



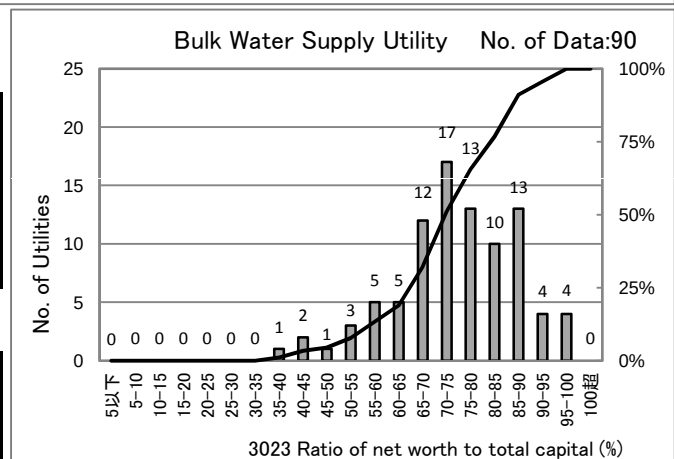
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%値	75%値	50%値	25%値	5%値
2008	92.0	76.7	64.2	52.9	36.6
2009	92.7	77.7	65.5	54.5	37.8
2010	93.2	78.9	66.8	55.8	39.4
2011	93.7	80.5	67.8	56.8	40.3
2012	94.2	81.7	68.8	57.9	41.8

Population supplied (F.Y.2012)

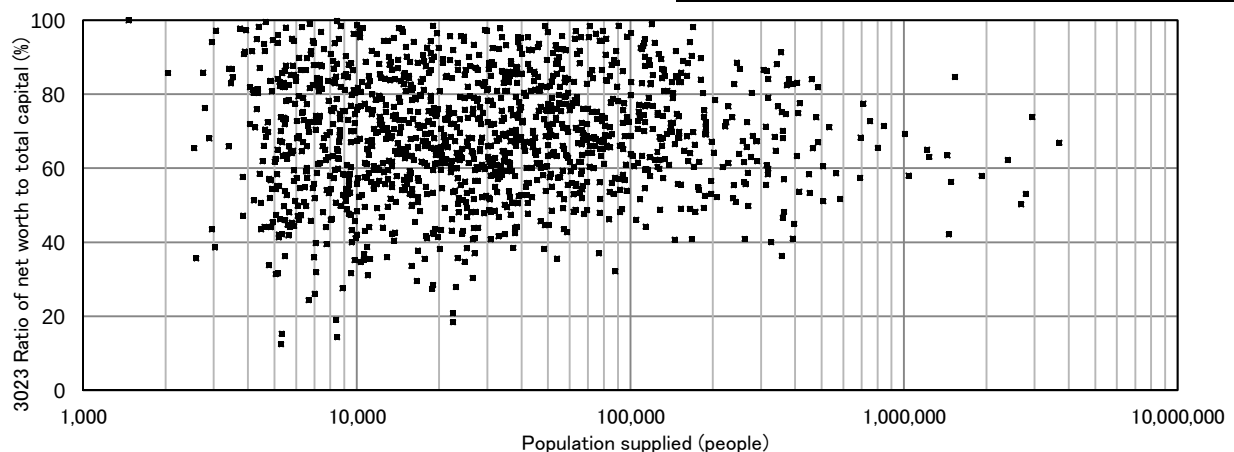
People	95%値	75%値	50%値	25%値	5%値
<=1	96.1	83.6	70.0	54.3	34.8
1-3	93.3	79.4	67.5	56.8	38.5
3-10	94.0	81.1	69.2	60.3	47.9
10-50	91.7	82.5	70.1	60.8	48.2
50<	77.7	70.7	63.3	57.6	50.5

× 10,000people



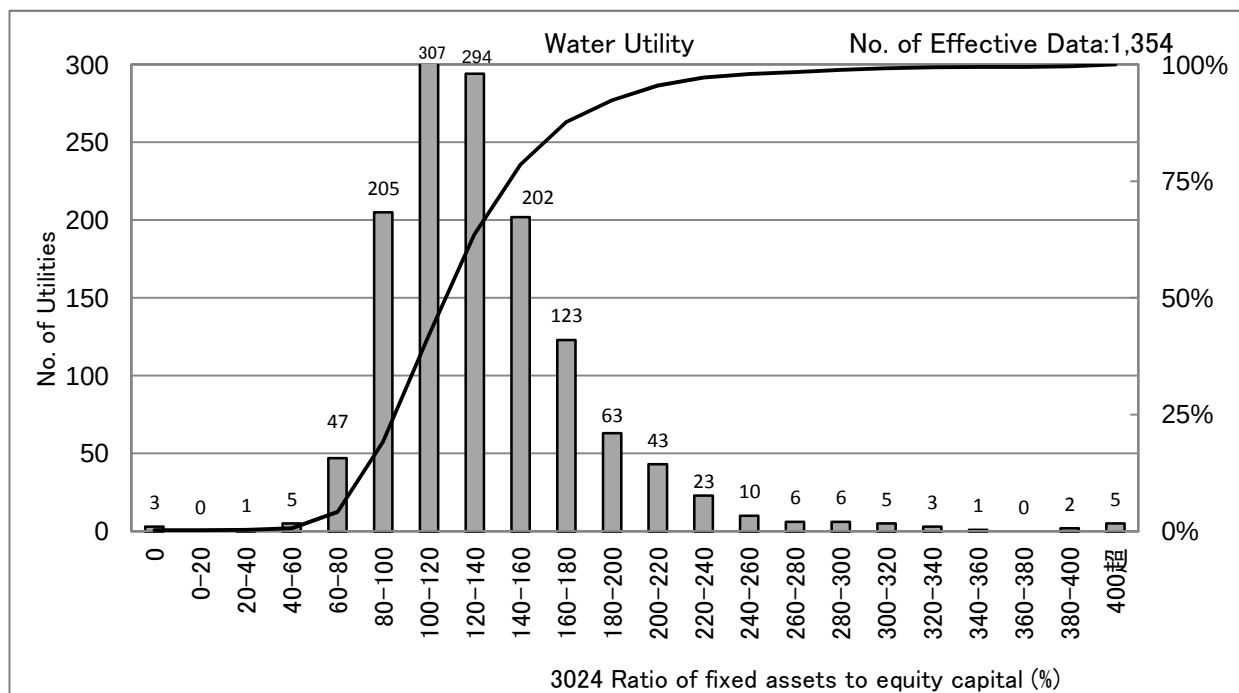
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	92.0	77.4	70.6	62.6	45.7
Supply Utility	2010	90.1	78.8	71.8	65.0	47.6
	2011	91.3	81.8	73.5	66.4	49.3
	2012	93.2	83.9	74.4	67.8	50.5

[Scatter Plot]



3024 Ratio of fixed assets to equity capital (%)

Ratio of fixed assets to equity capital = Fixed assets[yen]
/ (Owned capital[yen] + Surplus[yen]) x 100 (%)



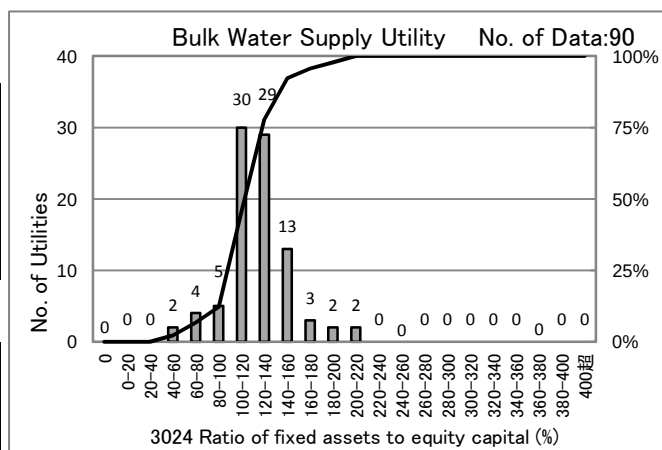
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	251.6	171.0	113.7	137.5	87.1
2009	242.7	166.8	134.7	111.6	86.6
2010	231.8	162.7	131.3	109.0	84.0
2011	224.3	158.5	128.7	107.2	83.5
2012	215.8	153.9	126.7	105.9	81.6

Population supplied (F.Y.2012)

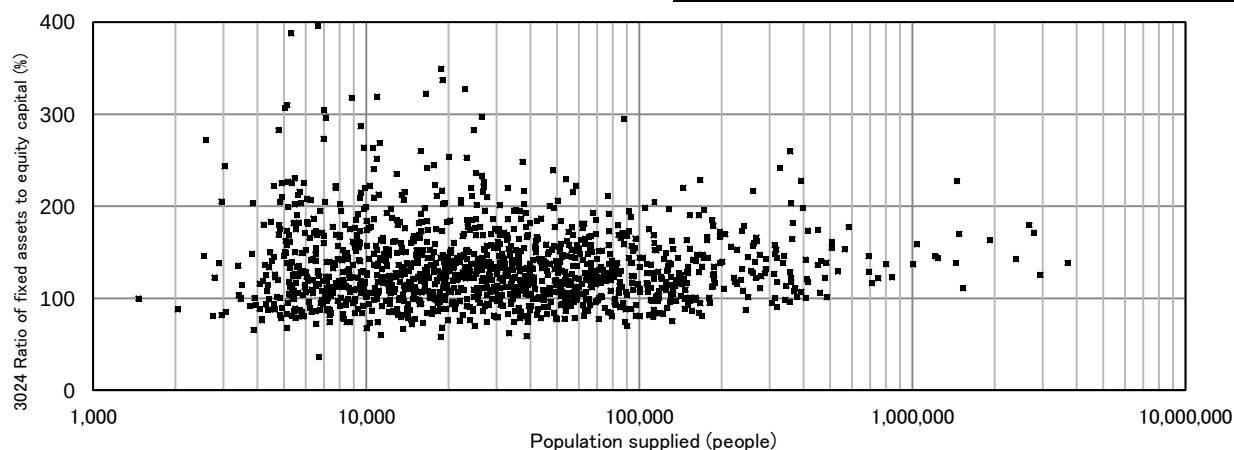
People	95%	75%	50%	25%	5%
<=1	240.0	166.3	123.7	100.1	76.0
1-3	232.3	157.4	128.8	106.6	81.9
3-10	190.8	150.9	125.3	106.0	82.8
10-50	197.1	147.5	125.1	107.3	87.4
50<	179.2	160.8	143.1	129.2	113.4

× 10,000people



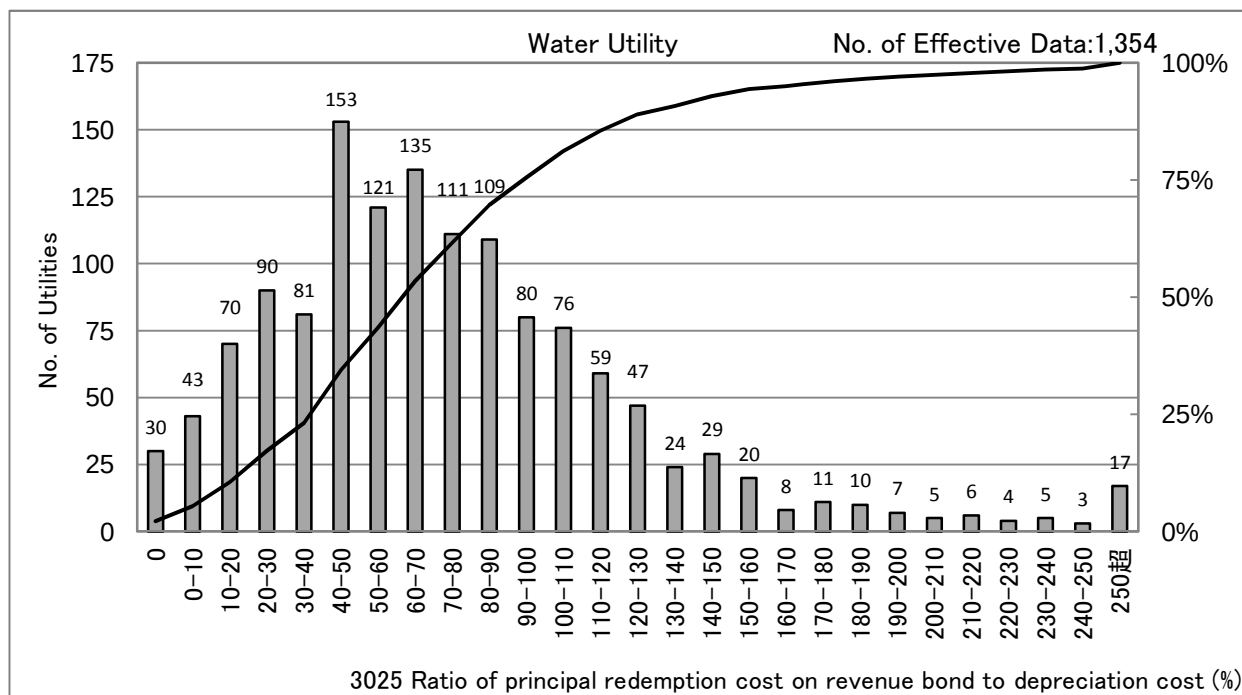
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	182.9	145.3	131.5	119.2	89.6
Supply Utility	2010	177.3	142.3	128.4	116.4	87.4
	2011	174.1	137.8	125.3	111.4	82.6
	2012	173.2	136.4	122.8	109.7	79.6

[Scatter Plot]



3025 Ratio of principal redemption cost on revenue bond to depreciation cost (%)

Ratio of principal redemption cost on revenue bond to depreciation cost = $\frac{\text{Redemption principal[yen]}}{\text{Depreciation cost[yen]} \times 100 (\%)}$



[Percentile Value] Water Utility

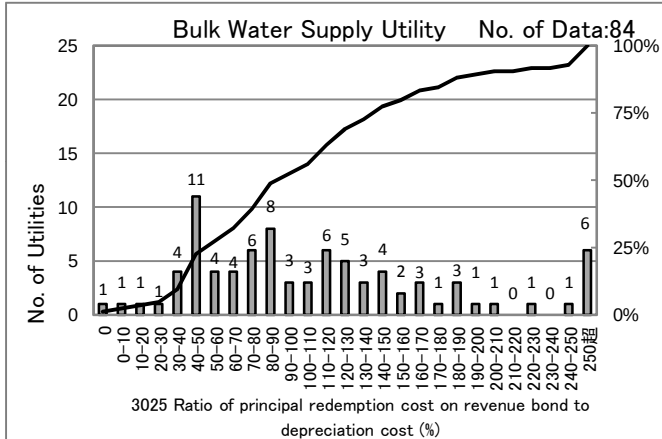
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	349.6	168.6	94.1	51.1	14.1
2009	274.0	120.0	73.0	42.3	10.9
2010	160.1	98.4	64.4	40.9	9.5
2011	148.8	92.1	63.5	40.1	8.2
2012	170.1	98.9	66.4	41.2	9.0

Population supplied (F.Y.2012)

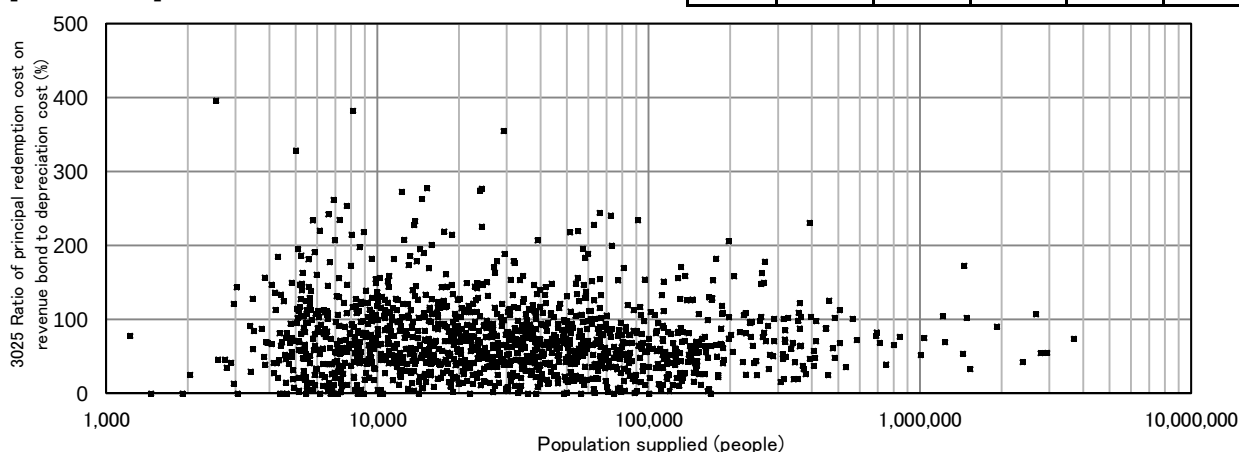
People	95%	75%	50%	25%	5%
<=1	209.0	109.3	68.9	37.4	0.0
1-3	177.8	103.8	70.5	42.7	13.4
3-10	152.5	91.3	65.0	41.3	9.8
10-50	151.6	91.6	61.2	40.1	12.2
50<	111.4	88.6	70.7	54.1	36.4

× 10,000people



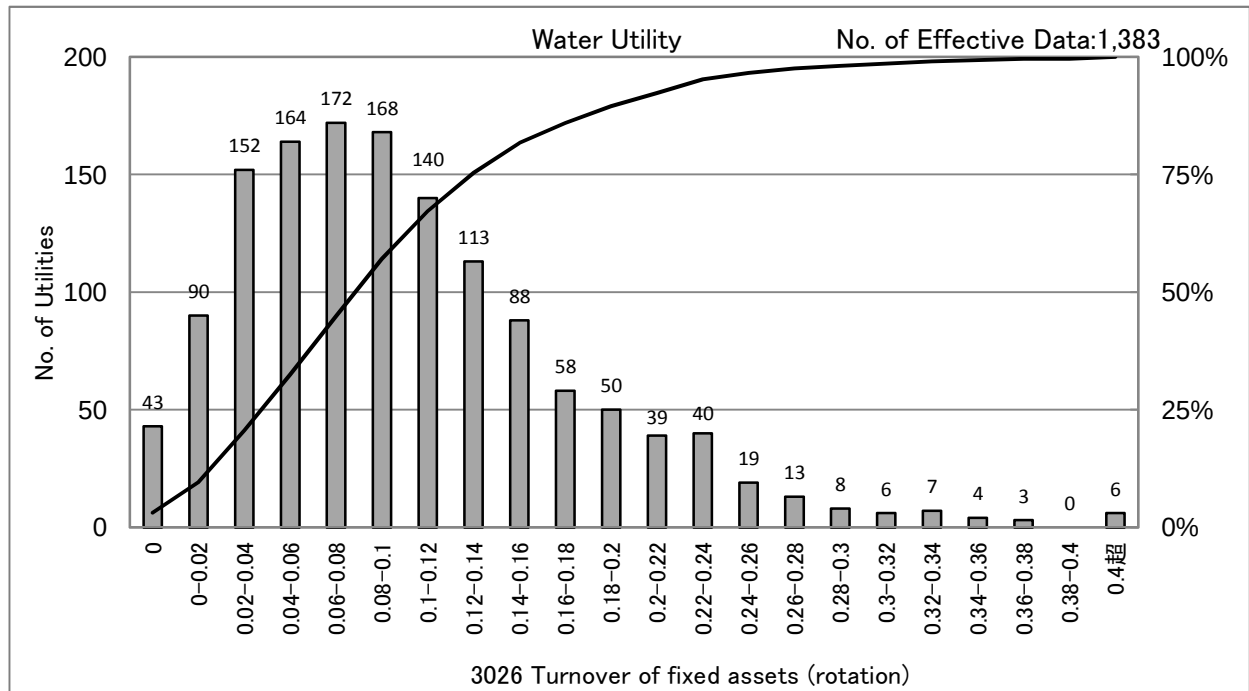
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	370.6	159.7	102.1	60.6	25.9
Supply Utility	2010	363.4	164.0	106.1	62.1	29.5
	2011	306.6	139.6	92.7	58.0	23.5
	2012	445.5	146.4	93.3	52.5	30.5

[Scatter Plot]



3026 Turnover of fixed assets (rotation)

$$\text{Turnover of fixed assets} = \frac{(\text{Operating income}[\text{yen}] - \text{Commissioned work income}[\text{yen}])}{\{(\text{Initial fixed assets}[\text{yen}] + \text{Final fixed assets}[\text{yen}]) / 2\}} (\text{rotation})$$



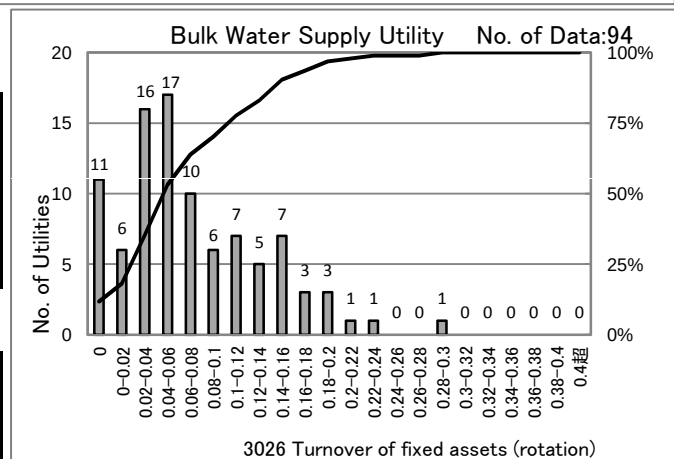
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	0.25	0.15	0.09	0.05	0.01
2009	0.25	0.14	0.09	0.05	0.01
2010	0.25	0.14	0.09	0.05	0.01
2011	0.25	0.14	0.09	0.05	0.01
2012	0.24	0.14	0.09	0.05	0.01

Population supplied (F.Y.2012)

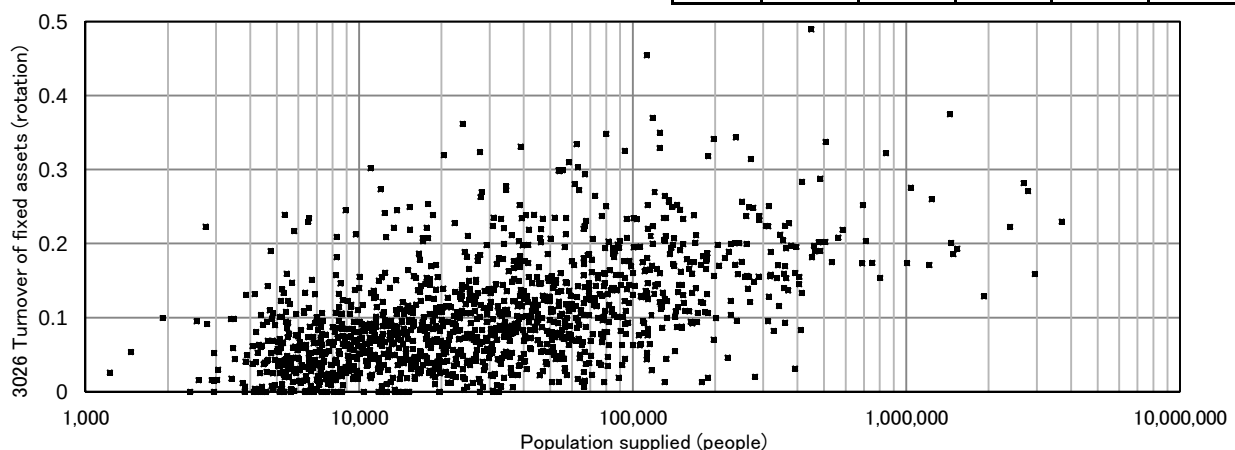
People	95%	75%	50%	25%	5%
<=1	0.15	0.08	0.04	0.02	0.00
1-3	0.20	0.11	0.08	0.04	0.01
3-10	0.24	0.15	0.11	0.07	0.02
10-50	0.29	0.20	0.16	0.12	0.05
50<	0.33	0.26	0.21	0.17	0.16

× 10,000people



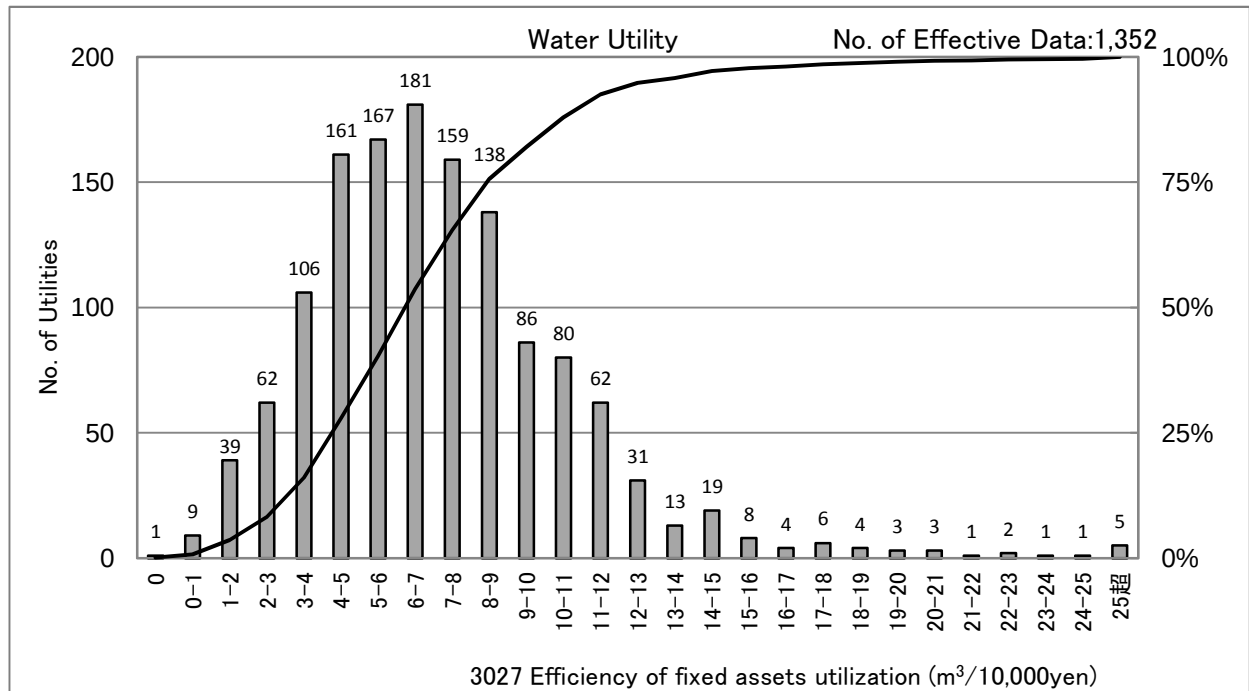
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	0.21	0.12	0.06	0.04	0.00
	2010	0.22	0.13	0.06	0.03	0.00
	2011	0.20	0.12	0.06	0.04	0.00
	2012	0.19	0.11	0.06	0.03	0.00

[Scatter Plot]



3027 Efficiency of fixed assets utilization (m³/10,000yen)

Efficiency of fixed assets utilization = Supply volume[m³]
/ Tangible fixed assets[yen] x 10,000 (m³/10,000yen)



[Percentile Value] Water Utility

Fiscal year

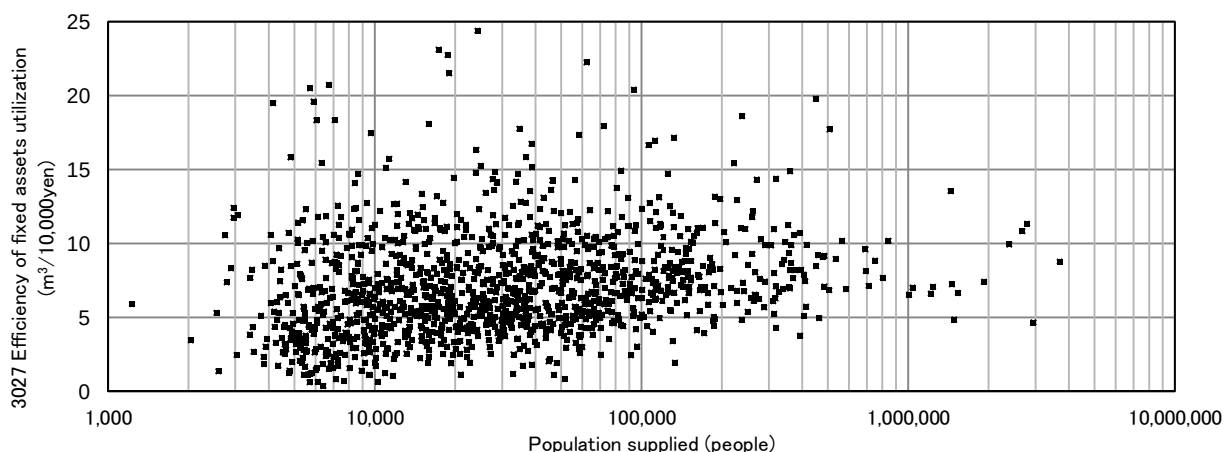
F.Y.	95%	75%	50%	25%	5%
2008	14.3	9.6	7.1	4.9	2.5
2009	14.1	9.3	6.9	4.9	2.5
2010	13.8	9.3	6.9	4.9	2.5
2011	13.6	9.1	6.8	4.8	2.5
2012	13.1	8.9	6.8	4.8	2.5

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	12.5	8.2	5.3	3.4	1.3
1-3	13.3	8.6	6.3	4.6	2.6
3-10	12.7	9.0	7.0	5.2	3.3
10-50	13.2	9.9	8.0	6.7	4.9
50<	13.0	9.9	7.6	6.9	5.3

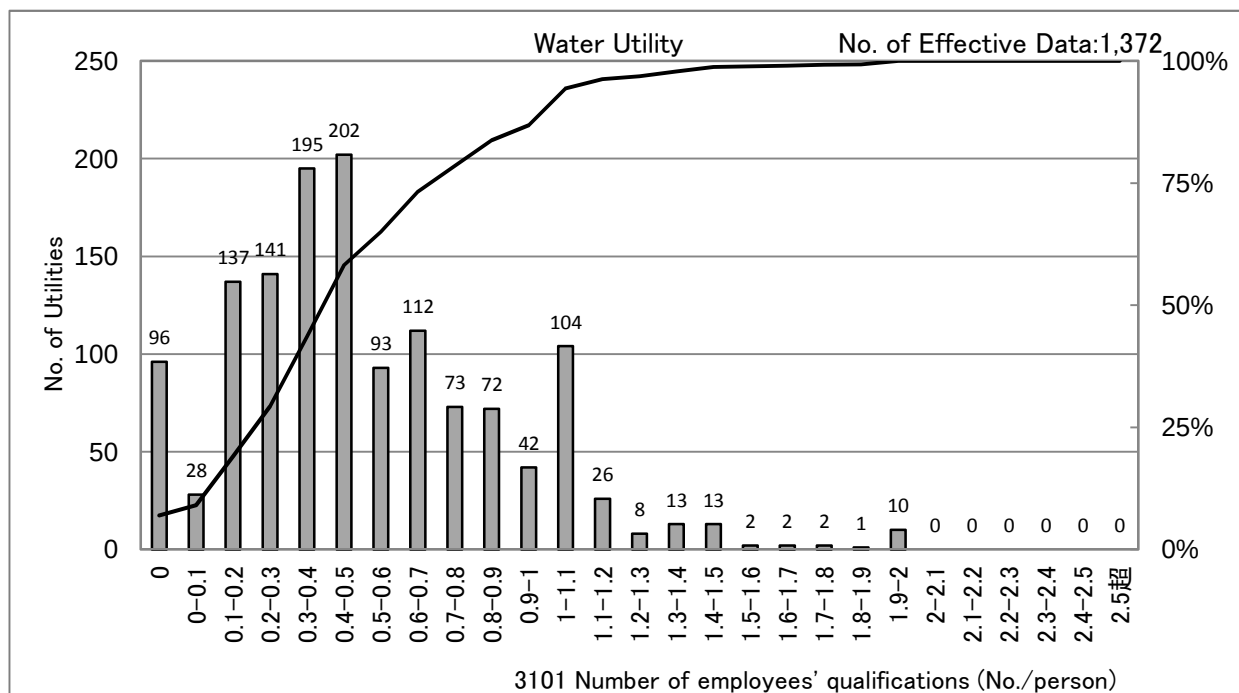
× 10,000people

[Scatter Plot]



3101 Number of employees' qualifications (No./person)

Number of employees' qualifications = Number of statutory qualifications[No.]
/ Total number of staff members[person] (No./person)



[Percentile Value] Water Utility

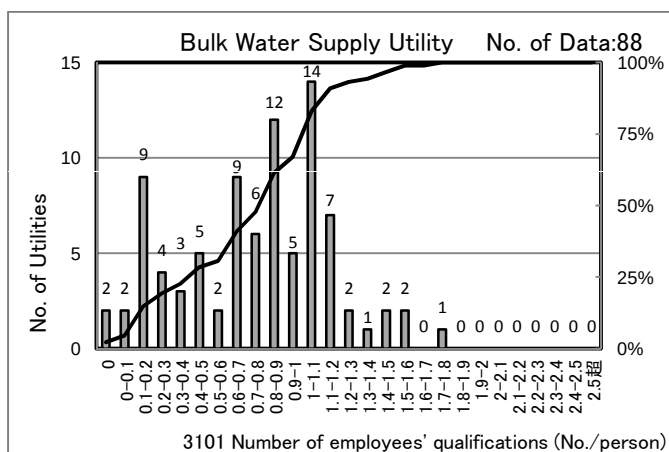
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	1.05	0.67	0.40	0.21	0.00
2009	1.03	0.67	0.40	0.23	0.00
2010	1.07	0.67	0.43	0.25	0.00
2011	1.06	0.69	0.44	0.25	0.00
2012	1.12	0.75	0.50	0.26	0.00

Population supplied (F.Y.2012)

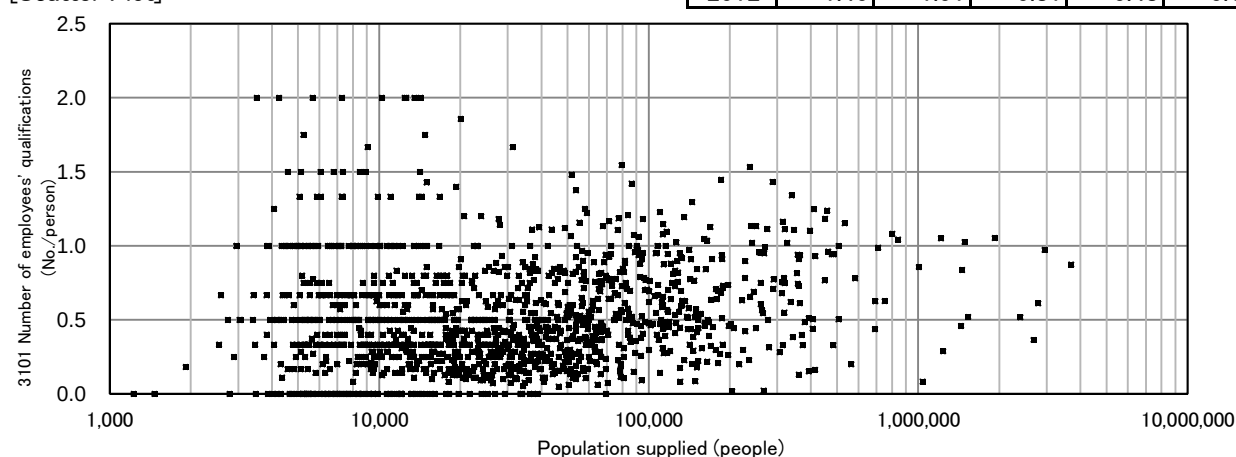
People	95%	75%	50%	25%	5%
<=1	1.33	0.75	0.50	0.20	0.00
1-3	1.00	0.63	0.40	0.25	0.00
3-10	1.04	0.71	0.45	0.26	0.10
10-50	1.16	0.90	0.62	0.44	0.20
50<	1.07	1.00	0.70	0.47	0.11

× 10,000people



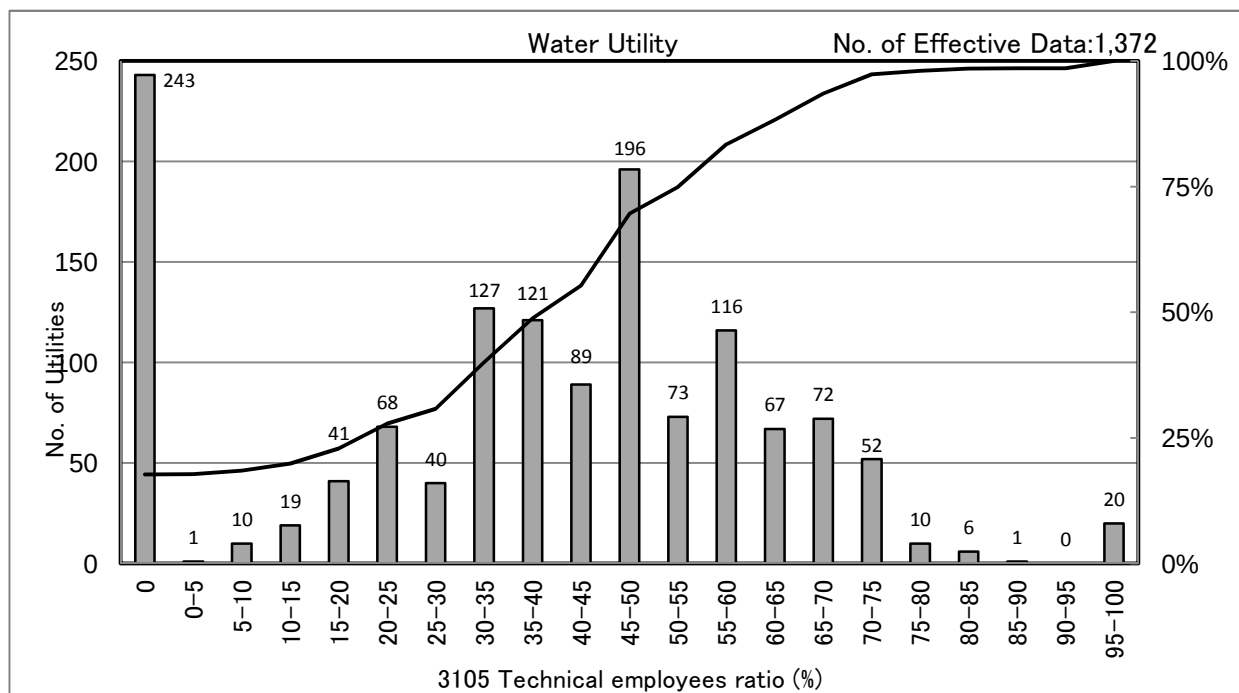
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	1.43	1.13	0.80	0.37	0.09
	2010	1.45	1.12	0.80	0.38	0.09
	2011	1.39	1.09	0.81	0.43	0.12
	2012	1.40	1.01	0.81	0.48	0.14

[Scatter Plot]



3105 Technical employees ratio (%)

Technical employees ratio = Number of engineers[person]
/ Total number of staff members[person] x 100 (%)



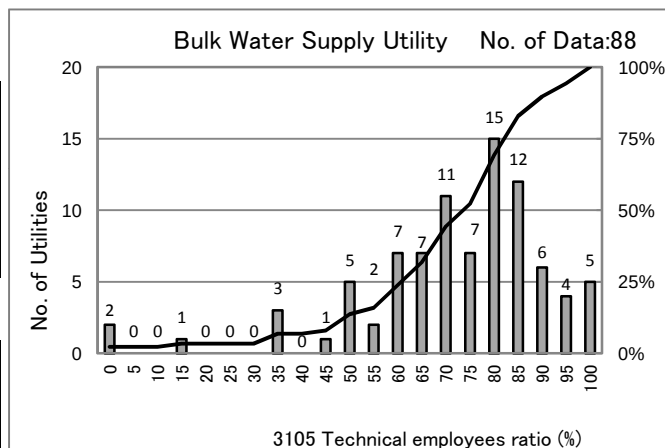
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	71.4	53.7	40.0	23.5	0.0
2009	71.0	53.4	40.1	25.0	0.0
2010	71.4	54.5	41.7	25.0	0.0
2011	71.4	54.5	42.6	25.0	0.0
2012	72.1	55.0	41.7	25.0	0.0

Population supplied (F.Y.2012)

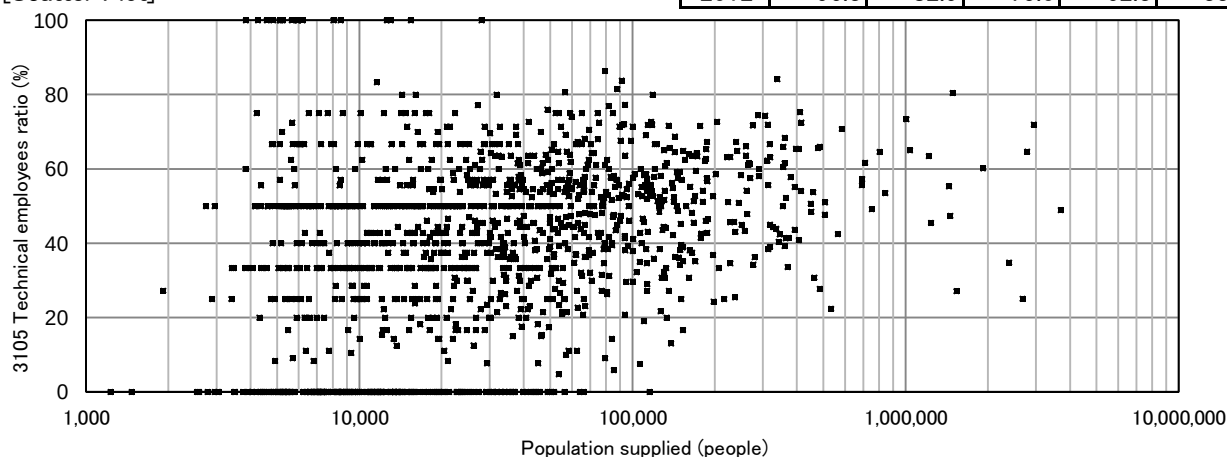
People	95%	75%	50%	25%	5%
<=1	78.5	50.0	33.3	0.0	0.0
1-3	70.0	50.0	37.5	16.7	0.0
3-10	71.4	56.3	45.5	32.1	0.0
10-50	71.9	61.4	52.3	40.8	25.4
50<	73.0	64.3	54.4	47.5	25.6

× 10,000people



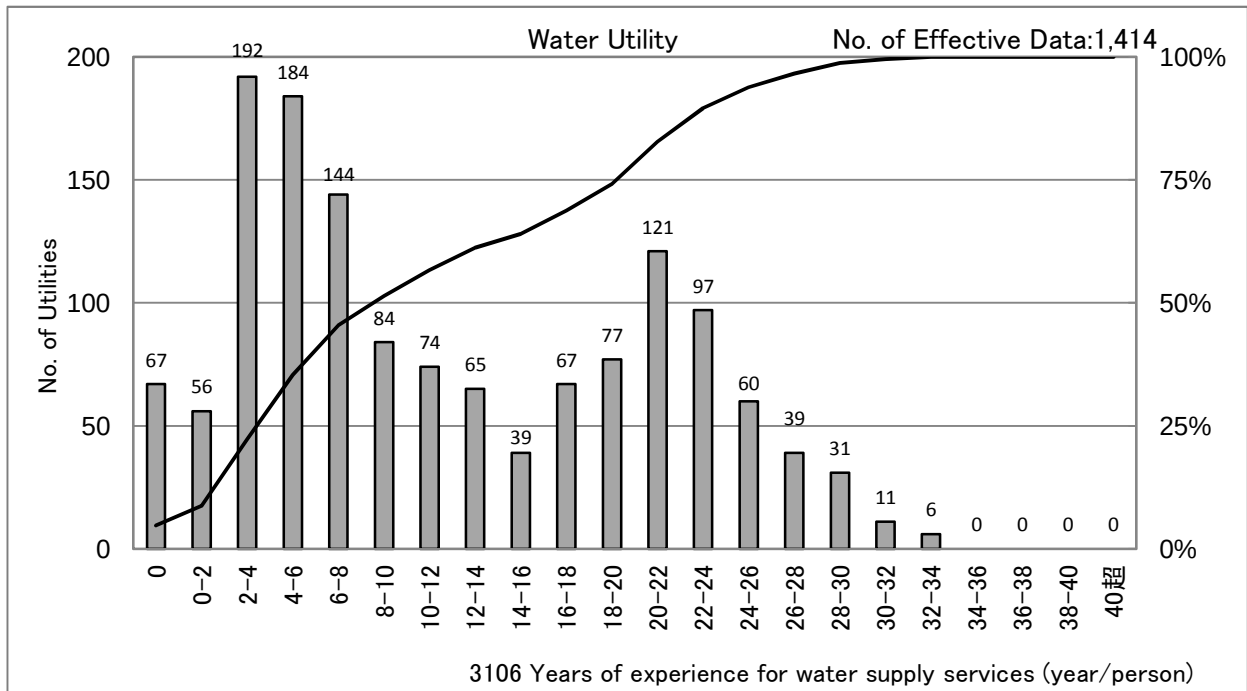
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	92.3	80.0	70.6	59.9	33.3
	2010	92.3	82.1	71.4	59.4	33.3
	2011	92.8	82.5	72.9	59.2	33.3
	2012	96.3	82.9	75.0	62.3	33.3

[Scatter Plot]



3106 Years of experience for water supply services (year/person)

Years of experience for water supply services = Total experience period[year]
/ Total number of staff members[person] (year/person)



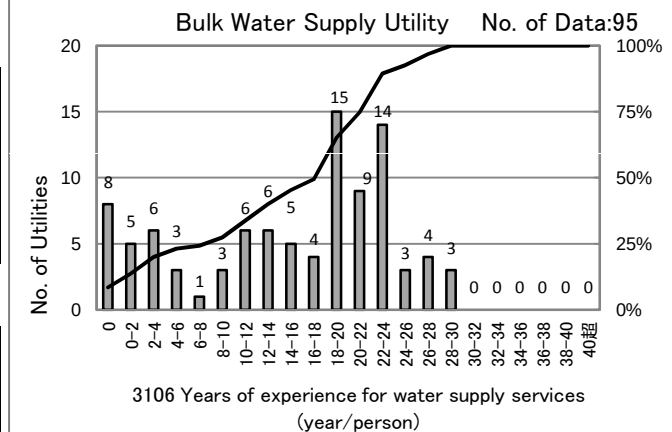
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	28.0	22.0	12.0	5.0	2.0
2009	27.0	22.0	12.0	5.0	2.0
2010	28.0	22.0	12.0	5.0	2.0
2011	28.0	22.0	11.0	5.0	2.0
2012	27.0	21.0	10.0	5.0	1.0

Population supplied (F.Y.2012)

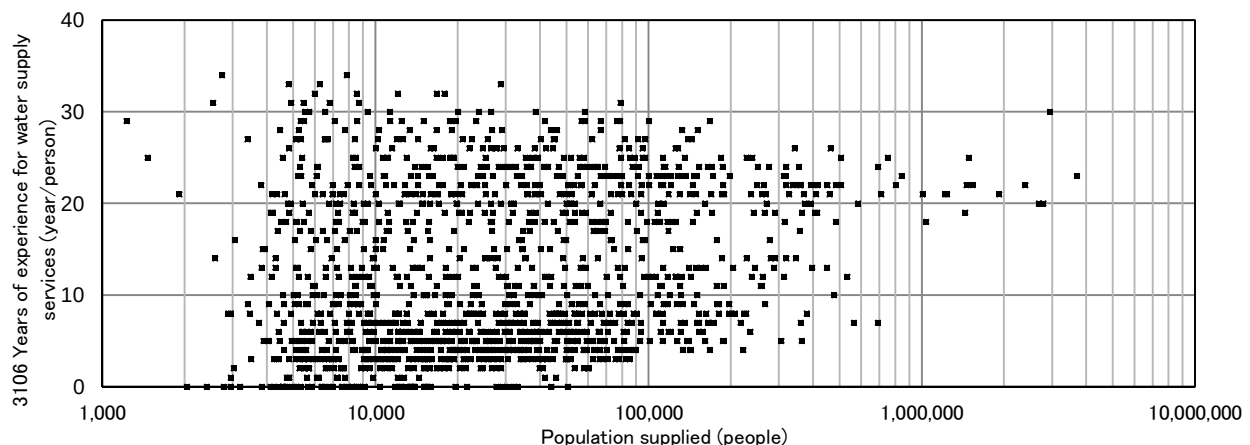
People	95%	75%	50%	25%	5%
<=1	29.0	18.0	9.0	3.0	0.0
1-3	27.0	20.0	7.0	4.0	1.0
3-10	26.0	21.0	10.0	5.0	3.0
10-50	25.1	22.0	17.0	9.0	5.0
50<	25.0	23.0	21.5	20.0	8.3

× 10,000people



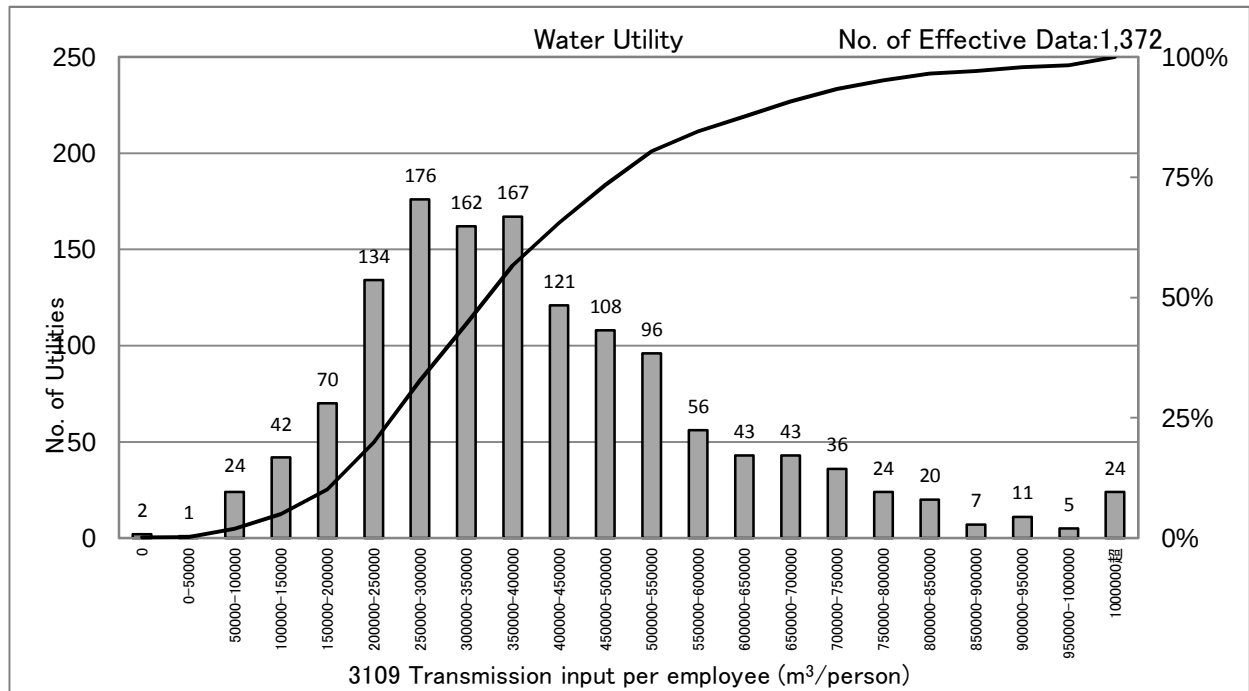
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	27.0	22.0	17.0	8.0	0.0
Supply Utility	2010	26.0	22.0	17.5	9.0	0.0
	2011	27.0	22.0	18.0	8.5	0.0
	2012	27.0	22.5	19.0	9.0	0.0

[Scatter Plot]



3109 Transmission input per employee (m³/person)

Transmission input per employee = Annual distribution input[m³]
/ Total number of staff members[person] (m³/person)



[Percentile Value] Water Utility

Fiscal year

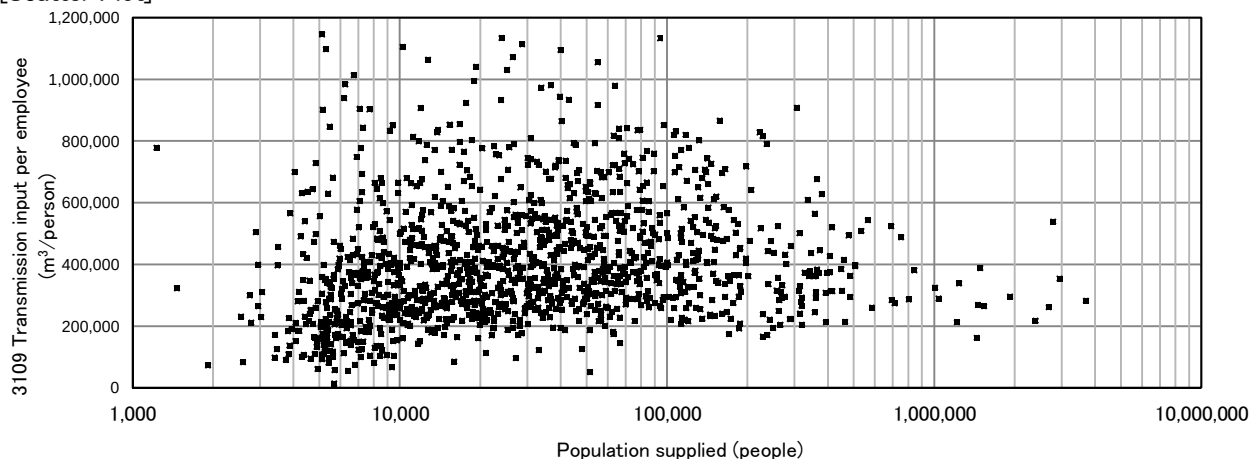
F.Y.	95%	75%	50%	25%	5%
2008	734,317	466,875	344,358	251,333	144,000
2009	728,442	470,477	350,874	257,475	146,706
2010	769,984	491,899	360,523	264,583	150,200
2011	787,457	499,768	366,489	268,750	147,313
2012	795,500	509,172	373,494	271,582	149,840

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	743,000	400,042	275,800	174,446	91,225
1-3	832,667	508,881	385,750	277,525	196,389
3-10	793,781	561,600	421,411	324,577	238,189
10-50	778,992	518,120	403,286	305,005	214,254
50<	535,180	393,707	310,447	270,266	214,096

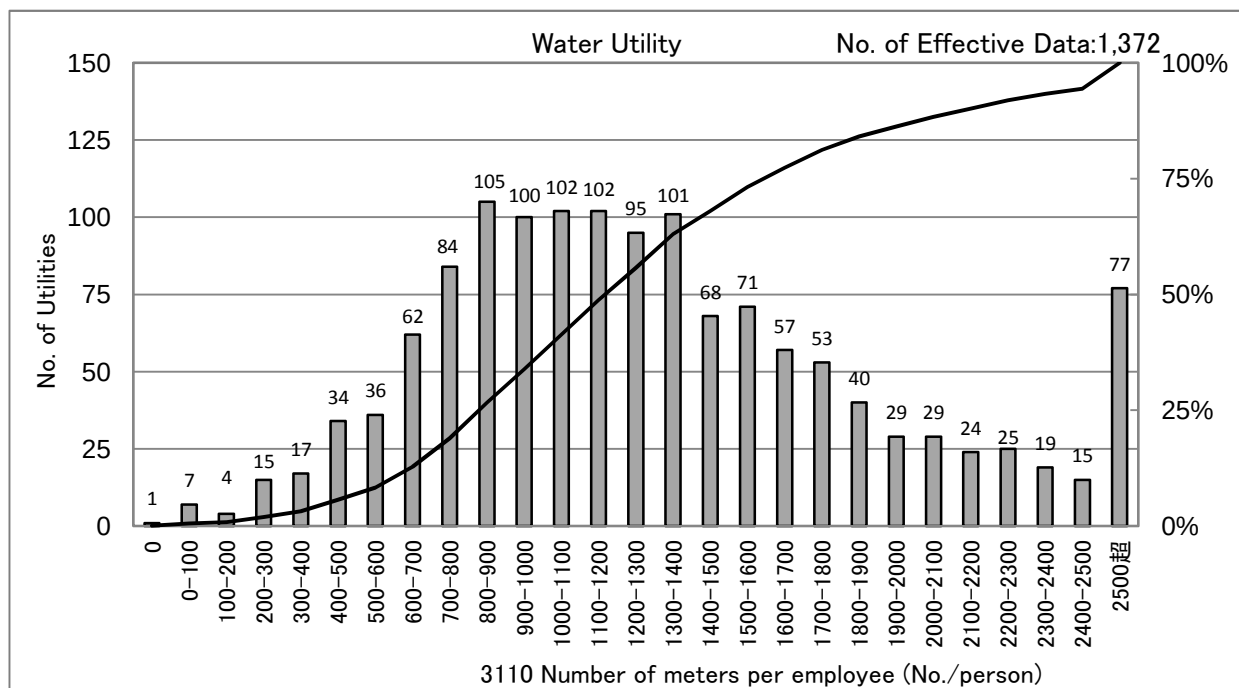
× 10,000people

[Scatter Plot]



3110 Number of meters per employee (No./person)

Number of meters per employee = Number of water meters[No.]
/ Total number of staff members[person] (No./person)



[Percentile Value] Water Utility

Fiscal year

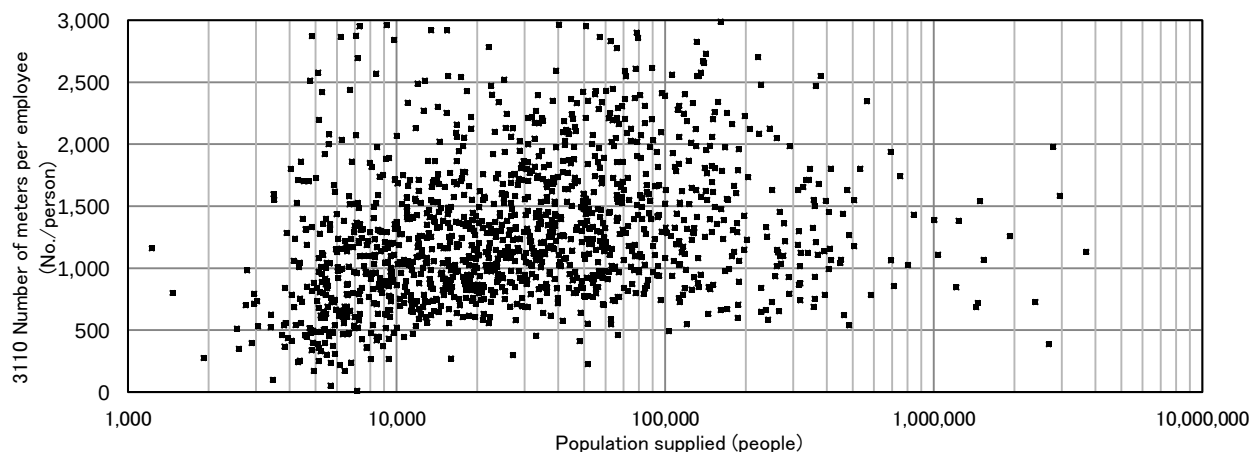
F.Y.	95%	75%	50%	25%	5%
2008	2,145	1,415	1,058	765	420
2009	2,196	1,460	1,082	799	455
2010	2,421	1,538	1,135	827	462
2011	2,523	1,581	1,178	850	467
2012	2,551	1,653	1,217	876	480

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	2,434	1,282	892	540	240
1-3	2,502	1,558	1,185	899	642
3-10	2,577	1,847	1,402	1,061	763
10-50	2,704	1,830	1,376	1,060	663
50<	1,970	1,575	1,218	899	695

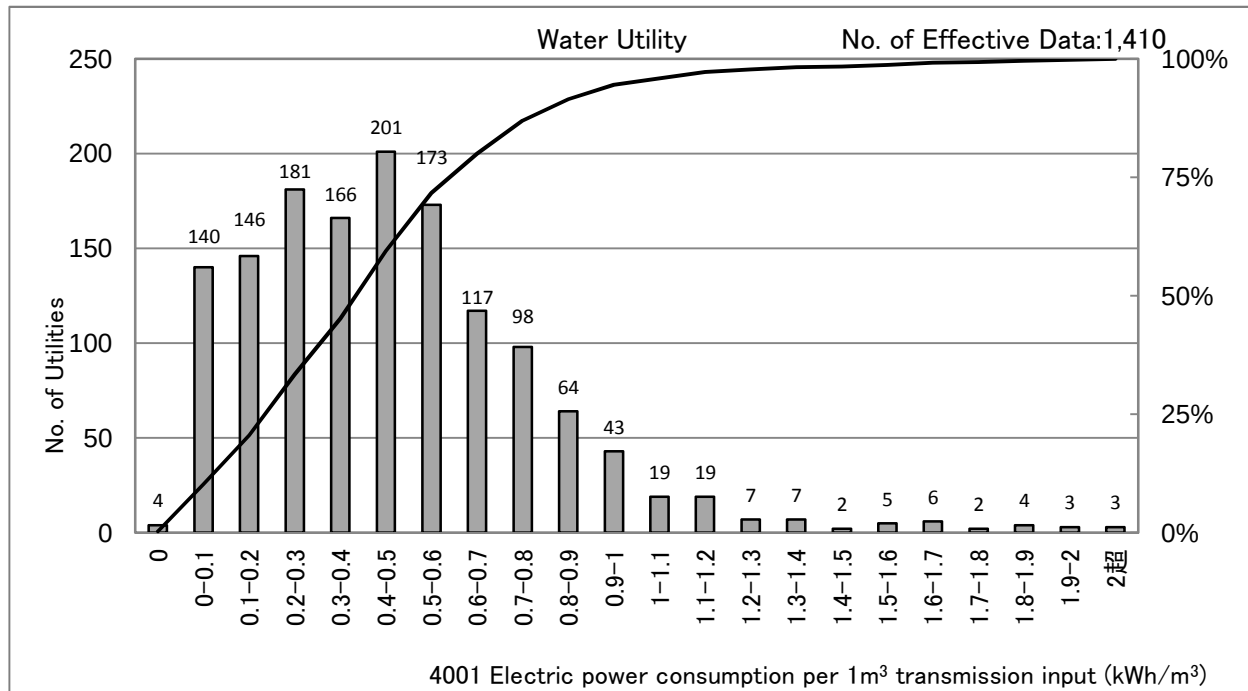
× 10,000people

[Scatter Plot]



4001 Electric power consumption per 1m³ transmission input (kWh/m³)

Electric power consumption per 1m³ transmission input = Total power consumption[kWh]
/ Annual transmission input[m³] (kWh/m³)



[Percentile Value] Water Utility

Fiscal year

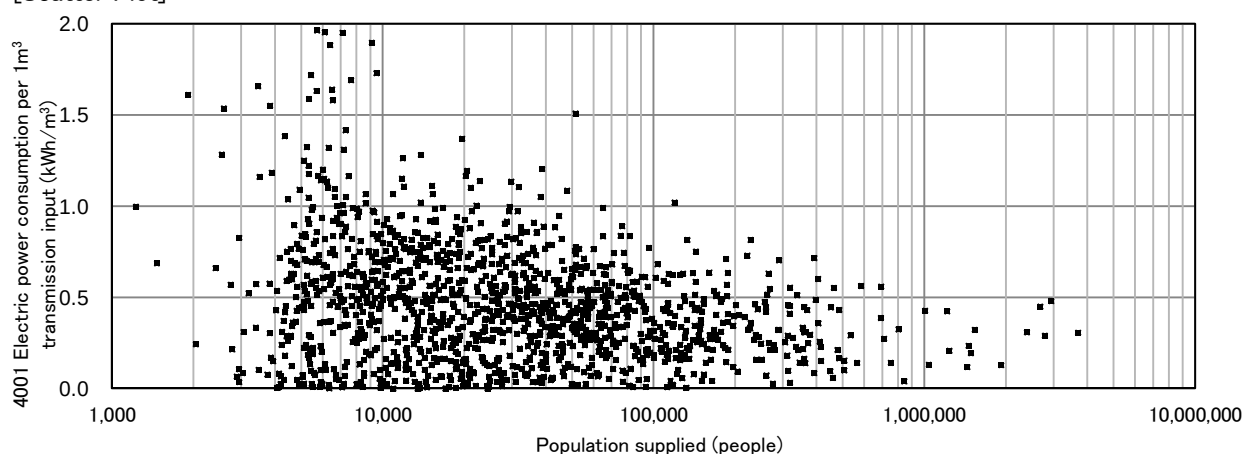
F.Y.	95%	75%	50%	25%	5%
2008	1.00	0.63	0.44	0.24	0.05
2009	1.02	0.63	0.44	0.24	0.04
2010	1.01	0.64	0.44	0.23	0.05
2011	1.01	0.63	0.43	0.24	0.05
2012	1.03	0.63	0.44	0.24	0.05

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	1.60	0.83	0.56	0.29	0.03
1-3	0.94	0.71	0.48	0.23	0.04
3-10	0.82	0.55	0.42	0.26	0.07
10-50	0.63	0.45	0.31	0.21	0.06
50<	0.54	0.41	0.29	0.14	0.10

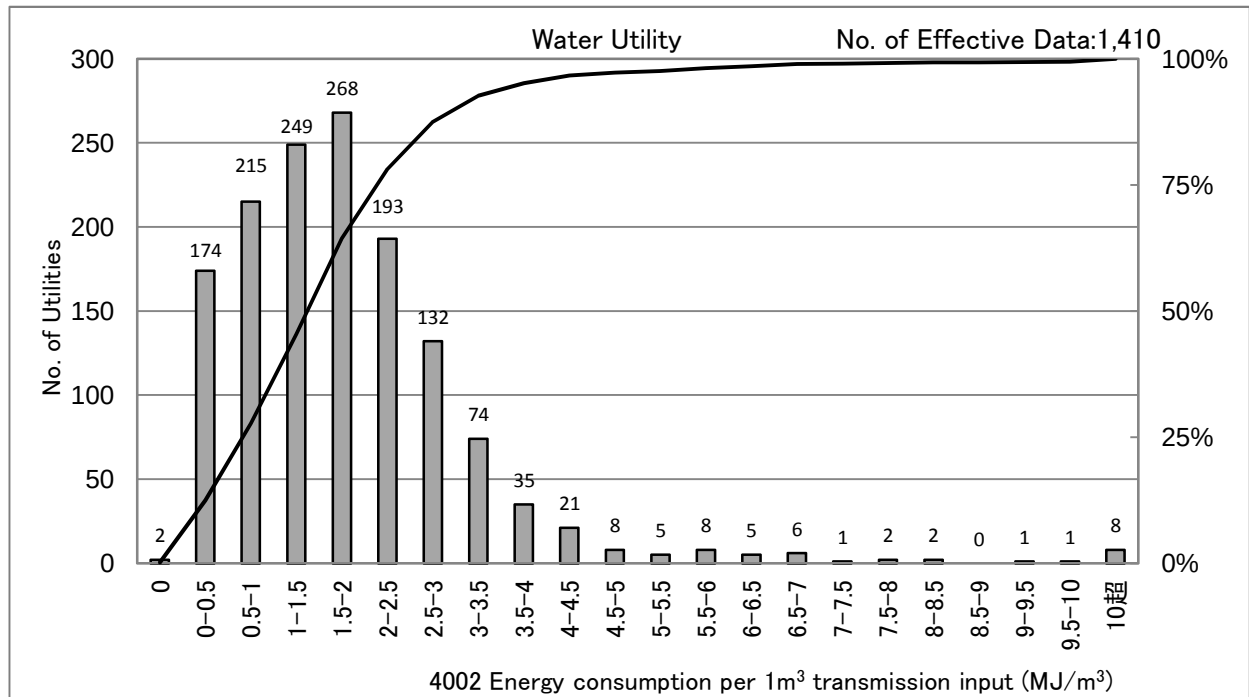
× 10,000people

[Scatter Plot]



4002 Energy consumption per 1m³ transmission input (MJ/m³)

Energy consumption per 1m³ transmission input = Total energy consumption[MJ]
/ Annual transmission input[m³] (MJ/m³)



[Percentile Value] Water Utility

Fiscal year

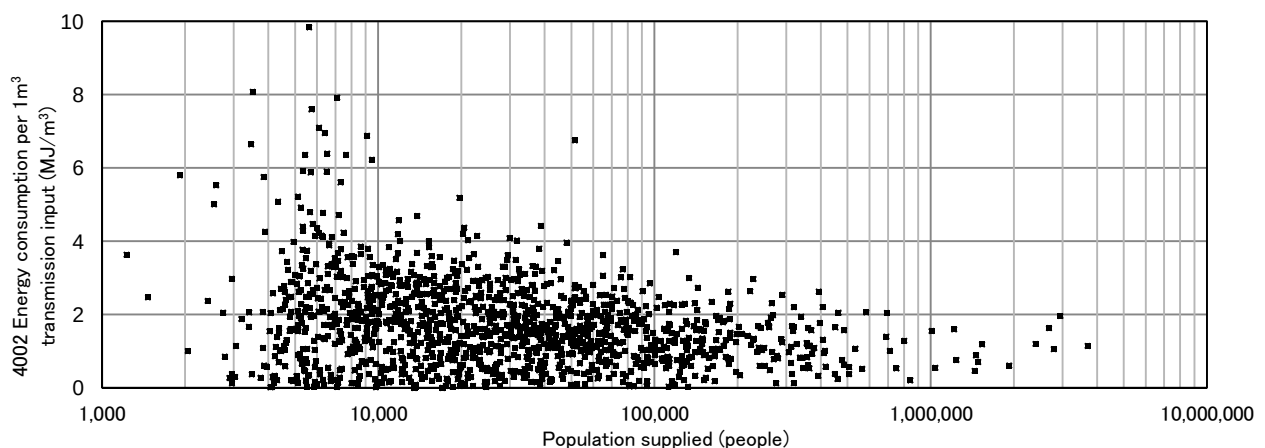
F.Y.	95%	75%	50%	25%	5%
2008	3.67	2.34	1.63	0.91	0.20
2009	3.77	2.34	1.63	0.89	0.19
2010	3.71	2.38	1.62	0.91	0.20
2011	3.83	2.36	1.59	0.90	0.20
2012	3.92	2.38	1.61	0.91	0.20

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	6.36	3.09	2.06	1.10	0.19
1-3	3.57	2.60	1.76	0.91	0.17
3-10	2.99	2.06	1.54	0.98	0.26
10-50	2.31	1.65	1.15	0.79	0.21
50<	2.03	1.51	1.07	0.58	0.40

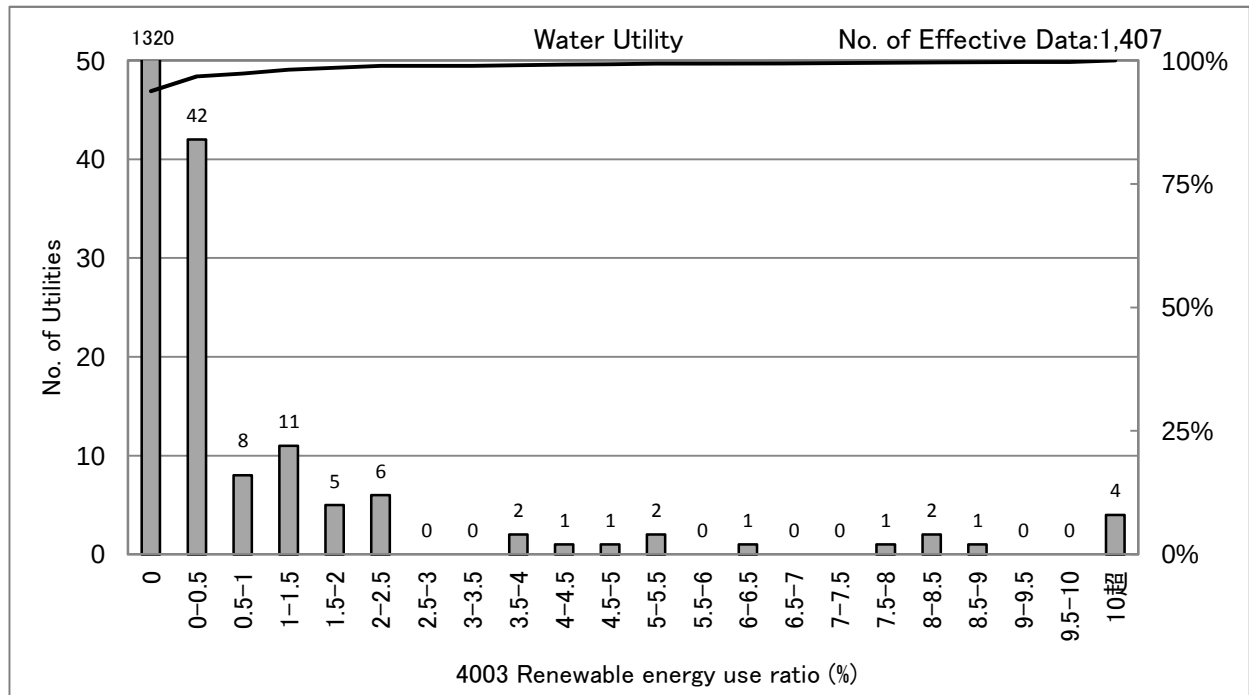
× 10,000people

[Scatter Plot]



4003 Renewable energy use ratio (%)

Renewable energy use ratio = Recyclable power consumption[kWh]
/ Total power consumption[kWh] x 100 (%)



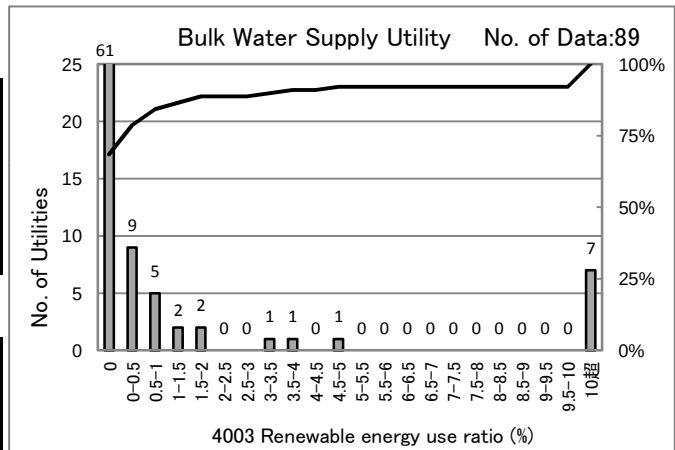
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00
2011	0.03	0.00	0.00	0.00	0.00
2012	0.11	0.00	0.00	0.00	0.00

Population supplied (F.Y.2012)

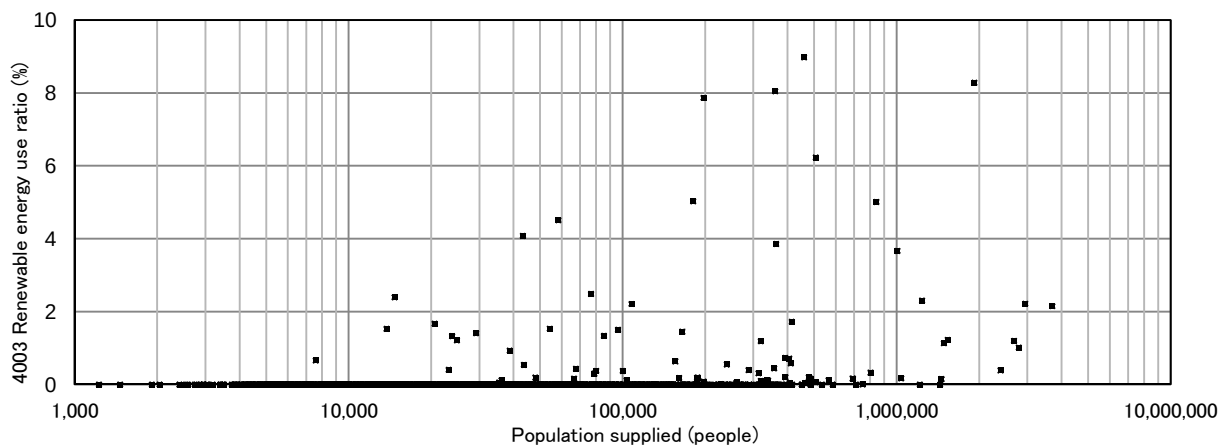
People	95%	75%	50%	25%	5%
<=1	0.00	0.00	0.00	0.00	0.00
1-3	0.00	0.00	0.00	0.00	0.00
3-10	0.00	0.00	0.00	0.00	0.00
10-50	0.71	0.00	0.00	0.00	0.00
50<	5.93	1.95	0.36	0.08	0.00

× 10,000people



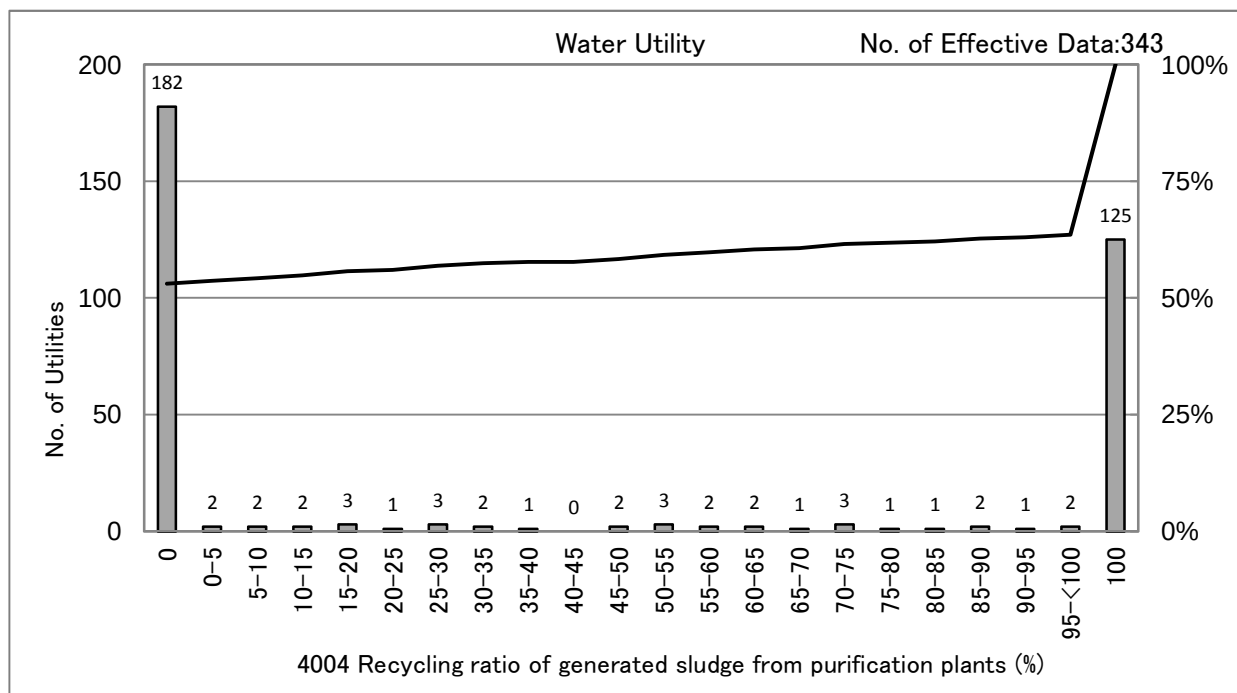
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	11.06	0.00	0.00	0.00	0.00
Supply Utility	2010	13.49	0.00	0.00	0.00	0.00
	2011	14.61	0.02	0.00	0.00	0.00
	2012	14.90	0.04	0.00	0.00	0.00

[Scatter Plot]



4004 Recycling ratio of generated sludge from purification plants (%)

Recycling ratio of generated sludge from purification plants = Amount of used sludge[t-DS]
/ Amount of deposited sludge[t-DS] x 100 (%)



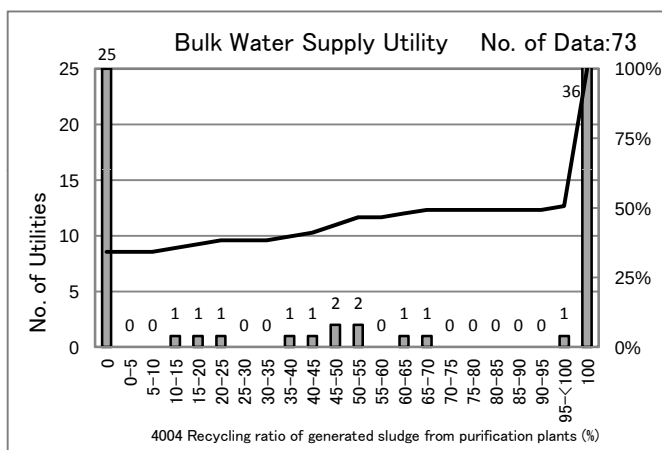
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	100.0	100.0	0.0	0.0	0.0
2009	100.0	100.0	0.0	0.0	0.0
2010	100.0	100.0	0.0	0.0	0.0
2011	100.0	100.0	0.0	0.0	0.0
2012	100.0	100.0	0.0	0.0	0.0

Population supplied (F.Y.2012)

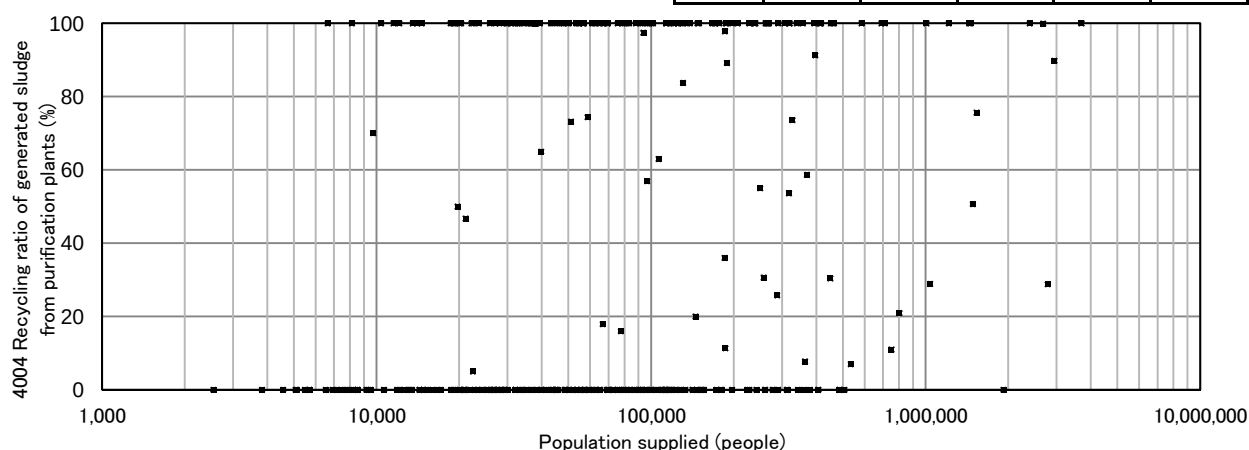
People	95%	75%	50%	25%	5%
<=1	95.5	0.0	0.0	0.0	0.0
1-3	100.0	100.0	0.0	0.0	0.0
3-10	100.0	100.0	0.0	0.0	0.0
10-50	100.0	100.0	44.8	0.0	0.0
50<	100.0	100.0	89.8	20.9	0.0

× 10,000people



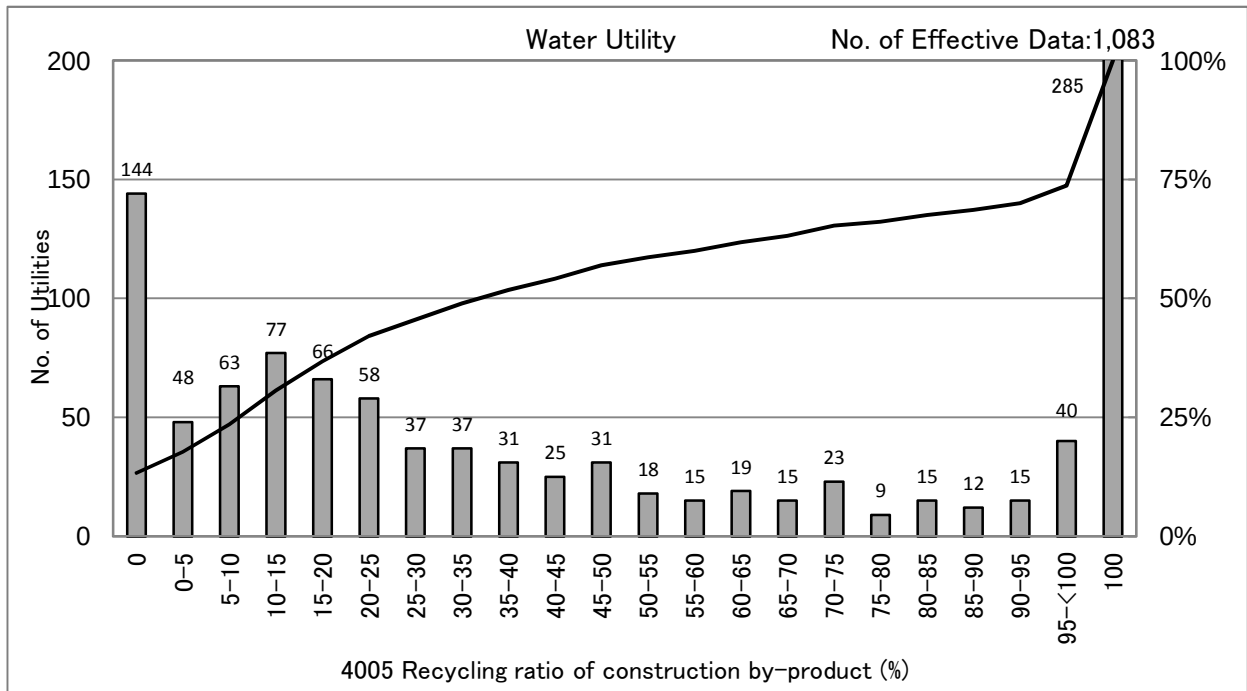
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	100.0	100.0	100.0	0.0	0.0
Supply Utility	2010	100.0	100.0	100.0	62.0	0.0
	2011	100.0	100.0	100.0	0.0	0.0
	2012	100.0	100.0	96.6	0.0	0.0

[Scatter Plot]



4005 Recycling ratio of construction by-product (%)

Recycling ratio of construction by-product = Amount of recycled by-products[t]
/ Amount of generated by-products[t] x 100 (%)



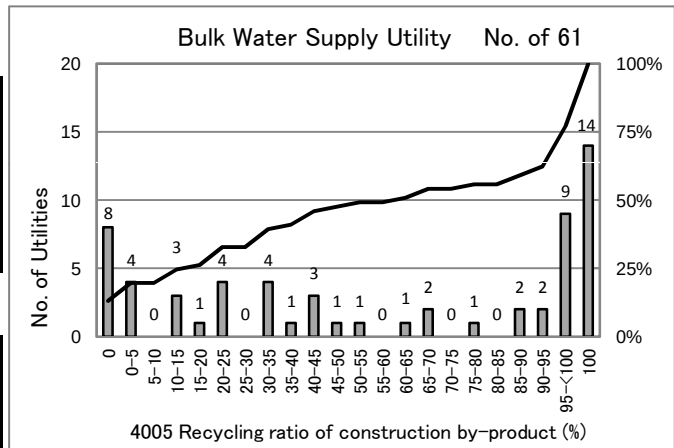
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	100.0	100.0	32.5	10.1	0.0
2009	100.0	99.3	34.7	10.6	0.0
2010	100.0	99.4	32.6	10.1	0.0
2011	100.0	99.9	32.9	10.1	0.0
2012	100.0	100.0	36.7	11.2	0.0

Population supplied (F.Y.2012)

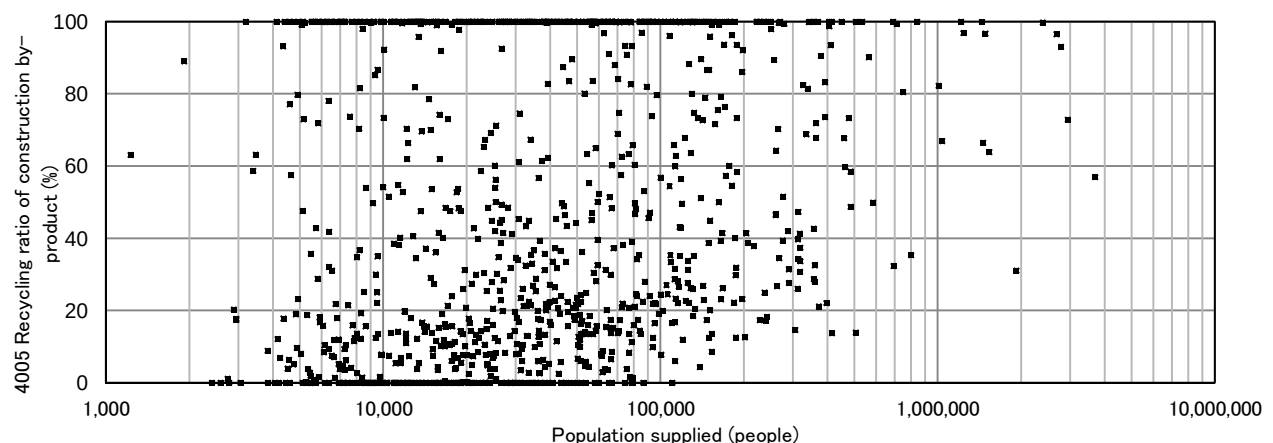
People	95%	75%	50%	25%	5%
<=1	100.0	99.9	17.8	0.1	0.0
1-3	100.0	99.7	21.4	4.2	0.0
3-10	100.0	100.0	35.6	14.4	0.0
10-50	100.0	100.0	62.9	29.2	13.6
50<	100.0	99.9	91.6	64.5	31.4

× 10,000people



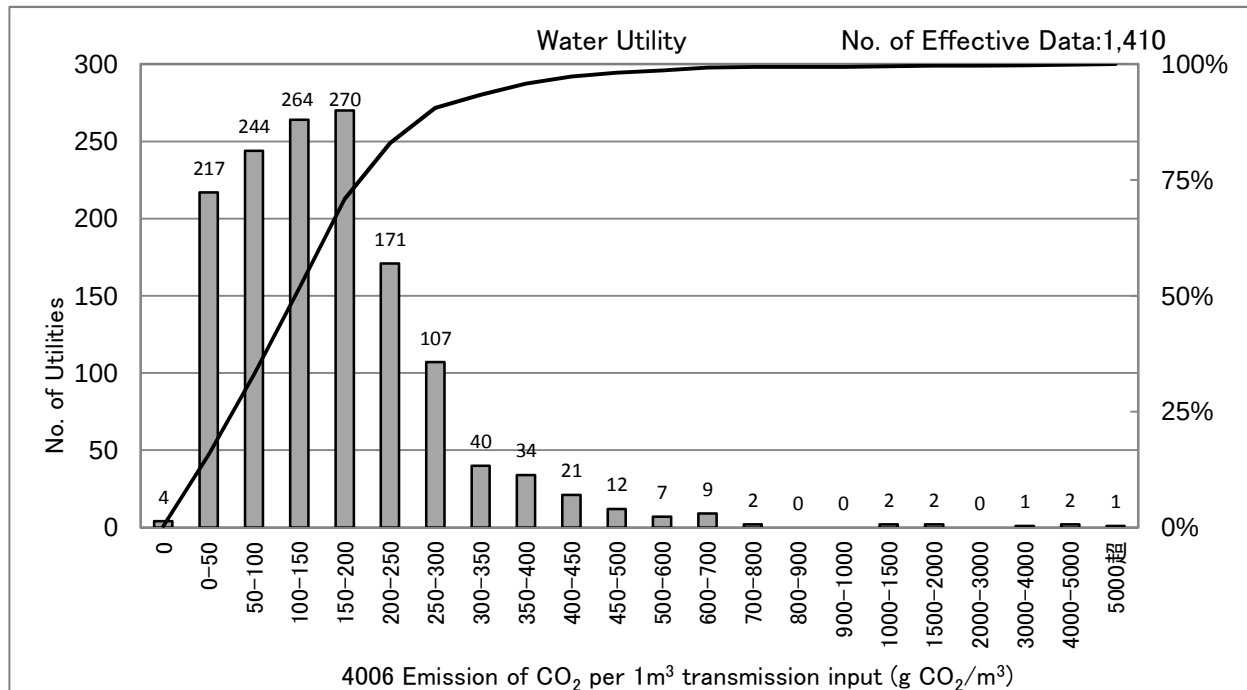
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	100.0	100.0	62.0	19.0	0.0
	2010	100.0	100.0	78.6	23.3	0.0
	2011	100.0	99.9	72.0	12.7	0.0
	2012	100.0	99.7	61.4	19.3	0.0

[Scatter Plot]



4006 Emission of CO₂ per 1m³ transmission input (g CO₂/m³)

Emission of CO₂ per 1m³ transmission input = Carbon dioxide emission[t CO₂/year]
/ Annual transmission input[m³] x 106 (g CO₂/m³)



[Percentile Value] Water Utility

Fiscal year

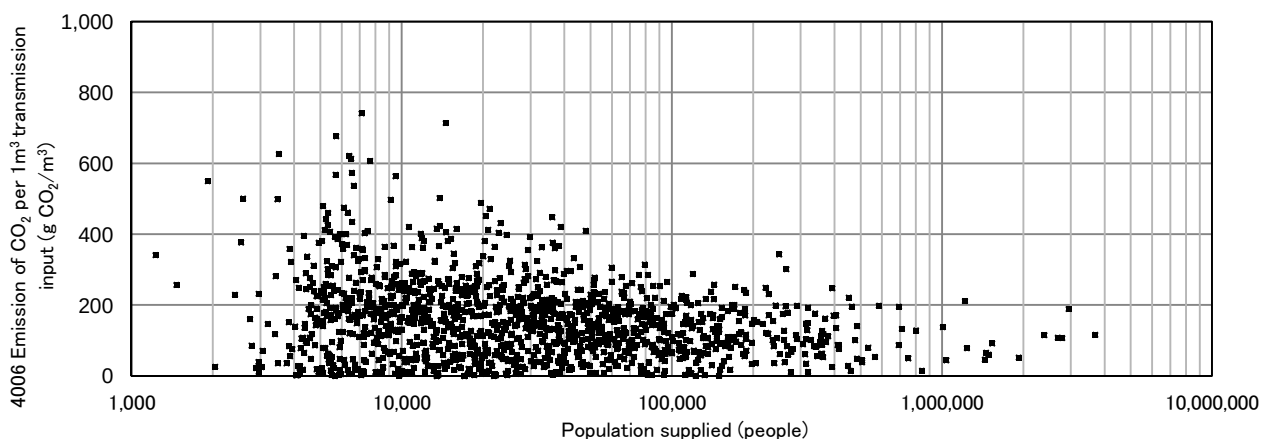
F.Y.	95%	75%	50%	25%	5%
2008	383	227	157	90	19
2009	355	212	149	82	17
2010	368	215	150	83	17
2011	358	215	143	80	16
2012	379	216	146	79	15

Population supplied (F.Y.2012)

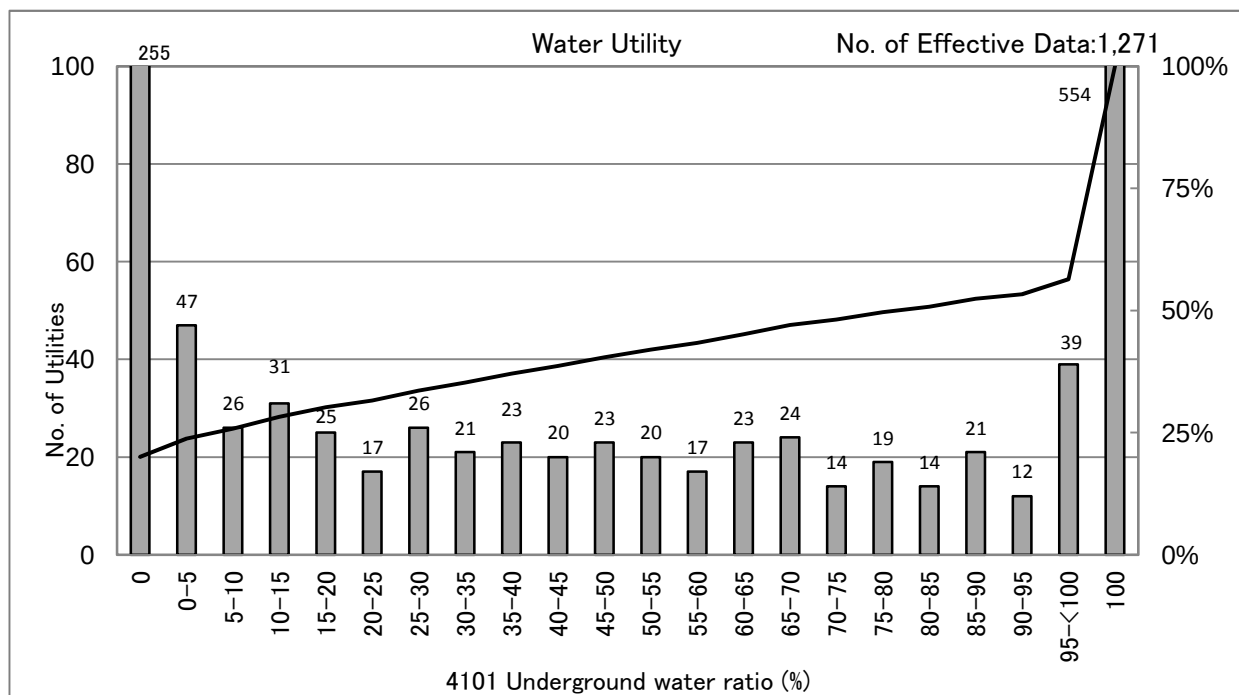
People	95%	75%	50%	25%	5%
<=1	555	278	182	94	12
1-3	381	237	156	73	11
3-10	280	191	135	88	24
10-50	232	163	107	68	16
50<	197	132	90	52	40

× 10,000people

[Scatter Plot]



4101 Underground water ratio (%)

$$\text{Underground water ratio} = \frac{\text{Pumping discharge}[\text{m}^3]}{\text{Water resource volume}[\text{m}^3]} \times 100 (\%)$$


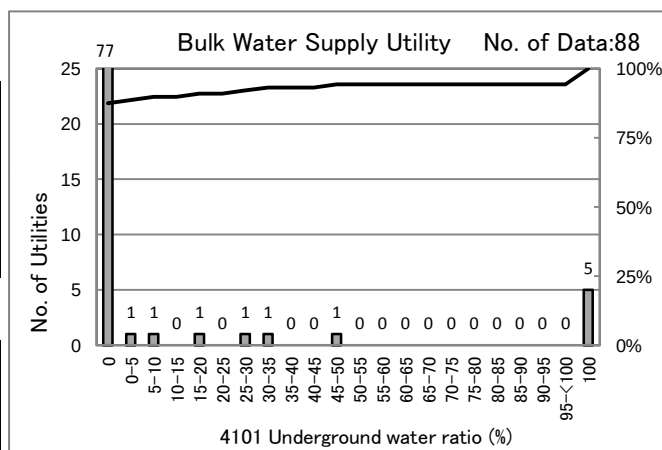
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	100.0	100.0	89.7	7.7	0.0
2009	100.0	100.0	87.0	8.3	0.0
2010	100.0	100.0	84.4	8.4	0.0
2011	100.0	100.0	84.6	8.6	0.0
2012	100.0	100.0	80.9	8.6	0.0

Population supplied (F.Y.2012)

Population	95%	75%	50%	25%	5%
<=1	100.0	100.0	68.4	0.0	0.0
1-3	100.0	100.0	94.7	15.2	0.0
3-10	100.0	100.0	92.7	26.9	0.0
10-50	100.0	100.0	65.9	9.4	0.0
50<	100.0	43.1	3.4	0.0	0.0

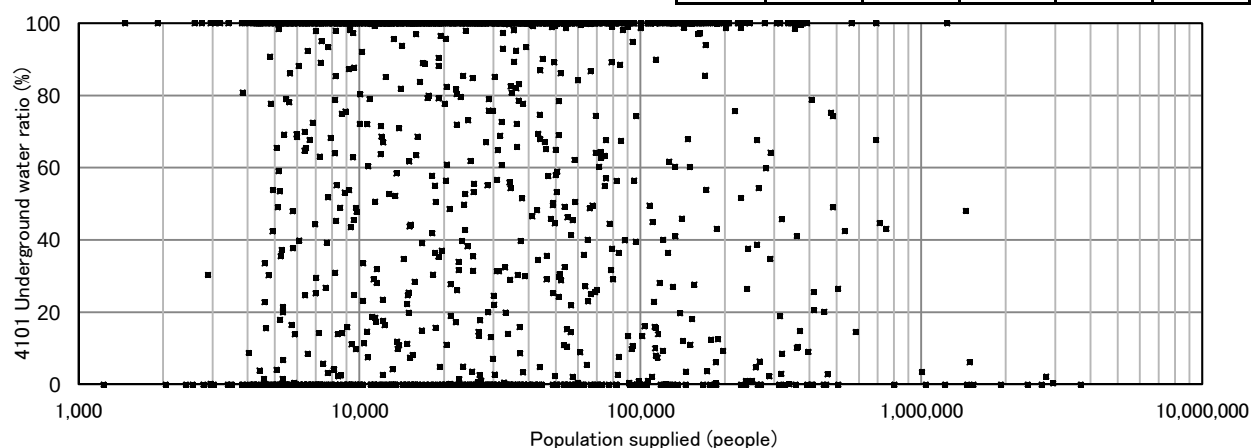
× 10,000people



[Percentile Value]
Bulk Water Supply Utility

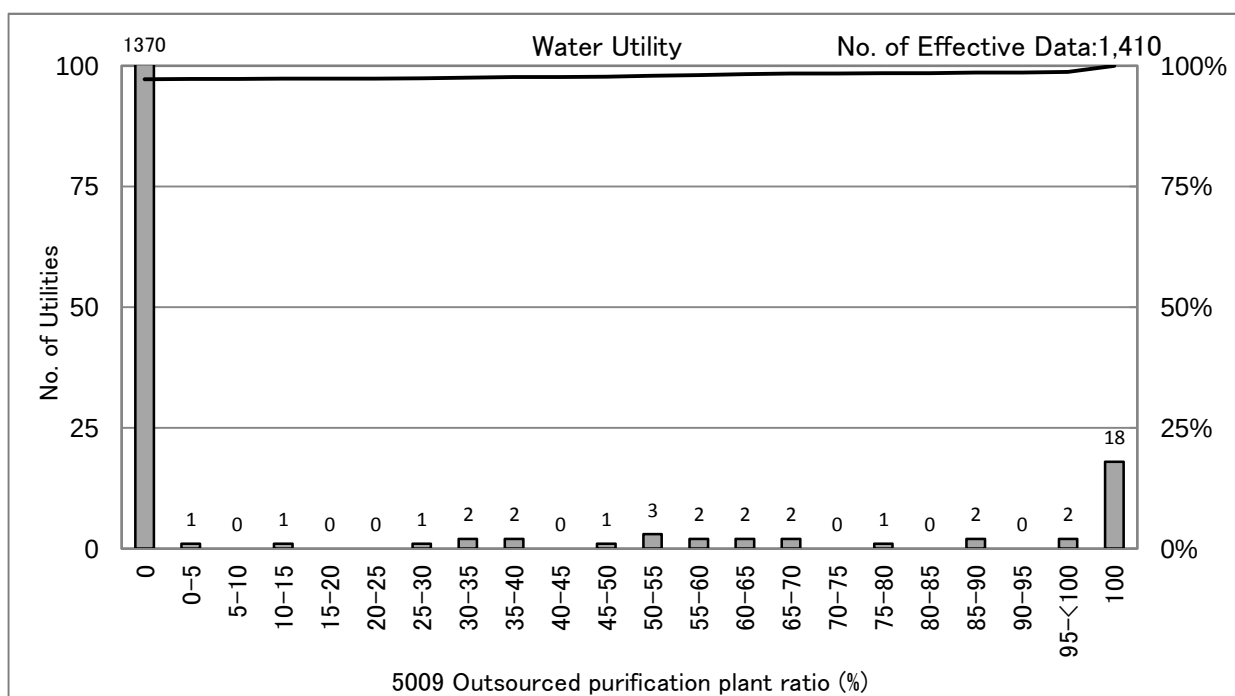
F.Y.	95%	75%	50%	25%	5%
2009	71.4	0.0	0.0	0.0	0.0
2010	80.1	0.0	0.0	0.0	0.0
2011	80.3	0.0	0.0	0.0	0.0
2012	81.2	0.0	0.0	0.0	0.0

[Scatter Plot]



5009 Outsourced purification plant ratio (%)

Outsourced purification plant ratio = Commissioned purification capacity[m³/day]
/ Total purification capacity[m³/day] (%)



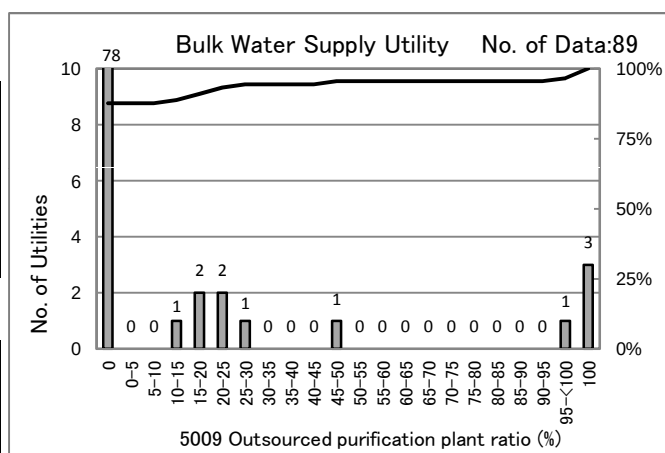
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	0.0	0.0	0.0	0.0	0.0
2009	0.0	0.0	0.0	0.0	0.0
2010	0.0	0.0	0.0	0.0	0.0
2011	0.0	0.0	0.0	0.0	0.0
2012	0.0	0.0	0.0	0.0	0.0

Population supplied (F.Y.2012)

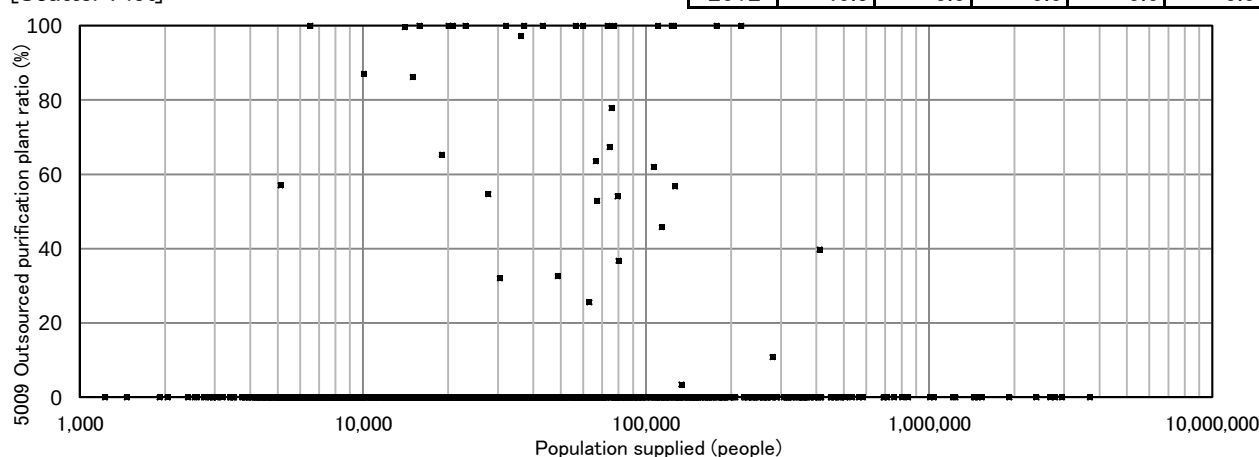
People	95%	75%	50%	25%	5%
<=1	0.0	0.0	0.0	0.0	0.0
1-3	0.0	0.0	0.0	0.0	0.0
3-10	0.0	0.0	0.0	0.0	0.0
10-50	3.8	0.0	0.0	0.0	0.0
50<	0.0	0.0	0.0	0.0	0.0

× 10,000people



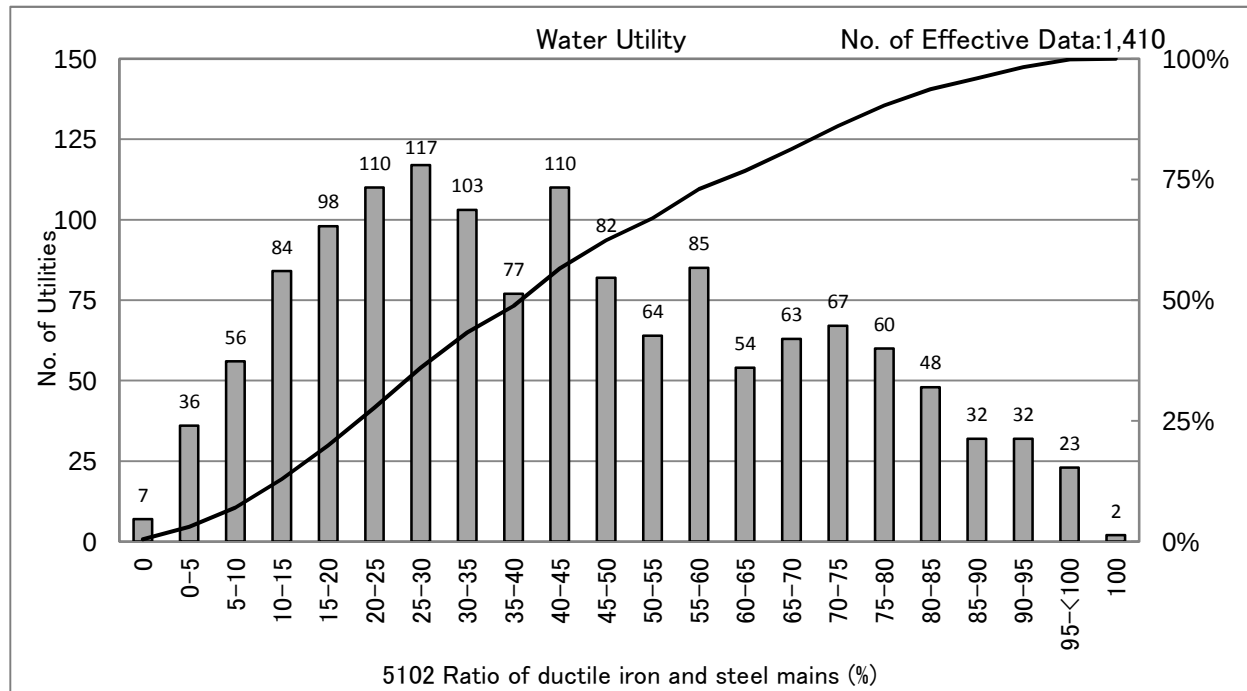
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	59.9	0.0	0.0	0.0	0.0
Supply Utility	2010	27.9	0.0	0.0	0.0	0.0
	2011	26.1	0.0	0.0	0.0	0.0
	2012	40.5	0.0	0.0	0.0	0.0

[Scatter Plot]



5102 Ratio of ductile iron and steel mains (%)

Ratio of ductile iron and steel mains = (Length of ductile cast iron pipes[km]
+ Length of steel pipes[km]) / Total pipeline length[km] x 100 (%)



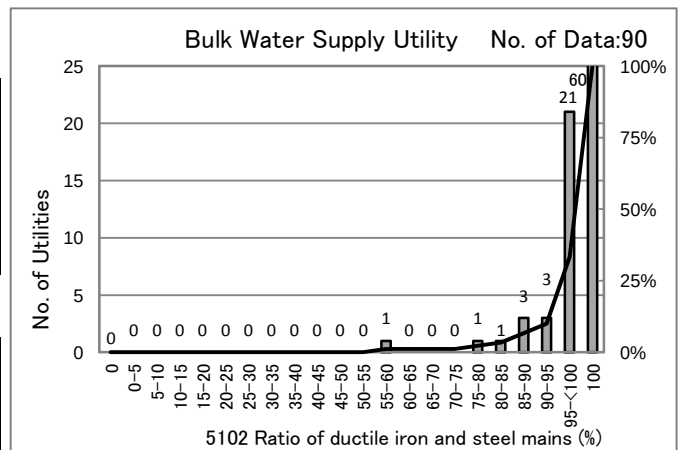
[Percentile Value] Water Utility
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	87.2	60.2	38.9	22.4	6.6
2009	87.3	61.1	40.1	22.9	7.0
2010	87.9	62.2	40.4	23.0	7.6
2011	88.1	62.7	40.3	23.1	7.8
2012	88.0	62.8	40.6	23.1	7.8

Population supplied (F.Y.2012)

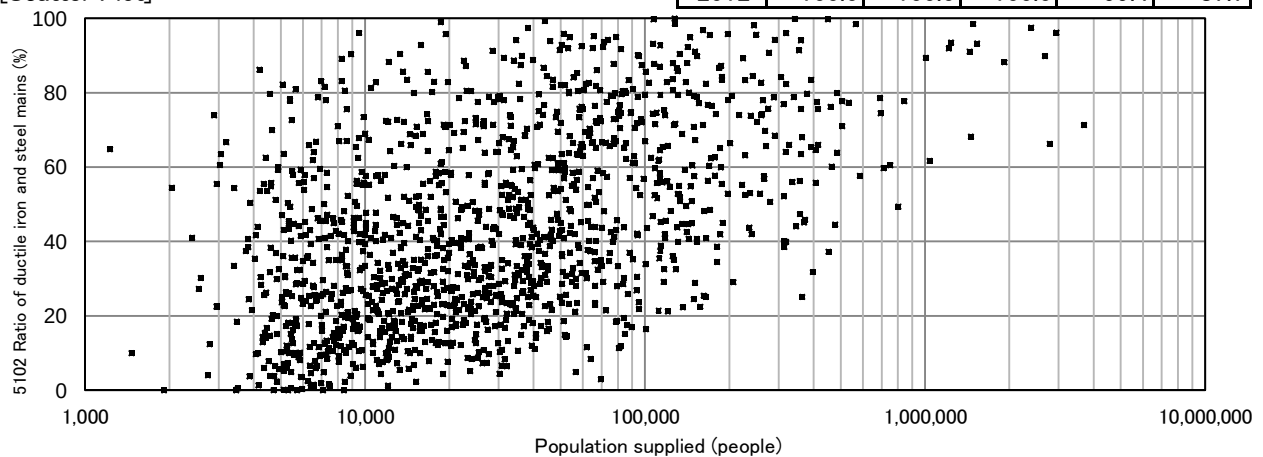
People	95%	75%	50%	25%	5%
<=1	75.2	45.3	26.2	12.5	1.6
1-3	78.6	48.4	30.8	20.6	8.9
3-10	89.2	68.5	48.3	31.1	15.0
10-50	95.6	79.4	63.7	46.6	29.1
50<	98.5	92.9	78.2	68.9	58.2

× 10,000people



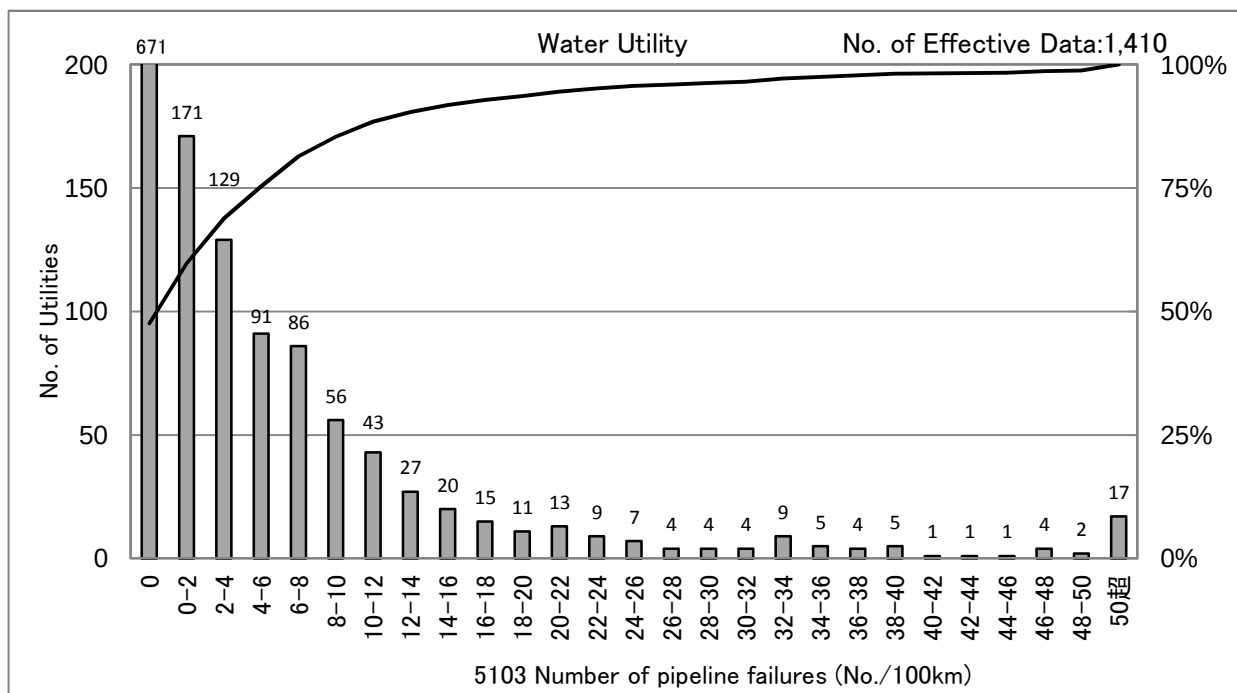
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water Supply Utility	2009	100.0	100.0	100.0	99.2	75.3
	2010	100.0	100.0	100.0	99.4	79.5
	2011	100.0	100.0	100.0	99.4	82.9
	2012	100.0	100.0	100.0	99.4	87.7

[Scatter Plot]



5103 Number of pipeline failures (No./100km)

Number of pipeline failures = Number of pipeline failures[No.]
/ Total pipeline length[km] x 100 (No./100km)



[Percentile Value] Water Utility

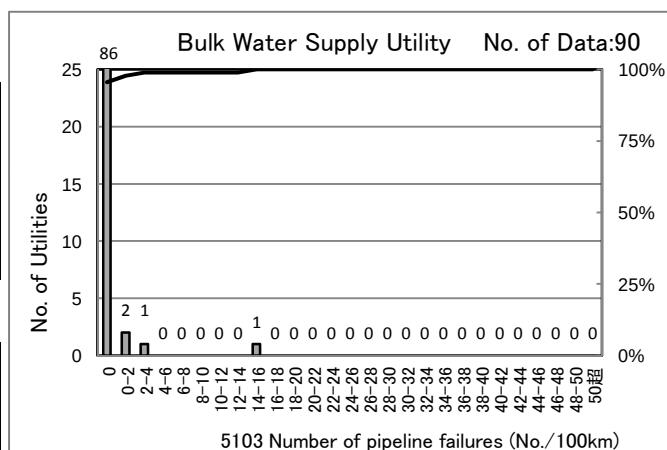
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	28.9	8.2	1.4	0.0	0.0
2009	29.0	8.0	2.0	0.0	0.0
2010	27.8	6.5	0.6	0.0	0.0
2011	26.0	5.8	0.3	0.0	0.0
2012	23.1	5.9	0.5	0.0	0.0

Population supplied (F.Y.2012)

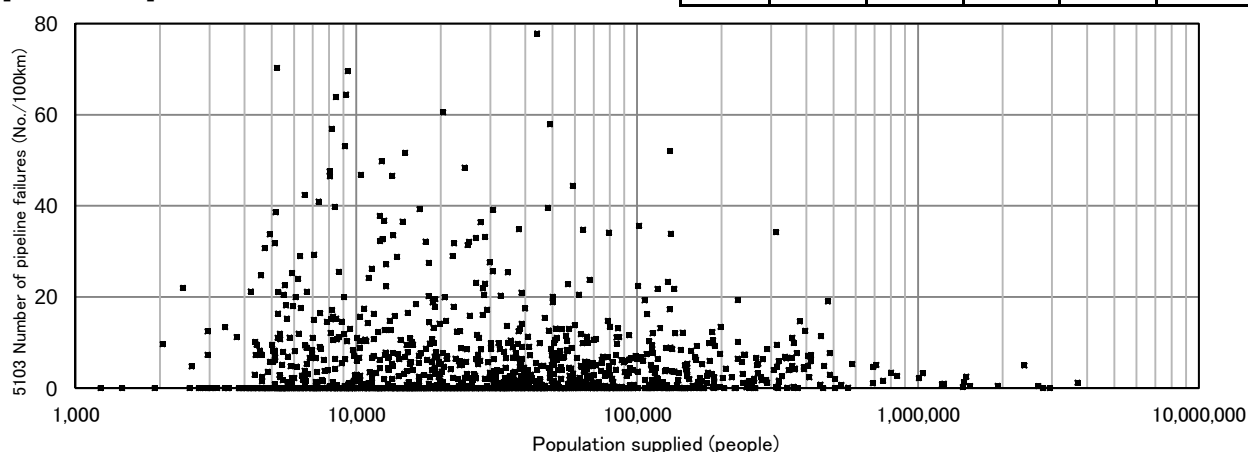
People	95%	75%	50%	25%	5%
<=1	31.1	6.4	0.0	0.0	0.0
1-3	29.1	6.0	0.0	0.0	0.0
3-10	14.5	5.0	0.9	0.0	0.0
10-50	19.0	6.8	2.6	0.1	0.0
50<	5.1	2.6	1.1	0.5	0.0

× 10,000people



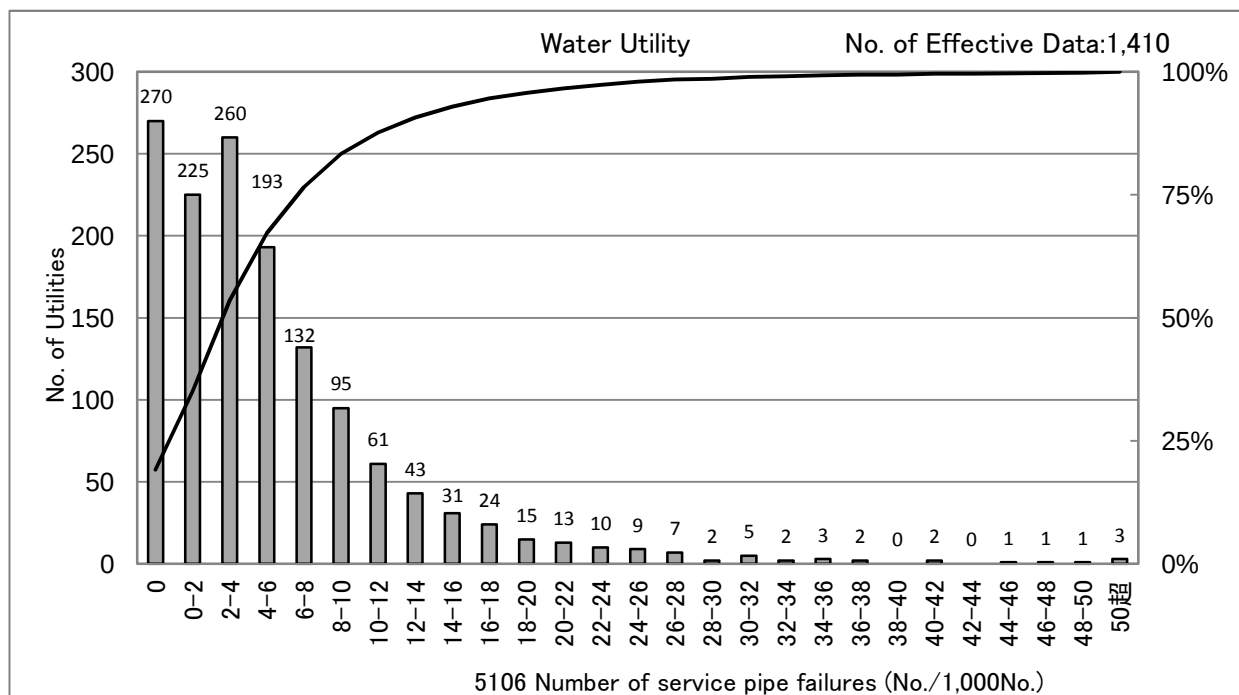
[Percentile Value]	F.Y.	95%	75%	50%	25%	5%
Bulk Water	2009	3.6	0.0	0.0	0.0	0.0
Supply Utility	2010	2.9	0.0	0.0	0.0	0.0
	2011	0.5	0.0	0.0	0.0	0.0
	2012	0.0	0.0	0.0	0.0	0.0

[Scatter Plot]



5106 Number of service pipe failures (No./1,000No.)

Number of service pipe failures = Number of service pipe failures[No.]
/ Total number of users[No.] x 1,000 (No./1,000No.)



[Percentile Value] Water Utility

Fiscal year

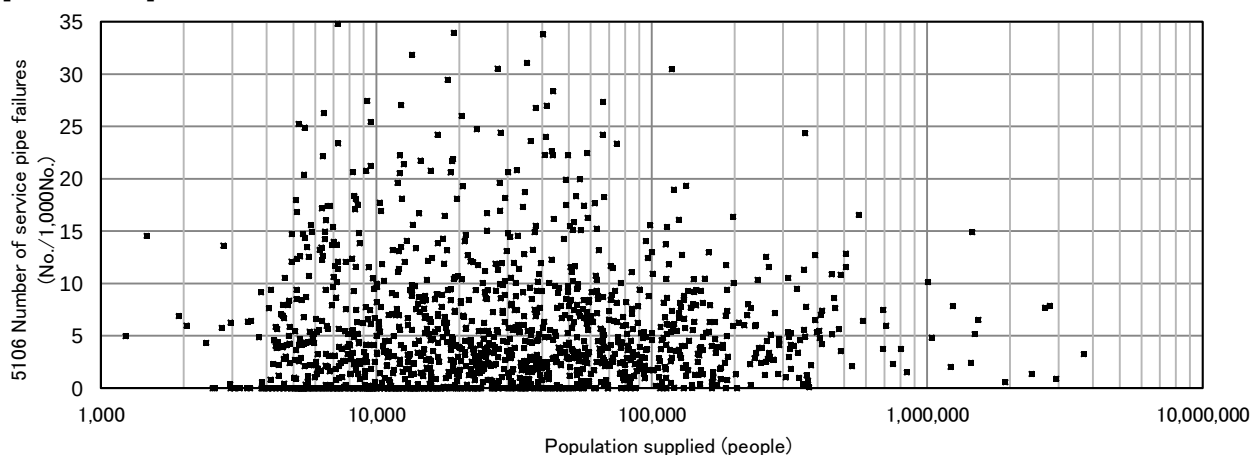
F.Y.	95%	75%	50%	25%	5%
2008	19.2	7.9	3.6	0.3	0.0
2009	18.6	7.6	3.5	0.4	0.0
2010	20.5	8.3	4.1	0.8	0.0
2011	20.4	8.3	3.8	0.8	0.0
2012	18.3	7.7	3.6	0.8	0.0

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	21.0	7.6	2.6	0.0	0.0
1-3	19.3	7.4	3.2	0.1	0.0
3-10	19.4	7.8	3.8	1.5	0.0
10-50	12.8	7.4	4.6	2.3	0.1
50<	14.4	7.8	5.0	2.2	1.0

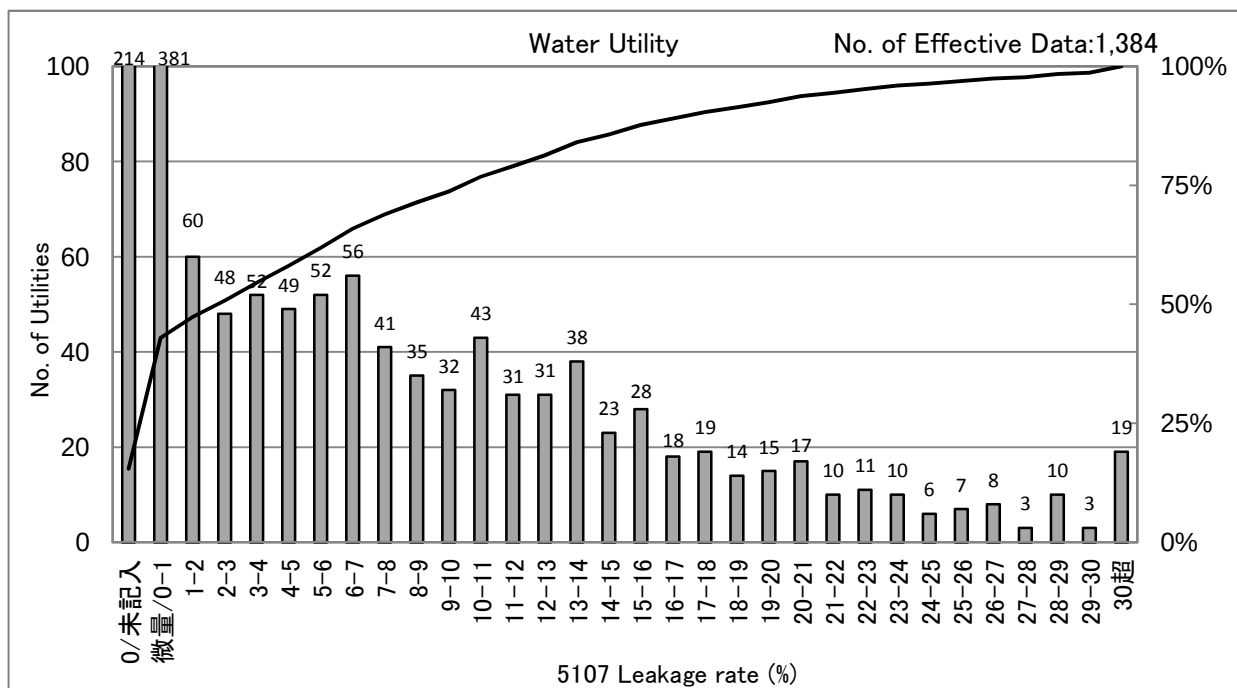
× 10,000people

[Scatter Plot]



5107 Leakage rate (%)

$$\text{Leakage rate} = \text{Annual leakage}[\text{m}^3] / \text{Annual transmission input}[\text{m}^3] \times 100 (\%)$$



[Percentile Value] Water Utility

Fiscal year

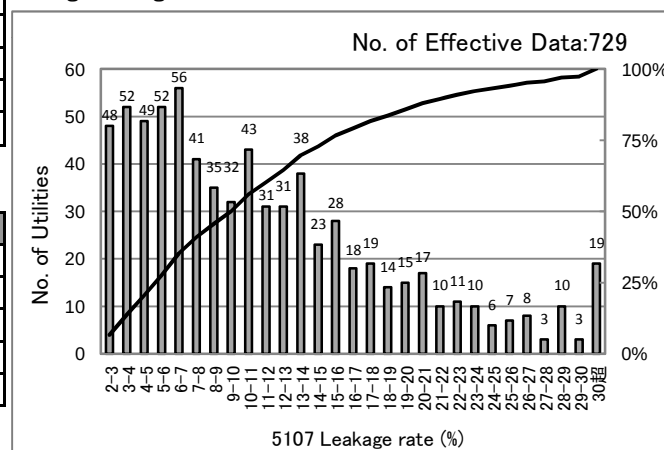
F.Y.	95%	75%	50%	25%	5%
2008	21.0	8.9	1.2	0.0	0.0
2009	20.5	8.9	1.6	0.0	0.0
2010	20.4	9.7	2.1	0.0	0.0
2011	23.0	10.4	2.8	0.0	0.0
2012	22.6	10.3	2.8	0.0	0.0

"Small" in "Small/0-1" means that grasp of the quantity of leakage water is not possible. Or there is entered the quantity of found leakage water. Next chart shows the leakage rate greater than 2%.

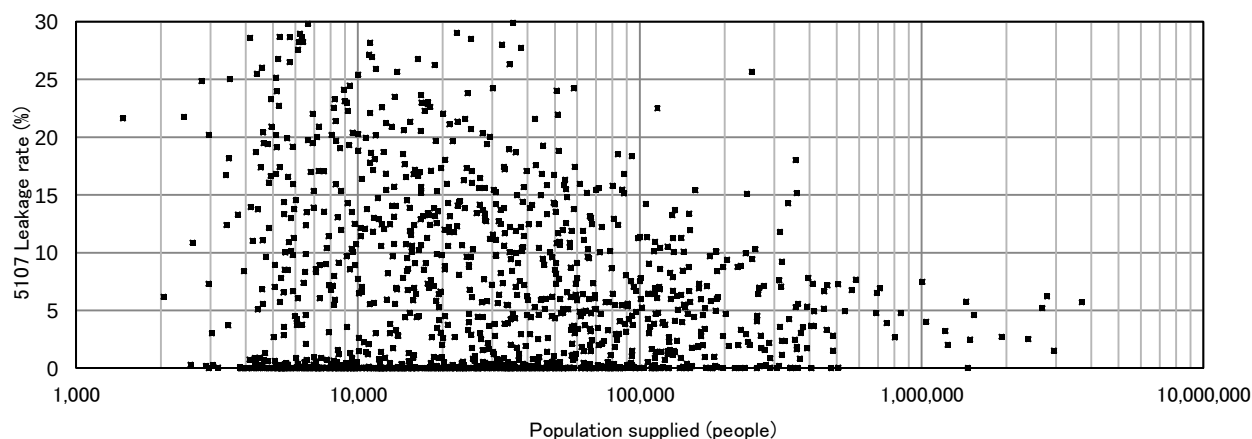
Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	28.4	13.6	0.8	0.0	0.0
1-3	23.0	12.8	2.6	0.0	0.0
3-10	17.1	9.2	2.9	0.0	0.0
10-50	13.3	7.1	3.7	0.9	0.0
50<	7.4	6.1	4.7	2.6	0.4

× 10,000people



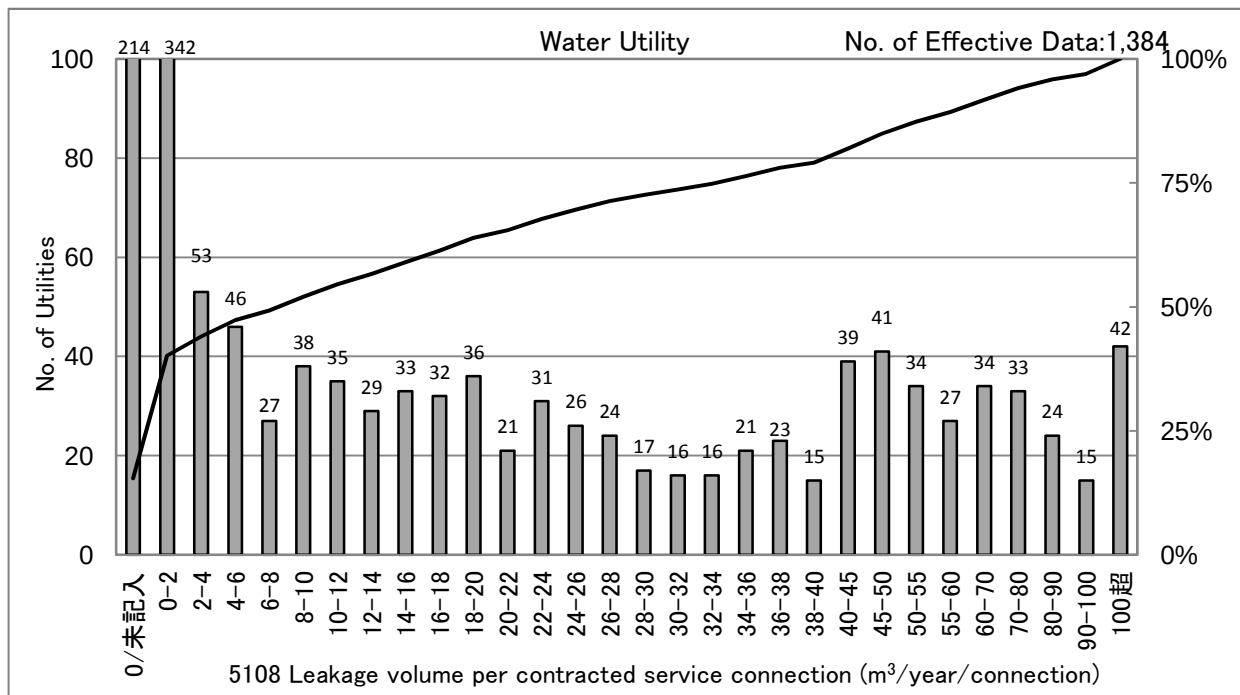
[Scatter Plot]



5108 Leakage volume per contracted service connection (m³/year/connection)

Leakage volume per contracted service connection = Annual leakage[m³/year]

/ Total number of users[connection] (m³/year/connection)



[Percentile Value] Water Utility

Fiscal year

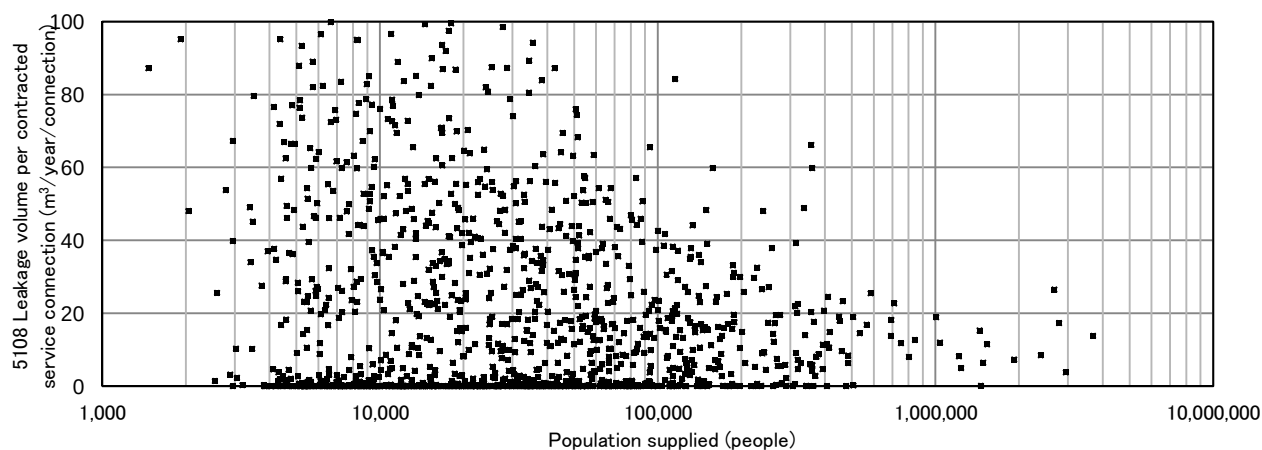
F.Y.	95%	75%	50%	25%	5%
2008	79.6	28.9	4.1	0.0	0.0
2009	79.9	29.5	4.6	0.0	0.0
2010	82.2	32.0	6.2	0.1	0.0
2011	89.8	34.5	8.1	0.1	0.0
2012	84.9	34.1	8.4	0.1	0.0

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	116.0	49.3	2.8	0.0	0.0
1-3	91.3	42.0	8.2	0.0	0.0
3-10	57.7	28.2	8.8	0.1	0.0
10-50	39.5	20.5	10.5	2.8	0.0
50<	24.8	17.2	12.4	7.5	1.1

× 10,000people

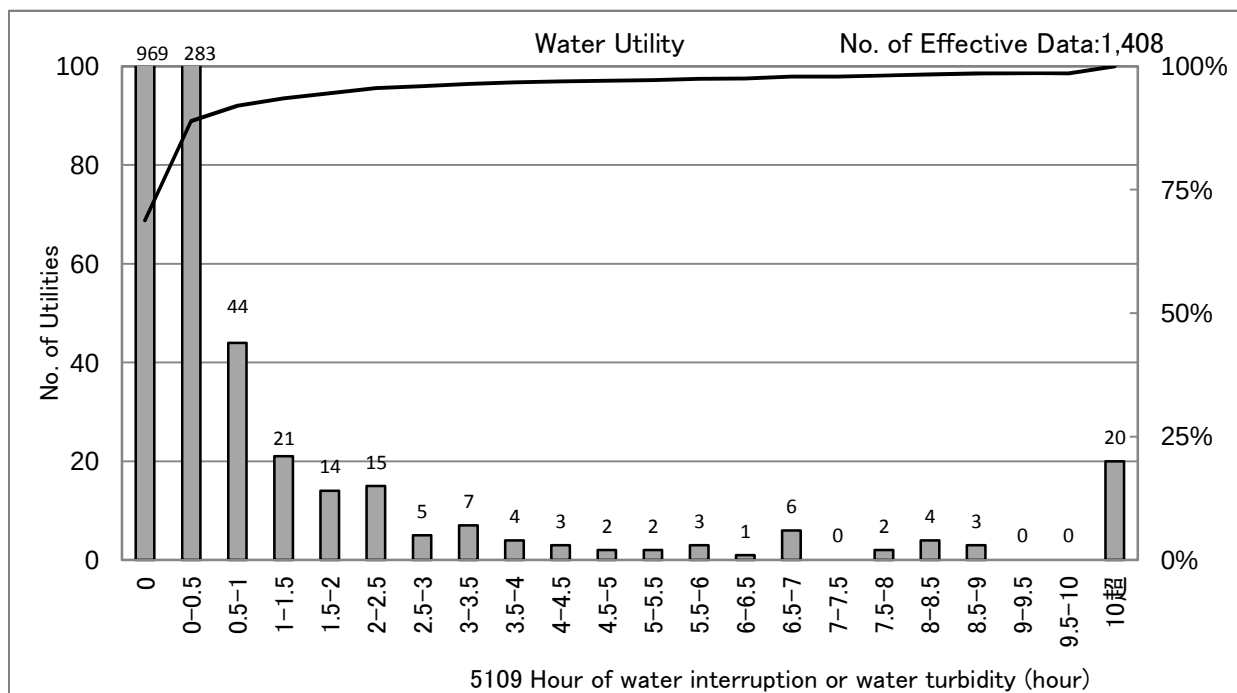
[Scatter Plot]



5109 Hour of water interruption or water turbidity (hour)

Hour of water interruption or water turbidity = Water cut and turbidity time[hour]

x Suffered service population[person] / Service population[person] (hour)



[Percentile Value] Water Utility

Fiscal year

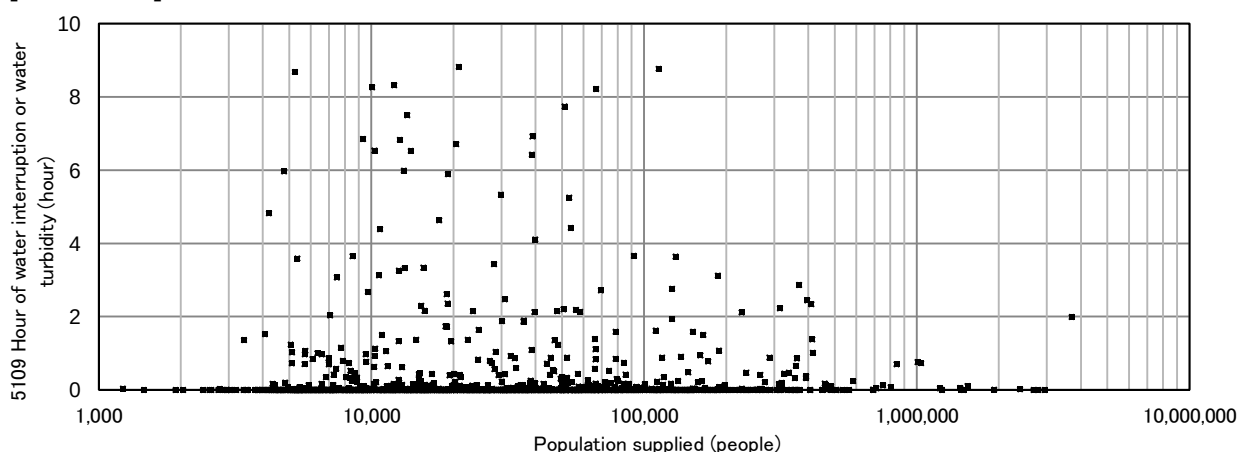
F.Y.	95%	75%	50%	25%	5%
2008	2.02	0.01	0.00	0.00	0.00
2009	1.67	0.02	0.00	0.00	0.00
2010	25.79	0.06	0.00	0.00	0.00
2011	3.73	0.03	0.00	0.00	0.00
2012	2.16	0.02	0.00	0.00	0.00

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	1.20	0.00	0.00	0.00	0.00
1-3	3.13	0.01	0.00	0.00	0.00
3-10	2.13	0.02	0.00	0.00	0.00
10-50	2.35	0.10	0.00	0.00	0.00
50<	0.75	0.10	0.01	0.00	0.00

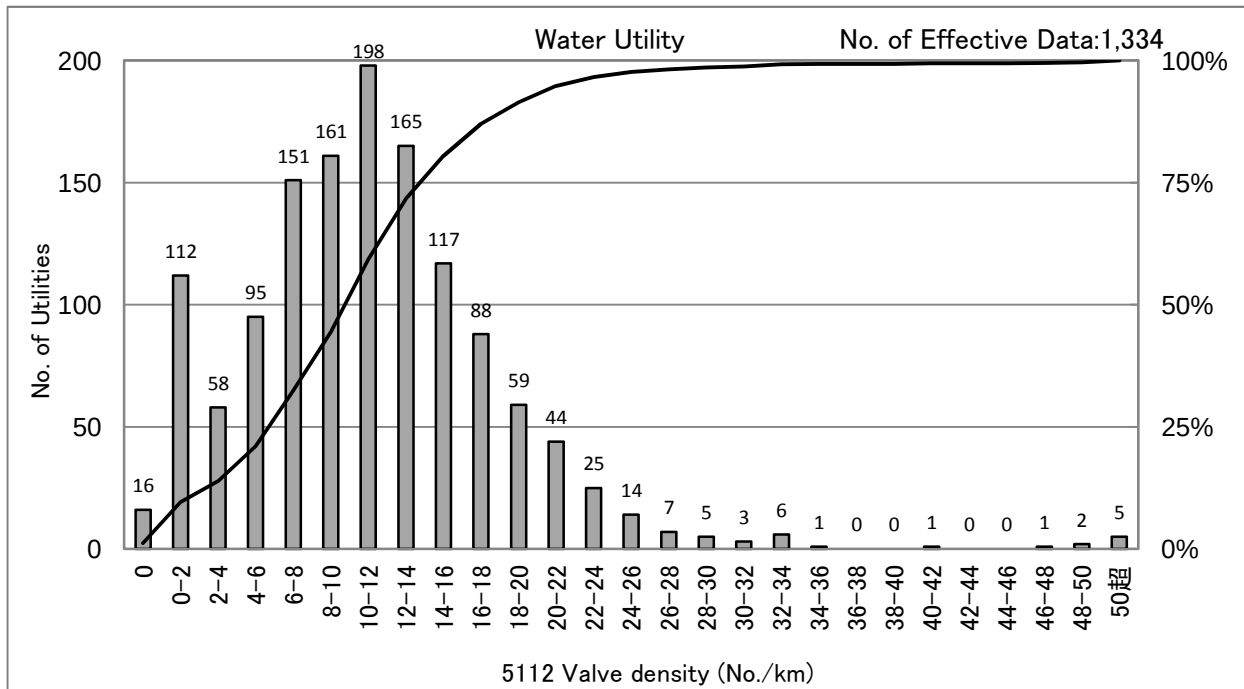
x 10,000people

[Scatter Plot]



5112 Valve density (No./km)

Valve density = Number of valves[No.] / Total pipeline length[km] (No./km)



[Percentile Value] Water Utility

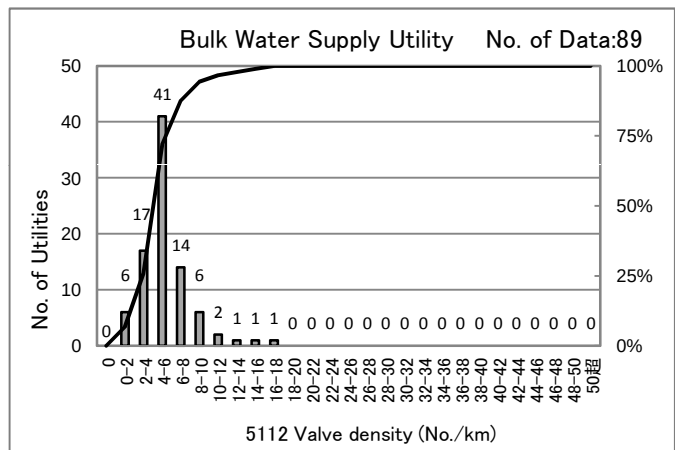
Fiscal year

F.Y.	95%	75%	50%	25%	5%
2008	21.6	14.6	10.4	7.0	0.5
2009	21.8	14.8	10.5	6.9	0.3
2010	22.0	14.8	10.7	7.0	0.4
2011	22.1	14.8	10.7	7.0	0.1
2012	22.2	14.8	10.7	6.9	0.1

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	18.5	11.4	7.9	4.8	0.0
1-3	19.2	13.1	9.3	5.7	0.0
3-10	23.4	16.0	11.9	8.7	0.2
10-50	26.6	18.7	15.1	11.8	6.5
50<	16.0	13.9	12.6	10.5	8.2

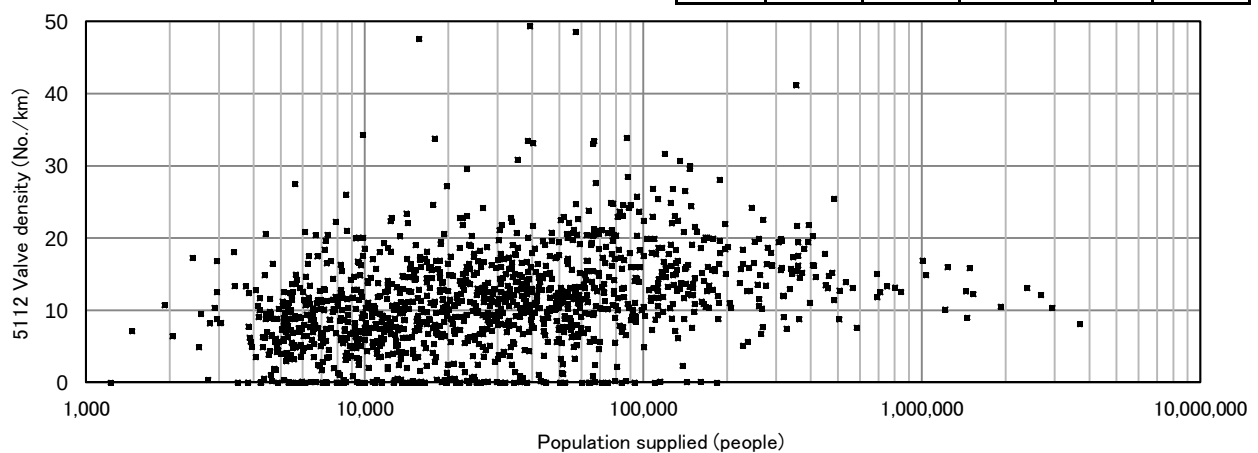
× 10,000people



[Percentile Value]
Bulk Water
Supply Utility

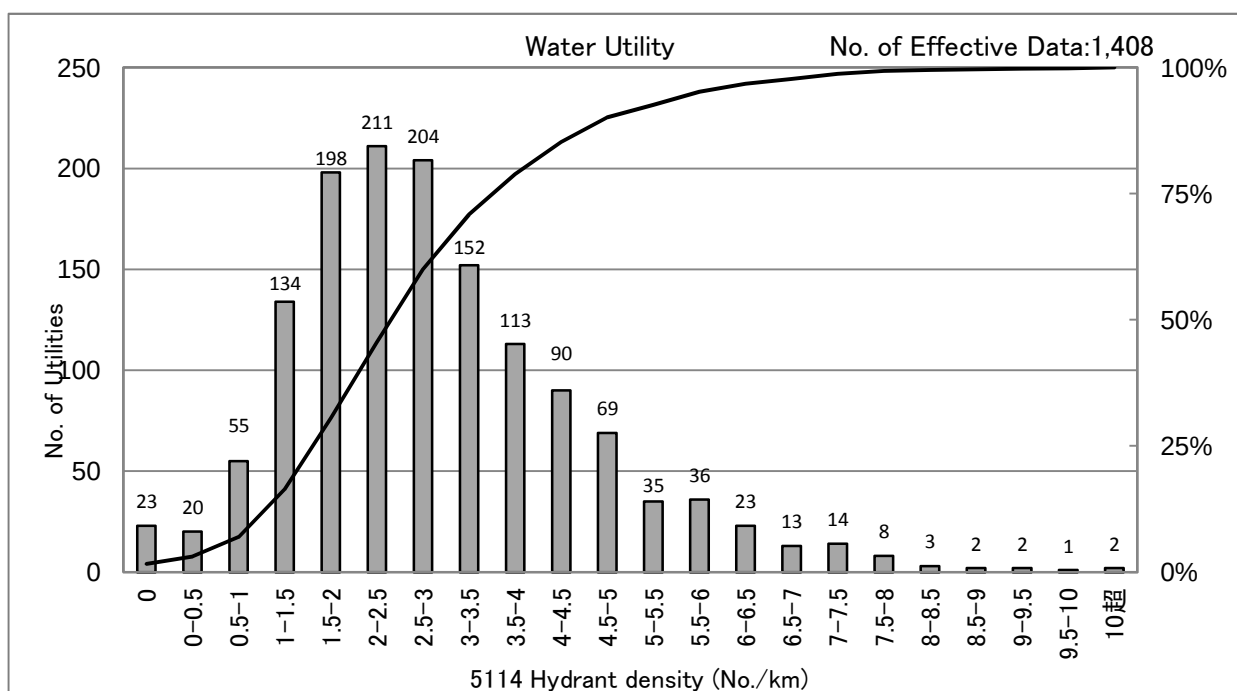
F.Y.	95%	75%	50%	25%	5%
2009	11.0	6.2	5.0	3.6	0.8
2010	11.0	6.3	5.2	3.9	1.7
2011	11.1	6.4	5.2	3.8	1.4
2012	10.1	6.3	5.2	3.8	1.4

[Scatter Plot]



5114 Hydrant density (No./km)

Hydrant density = Total number of hydrants[No.] / Distribution pipe length[km] (No./km)



[Percentile Value] Water Utility

Fiscal year

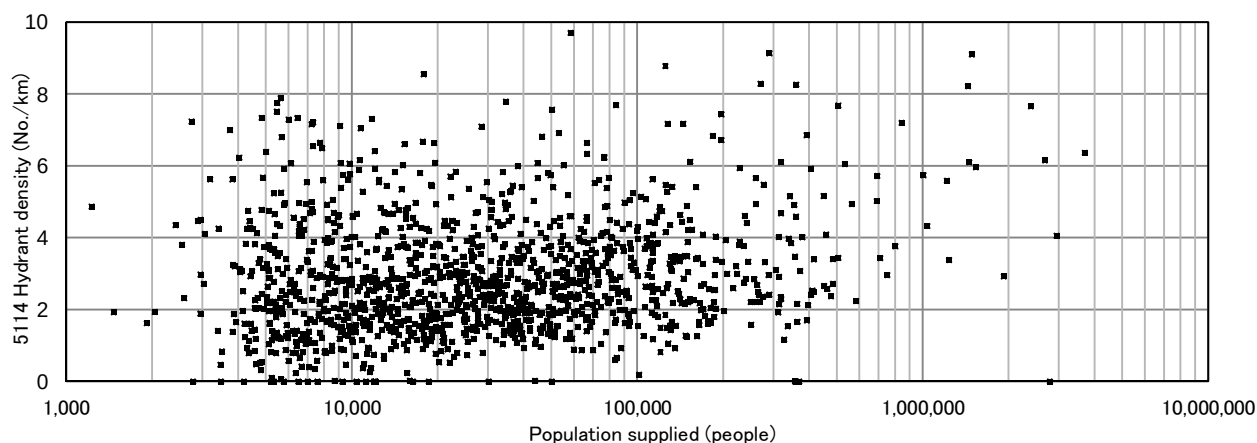
F.Y.	95%	75%	50%	25%	5%
2008	5.9	3.7	2.6	1.8	0.7
2009	6.0	3.8	2.6	1.8	0.7
2010	6.0	3.8	2.7	1.8	0.8
2011	6.0	3.8	2.7	1.8	0.8
2012	5.9	3.8	2.7	1.8	0.8

Population supplied (F.Y.2012)

People	95%	75%	50%	25%	5%
<=1	6.2	3.9	2.5	1.5	0.4
1-3	5.5	3.5	2.5	1.7	0.8
3-10	5.4	3.6	2.7	2.0	1.2
10-50	6.1	4.0	3.0	2.2	1.3
50<	8.1	6.1	5.3	3.5	2.4

× 10,000people

[Scatter Plot]



4 Reference

Specific gravity of construction by-products

(4005 Recycling ratio of construction by-products)

Soil from Construction	Specific gravity	Wood	Specific gravity	Waste from Construction	Specific gravity
Loam	1.6	Hinoki Cypress	0.44	Reinforced Concrete	2.50
Normal Soil	1.7	Cryptomeria Japonica	0.38	Concrete	2.35
Clay	1.7	Castanea	0.62	Asphalt Concrete	2.35
Sand	1.7	Japanese Red Pine	0.52	Cement Mortar	2.10
Sand Gravel	1.9	Japanese Black Pine	0.58	Bituminous Material	1.10
Gravel	1.8	Momi Fir	0.44		
Soft Rock	2.1	Average	0.50		
Average ^{*1}	1.8				

*1: The specific gravity of "Soil from Construction" is calculated by 1.8t/m³ this year.

Carbon Dioxide (CO₂) Emission Factor every Electrical Power Industry

(4006 Emission of CO₂ per 1m³ transmission input)

Electrical Power Industry	Emission Factor (t-CO ₂ /kWh)	Electrical Power Industry	Emission Factor (t-CO ₂ /kWh)
Hokkaido	0.000680	Kansai	0.000475
Tohoku	0.000560	Chugoku	0.000672
Tokyo	0.000406	Shikoku	0.000656
Chubu	0.000373	Kyushu	0.000599
Hokuriku	0.000494	Okinawa	0.000692

Carbon Dioxide (CO₂) Emission Factor

(4006 Emission of CO₂ per 1m³ transmission input)

Fuel	Unit ^{*4}	Heat of Combustion MJ/Unit	Emission Factor kgCO ₂ /MJ	Remark
Crude Oil	L	38.2	0.0690	*2: Add Natural Gas Liquid (NGL) and Petroleum Asphalt, this year. *3: Heavy Crude Oil type B/C uses numerical value of type C. Last year, it used type B. *4: The unit; "Nm³" is a "Normal cubic meter". It is a unit volume only for the true quantity that does not depend on Boyle-Charles's Law (Combined Gas Law).
Natural Gas Liquid (NGL) ^{*2}	L	35.3	0.0680	
Gasoline	L	34.6	0.0688	
Naphtha	L	34.1	0.0652	
Kerosene	L	36.7	0.0685	
Diesel	L	38.2	0.0692	
Heavy Crude Oil type A	L	39.1	0.0716	
Heavy Crude Oil type B/C ^{*3}	L	41.7	0.0716	
Petroleum Asphalt ^{*2}	kg	42.3	0.0760	
Coke	kg	35.6	0.0930	
Liquefied Petroleum Gas (LPG)	kg	50.2	0.0586	
Liquefied Natural Gas (LNG)	kg	54.5	0.0508	
Natural Gas (exclude LNG)	Nm ³	40.9	0.0510	
Coal	kg	26.6	0.0900	
Coal Coke	kg	30.1	0.1080	
Coke Oven Gas	Nm ³	21.1	0.0403	
Blast Furnace Gas	Nm ³	3.41	0.1080	
Converter Gas	Nm ³	8.41	0.1080	
Coal Gas	Nm ³	41.1	0.0513	

