LAMPIRAN

Lampiran 1. Data Angka Kematian Bayi di Kota Bandung Tahun 2019

No	Puskesmas	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7
1.	Sukarasa	0	0	43	100	25	100	70.49	90.24
2.	Ledeng	0	5.8	47	100	10	100	27.47	90.52
3.	Karangsetra	1	3.68	82	99.74	10	100	89.03	92.82
4.	Sarijadi	0	0.45	98	100	11	100	40.32	91.74
5.	Sukajadi	5	1.53	107	82.71	19	100	80.18	16.63
6.	Sukagalih	0	1.14	21	100	9	98.17	95.06	43.61
7.	Sukawarna	0	2.25	48	100	11	92.65	82.14	93.49
8.	Pasirliki	0	1.3	156	99.83	17	82.08	74.58	62.15
9.	Sukaraja	0	2.91	37	100	10	87.9	65.7	62.54
10.	Garuda	3	13.21	236	98.69	35	98.24	71.68	68.26
11.	Babatan	1	2.49	103	100	11	90.91	85.91	78.22
12.	Ciumbuleuit	0	2.17	102	96.3	15	100	99.49	78.82
13.	Cipaku	0	1.84	14	100	6	100	42.19	89.66
14.	Puter	0	2.97	58	70.32	37	91.57	66.01	43.31
15.	Dago	1	1.59	156	86.2	11	89.33	71.48	42.53
16.	Sekeloa	0	2.48	5	91.09	11	94.55	54.93	6.48
17.	Cikutra Lama	1	4.62	82	100	9	100	77.04	99.6
18.	Salam	0	0	0	100	15	100	25	100
19.	Tamansari	1	0.62	37	100	13	100	45.1	11.81
20.	Tamblong	2	0	78	100	19	100	100	49
21.	Balaikota	1	0.93	42	100	11	100	70.73	9.01
22.	Neglasari	0	0.95	125	82.73	20	96.74	77.38	43.19
23.	Cigadung	0	0.52	2	72.73	7	83.25	55.54	42.92
24.	Padasuka	2	2.97	249	100	35	100	100	76.6
25.	Pasirlayung	0	0.65	0	92.31	9	93.18	68.13	81.18
26.	Babakan Sari	0	2.33	325	100	21	93.69	59.35	60.06
27.	Babakan Surabaya	0	2.14	123	98.01	14	97.01	81.27	59.18
28.	Ibrahim Adjie	0	1.92	157	97.18	37	100	41.43	61.58
29.	Gumuruh	0	0.82	194	92.81	17	100	69.44	24.42
30.	Ahmad Yani	1	0.15	73	100	14	100	41.89	77.92
31.	Talagabodas	0	0.65	26	95.26	15	100	69.29	53.84
32.	Suryalaya	0	0	2	87.5	10	100	59.09	100
33.	Cijagra Baru	0	1.6	48	94.65	12	0	68.34	82.05
34.	Cijagra Lama	0	0	24	94.64	13	100	30.15	88.53
35.	Pasundan	0	5.66	36	100	20	100	89.9	85.95
36.	Moch. Ramdan	0	1.11	68	100	15	100	55.32	61.87
37.	Pasirluyu	1	0.44	7	95.21	11	100	38.7	65
38.	Cetarip	0	2.34	195	100	14	58.78	43.68	36.18
39.	Babakan Tarogong	0	0.56	138	100	12	36.62	85.81	33.87

No	Puskesmas	Y	X_1	X_2	X_3	X_4	X_5	X_6	X_7
40.	Sukapakir	0	1.04	77	95.44	9	64.38	30.42	39.38
41.	Pagarsih	1	0.32	30	100	23	100	94.2	74.41
42.	Astana Anyar	0	2.93	26	87.32	8	100	71.43	51.86
43.	Lio Genteng	0	1.49	10	91.79	10	100	60.31	93.64
44.	Pelindung Hewan	0	3.18	50	97.38	11	100	35.47	40.58
45.	Kopo	0	2.91	158	94.97	28	91.11	85.73	35.6
46.	Cibaduyut Wetan	0	3.65	74	100	10	100	86.42	33.53
47.	Cibaduyut Kidul	0	0.93	49	84.11	10	90.67	58.85	17.83
48.	Caringin	0	2.02	106	98.94	15	100	83.58	22.22
49.	Cibolerang	0	0.23	74	89.46	10	97.7	83.5	40.5
50.	Sukahaji	0	0.28	63	92.55	13	95.73	56.41	44.52
51.	Cibuntu	0	8.24	74	96.29	20	100	69.11	60.77
52.	Cijerah	0	2.47	109	94.44	11	94.42	93.97	74.22
53.	Cigondewah	2	0.42	77	91.76	13	100	59.54	65.98
54.	Griya Antapani	2	1.37	66	94.74	13	95.24	71.55	100
55.	Jajaway	0	0.24	67	95.37	15	100	59.84	93.01
56.	Antapani	0	0	53	100	12	100	60.76	92.06
57.	Sindang Jaya	0	0.82	77	97.35	15	100	69.23	84.2
58.	Jatihandap	0	0	0	95.37	6	100	46.79	85.37
59.	Mandala Mekar	1	0.87	26	90.39	8	100	61.26	98.38
60.	Pamulang	0	3.17	19	93.65	8	100	27.78	97.23
61.	Girimande	0	0.54	5	71.51	8	100	70	83.42
62.	Arcamanik	0	1.76	122	97.36	24	100	47.77	62.84
63.	Rusunawa	0	11.59	144	94.71	14	100	93.28	68.42
64.	Ujung Berung Indah	0	1.25	223	100	21	78.44	52.67	73.68
65.	Pasirjati	0	3.51	51	95.58	11	87.23	80.36	68.68
66.	Cinambo	2	7.51	103	98.45	19	100	77.38	78.91
67.	Cibiru	0	2.55	56	97.82	20	100	72.95	75.07
68.	Cipadung	0	0.15	73	100	11	100	57.46	99.71
69.	Cilengkrang	0	3.51	58	94.74	11	92.23	61.21	49.23
70.	Panghegar	0	0	93	100	22	100	77.5	61.06
71.	Panyileukan	0	0	8	100	10	100	97.01	97.81
72.	Riung Bandung	0	0.68	70	97.06	19	91.73	93.2	89.86
73.	Cempaka Arum	0	0	11	97.35	10	14.09	56.33	99.7
74.	Cipamokolan	0	1.36	141	80.39	32	82.13	64.41	93.34
75.	Derwati	0	2.23	80	75.09	14	100	66.54	81.16
76.	Margahayu Raya	0	0	172	100	2	100	56.78	87.93
77.	Sekejati	0	0.35	117	96.71	15	100	61.84	97.82
78.	Kujang Sari	2	3.13	28	98.59	13	93.01	79.25	72.38
79.	Mengger	0	3.37	8	96.63	8	92.59	71.76	55.1
80.	Pasawahan	0	2.29	20	95.42	15	89.06	72.39	33.55

KETERANGAN :

Y : Jumlah kasus kematian bayi di Kota Bandung Tahun 2019

X_1 : Persentase berat badan bayi lahir rendah (BBLR)

X_2 : Jumlah penanganan komplikasi kebidanan

X_3 : Persentase kunjungan neonatal selama 3x

X_4 : Jumlah tenaga kesehatan (dokter, perawat, bidan) disetiap puskesmas Kota Bandung

X_5 : Persentase bayi mendapat vitamin A

X_6 : Persentase bayi yang diberikan ASI eksklusif

X_7 : Persentase penduduk dengan akses sanitasi yang layak

Lampiran 2. Output Statistika Deskriptif

```
>
> #Read data Angka Kematian Bayi
> akb <- read.csv('E:/SKRIPSI/Bahan SKRIPSI/Data AKB Kota Bandung 2019.csv', header = TRUE, dec =
 ".")
> head(akb)
  Kecamatan.di.Kota.Bandung Puskesmas.di.Kota.Bandung Y   X1  X2     X3 X4     X5    X6    X7
1                 SUKASARI                SUKARASA 0 0.00  43 100.00 25 100.00 70.49 90.24
2                                           LEDENG 0 5.80  47 100.00 10 100.00 27.47 90.52
3                                       KARANGSETRA 1 3.68  82  99.74 10 100.00 89.03 92.82
4                                         SARIJADI 0 0.45  98 100.00 11 100.00 40.32 91.74
5                 SUKAJADI                SUKAJADI 5 1.53 107  82.71 19 100.00 80.18 16.63
6                                         SUKAGALIH 0 1.14  21 100.00  9  98.17 95.06 43.61
> summary(akb)
 Kecamatan.di.Kota.Bandung Puskesmas.di.Kota.Bandung       Y                X1
 Length:80                 Length:80                 Min.   :0.000   Min.   : 0.0000
 Class :character          Class :character          1st Qu.:0.000   1st Qu.: 0.4475
 Mode  :character          Mode  :character          Median :0.000   Median : 1.3650
                                                     Mean   :0.375   Mean   : 1.9894
                                                     3rd Qu.:0.000   3rd Qu.: 2.6400
                                                     Max.   :5.000   Max.   :13.2100
       X2               X3               X4               X5               X6
 Min.   :  0.00   Min.   : 70.32   Min.   : 6.00   Min.   :  0.00   Min.   : 25.00
 1st Qu.: 27.50   1st Qu.: 94.24   1st Qu.:10.00   1st Qu.: 92.64   1st Qu.: 56.39
 Median : 67.50   Median : 97.27   Median :13.00   Median :100.00   Median : 69.17
 Mean   : 77.65   Mean   : 94.96   Mean   :14.97   Mean   : 92.93   Mean   : 66.82
 3rd Qu.:106.25   3rd Qu.:100.00   3rd Qu.:19.00   3rd Qu.:100.00   3rd Qu.: 80.22
 Max.   :325.00   Max.   :100.00   Max.   :37.00   Max.   :100.00   Max.   :100.00
       X7
 Min.   :  6.48
 1st Qu.: 44.29
 Median : 70.53
 Mean   : 66.62
 3rd Qu.: 89.71
 Max.   :100.00
```

Lampiran 3. Pengujian Distribusi Poisson pada Data Kematian Bayi

One-Sample Kolmogorov-Smirnov Test

		Jumlah kasus kematian bayi di Kota Bandung tahun 2019
N		80
Poisson Parameter[a,b]	Mean	.38
Most Extreme Differences	Absolute	.088
	Positive	.088
	Negative	-.045
Kolmogorov-Smirnov Z		.785
Asymp. Sig. (2-tailed)		.570

a. Test distribution is Poisson.

b. Calculated from data.

Lampiran 4. Uji Multikolinearitas

```
>
> #Uji Multikolinearitas
> vif(lm(Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7, data = akb))
      X1       X2       X3       X4       X5       X6       X7
1.126591 1.687620 1.100759 1.581601 1.037437 1.067019 1.074750
>
> #Fit a Poisson model
> poisson <- glm(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7, family=poisson(link = "log"), data
 = akb)
> summary(poisson)
```

Lampiran 5. Output Perhitungan Model Regresi Poisson

```
> #Fit a Poisson model
> poisson <- glm(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7, family=poisson(link = "log"), data
 = akb)
> summary(poisson)

Call:
glm(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7, family = poisson(link = "log"),
    data = akb)

Deviance Residuals:
     Min        1Q    Median        3Q       Max
-1.70437  -0.86429  -0.59130  -0.02936   2.49231

Coefficients:
             Estimate Std. Error z value Pr(>|z|)
(Intercept) -11.693296   5.585821  -2.093   0.0363 *
X1            0.061562   0.056136   1.097   0.2728
X2            0.002456   0.003678   0.668   0.5043
X3           -0.016746   0.028013  -0.598   0.5500
X4            0.023120   0.029400   0.786   0.4316
X5            0.110588   0.056351   1.962   0.0497 *
X6            0.020573   0.011175   1.841   0.0656 .
X7           -0.010465   0.007647  -1.369   0.1712
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for poisson family taken to be 1)

    Null deviance: 98.171  on 79  degrees of freedom
Residual deviance: 76.532  on 72  degrees of freedom
AIC: 134.69

Number of Fisher Scoring iterations: 6
```

```
> # Likelihood rasio test model regresi Poisson
> lrtest(poisson)
Likelihood ratio test

Model 1: Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7
Model 2: Y ~ 1
  #Df  LogLik Df Chisq Pr(>Chisq)
1   8 -59.343
2   1 -70.163 -7 21.64    0.00293 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Lampiran 6. Output Perhitungan Model Regresi Poisson dengan Parameter yang Signifikan

```
> #Model regresi Poisson dengan parameter yang signifikan
> poisson1 <- glm(formula = Y ~  X5, family=poisson(link = "log"), data = akb)
> summary(poisson1)

Call:
glm(formula = Y ~ X5, family = poisson(link = "log"), data = akb)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-0.9884  -0.9884  -0.7748  -0.0507   3.7731

Coefficients:
            Estimate Std. Error z value Pr(>|z|)
(Intercept) -9.54650    4.84310  -1.971   0.0487 *
X5           0.08830    0.04919   1.795   0.0727 .
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for poisson family taken to be 1)

    Null deviance: 98.171  on 79  degrees of freedom
Residual deviance: 90.884  on 78  degrees of freedom
AIC: 137.04

Number of Fisher Scoring iterations: 6

> # Likelihood rasio test model regresi Poisson dengan parameter yang signifikan
> lrtest(poisson1)
Likelihood ratio test

Model 1: Y ~ X5
Model 2: Y ~ 1
  #Df  LogLik Df  Chisq Pr(>Chisq)
1   2 -66.520
2   1 -70.163 -1 7.2868   0.006946 **
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Lampiran 7. Output Uji Overdispersi

```
> # Test for overdispersion
> dispersiontest(poisson)

        Overdispersion test

data:  poisson
z = 1.6997, p-value = 0.04459
alternative hypothesis: true dispersion is greater than 1
sample estimates:
dispersion
  1.295619
```

Goodness of Fit[a]

	Value	df	Value/df
Deviance	76.532	72	1.063
Scaled Deviance	76.532	72	
Pearson Chi-Square	102.124	72	1.418
Scaled Pearson Chi-Square	102.124	72	
Log Likelihood[b]	-59.343		
Akaike's Information Criterion (AIC)	134.686		
Finite Sample Corrected AIC (AICC)	136.715		
Bayesian Information Criterion (BIC)	153.743		
Consistent AIC (CAIC)	161.743		

Dependent Variable: Jumlah kasus kematian bayi di Kota Bandung tahun 2019
Model: (Intercept), Persentase berat badan bayi lahir rendah (BBLR), Jumlah penanganan kompilasi kebidanan, Persentase kunjungan neonatal selama 3x, Jumlah tenaga kesehatan di setiap puskesmas Kota Bandung , Persentase bayi mendapat vitamin A, Persentase bayi yang diberikan ASI eksklusif, Persentase keluarga dengan akses sanitasi yang layak

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Lampiran 8. Output *Zero-Inflated Poisson Regression*

```
> #Fit a zero-inflated poisson (ZIP) model
> zip <- zeroinfl(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7, data = akb)
> summary(zip)

Call:
zeroinfl(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7, data = akb)

Pearson residuals:
      Min        1Q    Median        3Q       Max
-1.022640 -0.480402 -0.259891 -0.002821  4.320727

Count model coefficients (poisson with log link):
             Estimate Std. Error z value Pr(>|z|)
(Intercept) -2.981758   7.538870  -0.396  0.69246
X1           0.221366   0.079133   2.797  0.00515 **
X2          -0.003369   0.005505  -0.612  0.54046
X3          -0.101490   0.047549  -2.134  0.03281 *
X4          -0.010992   0.040542  -0.271  0.78629
X5           0.095259   0.063871   1.491  0.13585
X6           0.045101   0.015276   2.952  0.00315 **
X7          -0.005461   0.010031  -0.544  0.58615

Zero-inflation model coefficients (binomial with logit link):
            Estimate Std. Error z value Pr(>|z|)
(Intercept) 44.98897   31.58572   1.424   0.1543
X1           0.98316    0.66313   1.483   0.1382
X2          -0.06110    0.03136  -1.948   0.0514 .
X3          -0.47651    0.29261  -1.628   0.1034
X4          -0.21233    0.25304  -0.839   0.4014
X5          -0.11761    0.26344  -0.446   0.6553
X6           0.21271    0.13523   1.573   0.1157
X7          -0.01649    0.03449  -0.478   0.6326
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Number of iterations in BFGS optimization: 66
Log-likelihood: -48.35 on 16 Df
```

```
> # Likelihood rasio test model regresi ZIP
> lrtest(zip)
Likelihood ratio test

Model 1: Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7
Model 2: Y ~ 1
  #Df  LogLik  Df  Chisq Pr(>Chisq)
1  16 -48.351
2   2 -63.042 -14 29.382   0.009273 **
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Lampiran 9. Output *Zero-Inflated Poisson Regression* dengan Parameter yang signifikan

```
> #Pemodelan regresi ZIP dengan parameter yang signifikan
> zip1 <- zeroinfl(Y ~ X1 + X3 + X6, data = akb)
> summary(zip1)

Call:
zeroinfl(formula = Y ~ X1 + X3 + X6, data = akb)

Pearson residuals:
    Min      1Q  Median      3Q     Max
-0.7159 -0.5088 -0.3890 -0.2074  3.0969

Count model coefficients (poisson with log link):
            Estimate Std. Error z value Pr(>|z|)
(Intercept)  7.61179    3.30534   2.303  0.02129 *
X1           0.14901    0.06036   2.469  0.01356 *
X3          -0.11494    0.03530  -3.256  0.00113 **
X6           0.03793    0.01720   2.206  0.02738 *

Zero-inflation model coefficients (binomial with logit link):
            Estimate Std. Error z value Pr(>|z|)
(Intercept) 12.11165    6.55840   1.847   0.0648 .
X1           0.02623    0.13721   0.191   0.8484
X3          -0.14697    0.08337  -1.763   0.0779 .
X6           0.02386    0.04128   0.578   0.5633
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Number of iterations in BFGS optimization: 35
Log-likelihood: -55.39 on 8 Df
```

```
> #Likelihood rasio test model regresi ZIP dengan parameter yang signifikan
> lrtest(zip1)
Likelihood ratio test

Model 1: Y ~ X1 + X3 + X6
Model 2: Y ~ 1
  #Df  LogLik Df  Chisq Pr(>Chisq)
1   8 -55.388
2   2 -63.042 -6 15.308    0.01799 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Lampiran 10. Output Pengujian Overdispersi pada model regresi *Zero-Inflated Poisson*

Criteria For Assessing Goodness Of Fit			
Criterion	**DF**	**Value**	**Value/DF**
Deviance		115.6444	
Scaled Deviance		115.6444	
Pearson Chi-Square	74	73.0720	0.9875
Scaled Pearson X2	74	73.0720	0.9875
Log Likelihood		-47.0841	
Full Log Likelihood		-57.8222	
AIC (smaller is better)		127.6444	
AICC (smaller is better)		128.7951	
BIC (smaller is better)		141.9366	