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LAMPIRAN

Lampiran 1. Data kecelakaan lalu lintas di Kabupeten Pati tahun 2017

No	Y	X1	X2	X3	X4	X5	X6	X7
1	1	2	2	6	3	1	2	1
2	0	1	2	6	3	1	2	1
3	0	2	2	6	3	1	2	1
4	1	2	2	6	3	1	2	2
5	0	2	2	6	3	1	2	2
6	0	2	1	3	1	1	1	1
7	0	1	1	3	1	2	2	1
8	0	1	1	8	1	2	2	1
9	0	1	2	5	1	1	2	1
10	0	2	2	5	1	1	2	1
11	0	2	1	4	1	1	1	1
12	0	2	1	4	1	1	2	1
13	0	2	1	3	1	1	2	1
14	0	1	1	3	1	1	2	1
15	0	2	1	8	1	1	2	2
16	0	1	1	8	1	1	1	2
17	0	2	1	2	1	1	2	1
18	0	1	1	2	1	2	2	1
19	0	2	1	2	1	2	2	1
20	0	2	1	2	1	1	2	1
21	0	2	1	3	1	1	2	1
22	0	2	1	3	1	1	2	1
23	0	2	1	2	1	1	2	1
24	0	2	1	2	1	1	2	1
25	1	1	2	4	1	1	2	1
26	0	2	1	4	1	2	2	1
27	0	2	1	7	1	2	2	1
28	0	2	1	7	1	1	2	2
29	0	2	1	4	1	1	2	1
30	0	2	1	4	1	1	2	1
31	0	1	2	3	1	2	1	1
32	0	2	2	3	1	2	2	1
33	0	2	2	3	1	1	2	1
34	0	2	2	3	2	1	2	1
35	1	2	2	3	1	1	2	2

36	0	2	2	2	2	2	2	1
37	1	2	2	2	1	1	2	1
38	1	2	2	2	1	1	2	2
39	0	2	1	3	1	1	2	1
40	0	1	1	3	1	2	2	1
41	0	1	1	6	1	2	2	1
42	0	2	1	6	1	1	2	1
43	0	1	1	6	1	1	2	1
44	0	1	1	6	1	1	2	1
45	0	1	1	3	1	2	2	1
.								
.								
.								
238	0	2	1	7	1	2	2	2
239	0	2	1	5	4	2	2	2
240	0	3	2	7	4	2	2	2
241	1	1	2	7	1	2	2	2

Keterangan variabel :

Y = keadaan korban kcelakaan

X1 = usia korban

X2 = waktu kejadian kecelakaan

X3 = jenis kecelakaan

X4 = jenis kendaraan

X5 = faktor manusia

X6 = pengunaan atribut berkendara

X7 = peran korban kecelakaan

Lampiran 2. Syntax dan Output Estimasi Parameter Regresi Logistik Biner Dengan Mengunakan *Maximum Likelihood Estimation* model ke-1

```
> skripsi = read.delim("clipboard")
> skripsi
   Y X1 X2 X3 X4 X5 X6 X7
1  1  2  2  6  3  1  2  1
2  0  1  2  6  3  1  2  1
3  0  2  2  6  3  1  2  1
4  1  2  2  6  3  1  2  2
5  0  2  2  6  3  1  2  2
6  0  2  1  3  1  1  1  1
7  0  1  1  3  1  2  2  1
8  0  1  1  8  1  2  2  1
9  0  1  2  5  1  1  2  1
10 0  2  2  5  1  1  2  1
11 0  2  1  4  1  1  1  1
12 0  2  1  4  1  1  2  1
13 0  2  1  3  1  1  2  1
14 0  1  1  3  1  1  2  1
15 0  2  1  8  1  1  2  2
16 0  1  1  8  1  1  1  2
17 0  2  1  2  1  1  2  1
18 0  1  1  2  1  2  2  1
19 0  2  1  2  1  2  2  1
20 0  2  1  2  1  1  2  1
21 0  2  1  3  1  1  2  1
22 0  2  1  3  1  1  2  1
23 0  2  1  2  1  1  2  1
24 0  2  1  2  1  1  2  1
25 1  1  2  4  1  1  2  1
26 0  2  1  4  1  2  2  1
27 0  2  1  7  1  2  2  1
28 0  2  1  7  1  1  2  2
29 0  2  1  4  1  1  2  1
30 0  2  1  4  1  1  2  1
31 0  1  2  3  1  2  1  1
32 0  2  2  3  1  2  2  1
33 0  2  2  3  1  1  2  1
34 0  2  2  3  2  1  2  1
35 1  2  2  3  1  1  2  2
36 0  2  2  2  2  2  2  1
37 1  2  2  2  1  1  2  1
38 1  2  2  2  1  1  2  2
39 0  2  1  3  1  1  2  1
40 0  1  1  3  1  2  2  1
41 0  1  1  6  1  2  2  1
```

42	0	2	1	6	1	1	2	1
43	0	1	1	6	1	1	2	1
44	0	1	1	6	1	1	2	1
45	0	1	1	3	1	2	2	1
46	0	1	1	3	1	1	2	1
47	0	1	1	3	1	1	2	2
48	0	1	2	3	1	1	2	2
49	0	3	2	2	1	1	1	1
50	0	2	2	2	1	1	2	1
51	0	1	2	2	1	1	2	2
52	0	2	2	2	1	1	2	2
53	0	2	1	8	1	1	2	1
54	1	2	1	8	1	1	2	1
55	0	2	1	8	1	1	2	1
56	0	1	1	4	1	1	2	1
57	0	1	2	7	1	2	2	1
58	0	2	2	4	1	2	2	1
59	1	2	1	8	1	2	1	1
60	0	2	1	8	2	2	2	1
61	0	1	1	8	2	2	2	1
62	0	1	1	8	1	2	2	1
63	0	2	1	8	2	1	2	1
64	0	2	2	8	2	1	2	1
65	0	2	1	8	2	1	2	1
66	0	1	2	7	4	2	2	2
67	0	1	1	3	1	1	2	1
68	0	1	1	3	1	1	2	1
69	0	2	1	3	1	1	2	1
70	0	2	1	3	1	1	2	1
71	0	2	1	3	2	1	2	1
72	0	2	1	3	1	2	1	1
73	0	2	1	4	1	2	2	1
74	0	2	1	3	1	2	1	1
75	0	2	1	3	2	1	2	1
76	0	2	1	3	4	1	2	1
77	0	1	1	3	1	1	2	1
78	0	2	1	3	1	2	2	1
79	0	2	1	3	1	1	2	1
80	0	3	1	4	4	1	2	1
81	0	1	1	3	1	2	2	2
82	0	1	1	2	1	2	2	1
83	0	2	2	2	1	2	2	1
84	0	2	1	2	3	2	2	1
85	0	2	1	4	2	2	2	1
86	0	1	2	6	1	1	2	1
87	1	2	1	3	1	2	1	1
88	0	2	1	2	3	2	2	1
89	0	2	1	2	3	1	2	1
90	0	2	2	2	1	1	2	1

```
91   1   3   1   2   1   2   2   1
92   0   2   1   4   1   1   2   1
93   0   2   2   6   1   1   2   1
94   0   1   1   3   2   2   2   1
95   0   1   1   2   1   1   2   1
96   0   1   2   6   1   1   2   1
97   0   2   1   3   1   2   2   1
98   0   2   1   2   1   2   2   1
99   1   2   1   1   1   1   2   1
100  0   1   1   6   1   1   2   1
101  0   1   1   7   1   1   2   1
102  0   2   1   3   1   1   2   1
103  0   2   1   2   1   1   2   1
104  0   3   1   3   1   1   2   1
105  0   2   1   2   2   2   2   1
106  0   1   1   6   1   2   2   1
107  0   1   1   3   4   2   2   1
108  0   2   1   2   1   1   2   1
109  0   2   1   6   4   1   2   2
110  0   1   1   8   4   2   2   2
111  0   2   1   3   1   2   2   1
112  0   2   1   7   1   1   2   1
113  0   2   1   4   1   1   2   1
114  1   3   1   3   1   2   2   1
115  0   2   1   3   1   1   2   1
116  0   2   1   7   2   1   2   1
117  0   1   1   3   1   1   2   1
118  0   1   1   3   1   1   2   1
119  0   2   1   4   1   1   1   1
120  0   2   1   3   1   1   2   1
121  0   3   1   3   1   1   2   1
122  0   2   1   3   1   2   2   1
123  0   3   1   7   4   1   2   1
124  0   1   1   7   4   2   2   1
125  0   1   1   3   1   1   2   1
 [ reached 'max' / getOption("max.print") -- omitted 116
rows ]

> reglog=glm(formula = Y~X1+X2+X3+X4+X5+X6+X7, data = skr
ipsi,family = binomial(link = "logit"))
> summary(reglog)

Call:
glm(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7, famil
y = binomial(link = "logit"),
    data = skripsi)

Deviance Residuals:
    Min        1Q    Median        3Q       Max
```

```
-1.2477  -0.4685  -0.3583  -0.2890   2.6487

Coefficients:
            Estimate Std. Error z value Pr(>|z|)
(Intercept) -5.39161    1.75167  -3.078  0.00208 **
X1           0.76356    0.36141   2.113  0.03463 *
X2           0.80961    0.48225   1.679  0.09319 .
X3          -0.08333    0.12038  -0.692  0.48879
X4           0.01058    0.22582   0.047  0.96265
X5           0.40628    0.46173   0.880  0.37892
X6          -0.44542    0.68761  -0.648  0.51713
X7           0.98159    0.56302   1.743  0.08126 .
---
Signif. codes:
0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 156.25  on 240  degrees of freedom
Residual deviance: 141.23  on 233  degrees of freedom
AIC: 157.23

Number of Fisher Scoring iterations: 5

> lrtest(reglog)
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 -70.613
2   1 -78.125 -7 15.025    0.03568 *
---
Signif. codes:
0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1
```

Lampiran 3. Syntax dan Output Estimasi Parameter Regresi Logistik Biner Dengan Mengunakan *Maximum Likelihood Estimation* model ke-2

```
> reglog=glm(formula = Y~X1, data = skripsi,family = bino
mial(link = "logit"))
> summary(reglog)

Call:
glm(formula = Y ~ X1, family = binomial(link = "logit"),
data = skripsi)

Deviance Residuals:
    Min       1Q   Median       3Q      Max
-0.6900  -0.4658  -0.4658  -0.3089   2.4764

Coefficients:
            Estimate Std. Error z value Pr(>|z|)
(Intercept)  -3.8710     0.7669  -5.048 4.47e-07 ***
X1            0.8523     0.3524   2.418   0.0156 *
---
Signif. codes:
0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

(Dispersion parameter for binomial family taken to be 1)

    Null deviance: 156.25  on 240  degrees of freedom
Residual deviance: 150.18  on 239  degrees of freedom
AIC: 154.18

Number of Fisher Scoring iterations: 5

> lrtest(reglog)
Likelihood ratio test

Model 1: Y ~ X1
Model 2: Y ~ 1
  #Df  LogLik Df  Chisq Pr(>Chisq)
1   2 -75.091
2   1 -78.125 -1 6.0672    0.01377 *
---
Signif. codes:
0  ‘***’  0.001  ‘**’  0.01  ‘*’  0.05  ‘.’  0.1  ‘  ’  1
```

Lampiran 4. Syntax dan output replikasi mengunakan *resampling Bootstrap* terhadap data asli sebanyak 241 data

>logit y x1, vce(bootstrap mse)

R=5

```
. bootstrap _se, reps(5) : logit y x1, vce(bootstrap, mse)
(running logit on estimation sample)

Bootstrap replications (5)
----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
.....

Logistic regression                             Number of obs     =        241
                                                Replications      =          5
```

	Observed Coef.	Bootstrap Std. Err.	z	P>|z|	Normal-based [95% Conf. Interval]	
x1	.3677844	.1762885	2.09	0.037	.0222652	.7133035
_cons	.7813257	.4012514	1.95	0.052	-.0051125	1.567764

R=10

```
. bootstrap _se, reps(10) : logit y x1, vce(bootstrap, mse)
(running logit on estimation sample)

Bootstrap replications (10)
----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
..........

Logistic regression                             Number of obs     =        241
                                                Replications      =         10
```

	Observed Coef.	Bootstrap Std. Err.	z	P>|z|	Normal-based [95% Conf. Interval]	
x1	.4543493	.1218583	3.73	0.000	.2155115	.6931872
_cons	.9402709	.3130744	3.00	0.003	.3266562	1.553886

R=20

```
. bootstrap _se, reps(20) : logit y x1, vce(bootstrap, mse)
(running logit on estimation sample)

Bootstrap replications (20)
----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
....................

Logistic regression                             Number of obs     =        241
                                                Replications      =         20
```

	Observed Coef.	Bootstrap Std. Err.	z	P>|z|	Normal-based [95% Conf.	Interval]
x1	.4741903	.0962436	4.93	0.000	.2855562	.6628243
_cons	1.009322	.2407079	4.19	0.000	.5375434	1.481101

R=30

```
. bootstrap _se, reps(30) : logit y x1, vce(bootstrap, mse)
(running logit on estimation sample)

Bootstrap replications (30)
----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
..............................

Logistic regression                             Number of obs     =        241
                                                Replications      =         30
```

	Observed Coef.	Bootstrap Std. Err.	z	P>|z|	Normal-based [95% Conf.	Interval]
x1	.3618018	.0999525	3.62	0.000	.1658984	.5577051
_cons	.8548482	.2427845	3.52	0.000	.3789994	1.330697

R=40

```
. bootstrap _se, reps(40) : logit y x1, vce(bootstrap, mse)
(running logit on estimation sample)

Bootstrap replications (40)
----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
........................................

Logistic regression                             Number of obs     =        241
                                                Replications      =         40
```

	Observed Coef.	Bootstrap Std. Err.	z	P>|z|	Normal-based [95% Conf.	Interval]
x1	.376174	.0728206	5.17	0.000	.2334483	.5188997
_cons	.7902915	.1840872	4.29	0.000	.4294871	1.151096

R=50

```
. bootstrap _se, reps(50) : logit y x1, vce(bootstrap, mse)
(running logit on estimation sample)

Bootstrap replications (50)
----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
..................................................    50

Logistic regression                             Number of obs     =        241
                                                Replications      =         50
```

	Observed Coef.	Bootstrap Std. Err.	z	P>|z|	Normal-based [95% Conf.	Interval]
x1	.4389589	.0751461	5.84	0.000	.2916752	.5862426
_cons	1.026987	.1887032	5.44	0.000	.6571357	1.396839

R=100

```
Bootstrap replications (100)
----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
..................................................    50
..................................................   100
```

Logistic regression — Number of obs = 241; Replications = 100

	Observed Coef.	Bootstrap Std. Err.	z	P>|z|	Normal-based [95% Conf.	Interval]
x1	.4530625	.0860453	5.27	0.000	.2844168	.6217081
_cons	.9503615	.2042497	4.65	0.000	.5500394	1.350684

R=500

```
. bootstrap _se, reps(500) : logit y x1, vce(bootstrap, mse)
(running logit on estimation sample)

Bootstrap replications (500)
----+--- 1 ---+--- 2 ---+--- 3 ---+--- 4 ---+--- 5
..................................................    50
..................................................   100
..................................................   150
..................................................   200
..................................................   250
..................................................   300
..................................................   350
..................................................   400
..................................................   450
..................................................   500
```

Logistic regression — Number of obs = 241; Replications = 500

	Observed Coef.	Bootstrap Std. Err.	z	P>|z|	Normal-based [95% Conf.	Interval]
x1	.3569989	.085242	4.19	0.000	.1899277	.52407
_cons	.7250718	.2093316	3.46	0.001	.3147895	1.135354