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# LAMPIRAN



**Lampiran 1.** Data Penelitian

<i>i</i>	Kabupaten/Kota	Y	X1	X2	X3	X4	X5	X6	X7
1	Bantaeng	1	122	26.9	954570	45368	38466	1.57	52
2	Barru	0	20	24.07	841533	25589	29825	1.42	46
3	Bone	1	74	24.01	837481	143708	111392	1.25	118
4	Bulukumba	0	209	23.64	849060	86889	69696	2.27	56
5	Enrekang	1	20	29.55	912408	44792	30429	2.36	79
6	Gowa	1	210	27.17	1044674	157015	126261	1.45	142
7	Jeneponto	0	36	28.48	824737	75500	60759	1.42	79
8	Kepulauan Selayar	0	108	21.31	967487	30761	20835	3.73	38
9	Kota Makassar	0	231	18.09	1588023	242193	164885	2.57	127
10	Kota Palopo	1	106	21.68	1213722	32166	24257	2.88	64
11	Kota Parepare	0	31	18.61	1622137	28409	21920	2.63	23
12	Luwu	0	170	25.32	925803	62946	48723	3.01	40
13	Luwu Timur	1	182	25.8	1267049	60793	47659	1.87	114
14	Utara	1	77	24.02	879872	53344	48500	1.87	74
		1	163	26.08	1136610	51392	62385	2.64	136
	Majene Dan Kepulauan	0	33	22.1	1095248	58681	55578	1.72	57



**Lampiran 1.** Data Penelitian (Lanjutan)

<i>i</i>	Kabupaten/Kota	Y	X1	X2	X3	X4	X5	X6	X7
17	Pinrang	0	121	24.13	996006	51514	56697	2.80	109
18	Sidenreng Rappang	0	188	22.21	1218069	43261	43671	1.20	31
19	Sinjai	0	118	26.08	1088023	55222	39460	2.57	77
20	Soppeng	1	65	20.96	964270	37656	34813	1.59	35
21	Takalar	1	60	23.25	930465	57475	54870	1.04	87
22	Tana Toraja	1	55	29.26	995780	63169	28473	1.04	25
23	Toraja Utara	0	31	32.2	991589	55082	30023	1.93	27
24	Wajo	0	134	21.37	1030536	75421	60445	1.68	100

**Lampiran 2.** Jarak Antar Lokasi Pengamatan

$i,j$	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
1	0	219	176	28.7	320	109	33.4	127.4	126	469	272	331	559	452	146	169	299	273	97.8	212	86.2	400	419	245
2	219	0	123	229	120	102	182	291.4	98.4	257	53.6	204	432	325	73.1	51.6	80.5	80.6	162	57.1	130	200	220	88.3
3	176	123	0	148	171	173	209	210.4	168	209	144	156	384	278	143	132	155	123	81.2	69	196	251	268	72.1
4	28.7	229	148	0	293	143	62.1	98.8	154	357	271	304	531	425	174	198	276	246	70.7	185	115	373	392	218
5	320	120	171	293	0	222	302	353.4	218	125	67.1	184	288	182	193	171	40.1	56	224	109	250	80.1	99.7	95.5
6	109	102	173	143	222	0	81.2	241.4	11	359	156	306	534	427	30	53	183	183	131	163	29.3	303	322	197
7	33.4	182	209	62.1	302	81.2	0	160.4	93.3	417	239	364	592	485	113	136	266	266	131	240	53.2	386	405	278
8	127.4	291.4	210.4	98.8	353.4	241.4	160.4	0	253.4	418.4	330.4	365.4	592.4	486.4	267.4	260.4	336.4	308.4	132.9	245.4	212.4	432.4	452.4	280.4
9	126	98.4	168	154	218	11	93.3	253.4	0	356	152	303	532	424	25.8	48.8	179	179	139	156	39.5	299	318	194
10	469	257	209	357	125	359	417	418.4	356	0	219	54.2	175	68.1	330	318	165	179	289	211	383	63.9	58.5	170
11	272	53.6	144	271	67.1	156	239	330.4	152	219	0	166	356	249	126	104	27.7	27.8	201	86.4	183	147	167	77.8
12	331	204	156	304	184	306	364	365.4	303	54.2	166	0	228	122	277	265	168	144	236	158	330	115	112	118
13	559	432	384	531	288	534	592	592.4	532	175	356	228	0	107	503	482	328	343	464	385	557	208	189	345
14	452	325	278	425	182	427	485	486.4	424	68.1	249	122	107	0	375	387	222	243	357	278	431	102	82	238
15	146	73.1	143	174	193	30	113	267.4	25.8	330	126	277	503	375	0	23.3	154	154	139	134	57	273	293	167
16	169	51.6	132	198	171	53	136	260.4	48.8	318	104	265	482	387	23.3	0	132	132	132	110	78.7	252	272	140
17	299	80.5	155	276	40.1	183	266	336.4	179	165	27.7	168	328	222	154	132	0	34.4	207	92.1	210	120	140	78.7
18	273	80.6	123	246	56	183	266	308.4	179	179	27.8	144	343	243	154	132	34.4	0	179	64.3	212	134	154	54.4
19	97.8	162	81.2	70.7	224	131	131	132.9	139	289	201	236	464	357	139	132	207	179	0	117	150	305	348	151
20	212	57.1	69	185	109	163	240	245.4	156	211	86.4	158	385	278	134	110	92.1	64.3	117	0	190	189	209	41.6
			196	115	250	29.3	53.2	212.4	39.5	383	183	330	557	431	57	78.7	210	212	150	190	0	333	353	222
			251	373	80.1	303	386	432.4	299	63.9	147	115	208	102	273	252	120	134	305	189	333	0	19.9	175
			268	392	99.7	322	405	452.4	318	58.5	167	112	189	82	293	272	140	154	348	209	353	19.9	0	195
			72.1	218	95.5	197	278	280.4	194	170	77.8	118	345	238	167	140	78.7	54.4	151	41.6	222	175	195	0



**Lampiran 3. Output Nilai Bandwidth dan CV-Score**

```
> b_terbaik_km1 = bw.ggwr(Y~X1+X2+X3+X4+X5+X6+X7, data=data_akhir_
spasial,family="binomial",
+                               kernel = "gaussian",
+                               adaptive = FALSE,dMat = d_ij_km1)
Fixed bandwidth: 366.1686 CV score: 7.751773
Fixed bandwidth: 226.3499 CV score: 10.08082
Fixed bandwidth: 452.5813 CV score: 7.640189
Fixed bandwidth: 505.9873 CV score: 7.595585
Fixed bandwidth: 538.994 CV score: 7.573961
Fixed bandwidth: 559.3933 CV score: 7.562368
Fixed bandwidth: 572.0007 CV score: 7.555787
Fixed bandwidth: 579.7926 CV score: 7.551923
Fixed bandwidth: 584.6082 CV score: 7.54956
Fixed bandwidth: 587.5844 CV score: 7.548156
Fixed bandwidth: 589.4238 CV score: 7.547299
Fixed bandwidth: 590.5606 CV score: 7.546773
Fixed bandwidth: 591.2632 CV score: 7.546449
Fixed bandwidth: 591.6974 CV score: 7.54625
Fixed bandwidth: 591.9658 CV score: 7.546126
Fixed bandwidth: 592.1316 CV score: 7.54605

> b_terbaik_km1
[1] 592.1316
```



**Lampiran 4.** Nilai Pembobot

$i, j$	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24									
1	1	0.934	0.957	0.999	0.864	0.983	0.998	0.977	0.978	0.731	0.900	0.855	0.640	0.747	0.970	0.960	0.880	0.899	0.986	0.938	0.989	0.796	0.779	0.918									
2	0.934	1	0.979	0.928	0.980	0.985	0.954	0.886	0.986	0.910	0.996	0.942	0.766	0.860	0.992	0.996	0.991	0.991	0.963	0.995	0.976	0.945	0.933	0.989									
3	0.957	0.979	1	0.969	0.959	0.958	0.940	0.939	0.961	0.940	0.971	0.966	0.810	0.896	0.971	0.975	0.966	0.979	0.991	0.993	0.947	0.914	0.903	0.993									
4	0.999	0.928	0.969	1	0.885	0.971	0.995	0.986	0.967	0.834	0.901	0.877	0.669	0.773	0.958	0.946	0.897	0.917	0.993	0.952	0.981	0.820	0.803	0.934									
5	0.864	0.980	0.959	0.885	1	0.932	0.878	0.837	0.934	0.978	0.994	0.953	0.888	0.954	0.948	0.959	0.998	0.996	0.931	0.983	0.915	0.991	0.986	0.987									
6	0.983	0.985	0.958	0.971	0.932	1	0.991	0.920	1.000	0.832	0.966	0.875	0.666	0.771	0.999	0.996	0.953	0.953	0.976	0.963	0.999	0.877	0.863	0.946									
7	0.998	0.954	0.940	0.995	0.878	0.991	1	0.964	0.988	0.780	0.922	0.828	0.607	0.715	0.982	0.974	0.904	0.904	0.976	0.921	0.996	0.809	0.791	0.896									
8	0.977	0.886	0.939	0.986	0.837	0.920	0.964	1	0.912	0.779	0.856	0.827	0.606	0.714	0.903	0.908	0.851	0.873	0.975	0.918	0.938	0.766	0.747	0.894									
9	0.978	0.986	0.961	0.967	0.934	1.000	0.988	0.912	1	0.835	0.968	0.877	0.668	0.774	0.999	0.997	0.955	0.955	0.973	0.966	0.998	0.880	0.866	0.948									
10	0.731	0.910	0.940	0.834	0.978	0.832	0.780	0.779	0.835	1	0.934	0.996	0.957	0.993	0.856	0.866	0.962	0.955	0.888	0.938	0.811	0.994	0.995	0.960									
11	0.900	0.996	0.971	0.901	0.994	0.966	0.922	0.856	0.968	0.934	1	0.961	0.835	0.915	0.978	0.985	0.999	0.999	0.944	0.989	0.953	0.970	0.961	0.991									
12	0.855	0.942	0.966	0.877	0.953	0.875	0.828	0.827	0.877	0.996	0.961	1	0.929	0.979	0.896	0.905	0.961	0.971	0.924	0.965	0.856	0.981	0.982	0.980									
13	0.640	0.766	0.810	0.669	0.888	0.666	0.607	0.606	0.668	0.957	0.835	0.929	1	0.984	0.697	0.718	0.858	0.846	0.736	0.809	0.642	0.940	0.950	0.844									
14	0.747	0.860	0.896	0.773	0.954	0.771	0.715	0.714	0.774	0.993	0.915	0.979	0.984	1	0.818	0.808	0.932	0.919	0.834	0.896	0.767	0.985	0.990	0.922									
15	0.970	0.992	0.971	0.958	0.948	0.999	0.982	0.903	0.999	0.856	0.978	0.896	0.697	0.818	1	0.999	0.967	0.967	0.973	0.975	0.995	0.899	0.885	0.961									
16	0.960	0.996	0.975	0.946	0.959	0.996	0.974	0.908	0.997	0.866	0.985	0.905	0.718	0.808	0.999	1	0.975	0.975	0.983	0.991	0.913	0.900	0.972										
17	0.880	0.991	0.966	0.897	0.998	0.953	0.904	0.851	0.955	0.962	0.999	0.961	0.858	0.932	0.967	0.975	1	0.998	0.941	0.988	0.939	0.980	0.972	0.991									
18	0.899	0.991	0.979	0.917	0.996	0.953	0.904	0.873	0.955	0.955	0.999	0.971	0.846	0.919	0.967	0.975	0.998	1	0.955	0.994	0.938	0.975	0.967	0.996									
19	0.986	0.963	0.991	0.993	0.931	0.976	0.976	0.975	0.973	0.888	0.944	0.924	0.736	0.834	0.973	0.975	0.941	0.955	1	0.981	0.968	0.876	0.841	0.968									
20	0.938	0.995	0.993	0.952	0.983	0.963	0.921	0.918	0.966	0.938	0.989	0.965	0.809	0.896	0.975	0.983	0.988	0.994	0.981	1	0.950	0.950	0.940	0.998									
												0.947	0.981	0.915	0.999	0.996	0.938	0.998	0.811	0.953	0.856	0.642	0.767	0.995	0.991	0.939	0.938	0.968	0.950	1	0.854	0.837	0.932
												0.914	0.820	0.991	0.877	0.809	0.766	0.880	0.994	0.970	0.981	0.940	0.985	0.985	0.999	0.975	0.876	0.950	0.854	1	0.999	0.957	
												0.903	0.803	0.986	0.863	0.791	0.747	0.866	0.995	0.961	0.982	0.950	0.990	0.885	0.900	0.972	0.967	0.841	0.940	0.837	0.999	1	0.947
												0.993	0.934	0.987	0.946	0.896	0.894	0.948	0.960	0.991	0.980	0.844	0.922	0.961	0.972	0.991	0.996	0.968	0.998	0.932	0.957	0.947	1



**Lampiran 5.** Hasil Estimasi Parameter model GWLR

$i$	$\hat{\beta}$							
	<i>intercept</i>	$x_1$	$x_2$	$x_3$	$x_4$	$x_5$	$x_6$	$x_7$
1	-0.413	0.357	-0.136	-0.150	2.576	-4.685	-1.542	2.568
2	-0.363	0.336	-0.200	-0.181	2.926	-5.093	-1.502	2.646
3	-0.352	0.315	-0.205	-0.179	2.869	-5.017	-1.491	2.621
4	-0.380	0.344	-0.177	-0.150	2.705	-4.847	-1.527	2.597
5	-0.332	0.313	-0.245	-0.209	3.089	-5.284	-1.483	2.683
6	-0.390	0.365	-0.172	-0.159	2.823	-4.997	-1.536	2.642
7	-0.402	0.384	-0.165	-0.144	2.768	-4.955	-1.565	2.651
8	-0.393	0.338	-0.167	-0.142	2.638	-4.753	-1.529	2.567
9	-0.388	0.363	-0.174	-0.161	2.830	-5.003	-1.534	2.642
10	-0.314	0.252	-0.288	-0.219	3.179	-5.354	-1.456	2.687
11	-0.350	0.328	-0.218	-0.198	3.002	-5.182	-1.493	2.665
12	-0.317	0.288	-0.260	-0.217	3.072	-5.243	-1.468	2.658
13	-0.266	0.245	-0.349	-0.278	3.410	-5.633	-1.440	2.727
14	-0.289	0.262	-0.303	-0.243	3.248	-5.456	-1.458	2.705
15	-0.379	0.357	-0.183	-0.172	2.858	-5.030	-1.524	2.644
16	-0.380	0.348	-0.180	-0.169	2.856	-5.017	-1.518	2.636
17	-0.341	0.320	-0.232	-0.200	3.045	-5.234	-1.488	2.675
18	-0.346	0.314	-0.223	-0.195	3.003	-5.177	-1.489	2.660
19	-0.367	0.331	-0.186	-0.163	2.792	-4.936	-1.510	2.608
20	-0.354	0.314	-0.206	-0.184	2.921	-5.077	-1.494	2.637
21	-0.393	0.372	-0.167	-0.156	2.798	-4.976	-1.543	2.642
22	-0.311	0.305	-0.277	-0.230	3.219	-5.442	-1.474	2.717
23	-0.302	0.307	-0.286	-0.237	3.270	-5.505	-1.470	2.730
24	-0.343	0.305	-0.217	-0.193	2.959	-5.114	-1.484	2.640



**Lampiran 6.** Nilai VIF Lokal Model GWLR

<i>i</i>	X1	X2	X3	X4	X5	X6	X7
1	1.833	2.045	1.822	29.696	44.132	1.513	3.848
2	1.810	2.064	1.837	27.934	41.332	1.457	3.698
3	1.787	2.043	1.813	27.733	40.822	1.461	3.619
4	1.820	2.038	1.816	29.206	43.296	1.511	3.775
5	1.782	2.068	1.830	26.774	39.312	1.423	3.553
6	1.832	2.068	1.840	28.982	43.152	1.493	3.826
7	1.845	2.065	1.835	29.778	44.463	1.526	3.901
8	1.815	2.032	1.798	29.286	43.545	1.531	3.795
9	1.832	2.068	1.842	28.956	43.108	1.491	3.824
10	1.752	2.058	1.805	25.611	37.372	1.393	3.390
11	1.797	2.066	1.837	27.385	40.341	1.436	3.625
12	1.756	2.049	1.808	26.208	38.303	1.412	3.452
13	1.710	2.082	1.805	24.045	34.796	1.347	3.208
14	1.734	2.065	1.804	24.906	36.288	1.375	3.329
15	1.826	2.066	1.842	28.691	42.629	1.481	3.788
16	1.821	2.065	1.838	28.455	42.244	1.475	3.766
17	1.792	2.066	1.834	27.125	39.896	1.432	3.592
18	1.789	2.062	1.825	27.177	40.019	1.436	3.596
19	1.804	2.044	1.816	28.467	42.088	1.488	3.709
20	1.792	2.053	1.817	27.540	40.632	1.452	3.630
21	1.838	2.066	1.838	29.251	43.604	1.504	3.856
22	1.770	2.075	1.832	26.045	38.058	1.397	3.459
23	1.767	2.077	1.833	25.902	37.808	1.390	3.440
24	1.782	2.052	1.816	27.193	40.013	1.441	3.582



**Lampiran 7.** Nilai  $\lambda$  Optimum

i	$\lambda$
1	$3.725 \times 10^{-2}$
2	$1.856 \times 10^{-2}$
3	$1.868 \times 10^{-2}$
4	$3.656 \times 10^{-2}$
5	$1.826 \times 10^{-2}$
6	$3.608 \times 10^{-2}$
7	$3.650 \times 10^{-2}$
8	$3.679 \times 10^{-2}$
9	$3.604 \times 10^{-2}$
10	$1.815 \times 10^{-2}$
11	$1.845 \times 10^{-2}$
12	$1.843 \times 10^{-2}$
13	$1.784 \times 10^{-2}$
14	$1.814 \times 10^{-2}$
15	$3.596 \times 10^{-2}$
16	$3.589 \times 10^{-2}$
17	$1.833 \times 10^{-2}$
18	$1.847 \times 10^{-2}$
19	$3.622 \times 10^{-2}$
20	$1.864 \times 10^{-2}$
21	$3.621 \times 10^{-2}$
22	$1.804 \times 10^{-2}$
23	$1.796 \times 10^{-2}$
24	$1.856 \times 10^{-2}$



Optimization Software:  
[www.balesio.com](http://www.balesio.com)

**Lampiran 8.** Hasil Estimasi Parameter model GWLR dengan LASSO

i	$\hat{\beta}_{LASSO}$							
	intercept	$x_1$	$x_2$	$x_3$	$x_4$	$x_5$	$x_6$	$x_7$
1	-0.215	0	0.253	0	0	-0.304	-0.651	0.779
2	-0.263	0	0.205	0	0	-0.835	-0.862	1.253
3	-0.258	0	0.201	0	0	-0.850	-0.857	1.258
4	-0.209	0	0.224	0	0	-0.358	-0.639	0.808
5	-0.270	0	0.199	0	0	-0.906	-0.889	1.307
6	-0.214	0	0.231	0	0	-0.351	-0.641	0.805
7	-0.211	0	0.241	0	0	-0.335	-0.645	0.806
8	-0.205	0	0.238	0	0	-0.354	-0.660	0.824
9	-0.215	0	0.230	0	0	-0.353	-0.642	0.806
10	-0.268	0	0.198	0	0	-0.994	-0.938	1.388
11	-0.268	0	0.205	0	0	-0.860	-0.872	1.273
12	-0.265	0	0.198	0	0	-0.941	-0.907	1.335
13	-0.279	0	0.215	0	0	-1.244	-1.106	1.638
14	-0.276	0	0.205	0	0	-1.074	-0.994	1.462
15	-0.216	0	0.225	0	0	-0.362	-0.641	0.810
16	-0.216	0	0.225	0	0	-0.362	-0.638	0.808
17	-0.268	0	0.201	0	0	-0.881	-0.876	1.287
18	-0.265	0	0.203	0	0	-0.868	-0.872	1.274
19	-0.210	0	0.223	0	0	-0.369	-0.630	0.806
20	-0.260	0	0.206	0	0	-0.845	-0.862	1.255
21	-0.213	0	0.235	0	0	-0.345	-0.642	0.804
22	-0.273	0	0.200	0	0	-0.975	-0.926	1.373
23	-0.274	0	0.202	0	0	-0.998	-0.937	1.395
24	-0.262	0	0.206	0	0	-0.864	-0.868	1.269



**Lampiran 9.** Nilai Standard Error

$i$	$SE(\beta_1)$	$SE(\beta_2)$	$SE(\beta_3)$	$SE(\beta_4)$	$SE(\beta_5)$	$SE(\beta_6)$	$SE(\beta_7)$
1	-	0.116	-	-	0.141	0.087	0.094
2	-	0.099	-	-	0.108	0.061	0.088
3	-	0.084	-	-	0.109	0.082	0.104
4	-	0.098	-	-	0.134	0.082	0.103
5	-	0.091	-	-	0.118	0.113	0.115
6	-	0.098	-	-	0.121	0.072	0.092
7	-	0.097	-	-	0.105	0.065	0.101
8	-	0.105	-	-	0.140	0.081	0.111
9	-	0.113	-	-	0.119	0.064	0.102
10	-	0.088	-	-	0.092	0.093	0.077
11	-	0.110	-	-	0.109	0.101	0.111
12	-	0.097	-	-	0.100	0.094	0.104
13	-	0.099	-	-	0.143	0.102	0.109
14	-	0.108	-	-	0.134	0.088	0.119
15	-	0.089	-	-	0.113	0.071	0.082
16	-	0.095	-	-	0.113	0.077	0.089
17	-	0.095	-	-	0.107	0.095	0.111
18	-	0.091	-	-	0.114	0.094	0.103
19	-	0.091	-	-	0.145	0.078	0.117
20	-	0.100	-	-	0.111	0.072	0.106
21	-	0.081	-	-	0.111	0.077	0.103
22	-	0.087	-	-	0.109	0.079	0.090
23	-	0.097	-	-	0.126	0.096	0.098
24	-	0.094	-	-	0.112	0.093	0.113



**Lampiran 10.** Nilai Statistik Uji  $|W|$ 

$i$	$\beta_1$	$\beta_2$	$\beta_3$	$\beta_4$	$\beta_5$	$\beta_6$	$\beta_7$	$Z_{0.025}$
1	-	2.179	-	-	2.160	7.461	8.273	1.960
2	-	2.067	-	-	7.761	14.030	14.314	
3	-	2.395	-	-	7.816	10.391	12.088	
4	-	2.283	-	-	2.670	7.754	7.865	
5	-	2.175	-	-	7.704	7.846	11.321	
6	-	2.364	-	-	2.907	8.906	8.785	
7	-	2.485	-	-	3.195	9.889	8.001	
8	-	2.264	-	-	2.533	8.125	7.432	
9	-	2.030	-	-	2.953	10.056	7.898	
10	-	2.237	-	-	10.837	10.074	18.132	
11	-	1.865	-	-	7.898	8.660	11.496	
12	-	2.034	-	-	9.420	9.644	12.820	
13	-	2.159	-	-	8.686	10.837	14.969	
14	-	1.891	-	-	8.005	11.328	12.294	
15	-	2.529	-	-	3.195	9.025	9.845	
16	-	2.369	-	-	3.214	8.263	9.073	
17	-	2.119	-	-	8.208	9.210	11.601	
18	-	2.234	-	-	7.595	9.273	12.418	
19	-	2.465	-	-	2.551	8.112	6.866	
20	-	2.058	-	-	7.614	11.904	11.889	
21	-	2.906	-	-	3.110	8.343	7.782	
22	-	2.311	-	-	8.978	11.682	15.172	
23	-	2.073	-	-	7.944	9.738	14.223	
24	-	2.184	-	-	7.688	9.319	11.204	



**Lampiran 11.** Parameter model GWLR dengan LASSO Setelah Uji Signifikansi Parameter

$i$	$\hat{\beta}^{LASSO}$							
	<i>intercept</i>	$x_1$	$x_2$	$x_3$	$x_4$	$x_5$	$x_6$	$x_7$
1	-0.215	-	0.253	-	-	-0.304	-0.651	0.779
2	-0.263	-	0.205	-	-	-0.835	-0.862	1.253
3	-0.258	-	0.201	-	-	-0.850	-0.857	1.258
4	-0.209	-	0.224	-	-	-0.358	-0.639	0.808
5	-0.270	-	0.199	-	-	-0.906	-0.889	1.307
6	-0.214	-	0.231	-	-	-0.351	-0.641	0.805
7	-0.211	-	0.241	-	-	-0.335	-0.645	0.806
8	-0.205	-	0.238	-	-	-0.354	-0.660	0.824
9	-0.215	-	0.230	-	-	-0.353	-0.642	0.806
10	-0.268	-	0.198	-	-	-0.994	-0.938	1.388
11	-0.268	-	-	-	-	-0.860	-0.872	1.273
12	-0.265	-	0.198	-	-	-0.941	-0.907	1.335
13	-0.279	-	0.215	-	-	-1.244	-1.106	1.638
14	-0.276	-	-	-	-	-1.074	-0.994	1.462
15	-0.216	-	0.225	-	-	-0.362	-0.641	0.810
16	-0.216	-	0.225	-	-	-0.362	-0.638	0.808
17	-0.268	-	0.201	-	-	-0.881	-0.876	1.287
18	-0.265	-	0.203	-	-	-0.868	-0.872	1.274
19	-0.210	-	0.223	-	-	-0.369	-0.630	0.806
20	-0.260	-	0.206	-	-	-0.845	-0.862	1.255
21	-0.213	-	0.235	-	-	-0.345	-0.642	0.804
22	-0.273	-	0.200	-	-	-0.975	-0.926	1.373
23	-0.274	-	0.202	-	-	-0.998	-0.937	1.395
24	-0.262	-	0.206	-	-	-0.864	-0.868	1.269



**Lampiran 12.** Model GWLR dengan LASSO

Kabupaten Bantaeng:

$$\pi(u_1, v_1) = \frac{\exp(-0.215 + 0.253x_2 - 0.304x_5 - 0.651x_6 + 0.779x_7)}{1 + \exp(-0.215 + 0.253x_2 - 0.304x_5 - 0.651x_6 + 0.779x_7)}$$

Kabupaten Barru:

$$\pi(u_2, v_2) = \frac{\exp(-0.263 + 0.205x_2 - 0.835x_5 - 0.862x_6 + 1.253x_7)}{1 + \exp(-0.263 + 0.205x_2 - 0.835x_5 - 0.862x_6 + 1.253x_7)}$$

Kabupaten Bone:

$$\pi(u_3, v_3) = \frac{\exp(-0.258 + 0.201x_2 - 0.850x_5 - 0.857x_6 + 1.258x_7)}{1 + \exp(-0.258 + 0.201x_2 - 0.850x_5 - 0.857x_6 + 1.258x_7)}$$

Kabupaten Bulukumba:

$$\pi(u_4, v_4) = \frac{\exp(-0.209 + 0.224x_2 - 0.358x_5 - 0.639x_6 + 0.808x_7)}{1 + \exp(-0.209 + 0.224x_2 - 0.358x_5 - 0.639x_6 + 0.808x_7)}$$

Kabupaten Enrekang:

$$\pi(u_5, v_5) = \frac{\exp(-0.270 + 0.199x_2 - 0.906x_5 - 0.889x_6 + 1.307x_7)}{1 + \exp(-0.270 + 0.199x_2 - 0.906x_5 - 0.889x_6 + 1.307x_7)}$$

Kabupaten Gowa:

$$\pi(u_6, v_6) = \frac{\exp(-0.214 + 0.231x_2 - 0.351x_5 - 0.641x_6 + 0.805x_7)}{1 + \exp(-0.214 + 0.231x_2 - 0.351x_5 - 0.641x_6 + 0.805x_7)}$$

Kabupaten Jeneponto:

$$\pi(u_7, v_7) = \frac{\exp(-0.211 + 0.241x_2 - 0.335x_5 - 0.645x_6 + 0.806x_7)}{1 + \exp(-0.211 + 0.241x_2 - 0.335x_5 - 0.645x_6 + 0.806x_7)}$$

Kepulauan Selayar:

$$\pi(u_8, v_8) = \frac{\exp(-0.205 + 0.238x_2 - 0.354x_5 - 0.660x_6 + 0.824x_7)}{1 + \exp(-0.205 + 0.238x_2 - 0.354x_5 - 0.660x_6 + 0.824x_7)}$$

Kota Makassar:

$$= \frac{\exp(-0.215 + 0.230x_2 - 0.353x_5 - 0.642x_6 + 0.806x_7)}{1 + \exp(-0.215 + 0.230x_2 - 0.353x_5 - 0.642x_6 + 0.806x_7)}$$



**Lampiran 12.** Model GWLR dengan LASSO (Lanjutan)

Kota Palopo:

$$\pi(u_{10}, v_{10}) = \frac{\exp(-0.268 + 0.198x_2 - 0.994x_5 - 0.938x_6 + 1.388x_7)}{1 + \exp(-0.268 + 0.198x_2 - 0.994x_5 - 0.938x_6 + 1.388x_7)}$$

Kota Parepare:

$$\pi(u_{11}, v_{11}) = \frac{\exp(-0.268 - 0.860x_5 - 0.872x_6 + 1.273x_7)}{1 + \exp(-0.268 - 0.860x_5 - 0.872x_6 + 1.273x_7)}$$

Kabupaten Luwu:

$$\pi(u_{12}, v_{12}) = \frac{\exp(-0.265 + 0.198x_2 - 0.941x_5 - 0.907x_6 + 1.335x_7)}{1 + \exp(-0.265 + 0.198x_2 - 0.941x_5 - 0.907x_6 + 1.335x_7)}$$

Kabupaten Luwu Timur:

$$\pi(u_{13}, v_{13}) = \frac{\exp(-0.279 + 0.215x_2 - 1.244x_5 - 1.106x_6 + 1.638x_7)}{1 + \exp(-0.279 + 0.215x_2 - 1.244x_5 - 1.106x_6 + 1.638x_7)}$$

Kabupaten Luwu Utara:

$$\pi(u_{14}, v_{14}) = \frac{\exp(-0.276 - 1.074x_5 - 0.994x_6 + 1.462x_7)}{1 + \exp(-0.276 - 1.074x_5 - 0.994x_6 + 1.462x_7)}$$

Kabupaten Maros:

$$\pi(u_{15}, v_{15}) = \frac{\exp(-0.216 + 0.225x_2 - 0.362x_5 - 0.641x_6 + 0.810x_7)}{1 + \exp(-0.216 + 0.225x_2 - 0.362x_5 - 0.641x_6 + 0.810x_7)}$$

Pangkajene dan Kepulauan:

$$\pi(u_{16}, v_{16}) = \frac{\exp(-0.216 + 0.225x_2 - 0.362x_5 - 0.638x_6 + 0.808x_7)}{1 + \exp(-0.216 + 0.225x_2 - 0.362x_5 - 0.638x_6 + 0.808x_7)}$$

Kabupaten Pinrang:

$$\pi(u_{17}, v_{17}) = \frac{\exp(-0.268 + 0.201x_2 - 0.881x_5 - 0.876x_6 + 1.287x_7)}{1 + \exp(-0.268 + 0.201x_2 - 0.881x_5 - 0.876x_6 + 1.287x_7)}$$

Sidenreng Rappang:

$$\pi(u_{18}, v_{18}) = \frac{\exp(-0.265 + 0.203x_2 - 0.868x_5 - 0.872x_6 + 1.274x_7)}{1 + \exp(-0.265 + 0.203x_2 - 0.868x_5 - 0.872x_6 + 1.274x_7)}$$



**Lampiran 12.** Model GWLR dengan LASSO (Lanjutan)

Kabupaten Sinjai:

$$\pi(u_{19}, v_{19}) = \frac{\exp(-0.210 + 0.223x_2 - 0.369x_5 - 0.630x_6 + 0.806x_7)}{1 + \exp(-0.210 + 0.223x_2 - 0.369x_5 - 0.630x_6 + 0.806x_7)}$$

Kabupaten Soppeng:

$$\pi(u_{20}, v_{20}) = \frac{\exp(-0.260 + 0.206x_2 - 0.845x_5 - 0.862x_6 + 1.255x_7)}{1 + \exp(-0.260 + 0.206x_2 - 0.845x_5 - 0.862x_6 + 1.255x_7)}$$

Kabupaten Takalar:

$$\pi(u_{21}, v_{21}) = \frac{\exp(-0.213 + 0.235x_2 - 0.345x_5 - 0.642x_6 + 0.804x_7)}{1 + \exp(-0.213 + 0.235x_2 - 0.345x_5 - 0.642x_6 + 0.804x_7)}$$

Kabupaten Tana Toraja:

$$\pi(u_{22}, v_{22}) = \frac{\exp(-0.273 + 0.200x_2 - 0.975x_5 - 0.926x_6 + 1.373x_7)}{1 + \exp(-0.273 + 0.200x_2 - 0.975x_5 - 0.926x_6 + 1.373x_7)}$$

Kabupaten Toraja Utara:

$$\pi(u_{23}, v_{23}) = \frac{\exp(-0.274 + 0.202x_2 - 0.998x_5 - 0.937x_6 + 1.395x_7)}{1 + \exp(-0.274 + 0.202x_2 - 0.998x_5 - 0.937x_6 + 1.395x_7)}$$

Kabupaten Wajo:

$$\pi(u_{24}, v_{24}) = \frac{\exp(-0.262 + 0.206x_2 - 0.864x_5 - 0.868x_6 + 1.269x_7)}{1 + \exp(-0.262 + 0.206x_2 - 0.864x_5 - 0.868x_6 + 1.269x_7)}$$



**Lampiran 12.** Model GWLR dengan LASSO (Lanjutan)

Model Transformasi logitnya yaitu:

Kabupaten Bantaeng:

$$\begin{aligned} \text{logit}[\pi(u_1, v_1)] &= \ln\left(\frac{\pi(u_1, v_1)}{1 - \pi(u_1, v_1)}\right) \\ &= -0.215 + 0.253x_2 - 0.304x_5 - 0.651x_6 + 0.779x_7 \end{aligned}$$

Kabupaten Barru:

$$\begin{aligned} \text{logit}[\pi(u_2, v_2)] &= \ln\left(\frac{\pi(u_2, v_2)}{1 - \pi(u_2, v_2)}\right) \\ &= -0.263 + 0.205x_2 - 0.835x_5 - 0.862x_6 + 1.253x_7 \end{aligned}$$

Kabupaten Bone:

$$\begin{aligned} \text{logit}[\pi(u_3, v_3)] &= \ln\left(\frac{\pi(u_3, v_3)}{1 - \pi(u_3, v_3)}\right) \\ &= -0.258 + 0.201x_2 - 0.850x_5 - 0.857x_6 + 1.258x_7 \end{aligned}$$

Kabupaten Bulukumba:

$$\begin{aligned} \text{logit}[\pi(u_4, v_4)] &= \ln\left(\frac{\pi(u_4, v_4)}{1 - \pi(u_4, v_4)}\right) \\ &= -0.209 + 0.224x_2 - 0.358x_5 - 0.639x_6 + 0.808x_7 \end{aligned}$$

Kabupaten Enrekang:

$$\begin{aligned} \text{logit}[\pi(u_5, v_5)] &= \ln\left(\frac{\pi(u_5, v_5)}{1 - \pi(u_5, v_5)}\right) \\ &= -0.270 + 0.199x_2 - 0.906x_5 - 0.889x_6 + 1.307x_7 \end{aligned}$$

Kabupaten Gowa:

$$\begin{aligned} \text{logit}[\pi(u_6, v_6)] &= \ln\left(\frac{\pi(u_6, v_6)}{1 - \pi(u_6, v_6)}\right) \\ &= -0.214 + 0.231x_2 - 0.351x_5 - 0.641x_6 + 0.805x_7 \end{aligned}$$

Kabupaten Jeneponto:

$$\begin{aligned} \text{logit}[\pi(u_7, v_7)] &= \ln\left(\frac{\pi(u_7, v_7)}{1 - \pi(u_7, v_7)}\right) \\ &= -0.211 + 0.241x_2 - 0.335x_5 - 0.645x_6 + 0.806x_7 \end{aligned}$$

**Lampiran 12.** Model GWLR dengan LASSO (Lanjutan)

Kepulauan Selayar:

$$\begin{aligned} \text{logit}[\pi(u_8, v_8)] &= \ln\left(\frac{\pi(u_8, v_8)}{1 - \pi(u_8, v_8)}\right) \\ &= -0.205 + 0.238x_2 - 0.354x_5 - 0.660x_6 + 0.824x_7 \end{aligned}$$

Kota Makassar:

$$\begin{aligned} \text{logit}[\pi(u_9, v_9)] &= \ln\left(\frac{\pi(u_9, v_9)}{1 - \pi(u_9, v_9)}\right) \\ &= -0.215 + 0.230x_2 - 0.353x_5 - 0.642x_6 + 0.806x_7 \end{aligned}$$

Kota Palopo:

$$\begin{aligned} \text{logit}[\pi(u_{10}, v_{10})] &= \ln\left(\frac{\pi(u_{10}, v_{10})}{1 - \pi(u_{10}, v_{10})}\right) \\ &= -0.268 + 0.198x_2 - 0.994x_5 - 0.938x_6 + 1.388x_7 \end{aligned}$$

Kota Parepare:

$$\begin{aligned} \text{logit}[\pi(u_{11}, v_{11})] &= \ln\left(\frac{\pi(u_{11}, v_{11})}{1 - \pi(u_{11}, v_{11})}\right) \\ &= -0.268 - 0.860x_5 - 0.872x_6 + 1.273x_7 \end{aligned}$$

Kabupaten Luwu:

$$\begin{aligned} \text{logit}[\pi(u_{12}, v_{12})] &= \ln\left(\frac{\pi(u_{12}, v_{12})}{1 - \pi(u_{12}, v_{12})}\right) \\ &= -0.265 + 0.198x_2 - 0.941x_5 - 0.907x_6 + 1.335x_7 \end{aligned}$$

Kabupaten Luwu Timur:

$$\begin{aligned} \text{logit}[\pi(u_{13}, v_{13})] &= \ln\left(\frac{\pi(u_{13}, v_{13})}{1 - \pi(u_{13}, v_{13})}\right) \\ &= -0.279 + 0.215x_2 - 1.244x_5 - 1.106x_6 + 1.638x_7 \end{aligned}$$

Kabupaten Luwu Utara:

$$\begin{aligned} \text{logit}[\pi(u_{14}, v_{14})] &= \ln\left(\frac{\pi(u_{14}, v_{14})}{1 - \pi(u_{14}, v_{14})}\right) \\ &= -0.276 - 1.074x_5 - 0.994x_6 + 1.462x_7 \end{aligned}$$

Kabupaten Maros:



$$\begin{aligned} \text{logit}[\pi(u_{15}, v_{15})] &= \ln\left(\frac{\pi(u_{15}, v_{15})}{1 - \pi(u_{15}, v_{15})}\right) \\ &= -0.216 + 0.225x_2 - 0.362x_5 - 0.641x_6 + 0.810x_7 \end{aligned}$$

**Lampiran 12.** Model GWLR dengan LASSO (Lanjutan)

Pangkajene dan Kepulauan:

$$\begin{aligned} \text{logit}[\pi(u_{16}, v_{16})] &= \ln\left(\frac{\pi(u_{16}, v_{16})}{1 - \pi(u_{16}, v_{16})}\right) \\ &= -0.216 + 0.225x_2 - 0.362x_5 - 0.638x_6 + 0.808x_7 \end{aligned}$$

Kabupaten Pinrang:

$$\begin{aligned} \text{logit}[\pi(u_{17}, v_{17})] &= \ln\left(\frac{\pi(u_{17}, v_{17})}{1 - \pi(u_{17}, v_{17})}\right) \\ &= -0.268 + 0.201x_2 - 0.881x_5 - 0.876x_6 + 1.287x_7 \end{aligned}$$

Sidenreng Rappang:

$$\begin{aligned} \text{logit}[\pi(u_{18}, v_{18})] &= \ln\left(\frac{\pi(u_{18}, v_{18})}{1 - \pi(u_{18}, v_{18})}\right) \\ &= -0.265 + 0.203x_2 - 0.868x_5 - 0.872x_6 + 1.274x_7 \end{aligned}$$

Kabupaten Sinjai:

$$\begin{aligned} \text{logit}[\pi(u_{19}, v_{19})] &= \ln\left(\frac{\pi(u_{19}, v_{19})}{1 - \pi(u_{19}, v_{19})}\right) \\ &= -0.210 + 0.223x_2 - 0.369x_5 - 0.630x_6 + 0.806x_7 \end{aligned}$$

Kabupaten Soppeng:

$$\begin{aligned} \text{logit}[\pi(u_{20}, v_{20})] &= \ln\left(\frac{\pi(u_{20}, v_{20})}{1 - \pi(u_{20}, v_{20})}\right) \\ &= -0.260 + 0.206x_2 - 0.845x_5 - 0.862x_6 + 1.255x_7 \end{aligned}$$

Kabupaten Takalar:

$$\begin{aligned} \text{logit}[\pi(u_{21}, v_{21})] &= \ln\left(\frac{\pi(u_{21}, v_{21})}{1 - \pi(u_{21}, v_{21})}\right) \\ &= -0.213 + 0.235x_2 - 0.345x_5 - 0.642x_6 + 0.804x_7 \end{aligned}$$

Kabupaten Tana Toraja:

$$\begin{aligned} \text{logit}[\pi(u_{22}, v_{22})] &= \ln\left(\frac{\pi(u_{22}, v_{22})}{1 - \pi(u_{22}, v_{22})}\right) \\ &= -0.273 + 0.200x_2 - 0.975x_5 - 0.926x_6 + 1.373x_7 \end{aligned}$$

**Lampiran 12.** Model GWLR dengan LASSO (Lanjutan)

Kabupaten Toraja Utara:

$$\begin{aligned} \text{logit}[\pi(u_{23}, v_{23})] &= \ln\left(\frac{\pi(u_{23}, v_{23})}{1 - \pi(u_{23}, v_{23})}\right) \\ &= -0.274 + 0.202x_2 - 0.998x_5 - 0.937x_6 + 1.395x_7 \end{aligned}$$

Kabupaten Wajo:

$$\begin{aligned} \text{logit}[\pi(u_{24}, v_{24})] &= \ln\left(\frac{\pi(u_{24}, v_{24})}{1 - \pi(u_{24}, v_{24})}\right) \\ &= -0.262 + 0.206x_2 - 0.864x_5 - 0.868x_6 + 1.269x_7 \end{aligned}$$



**Lampiran 13.** Nilai *Odds Ratio*

$i$	$\exp(\beta_1)$	$\exp(\beta_2)$	$\exp(\beta_3)$	$\exp(\beta_4)$	$\exp(\beta_5)$	$\exp(\beta_6)$	$\exp(\beta_7)$
1	-	1.288	-	-	0.738	0.521	2.180
2	-	1.227	-	-	0.434	0.422	3.502
3	-	1.223	-	-	0.428	0.424	3.519
4	-	1.251	-	-	0.699	0.528	2.244
5	-	1.220	-	-	0.404	0.411	3.695
6	-	1.259	-	-	0.704	0.527	2.236
7	-	1.273	-	-	0.715	0.524	2.238
8	-	1.269	-	-	0.702	0.517	2.279
9	-	1.259	-	-	0.703	0.526	2.239
10	-	1.218	-	-	0.370	0.392	4.008
11	-	-	-	-	0.423	0.418	3.571
12	-	1.219	-	-	0.390	0.404	3.800
13	-	1.240	-	-	0.288	0.331	5.143
14	-	-	-	-	0.342	0.370	4.315
15	-	1.253	-	-	0.697	0.527	2.247
16	-	1.252	-	-	0.696	0.528	2.243
17	-	1.222	-	-	0.414	0.417	3.622
18	-	1.225	-	-	0.420	0.418	3.576
19	-	1.250	-	-	0.691	0.533	2.240
20	-	1.228	-	-	0.430	0.422	3.509
21	-	1.265	-	-	0.708	0.526	2.234
22	-	1.222	-	-	0.377	0.396	3.946
23	-	1.224	-	-	0.369	0.392	4.035
24	-	1.229	-	-	0.421	0.420	3.557

