PROGRAM STUDI STATISTIKA
SK BAN-PT No. 1765/SK/BAN-PT/AK-PPJ/S/III/2022
FAKULTAS SAINS DAN TEKNOLOGI
UNIVERSITAS PGRI ADI BUANA SURABAYA

FORM F.SK05
BUKTI BIMBINGAN SKRIPSI

Nama	:	Maria Hernita Elvine Pramesty
NIM	:	202400007
Judul Skripsi	:	Pemodelan Faktor-Faktor yang Mempengaruhi Tuberkulosis (TBC) di Provinsi Jawa Barat Tahun 2022 Menggunakan Spasial Geographically Weighted Regression (GWR)
Dosen Pembimbing	:	Artanti Indrasetianingsih, S.Si., M.Si

	Materi Pembimbingan Proposal	Tanda Tangan Dosen Pembimbing
1.	Bimbingan Statistika Deskriptif	
2.	Bimbingan Regresi OLS	
3.	Bimbingan Uji Asumsi Klasik	
4.	Bimbingan GWR	
5.	Revisi Statistik Des,	
6.	Revisi Uji Parsial & Serentak OLS	
7.	Revisi Hasil Uji Parsial GWR (peta)	
8.	Interpretasi & Artikel	

Catatan: *) Coret yang tidak sesuai

PROGRAM STUDI STATISTIKA
SK BAN-PT No. 1765/SK/BAN-PT/AK-PPJ/S/III/2022
FAKULTAS SAINS DAN TEKNOLOGI
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FORM F.SK08
PERBAIKAN/REVISI SEMINAR DAN UJIAN SKRIPSI

Nama	:	Maria Hernita Elvine Pramesty
NIM	:	202400007
Judul Skripsi	:	Pemodelan Faktor-Faktor yang Mempengaruhi Tuberkulosis (TBC) di Provinsi Jawa Barat Tahun 2022 Menggunakan Spasial Geographically Weighted Regression (GWR)
Dosen Pembimbing	:	Artanti Indrasetianingsih, S.Si., M.Si

	Materi Revisi Seminar dan Ujian Skripsi	Tanda Tangan Dosen Penguji
1.	Diagram Alir (Uji Multikolinearitas) & penanganan multikolinearitas	
2.	Merapikan font sitasi	
3.	Interpretasi Uji Parsial GWR	
4.	Kesimpulan	
5.		
6.		

Surabaya, 11 Juli 2024
Dosen Pembimbing,

Artanti Indrasetianingsih, S.Si., M.Si
NIP/NPP : 0609466/DY

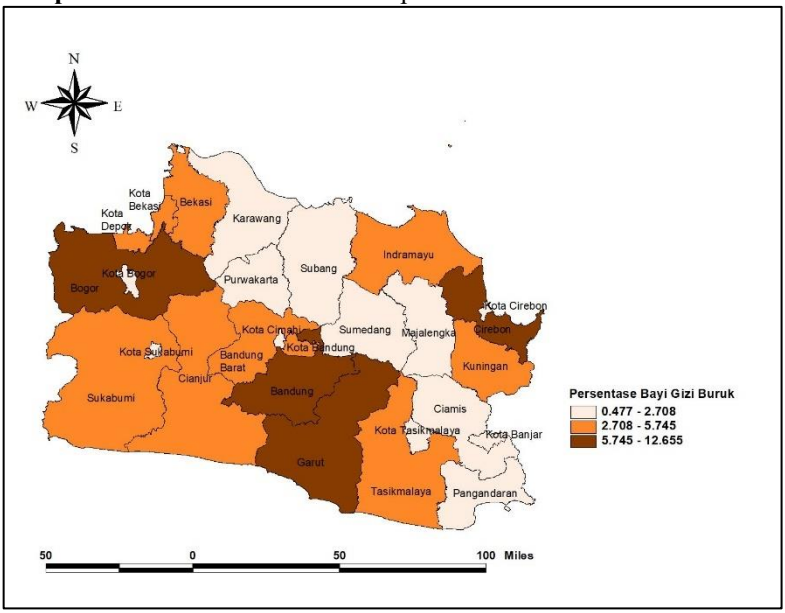
*Catatan: *) Coret yang tidak sesuai*

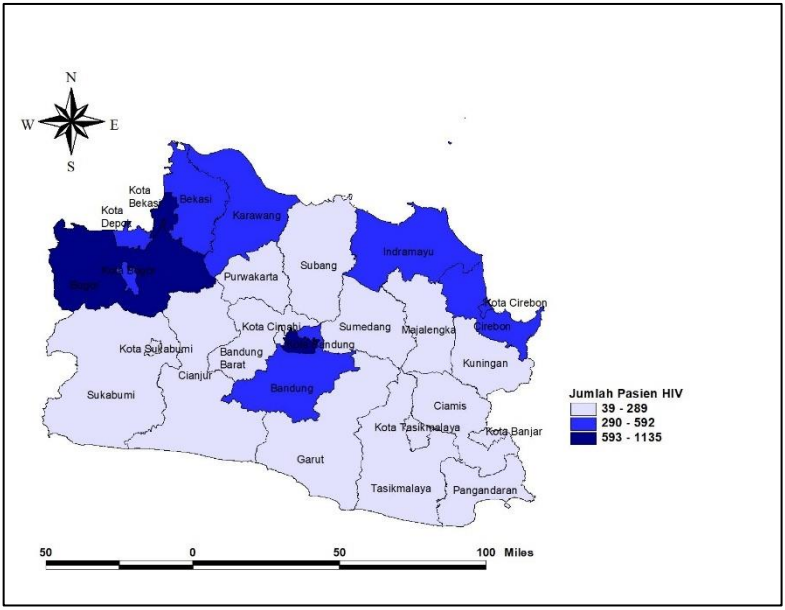
LAMPIRAN

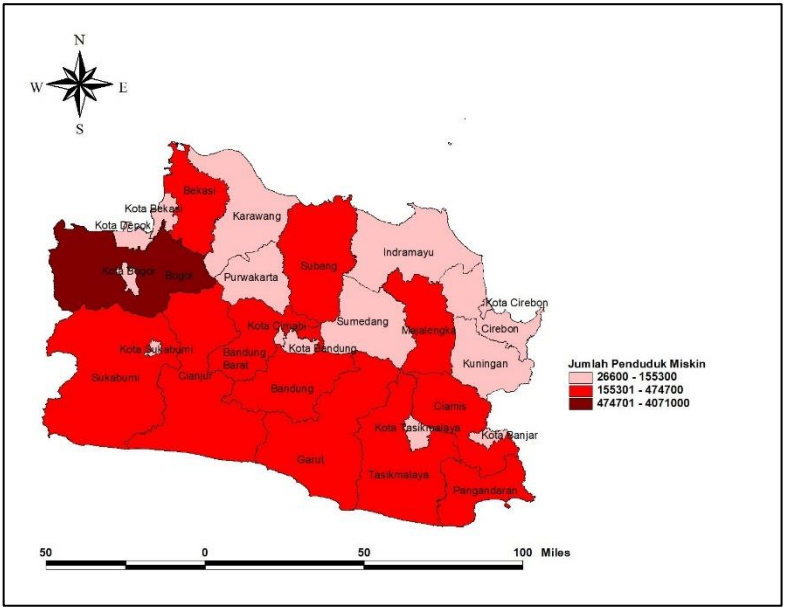
Lampiran 1 Data Jumlah Kasus Tuberculosis (Y) dan Variabel Independen (Xk) dan Titik Koordinat Provinsi Jawa Barat

Kab/Kota	v	u	Y	X1	X2	X3	X4	X5	X6	X7	X8
Bandung	-6,9147	107,61	10650	246800	502	83,09	8,686	62,37	100	2136	11
Bandung Barat	-6,8937	107,432	3043	201100	174	81,22	4,639	50,48	91,1	1439	9
Bekasi	-6,2474	107,149	8379	199900	563	83,14	3,063	78,28	92,6	2570	53
Bogor	-7,7403	110,741	21516	4071000	751	79,46	12,655	53,06	66,6	1861	29
Ciamis	-7,3321	108,493	2946	194100	106	80,46	2,194	60,49	83,8	782	6
Cianjur	-6,8332	107,123	7059	186300	219	77,82	3,068	73,12	92,9	700	5
Cirebon	-6,6899	108,475	6981	140300	340	80,72	8,517	71,07	91	2150	12
Garut	-7,2279	107,909	7920	258600	212	79,77	8,49	55,09	93,5	847	7
Indramayu	-6,4557	108,19	2729	120100	592	80,23	5,745	64,24	91,8	902	12
Karawang	-6,3227	107,338	8020	83400	414	80,95	2,504	60,93	55,3	1309	25
Kota Bandung	-6,9149	107,608	14541	26600	1135	84,23	4,016	68,32	100	14776	38
Kota Banjar	-7,3746	108,558	742	87100	55	79,22	0,728	81,59	99	1576	4
Kota Bekasi	-6,249	106,997	10747	31500	906	85,35	4,151	64,59	93	12159	46
Kota Bogor	-6,6	106,8	7740	37900	408	83,28	1,653	70,02	62,4	9550	22
Kota Cimahi	-6,8995	107,534	4321	64400	161	83,85	0,962	53,41	83,1	13557	8
Kota Cirebon	-6,7155	108,564	2760	109800	343	81,14	1,105	74,96	86,7	8646	10
Kota Depok	-6,3889	106,83	6549	137400	321	84,49	3,17	77,5	99,3	10622	26
Kota Sukabumi	-6,9196	106,927	2383	79200	165	81,31	0,97	66,48	95,5	7377	6
Kota Tasikmalaya	-7,3333	108,2	2838	31200	192	80,97	2,25	43,88	63,8	3988	13
Kuningan	-7,0138	108,57	2441	94000	165	83,12	2,904	51,35	95,3	1003	12
Majalengka	-6,7791	108,285	3162	266100	168	78,09	2,475	48,42	97,3	1004	5
Pangandaran	-7,7008	108,657	734	183700	39	79,83	0,477	79,37	83	383	1
Purwakarta	-6,5614	107,444	4589	155300	174	79,18	1,147	71,99	86,7	1036	11
Subang	-6,3488	107,764	4769	225000	289	81,42	2,005	70,54	97,5	750	10
Sukabumi	-6,8388	106,959	7491	474700	177	79,29	5,647	61	100	674	9
Sumedang	-6,8329	107,953	2501	147100	150	81,4	2,708	59,12	98,5	745	3
Tasikmalaya	-7,3333	108,2	3110	276700	86	76,85	4,07	46,37	89,7	705	2

Lampiran 2 Peta Tematik Pada Setiap Variabel






N
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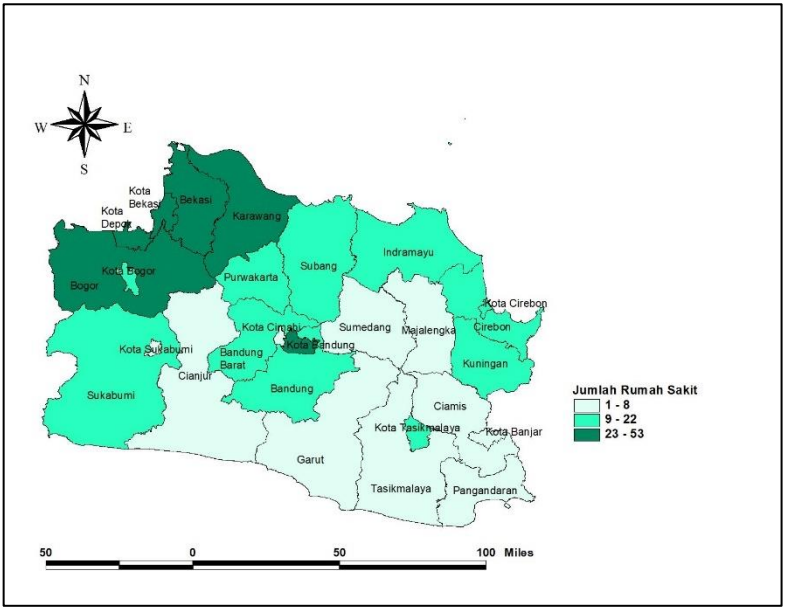
Bekasi
Kota Bekasi
Kota Depok
Karawang
Indramayu
Subang
Purwakarta
Kota Bogor
Bogor
Kota Cirebon
Sumedang
Majalengka
Cirebon
Kota Cimahi
Kota Sukabumi
Bandung Barat
Kota Bandung
Kuningan
Sukabumi
Cianjur
Bandung
Ciamis
Kota Tasikmalaya
Kota Banjar
Garut
Tasikmalaya
Pangandaran
Jumlah Penduduk Miskin
26600 - 155300
155301 - 474700
474701 - 4071000
50
0
50
100 Miles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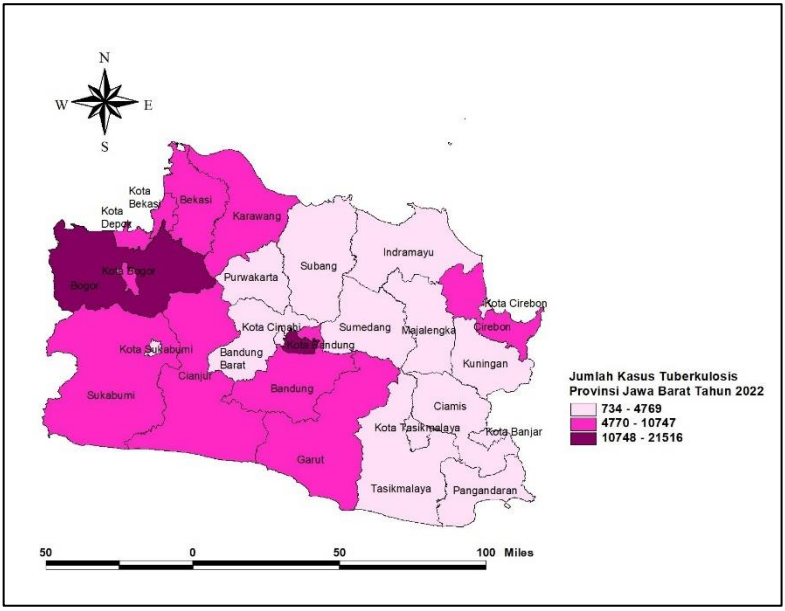
Bandung Barat
Kota Bandung
Kuningan
Cianjur
Sukabumi
Bandung
Ciamis
Kota Tasikmalaya
Kota Banjar
Garut
Tasikmalaya
Pangandaran
Jumlah Rumah Sakit
1 - 8
9 - 22
23 - 53
50
0
50
100 Miles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Indramayu
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Sukabumi
Bandung
Ciamis
Kota Tasikmalaya
Kota Banjar
Garut
Tasikmalaya
Pangandaran
50
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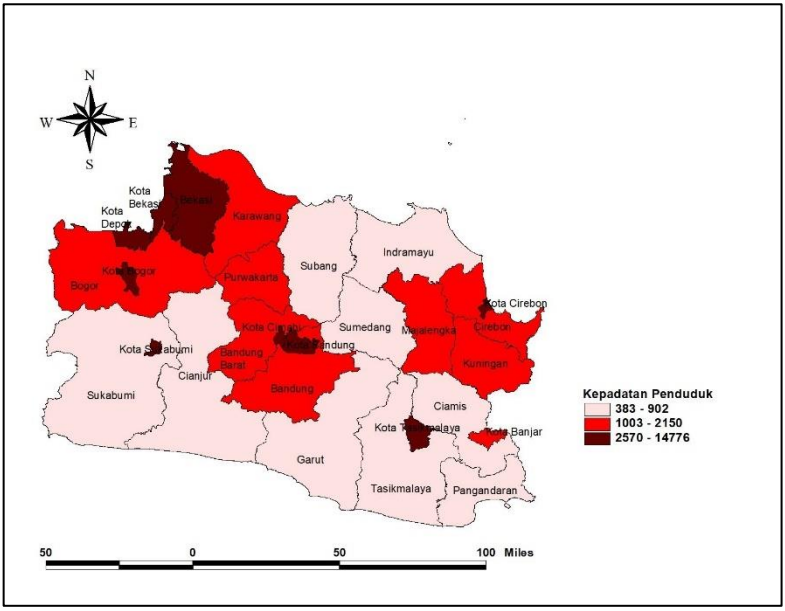
100 Miles
Jumlah Kasus Tuberkulosis
Provinsi Jawa Barat Tahun 2022
734 - 4769
4770 - 10747
10748 - 21516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Bandung Barat
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Sukabumi
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Ciamis
Kota Tasikmalaya
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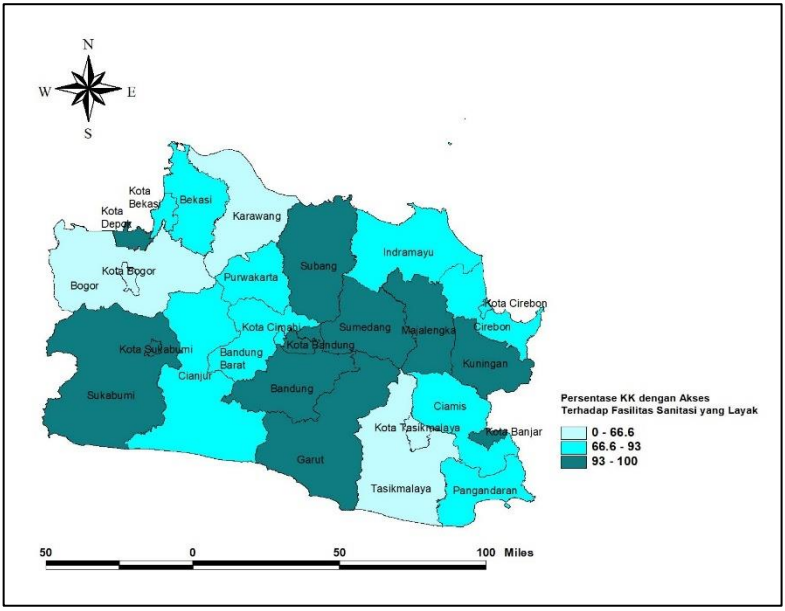
Kepadatan Penduduk
383 - 902
1003 - 2150
2570 - 14776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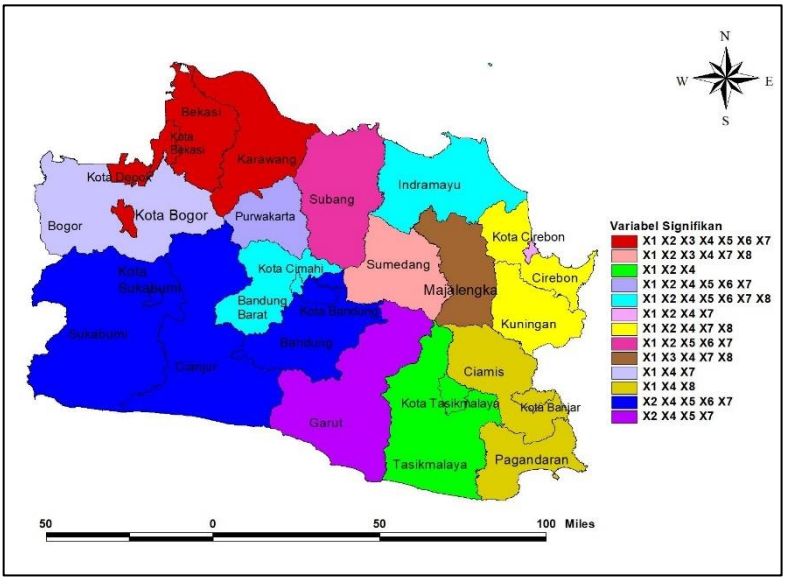
Sukabumi
Bandung
Ciamis
Kota Tasikmalaya
Kota Banjar
Garut
Tasikmalaya
Pangandaran
Persentase KK dengan Akses Terhadap Fasilitas Sanitasi yang Layak
0 - 66.6
66.6 - 93
93 - 100
50 0 50 100 Miles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Kota Bekasi
Karawang
Kota Depok
Indramayu
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Kota Bogor
Purwakarta
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Kota Bandung
Kuningan
Cianjur
Sukabumi
Bandung
Ciamis
Kota Tasikmalaya
Kota Banjar
Garut
Tasikmalaya
Pagandaran
Variabel Signifikan
X1 X2 X3 X4 X5 X6 X7
X1 X2 X3 X4 X7 X8
X1 X2 X4
X1 X2 X4 X5 X6 X7
X1 X2 X4 X5 X6 X7 X8
X1 X2 X4 X7
X1 X2 X4 X7 X8
X1 X2 X5 X6 X7
X1 X3 X4 X7 X8
X1 X4 X7
X1 X4 X8
X2 X4 X5 X6 X7
X2 X4 X5 X7
50 0 50 100 Miles

Lampiran 3 T_Hitung (Parameter Parsial) Model GWR setiap Kabupaten/Kota

Kab/Kota	T_X1	T_X2	T_X3	T_X4	T_X5	T_X6	T_X7	T_X8
Bogor	|7,449424 |	|-1,254131 8|	|0,6431477 |	|7,919897 |	|-0,426779 5|	|-0,3922496 8|	|2,970365 8|	|-0,1444779 3|
Sukabumi	|1,453816 4|	|4,720286 2|	|-1,6413224 4|	|2,38390 3|	|3,986388 1|	|-4,7070101 3|	|2,337226 8|	|0,0107470 3|
Cianjur	|1,436492 3|	|4,901133 8|	|-1,5244155 1|	|2,30495|	|4,003184 1|	|-5,0348908 3|	|2,331600 5|	|-0,1210873 5|
Bandung	|1,490971 7|	|2,477805 5|	|-1,3837241 8|	|3,45714|	|2,697713 5|	|-2,8224033 6|	|4,149076 8|	|-1,2438588 6|
Garut	|0,998044 3|	|2,042601 1|	|0,0364705 7|	|4,61802 8|	|1,914653 2|	|-1,1258934 9|	|3,547432 |	|-0,3365984 8|
Tasikmalaya	|1,805403 7|	|1,750651 8|	|0,6755335 9|	|5,43412 9|	|1,231769 3|	|-0,7172121 4|	|1,715710 8|	|0,9380658 3|
Ciamis	|2,784362 8|	|-0,532144 9|	|0,2908262 4|	|6,00055 9|	|1,336448 9|	|-0,4500228 5|	|1,627293 3|	|2,4002596 4|
Kuningan	|2,805307 7|	|-1,740977 7|	|0,5354311 2|	|6,00901 3|	|0,978929 |	|-0,3205113 1|	|2,349909 2|	|2,1336663 5|
Cirebon	|4,800122 2|	|-1,765538 6|	|1,2348885 2|	|5,88257 4|	|1,153277 9|	|0,0198889 5|	|2,494885 3|	|2,8542410 9|
Majalengka	|4,811599 1|	|-1,356067 1|	|2,1428844 3|	|6,59084 2|	|-0,251718|	|0,6171948 9|	|3,822889 1|	|2,5460645 9|
Sumedang	|3,311681 7|	|-2,010231 8|	|3,0093941 5|	|5,56044 9|	|0,743345 4|	|1,6670844 4|	|3,321958 5|	|5,5803597 2|
Indramayu	|3,157174 6|	|-1,901701 2|	|0,8872222 8|	|6,0154|	|1,980211 4|	|2,9948277 |	|4,265540 2|	|4,9339567 8|
Subang	|5,412260 8|	|3,100949 9|	|0,8783353 5|	|1,65594 7|	|3,774779 2|	|-6,0642684 1|	|5,402492 |	|-0,0524206 6|
Purwakarta	|2,485247 4|	|4,039026 1|	|-1,2160224 6|	|4,35295 9|	|4,263235 6|	|-4,7401717|	|4,569924 1|	|-1,5290422 6|
Karawang	|2,562330 8|	|5,031456 2|	|-2,1225131 1|	|3,61682 1|	|4,024608 8|	|-4,3590919 2|	|3,537557 4|	|-0,6644929 2|
Bekasi	|2,366799 8|	|4,967702 6|	|-2,2844918 8|	|3,59792 5|	|3,865155 4|	|-4,6825125 4|	|3,124715 2|	|-0,5087158 3|
Bandung Barat	|3,353551 5|	|5,453606 |	|-1,2031590 8|	|5,07359 7|	|3,764308 6|	|-5,5456109 3|	|4,432460 4|	|-2,3245650 4|
Pangandaran	|2,068775 6|	|0,480535 8|	|-0,1273763|	|5,56073 6|	|1,364981 3|	|-0,6317874 9|	|0,563281 9|	|1,7735634 5|
Kota Bogor	|2,067817 |	|4,764363 1|	|-2,1034456|	|3,14642 3|	|4,000241 |	|-4,6844498 6|	|2,915354 7|	|-0,3035648 6|
Kota Sukabumi	|1,178443 3|	|4,446231 9|	|-1,6141771 9|	|2,27331 4|	|3,891885 2|	|-4,6026238 9|	|2,254085 |	|0,1615484 9|
Kota Bandung	|1,555631 2|	|2,465830 9|	|-1,3811714 2|	|3,43752|	|2,682405 4|	|-2,8669453 7|	|4,162666 |	|-1,2496487 8|
Kota Cirebon	|3,290054 5|	|-1,794973 1|	|1,0345126 4|	|5,69783 5|	|1,177328 8|	|-0,7313943 9|	|1,939447 1|	|1,3016414 3|
Kota Bekasi	|2,292887 2|	|4,928650 7|	|-2,3181841|	|3,60137 2|	|3,880085 |	|-4,7152136 5|	|3,087256 7|	|-0,4853025|

Kota Depok	|2,2492092|	|4,8741135|	|-2,2864659|	|3,512546|	|3,9393948|	|-4,7123303|	|3,1034106|	|-0,4663842|
Kota Cimahi	|3,2149729|	|2,0367643|	|-1,2605591|	|4,253033|	|3,2290998|	|-4,7725195|	|4,4277991|	|-1,7490083|
Kota Tasikmalaya	|1,8054037|	|1,7506518|	|0,6755339|	|5,434129|	|1,2317693|	|-0,7172121|	|1,7157108|	|0,9380658|
Kota Banjar	|2,807132|	|-0,7171741|	|0,2355574|	|6,053148|	|1,3700539|	|-0,4515962|	|1,677785|	|2,4570039|

Lampiran 4 Pemodelan GWR untuk setiap Kabupaten/Kota

Kabupaten/ Kota	Model GWR
Bogor	$\hat{Y}_1 = -9936,159 + 0,003X_{1\cdot1} - 3,678X_{1\cdot2} + 140,971X_{1\cdot3} + 844,349X_{1\cdot4} - 7,879X_{1\cdot5} - 9,556X_{1\cdot6} + 0,327X_{1\cdot7} - 17,199X_{1\cdot8}$
Sukabumi	$\hat{Y}_2 = 49660,754 + 0,007X_{2\cdot1} + 9,024X_{2\cdot2} - 627,372X_{2\cdot3} + 862,844X_{2\cdot4} + 110,578X_{2\cdot5} - 88,513X_{2\cdot6} + 0,338X_{2\cdot7} + 0,544X_{2\cdot8}$
Cianjur	$\hat{Y}_3 = 48903,631 + 0,007X_{3\cdot1} + 9,071X_{3\cdot2} - 616,900X_{3\cdot3} + 878,240X_{3\cdot4} + 114,519X_{3\cdot5} - 93,020X_{3\cdot6} + 0,361X_{3\cdot7} - 6,451X_{3\cdot8}$
Bandung	$\hat{Y}_4 = 24242,141 + 0,007X_{4\cdot1} + 12,828X_{4\cdot2} - 291,455X_{4\cdot3} + 688,483X_{4\cdot4} + 155,906X_{4\cdot5} - 122,707X_{4\cdot6} + 0,326X_{4\cdot7} - 154,787X_{4\cdot8}$
Garut	$\hat{Y}_5 = -1602,509 + 0,007X_{5\cdot1} + 9,172X_{5\cdot2} + 5,864X_{5\cdot3} + 712,467X_{5\cdot4} + 55,409X_{5\cdot5} - 41,403X_{5\cdot6} + 0,265X_{5\cdot7} - 36,013X_{5\cdot8}$
Tasikmalaya	$\hat{Y}_6 = -10484,837 + 0,010X_{6\cdot1} + 6,081X_{6\cdot2} + 103,935X_{6\cdot3} + 614,951X_{6\cdot4} + 25,866X_{6\cdot5} - 17,330X_{6\cdot6} + 0,139X_{6\cdot7} + 104,670X_{6\cdot8}$
Ciamis	$\hat{Y}_7 = -7320,435 + 0,014X_{7\cdot1} - 1,463X_{7\cdot2} + 49,366X_{7\cdot3} + 615,929X_{7\cdot4} + 26,367X_{7\cdot5} - 10,989X_{7\cdot6} + 0,190X_{7\cdot7} + 243,254X_{7\cdot8}$
Kuningan	$\hat{Y}_8 = -10508,286 + 0,014X_{8\cdot1} - 4,451X_{8\cdot2} + 93,330X_{8\cdot3} + 665,928X_{8\cdot4} + 20,258X_{8\cdot5} - 8,038X_{8\cdot6} + 0,268X_{8\cdot7} + 222,170X_{8\cdot8}$
Cirebon	$\hat{Y}_9 = -21835,508 + 0,019X_{9\cdot1} - 4,658X_{9\cdot2} + 209,788X_{9\cdot3} + 625,777X_{9\cdot4} + 24,834X_{9\cdot5} + 0,574X_{9\cdot6} + 0,268X_{9\cdot7} + 257,675X_{9\cdot8}$
Majalengka	$\hat{Y}_{10} = -32.657,183 + 0,019X_{10\cdot1} - 3,535X_{10\cdot2} + 341,315X_{10\cdot3} + 680,018X_{10\cdot4} - 5,462X_{10\cdot5} + 17,176X_{10\cdot6} + 0,380X_{10\cdot7} + 229,081X_{10\cdot8}$
Sumedang	$\hat{Y}_{11} = -51.773,175 + 0,019X_{11\cdot1} - 5,471X_{11\cdot2} + 494,814X_{11\cdot3} + 577,940X_{11\cdot4} + 18,590X_{11\cdot5} + 77,285X_{11\cdot6} + 0,250X_{11\cdot7} + 399,136X_{11\cdot8}$
Indramayu	$\hat{Y}_{12} = -41.367,475 + 0,017X_{12\cdot1} - 5,469X_{12\cdot2} + 163,442X_{12\cdot3} + 640,208X_{12\cdot4} + 57,252X_{12\cdot5} + 223,755X_{12\cdot6} + 0,403X_{12\cdot7} + 327,803X_{12\cdot8}$
Subang	$\hat{Y}_{13} = -51773,175 + 0,019X_{13\cdot1} - 5,471X_{13\cdot2} + 494,814X_{13\cdot3} + 577,940X_{13\cdot4} + 18,590X_{13\cdot5} + 77,285X_{13\cdot6} + 0,250X_{13\cdot7} + 399,136X_{13\cdot8}$
Purwakarta	$\hat{Y}_{14} = 17.152,312 + 0,009X_{14\cdot1} + 8,577X_{14\cdot2} - 242,426X_{14\cdot3} + 828,862X_{14\cdot4} + 187,046X_{14\cdot5} - 120,590X_{14\cdot6} + 0,368X_{14\cdot7} - 44,797X_{14\cdot8}$
Karawang	$\hat{Y}_{15} = 34.660,881 + 0,009X_{15\cdot1} + 9,981X_{15\cdot2} - 431,311X_{15\cdot3} + 633,201X_{15\cdot4} + 113,102X_{15\cdot5} - 91,354X_{15\cdot6} + 0,265X_{15\cdot7} - 19,047X_{15\cdot8}$

Kabupaten/ Kota	Model GWR
Bekasi	$\hat{Y}_{16} = 35.598{,}134 + 0{,}008X_{16\cdot1} + 9{,}923X_{16\cdot2} - 447{,}094X_{16\cdot3} + 662{,}509X_{16\cdot4} + 110{,}862X_{16\cdot5} - 85{,}061X_{16\cdot6} + 0{,}237X_{16\cdot7} - 14{,}245X_{16\cdot8}$
Bandung Barat	$\hat{Y}_{17} = 18.146{,}669 + 0{,}010X_{17\cdot1} + 11{,}045X_{17\cdot2} - 227{,}820X_{17\cdot3} + 704{,}508X_{17\cdot4} + 161{,}423X_{17\cdot5} - 125{,}830X_{17\cdot6} + 0{,}326X_{17\cdot7} - 87{,}096X_{17\cdot8}$
Pangandaran	$\hat{Y}_{18} = -879{,}885 + 0{,}011X_{18\cdot1} + 1{,}484X_{18\cdot2} - 22{,}601X_{18\cdot3} + 599{,}895X_{18\cdot4} + 27{,}785X_{18\cdot5} - 15{,}998X_{18\cdot6} + 0{,}081X_{18\cdot7} + 221{,}185X_{18\cdot8}$
Kota Bogor	$\hat{Y}_{19} = 39731{,}475 + 0{,}008X_{19\cdot1} + 9{,}752X_{19\cdot2} - 504{,}266X_{19\cdot3} + 739{,}880X_{19\cdot4} + 113{,}089X_{19\cdot5} - 85{,}360X_{19\cdot6} + 0{,}266X_{19\cdot7} - 9{,}690X_{19\cdot8}$
Kota Sukabumi	$\hat{Y}_{20} = 56.238{,}861 + 0{,}006X_{20\cdot1} + 8{,}456X_{20\cdot2} - 710{,}156X_{20\cdot3} + 947{,}969X_{20\cdot4} + 109{,}159X_{20\cdot5} - 89{,}317X_{20\cdot6} + 0{,}378X_{20\cdot7} + 9{,}443X_{20\cdot8}$
Kota Bandung	$\hat{Y}_{21} = 24.355{,}996 + 0{,}007X_{21\cdot1} + 12{,}907X_{21\cdot2} - 291{,}587X_{21\cdot3} + 684{,}343X_{21\cdot4} + 155{,}247X_{21\cdot5} - 123{,}658X_{21\cdot6} + 0{,}326X_{21\cdot7} - 155{,}835X_{21\cdot8}$
Kota Cirebon	$\hat{Y}_{22} = -17.528{,}455 + 0{,}015X_{22\cdot1} - 4{,}721X_{22\cdot2} + 199{,}484X_{22\cdot3} + 683{,}224X_{22\cdot4} + 27{,}852X_{22\cdot5} - 24{,}455X_{22\cdot6} + 0{,}233X_{22\cdot7} + 143{,}637X_{22\cdot8}$
Kota Bekasi	$\hat{Y}_{23} = 35.836{,}651 + 0{,}008X_{23\cdot1} + 9{,}916X_{23\cdot2} - 452{,}811X_{23\cdot3} + 683{,}363X_{23\cdot4} + 112{,}551X_{23\cdot5} - 84{,}533X_{23\cdot6} + 0{,}235X_{23\cdot7} - 13{,}452X_{23\cdot8}$
Kota Depok	$\hat{Y}_{24} = 36.686{,}770 + 0{,}008X_{24\cdot1} + 9{,}925X_{24\cdot2} - 465{,}372X_{24\cdot3} + 703{,}815X_{24\cdot4} + 113{,}401X_{24\cdot5} - 84{,}702X_{24\cdot6} + 0{,}244X_{24\cdot7} - 13{,}041X_{24\cdot8}$
Kota Cimahi	$\hat{Y}_{25} = 20.679{,}764 + 0{,}010X_{25\cdot1} + 12{,}490X_{25\cdot2} - 241{,}362X_{25\cdot3} + 663{,}894X_{25\cdot4} + 155{,}084X_{25\cdot5} - 134{,}174X_{25\cdot6} + 0{,}322X_{25\cdot7} - 128{,}110X_{25\cdot8}$
Kota Tasikmalaya	$\hat{Y}_{26} = -10.484{,}837 + 0{,}010X_{26\cdot1} + 6{,}081X_{26\cdot2} + 103{,}935X_{26\cdot3} + 614{,}951X_{26\cdot4} + 25{,}866X_{26\cdot5} - 17{,}330X_{26\cdot6} + 0{,}139X_{26\cdot7} + 104{,}670X_{26\cdot8}$
Kota Banjar	$\hat{Y}_{27} = -6.652{,}746 + 0{,}014X_{27\cdot1} - 1{,}968X_{27\cdot2} + 40{,}297X_{27\cdot3} + 620{,}215X_{27\cdot4} + 26{,}968X_{27\cdot5} - 11{,}050X_{27\cdot6} + 0{,}195X_{27\cdot7} + 251{,}588X_{27\cdot8}$

Lampiran 5 Mengubah Nilai estimasi parameter OLS dan Uji F dalam bentuk Pangkat eksponen dari hasil R-Studio ke Bentuk Angka Biasa

Parameter	Nilai Estimasi Sebelum	Nilai Estimasi Sesudah
β_0	1.594e+04	15.940
β_1	1.840e-03	0,002
β_2	4.555e+00	4,556
β_3	-1.945e+02	-194,50

Parameter	Nilai Estimasi Sebelum	Nilai Estimasi Sesudah
β_4	6.289e+02	628,80
β_5	2.747e+01	27,460
β_6	-2.563e+01	-25,620
β_7	2.047e-01	0,204
β_8	7.896e+01	78,96
Uji F(*p-value)*	6,93E-04	0,000693

Lampiran 6 Sintax Beserta output program R

```
library(AICcmodavg)
library(foreign)
library(lattice)
library(zoo)
library(lmtest)
library(ape)
library(Matrix)
library(mvtnorm)
library(emulator)
library (spgwr)
library(car)
library(lmtest)
library(fBasics)
library (Gwmodel)
library (MLmetrics)
library (sp)
```

```
TBCJabar <- read_excel("TBC Jawa Barat Fix.xlsx",
         col_types = c("text", "numeric", "numeric",
        "numeric", "numeric", "numeric",
        "numeric", "numeric", "numeric",
        "numeric", "numeric", "numeric","numeric"))

View(TBCJabar)
```

Lampiran 7 Statistika Deskriptif

```
attach(TBCJabar)
summary(TBCJabar)
```

```
##    Kab/Kota              v                u               Y         
##  Length:27          Min.   :-7.740   Min.   :106.8   Min.   :  734  
##  Class :character   1st Qu.:-7.121   1st Qu.:107.2   1st Qu.: 2799  
##  Mode  :character   Median :-6.839   Median :107.8   Median : 4589  
##                     Mean   :-6.869   Mean   :107.9   Mean   : 5950  
##                     3rd Qu.:-6.581   3rd Qu.:108.4   3rd Qu.: 7830  
##                     Max.   :-6.247   Max.   :110.7   Max.   :21516  
##        X1                X2               X3              X4        
##  Min.   :  26600   Min.   :  39.0   Min.   :76.85   Min.   : 0.477  
##  1st Qu.:  85250   1st Qu.: 165.0   1st Qu.:79.61   1st Qu.: 1.829  
##  Median : 147100   Median : 212.0   Median :80.97   Median : 2.904  
##  Mean   : 301085   Mean   : 326.2   Mean   :81.11   Mean   : 3.704  
##  3rd Qu.: 213050   3rd Qu.: 411.0   3rd Qu.:83.11   3rd Qu.: 4.395  
##  Max.   :4071000   Max.   :1135.0   Max.   :85.35   Max.   :12.655  
##        X5                X6               X7              X8        
##  Min.   :43.88   Min.   : 55.30   Min.   :  383.0   Min.   : 1.00  
##  1st Qu.:54.25   1st Qu.: 85.25   1st Qu.:  814.5   1st Qu.: 6.00  
##  Median :64.24   Median : 92.60   Median : 1439.0   Median :10.00  
##  Mean   :63.63   Mean   : 88.50   Mean   : 3824.0   Mean   :14.63  
##  3rd Qu.:71.53   3rd Qu.: 97.40   3rd Qu.: 5682.5   3rd Qu.:17.50  
##  Max.   :81.59   Max.   :100.00   Max.   :14776.0   Max.   :53.00
```

Lampiran 8 Deteksi Multikolinearitas

```
library(car)
vif(ols)
```

```
##        X1        X2        X3        X4        X5        X6
X7        X8
## 2.288754 4.833226 3.140766 3.053931 1.330976 1.343797 2
.944002 4.136931
```

Lampiran 9 Regresi OLS

```
ols<- lm(Y~X1+X2+X3+X4+X5+X6+X7+X8, data = TBCJabar)
summary(ols)

##
## Call:
## lm(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7 + X8,
data = TBCJabar)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
```

```
## -4679.9  -817.0  -202.7  1154.2  2820.6
##
## Coefficients:
##               Estimate Std. Error t value Pr(>|t|)
## (Intercept)  1.594e+04  2.425e+04   0.657   0.5193
## X1           1.840e-03  7.373e-04   2.496   0.0225 *
## X2           4.555e+00  3.049e+00   1.494   0.1525
## X3          -1.945e+02  3.056e+02  -0.637   0.5324
## X4           6.289e+02  2.200e+02   2.859   0.0104 *
## X5           2.747e+01  3.964e+01   0.693   0.4973
## X6          -2.563e+01  3.441e+01  -0.745   0.4660
## X7           2.047e-01  1.397e-01   1.465   0.1601
## X8           7.896e+01  5.610e+01   1.407   0.1763
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.
1 ' ' 1
##
## Residual standard error: 1888 on 18 degrees of freedom
## Multiple R-squared:  0.8821, Adjusted R-squared:  0.829
7
## F-statistic: 16.83 on 8 and 18 DF,  p-value: 6.927e-07
```

Lampiran 10 Pengujian Asumsi Residual

##Uji IIDN #Uji Normalitas

```
resid<-abs(ols$residuals)
```

```
ks.test(res,"pnorm",mean(res),sd(res),alternative=c("two.s
ided"))

##
##  Exact one-sample Kolmogorov-Smirnov test
##
## data:  res
## D = 0.1075, p-value = 0.8813
## alternative hypothesis: two-sided
```

#Identik-Heterogenitas

```
glejser(ols)

## # A tibble: 1 × 4
##   statistic p.value parameter alternative
```

```
##       <dbl>   <dbl>     <dbl> <chr>
## 1      18.0  0.0213         8 greater
```

#Independen

```
dwtest(ols)

##
##  Durbin-Watson test
##
## data:  ols
## DW = 2.2913, p-value = 0.721
## alternative hypothesis: true autocorrelation is greater
than 0
```

##GEOGRAPHICALLY WEGHTED REGRESSION

##Mencari Bandwidth optimal (Addaptive bandwidth) dan Cross Validation

```
b <- gwr.sel(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJabar,adapt
=TRUE,coords=cbind(TBCJabar$u,TBCJabar$v),gweight=gwr.bisq
uare)

## Adaptive q: 0.381966 CV score: 9424282355
## Adaptive q: 0.618034 CV score: 1820984226
## Adaptive q: 0.763932 CV score: 5113218709
## Adaptive q: 0.6123026 CV score: 1756177013
## Adaptive q: 0.5243219 CV score: 1531996423
## Adaptive q: 0.5546821 CV score: 1436088349
## Adaptive q: 0.5554492 CV score: 1434911573
## Adaptive q: 0.5697606 CV score: 1397868255
## Adaptive q: 0.5860102 CV score: 1504659176
## Adaptive q: 0.5759674 CV score: 1423207561
## Adaptive q: 0.5665856 CV score: 1393976129
## Adaptive q: 0.5661601 CV score: 1393970656
## Adaptive q: 0.5663538 CV score: 1393957537
## Adaptive q: 0.5663944 CV score: 1393958101
## Adaptive q: 0.5663131 CV score: 1393958125
## Adaptive q: 0.5663538 CV score: 1393957537
```

b

```
## [1] 0.5663538
```

Lampiran 11 Fungsi pembobot Kernel

#Fixed Gauss

```
fixgauss=gwr.sel(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJabar,
                 adapt=FALSE,coords=cbind(TBCJabar$u,TBCJa
bar$v),gweight=gwr.Gauss)

## Bandwidth: 1.612463 CV score: 1735913242
## Bandwidth: 2.606415 CV score: 1773690448
## Bandwidth: 0.9981667 CV score: 2.674e+09
## Bandwidth: 2.089911 CV score: 1729528956
## Bandwidth: 1.918399 CV score: 1717525471
## Bandwidth: 1.875725 CV score: 1715839152
## Bandwidth: 1.775168 CV score: 1715711483
## Bandwidth: 1.823069 CV score: 1714971337
## Bandwidth: 1.823447 CV score: 1714971853
## Bandwidth: 1.821299 CV score: 1714970135
## Bandwidth: 1.821122 CV score: 1714970126
## Bandwidth: 1.821162 CV score: 1714970126
## Bandwidth: 1.821081 CV score: 1714970126
## Bandwidth: 1.821122 CV score: 1714970126

#estimasi parameter
gwr.fixgauss=gwr(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJabar,b
andwidth = fixgauss,coords=cbind(TBCJabar$u,TBCJabar$v),ha
tmatrix=TRUE,gweight=gwr.Gauss)
gwr.fixgauss

## Call:
## gwr(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7 + X8
, data = TBCJabar,
##     coords = cbind(TBCJabar$u, TBCJabar$v), bandwidth =
fixgauss,
##     gweight = gwr.Gauss, hatmatrix = TRUE)
## Kernel function: gwr.Gauss
## Fixed bandwidth: 1.821122
## Summary of GWR coefficient estimates at data points:
##                      Min.     1st Qu.      Median     3r
d Qu.        Max.
## X.Intercept.  6.8510e+03  1.3006e+04  1.5156e+04  1.702
9e+04  1.8640e+04
## X1            1.9441e-03  2.0045e-03  2.0594e-03  2.195
8e-03  2.3944e-03
## X2            2.7168e+00  4.2775e+00  4.6250e+00  4.914
```

```
1e+00  5.2358e+00
## X3           -2.2717e+02 -2.0616e+02 -1.8421e+02 -1.620
7e+02 -1.0036e+02
## X4            6.1135e+02  6.1863e+02  6.2619e+02  6.295
1e+02  6.3682e+02
## X5            8.6481e+00  2.3333e+01  2.9406e+01  3.497
0e+01  3.9827e+01
## X6           -3.5179e+01 -3.0862e+01 -2.6230e+01 -1.951
0e+01  1.0911e+00
## X7            2.0461e-01  2.0595e-01  2.0669e-01  2.072
0e-01  2.1184e-01
## X8            6.4284e+01  7.0211e+01  7.7269e+01  8.565
3e+01  1.1681e+02
##                   Global
## X.Intercept. 15940.5791
## X1               0.0018
## X2               4.5553
## X3            -194.5172
## X4             628.9114
## X5              27.4655
## X6             -25.6319
## X7               0.2047
## X8              78.9587
## Number of data points: 27
## Effective number of parameters (residual: 2traceS - tra
ceS'S): 10.48562
## Effective degrees of freedom (residual: 2traceS - trace
S'S): 16.51438
## Sigma (residual: 2traceS - traceS'S): 1831.962
## Effective number of parameters (model: traceS): 9.79350
4
## Effective degrees of freedom (model: traceS): 17.2065
## Sigma (model: traceS): 1794.739
## Sigma (ML): 1432.734
## AICc (GWR p. 61, eq 2.33; p. 96, eq. 4.21): 507.388
## AIC (GWR p. 96, eq. 4.22): 478.8525
## Residual sum of squares: 55423630
## Quasi-global R2: 0.8981585
```

#Fix Tricube

```
## Bandwidth: 3.220711 CV score: 2132487614
## Bandwidth: 3.600367 CV score: 3763339437
```

```
## Bandwidth: 3.410539 CV score: 2165989950
## Bandwidth: 3.311558 CV score: 1647512067
## Bandwidth: 3.314041 CV score: 1648436903
## Bandwidth: 3.309756 CV score: 1647343321
## Bandwidth: 3.309938 CV score: 1647341092
## Bandwidth: 3.309978 CV score: 1647341185
## Bandwidth: 3.309897 CV score: 1647341216
## Bandwidth: 3.309938 CV score: 1647341092

#estimasi parameter
gwr.fixtricube=gwr(Y~X1+X2+X3+X4+X5+X6+X7+X8,

data=TBCJabar, bandwidth = fixtricube,coords=cbind(TBCJaba
r$u,TBCJabar$v),hatmatrix=TRUE,gweight=gwr.tricube)
gwr.fixtricube

## Call:
## gwr(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7 + X8
, data = TBCJabar,
##     coords = cbind(TBCJabar$u, TBCJabar$v), bandwidth =
fixtricube,
##     gweight = gwr.tricube, hatmatrix = TRUE)
## Kernel function: gwr.tricube
## Fixed bandwidth: 3.309938
## Summary of GWR coefficient estimates at data points:
##                       Min.     1st Qu.      Median     3r
d Qu.        Max.
## X.Intercept. -8.8746e+03  2.2321e+03  4.2156e+03  1.253
4e+04  1.3621e+04
## X1            2.0098e-03  2.2056e-03  1.2223e-02  1.288
6e-02  1.3268e-02
## X2           -3.3563e+00  4.3900e+00  6.7087e+00  7.099
7e+00  7.5704e+00
## X3           -1.7122e+02 -1.5483e+02 -3.3047e+01 -1.091
1e+01  1.2813e+02
## X4            4.5692e+02  4.7392e+02  4.8810e+02  6.171
6e+02  8.3108e+02
## X5           -7.3103e+00  2.4445e+01  3.5944e+01  4.108
2e+01  4.9279e+01
## X6           -7.2595e+01 -6.6995e+01 -6.0990e+01 -2.036
9e+01 -7.4026e+00
## X7            2.0500e-01  2.0855e-01  2.3454e-01  2.382
7e-01  3.1446e-01
## X8           -1.2328e+01  3.4886e+01  4.5046e+01  8.339
8e+01  9.8011e+01
```

```
##                   Global
## X.Intercept. 15940.5791
## X1               0.0018
## X2               4.5553
## X3            -194.5172
## X4             628.9114
## X5              27.4655
## X6             -25.6319
## X7               0.2047
## X8              78.9587
## Number of data points: 27
## Effective number of parameters (residual: 2traceS - tra
ceS'S): 10.76446
## Effective degrees of freedom (residual: 2traceS - trace
S'S): 16.23554
## Sigma (residual: 2traceS - traceS'S): 1770.689
## Effective number of parameters (model: traceS): 10.2328
1
## Effective degrees of freedom (model: traceS): 16.76719
## Sigma (model: traceS): 1742.391
## Sigma (ML): 1373.074
## AICc (GWR p. 61, eq 2.33; p. 96, eq. 4.21): 507.8379
## AIC (GWR p. 96, eq. 4.22): 476.9951
## Residual sum of squares: 50903964
## Quasi-global R2: 0.9064634
```

#Fix Bisquare

```
#bandwidth
fixbisquare=gwr.sel(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJaba
r,
                    adapt=FALSE,coords=cbind(TBCJabar$u,TBCJa
bar$v),gweight=gwr.bisquare)

## Bandwidth: 3.220711 CV score: 1322481307
## Bandwidth: 3.600367 CV score: 4634037262
## Bandwidth: 3.410539 CV score: 3175060215
## Bandwidth: 2.986071 CV score: 5748495512
## Bandwidth: 3.131086 CV score: 1881264177
## Bandwidth: 3.230366 CV score: 1286243336
## Bandwidth: 3.299186 CV score: 1607515052
## Bandwidth: 3.243026 CV score: 1244738952
## Bandwidth: 3.264477 CV score: 1284028276
## Bandwidth: 3.247638 CV score: 1239335954
## Bandwidth: 3.248616 CV score: 1239251743
```

```
## Bandwidth: 3.248349 CV score: 1239238947
## Bandwidth: 3.24839 CV score: 1239239168
## Bandwidth: 3.248308 CV score: 1239239350
## Bandwidth: 3.248349 CV score: 1239238947

#estimasi parameter
gwr.fixbisquare=gwr(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJaba
r,
                    bandwidth = fixbisquare,coords=cbind(TBCJ
abar$u,TBCJabar$v),hatmatrix=TRUE,gweight=gwr.bisquare)
gwr.fixbisquare

## Call:
## gwr(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7 + X8
, data = TBCJabar,
##     coords = cbind(TBCJabar$u, TBCJabar$v), bandwidth =
fixbisquare,
##     gweight = gwr.bisquare, hatmatrix = TRUE)
## Kernel function: gwr.bisquare
## Fixed bandwidth: 3.248349
## Summary of GWR coefficient estimates at data points:
##                       Min.     1st Qu.      Median     3r
d Qu.        Max.
## X.Intercept. -9.9860e+03  2.8255e+03  6.2437e+03  1.114
8e+04  1.2947e+04
## X1            2.0236e-03  2.2164e-03  1.2696e-02  1.286
2e-02  1.3255e-02
## X2           -3.6834e+00  4.1559e+00  6.7735e+00  7.343
0e+00  7.8653e+00
## X3           -1.6225e+02 -1.4290e+02 -5.7827e+01 -1.632
2e+01  1.4181e+02
## X4            4.5220e+02  4.7087e+02  4.8165e+02  6.180
6e+02  8.4489e+02
## X5           -7.9061e+00  2.2023e+01  3.7397e+01  4.478
1e+01  5.2789e+01
## X6           -7.4882e+01 -6.9530e+01 -6.2880e+01 -1.730
2e+01 -5.9395e+00
## X7            2.0632e-01  2.0901e-01  2.3738e-01  2.397
7e-01  3.2734e-01
## X8           -1.7853e+01  2.9846e+01  4.1162e+01  8.542
7e+01  9.8512e+01
##                   Global
## X.Intercept. 15940.5791
## X1               0.0018
## X2               4.5553
```

```
## X3            -194.5172
## X4             628.9114
## X5              27.4655
## X6             -25.6319
## X7               0.2047
## X8              78.9587
## Number of data points: 27
## Effective number of parameters (residual: 2traceS - tra
ceS'S): 11.67263
## Effective degrees of freedom (residual: 2traceS - trace
S'S): 15.32737
## Sigma (residual: 2traceS - traceS'S): 1742.559
## Effective number of parameters (model: traceS): 10.7437
9
## Effective degrees of freedom (model: traceS): 16.25621
## Sigma (model: traceS): 1692.044
## Sigma (ML): 1312.924
## AICc (GWR p. 61, eq 2.33; p. 96, eq. 4.21): 508.8267
## AIC (GWR p. 96, eq. 4.22): 475.0871
## Residual sum of squares: 46541758
## Quasi-global R2: 0.914479
```

```
#Adapt Kernel

#Kernel Gaussian
```

```
#bandwidth
adaptgauss=gwr.sel(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJabar
,adapt
                   =TRUE,coords=cbind(TBCJabar$u,TBCJabar$
v),gweight=gwr.Gauss)

## Adaptive q: 0.381966 CV score: 1752620380
## Adaptive q: 0.618034 CV score: 1782792723
## Adaptive q: 0.236068 CV score: 1733853379
## Adaptive q: 0.145898 CV score: 1739677513
## Adaptive q: 0.2304397 CV score: 1732679424
## Adaptive q: 0.2009778 CV score: 1737390715
## Adaptive q: 0.2191863 CV score: 1730822089
## Adaptive q: 0.2122312 CV score: 1731125068
## Adaptive q: 0.2176099 CV score: 1730774101
## Adaptive q: 0.2172918 CV score: 1730769080
## Adaptive q: 0.2153588 CV score: 1730788860
## Adaptive q: 0.2167681 CV score: 1730765196
```

```
## Adaptive q: 0.2166567 CV score: 1730765144
## Adaptive q: 0.216616 CV score: 1730765198
## Adaptive q: 0.2166974 CV score: 1730765130
## Adaptive q: 0.2166974 CV score: 1730765130

#estimasi parameter
gwr.adaptgauss=gwr(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJabar
,adapt=adaptgauss,
                   coords=cbind(TBCJabar$u,TBCJabar$v),hat
matrix=TRUE,gweight=gwr.Gauss)
gwr.adaptgauss

## Call:
## gwr(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7 + X8
, data = TBCJabar,
##     coords = cbind(TBCJabar$u, TBCJabar$v), gweight = g
wr.Gauss,
##     adapt = adaptgauss, hatmatrix = TRUE)
## Kernel function: gwr.Gauss
## Adaptive quantile: 0.2166974 (about 5 of 27 data points
)
## Summary of GWR coefficient estimates at data points:
##                       Min.     1st Qu.      Median     3r
d Qu.        Max.
## X.Intercept. -2.1311e+04 -1.3505e+04  6.2523e+03  2.105
9e+04  3.6379e+04
## X1            1.9752e-03  9.8418e-03  1.2901e-02  1.396
9e-02  1.8060e-02
## X2           -3.2480e+00  1.9489e+00  6.9353e+00  9.673
7e+00  1.0356e+01
## X3           -4.6279e+02 -2.5610e+02 -9.2307e+01  1.100
4e+02  2.2003e+02
## X4            3.7535e+02  5.3477e+02  5.7455e+02  6.011
4e+02  6.8960e+02
## X5            9.5637e+00  2.2437e+01  5.5385e+01  1.081
4e+02  1.1851e+02
## X6           -1.0073e+02 -8.7347e+01 -8.2553e+01 -6.784
9e+00  1.3272e+01
## X7            2.0636e-01  2.5884e-01  2.7058e-01  2.867
8e-01  3.0472e-01
## X8           -2.9781e+01 -1.0675e+01  2.9372e+01  1.776
8e+02  3.1571e+02
##                   Global
## X.Intercept. 15940.5791
## X1               0.0018
```

```
## X2               4.5553
## X3            -194.5172
## X4             628.9114
## X5              27.4655
## X6             -25.6319
## X7               0.2047
## X8              78.9587
## Number of data points: 27
## Effective number of parameters (residual: 2traceS - tra
ceS'S): 20.45873
## Effective degrees of freedom (residual: 2traceS - trace
S'S): 6.541265
## Sigma (residual: 2traceS - traceS'S): 1407.144
## Effective number of parameters (model: traceS): 17.6083
## Effective degrees of freedom (model: traceS): 9.391701
## Sigma (model: traceS): 1174.349
## Sigma (ML): 692.6079
## AICc (GWR p. 61, eq 2.33; p. 96, eq. 4.21): 565.7505
## AIC (GWR p. 96, eq. 4.22): 447.416
## Residual sum of squares: 12952053
## Quasi-global R2: 0.9762005
```

#Adapt Tricube

```
#bandwidth
adapttricube=gwr.sel(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJab
ar,adapt
                    =TRUE,coords=cbind(TBCJabar$u,TBCJabar$
v),gweight=gwr.tricube)

## Adaptive q: 0.381966 CV score: 9591552979
## Adaptive q: 0.618034 CV score: 1764691666
## Adaptive q: 0.763932 CV score: 4444572984
## Adaptive q: 0.6228971 CV score: 1763542826
## Adaptive q: 0.621361 CV score: 1763538548
## Adaptive q: 0.6221097 CV score: 1763499155
## Adaptive q: 0.622069 CV score: 1763499260
## Adaptive q: 0.6221504 CV score: 1763499283
## Adaptive q: 0.6221097 CV score: 1763499155

#estimasi parameter
gwr.adapttricube=gwr(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJab
ar,adapt=adapttricube,
                    coords=cbind(TBCJabar$u,TBCJabar$v),hat
```

```
matrix=TRUE,gweight=gwr.tricube)
gwr.adapttricube

## Call:
## gwr(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7 + X8
, data = TBCJabar,
##     coords = cbind(TBCJabar$u, TBCJabar$v), gweight = g
wr.tricube,
##     adapt = adapttricube, hatmatrix = TRUE)
## Kernel function: gwr.tricube
## Adaptive quantile: 0.6221097 (about 16 of 27 data point
s)
## Summary of GWR coefficient estimates at data points:
##                       Min.     1st Qu.      Median     3r
d Qu.        Max.
## X.Intercept. -4.3120e+04 -1.6137e+04 -3.2802e+03  3.019
2e+04  3.4860e+04
## X1            3.2124e-03  8.5555e-03  1.0228e-02  1.622
8e-02  3.2007e-02
## X2           -5.3533e+00 -2.8181e+00  9.0088e+00  1.031
7e+01  1.3968e+01
## X3           -4.4050e+02 -3.7679e+02  2.6750e+01  1.585
4e+02  4.1098e+02
## X4            2.3107e+02  5.9446e+02  6.3430e+02  6.818
8e+02  8.3108e+02
## X5           -7.3101e+00  2.6084e+01  1.0736e+02  1.126
9e+02  1.5708e+02
## X6           -1.5237e+02 -9.0118e+01 -8.5625e+01 -3.702
2e+00  1.6514e+02
## X7            2.1154e-01  2.4911e-01  2.6858e-01  3.138
8e-01  5.0460e-01
## X8           -1.6132e+02 -2.7617e+01 -1.7494e+01  2.702
7e+02  3.6685e+02
##                    Global
## X.Intercept. 15940.5791
## X1               0.0018
## X2               4.5553
## X3            -194.5172
## X4             628.9114
## X5              27.4655
## X6             -25.6319
## X7               0.2047
## X8              78.9587
## Number of data points: 27
## Effective number of parameters (residual: 2traceS - tra
```

```
ceS'S): 22.67465
## Effective degrees of freedom (residual: 2traceS - trace
S'S): 4.325349
## Sigma (residual: 2traceS - traceS'S): 916.5954
## Effective number of parameters (model: traceS): 20.9349
8
## Effective degrees of freedom (model: traceS): 6.065019
## Sigma (model: traceS): 774.0556
## Sigma (ML): 366.8651
## AICc (GWR p. 61, eq 2.33; p. 96, eq. 4.21): 686.8782
## AIC (GWR p. 96, eq. 4.22): 416.4273
## Residual sum of squares: 3633929
## Quasi-global R2: 0.9933226
```

#Adapt Bisquare

```
#bandwidth
adaptbisquare=gwr.sel(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJa
bar,adapt
                    =TRUE,coords=cbind(TBCJabar$u,TBCJabar$
v),gweight=gwr.bisquare)

## Adaptive q: 0.381966 CV score: 9424282355
## Adaptive q: 0.618034 CV score: 1820984226
## Adaptive q: 0.763932 CV score: 5113218709
## Adaptive q: 0.6123026 CV score: 1756177013
## Adaptive q: 0.5243219 CV score: 1531996423
## Adaptive q: 0.5546821 CV score: 1436088349
## Adaptive q: 0.5554492 CV score: 1434911573
## Adaptive q: 0.5697606 CV score: 1397868255
## Adaptive q: 0.5860102 CV score: 1504659176
## Adaptive q: 0.5759674 CV score: 1423207561
## Adaptive q: 0.5665856 CV score: 1393976129
## Adaptive q: 0.5661601 CV score: 1393970656
## Adaptive q: 0.5663538 CV score: 1393957537
## Adaptive q: 0.5663944 CV score: 1393958101
## Adaptive q: 0.5663131 CV score: 1393958125
## Adaptive q: 0.5663538 CV score: 1393957537

#estimasi parameter
gwr.adaptbisquare=gwr(Y~X1+X2+X3+X4+X5+X6+X7+X8,data=TBCJa
bar,adapt=adaptbisquare,
                    coords=cbind(TBCJabar$u,TBCJabar$v),hat
matrix=TRUE,gweight=gwr.bisquare)
gwr.adaptbisquare
```

```
## Call:
## gwr(formula = Y ~ X1 + X2 + X3 + X4 + X5 + X6 + X7 + X8
, data = TBCJabar,
##     coords = cbind(TBCJabar$u, TBCJabar$v), gweight = g
wr.bisquare,
##     adapt = adaptbisquare, hatmatrix = TRUE)
## Kernel function: gwr.bisquare
## Adaptive quantile: 0.5663538 (about 15 of 27 data point
s)
## Summary of GWR coefficient estimates at data points:
##                       Min.     1st Qu.      Median     3r
d Qu.        Max.
## X.Intercept. -5.1768e+04 -1.0502e+04 -8.8538e+02  3.512
4e+04  5.6234e+04
## X1            3.2608e-03  7.4652e-03  1.0132e-02  1.371
4e-02  3.1300e-02
## X2           -5.4707e+00 -2.7509e+00  8.4549e+00  9.918
4e+00  1.2907e+01
## X3           -7.1009e+02 -4.3914e+02 -2.2529e+01  1.225
5e+02  4.9474e+02
## X4            2.6072e+02  6.2299e+02  6.8002e+02  7.084
7e+02  9.4803e+02
## X5           -7.8794e+00  2.6123e+01  1.0917e+02  1.139
7e+02  1.8702e+02
## X6           -1.5197e+02 -9.2194e+01 -8.4541e+01 -1.103
0e+01  2.2377e+02
## X7            8.0627e-02  2.3601e-01  2.6767e-01  3.327
6e-01  5.1937e-01
## X8           -1.5583e+02 -1.8157e+01 -1.5228e+00  2.216
7e+02  3.9913e+02
##                   Global
## X.Intercept. 15940.5791
## X1               0.0018
## X2               4.5553
## X3            -194.5172
## X4             628.9114
## X5              27.4655
## X6             -25.6319
## X7               0.2047
## X8              78.9587
## Number of data points: 27
## Effective number of parameters (residual: 2traceS - tra
ceS'S): 24.68229
## Effective degrees of freedom (residual: 2traceS - trace
S'S): 2.317709
```

```
## Sigma (residual: 2traceS - traceS'S): 812.3037
## Effective number of parameters (model: traceS): 22.9444
1
## Effective degrees of freedom (model: traceS): 4.055588
## Sigma (model: traceS): 614.0744
## Sigma (ML): 237.994
## AICc (GWR p. 61, eq 2.33; p. 96, eq. 4.21): 1001.14
## AIC (GWR p. 96, eq. 4.22): 395.0684
## Residual sum of squares: 1529311
## Quasi-global R2: 0.9971899
```

Lampiran 12 Menampilkan Uji Kesesuaian Model GWR

```
BFC02.gwr.test(gwr.adaptbisquare)

##
##  Brunsdon, Fotheringham & Charlton (2002, pp. 91-2) ANO
VA
##
## data:  gwr.adaptbisquare
## F = 41.961, df1 = 18.0000, df2 = 2.3177, p-value = 0.01
439
## alternative hypothesis: greater
## sample estimates:
## SS OLS residuals SS GWR residuals
##         64171125          1529311
```

Lampiran 13 Menampilkan T Hitung (Pengujian Parsial) model GWR setiap lokasi GWR

```
T hitung X1
```

```
t_X1=gwr.adaptbisquare$SDF$X1/gwr.adaptbisquare$SDF$X1_se
t_X1

##  [1] 1.4906590 3.3529954 2.3667257 7.4497669 2.7849375
1.4360996 4.8002928
##  [8] 0.9983284 3.1566986 2.5624077 1.5553197 2.8077166
2.2927794 2.0677042
## [15] 3.2144744 3.2904676 2.2490927 1.1782804 1.8058988
2.8059248 4.8116277
## [22] 2.0692779 2.4851252 5.4119864 1.4536697 3.3110899
1.8058988
```

```
T hitung X2
```

```
t_X2=gwr.adaptbisquare$SDF$X2/gwr.adapttricube$SDF$X2_se
t_X2
```

```
##  [1]  2.4780087  5.4534684  4.9669721 -1.2534730 -0.531
8844  4.9003326
##  [7] -1.7652991  2.0424735 -1.9015986  5.0308481  2.466
0347 -0.7169110
## [13]  4.9279207  4.7638348  2.0368004 -1.7946764  4.873
4571  4.4457972
## [19]  1.7508409 -1.7406558 -1.3558348  0.4807489  4.039
0032  3.1007082
## [25]  4.7198552 -2.0103060  1.7508409
```

T hitung X3

```
t_X3=gwr.adaptbisquare$SDF$X3/gwr.adaptbisquare$SDF$X3_se
t_X3
```

```
##  [1] -1.38385373 -1.20321899 -2.28428331  0.64375030  0
.29126854 -1.52477976
##  [7]  1.23517161  0.03668144  0.88683735 -2.12236742 -1
.38130074  0.23599713
## [13] -2.31795548 -2.10321444 -1.26063489  1.03494551 -2
.28621015 -1.61438671
## [19]  0.67600538  0.53591866  2.14305213 -0.12697845 -1
.21603953  0.87820072
## [25] -1.64145148  3.00903340  0.67600538
```

T hitung X4

```
t_X4=gwr.adaptbisquare$SDF$X4/gwr.adaptbisquare$SDF$X4_se
t_X4
```

```
##  [1] 3.457298 5.073853 3.598198 7.920236 6.000829 2.305
555 5.882903 4.618298
##  [9] 6.015682 3.617045 3.437672 6.053419 3.601619 3.146
569 4.253131 5.698082
## [17] 3.512724 2.273782 5.434340 6.009308 6.591200 5.560
952 4.353072 1.656412
## [25] 2.384308 5.560869 5.434340
```

T hitung X5

```
t_X5=gwr.adaptbisquare$SDF$X5/gwr.adaptbisquare$SDF$X5_se
t_X5
```

```
##  [1]  2.6976540  3.7642162  3.8656373 -0.4267935  1.336
8374  4.0033941
##  [7]  1.1532950  1.9148169  1.9802262  4.0250805  2.682
3449  1.3704488
## [13]  3.8805474  4.0006686  3.2289980  1.1775180  3.939
8360  3.8923173
## [19]  1.2320980  0.9793322 -0.2516661  1.3653557  4.263
0730  3.7750055
## [25]  3.9868037  0.7431220  1.2320980
```

T hitung X6

```
t_X6=gwr.adaptbisquare$SDF$X6/gwr.adaptbisquare$SDF$X6_se
t_X6
```

```
##  [1] -2.82235223 -5.54559737 -4.68313844 -0.39277421 -0
.45046662 -5.03523005
##  [7]  0.01972012 -1.12584701  2.99506749 -4.35968862 -2
.86689735 -0.45204269
## [13] -4.71583423 -4.68494948 -4.77244018 -0.73172116 -4
.71290211 -4.60295923
## [19] -0.71760870 -0.32098854  0.61716357 -0.63220894 -4
.74032318 -6.06432632
## [25] -4.70737468  1.66748677 -0.71760870
```

T hitung X7

```
t_X7=gwr.adaptbisquare$SDF$X7/gwr.adaptbisquare$SDF$X7_se
t_X7
```

```
##  [1] 4.1490662 4.4325284 3.1247847 2.9703005 1.6272019
2.3321151 2.4950541
##  [8] 3.5474401 4.2658799 3.5377114 4.1626576 1.6776919
3.0872886 2.9152939
## [15] 4.4277949 1.9394678 3.1033817 2.2544633 1.7156523
2.3498201 3.8230750
## [22] 0.5631869 4.5700143 5.4029689 2.3375161 3.3221777
1.7156523
```

T hitung X8

```
t_X8=gwr.adaptbisquare$SDF$X8/gwr.adaptbisquare$SDF$X8_se
t_X8
```

```
##  [1] -1.24385709 -2.32404773 -0.50836283 -0.14512754  2
.40028652 -0.12059684
```

```
##  [7]  2.85403136 -0.33630022  4.93386772 -0.66417669 -1
.24964824  2.45703413
## [13] -0.48495432 -0.30336510 -1.74884875  1.30143969 -0
.46609824  0.16178596
## [19]  0.93815010  2.13365073  2.54592844  1.77361899 -1
.52850231 -0.05209413
## [25]  0.01096136  5.58055970  0.93815010
```

Lampiran 14 Pembentukkan Model GWR setiap Lokasi

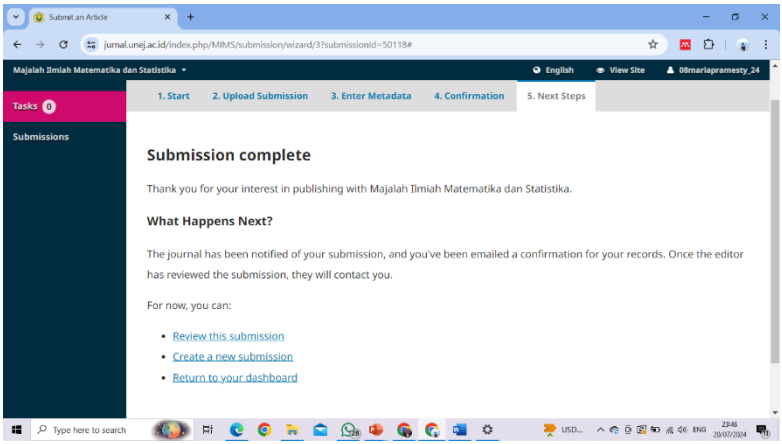
```
gwr.adaptbisquare$SDF$"(Intercept)"

##  [1]  24244.4723  18147.2813  35592.4697  -9944.9934  -
7325.9525  48907.2995
##  [7] -21838.1543  -1605.7738 -41362.1276  34656.2610  2
4358.3292  -6658.3143
## [13]  35830.6441  39724.0136  20680.9723 -17533.9511  3
6680.2290  56233.9457
## [19] -10490.0168 -10514.4143 -32657.9274   -885.3815  1
7152.8099 -12891.9426
## [25]  49655.5533 -51768.1864 -10490.0168

gwr.adaptbisquare$SDF$X1

##  [1] 0.007248894 0.010283953 0.007939265 0.003260835 0.
013541967 0.006860248
##  [7] 0.018873158 0.006528453 0.017300271 0.009008783 0.
007420032 0.013629218
## [13] 0.007756470 0.007510421 0.010131842 0.015303428 0.
007713711 0.005913024
## [19] 0.010221409 0.013798056 0.019433163 0.011281234 0.
008911297 0.031299471
## [25] 0.006647810 0.019356853 0.010221409

gwr.adaptbisquare$SDF$X2

##  [1] 12.828079 11.044617  9.921476 -3.675741 -1.462570
9.069350 -4.657004
##  [8]  9.171243 -5.468414  9.980523 12.907248 -1.967140
9.915300  9.751198
## [15] 12.489646 -4.719993  9.923708  8.454912  6.081418
-4.450101 -3.534727
## [22]  1.484274  8.576858  7.124458  9.023480 -5.470744
6.081418
```

```
gwr.adaptbisquare$SDF$X3

##  [1] -291.470044 -227.821823 -447.022894  141.099421
49.439011 -616.944551
##  [7]  209.827172    5.896985  163.370077 -431.252146 -2
91.602149   40.369996
## [13] -452.736331 -504.173791 -241.366351  199.559472 -4
65.290880 -710.094307
## [19]  104.001238   93.411413  341.327320  -22.529006 -2
42.418354  180.314894
## [25] -627.307143  494.742600  104.001238

gwr.adaptbisquare$SDF$X4

##  [1] 688.4621 704.5189 662.5561 844.3446 615.9049 878.3
850 625.7908 712.4221
##  [9] 640.2334 633.2410 684.3222 620.1904 683.4076 739.9
068 663.8782 683.2242
## [17] 703.8501 948.0324 614.9155 665.9032 680.0234 599.8
690 828.8362 260.7222
## [25] 862.8984 577.9842 614.9155

gwr.adaptbisquare$SDF$X5

##  [1] 155.88166 161.40657 110.87286  -7.87943  26.37372
114.51943  24.83303
##  [8]  55.41145  57.24979 113.11130 155.22208  26.97457
112.56257 113.09988
## [15] 155.06311  27.85583 113.41238 109.16557  25.87239
20.26515  -5.46027
## [22]  27.79091 187.02496 118.89831 110.58538  18.58354
25.87239

gwr.adaptbisquare$SDF$X6

##  [1] -122.7005238 -125.8227525  -85.0695128   -9.568301
6  -10.9989507
##  [6]  -93.0240236    0.5693834  -41.3995804  223.765987
8  -91.3639658
## [11] -123.6512807  -11.0604340  -84.5413050  -85.366502
4 -134.1672568
## [16]  -24.4646029  -84.7088562  -89.3217453  -17.338450
4   -8.0496218
## [21]   17.1746735  -16.0073915 -120.5882828 -151.969429
```

```
8  -88.5179359
## [26]   77.3022296  -17.3384504

gwr.adaptbisquare$SDF$X7

##  [1] 0.32615839 0.32559511 0.23695792 0.32723752 0.1897
5201 0.36054106
##  [7] 0.26791906 0.26491682 0.40291872 0.26504496 0.3260
8581 0.19516962
## [13] 0.23505911 0.26559428 0.32164591 0.23311945 0.2438
9668 0.37753698
## [19] 0.13884765 0.26766599 0.37991512 0.08062738 0.3684
7516 0.51936859
## [25] 0.33828530 0.24975153 0.13884765

gwr.adaptbisquare$SDF$X8

##  [1] -154.7832755  -87.0750806  -14.2353364  -17.276459
4  243.2479559
##  [6]   -6.4248582  257.6481188  -35.9804274  327.780700
3  -19.0377690
## [11] -155.8315516  251.5819804  -13.4420183   -9.683649
8 -128.0981763
## [16]  143.6111623  -13.0333639    9.4556492  104.675185
5  222.1603761
## [21]  229.0606711  221.1829692  -44.7813366   -1.522825
7    0.5552483
## [26]  399.1315789  104.6751855
```

Lampiran 15 Menampilkan R-Square Lokal

```
gwr.adaptbisquare.R2=gwr.adaptbisquare$SDF$localR2
gwr.adaptbisquare.R2

##  [1] 0.9980796 0.9972574 0.9907718 0.9995281 0.9873675
0.9938526 0.9852726
##  [8] 0.9976980 0.9872780 0.9912423 0.9980721 0.9870920
0.9907351 0.9914430
## [15] 0.9974748 0.9824161 0.9910974 0.9922876 0.9926190
0.9850915 0.9888793
## [22] 0.9870876 0.9955060 0.9920225 0.9924651 0.9974640
0.9926190
```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SK BAN-PT No. 1765/SK/BAN-PT/AK-PPJ/S/III/2022
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Nama : Maria Hernita Elvine Pramesty

NIM : 202400007

Judul Skripsi : Pemodelan Faktor-Faktor yang Mempengaruhi Tuberkulosis (TBC) di Provinsi Jawa Barat Tahun 2022 Menggunakan Spasial Geographically Weighted Regression (GWR)

Dinyatakan **layak** / ~~**tidak layak**~~ mengikuti seminar hasil dan ujian skripsi. Demikian rekomendasi ini dibuat dapat dipergunakan sebagaimana mestinya.

Surabaya,14 Juni 2024
Tim Validasi,
Prodi Statistika UNIPA Surabaya

Gangga Anuraga,S.Si,M.Si, Ph.D
NIP :1986011820150410001

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BIODATA PENULIS

Maria Hernita Elvine Pramesty adalah nama dari penulis skripsi ini. Penulis lahir di Kabupaten Manggarai Timur tepatnya di Kecamatan Congkar tanggal 24 Agustus 2001. Penulis merupakan anak kedua dari dua bersaudara. Penulis menyelesaikan pendidikan dasar di SDK Wea Watunggong pada tahun 2014, kemudian melanjutkan pendidikannya di SMP Negeri 1 Sambi Rampas dan lulus pada tahun 2017. Penulis kemudian melanjutkan pendidikan di SMAK Santo Yohanes Paulus II Labuan Bajo dan lulus pada tahun 2020. Pada tahun 2020, Penulis melanjutkan pendidikan tinggi di Universitas PGRI Adi Buana Surabaya , Fakultas Sains dan Teknologi Program Studi Statistika. Penulis menyelesaikan kuliah Strata satu (S1) pada tahun 2024.

Penulis aktif dalam kegiatan organisasi, baik organisasi dalam maupun luar kampus. Organisasi dalam kampus yang diikuti penulis antara lain sebagai pengurus Himpunan Mahasiswa Statistika Family (HIMASTAF) pada periode 2021/2022 sebagai staf departemen KOMINFO, kemudian menjadi Ketua Umum pada tahun 2022/2023. Organisasi luar kampus yang diikuti Penulis adalah Komunitas Beasiswa Unggulan Surabaya (KUBUS) sebagai staf departemen KOMINFO pada periode 2020/2021 dan menjadi wakil ketua departemen KOMINFO pada periode 2021/2022.

Akhir kata penulis mengucapkan rasa syukur yang sebesar-besarnya atas terselesaikannya skripsi "*Pemodelan Faktor-Faktor yang Mempengaruhi Tuberkulosis (TBC) di Provinsi Jawa Barat tahun 2022 menggunakan Spasial Geographically Weighted Regression (GWR)"* dan Penulis dapat dihubingi di e-mail: mariaelvine17@gmail.com.