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# LAMPIRAN



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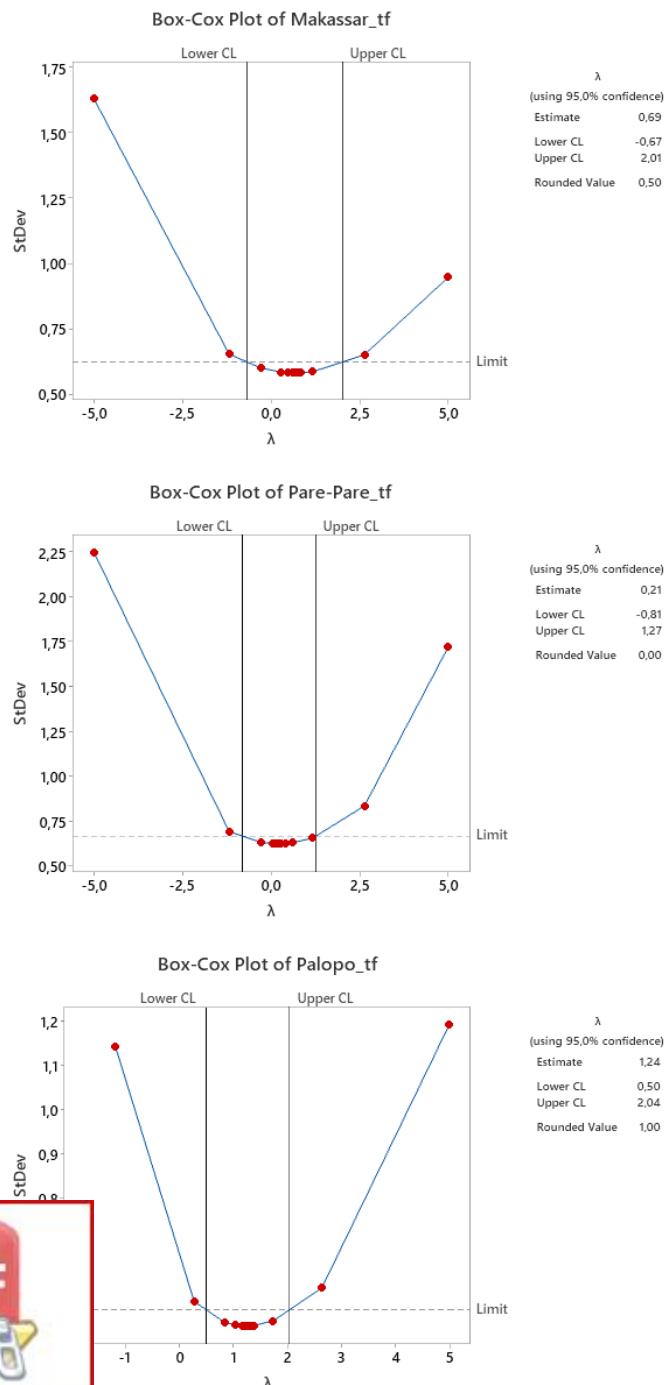
**Lampiran 1** Data Inflasi Tiga Kota di Sulawesi Selatan

No	Tahun	Bulan	Makassar	Pare-Pare	Palopo
1	2011	1	1.42	0.98	0.42
2		2	-0.26	-0.41	0.40
3		3	-0.35	-0.20	-0.10
4		4	-0.02	-0.51	-0.17
5		5	0.07	0.08	0.75
6		6	0.55	0.25	0.55
7		7	0.68	0.83	0.59
8		8	0.98	0.83	1.02
9		9	-0.70	-0.72	0.12
10		10	-0.48	-0.44	-0.74
11		11	0.19	0.25	0.29
12		12	0.77	0.69	0.18
13	2012	1	1.26	0.39	0.60
14		2	0.35	0.21	0.84
15		3	0.38	0.15	0.17
16		4	0.36	0.13	0.52
17		5	-0.58	-0.16	-0.42
18		6	0.64	0.37	0.76
19		7	0.60	1.09	1.00
20		8	1.17	1.93	1.14
21		9	-0.12	-0.87	-0.26
22		10	-0.10	0.07	-0.47
23		11	-0.10	-0.27	-0.27
24		12	0.63	0.40	0.44
:	:	:	:	:	:
145	2023	1	0.67	0.38	0.50
146		2	-0.25	-0.27	0.06
147		3	0.75	0.88	0.86
148		4	0.20	0.20	0.31
149		5	0.03	0.26	0.30
150		6	0.22	-0.03	-0.23
151		7	0.08	-0.08	0.12
		8	-0.08	-0.13	-0.23
		9	-0.09	0.16	-0.15
		10	0.40	0.31	0.15
		11	0.16	0.08	0.01
		12	0.77	0.42	0.50



## Lampiran 2 Hasil Uji Stasioneritas Data Inflasi Sebelum Intervensi Pertama

### A. Uji Stasioneritas dalam Varians



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**Lampiran 2 Hasil Uji Stasioneritas Data Inflasi Sebelum Intervensi Pertama  
(Lanjutan)**

Bentuk Transformasi Box-Cox ARIMA Pre-Intervensi

Kota	Bentuk Transformasi ( $y_t^*$ )
Makassar	$\sqrt{(y_t + 1)}$
Pare-Pare	$\log(y_t + 2)$
Palopo	$(y_t + 1)$

**B. Uji Stasioneritas dalam Mean**

**1. Makassar**

```
> adf.test(Seriestf1)
```

Augmented Dickey-Fuller Test

```
data: Seriestf1
Dickey-Fuller = -5.6785, Lag order = 3, p-value = 0.01
alternative hypothesis: stationary
```

**2. Pare-Pare**

```
> adf.test(Seriestf2)
```

Augmented Dickey-Fuller Test

```
data: Seriestf2
Dickey-Fuller = -5.1554, Lag order = 3, p-value = 0.01
alternative hypothesis: stationary
```

**3. Palopo**

```
> adf.test(Seriestf3)
```

Augmented Dickey-Fuller Test

```
data: Seriestf3
Dickey-Fuller = -5.073, Lag order = 3, p-value = 0.01
alternative hypothesis: stationary
```



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**Lampiran 3 Output Estimasi Parameter Model Arima Intervensi****Tabel A** Output Estimasi Parameter Model Arima Intervensi Kota Makassar

	Estimate	Std. Error	z value	Pr(> z )	
ar3	-0.946702	0.051557	-18.3621	< 2.2e-16	***
ma3	0.792623	0.101718	7.7924	6.576e-15	***
intercept	1.118091	0.014855	75.2690	< 2.2e-16	***
T30-AR1	0.708255	0.147268	4.8093	1.515e-06	***
T30-AR2	-0.615099	0.098096	-6.2704	3.601e-10	***
T30-MA0	0.720082	0.153507	4.6909	2.721e-06	***
T47-MA0	0.461754	0.185858	2.4844	0.01298	*
T47-MA1	0.752030	0.189995	3.9582	7.553e-05	***
---					
Signif. codes:	0	'***'	0.001	'**'	0.01
	'*'	0.05	'. '	0.1	'1

**Tabel B** Output Estimasi Parameter Model Arima Intervensi Kota Pare-Pare

	Estimate	Std. Error	z value	Pr(> z )	
ar3	-0.970774	0.023489	-41.3289	< 2.2e-16	***
ma3	0.812974	0.065985	12.3205	< 2.2e-16	***
intercept	1.484962	0.014019	105.9247	< 2.2e-16	***
T30-MA0	0.763063	0.173187	4.4060	1.053e-05	***
T30-MA1	0.491291	0.173857	2.8258	0.004716	**
T30-MA2	-0.406646	0.172859	-2.3525	0.018649	*
T47-MA0	0.463262	0.172754	2.6816	0.007327	**
T47-MA1	0.742699	0.172523	4.3049	1.670e-05	***
---					
Signif. codes:	0	'***'	0.001	'**'	0.01
	'*'	0.05	'. '	0.1	'1

**Tabel C** Output Estimasi Parameter Model Arima Intervensi Kota Palopo

	Estimate	Std. Error	z value	Pr(> z )	
ar3	-0.9694811	0.0250481	-38.7048	< 2.2e-16	***
ma3	0.8289375	0.0611949	13.5458	< 2.2e-16	***
intercept	1.0494470	0.0074056	141.7101	< 2.2e-16	***
T30-MA0	0.2537864	0.0917348	2.7665	0.0056657	**
T30-MA1	0.2006273	0.0919801	2.1812	0.0291685	*
T30-MA2	-0.3248244	0.0912365	-3.5602	0.0003705	***
T47-AR1	0.4339529	0.1117348	3.8838	0.0001028	***
T47-AR2	-0.6667923	0.1283352	-5.1957	2.039e-07	***
T47-MA0	0.2938647	0.0818301	3.5912	0.0003292	***
---					
Signif. codes:	0	'***'	0.001	'**'	0.01
	'*'	0.05	'. '	0.1	'1



**Lampiran 4 Hasil Ramalan Data Training ARIMA Intervensi**

No	Makassar	Pare-Pare	Palopo	No	Makassar	Pare-Pare	Palopo
1	0.3659	0.3170	0.2360	41	-0.0419	-0.0727	-0.1074
2	0.1903	0.0967	0.2338	42	0.5491	0.5347	0.4113
3	0.1772	0.1341	0.1678	43	0.6134	0.7077	0.6722
4	-0.0402	-0.1137	0.1207	44	0.5767	0.4159	0.5075
5	0.4251	0.4344	0.1892	45	0.0683	-0.0811	0.0380
6	0.4959	0.3595	0.3467	46	-0.0603	-0.2790	-0.2207
7	0.5711	0.6487	0.3866	47	1.1369	1.5381	1.9935
8	0.1966	0.0962	0.1680	48	2.6870	3.3634	1.4015
9	0.0009	0.0307	0.0599	49	0.4852	0.5969	-0.0227
10	-0.0411	-0.2302	-0.0041	50	0.4847	0.3546	-0.2249
11	0.1827	0.1694	0.1349	51	0.1554	-0.0828	-0.0311
12	0.7361	0.5572	0.3540	52	0.1431	-0.0049	0.4020
13	0.6943	0.7053	0.7113	53	0.1578	0.2179	0.1718
14	0.3240	0.2165	0.2712	54	0.2753	0.6895	0.2603
15	-0.1301	-0.1346	0.1103	55	0.3229	0.3366	0.3211
16	-0.1619	-0.1901	-0.1429	56	0.3198	0.1790	0.5120
17	0.1778	0.1818	0.0772	57	0.1718	-0.2257	0.0223
18	0.5846	0.4960	0.3096	58	0.0729	-0.0435	-0.0970
19	0.6245	0.5597	0.5261	59	0.1760	0.2375	0.0040
:	:	:	:	:	:	:	:
97	0.4662	0.6763	0.5182	129	0.2786	0.0337	0.0808
98	0.1774	0.0944	0.1908	130	0.2860	0.1387	0.1660
99	-0.1795	-0.5346	-0.2267	131	0.3901	0.4475	0.3986
100	0.0583	-0.2726	0.0162	132	0.3028	0.4297	0.3859
101	0.3816	0.4708	0.2850	133	0.2593	0.2908	0.2924
102	0.6625	0.9192	0.7265	134	0.1330	-0.0658	0.0694
103	0.3922	0.6583	0.3515	135	0.1273	-0.1032	0.0300
104	0.0931	-0.1584	0.1123	136	0.2063	-0.0053	0.1275
105	-0.0008	-0.4158	-0.1791	137	0.4109	0.4677	0.3784
106	0.1883	-0.0327	0.1542	138	0.3247	0.4099	0.3440
	0.5442	0.3348	139	0.1608	0.2987	0.1768	
	0.9948	0.6652	140	0.1551	-0.2135	0.0604	
	0.4288	0.2942	141	0.1944	0.0508	0.0853	
	-0.1473	0.1234	142	0.1994	0.0699	0.1908	
	-0.3142	-0.0694	143	0.4382	0.6245	0.3401	
	-0.0804	0.1564	144	0.1907	0.1880	0.1664	



**Lampiran 5** Hasil Ramalan Data Testing ARIMA Intervensi

Bulan	Makassar	Pare-Pare	Palopo
1	0.36	0.43	0.87
2	0.11	-0.12	0.38
3	0.24	0.14	0.51
4	0.16	-0.01	0.15
5	0.40	0.54	0.56
6	0.27	0.27	0.43
7	0.35	0.42	0.84
8	0.12	-0.10	0.38
9	0.24	0.14	0.51
10	0.16	0.00	0.17
11	0.39	0.52	0.55
12	0.27	0.26	0.43



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**Lampiran 6 Output Estimasi Parameter Model GSTARX Bobot Seragam**

**Tabel A** Hasil Estimasi Parameter Model Kota Makassar

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Variable Label
u1_t1	1	-0.70672	0.118158	-5.98	<.0001	u1_t1
v1_t1	1	-0.11159	0.184665	-0.60	0.5467	v1_t1
u1_t2	1	-0.55826	0.142641	-3.91	0.0001	u1_t2
v1_t2	1	-0.18652	0.203826	-0.92	0.3619	v1_t2
u1_t3	1	-0.45114	0.152174	-2.96	0.0036	u1_t3
v1_t3	1	-0.29612	0.204563	-1.45	0.1502	v1_t3
u1_t4	1	-0.32925	0.141668	-2.32	0.0217	u1_t4
v1_t4	1	-0.41400	0.201949	-2.05	0.0424	v1_t4
u1_t5	1	-0.21522	0.117602	-1.83	0.0696	u1_t5
v1_t5	1	-0.24052	0.183409	-1.31	0.1921	v1_t5

**Tabel B** Hasil Estimasi Parameter Model Kota Pare-Pare

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Variable Label
u2_t1	1	-0.79993	0.113494	-7.05	<.0001	u2_t1
v2_t1	1	0.102530	0.156968	0.65	0.5148	v2_t1
u2_t2	1	-0.63162	0.134832	-4.68	<.0001	u2_t2
v2_t2	1	0.003991	0.198086	0.02	0.9840	v2_t2
u2_t3	1	-0.57765	0.143095	-4.04	<.0001	u2_t3
v2_t3	1	-0.25190	0.222252	-1.13	0.2592	v2_t3
u2_t4	1	-0.63444	0.132915	-4.77	<.0001	u2_t4
v2_t4	1	-0.11900	0.198999	-0.60	0.5509	v2_t4
u2_t5	1	-0.24478	0.111172	-2.20	0.0295	u2_t5
v2_t5	1	-0.10585	0.162103	-0.65	0.5150	v2_t5

**Tabel C** Hasil Estimasi Parameter Model Kota Palopo

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Variable Label
u3_t1	1	-0.88580	0.107175	-8.27	<.0001	u3_t1
v3_t1	1	0.111553	0.061800	1.81	0.0734	v3_t1
u3_t2	1	-0.92103	0.133099	-6.92	<.0001	u3_t2
3_t2	1	0.128365	0.074143	1.73	0.0858	v3_t2
3_t3	1	-0.75945	0.148993	-5.10	<.0001	u3_t3
3_t3	1	0.031223	0.076569	0.41	0.6841	v3_t3
3_t4	1	-0.62507	0.138872	-4.50	<.0001	u3_t4
3_t4	1	0.018649	0.074817	0.25	0.8036	v3_t4
3_t5	1	-0.38491	0.109603	-3.51	0.0006	u3_t5
3_t5	1	0.026300	0.061296	0.43	0.6686	v3_t5



**Lampiran 7 Output Estimasi Parameter Model GSTARX Bobot Invers Jarak**

**Tabel A** Hasil Estimasi Parameter Model Kota Makassar

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Variable Label
u1_t1	1	-0.71259	0.116102	-6.14	<.0001	u1_t1
v1_t1	1	-0.09206	0.173816	-0.53	0.5973	v1_t1
u1_t2	1	-0.58679	0.141172	-4.16	<.0001	u1_t2
v1_t2	1	-0.11834	0.192603	-0.61	0.5400	v1_t2
u1_t3	1	-0.47486	0.151668	-3.13	0.0022	u1_t3
v1_t3	1	-0.24558	0.194305	-1.26	0.2086	v1_t3
u1_t4	1	-0.34969	0.139982	-2.50	0.0138	u1_t4
v1_t4	1	-0.36533	0.189516	-1.93	0.0561	v1_t4
u1_t5	1	-0.22834	0.116248	-1.96	0.0517	u1_t5
v1_t5	1	-0.19678	0.171746	-1.15	0.2540	v1_t5

**Tabel B** Hasil Estimasi Parameter Model Kota Pare-Pare

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Variable Label
u2_t1	1	-0.80393	0.113490	-7.08	<.0001	u2_t1
v2_t1	1	0.081533	0.114712	0.71	0.4785	v2_t1
u2_t2	1	-0.63924	0.134335	-4.76	<.0001	u2_t2
v2_t2	1	0.016187	0.144534	0.11	0.9110	v2_t2
u2_t3	1	-0.58828	0.142325	-4.13	<.0001	u2_t3
v2_t3	1	-0.16929	0.161857	-1.05	0.2976	v2_t3
u2_t4	1	-0.64545	0.132281	-4.88	<.0001	u2_t4
v2_t4	1	-0.07418	0.145057	-0.51	0.6100	v2_t4
u2_t5	1	-0.25266	0.111097	-2.27	0.0246	u2_t5
v2_t5	1	-0.06477	0.118385	-0.55	0.5853	v2_t5

**Tabel C** Hasil Estimasi Parameter Model Kota Palopo

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Variable Label
u3_t1	1	-0.89466	0.106322	-8.41	<.0001	u3_t1
v3_t1	1	0.172618	0.086437	2.00	0.0479	v3_t1
u3_t2	1	-0.91943	0.133076	-6.91	<.0001	u3_t2
v3_t2	1	0.188941	0.103873	1.82	0.0713	v3_t2
u3_t3	1	-0.74620	0.149470	-4.99	<.0001	u3_t3
v3_t3	1	0.035042	0.107415	0.33	0.7448	v3_t3
u3_t4	1	-0.60950	0.138591	-4.40	<.0001	u3_t4
v3_t4	1	0.021648	0.104800	0.21	0.8367	v3_t4
u3_t5	1	-0.37791	0.108767	-3.47	0.0007	u3_t5
v3_t5	1	0.039575	0.085954	0.46	0.6460	v3_t5



**Lampiran 8 Output Estimasi Parameter Model GSTARX Bobot Normalisasi**

**Tabel A** Hasil Estimasi Parameter Model Kota Makassar

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Variable Label
u1_t1	1	-0.69624	0.115802	-6.01	<.0001	u1_t1
v1_t1	1	-0.10188	0.171920	-0.59	0.5545	v1_t1
u1_t2	1	-0.53653	0.132895	-4.04	<.0001	u1_t2
v1_t2	1	-0.27512	0.215437	-1.28	0.2039	v1_t2
u1_t3	1	-0.49304	0.134077	-3.68	0.0003	u1_t3
v1_t3	1	-0.17660	0.139504	-1.27	0.2078	v1_t3
u1_t4	1	-0.36070	0.136654	-2.64	0.0093	u1_t4
v1_t4	1	-0.40152	0.207592	-1.93	0.0553	v1_t4
u1_t5	1	-0.24568	0.111942	-2.19	0.0300	u1_t5
v1_t5	1	-0.15458	0.142062	-1.09	0.2786	v1_t5

**Tabel B** Hasil Estimasi Parameter Model Kota Pare-Pare

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Variable Label
u2_t1	1	-0.75930	0.105723	-7.18	<.0001	u2_t1
v2_t1	1	0.016223	0.107175	0.15	0.8799	v2_t1
u2_t2	1	-0.55566	0.121465	-4.57	<.0001	u2_t2
v2_t2	1	-0.16181	0.201380	-0.80	0.4232	v2_t2
u2_t3	1	-0.52264	0.132209	-3.95	0.0001	u2_t3
v2_t3	1	-0.38406	0.216017	-1.78	0.0778	v2_t3
u2_t4	1	-0.60701	0.122696	-4.95	<.0001	u2_t4
v2_t4	1	-0.12610	0.134725	-0.94	0.3510	v2_t4
u2_t5	1	-0.25049	0.104162	-2.40	0.0176	u2_t5
v2_t5	1	-0.11499	0.150207	-0.77	0.4454	v2_t5

**Tabel C** Hasil Estimasi Parameter Model Kota Palopo

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr >  t	Variable Label
u3_t1	1	-0.82156	0.111805	-7.35	<.0001	u3_t1
v3_t1	1	0.058187	0.059735	0.97	0.3319	v3_t1
u3_t2	1	-0.84535	0.131801	-6.41	<.0001	u3_t2
v3_t2	1	0.073513	0.070514	1.04	0.2991	v3_t2
u3_t3	1	-0.69401	0.127516	-5.44	<.0001	u3_t3
v3_t3	1	-0.02280	0.060035	-0.38	0.7047	v3_t3
u3_t4	1	-0.59726	0.123464	-4.84	<.0001	u3_t4
v3_t4	1	-0.01232	0.055273	-0.22	0.8240	v3_t4
u3_t5	1	-0.37098	0.102330	-3.63	0.0004	u3_t5
v3_t5	1	0.003729	0.055573	0.07	0.9466	v3_t5



### Lampiran 9 Hasil Ramalan Data *Training* Model GSTARX dengan Tiga Bobot

Seragam		Invers Jarak				NKS			
Makassar	Pare-Pare	Palopo	Makassar	Pare-Pare	Palopo	Makassar	Pare-Pare	Palopo	
0.4394	0.1971	0.3178	0.4510	0.1953	0.3188	0.4376	0.1580	0.3642	
0.0651	-0.0367	0.4166	0.0577	-0.0293	0.4286	0.0992	-0.0918	0.3256	
0.1162	-0.0763	0.2828	0.1265	-0.0696	0.2958	0.0935	-0.0234	0.2342	
-0.1136	-0.3275	-0.0449	-0.1075	-0.3321	-0.0524	-0.1143	-0.3250	0.0025	
-0.0170	-0.2356	0.1372	-0.0343	-0.2451	0.1557	-0.0360	-0.1755	0.1150	
0.2686	0.7233	0.7952	0.2690	0.7147	0.8155	0.3859	0.7750	0.7882	
0.5414	1.0022	0.5045	0.5443	0.9976	0.4559	0.4112	1.0601	0.4507	
0.5270	0.0541	0.4035	0.4842	0.0572	0.3720	0.6775	-0.0977	0.4144	
-0.1474	-0.4450	-0.1121	-0.1609	-0.4411	-0.1078	-0.2524	-0.4604	-0.1345	
0.0709	-0.2190	-0.2925	0.0978	-0.2020	-0.2729	0.0784	-0.2704	-0.2860	
0.4686	0.4080	0.4019	0.4784	0.4147	0.4120	0.4905	0.3990	0.4154	
0.2732	0.2365	0.0737	0.2847	0.2282	0.0792	0.2195	0.3790	0.0824	
0.5003	0.4011	0.6456	0.5110	0.3880	0.6424	0.6133	0.4063	0.6952	
0.3318	0.6789	0.6726	0.3291	0.6747	0.6755	0.2669	0.6545	0.6255	
0.3894	0.4485	0.5207	0.4045	0.4538	0.5272	0.4732	0.4267	0.4760	
0.1277	-0.0923	-0.0141	0.1277	-0.0944	-0.0237	0.0883	-0.0920	0.0194	
-0.0679	-0.2506	-0.0773	-0.1001	-0.2453	-0.0771	-0.0421	-0.2061	-0.1453	
0.4166	0.5714	0.5665	0.4113	0.5581	0.5956	0.4238	0.6189	0.6148	
0.7645	1.3183	0.6008	0.7553	1.3183	0.5358	0.6854	1.2690	0.5836	
0.6989	0.4189	0.3756	0.6701	0.4214	0.3806	0.7194	0.3696	0.3831	
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	
0.1038	0.0147	0.0007	0.1067	0.0191	0.0013	0.0643	0.0139	-0.0238	
0.1791	0.0037	-0.0001	0.1842	0.0089	0.0094	0.1872	-0.0038	-0.0139	
0.2108	0.0285	0.1216	0.2062	0.0315	0.1237	0.2063	0.0326	0.0905	
0.2352	0.2031	0.2015	0.2330	0.1989	0.2114	0.2514	0.2492	0.1649	
0.2945	0.4606	0.3091	0.3197	0.4501	0.3221	0.2819	0.4740	0.3468	
0.0917	0.2820	0.0202	0.1027	0.2792	0.0161	0.0818	0.2668	0.0536	
0.0573	0.1583	0.2024	0.0631	0.1555	0.2069	0.1216	0.1811	0.2542	
0.0225	0.4285	0.1216	0.0410	0.4246	0.1296	-0.0151	0.4417	0.1535	
0.1257	0.4045	0.3263	0.1171	0.4098	0.3004	0.1722	0.3835	0.3522	
0.0907	0.2614	0.4045	0.0686	0.2583	0.4037	0.0516	0.2796	0.3828	
0.0131	0.2251	0.2622	0.0082	0.2306	0.2624	0.0260	0.2224	0.1974	
0.2304	0.3624	0.4211	0.2245	0.3619	0.4239	0.2177	0.3472	0.3582	
0.0464	0.1058	0.0809	0.0421	0.1091	0.0877	0.0454	0.1057	0.0151	
-0.0032	-0.1178	-0.0972	-0.0016	-0.1210	-0.0961	0.0119	-0.0943	-0.0824	
0.2418	0.4109	0.1580	0.2404	0.4089	0.1625	0.2434	0.3827	0.1561	
0.7077	0.9989	0.5841	0.7184	1.0122	0.5809	0.7205	0.9033	0.6358	
		0.4745	0.5809	1.1151	0.4884	0.5417	1.1405	0.4042	
		0.2221	0.3747	0.4170	0.2277	0.3602	0.4895	0.2980	
		0.3690	0.4087	0.5462	0.3500	0.4235	0.4648	0.3116	
		0.4485	0.3529	0.2819	0.4450	0.4220	0.2883	0.5410	
		0.8593	0.8260	1.1537	0.8604	0.7090	1.1098	0.8788	
		0.1949	0.4014	0.5633	0.2021	0.3782	0.5106	0.2128	
		0.4118	0.3333	0.0518	0.3850	0.4522	0.1665	0.3432	



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

**Lampiran 10** Pemeliharan Parameter Model *Hybrid GSTARX-SVR* dengan Menggunakan Metode *Grid Search*

**Tabel A** Parameter Model *Hybrid GSTARX-SVR* dengan Bobot Seragam

<b>Kota</b>	<b>Epsilon</b>	<b>Cost</b>	<b>Gamma</b>	<b>Training</b>		<b>Testing</b>	
				<b>sMAPE</b>	<b>RMSE</b>	<b>sMAPE</b>	<b>RMSE</b>
Makassar	0.00009	350.0	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.1	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.2	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.3	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.4	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.5	0.4204	0.06%	0.0001	34.51%	0.1928
Pare-Pare	0.00008	350.0	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.1	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.2	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.3	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.4	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.5	0.4204	0.07%	0.0002	38.65%	0.2849
Palopo	0.00005	350.0	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.1	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.2	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.3	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.4	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.5	0.0312	5.18%	0.1070	38.02%	0.2256

**Tabel B** Parameter Model *Hybrid GSTARX-SVR* Bobot dengan Invers Jarak

<b>Kota</b>	<b>Epsilon</b>	<b>Cost</b>	<b>Gamma</b>	<b>Training</b>		<b>Testing</b>	
				<b>sMAPE</b>	<b>RMSE</b>	<b>sMAPE</b>	<b>RMSE</b>
Makassar	0.00005	350.0	0.3536	0.05%	0.0001	31.84%	0.1928
	0.00005	350.1	0.3536	0.05%	0.0001	31.84%	0.1928
	0.00005	350.2	0.3536	0.05%	0.0001	31.84%	0.1928
	0.00005	350.3	0.3536	0.05%	0.0001	31.84%	0.1928
	0.00005	350.4	0.3536	0.05%	0.0001	31.84%	0.1928
	0.00005	350.5	0.3536	0.05%	0.0001	31.84%	0.1928
	0.00007	350.0	0.4204	0.07%	0.0002	38.34%	0.2849
	07	350.1	0.4204	0.07%	0.0002	38.34%	0.2849
	07	350.2	0.4204	0.07%	0.0002	38.34%	0.2849
	07	350.3	0.4204	0.07%	0.0002	38.34%	0.2849
	07	350.4	0.4204	0.07%	0.0002	38.34%	0.2849
	07	350.5	0.4204	0.07%	0.0002	38.34%	0.2849



**Tabel B** Parameter Model *Hybrid GSTARX-SVR* Bobot dengan Invers Jarak  
(Lanjutan)

<b>Kota</b>	<b>Epsilon</b>	<b>Cost</b>	<b>Gamma</b>	<b>Training</b>		<b>Testing</b>	
				<b>sMAPE</b>	<b>RMSE</b>	<b>sMAPE</b>	<b>RMSE</b>
Palopo	0.00009	350.0	0.0313	5.61%	0.1116	43.96%	0.2256
	0.00009	350.1	0.0313	5.61%	0.1116	43.96%	0.2256
	0.00009	350.2	0.0313	5.61%	0.1116	43.96%	0.2256
	0.00009	350.3	0.0313	5.61%	0.1116	43.96%	0.2256
	0.00009	350.4	0.0313	5.61%	0.1116	43.96%	0.2256
	0.00009	350.5	0.0313	5.61%	0.1116	43.96%	0.2256

**Tabel C** Parameter Model *Hybrid GSTARX-SVR* dengan Bobot Normalisasi Korelasi Silang

<b>Kota</b>	<b>Epsilon</b>	<b>Cost</b>	<b>Gamma</b>	<b>Training</b>		<b>Testing</b>	
				<b>sMAPE</b>	<b>RMSE</b>	<b>sMAPE</b>	<b>RMSE</b>
Makassar	0.00009	350.0	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.1	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.2	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.3	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.4	0.4204	0.06%	0.0001	34.51%	0.1928
	0.00009	350.5	0.4204	0.06%	0.0001	34.51%	0.1928
Pare-Pare	0.00008	350.0	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.1	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.2	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.3	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.4	0.4204	0.07%	0.0002	38.65%	0.2849
	0.00008	350.5	0.4204	0.07%	0.0002	38.65%	0.2849
Palopo	0.00005	350.0	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.1	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.2	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.3	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.4	0.0312	5.18%	0.1070	38.02%	0.2256
	0.00005	350.5	0.0312	5.18%	0.1070	38.02%	0.2256



**Lampiran 11 Matrix Kernel RBF Hybrid GSTARX-SVR dengan Bobot Seragam**

**Tabel A** Matrix Kernel RBF Kota Makassar

	1	2	3	4	5	6	7	8	9	...	130	131	132	133	134	135	136	137	138
1	1	0.9415	0.8697	0.6166	0.5489	0.6301	0.7981	0.8630	0.7895	...	0.7281	0.7271	0.7484	0.7537	0.6557	0.6210	0.7269	0.6470	0.6712
2	0.9415	1	0.9374	0.6646	0.5076	0.5747	0.6962	0.9133	0.8935	...	0.7691	0.7549	0.8190	0.8052	0.7440	0.6339	0.7483	0.7002	0.6548
3	0.8697	0.9374	1	0.6620	0.5149	0.5274	0.6479	0.8305	0.9134	...	0.8247	0.8239	0.8548	0.8794	0.8100	0.6958	0.8000	0.6969	0.7016
4	0.6166	0.6646	0.6620	1	0.6636	0.4689	0.4296	0.4863	0.7502	...	0.7028	0.5562	0.7646	0.7870	0.5840	0.8151	0.5343	0.8145	0.6089
5	0.5489	0.5076	0.5149	0.6636	1	0.6144	0.3929	0.3369	0.4804	...	0.7712	0.5032	0.4966	0.7056	0.5770	0.5760	0.6363	0.5349	0.7410
6	0.6301	0.5747	0.5274	0.4689	0.6144	1	0.6018	0.3720	0.4212	...	0.7254	0.7128	0.4988	0.4993	0.6805	0.5618	0.5510	0.6366	0.5363
7	0.7981	0.6962	0.6479	0.4296	0.3929	0.6018	1	0.5977	0.4859	...	0.5511	0.7188	0.6844	0.4905	0.5249	0.6140	0.5605	0.5129	0.6350
8	0.8630	0.9133	0.8305	0.4863	0.3369	0.3720	0.5977	1	0.8191	...	0.5531	0.5634	0.6523	0.6523	0.5442	0.4422	0.6057	0.4994	0.5042
9	0.7895	0.8935	0.9134	0.7502	0.4804	0.4212	0.4859	0.8191	1	...	0.7199	0.6376	0.7852	0.8436	0.6737	0.6467	0.6504	0.6981	0.5836
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
130	0.7281	0.7691	0.8247	0.7028	0.7712	0.7254	0.5511	0.5531	0.7199	...	1	0.8528	0.7589	0.8811	0.9301	0.7349	0.8782	0.7293	0.7922
131	0.7271	0.7549	0.8239	0.5562	0.5032	0.7128	0.7188	0.5634	0.6376	...	0.8528	1	0.7999	0.7122	0.9040	0.7589	0.7669	0.7342	0.6799
132	0.7484	0.8190	0.8548	0.7646	0.4966	0.4988	0.6844	0.6523	0.7852	...	0.7589	0.7999	1	0.7820	0.7176	0.8639	0.7181	0.7215	0.7319
133	0.7537	0.8052	0.8794	0.7870	0.7056	0.4993	0.4905	0.6523	0.8436	...	0.8811	0.7122	0.7820	1	0.7790	0.6937	0.8287	0.7043	0.7326
134	0.6557	0.7442	0.9100	0.5840	0.5770	0.6805	0.5249	0.5442	0.6737	...	0.9301	0.9040	0.7176	0.7790	1	0.6672	0.7899	0.7315	0.6713
	0.958	0.8151	0.5760	0.5618	0.6140	0.4422	0.6467	...	0.7349	0.7589	0.8639	0.6937	0.6672	1	0.5698	0.7953	0.7079		
	0.900	0.5343	0.6363	0.5510	0.5605	0.6057	0.6504	...	0.8782	0.7669	0.7181	0.8287	0.7899	0.5698	1	0.5044	0.7865		
	0.969	0.8145	0.5349	0.6366	0.5129	0.4994	0.6981	...	0.7293	0.7342	0.7215	0.7043	0.7315	0.7953	0.5044	1	0.5043		
	0.916	0.6089	0.7410	0.5363	0.6350	0.5042	0.5836	...	0.7922	0.6799	0.7319	0.7326	0.6713	0.7079	0.7865	0.5043	1		



**Tabel B** Matrix Kernel RBF Kota Pare-Pare

	1	2	3	4	5	6	7	8	9	...	130	131	132	133	134	135	136	137	138
1	1	0.9414	0.8842	0.7096	0.6286	0.7306	0.8357	0.9014	0.8422	...	0.6927	0.7358	0.7017	0.7218	0.6404	0.6732	0.6646	0.7553	0.7132
2	0.9414	1	0.9436	0.7228	0.6041	0.6417	0.8050	0.9299	0.9055	...	0.7406	0.7381	0.8147	0.7784	0.7230	0.6365	0.7519	0.7265	0.7528
3	0.8842	0.9436	1	0.7508	0.5918	0.6110	0.6990	0.8998	0.9290	...	0.7833	0.7865	0.7992	0.8796	0.7803	0.6995	0.7218	0.7720	0.7145
4	0.7096	0.7228	0.7508	1	0.7650	0.5678	0.5742	0.6624	0.8186	...	0.7546	0.6669	0.6649	0.8496	0.7251	0.8106	0.5852	0.9098	0.7334
5	0.6286	0.6041	0.5918	0.7650	1	0.7086	0.5002	0.4970	0.6443	...	0.8115	0.6054	0.5378	0.6442	0.6992	0.7124	0.6325	0.6493	0.8485
6	0.7306	0.6417	0.6110	0.5678	0.7086	1	0.7095	0.4981	0.5596	...	0.7461	0.7874	0.5707	0.5556	0.6398	0.6928	0.6808	0.6670	0.6509
7	0.8357	0.8050	0.6990	0.5742	0.5002	0.7095	1	0.7044	0.6035	...	0.6104	0.7399	0.7517	0.5639	0.5820	0.6094	0.6846	0.6390	0.6727
8	0.9014	0.9299	0.8998	0.6624	0.4970	0.4981	0.7044	1	0.8835	...	0.6146	0.6165	0.6727	0.7451	0.6068	0.5501	0.5960	0.6450	0.6426
9	0.8422	0.9055	0.9290	0.8186	0.6443	0.5596	0.6035	0.8835	1	...	0.7798	0.7019	0.7268	0.8523	0.7700	0.6874	0.6686	0.7830	0.6999
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
130	0.6927	0.7406	0.7833	0.7546	0.8115	0.7461	0.6104	0.6146	0.7798	...	1	0.8705	0.7735	0.8018	0.9522	0.8154	0.8602	0.7216	0.8458
131	0.7358	0.7381	0.7865	0.6669	0.6054	0.7874	0.7399	0.6165	0.7019	...	0.8705	1	0.8174	0.7480	0.8274	0.8626	0.8303	0.7624	0.6973
132	0.7017	0.8147	0.7992	0.6649	0.5378	0.5707	0.7517	0.6727	0.7268	...	0.7735	0.8174	1	0.7329	0.7538	0.7205	0.8292	0.6719	0.7288
133	0.7218	0.7784	0.8796	0.8496	0.6442	0.5556	0.5639	0.7451	0.8523	...	0.8018	0.7480	0.7329	1	0.7686	0.7547	0.6864	0.8109	0.7026
134	0.6404	0.7230	0.7803	0.7251	0.6992	0.6398	0.5820	0.6068	0.7700	...	0.9522	0.8274	0.7538	0.7686	1	0.7328	0.8089	0.6911	0.7895
135	0.6732	0.6365	0.6995	0.8106	0.7124	0.6928	0.6094	0.5501	0.6874	...	0.8154	0.8626	0.7205	0.7547	0.7328	1	0.6475	0.8516	0.6912



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**Tabel C** Matrix Kernel RBF Kota Palopo

	1	2	3	4	5	6	7	8	9	...	130	131	132	133	134	135	136	137	138
1	1	0.9968	0.9915	0.9781	0.9684	0.9755	0.9875	0.9915	0.9863	...	0.9808	0.9824	0.9853	0.9836	0.9797	0.9779	0.9812	0.9806	0.9764
2	0.9968	1	0.9969	0.9788	0.9664	0.9701	0.9810	0.9950	0.9923	...	0.9840	0.9842	0.9907	0.9905	0.9843	0.9789	0.9853	0.9803	0.9804
3	0.9915	0.9969	1	0.9808	0.9641	0.9673	0.9753	0.9891	0.9953	...	0.9882	0.9877	0.9925	0.9948	0.9908	0.9818	0.9879	0.9816	0.9787
4	0.9781	0.9788	0.9808	1	0.9788	0.9608	0.9601	0.9683	0.9836	...	0.9820	0.9738	0.9814	0.9917	0.9792	0.9920	0.9703	0.9908	0.9760
5	0.9684	0.9664	0.9641	0.9788	1	0.9727	0.9520	0.9492	0.9639	...	0.9852	0.9650	0.9645	0.9767	0.9776	0.9761	0.9735	0.9719	0.9859
6	0.9755	0.9701	0.9673	0.9608	0.9727	1	0.9720	0.9514	0.9576	...	0.9812	0.9823	0.9648	0.9651	0.9761	0.9765	0.9731	0.9713	0.9717
7	0.9875	0.9810	0.9753	0.9601	0.9520	0.9720	1	0.9720	0.9630	...	0.9681	0.9804	0.9825	0.9637	0.9681	0.9720	0.9747	0.9672	0.9714
8	0.9915	0.9950	0.9891	0.9683	0.9492	0.9514	0.9720	1	0.9867	...	0.9688	0.9689	0.9805	0.9812	0.9688	0.9635	0.9710	0.9669	0.9672
9	0.9863	0.9923	0.9953	0.9836	0.9639	0.9576	0.9630	0.9867	1	...	0.9836	0.9769	0.9847	0.9945	0.9834	0.9770	0.9780	0.9803	0.9718
:	:	:	:	:	:	:	:	:	:	..	:	:	:	:	:	:	:	:	
130	0.9808	0.9840	0.9882	0.9820	0.9852	0.9812	0.9681	0.9688	0.9836	...	1	0.9920	0.9874	0.9926	0.9985	0.9892	0.9942	0.9809	0.9887
131	0.9824	0.9842	0.9877	0.9738	0.9650	0.9823	0.9804	0.9689	0.9769	...	0.9920	1	0.9925	0.9848	0.9941	0.9910	0.9906	0.9830	0.9772
132	0.9853	0.9907	0.9925	0.9814	0.9645	0.9648	0.9825	0.9805	0.9847	...	0.9874	0.9925	1	0.9912	0.9901	0.9898	0.9897	0.9833	0.9837
133	0.9836	0.9905	0.9948	0.9917	0.9767	0.9651	0.9637	0.9812	0.9945	...	0.9926	0.9848	0.9912	1	0.9927	0.9893	0.9861	0.9866	0.9842
134	0.9797	0.9843	0.9908	0.9792	0.9776	0.9761	0.9681	0.9688	0.9834	...	0.9985	0.9941	0.9901	0.9927	1	0.9883	0.9946	0.9808	0.9846
135	0.9779	0.9789	0.9818	0.9920	0.9761	0.9765	0.9720	0.9635	0.9770	...	0.9892	0.9910	0.9898	0.9893	0.9883	1	0.9802	0.9935	0.9795
		9879	0.9703	0.9735	0.9731	0.9747	0.9710	0.9780	...	0.9942	0.9906	0.9897	0.9861	0.9946	0.9802	1	0.9665	0.9902	
		9816	0.9908	0.9719	0.9713	0.9672	0.9669	0.9803	...	0.9809	0.9830	0.9833	0.9866	0.9808	0.9935	0.9665	1	0.9660	
		9787	0.9760	0.9859	0.9717	0.9714	0.9672	0.9718	...	0.9887	0.9772	0.9837	0.9842	0.9846	0.9795	0.9902	0.9660	1	

**Lampiran 12 Nilai  $\alpha$  Model Hybrid GSTARX-SVR dengan Bobot Seragam**

No	Makassar	Pare-Pare	Palopo
1	-22.2852	88.3222	350.0000
2	350.0000	-297.2159	350.0000
3	-350.0000	-350.0000	350.0000
4	-123.2501	-168.6947	-350.0000
5	75.0077	129.5565	14.1064
6	25.5129	29.3165	-350.0000
7	9.8100	48.7211	-202.3806
8	-28.4507	-44.7159	350.0000
9	65.2908	163.7182	350.0000
10	350.0000	350.0000	350.0000
11	-350.0000	-350.0000	-350.0000
12	202.1269	146.2998	350.0000
13	-13.7610	193.0024	350.0000
14	168.6048	25.7860	350.0000
15	73.0535	-84.5825	-350.0000
16	-16.8268	-79.2524	-329.6252
17	-9.3805	-84.2039	-350.0000
:	:	:	:
123	-18.4897	-137.3456	-350.0000
124	-201.5440	-120.2991	-350.0000
125	350.0000	350.0000	-350.0000
126	350.0000	190.1900	350.0000
127	334.7418	350.0000	-350.0000
128	-350.0000	-106.8937	-350.0000
129	350.0000	350.0000	350.0000
130	350.0000	346.3480	350.0000
131	-80.3951	66.2129	-350.0000
132	88.8775	-65.5245	350.0000
133	350.0000	-26.9364	350.0000
134	62.9853	-16.7386	350.0000
135	-102.2954	-1.0401	350.0000
136	-84.2126	-17.3238	-350.0000
137	59.8515	170.2728	-122.2383
138	-65.9044	77.5484	350.0000



**Lampiran 13 Hasil Ramalan Data Training Model Hybrid GSTARX-SVR**

No	Makassar	Pare-Pare	Palopo	No	Makassar	Pare-Pare	Palopo
1	0.6799	0.8300	0.5902	41	1.3602	1.8699	1.4599
2	0.9799	0.8299	1.0197	42	2.6897	3.7498	2.7801
3	-0.7000	-0.7200	0.1200	43	-0.0599	-0.3899	-0.3100
4	-0.4800	-0.4400	-0.7399	44	-0.1900	-0.6100	-0.1700
5	0.1900	0.2500	0.2901	45	0.6297	-1.0100	0.3602
6	0.7700	0.6899	0.1800	46	0.3800	0.4502	0.4298
7	1.2602	0.3897	0.6000	47	0.3500	0.2498	0.0702
8	0.3500	0.2099	0.8400	48	0.7500	0.6799	0.7699
9	0.3800	0.1499	0.1702	49	1.2897	1.2099	0.7498
10	0.3600	0.1298	0.5201	50	0.4398	0.0802	0.0298
11	-0.5800	-0.1599	-0.4199	51	0.5699	0.1700	0.4699
12	0.6399	0.3698	0.7601	52	-0.0298	-0.2800	-0.0501
13	0.6002	1.0900	1.0001	53	0.2598	0.2999	0.4401
14	1.1699	1.9298	1.1400	54	0.6999	0.7398	0.5498
15	-0.1200	-0.8700	-0.2600	55	1.3598	1.1099	0.5158
16	-0.1000	0.0700	-0.4699	56	-0.0200	-0.0300	0.0698
17	-0.1000	-0.2700	-0.2700	57	0.1701	-0.9001	0.1938
18	0.6300	0.4003	0.4402	58	-0.3899	-0.5300	-0.3699
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
95	0.7299	1.3599	0.5401	124	0.0702	-0.0400	-0.0598
96	0.0500	1.0597	0.8596	125	0.3798	0.7401	0.2202
97	0.0098	-0.4801	-0.1300	126	0.9201	1.1401	0.6498
98	0.3900	0.0404	-0.0199	127	0.5602	1.1799	0.3787
99	-0.1199	-0.8498	0.0099	128	-0.0601	-0.0203	-0.0302
100	0.1000	0.0300	-0.0100	129	0.4900	0.5502	0.4501
101	0.0400	0.8400	0.1499	130	1.2698	0.7099	0.8776
102	0.0400	-0.1000	0.0499	131	0.1300	1.8797	0.4099
103	0.6598	0.9603	0.1299	132	0.2901	0.1100	0.4000
104	0.4999	0.0200	0.0401	133	1.2502	0.5602	0.2924
105	-0.1098	-0.1001	-0.0900	134	-0.2900	-0.1098	0.2599
					-0.1399	0.3400	1.7400
					0.1499	0.4898	136 -0.1100 -0.4800 -0.4900
					0.6498	0.0981	137 0.3100 0.2199 -0.1900
					0.1801	0.1501	138 0.7400 0.7203 0.3602



**Lampiran 14 Hasil Ramalan Data Testing Model Level Dua**

**Tabel A** Hasil Ramalan Model GSTARX Kota Makassar

Bulan	Aktual	Seragam	Invers Jarak	NKS
1	0.67	0.39	0.40	0.43
2	-0.25	-0.33	-0.32	-0.36
3	0.75	0.32	0.32	0.32
4	0.20	0.49	0.49	0.46
5	0.03	0.37	0.37	0.35
6	0.22	0.32	0.31	0.36
7	0.08	0.17	0.17	0.18
8	-0.08	0.02	0.04	0.02
9	-0.09	0.28	0.27	0.27
10	0.40	0.37	0.36	0.36
11	0.16	0.35	0.35	0.34
12	0.77	0.26	0.26	0.28

**Tabel B** Hasil Ramalan Model GSTARX Kota Pare-Pare

Bulan	Aktual	Seragam	Invers Jarak	NKS
1	0.38	0.35	0.35	0.40
2	-0.27	-0.61	-0.61	-0.66
3	0.88	0.31	0.31	0.27
4	0.20	0.55	0.55	0.51
5	0.26	0.46	0.46	0.49
6	-0.03	0.30	0.30	0.34
7	-0.08	-0.08	-0.08	-0.05
8	-0.13	-0.10	-0.09	-0.13
9	0.16	0.23	0.23	0.20
10	0.31	0.40	0.39	0.38
11	0.08	0.42	0.41	0.43
12	0.42	0.18	0.18	0.20



**Table C** Hasil Ramalan Model GSTARX Kota Palopo

Bulan	Aktual	Seragam	Invers Jarak	NKS
1	0.50	0.28	0.24	0.33
2	0.06	-0.27	-0.23	-0.31
3	0.86	0.24	0.23	0.28
4	0.31	0.43	0.41	0.44
5	0.30	0.38	0.39	0.38
6	-0.23	0.29	0.27	0.26
7	0.12	0.10	0.09	0.11
8	-0.23	0.02	0.03	0.00
9	-0.15	0.21	0.20	0.22
10	0.15	0.35	0.35	0.36
11	0.01	0.34	0.34	0.32
12	0.50	0.22	0.21	0.21

**Tabel D** Hasil Ramalan Model *Hybrid GSTARX-SVR* Kota Makassar

Bulan	Aktual	Seragam	Invers Jarak	NKS
1	0.67	0.19	0.17	0.16
2	-0.25	-0.17	-0.56	-0.33
3	0.75	0.79	0.85	0.96
4	0.20	0.23	0.28	0.25
5	0.03	0.04	0.03	0.01
6	0.22	0.44	0.38	0.28
7	0.08	0.28	0.28	0.29
8	-0.08	0.04	-0.03	-0.06
9	-0.09	0.19	0.18	0.08
10	0.40	0.40	0.41	0.43
11	0.16	0.27	0.24	0.34
12	0.77	0.67	0.74	0.75



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**Tabel E** Hasil Ramalan Model *Hybrid GSTARX-SVR* Kota Pare-Pare

Bulan	Aktual	Seragam	Invers Jarak	NKS
1	0.38	0.30	0.30	0.35
2	-0.27	-0.53	-0.52	-0.56
3	0.88	0.39	0.38	0.05
4	0.20	0.44	0.52	0.43
5	0.26	0.36	0.39	0.48
6	-0.03	-0.09	-0.25	-0.04
7	-0.08	0.11	0.10	0.04
8	-0.13	-0.11	-0.12	-0.13
9	0.16	0.23	0.23	0.14
10	0.31	0.47	0.46	0.53
11	0.08	0.04	0.04	0.04
12	0.42	-0.30	-0.29	-0.10

**Table F** Hasil Ramalan Model *Hybrid GSTARX-SVR* Kota Palopo

Bulan	Aktual	Seragam	Invers Jarak	NKS
1	0.50	0.30	0.28	0.25
2	0.06	0.36	0.40	0.21
3	0.86	0.95	0.91	0.13
4	0.31	0.32	0.37	0.16
5	0.30	0.68	0.57	0.38
6	-0.23	-0.42	-0.35	0.04
7	0.12	0.39	0.56	0.14
8	-0.23	0.05	0.18	-0.02
9	-0.15	0.21	0.37	0.23
10	0.15	0.13	0.27	0.32
11	0.01	0.01	0.04	0.09
12	0.50	0.55	0.57	0.27



**Lampiran 15 RMSE *k-step* Data Testing Model *Hybrid GSTARX-SVR***

Bulan	Makassar	Pare-Pare	Palopo
1	0.4829	0.0822	0.2036
2	0.3457	0.1913	0.2544
3	0.2834	0.3211	0.2144
4	0.2458	0.3032	0.1858
5	0.2198	0.2748	0.2391
6	0.2197	0.2520	0.2319
7	0.2167	0.2440	0.2375
8	0.2072	0.2284	0.2438
9	0.2170	0.2166	0.2599
10	0.2059	0.2120	0.2466
11	0.1991	0.2024	0.2352
12	0.1928	0.2849	0.2256



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