

Lampiran 01

**DATA ANGKA PARTISIPASI SEKOLAH PROVINSI BALI
BERDASARKAN KELOMPOK UMUR**

NO	TAHUN	Angka Partisipasi Sekolah (%)		
		7 - 12 Tahun	13 – 15 Tahun	16 – 18 Tahun
1	2000	97,33	84,64	63,4
2	2001	96,44	82,49	57,61
3	2002	96,82	83,28	62,25
4	2003	96,82	83,28	62,25
5	2004	98,11	86,36	63,31
6	2005	95,73	83,59	59,86
7	2006	98,27	87,16	63,21
8	2007	98,29	87,44	63,21
9	2008	98,29	87,24	62,71
10	2009	98,52	88,34	63,75
11	2010	98,69	89,26	65,22
12	2011	98,45	92,22	68,91
13	2012	99,2	95,15	70,8
14	2013	99,27	95,83	73,95
15	2014	99,36	97,23	81,59
16	2015	99,41	97,41	81,69
17	2016	99,35	97,55	81,98
18	2017	99,44	97,72	82,16
19	2018	99,56	97,92	82,35
20	2019	99,71	97,72	82,6

Lampiran 02

TABEL KERJA PERHITUNGAN APS KELOMPOK 7 – 12 TAHUN
SINGLE MOVING AVERAGE 3

NO	TAHUN	APS (%)	FORECAST	ERROR	ABSOLUT	ERROR ²	ABS
	<i>T</i>	<i>X_t</i>	<i>F_t</i>	<i>X_t - F_t</i>	<i> X_t - F_t </i>	<i>(X_t - F_t)²</i>	<i> (X_t - F_t)/A_t </i>
1	2000	97,33					
2	2001	96,44					
3	2002	96,82					
4	2003	96,82	96,8633	-0,0433	0,0433	0,0019	0,0004
5	2004	98,11	96,6933	1,4167	1,4167	2,0069	0,0144
6	2005	95,73	97,25	-1,52	1,52	2,3104	0,0159
7	2006	98,27	96,8867	1,3833	1,3833	1,9136	0,0141
8	2007	98,29	97,37	0,92	0,92	0,8464	0,0094
9	2008	98,29	97,43	0,86	0,86	0,7396	0,0087
10	2009	98,52	98,2833	0,2367	0,2367	0,056	0,0024
11	2010	98,69	98,3667	0,3233	0,3233	0,1045	0,0033
12	2011	98,45	98,5	-0,05	0,05	0,0025	0,0005
13	2012	99,2	98,5533	0,6467	0,6467	0,4182	0,0065
14	2013	99,27	98,78	0,49	0,49	0,2401	0,0049
15	2014	99,36	98,9733	0,3867	0,3867	0,1495	0,0039
16	2015	99,41	99,2767	0,1333	0,1333	0,0178	0,0013
17	2016	99,35	99,3467	0,0033	0,0033	1E-05	3E-05
18	2017	99,44	99,3733	0,0667	0,0667	0,0044	0,0007
19	2018	99,56	99,4	0,16	0,16	0,0256	0,0016
20	2019	99,71	99,45	0,26	0,26	0,0676	0,0026
	Jumlah			5,6733	8,9	8,9051	0,0907

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TABEL KERJA PERHITUNGAN APS KELOMPOK 7 – 12 TAHUN
SINGLE MOVING AVERAGE 4

NO	TAHUN	APS (%)	FORECAST	ERROR	ABSOLUT	ERROR ²	ABS
	<i>T</i>	<i>X_t</i>	<i>F_t</i>	<i>X_t - F_t</i>	<i> X_t - F_t </i>	<i>(X_t -F_t)²</i>	<i> (X_t -F_t)/A_t </i>
1	2000	97,33					
2	2001	96,44					
3	2002	96,82					
4	2003	96,82					
5	2004	98,11	96,8525	1,2575	1,2575	1,5813	0,0128
6	2005	95,73	97,0475	-1,318	1,3175	1,7358	0,0138
7	2006	98,27	96,87	1,4	1,4	1,96	0,0142
8	2007	98,29	97,2325	1,0575	1,0575	1,1183	0,0108
9	2008	98,29	97,6	0,69	0,69	0,4761	0,007
10	2009	98,52	97,645	0,875	0,875	0,7656	0,0089
11	2010	98,69	98,3425	0,3475	0,3475	0,1208	0,0035
12	2011	98,45	98,4475	0,0025	0,0025	6E-06	3E-05
13	2012	99,2	98,4875	0,7125	0,7125	0,5077	0,0072
14	2013	99,27	98,715	0,555	0,555	0,308	0,0056
15	2014	99,36	98,9025	0,4575	0,4575	0,2093	0,0046
16	2015	99,41	99,07	0,34	0,34	0,1156	0,0034
17	2016	99,35	99,31	0,04	0,04	0,0016	0,0004
18	2017	99,44	99,3475	0,0925	0,0925	0,0086	0,0009
19	2018	99,56	99,39	0,17	0,17	0,0289	0,0017
20	2019	99,71	99,44	0,27	0,27	0,0729	0,0027
	Jumlah			6,95	9,585	9,0104	0,0976

Lampiran 04

TABEL KERJA PERHITUNGAN APS KELOMPOK 7 – 12 TAHUN
SINGLE MOVING AVERAGE 5

NO	TAHUN	APS (%)	FORECAST	ERROR	ABSOLUT	ERROR ²	ABS
	<i>T</i>	<i>X_t</i>	<i>F_t</i>	<i>X_t - F_t</i>	<i> X_t - F_t </i>	<i>(X_t - F_t)²</i>	<i> (X_t - F_t)/A_t </i>
1	2000	97,33					
2	2001	96,44					
3	2002	96,82					
4	2003	96,82					
5	2004	98,11					
6	2005	95,73	97,104	-1,374	1,374	1,8879	0,0144
7	2006	98,27	96,784	1,486	1,486	2,2082	0,0151
8	2007	98,29	97,15	1,14	1,14	1,2996	0,0116
9	2008	98,29	97,444	0,846	0,846	0,7157	0,0086
10	2009	98,52	97,738	0,782	0,782	0,6115	0,0079
11	2010	98,69	97,82	0,87	0,87	0,7569	0,0088
12	2011	98,45	98,412	0,038	0,038	0,0014	0,0004
13	2012	99,2	98,448	0,752	0,752	0,5655	0,0076
14	2013	99,27	98,63	0,64	0,64	0,4096	0,0064
15	2014	99,36	98,826	0,534	0,534	0,2852	0,0054
16	2015	99,41	98,994	0,416	0,416	0,1731	0,0042
17	2016	99,35	99,138	0,212	0,212	0,0449	0,0021
18	2017	99,44	99,318	0,122	0,122	0,0149	0,0012
19	2018	99,56	99,366	0,194	0,194	0,0376	0,0019
20	2019	99,71	99,424	0,286	0,286	0,0818	0,0029
	Jumlah			6,944	9,692	9,0938	0,0986

Lampiran 05

TABEL KERJA PERHITUNGAN APS KELOMPOK 13 – 15 TAHUN
SINGLE MOVING AVERAGE 3

NO	TAHUN	APS (%)	FORECAST	ERROR	ABSOLUT	ERROR ²	ABS
	<i>T</i>	<i>X_t</i>	<i>F_t</i>	<i>X_t - F_t</i>	<i> X_t - F_t </i>	<i>(X_t - F_t)²</i>	<i> (X_t - F_t)/A_t </i>
1	2000	84,64					
2	2001	82,49					
3	2002	83,28					
4	2003	83,28	83,47	-0,19	0,19	0,0361	0,0023
5	2004	86,36	83,0167	3,3433	3,3433	11,1779	0,0387
6	2005	83,59	84,3067	-0,7167	0,7167	0,51361	0,0086
7	2006	87,16	84,41	2,75	2,75	7,5625	0,0316
8	2007	87,44	85,7033	1,7367	1,7367	3,01601	0,0199
9	2008	87,24	86,0633	1,1767	1,1767	1,38454	0,0135
10	2009	88,34	87,28	1,06	1,06	1,1236	0,012
11	2010	89,26	87,6733	1,5867	1,5867	2,51751	0,0178
12	2011	92,22	88,28	3,94	3,94	15,5236	0,0427
13	2012	95,15	89,94	5,21	5,21	27,1441	0,0548
14	2013	95,83	92,21	3,62	3,62	13,1044	0,0378
15	2014	97,23	94,4	2,83	2,83	8,0089	0,0291
16	2015	97,41	96,07	1,34	1,34	1,7956	0,0138
17	2016	97,55	96,8233	0,7267	0,7267	0,52804	0,0074
18	2017	97,72	97,3967	0,3233	0,3233	0,10454	0,0033
19	2018	97,92	97,56	0,36	0,36	0,1296	0,0037
20	2019	97,72	97,73	-0,01	0,01	0,0001	0,0001
	Jumlah			29,087	30,92	93,6706	0,3369

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TABEL KERJA PERHITUNGAN APS KELOMPOK 13 – 15 TAHUN

SINGLE MOVING AVERAGE 4

NO	TAHUN	APS (%)	FORECAST	ERROR	ABSOLUT	ERROR ²	ABS
	T	X _t	F _t	X _t - F _t	X _t - F _t	(X _t - F _t) ²	(X _t - F _t)/A _t
1	2000	84,64					
2	2001	82,49					
3	2002	83,28					
4	2003	83,28					
5	2004	86,36	83,4225	2,9375	2,9375	8,6289	0,034
6	2005	83,59	83,8525	-0,2625	0,2625	0,0689	0,0031
7	2006	87,16	84,1275	3,0325	3,0325	9,1961	0,0348
8	2007	87,44	85,0975	2,3425	2,3425	5,4873	0,0268
9	2008	87,24	86,1375	1,1025	1,1025	1,2155	0,0126
10	2009	88,34	86,3575	1,9825	1,9825	3,9303	0,0224
11	2010	89,26	87,545	1,715	1,715	2,9412	0,0192
12	2011	92,22	88,07	4,15	4,15	17,223	0,045
13	2012	95,15	89,265	5,885	5,885	34,633	0,0618
14	2013	95,83	91,2425	4,5875	4,5875	21,045	0,0479
15	2014	97,23	93,115	4,115	4,115	16,933	0,0423
16	2015	97,41	95,1075	2,3025	2,3025	5,3015	0,0236
17	2016	97,55	96,405	1,145	1,145	1,311	0,0117
18	2017	97,72	97,005	0,715	0,715	0,5112	0,0073
19	2018	97,92	97,4775	0,4425	0,4425	0,1958	0,0045
20	2019	97,72	97,65	0,07	0,07	0,0049	0,0007
	Jumlah			36,2625	36,7875	128,63	0,398

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**TABEL KERJA PERHITUNGAN APS KELOMPOK 13-15 TAHUN
SINGLE MOVING AVERAGE 5**

NO	TAHUN	APS (%)	FORECAST	ERROR	ABSOLUT	ERROR ²	ABS
	T	X _t	F _t	X _t - F _t	X _t - F _t	(X _t - F _t) ²	X _t - F _t /A _t
1	2000	84,64					
2	2001	82,49					
3	2002	83,28					
4	2003	83,28					
5	2004	86,36					
6	2005	83,59	84,01	-0,42	0,42	0,1764	0,005
7	2006	87,16	83,8	3,36	3,36	11,29	0,0385
8	2007	87,44	84,734	2,706	2,706	7,3224	0,0309
9	2008	87,24	85,566	1,674	1,674	2,8023	0,0192
10	2009	88,34	86,358	1,982	1,982	3,9283	0,0224
11	2010	89,26	86,754	2,506	2,506	6,28	0,0281
12	2011	92,22	87,888	4,332	4,332	18,766	0,047
13	2012	95,15	88,9	6,25	6,25	39,063	0,0657
14	2013	95,83	90,442	5,388	5,388	29,031	0,0562
15	2014	97,23	92,16	5,07	5,07	25,705	0,0521
16	2015	97,41	93,938	3,472	3,472	12,055	0,0356
17	2016	97,55	95,568	1,982	1,982	3,9283	0,0203
18	2017	97,72	96,634	1,086	1,086	1,1794	0,0111
19	2018	97,92	97,148	0,772	0,772	0,596	0,0079
20	2019	97,72	97,566	0,154	0,154	0,0237	0,0016
	Jumlah			40,314	41,154	162,15	0,4418

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TABEL KERJA PERHITUNGAN APS KELOMPOK 16 – 18 TAHUN

SINGLE MOVING AVERAGE 3

NO	TAHUN	APS (%)	FORECAST	ERROR	ABSOLUT	ERROR ²	ABS
	T	X _t	F _t	X _t - F _t	X _t - F _t	(X _t - F _t) ²	(X _t - F _t)/A _t
1	2000	63,4					
2	2001	57,61					
3	2002	62,25					
4	2003	62,25	61,0867	1,1633	1,1633	1,3533	0,0187
5	2004	63,31	60,7033	2,6067	2,6067	6,7947	0,0412
6	2005	59,86	62,6033	-2,743	2,7433	7,5259	0,0458
7	2006	63,21	61,8067	1,4033	1,4033	1,9693	0,0222
8	2007	63,21	62,1267	1,0833	1,0833	1,1736	0,0171
9	2008	62,71	62,0933	0,6167	0,6167	0,3803	0,0098
10	2009	63,75	63,0433	0,7067	0,7067	0,4994	0,0111
11	2010	65,22	63,2233	1,9967	1,9967	3,9867	0,0306
12	2011	68,91	63,8933	5,0167	5,0167	25,167	0,0728
13	2012	70,8	65,96	4,84	4,84	23,426	0,0684
14	2013	73,95	68,31	5,64	5,64	31,81	0,0763
15	2014	81,59	71,22	10,37	10,37	107,54	0,1271
16	2015	81,69	75,4467	6,2433	6,2433	38,979	0,0764
17	2016	81,98	79,0767	2,9033	2,9033	8,4293	0,0354
18	2017	82,16	81,7533	0,4067	0,4067	0,1654	0,0049
19	2018	82,35	81,9433	0,4067	0,4067	0,1654	0,0049
20	2019	82,6	82,1633	0,4367	0,4367	0,1907	0,0053
	Jumlah			43,097	48,583	259,55	0,6681

Lampiran 09

TABEL KERJA PERHITUNGAN APS KELOMPOK 16 – 18 TAHUN

SINGLE MOVING AVERAGE 4

NO	TAHUN	APS (%)	FORECAST	ERROR	ABSOLUT	ERROR ²	ABS
	<i>T</i>	<i>X_t</i>	<i>F_t</i>	<i>X_t - F_t</i>	<i> X_t - F_t </i>	<i>(X_t - F_t)²</i>	<i> X_t - F_t /A_t </i>
1	2000	63,4					
2	2001	57,61					
3	2002	62,25					
4	2003	62,25					
5	2004	63,31	61,3775	1,9325	1,9325	3,7346	0,0305
6	2005	59,86	61,355	-1,495	1,495	2,235	0,025
7	2006	63,21	61,9175	1,2925	1,2925	1,6706	0,0204
8	2007	63,21	62,1575	1,0525	1,0525	1,1078	0,0167
9	2008	62,71	62,3975	0,3125	0,3125	0,0977	0,005
10	2009	63,75	62,2475	1,5025	1,5025	2,2575	0,0236
11	2010	65,22	63,22	2	2	4	0,0307
12	2011	68,91	63,7225	5,1875	5,1875	26,91	0,0753
13	2012	70,8	65,1475	5,6525	5,6525	31,951	0,0798
14	2013	73,95	67,17	6,78	6,78	45,968	0,0917
15	2014	81,59	69,72	11,87	11,87	140,9	0,1455
16	2015	81,69	73,8125	7,8775	7,8775	62,055	0,0964
17	2016	81,98	77,0075	4,9725	4,9725	24,726	0,0607
18	2017	82,16	79,8025	2,3575	2,3575	5,5578	0,0287
19	2018	82,35	81,855	0,495	0,495	0,245	0,006
20	2019	82,6	82,045	0,555	0,555	0,308	0,0067
	Jumlah			52,345	55,335	353,72	0,7426

Lampiran 09

TABEL KERJA PERHITUNGAN APS KELOMPOK 16 – 18 TAHUN

SINGLE MOVING AVERAGE 5

NO	TAHUN	APS (%)	FORECAST	ERROR	ABSOLUT	ERROR ²	ABS
	<i>T</i>	<i>X_t</i>	<i>F_t</i>	<i>X_t - F_t</i>	<i> X_t - F_t </i>	<i>(X_t - F_t)²</i>	<i> X_t - F_t /A_t </i>
1	2000	63,4					
2	2001	57,61					
3	2002	62,25					
4	2003	62,25					
5	2004	63,31					
6	2005	59,86	61,764	-1,904	1,904	3,6252	0,0318
7	2006	63,21	61,056	2,154	2,154	4,6397	0,0341
8	2007	63,21	62,176	1,034	1,034	1,0692	0,0164
9	2008	62,71	62,368	0,342	0,342	0,117	0,0055
10	2009	63,75	62,46	1,29	1,29	1,6641	0,0202
11	2010	65,22	62,548	2,672	2,672	7,1396	0,041
12	2011	68,91	63,62	5,29	5,29	27,984	0,0768
13	2012	70,8	64,76	6,04	6,04	36,482	0,0853
14	2013	73,95	66,278	7,672	7,672	58,86	0,1037
15	2014	81,59	68,526	13,064	13,064	170,67	0,1601
16	2015	81,69	72,094	9,596	9,596	92,083	0,1175
17	2016	81,98	75,388	6,592	6,592	43,454	0,0804
18	2017	82,16	78,002	4,158	4,158	17,289	0,0506
19	2018	82,35	80,274	2,076	2,076	4,3098	0,0252
20	2019	82,6	81,954	0,646	0,646	0,4173	0,0078
	Jumlah			60,722	64,53	469,8	0,8564

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PERHITUNGAN PENGUJIAN AKURASI SINGLE MOVING AVERAGE 3

KELOMPOK 7 – 12 TAHUN

1. **MSE (Mean Square Error)**

$$MSE = \frac{\sum_{i=1}^n (X_t - F_t)^2}{n}$$

$$MSE = \frac{8,9051}{20}$$

$$MSE = 0,4453$$

2. **RMSE (Root Mean Square Error)**

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (X_t - F_t)^2}{n}}$$

$$RMSE = \sqrt{\frac{8,9051}{20}}$$

$$RMSE = 0,6673$$

3. **MAD (Mean Absolut Deviation)**

$$MAD / MAE = \left| \frac{\sum_{i=1}^n (X_t - F_t)}{n} \right|$$

$$MAD / MAE = \frac{5,6733}{20}$$

$$MAD / MAE = 0,445$$

4. **MAPE (Mean Absolute Percentage Error)**

$$MAPE = \frac{\sum_{i=1}^n \left| \frac{X_t - F_t}{X_t} \right|}{n} \times 100$$

$$MAPE = \frac{0,0907}{20} \times 100$$

$$MAPE = 0,4537\%$$

Lampiran 11

**PERHITUNGAN PENGUJIAN AKURASI SINGLE MOVING AVERAGE 4
KELOMPOK 7 – 12 TAHUN**

1. **MSE (Mean Square Error)**

$$MSE = \frac{\sum_{i=1}^n (X_t - F_t)^2}{n}$$

$$MSE = \frac{9,585}{20}$$

$$MSE = 0,4505$$

2. **RMSE (Root Mean Square Error)**

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (X_t - F_t)^2}{n}}$$

$$RMSE = \sqrt{\frac{9,585}{20}}$$

$$RMSE = 0,6712$$

3. **MAD (Mean Absolut Deviation)**

$$MAD / MAE = \frac{\sum_{i=1}^n |X_t - F_t|}{n}$$

$$MAD / MAE = \frac{6,95}{20}$$

$$MAD / MAE = 0,4793$$

4. **MAPE (Mean Absolute Percentage Error)**

$$MAPE = \frac{\sum_{i=1}^n \left| \frac{X_t - F_t}{X_t} \right|}{n} \times 100$$

$$MAPE = \frac{0,0976}{20} \times 100$$

$$MAPE = 0,4879\%$$

Lampiran 12

**PERHITUNGAN PENGUJIAN AKURASI SINGLE MOVING AVERAGE 5
KELOMPOK 7 – 12 TAHUN**

1. **MSE (Mean Square Error)**

$$MSE = \frac{\sum_{i=1}^n (X_t - F_t)^2}{n}$$

$$MSE = \frac{9,692}{20}$$

$$MSE = 0,4547$$

2. **RMSE (Root Mean Square Error)**

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (X_t - F_t)^2}{n}}$$

$$RMSE = \sqrt{\frac{9,692}{20}}$$

$$RMSE = 0,6743$$

3. **MAD (Mean Absolut Deviation)**

$$MAD / MAE = \frac{\sum_{i=1}^n |X_t - F_t|}{n}$$

$$MAD / MAE = \frac{6,95}{20}$$

$$MAD / MAE = 0,4846$$

4. **MAPE (Mean Absolute Percentage Error)**

$$MAPE = \frac{\sum_{i=1}^n \left| \frac{X_t - F_t}{X_t} \right|}{n} \times 100$$

$$MAPE = \frac{0,0985}{20} \times 100$$

$$MAPE = 0,4929\%$$

Lampiran 13

**PERHITUNGAN PENGUJIAN AKURASI SINGLE MOVING AVERAGE 3
KELOMPOK 13 – 15 TAHUN**

1. **MSE (Mean Square Error)**

$$MSE = \frac{\sum_{i=1}^n (X_t - F_t)^2}{n}$$

$$MSE = \frac{93,67}{20}$$

$$MSE = 4,6835$$

2. **RMSE (Root Mean Square Error)**

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (X_t - F_t)^2}{n}}$$

$$RMSE = \sqrt{\frac{93,67}{20}}$$

$$RMSE = 2,1641$$

3. **MAD (Mean Absolut Deviation)**

$$MAD / MAE = \frac{\sum_{i=1}^n |X_t - F_t|}{n}$$

$$MAD / MAE = \frac{29,086}{20}$$

$$MAD / MAE = 1,546$$

4. **MAPE (Mean Absolute Percentage Error)**

$$MAPE = \frac{\sum_{i=1}^n \left| \frac{X_t - F_t}{X_t} \right|}{n} \times 100$$

$$MAPE = \frac{0,3369}{20} \times 100$$

$$MAPE = 1,6845\%$$

Lampiran 14

**PERHITUNGAN PENGUJIAN AKURASI SINGLE MOVING AVERAGE 4
KELOMPOK 13 – 15 TAHUN**

1. **MSE (Mean Square Error)**

$$MSE = \frac{\sum_{i=1}^n (X_t - F_t)^2}{n}$$

$$MSE = \frac{128,6268}{20}$$

$$MSE = 6,4313$$

2. **RMSE (Root Mean Square Error)**

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (X_t - F_t)^2}{n}}$$

$$RMSE = \sqrt{\frac{128,6268}{20}}$$

$$RMSE = 2,536$$

3. **MAD (Mean Absolut Deviation)**

$$MAD / MAE = \frac{\sum_{i=1}^n |X_t - F_t|}{n}$$

$$MAD / MAE = \frac{36,2625}{20}$$

$$MAD / MAE = 1,8394$$

4. **MAPE (Mean Absolute Percentage Error)**

$$MAPE = \frac{\sum_{i=1}^n \left| \frac{X_t - F_t}{X_t} \right|}{n} \times 100$$

$$MAPE = \frac{0,3369}{20} \times 100$$

$$MAPE = 1,99\%$$

Lampiran 15

**PERHITUNGAN PENGUJIAN AKURASI *SINGLE MOVING AVERAGE 5*
KELOMPOK 13 – 15 TAHUN**

1. **MSE (*Mean Square Error*)**

$$MSE = \frac{\sum_{i=1}^n (X_t - F_t)^2}{n}$$

$$MSE = \frac{162,1454}{20}$$

$$MSE = 8,1073$$

2. **RMSE (*Root Mean Square Error*)**

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (X_t - F_t)^2}{n}}$$

$$RMSE = \sqrt{\frac{162,1454}{20}}$$

$$RMSE = 2,8473$$

3. **MAD (*Mean Absolut Deviation*)**

$$MAD / MAE = \frac{\sum_{i=1}^n |X_t - F_t|}{n}$$

$$MAD / MAE = \frac{40,314}{20}$$

$$MAD / MAE = 2,0577$$

4. **MAPE (*Mean Absolute Percentage Error*)**

$$MAPE = \frac{\sum_{i=1}^n \left| \frac{X_t - F_t}{X_t} \right|}{n} \times 100$$

$$MAPE = \frac{0,4417}{20} \times 100$$

$$MAPE = 2,2089\%$$

Lampiran 16

**PERHITUNGAN PENGUJIAN AKURASI SINGLE MOVING AVERAGE 3
KELOMPOK 16 – 18 TAHUN**

1. **MSE (Mean Square Error)**

$$MSE = \frac{\sum_{i=1}^n (X_t - F_t)^2}{n}$$

$$MSE = \frac{259,5523}{20}$$

$$MSE = 12,9776$$

2. **RMSE (Root Mean Square Error)**

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (X_t - F_t)^2}{n}}$$

$$RMSE = \sqrt{\frac{259,5523}{20}}$$

$$RMSE = 3,6024$$

3. **MAD (Mean Absolut Deviation)**

$$MAD / MAE = \frac{\sum_{i=1}^n |X_t - F_t|}{n}$$

$$MAD / MAE = \frac{43,0966}{20}$$

$$MAD / MAE = 2,4292$$

4. **MAPE (Mean Absolute Percentage Error)**

$$MAPE = \frac{\sum_{i=1}^n \left| \frac{X_t - F_t}{X_t} \right|}{n} \times 100$$

$$MAPE = \frac{0,6681}{20} \times 100$$

$$MAPE = 3,3405\%$$

Lampiran 17

**PERHITUNGAN PENGUJIAN AKURASI SINGLE MOVING AVERAGE 4
KELOMPOK 16 – 18 TAHUN**

1. **MSE (Mean Square Error)**

$$MSE = \frac{\sum_{i=1}^n (X_t - F_t)^2}{n}$$

$$MSE = \frac{353,7209}{20}$$

$$MSE = 17,686$$

2. **RMSE (Root Mean Square Error)**

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (X_t - F_t)^2}{n}}$$

$$RMSE = \sqrt{\frac{353,7209}{20}}$$

$$RMSE = 4,2055$$

3. **MAD (Mean Absolut Deviation)**

$$MAD / MAE = \frac{\sum_{i=1}^n |X_t - F_t|}{n}$$

$$MAD / MAE = \frac{52,345}{20}$$

$$MAD / MAE = 2,7668$$

4. **MAPE (Mean Absolute Percentage Error)**

$$MAPE = \frac{\sum_{i=1}^n \left| \frac{X_t - F_t}{X_t} \right|}{n} \times 100$$

$$MAPE = \frac{0,7426}{20} \times 100$$

$$MAPE = 3,713\%$$

Lampiran 18

**PERHITUNGAN PENGUJIAN AKURASI SINGLE MOVING AVERAGE 5
KELOMPOK 16 – 18 TAHUN**

1. **MSE (Mean Square Error)**

$$MSE = \frac{\sum_{i=1}^n (X_t - F_t)^2}{n}$$

$$MSE = \frac{469,8019}{20}$$

$$MSE = 23,49$$

2. **RMSE (Root Mean Square Error)**

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (X_t - F_t)^2}{n}}$$

$$RMSE = \sqrt{\frac{469,8019}{20}}$$

$$RMSE = 4,8467$$

3. **MAD (Mean Absolut Deviation)**

$$MAD / MAE = \frac{\sum_{i=1}^n |X_t - F_t|}{n}$$

$$MAD / MAE = \frac{60,722}{20}$$

$$MAD / MAE = 3,2265$$

4. **MAPE (Mean Absolute Percentage Error)**

$$MAPE = \frac{\sum_{i=1}^n \left| \frac{X_t - F_t}{X_t} \right|}{n} \times 100$$

$$MAPE = \frac{0,8564}{20} \times 100$$

$$MAPE = 4,2818\%$$