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LAMPIRAN

Lampiran 1. Hasil Analisi Repeated Measure Anova

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for JAM12	.158		.200*	.945	16	.412
Standardized Residual for JAM24	.148	16	.200*	.954	16	.555
Standardized Residual for JAM36	.157	16	.200*	.939	16	.340
Standardized Residual for JAM48	.108	16	.200*	.956	16	.597
Standardized Residual for JAM60	.166	16	.200*	.943	16	.390
Standardized Residual for JAM72	.148	16	.200*	.961	16	.677
Standardized Residual for JAM84	.105	16	.200*	.949	16	.477
Standardized Residual for JAM96	.178	16	.190	.936	16	.299
Standardized Residual for JAM108	.147	16	.200*	.972	16	.866
Standardized Residual for JAM120	.122	16	.200*	.950	16	.496
Standardized Residual for JAM132	.200	16	.087	.950	16	.494
Standardized Residual for JAM144	.138	16	.200*	.956	16	.582

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Mauchly's Test of Sphericitya

Measure: MOTILITAS

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilonb Greenhouse-Geisser	Huynh-Feldt	Lower-bound
WAKTU	.000	111.673	65	.001	.357	.685	.091

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. Design: Intercept + Pengencer

Within Subjects Design: WAKTU

b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Measure: MOTILITAS

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
WAKTU	Sphericity Assumed	17175.160	11	1561.378	429.084	<.001
	Greenhouse-Geisser	17175.160	3.926	4374.587	429.084	<.001
	Huynh-Feldt	17175.160	7.533	2280.086	429.084	<.001
	Lower-bound	17175.160	1.000	17175.160	429.084	<.001
WAKTU * Pengencer	Sphericity Assumed	166.727	33	5.052	1.388	.100
	Greenhouse-Geisser	166.727	11.778	14.155	1.388	.206
	Huynh-Feldt	166.727	22.598	7.378	1.388	.140
	Lower-bound	166.727	3.000	55.576	1.388	.294
Error(WAKTU)	Sphericity Assumed	480.330	132	3.639		
	Greenhouse-Geisser	480.330	47.113	10.195		
	Huynh-Feldt	480.330	90.392	5.314		
	Lower-bound	480.330	12.000	40.027		

Descriptive Statistics

	Pengencer	Mean	Std. Deviation	N
JAM12	Andromed	83.7800	2.74621	4
	KED	76.3175	4.24557	4
	TKD	82.4475	.99577	4
	TKT	81.8050	1.04104	4
	Total	81.0875	3.76292	16
JAM24	Andromed	82.8450	2.78171	4
	KED	74.9300	3.80182	4
	TKD	81.0525	.55704	4
	TKT	80.7225	1.15981	4
	Total	79.8875	3.76876	16
JAM36	Andromed	81.6375	3.49625	4
	KED	73.0100	2.94504	4
	TKD	79.5150	.21127	4
	TKT	79.1450	.85278	4
	Total	78.3269	3.91789	16
JAM48	Andromed	80.3550	3.71309	4
	KED	71.2300	3.54532	4
	TKD	78.1350	.49359	4
	TKT	77.1300	2.34426	4
	Total	76.7125	4.30798	16
JAM60	Andromed	78.4375	2.11257	4
	KED	69.6950	2.49664	4
	TKD	77.2525	.53903	4
	TKT	75.2875	2.50239	4
	Total	75.1681	3.93071	16
JAM72	Andromed	75.7325	3.31927	4
	KED	67.6800	2.77660	4
	TKD	75.4500	1.04951	4
	TKT	74.0675	2.81098	4

	Total	73.2325	4.11477	16
JAM84	Andromed	74.0350	3.00347	4
	KED	65.3750	3.54508	4
	TKD	73.1550	.73532	4
	TKT	72.2450	2.34324	4
	Total	71.2025	4.24568	16
JAM96	Andromed	70.6500	4.01941	4
	KED	62.4000	7.07166	4
	TKD	71.5050	1.08328	4
	TKT	69.7575	3.57921	4
	Total	68.5781	5.47797	16
JAM108	Andromed	67.1000	3.94305	4
	KED	58.2075	6.72806	4
	TKD	69.1600	.88419	4
	TKT	66.8800	3.21219	4
	Total	65.3369	5.77050	16
JAM120	Andromed	60.8150	3.40304	4
	KED	55.2400	4.90854	4
	TKD	62.9925	4.01405	4
	TKT	60.8700	1.88119	4
	Total	59.9794	4.45800	16
JAM132	Andromed	56.5400	3.23596	4
	KED	51.0950	1.41691	4
	TKD	56.4075	2.27641	4
	TKT	57.2725	2.92193	4
	Total	55.3288	3.42472	16
JAM144	Andromed	51.2550	1.49436	4
	KED	48.9500	.99402	4
	TKD	51.6125	1.10373	4
	TKT	52.1000	2.90176	4
	Total	50.9794	2.03278	16

Pairwise Comparisons

Measure: MOTILITAS

(I) WAKTU	(J) WAKTU	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1	2	1.200*	.193	.003	.336	2.064
	3	2.761*	.302	<.001	1.411	4.110
	4	4.375*	.356	<.001	2.783	5.967
	5	5.919*	.451	<.001	3.902	7.936
	6	7.855*	.536	<.001	5.455	10.255
	7	9.885*	.507	<.001	7.618	12.152
	8	12.509*	.765	<.001	9.086	15.933
	9	15.751*	.694	<.001	12.643	18.858
	10	21.108*	.626	<.001	18.306	23.910
	11	25.759*	.656	<.001	22.824	28.693
	12	30.108*	.778	<.001	26.626	33.590
2	1	-1.200*	.193	.003	-2.064	-.336
	3	1.561*	.215	<.001	.598	2.524
	4	3.175*	.274	<.001	1.949	4.401
	5	4.719*	.340	<.001	3.195	6.243
	6	6.655*	.466	<.001	4.571	8.739
	7	8.685*	.436	<.001	6.732	10.638
	8	11.309*	.709	<.001	8.136	14.482
	9	14.551*	.688	<.001	11.473	17.628
	10	19.908*	.694	<.001	16.802	23.014
	11	24.559*	.693	<.001	21.459	27.659
	12	28.908*	.762	<.001	25.496	32.320

3	1	-2.761*	.302	<.001	-4.110	-1.411
	2	-1.561*	.215	<.001	-2.524	-.598
	4	1.614*	.265	.004	.427	2.802
	5	3.159*	.298	<.001	1.826	4.492
	6	5.094*	.408	<.001	3.270	6.919
	7	7.124*	.371	<.001	5.463	8.786
	8	9.749*	.753	<.001	6.377	13.121
	9	12.990*	.665	<.001	10.014	15.966
	10	18.348*	.691	<.001	15.255	21.440
	11	22.998*	.571	<.001	20.440	25.556
	12	27.348*	.675	<.001	24.327	30.368
4	1	-4.375*	.356	<.001	-5.967	-2.783
	2	-3.175*	.274	<.001	-4.401	-1.949
	3	-1.614*	.265	.004	-2.802	-.427
	5	1.544*	.297	.015	.216	2.873
	6	3.480*	.444	<.001	1.490	5.470
	7	5.510*	.443	<.001	3.526	7.494
	8	8.134*	.814	<.001	4.492	11.776
	9	11.376*	.716	<.001	8.169	14.582
	10	16.733*	.799	<.001	13.155	20.311
	11	21.384*	.766	<.001	17.957	24.811
	12	25.733*	.885	<.001	21.770	29.696
5	1	-5.919*	.451	<.001	-7.936	-3.902
	2	-4.719*	.340	<.001	-6.243	-3.195
	3	-3.159*	.298	<.001	-4.492	-1.826
	4	-1.544*	.297	.015	-2.873	-.216
	6	1.936*	.345	.007	.393	3.478
	7	3.966*	.340	<.001	2.443	5.488
	8	6.590*	.818	<.001	2.927	10.253
	9	9.831*	.746	<.001	6.493	13.169
	10	15.189*	.808	<.001	11.574	18.803
	11	19.839*	.732	<.001	16.562	23.117
	12	24.189*	.755	<.001	20.810	27.568
6	1	-7.855*	.536	<.001	-10.255	-5.455
	2	-6.655*	.466	<.001	-8.739	-4.571
	3	-5.094*	.408	<.001	-6.919	-3.270
	4	-3.480*	.444	<.001	-5.470	-1.490
	5	-1.936*	.345	.007	-3.478	-.393
	7	2.030*	.229	<.001	1.006	3.054
	8	4.654*	.804	.006	1.054	8.255
	9	7.896*	.696	<.001	4.780	11.011
	10	13.253*	.857	<.001	9.418	17.088
	11	17.904*	.770	<.001	14.456	21.352
	12	22.253*	.832	<.001	18.527	25.979
7	1	-9.885*	.507	<.001	-12.152	-7.618
	2	-8.685*	.436	<.001	-10.638	-6.732
	3	-7.124*	.371	<.001	-8.786	-5.463
	4	-5.510*	.443	<.001	-7.494	-3.526
	5	-3.966*	.340	<.001	-5.488	-2.443
	6	-2.030*	.229	<.001	-3.054	-1.006
	8	2.624	.720	.221	-.598	5.847
	9	5.866*	.597	<.001	3.194	8.537
	10	11.223*	.824	<.001	7.536	14.910
	11	15.874*	.712	<.001	12.685	19.063
	12	20.223*	.798	<.001	16.653	23.793
8	1	-12.509*	.765	<.001	-15.933	-9.086
	2	-11.309*	.709	<.001	-14.482	-8.136
	3	-9.749*	.753	<.001	-13.121	-6.377
	4	-8.134*	.814	<.001	-11.776	-4.492

	5	-6.590*	.818	<.001	-10.253	-2.927
	6	-4.654*	.804	.006	-8.255	-1.054
	7	-2.624	.720	.221	-5.847	.598
	9	3.241*	.505	.002	.982	5.501
	10	8.599*	.787	<.001	5.076	12.121
	11	13.249*	1.092	<.001	8.361	18.137
	12	17.599*	1.145	<.001	12.472	22.726
9	1	-15.751*	.694	<.001	-18.858	-12.643
	2	-14.551*	.688	<.001	-17.628	-11.473
	3	-12.990*	.665	<.001	-15.966	-10.014
	4	-11.376*	.716	<.001	-14.582	-8.169
	5	-9.831*	.746	<.001	-13.169	-6.493
	6	-7.896*	.696	<.001	-11.011	-4.780
	7	-5.866*	.597	<.001	-8.537	-3.194
	8	-3.241*	.505	.002	-5.501	-.982
	10	5.358*	.708	<.001	2.188	8.527
	11	10.008*	.984	<.001	5.603	14.413
	12	14.357*	1.049	<.001	9.661	19.054
10	1	-21.108*	.626	<.001	-23.910	-18.306
	2	-19.908*	.694	<.001	-23.014	-16.802
	3	-18.348*	.691	<.001	-21.440	-15.255
	4	-16.733*	.799	<.001	-20.311	-13.155
	5	-15.189*	.808	<.001	-18.803	-11.574
	6	-13.253*	.857	<.001	-17.088	-9.418
	7	-11.223*	.824	<.001	-14.910	-7.536
	8	-8.599*	.787	<.001	-12.121	-5.076
	9	-5.358*	.708	<.001	-8.527	-2.188
	11	4.651*	.831	.008	.932	8.369
	12	9.000*	.915	<.001	4.906	13.094
11	1	-25.759*	.656	<.001	-28.693	-22.824
	2	-24.559*	.693	<.001	-27.659	-21.459
	3	-22.998*	.571	<.001	-25.556	-20.440
	4	-21.384*	.766	<.001	-24.811	-17.957
	5	-19.839*	.732	<.001	-23.117	-16.562
	6	-17.904*	.770	<.001	-21.352	-14.456
	7	-15.874*	.712	<.001	-19.063	-12.685
	8	-13.249*	1.092	<.001	-18.137	-8.361
	9	-10.008*	.984	<.001	-14.413	-5.603
	10	-4.651*	.831	.008	-8.369	-.932
	12	4.349*	.608	<.001	1.629	7.070
12	1	-30.108*	.778	<.001	-33.590	-26.626
	2	-28.908*	.762	<.001	-32.320	-25.496
	3	-27.348*	.675	<.001	-30.368	-24.327
	4	-25.733*	.885	<.001	-29.696	-21.770
	5	-24.189*	.755	<.001	-27.568	-20.810
	6	-22.253*	.832	<.001	-25.979	-18.527
	7	-20.223*	.798	<.001	-23.793	-16.653
	8	-17.599*	1.145	<.001	-22.726	-12.472
	9	-14.357*	1.049	<.001	-19.054	-9.661
	10	-9.000*	.915	<.001	-13.094	-4.906
	11	-4.349*	.608	<.001	-7.070	-1.629

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	Df	Sig.
Standardized Residual for JAM12	.157	16	.200*	.939	16	.338
Standardized Residual for JAM24	.125	16	.200*	.963	16	.718
Standardized Residual for JAM36	.109	16	.200*	.967	16	.787
Standardized Residual for JAM48	.088	16	.200*	.962	16	.706
Standardized Residual for JAM60	.122	16	.200*	.951	16	.509
Standardized Residual for JAM72	.145	16	.200*	.938	16	.330
Standardized Residual for JAM84	.188	16	.136	.942	16	.370
Standardized Residual for JAM96	.188	16	.136	.906	16	.101
Standardized Residual for JAM108	.127	16	.200*	.966	16	.768
Standardized Residual for JAM120	.143	16	.200*	.974	16	.900
Standardized Residual for JAM132	.166	16	.200*	.937	16	.309
Standardized Residual for JAM144	.156	16	.200*	.967	16	.789

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Mauchly's Test of Sphericity[a]

Measure: VIABILITAS

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
WAKTU	.000	141.847	65	<.001	.212	.332	.091

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept + Pengencer
Within Subjects Design: WAKTU
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Measure: VIABILITAS

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
WAKTU	Sphericity Assumed	12666.682	11	1151.517	77.072	<.001
	Greenhouse-Geisser	12666.682	2.332	5432.330	77.072	<.001
	Huynh-Feldt	12666.682	3.652	3468.522	77.072	<.001
	Lower-bound	12666.682	1.000	12666.682	77.072	<.001
WAKTU * Pengencer	Sphericity Assumed	357.380	33	10.830	.725	.858
	Greenhouse-Geisser	357.380	6.995	51.090	.725	.652
	Huynh-Feldt	357.380	10.956	32.621	.725	.708
	Lower-bound	357.380	3.000	119.127	.725	.556
Error(WAKTU)	Sphericity Assumed	1972.188	132	14.941		
	Greenhouse-Geisser	1972.188	27.981	70.484		
	Huynh-Feldt	1972.188	43.823	45.004		
	Lower-bound	1972.188	12.000	164.349		

Descriptive Statistics

	Pengencer	Mean	Std. Deviation	N
JAM12	Andromed	84.2500	1.70783	4
	KED	76.2500	4.27200	4
	TKD	81.0000	2.58199	4
	TKT	83.2500	4.92443	4
	Total	81.1875	4.53459	16
JAM24	Andromed	79.7500	2.98608	4
	KED	75.0000	3.74166	4
	TKD	80.0000	3.55903	4
	TKT	79.2500	1.50000	4
	Total	78.5000	3.46410	16
JAM36	Andromed	76.5000	3.00000	4
	KED	71.5000	4.65475	4
	TKD	78.2500	.95743	4
	TKT	77.0000	2.58199	4
	Total	75.8125	3.83351	16
JAM48	Andromed	75.2500	3.20156	4
	KED	69.0000	7.34847	4
	TKD	76.0000	2.16025	4
	TKT	76.2500	3.77492	4
	Total	74.1250	5.11045	16
JAM60	Andromed	72.5000	3.69685	4
	KED	68.7500	5.56028	4
	TKD	74.2500	2.87228	4

	TKT	73.0000	6.97615	4
	Total	72.1250	4.97829	16
JAM72	Andromed	70.5000	6.24500	4
	KED	65.2500	4.42531	4
	TKD	72.7500	5.05800	4
	TKT	71.7500	6.18466	4
	Total	70.0625	5.77891	16
JAM84	Andromed	69.0000	7.16473	4
	KED	63.0000	6.48074	4
	TKD	70.0000	2.94392	4
	TKT	71.2500	5.67891	4
	Total	68.3125	6.12883	16
JAM96	Andromed	67.5000	6.80686	4
	KED	60.5000	4.35890	4
	TKD	69.0000	2.44949	4
	TKT	70.2500	7.08872	4
	Total	66.8125	6.28457	16
JAM108	Andromed	61.5000	9.39858	4
	KED	58.2500	6.13052	4
	TKD	68.0000	2.16025	4
	TKT	67.5000	9.11043	4
	Total	63.8125	7.79075	16
JAM120	Andromed	61.5000	8.66025	4
	KED	55.7500	4.92443	4
	TKD	65.7500	3.20156	4
	TKT	65.0000	9.05539	4
	Total	62.0000	7.41170	16
JAM132	Andromed	57.7500	5.85235	4
	KED	54.2500	4.92443	4
	TKD	59.5000	5.97216	4
	TKT	61.5000	8.26640	4
	Total	58.2500	6.32982	16
JAM144	Andromed	47.7500	1.89297	4
	KED	51.0000	4.00000	4
	TKD	55.0000	4.69042	4
	TKT	56.0000	4.24264	4
	Total	52.4375	4.84381	16

Pairwise Comparisons

Measure: VIABILITAS

(I) WAKTU	(J) WAKTU	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1	2	2.688	.895	.726	-1.318	6.693
	3	5.375*	.992	.010	.934	9.816
	4	7.063*	1.566	.047	.054	14.071
	5	9.063*	1.867	.026	.706	17.419
	6	11.125*	1.913	.005	2.563	19.687
	7	12.875*	1.933	.002	4.222	21.528
	8	14.375*	1.941	<.001	5.686	23.064
	9	17.375*	2.349	<.001	6.860	27.890
	10	19.188*	2.164	<.001	9.501	28.874
	11	22.938*	2.090	<.001	13.582	32.293
	12	28.750*	1.347	<.001	22.720	34.780
2	1	-2.688	.895	.726	-6.693	1.318
	3	2.688	.747	.242	-.658	6.033
	4	4.375	1.405	.591	-1.914	10.664
	5	6.375	1.625	.134	-.899	13.649
	6	8.438*	1.710	.023	.785	16.090
	7	10.188*	1.724	.005	2.470	17.905
	8	11.688*	1.761	.002	3.803	19.572

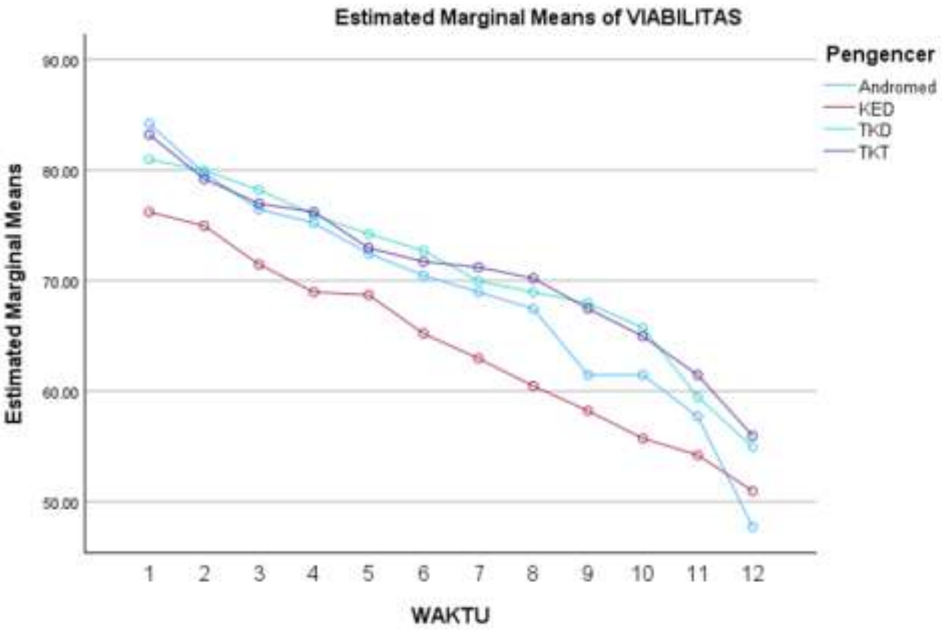
	9	14.688*	2.141	.001	5.103	24.272
	10	16.500*	1.967	<.001	7.695	25.305
	11	20.250*	1.883	<.001	11.823	28.677
	12	26.063*	1.048	<.001	21.373	30.752
3	1	-5.375*	.992	.010	-9.816	-.934
	2	-2.688	.747	.242	-6.033	.658
	4	1.688	.870	1.000	-2.206	5.581
	5	3.688	1.231	.735	-1.821	9.196
	6	5.750	1.433	.114	-.666	12.166
	7	7.500*	1.435	.014	1.076	13.924
	8	9.000*	1.482	.004	2.368	15.632
	9	12.000*	1.754	.001	4.150	19.850
	10	13.813*	1.587	<.001	6.708	20.917
	11	17.563*	1.619	<.001	10.316	24.809
	12	23.375*	.953	<.001	19.108	27.642
4	1	-7.063*	1.566	.047	-14.071	-.054
	2	-4.375	1.405	.591	-10.664	1.914
	3	-1.688	.870	1.000	-5.581	2.206
	5	2.000	.857	1.000	-1.836	5.836
	6	4.063	1.219	.394	-1.393	9.518
	7	5.813*	1.260	.039	.173	11.452
	8	7.313*	1.258	.005	1.683	12.942
	9	10.313*	1.514	.001	3.535	17.090
	10	12.125*	1.390	<.001	5.903	18.347
	11	15.875*	1.489	<.001	9.212	22.538
	12	21.688*	1.282	<.001	15.947	27.428
5	1	-9.063*	1.867	.026	-17.419	-.706
	2	-6.375	1.625	.134	-13.649	.899
	3	-3.688	1.231	.735	-9.196	1.821
	4	-2.000	.857	1.000	-5.836	1.836
	6	2.063	.534	.149	-.328	4.453
	7	3.813*	.697	.009	.693	6.932
	8	5.313*	.551	<.001	2.847	7.778
	9	8.313*	.932	<.001	4.141	12.484
	10	10.125*	.997	<.001	5.661	14.589
	11	13.875*	.840	<.001	10.115	17.635
	12	19.688*	1.263	<.001	14.034	25.341
6	1	-11.125*	1.913	.005	-19.687	-2.563
	2	-8.438*	1.710	.023	-16.090	-.785
	3	-5.750	1.433	.114	-12.166	.666
	4	-4.063	1.219	.394	-9.518	1.393
	5	-2.063	.534	.149	-4.453	.328
	7	1.750	.497	.280	-.476	3.976
	8	3.250*	.436	<.001	1.298	5.202
	9	6.250*	.858	<.001	2.407	10.093
	10	8.063*	.951	<.001	3.804	12.321
	11	11.813*	.811	<.001	8.183	15.442
	12	17.625*	1.420	<.001	11.270	23.980
7	1	-12.875*	1.933	.002	-21.528	-4.222
	2	-10.188*	1.724	.005	-17.905	-2.470
	3	-7.500*	1.435	.014	-13.924	-1.076
	4	-5.813*	1.260	.039	-11.452	-.173
	5	-3.813*	.697	.009	-6.932	-.693
	6	-1.750	.497	.280	-3.976	.476
	8	1.500	.433	.309	-.438	3.438
	9	4.500*	.843	.012	.726	8.274
	10	6.313*	1.029	.003	1.707	10.918
	11	10.063*	.864	<.001	6.196	13.929
	12	15.875*	1.345	<.001	9.853	21.897
8	1	-14.375*	1.941	<.001	-23.064	-5.686
	2	-11.688*	1.761	.002	-19.572	-3.803
	3	-9.000*	1.482	.004	-15.632	-2.368
	4	-7.313*	1.258	.005	-12.942	-1.683
	5	-5.313*	.551	<.001	-7.778	-2.847
	6	-3.250*	.436	<.001	-5.202	-1.298

	7	-1.500	.433	.309	-3.438	.438
	9	3.000	.755	.122	-.380	6.380
	10	4.813*	.902	.012	.775	8.850
	11	8.563*	.726	<.001	5.312	11.813
	12	14.375*	1.378	<.001	8.208	20.542
9	1	-17.375*	2.349	<.001	-27.890	-6.860
	2	-14.688*	2.141	.001	-24.272	-5.103
	3	-12.000*	1.754	.001	-19.850	-4.150
	4	-10.313*	1.514	.001	-17.090	-3.535
	5	-8.313*	.932	<.001	-12.484	-4.141
	6	-6.250*	.858	<.001	-10.093	-2.407
	7	-4.500*	.843	.012	-8.274	-.726
	8	-3.000	.755	.122	-6.380	.380
	10	1.813	.572	.532	-.746	4.371
	11	5.563*	1.159	.029	.376	10.749
	12	11.375*	1.745	.002	3.565	19.185
10	1	-19.188*	2.164	<.001	-28.874	-9.501
	2	-16.500*	1.967	<.001	-25.305	-7.695
	3	-13.813*	1.587	<.001	-20.917	-6.708
	4	-12.125*	1.390	<.001	-18.347	-5.903
	5	-10.125*	.997	<.001	-14.589	-5.661
	6	-8.063*	.951	<.001	-12.321	-3.804
	7	-6.313*	1.029	.003	-10.918	-1.707
	8	-4.813*	.902	.012	-8.850	-.775
	9	-1.813	.572	.532	-4.371	.746
	11	3.750	1.253	.741	-1.859	9.359
	12	9.563*	1.771	.011	1.635	17.490
11	1	-22.938*	2.090	<.001	-32.293	-13.582
	2	-20.250*	1.883	<.001	-28.677	-11.823
	3	-17.563*	1.619	<.001	-24.809	-10.316
	4	-15.875*	1.489	<.001	-22.538	-9.212
	5	-13.875*	.840	<.001	-17.635	-10.115
	6	-11.813*	.811	<.001	-15.442	-8.183
	7	-10.063*	.864	<.001	-13.929	-6.196
	8	-8.563*	.726	<.001	-11.813	-5.312
	9	-5.563*	1.159	.029	-10.749	-.376
	10	-3.750	1.253	.741	-9.359	1.859
	12	5.813	1.344	.065	-.203	11.828
12	1	-28.750*	1.347	<.001	-34.780	-22.720
	2	-26.063*	1.048	<.001	-30.752	-21.373
	3	-23.375*	.953	<.001	-27.642	-19.108
	4	-21.688*	1.282	<.001	-27.428	-15.947
	5	-19.688*	1.263	<.001	-25.341	-14.034
	6	-17.625*	1.420	<.001	-23.980	-11.270
	7	-15.875*	1.345	<.001	-21.897	-9.853
	8	-14.375*	1.378	<.001	-20.542	-8.208
	9	-11.375*	1.745	.002	-19.185	-3.565
	10	-9.563*	1.771	.011	-17.490	-1.635
	11	-5.813	1.344	.065	-11.828	.203

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.



Abnormalitas

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for JAM12	.161	16	.200*	.941	16	.362
Standardized Residual for JAM24	.177	16	.195	.950	16	.490
Standardized Residual for JAM36	.151	16	.200*	.936	16	.307
Standardized Residual for JAM48	.128	16	.200*	.948	16	.460
Standardized Residual for JAM60	.145	16	.200*	.948	16	.459
Standardized Residual for JAM72	.137	16	.200*	.941	16	.357
Standardized Residual for JAM84	.192	16	.116	.894	16	.065

Standardized Residual for JAM96	.119	16	.200*	.940	16	.345
Standardized Residual for JAM108	.152	16	.200*	.925	16	.204
Standardized Residual for JAM120	.191	16	.121	.893	16	.062
Standardized Residual for JAM132	.147	16	.200*	.909	16	.112
Standardized Residual for JAM144	.114	16	.200*	.969	16	.829

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Mauchly's Test of Sphericity[a]

Measure: ABNORMALITAS

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	Df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
WAKTU	.000	190.293	65	<.001	.152	.217	.091

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept + Pengencer
Within Subjects Design: WAKTU
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Measure: ABNORMALITAS

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
WAKTU	Sphericity Assumed	6427.604	11	584.328	56.097	<.001
	Greenhouse-Geisser	6427.604	1.669	3851.887	56.097	<.001
	Huynh-Feldt	6427.604	2.391	2688.590	56.097	<.001
	Lower-bound	6427.604	1.000	6427.604	56.097	<.001
WAKTU * Pengencer	Sphericity Assumed	62.437	33	1.892	.182	1.000
	Greenhouse-Geisser	62.437	5.006	12.472	.182	.966
	Huynh-Feldt	62.437	7.172	8.706	.182	.988
	Lower-bound	62.437	3.000	20.812	.182	.907
Error(WAKTU)	Sphericity Assumed	1374.958	132	10.416		
	Greenhouse-Geisser	1374.958	20.024	68.665		
	Huynh-Feldt	1374.958	28.688	47.927		
	Lower-bound	1374.958	12.000	114.580		

Descriptive Statistics

	Pengencer	Mean	Std. Deviation	N
JAM12	Andromed	13.5000	2.64575	4
	KED	19.7500	3.86221	4
	TKD	19.2500	5.18813	4
	TKT	18.2500	4.78714	4
	Total	17.6875	4.57120	16
JAM24	Andromed	16.7500	4.92443	4
	KED	20.7500	5.31507	4
	TKD	20.5000	5.06623	4
	TKT	20.2500	3.77492	4
	Total	19.5625	4.61835	16
JAM36	Andromed	18.2500	4.57347	4
	KED	21.2500	3.50000	4
	TKD	22.5000	3.69685	4
	TKT	20.7500	2.98608	4
	Total	20.6875	3.70079	16
JAM48	Andromed	19.2500	3.59398	4
	KED	22.2500	4.27200	4
	TKD	23.0000	4.96655	4
	TKT	23.0000	2.44949	4
	Total	21.8750	3.86221	16
JAM60	Andromed	19.7500	3.59398	4
	KED	24.5000	5.00000	4
	TKD	25.2500	4.27200	4
	TKT	25.2500	2.87228	4
	Total	23.6875	4.30068	16

JAM72	Andromed	21.5000	3.69685	4
	KED	27.5000	2.88675	4
	TKD	26.7500	5.25198	4
	TKT	26.7500	3.30404	4
	Total	25.6250	4.27200	16
JAM84	Andromed	23.0000	3.16228	4
	KED	27.5000	2.88675	4
	TKD	27.5000	3.69685	4
	TKT	27.0000	3.16228	4
	Total	26.2500	3.49285	16
JAM96	Andromed	25.7500	4.71699	4
	KED	28.5000	2.88675	4
	TKD	29.7500	5.73730	4
	TKT	29.5000	4.65475	4
	Total	28.3750	4.44035	16
JAM108	Andromed	27.5000	5.25991	4
	KED	33.0000	6.27163	4
	TKD	33.7500	6.84957	4
	TKT	31.7500	4.71699	4
	Total	31.5000	5.78504	16
JAM120	Andromed	29.5000	5.74456	4
	KED	35.0000	5.77350	4
	TKD	36.0000	7.07107	4
	TKT	34.7500	7.32006	4
	Total	33.8125	6.38977	16
JAM132	Andromed	29.7500	5.12348	4
	KED	35.0000	5.16398	4
	TKD	35.2500	5.90903	4
	TKT	35.2500	7.32006	4
	Total	33.8125	5.84487	16
JAM144	Andromed	31.2500	6.60177	4
	KED	35.2500	6.18466	4
	TKD	37.5000	7.50555	4
	TKT	37.0000	9.48683	4
	Total	35.2500	7.21572	16

Pairwise Comparisons

Measure: ABNORMALITAS

(I) WAKTU	(J) WAKTU	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1	2	-1.875	.528	.263	-4.238	.488
	3	-3.000*	.508	.005	-5.273	-.727
	4	-4.188*	.565	<.001	-6.716	-1.659
	5	-6.000*	.610	<.001	-8.731	-3.269
	6	-7.938*	.862	<.001	-11.797	-4.078
	7	-8.563*	1.029	<.001	-13.168	-3.957
	8	-10.688*	1.078	<.001	-15.514	-5.861
	9	-13.813*	1.519	<.001	-20.610	-7.015
	10	-16.125*	1.473	<.001	-22.718	-9.532
	11	-16.125*	1.406	<.001	-22.418	-9.832
	12	-17.563*	1.825	<.001	-25.730	-9.395
2	1	1.875	.528	.263	-.488	4.238
	3	-1.125	.484	1.000	-3.292	1.042
	4	-2.313	.585	.127	-4.932	.307
	5	-4.125*	.727	.007	-7.379	-.871
	6	-6.063*	.950	.002	-10.314	-1.811
	7	-6.688*	1.114	.004	-11.674	-1.701
	8	-8.813*	1.128	<.001	-13.861	-3.764

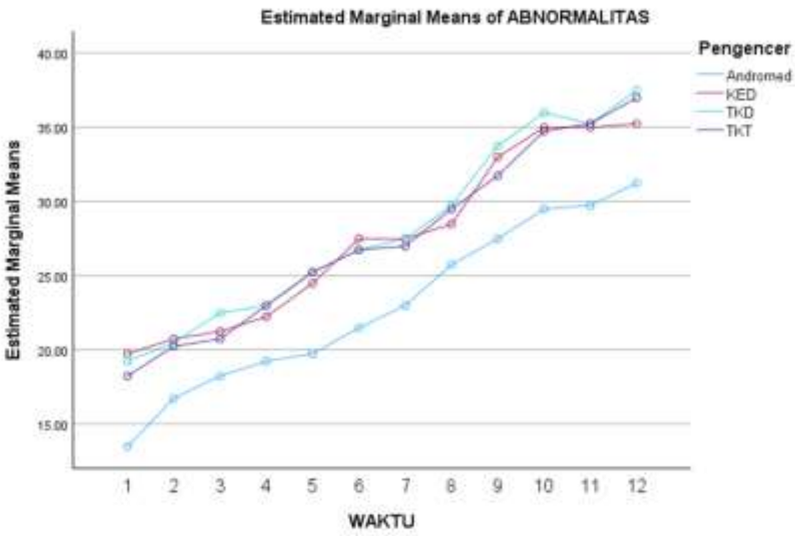
	9	-11.938*	1.673	<.001	-19.425	-4.450
	10	-14.250*	1.629	<.001	-21.542	-6.958
	11	-14.250*	1.610	<.001	-21.455	-7.045
	12	-15.688*	1.943	<.001	-24.384	-6.991
3	1	3.000*	.508	.005	.727	5.273
	2	1.125	.484	1.000	-1.042	3.292
	4	-1.188	.419	.997	-3.064	.689
	5	-3.000*	.465	.002	-5.081	-.919
	6	-4.938*	.785	.003	-8.450	-1.425
	7	-5.563*	.867	.002	-9.442	-1.683
	8	-7.688*	.966	<.001	-12.012	-3.363
	9	-10.813*	1.531	<.001	-17.667	-3.958
	10	-13.125*	1.559	<.001	-20.102	-6.148
	11	-13.125*	1.478	<.001	-19.741	-6.509
	12	-14.563*	1.844	<.001	-22.816	-6.309
4	1	4.188*	.565	<.001	1.659	6.716
	2	2.313	.585	.127	-.307	4.932
	3	1.188	.419	.997	-.689	3.064
	5	-1.813*	.377	.028	-3.499	-.126
	6	-3.750*	.740	.018	-7.060	-.440
	7	-4.375*	.914	.029	-8.467	-.283
	8	-6.500*	.972	.001	-10.852	-2.148
	9	-9.625*	1.602	.004	-16.798	-2.452
	10	-11.938*	1.611	<.001	-19.148	-4.727
	11	-11.938*	1.577	<.001	-18.995	-4.880
	12	-13.375*	1.924	.001	-21.989	-4.761
5	1	6.000*	.610	<.001	3.269	8.731
	2	4.125*	.727	.007	.871	7.379
	3	3.000*	.465	.002	.919	5.081
	4	1.813*	.377	.028	.126	3.499
	6	-1.938	.717	1.000	-5.148	1.273
	7	-2.563	.836	.648	-6.305	1.180
	8	-4.688*	.835	.007	-8.423	-.952
	9	-7.813*	1.510	.015	-14.571	-1.054
	10	-10.125*	1.513	.001	-16.897	-3.353
	11	-10.125*	1.442	<.001	-16.578	-3.672
	12	-11.563*	1.775	.002	-19.510	-3.615
6	1	7.938*	.862	<.001	4.078	11.797
	2	6.063*	.950	.002	1.811	10.314
	3	4.938*	.785	.003	1.425	8.450
	4	3.750*	.740	.018	.440	7.060
	5	1.938	.717	1.000	-1.273	5.148
	7	-.625	.424	1.000	-2.522	1.272
	8	-2.750*	.497	.009	-4.976	-.524
	9	-5.875*	1.033	.007	-10.500	-1.250
	10	-8.188*	1.103	<.001	-13.126	-3.249
	11	-8.188*	1.035	<.001	-12.821	-3.554
	12	-9.625*	1.313	<.001	-15.502	-3.748
7	1	8.563*	1.029	<.001	3.957	13.168
	2	6.688*	1.114	.004	1.701	11.674
	3	5.563*	.867	.002	1.683	9.442
	4	4.375*	.914	.029	.283	8.467
	5	2.563	.836	.648	-1.180	6.305
	6	.625	.424	1.000	-1.272	2.522
	8	-2.125	.481	.056	-4.280	.030
	9	-5.250*	.972	.011	-9.602	-.898
	10	-7.563*	1.198	.003	-12.927	-2.198
	11	-7.563*	1.008	<.001	-12.076	-3.049
	12	-9.000*	1.322	.001	-14.917	-3.083

8	1	10.688*	1.078	<.001	5.861	15.514
	2	8.813*	1.128	<.001	3.764	13.861
	3	7.688*	.966	<.001	3.363	12.012
	4	6.500*	.972	.001	2.148	10.852
	5	4.688*	.835	.007	.952	8.423
	6	2.750*	.497	.009	.524	4.976
	7	2.125	.481	.056	-.030	4.280
	9	-3.125	.914	.336	-7.217	.967
	10	-5.438*	1.069	.018	-10.221	-.654
	11	-5.438*	.904	.004	-9.482	-1.393
	12	-6.875*	1.126	.003	-11.916	-1.834
9	1	13.813*	1.519	<.001	7.015	20.610
	2	11.938*	1.673	<.001	4.450	19.425
	3	10.813*	1.531	<.001	3.958	17.667
	4	9.625*	1.602	.004	2.452	16.798
	5	7.813*	1.510	.015	1.054	14.571
	6	5.875*	1.033	.007	1.250	10.500
	7	5.250*	.972	.011	.898	9.602
	8	3.125	.914	.336	-.967	7.217
	10	-2.313	.563	.095	-4.830	.205
	11	-2.313*	.425	.010	-4.217	-.408
	12	-3.750*	.753	.021	-7.123	-.377
10	1	16.125*	1.473	<.001	9.532	22.718
	2	14.250*	1.629	<.001	6.958	21.542
	3	13.125*	1.559	<.001	6.148	20.102
	4	11.938*	1.611	<.001	4.727	19.148
	5	10.125*	1.513	.001	3.353	16.897
	6	8.188*	1.103	<.001	3.249	13.126
	7	7.563*	1.198	.003	2.198	12.927
	8	5.438*	1.069	.018	.654	10.221
	9	2.313	.563	.095	-.205	4.830
	11	.000	.481	1.000	-2.155	2.155
	12	-1.438	.658	1.000	-4.385	1.510
11	1	16.125*	1.406	<.001	9.832	22.418
	2	14.250*	1.610	<.001	7.045	21.455
	3	13.125*	1.478	<.001	6.509	19.741
	4	11.938*	1.577	<.001	4.880	18.995
	5	10.125*	1.442	<.001	3.672	16.578
	6	8.188*	1.035	<.001	3.554	12.821
	7	7.563*	1.008	<.001	3.049	12.076
	8	5.438*	.904	.004	1.393	9.482
	9	2.313*	.425	.010	.408	4.217
	10	.000	.481	1.000	-2.155	2.155
	12	-1.438	.601	1.000	-4.126	1.251
12	1	17.563*	1.825	<.001	9.395	25.730
	2	15.688*	1.943	<.001	6.991	24.384
	3	14.563*	1.844	<.001	6.309	22.816
	4	13.375*	1.924	.001	4.761	21.989
	5	11.563*	1.775	.002	3.615	19.510
	6	9.625*	1.313	<.001	3.748	15.502
	7	9.000*	1.322	.001	3.083	14.917
	8	6.875*	1.126	.003	1.834	11.916
	9	3.750*	.753	.021	.377	7.123
	10	1.438	.658	1.000	-1.510	4.385
	11	1.438	.601	1.000	-1.251	4.126

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.



MPU

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for JAM12	.155	16	.200*	.935	16	.294
Standardized Residual for JAM24	.164	16	.200*	.947	16	.439
Standardized Residual for JAM36	.174	16	.200*	.949	16	.480
Standardized Residual for JAM48	.196	16	.101	.945	16	.420
Standardized Residual for JAM60	.257	16	.006	.914	16	.133
Standardized Residual for JAM72	.204	16	.073	.930	16	.242
Standardized Residual for JAM84	.169	16	.200*	.954	16	.552
Standardized Residual for JAM96	.150	16	.200*	.946	16	.428
Standardized Residual for JAM108	.143	16	.200*	.947	16	.438
Standardized Residual for JAM120	.175	16	.200*	.942	16	.378
Standardized Residual for JAM132	.107	16	.200*	.972	16	.872
Standardized Residual for JAM144	.143	16	.200*	.954	16	.557

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Mauchly's Test of Sphericity[a]

Measure: MPU

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
WAKTU	.000	232.223	65	<.001	.182	.274	.091

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept + Pengencer
Within Subjects Design: WAKTU
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Measure: TAU

Source		Type III of Squares	df	Mean Square	F	Sig.
WAKTU	Sphericity Assumed	7470.437	11	679.131	56.431	<.001
	Greenhouse-Geisser	7470.437	2.005	3725.306	56.431	<.001
	Huynh-Feldt	7470.437	3.010	2481.776	56.431	<.001
	Lower-bound	7470.437	1.000	7470.437	56.431	<.001
WAKTU * Pengencer	Sphericity Assumed	276.313	33	8.373	.696	.887
	Greenhouse-Geisser	276.313	6.016	45.930	.696	.656
	Huynh-Feldt	276.313	9.030	30.598	.696	.709
	Lower-bound	276.313	3.000	92.104	.696	.572
Error(WAKTU)	Sphericity Assumed	1588.583	132	12.035		
	Greenhouse-Geisser	1588.583	24.064	66.015		
	Huynh-Feldt	1588.583	36.121	43.979		
	Lower-bound	1588.583	12.000	132.382		

Descriptive Statistics

	Pengencer	Mean	Std. Deviation	N
JAM12	Andromed	83.0000	1.82574	4
	KED	77.2500	5.56028	4
	TKD	82.2500	4.03113	4
	TKT	81.5000	2.38048	4
	Total	81.0000	4.06612	16
JAM24	Andromed	80.5000	2.38048	4
	KED	76.0000	5.71548	4
	TKD	79.5000	3.69685	4
	TKT	79.7500	3.30404	4
	Total	78.9375	3.97440	16
JAM36	Andromed	78.5000	3.87298	4
	KED	75.2500	6.60177	4
	TKD	79.2500	3.59398	4
	TKT	78.5000	3.10913	4
	Total	77.8750	4.33397	16
JAM48	Andromed	78.2500	3.94757	4
	KED	74.5000	7.00000	4
	TKD	78.0000	3.16228	4
	TKT	77.7500	3.59398	4
	Total	77.1250	4.47027	16

JAM60	Andromed	77.7500	4.19325	4
	KED	73.7500	7.41058	4
	TKD	76.7500	2.75379	4
	TKT	77.5000	4.35890	4
	Total	76.4375	4.74649	16
JAM72	Andromed	76.2500	4.50000	4
	KED	72.7500	8.46069	4
	TKD	77.0000	2.94392	4
	TKT	76.7500	4.92443	4
	Total	75.6875	5.30055	16
JAM84	Andromed	74.0000	4.96655	4
	KED	71.2500	9.28709	4
	TKD	75.5000	3.10913	4
	TKT	74.7500	5.25198	4
	Total	73.8750	5.69064	16
JAM96	Andromed	73.2500	4.57347	4
	KED	70.0000	10.03328	4
	TKD	73.2500	4.03113	4
	TKT	73.5000	5.80230	4
	Total	72.5000	6.04428	16
JAM108	Andromed	72.5000	3.41565	4
	KED	64.2500	7.41058	4
	TKD	72.5000	4.04145	4
	TKT	72.0000	4.96655	4
	Total	70.3125	5.88466	16
JAM120	Andromed	68.0000	2.30940	4
	KED	64.2500	7.13559	4
	TKD	68.5000	2.88675	4
	TKT	67.5000	5.68624	4
	Total	67.0625	4.72537	16
JAM132	Andromed	66.5000	2.38048	4
	KED	55.2500	3.77492	4
	TKD	66.5000	2.38048	4
	TKT	66.0000	5.71548	4
	Total	63.5625	6.02184	16
JAM144	Andromed	59.2500	4.03113	4
	KED	54.2500	3.77492	4
	TKD	64.7500	3.77492	4
	TKT	60.7500	6.50000	4
	Total	59.7500	5.69795	16

Pairwise Comparisons

Measure: MPU

(I) WAKTU	(J) WAKTU	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
1	2	2.063*	.300	.001	.721	3.404
	3	3.125*	.505	.003	.864	5.386
	4	3.875*	.564	.001	1.352	6.398
	5	4.563*	.656	.001	1.624	7.501
	6	5.313*	.775	.001	1.845	8.780
	7	7.125*	.967	<.001	2.797	11.453
	8	8.500*	1.093	<.001	3.606	13.394
	9	10.688*	1.174	<.001	5.431	15.944

	10	13.938*	1.264	<.001	8.280	19.595
	11	17.438*	1.525	<.001	10.610	24.265
	12	21.250*	1.846	<.001	12.986	29.514
2	1	-2.063*	.300	.001	-3.404	-.721
	3	1.063	.532	1.000	-1.317	3.442
	4	1.813	.581	.583	-.787	4.412
	5	2.500	.673	.195	-.513	5.513
	6	3.250	.818	.122	-.412	6.912
	7	5.063*	1.055	.029	.340	9.785
	8	6.438*	1.212	.012	1.010	11.865
	9	8.625*	1.306	.002	2.779	14.471
	10	11.875*	1.426	<.001	5.492	18.258
	11	15.375*	1.667	<.001	7.914	22.836
	12	19.188*	1.992	<.001	10.269	28.106
3	1	-3.125*	.505	.003	-5.386	-.864
	2	-1.063	.532	1.000	-3.442	1.317
	4	.750*	.125	.004	.190	1.310
	5	1.438*	.277	.015	.197	2.678
	6	2.188*	.428	.017	.270	4.105
	7	4.000*	.716	.008	.794	7.206
	8	5.375*	.840	.002	1.615	9.135
	9	7.563*	.989	<.001	3.136	11.989
	10	10.813*	1.266	<.001	5.146	16.479
	11	14.313*	1.645	<.001	6.948	21.677
	12	18.125*	1.967	<.001	9.323	26.927
4	1	-3.875*	.564	.001	-6.398	-1.352
	2	-1.813	.581	.583	-4.412	.787
	3	-.750*	.125	.004	-1.310	-.190
	5	.688	.165	.088	-.053	1.428
	6	1.438	.344	.085	-.103	2.978
	7	3.250*	.656	.022	.316	6.184
	8	4.625*	.799	.006	1.050	8.200
	9	6.813*	1.008	.001	2.299	11.326
	10	10.063*	1.294	<.001	4.273	15.852
	11	13.563*	1.673	<.001	6.075	21.050
	12	17.375*	1.994	<.001	8.449	26.301
5	1	-4.563*	.656	.001	-7.501	-1.624
	2	-2.500	.673	.195	-5.513	.513
	3	-1.438*	.277	.015	-2.678	-.197

	4	-.688	.165	.088	-1.428	.053
	6	.750	.234	.497	-.297	1.797
	7	2.563*	.565	.045	.034	5.091
	8	3.938*	.732	.011	.663	7.212
	9	6.125*	1.030	.004	1.517	10.733
	10	9.375*	1.308	<.001	3.520	15.230
	11	12.875*	1.692	<.001	5.303	20.447
	12	16.688*	2.037	<.001	7.569	25.806
6	1	-5.313*	.775	.001	-8.780	-1.845
	2	-3.250	.818	.122	-6.912	.412
	3	-2.188*	.428	.017	-4.105	-.270
	4	-1.438	.344	.085	-2.978	.103
	5	-.750	.234	.497	-1.797	.297
	7	1.813*	.373	.026	.142	3.483
	8	3.188*	.587	.010	.558	5.817
	9	5.375*	1.014	.012	.835	9.915
	10	8.625*	1.290	.001	2.851	14.399
	11	12.125*	1.773	.001	4.189	20.061
	12	15.938*	2.143	<.001	6.345	25.530
7	1	-7.125*	.967	<.001	-11.453	-2.797
	2	-5.063*	1.055	.029	-9.785	-.340
	3	-4.000*	.716	.008	-7.206	-.794
	4	-3.250*	.656	.022	-6.184	-.316
	5	-2.563*	.565	.045	-5.091	-.034
	6	-1.813*	.373	.026	-3.483	-.142
	8	1.375	.402	.334	-.424	3.174
	9	3.563	.940	.170	-.646	7.771
	10	6.813*	1.188	.006	1.497	12.128
	11	10.313*	1.788	.006	2.310	18.315
	12	14.125*	2.164	.002	4.437	23.813
8	1	-8.500*	1.093	<.001	-13.394	-3.606
	2	-6.438*	1.212	.012	-11.865	-1.010
	3	-5.375*	.840	.002	-9.135	-1.615
	4	-4.625*	.799	.006	-8.200	-1.050
	5	-3.938*	.732	.011	-7.212	-.663
	6	-3.188*	.587	.010	-5.817	-.558
	7	-1.375	.402	.334	-3.174	.424
	9	2.188	.833	1.000	-1.541	5.916
	10	5.438*	1.169	.037	.206	10.669

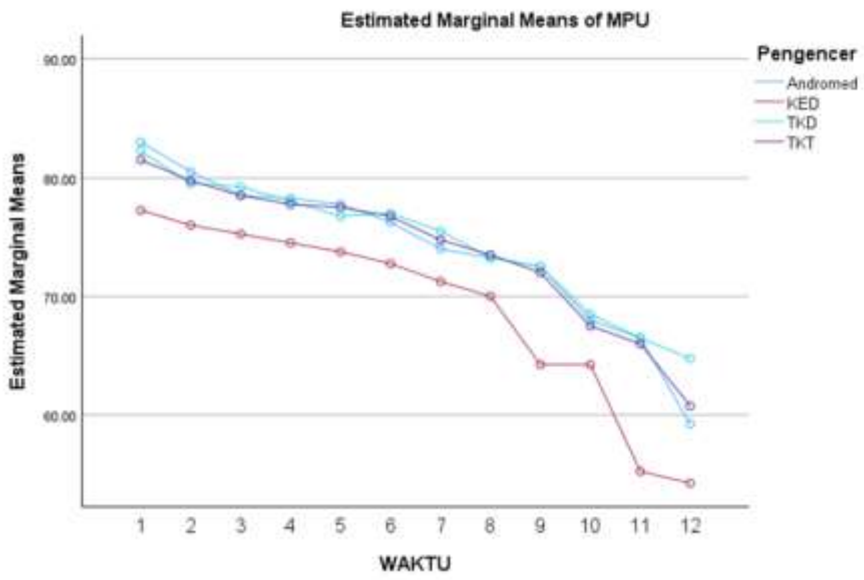
	11	8.938*	1.847	.027	.669	17.206
	12	12.750*	2.151	.005	3.121	22.379
9	1	-10.688*	1.174	<.001	-15.944	-5.431
	2	-8.625*	1.306	.002	-14.471	-2.779
	3	-7.563*	.989	<.001	-11.989	-3.136
	4	-6.813*	1.008	.001	-11.326	-2.299
	5	-6.125*	1.030	.004	-10.733	-1.517
	6	-5.375*	1.014	.012	-9.915	-.835
	7	-3.563	.940	.170	-7.771	.646
	8	-2.188	.833	1.000	-5.916	1.541
	10	3.250*	.714	.044	.052	6.448
	11	6.750*	1.358	.021	.672	12.828
	12	10.563*	1.633	.002	3.251	17.874
10	1	-13.938*	1.264	<.001	-19.595	-8.280
	2	-11.875*	1.426	<.001	-18.258	-5.492
	3	-10.813*	1.266	<.001	-16.479	-5.146
	4	-10.063*	1.294	<.001	-15.852	-4.273
	5	-9.375*	1.308	<.001	-15.230	-3.520
	6	-8.625*	1.290	.001	-14.399	-2.851
	7	-6.813*	1.188	.006	-12.128	-1.497
	8	-5.438*	1.169	.037	-10.669	-.206
	9	-3.250*	.714	.044	-6.448	-.052
	11	3.500	1.005	.299	-.999	7.999
	12	7.313*	1.370	.012	1.181	13.444
11	1	-17.438*	1.525	<.001	-24.265	-10.610
	2	-15.375*	1.667	<.001	-22.836	-7.914
	3	-14.313*	1.645	<.001	-21.677	-6.948
	4	-13.563*	1.673	<.001	-21.050	-6.075
	5	-12.875*	1.692	<.001	-20.447	-5.303
	6	-12.125*	1.773	.001	-20.061	-4.189
	7	-10.313*	1.788	.006	-18.315	-2.310
	8	-8.938*	1.847	.027	-17.206	-.669
	9	-6.750*	1.358	.021	-12.828	-.672
	10	-3.500	1.005	.299	-7.999	.999
	12	3.813*	.811	.034	.183	7.442
12	1	-21.250*	1.846	<.001	-29.514	-12.986
	2	-19.188*	1.992	<.001	-28.106	-10.269
	3	-18.125*	1.967	<.001	-26.927	-9.323
	4	-17.375*	1.994	<.001	-26.301	-8.449

	5	-16.688*	2.037	<.001	-25.806	-7.569
	6	-15.938*	2.143	<.001	-25.530	-6.345
	7	-14.125*	2.164	.002	-23.813	-4.437
	8	-12.750*	2.151	.005	-22.379	-3.121
	9	-10.563*	1.633	.002	-17.874	-3.251
	10	-7.313*	1.370	.012	-13.444	-1.181
	11	-3.813*	.811	.034	-7.442	-.183

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.



TAU

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Standardized Residual for JAM12	.132	16	.200*	.983	16	.981
Standardized Residual for JAM24	.129	16	.200*	.904	16	.095
Standardized Residual for JAM36	.163	16	.200*	.956	16	.592
Standardized Residual for JAM48	.142	16	.200*	.954	16	.548

Standardized Residual for JAM60	.096	16	.200*	.982	16	.977
Standardized Residual for JAM72	.148	16	.200*	.966	16	.763
Standardized Residual for JAM84	.106	16	.200*	.959	16	.650
Standardized Residual for JAM96	.221	16	.036	.936	16	.301
Standardized Residual for JAM108	.131	16	.200*	.969	16	.817
Standardized Residual for JAM120	.123	16	.200*	.941	16	.361
Standardized Residual for JAM132	.174	16	.200*	.934	16	.278
Standardized Residual for JAM144	.166	16	.200*	.921	16	.174

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Mauchly's Test of Sphericity[a]

Measure: TAU

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[b] Greenhouse-Geisser	Huynh-Feldt	Lower-bound
WAKTU	.000	194.987	65	<.001	.203	.315	.091

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.
a. Design: Intercept + Pengencer
Within Subjects Design: WAKTU
b. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the Tests of Within-Subjects Effects table.

Tests of Within-Subjects Effects

Measure: TAU

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
WAKTU	Sphericity Assumed	26217.182	11	2383.380	119.240	<.001
	Greenhouse-Geisser	26217.182	2.237	11717.796	119.240	<.001
	Huynh-Feldt	26217.182	3.462	7572.860	119.240	<.001
	Lower-bound	26217.182	1.000	26217.182	119.240	<.001
WAKTU * Pengencer	Sphericity Assumed	702.297	33	21.282	1.065	.388
	Greenhouse-Geisser	702.297	6.712	104.631	1.065	.411
	Huynh-Feldt	702.297	10.386	67.620	1.065	.411
	Lower-bound	702.297	3.000	234.099	1.065	.400
Error(WAKTU)	Sphericity Assumed	2638.438	132	19.988		
	Greenhouse-Geisser	2638.438	26.849	98.271		
	Huynh-Feldt	2638.438	41.544	63.510		
	Lower-bound	2638.438	12.000	219.870		

Descriptive Statistics

	Pengencer	Mean	Std. Deviation	N
JAM12	Andromed	73.0000	3.26599	4
	KED	68.0000	5.94418	4
	TKD	68.2500	2.36291	4
	TKT	69.0000	2.00000	4
	Total	69.5625	3.93224	16
JAM24	Andromed	69.0000	6.05530	4
	KED	68.0000	5.71548	4
	TKD	63.5000	3.41565	4
	TKT	65.7500	3.77492	4
	Total	66.5625	4.88493	16
JAM36	Andromed	66.0000	6.63325	4
	KED	63.5000	5.91608	4
	TKD	61.2500	5.90903	4
	TKT	63.5000	4.93288	4
	Total	63.5625	5.53737	16
JAM48	Andromed	66.0000	6.05530	4
	KED	60.7500	7.58837	4
	TKD	57.0000	6.68331	4
	TKT	61.2500	6.18466	4
	Total	61.2500	6.80686	16
JAM60	Andromed	61.7500	5.05800	4
	KED	59.2500	8.30161	4
	TKD	54.5000	4.79583	4
	TKT	59.7500	5.31507	4
	Total	58.8125	6.05771	16
JAM72	Andromed	60.0000	4.32049	4
	KED	57.2500	7.93200	4
	TKD	52.2500	4.78714	4
	TKT	57.2500	5.85235	4
	Total	56.6875	6.00798	16
JAM84	Andromed	53.7500	3.86221	4
	KED	51.5000	8.50490	4
	TKD	45.0000	3.55903	4
	TKT	47.7500	5.56028	4
	Total	49.5000	6.18601	16
JAM96	Andromed	47.7500	8.05709	4
	KED	46.7500	11.32475	4
	TKD	43.5000	5.44671	4
	TKT	47.5000	3.31662	4
	Total	46.3750	7.06045	16
JAM108	Andromed	39.2500	2.98608	4
	KED	44.5000	10.24695	4
	TKD	35.5000	6.13732	4
	TKT	42.0000	4.96655	4
	Total	40.3125	6.86750	16
JAM120	Andromed	37.7500	4.57347	4
	KED	44.2500	11.44188	4
	TKD	34.0000	4.89898	4

	TKT	39.7500	3.86221	4
	Total	38.9375	7.26149	16
JAM132	Andromed	35.7500	3.30404	4
	KED	43.5000	11.03026	4
	TKD	32.2500	4.57347	4
	TKT	37.0000	2.94392	4
	Total	37.1250	7.07931	16
JAM144	Andromed	33.5000	4.04145	4
	KED	42.2500	10.99621	4
	TKD	31.2500	4.57347	4
	TKT	36.0000	2.30940	4
	Total	35.7500	7.12273	16

Pairwise Comparisons

Measure: TAU

(I) WAKTU	(J) WAKTU	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
1	2	3.000	.815	.207	-.648	6.648
	3	6.000*	1.075	.008	1.187	10.813
	4	8.313*	1.283	.002	2.568	14.057
	5	10.750*	1.223	<.001	5.277	16.223
	6	12.875*	1.215	<.001	7.436	18.314
	7	20.063*	1.144	<.001	14.942	25.183
	8	23.188*	1.704	<.001	15.562	30.813
	9	29.250*	1.696	<.001	21.657	36.843
	10	30.625*	1.685	<.001	23.084	38.166
	11	32.438*	1.604	<.001	25.260	39.615
	12	33.813*	1.537	<.001	26.931	40.694
2	1	-3.000	.815	.207	-6.648	.648
	3	3.000	.855	.286	-.829	6.829
	4	5.313*	1.106	.028	.363	10.262
	5	7.750*	1.241	.003	2.197	13.303
	6	9.875*	1.288	<.001	4.110	15.640
	7	17.063*	1.522	<.001	10.250	23.875
	8	20.188*	2.031	<.001	11.095	29.280
	9	26.250*	1.806	<.001	18.164	34.336
	10	27.625*	1.846	<.001	19.361	35.889
	11	29.438*	1.778	<.001	21.477	37.398
	12	30.813*	1.676	<.001	23.311	38.314
3	1	-6.000*	1.075	.008	-10.813	-1.187

	2	-3.000	.855	.286	-6.829	.829
	4	2.313	.670	.317	-.688	5.313
	5	4.750*	.703	.001	1.601	7.899
	6	6.875*	.928	<.001	2.719	11.031
	7	14.063*	1.812	<.001	5.953	22.172
	8	17.188*	2.363	<.001	6.610	27.765
	9	23.250*	2.006	<.001	14.272	32.228
	10	24.625*	1.975	<.001	15.784	33.466
	11	26.438*	2.015	<.001	17.417	35.458
	12	27.813*	1.905	<.001	19.286	36.339
4	1	-8.313*	1.283	.002	-14.057	-2.568
	2	-5.313*	1.106	.028	-10.262	-.363
	3	-2.313	.670	.317	-5.313	.688
	5	2.438*	.539	.046	.026	4.849
	6	4.563*	.699	.002	1.435	7.690
	7	11.750*	1.832	.002	3.549	19.951
	8	14.875*	2.388	.003	4.188	25.562
	9	20.938*	2.056	<.001	11.737	30.138
	10	22.313*	2.017	<.001	13.286	31.339
	11	24.125*	2.060	<.001	14.903	33.347
	12	25.500*	1.952	<.001	16.763	34.237
5	1	-10.750*	1.223	<.001	-16.223	-5.277
	2	-7.750*	1.241	.003	-13.303	-2.197
	3	-4.750*	.703	.001	-7.899	-1.601
	4	-2.438*	.539	.046	-4.849	-.026
	6	2.125*	.459	.038	.069	4.181
	7	9.313*	1.717	.010	1.629	16.996
	8	12.438*	2.378	.014	1.793	23.082
	9	18.500*	1.969	<.001	9.686	27.314
	10	19.875*	1.946	<.001	11.165	28.585
	11	21.688*	1.979	<.001	12.828	30.547
	12	23.063*	1.902	<.001	14.551	31.574
6	1	-12.875*	1.215	<.001	-18.314	-7.436
	2	-9.875*	1.288	<.001	-15.640	-4.110
	3	-6.875*	.928	<.001	-11.031	-2.719
	4	-4.563*	.699	.002	-7.690	-1.435
	5	-2.125*	.459	.038	-4.181	-.069
	7	7.188	1.719	.084	-.506	14.881
	8	10.313	2.306	.050	-.011	20.636

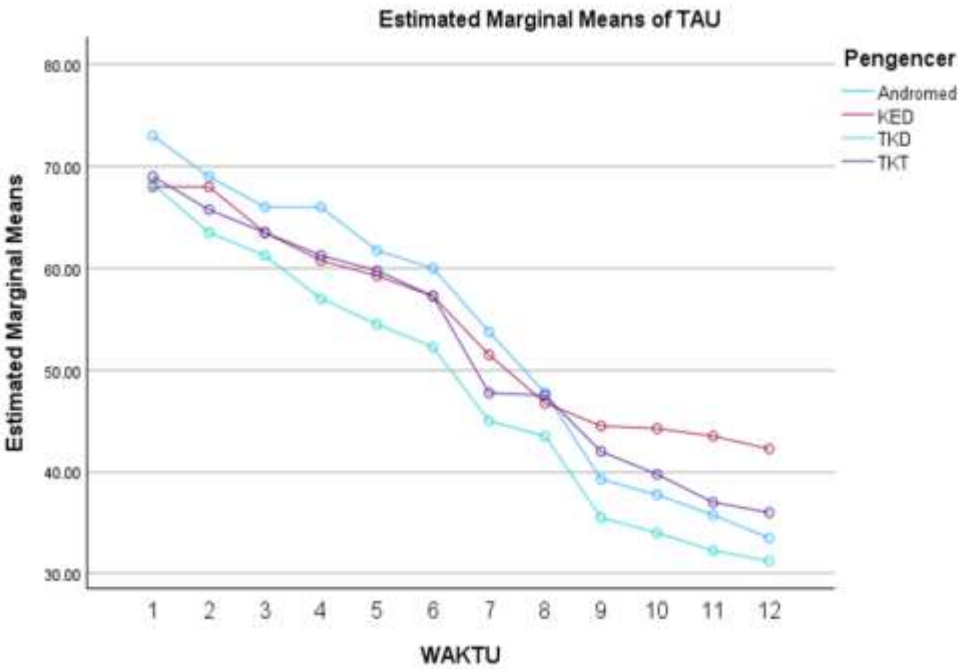
	9	16.375*	1.970	<.001	7.558	25.192
	10	17.750*	1.961	<.001	8.971	26.529
	11	19.563*	1.915	<.001	10.990	28.135
	12	20.938*	1.851	<.001	12.653	29.222
7	1	-20.063*	1.144	<.001	-25.183	-14.942
	2	-17.063*	1.522	<.001	-23.875	-10.250
	3	-14.063*	1.812	<.001	-22.172	-5.953
	4	-11.750*	1.832	.002	-19.951	-3.549
	5	-9.313*	1.717	.010	-16.996	-1.629
	6	-7.188	1.719	.084	-14.881	.506
	8	3.125	1.115	1.000	-1.864	8.114
	9	9.188*	1.612	.007	1.973	16.402
	10	10.563*	1.519	.001	3.765	17.360
	11	12.375*	1.391	<.001	6.149	18.601
	12	13.750*	1.409	<.001	7.445	20.055
8	1	-23.188*	1.704	<.001	-30.813	-15.562
	2	-20.188*	2.031	<.001	-29.280	-11.095
	3	-17.188*	2.363	<.001	-27.765	-6.610
	4	-14.875*	2.388	.003	-25.562	-4.188
	5	-12.438*	2.378	.014	-23.082	-1.793
	6	-10.313	2.306	.050	-20.636	.011
	7	-3.125	1.115	1.000	-8.114	1.864
	9	6.063	1.628	.192	-1.224	13.349
	10	7.438*	1.505	.022	.702	14.173
	11	9.250*	1.296	<.001	3.449	15.051
	12	10.625*	1.330	<.001	4.673	16.577
9	1	-29.250*	1.696	<.001	-36.843	-21.657
	2	-26.250*	1.806	<.001	-34.336	-18.164
	3	-23.250*	2.006	<.001	-32.228	-14.272
	4	-20.938*	2.056	<.001	-30.138	-11.737
	5	-18.500*	1.969	<.001	-27.314	-9.686
	6	-16.375*	1.970	<.001	-25.192	-7.558
	7	-9.188*	1.612	.007	-16.402	-1.973
	8	-6.063	1.628	.192	-13.349	1.224
	10	1.375	.392	.285	-.380	3.130
	11	3.188*	.509	.003	.909	5.466
	12	4.563*	.587	<.001	1.933	7.192
10	1	-30.625*	1.685	<.001	-38.166	-23.084
	2	-27.625*	1.846	<.001	-35.889	-19.361

	3	-24.625*	1.975	<.001	-33.466	-15.784
	4	-22.313*	2.017	<.001	-31.339	-13.286
	5	-19.875*	1.946	<.001	-28.585	-11.165
	6	-17.750*	1.961	<.001	-26.529	-8.971
	7	-10.563*	1.519	.001	-17.360	-3.765
	8	-7.438*	1.505	.022	-14.173	-.702
	9	-1.375	.392	.285	-3.130	.380
	11	1.813	.458	.125	-.237	3.862
	12	3.188*	.532	.004	.808	5.567
11	1	-32.438*	1.604	<.001	-39.615	-25.260
	2	-29.438*	1.778	<.001	-37.398	-21.477
	3	-26.438*	2.015	<.001	-35.458	-17.417
	4	-24.125*	2.060	<.001	-33.347	-14.903
	5	-21.688*	1.979	<.001	-30.547	-12.828
	6	-19.563*	1.915	<.001	-28.135	-10.990
	7	-12.375*	1.391	<.001	-18.601	-6.149
	8	-9.250*	1.296	<.001	-15.051	-3.449
	9	-3.188*	.509	.003	-5.466	-.909
	10	-1.813	.458	.125	-3.862	.237
	12	1.375	.335	.096	-.123	2.873
12	1	-33.813*	1.537	<.001	-40.694	-26.931
	2	-30.813*	1.676	<.001	-38.314	-23.311
	3	-27.813*	1.905	<.001	-36.339	-19.286
	4	-25.500*	1.952	<.001	-34.237	-16.763
	5	-23.063*	1.902	<.001	-31.574	-14.551
	6	-20.938*	1.851	<.001	-29.222	-12.653
	7	-13.750*	1.409	<.001	-20.055	-7.445
	8	-10.625*	1.330	<.001	-16.577	-4.673
	9	-4.563*	.587	<.001	-7.192	-1.933
	10	-3.188*	.532	.004	-5.567	-.808
	11	-1.375	.335	.096	-2.873	.123

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Bonferroni.



Estimated Marginal Means of TAU
Estimated Marginal Means
80.00
70.00
60.00
50.00
40.00
30.00
1
2
3
4
5
6
7
8
9
10
11
12
WAKTU
Pengencer
Andromed
KED
TKD
TKT

Lampiran 2. Dokumentasi Pelaksanaasn Penelitian


Ket. Perakitan Vagina Buatan

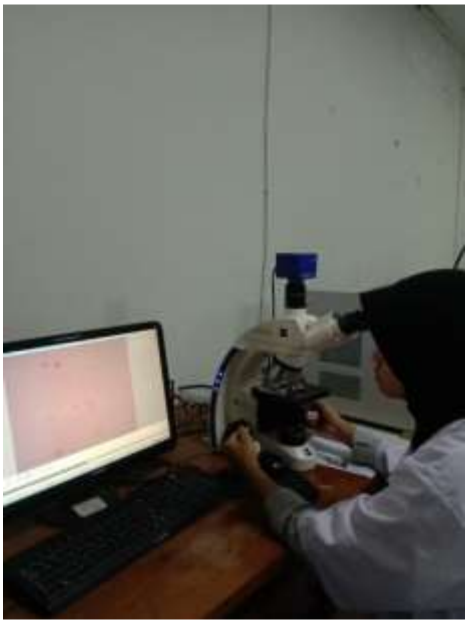

Ket. Penampungan Semen


Ket. Persiapan Alat, Bahan Pengencer

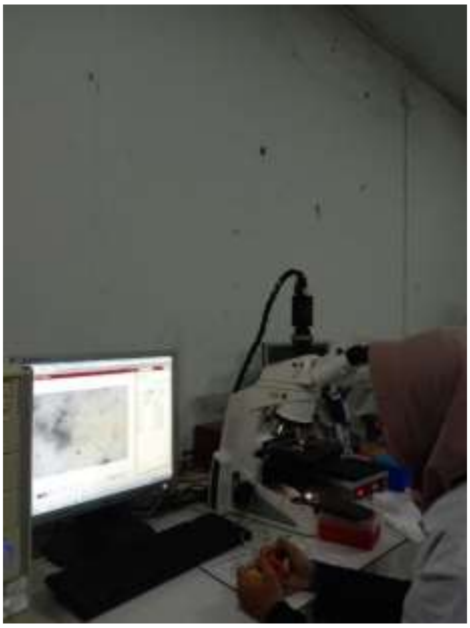

Ket. Pembuatan Pengencer

Ket. Pengecekan Motilitas

Ket. Pengecekan Konsentrasi



Ket. Pengecekan Viabilitas



Ket. Pengecekan MPU

BIODATA PENELITI

Andi Kiran Aulyah.AN (I011191035) biasa dipanggil kiran. Lahir di Patila pada tanggal 09 Agustus 2000. Merupakan anak keempat dari lima bersaudara dari pasangan bapak Andi Nurman.AM dan Hartini. Kedua orang tua penulis bertempat tinggal di Desa Patila, Kecamatan Tana Lili, Kabupaten Luwu Utara. Jenjang pendidikan formal yang pernah ditempuh penulis adalah SDN 210 Minna, kemudian melanjutkan sekolah di SMP Negeri 1 Bone-Bone, setelah lulus melanjutkan pendidikan di SMA Negeri 4 Luwu Utara. Pada tahun 2019, penulis diterima dan menempuh Pendidikan S-1 (Strata 1) di Perguruan Tinggi Negeri PTN) Fakultas Peternakan, Universitas Hasanuddin, Makassar melalui jalur SBMPTN. Penulis mengikuti beberapa organisasi yaitu Himpunan Mahasiswa Produksi ternak (HIMAPROTEK-UH) dan Forum Studi Ilmiah (FOSIL). Selama kuliah penulis juga pernah mengikuti kegiatan Pertukaran Mahasiswa Merdeka (PMM) di Universitas Gadjah Mada tahun 2020. Penulis juga tergabung dalam Tim Asisten Ilmu Reproduksi Ternak dan Bioteknologi Reproduksi Ternak. Penulis berharap kedepannya bisa menyelesaikan studi S1 dengan baik, melanjutkan pendidikan ke jenjang S2 dan mendapatkan pekerjaan serta dapat membahagiakan kedua orang tua dan keluarga penulis.