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LAMPIRAN

Lampiran 1. Lokasi penelitian ikan gobi *Sicyopterus longifilis* di Sungai Ummiding dan Sungai Matama

Sungai Ummiding

Sungai Matama

Lampiran 2. Analisis morfometrik ikan gobi *Sicyopterus longifilis* di Sungai Ummiding dan Sungai Matama

Eigenvalues

Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	.815[a]	100.0	100.0	.670

a. First 1 canonical discriminant functions were used in the analysis.

Wilks' Lambda

Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	.551	135.670	21	.000

Wilks' Lambda

Step	Number of Variables	Lambda	df1	df2	df3	Exact F			
						Statistic	df1	df2	Sig.
1	1	.897	1	1	238	27.397	1	238.000	.000
2	2	.778	2	1	238	33.729	2	237.000	.000
3	3	.749	3	1	238	26.310	3	236.000	.000
4	4	.674	4	1	238	28.470	4	235.000	.000
5	5	.626	5	1	238	27.927	5	234.000	.000
6	6	.607	6	1	238	25.116	6	233.000	.000
7	7	.592	7	1	238	22.856	7	232.000	.000
8	8	.578	8	1	238	21.125	8	231.000	.000

Classification Results[a]

			Predicted Group Membership		Total
		Lokasi	Sungai_Ummiding	Sungai_Matama	
Original	Count	Sungai_Ummiding	104	16	120
		Sungai_Matama	26	94	120
		Ungrouped cases	0	18	18
	%	Sungai_Ummiding	86.7	13.3	100.0
		Sungai_Matama	21.7	78.3	100.0
		Ungrouped cases	.0	100.0	100.0

t. 82,5% of original grouped cases correctly classified.

Lampiran 3. Uji statistik panjang total dan bobot tubuh ikan gobi *Sicyopterus longifilis* jantan dan betina di Sungai Ummiding

Panjang total jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	44,9301	45,5247
Variance	117,5890	90,5664
Observations	611,0000	904,0000
Pooled Variance	101,4612	
Hypothesized Mean Difference	0,0000	
df	1513,0000	
t Stat	-1,1271	
P(T<=t) one-tail	0,1299	
t Critical one-tail	1,6459	P<0,05 berbeda nyata
P(T<=t) two-tail	0,2599	
t Critical two-tail	1,9615	

Karena $t_{hitung} < t_{tabel}$ sehingga panjang total ikan jantan dan betina di Sungai Ummiding tidak berbeda nyata.

Bobot tubuh jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	1,3036	1,3242
Variance	0,8780	0,6760
Observations	611,0000	904,0000
Pooled Variance	0,7574	
Hypothesized Mean Difference	0,0000	
df	1513,0000	
t Stat	-0,4529	
P(T<=t) one-tail	0,3254	
t Critical one-tail	1,6459	
P(T<=t) two-tail	0,6507	P>0.05 tidak berbeda nyata
t Critical two-tail	1,9615	

Karena $t_{hitung} < t_{tabel}$ sehingga bobot tubuh ikan jantan dan betina di Sungai Ummiding tidak berbeda nyata.

Lampiran 4. Uji statistik panjang total dan bobot tubuh ikan gobi *Sicyopterus longifilis* jantan dan betina di Sungai Matama

Panjang total ikan jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	57,6138	56,9362	
Variance	268,7471	321,5327	
Observations	281,0000	477	
Pooled Variance	301,9825		
Hypothesized Mean Difference	0,0000		
df	756,0000		
t Stat	0,5185		
P(T<=t) one-tail	0,3021		
t Critical one-tail	1,6469		
P(T<=t) two-tail	0,6043	p>0.05 tidak berbeda nyata	
t Critical two-tail	1,9631		

Karena $t_{hitung} < t_{tabel}$ sehingga panjang total ikan jantan dan betina di Sungai Matama tidak berbeda nyata.

Bobot tubuh jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	3,0617	3,3096
Variance	5,1704	13,8738
Observations	281,0000	477
Pooled Variance	10,6503	
Hypothesized Mean Difference	0,0000	
df	756,0000	
t Stat	-1,0099	
P(T<=t) one-tail	0,1564	
t Critical one-tail	1,6469	
P(T<=t) two-tail	0,3129	p> 0.05 tidak berbeda nyata
t Critical two-tail	1,9631	

Karena $t_{hitung} < t_{tabel}$ sehingga bobot tubuh ikan jantan dan betina di Sungai Matama tidak berbeda nyata.

Lampiran 5. Uji statistik panjang total dan bobot tubuh ikan gobi *Sicyopterus longifilis* jantan dan betina di Sungai Ummiding pada fase bulan gelap

Panjang total ikan gobi jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	42,9013	44,0697	
Variance	115,9792	85,9749	
Observations	342,0000	421	
Pooled Variance	99,4197		
Hypothesized Mean Difference	0,0000		
df	761,0000		
t Stat	-1,6096		
P(T<=t) one-tail	0,0539		
t Critical one-tail	1,6469		
P(T<=t) two-tail	0,1079	p > 0.05 tidak berbeda nyata	
t Critical two-tail	1,9631		

Karena $t_{hitung} < t_{tabel}$ sehingga panjang total ikan jantan dan betina di Sungai Ummiding pada fase bulan gelap tidak berbeda nyata

Bobot tubuh ikan gobi jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	1,1330	1,1756	
Variance	0,8688	0,5631	
Observations	342,0000	421	
Pooled Variance	0,7001		
Hypothesized Mean Difference	0,0000		
df	761,0000		
t Stat	-0,7009		
P(T<=t) one-tail	0,2418		
t Critical one-tail	1,6469		
P(T<=t) two-tail	0,4836	p >0.05 tidak berbeda nyata	
t Critical two-tail	1,9631		

Karena $t_{hitung} < t_{tabel}$ sehingga bobot tubuh ikan jantan dan betina di Sungai Ummiding pada fase bulan gelap tidak berbeda nyata

Lampiran 6. Uji statistik panjang total dan bobot tubuh ikan gobi *Sicyopterus longifilis* jantan dan betina di Sungai Ummiding pada fase bulan terang

Panjang total jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	47,5094	46,7929	
Variance	108,146	91,2943	
Observations	269	483	
Pooled Variance	97,3160		
Hypothesized Mean Difference	0		
df	750		
t Stat	0,9546		
P(T<=t) one-tail	0,1700		
t Critical one-tail	1,6468		
P(T<=t) two-tail	0,3400	p> 0.05 tidak berbeda nyata	
t Critical two-tail	1,9631		

Karena $t_{hitung} < t_{tabel}$ sehingga panjang total ikan jantan dan betina di Sungai Ummiding pada fase bulan terang tidak berbeda nyata

Bobot tubuh antara jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	1,5324	1,4545	
Variance	0,8835	0,7444	
Observations	2690	483	
Pooled Variance	0,7941		
Hypothesized Mean Difference	0000		
df	750		
t Stat	1,1483		
P(T<=t) one-tail	0,1255		
t Critical one-tail	1,6468		
P(T<=t) two-tail	0,2511	p>0,05 tidak berbeda nyata	
t Critical two-tail	1,9631		

Karena $t_{hitung} < t_{tabel}$ sehingga bobot tubuh ikan jantan dan betina di Sungai Ummiding pada fase bulan terang tidak berbeda nyata

Lampiran 7. Uji statistik panjang total dan bobot tubuh ikan gobi *Sicyopterus longifilis* jantan dan betina di Sungai Matama pada fase bulan gelap

Panjang total jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	52,2153	55,5928
Variance	203,9855	198,6042
Observations	98,0000	218
Pooled Variance	200,2666	
Hypothesized Mean Difference	0,0000	
df	314,0000	
t Stat	-1,9624	
P(T<=t) one-tail	0,0253	
t Critical one-tail	1,6497	
P(T<=t) two-tail	0,0506	p>0.05 tidak berbeda nyata
t Critical two-tail	1,9675	

Karena $t_{hitung} < t_{tabel}$ sehingga panjang total ikan jantan dan betina di Sungai Matama pada fase bulan gelap tidak berbeda nyata

Bobot tubuh jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	2,2311	2,7329
Variance	3,1788	4,4322
Observations	98,0000	218
Pooled Variance	4,0450	
Hypothesized Mean Difference	0,0000	
df	314,0000	
t Stat	-2,0514	
P(T<=t) one-tail	0,0205	
t Critical one-tail	1,6497	
P(T<=t) two-tail	0,0411	p < 0.05 berbeda nyata
t Critical two-tail	1,9675	

Karena $t_{hitung} > t_{tabel}$ sehingga bobot tubuh ikan jantan dan betina di Sungai Matama pada fase bulan gelap berbeda nyata

Lampiran 8. Uji statistik panjang total dan bobot tubuh ikan gobi *Sicyopterus longifilis* jantan dan betina di Sungai Matama pada fase bulan terang

Panjang total antara jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	60,5047	58,0669	
Variance	280,6433	423,3639	
Observations	183	259	
Pooled Variance	364,3295		
Hypothesized Mean Difference	0		
df	440		
t Stat	1,3225		
P(T<=t) one-tail	0,0933		
t Critical one-tail	1,6483		
P(T<=t) two-tail	0,1866	p > 0.05 tidak berbeda nyata	
t Critical two-tail	1,9653		

Karena $t_{hitung} < t_{tabel}$ sehingga panjang total ikan jantan dan betina di Sungai Matama pada fase bulan terang tidak berbeda nyata

Bobot tubuh antara jantan dan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	3,5065	3,7949	
Variance	5,6897	21,3512	
Observations	183	259	
Pooled Variance	14,87304		
Hypothesized Mean Difference	0,0000		
df	440		
t Stat	-0,7745		
P(T<=t) one-tail	0,2195		
t Critical one-tail	1,6483		
P(T<=t) two-tail	0,4390	p> 0.05 tidak berbeda nyata	
t Critical two-tail	1,9653		

Karena $t_{hitung} < t_{tabel}$ sehingga bobot tubuh ikan jantan dan betina di Sungai Matama pada fase bulan terang tidak berbeda nyata

Lampiran 9. Uji statistik panjang total dan bobot tubuh ikan gobi *Sicyopterus longifilis* jantan di Sungai Ummiding dan di Sungai Matama

Panjang total antara ikan jantan

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	44,9300	57,6137
Variance	117,5889	268,7471
Observations	611	281
Pooled Variance	165,1443	
Hypothesized Mean Difference	0,0000	
df	890	
t Stat	-13,6931	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6465	
P(T<=t) two-tail	0,0000	p< 0.05 berbeda nyata
t Critical two-tail	1,9626	

Karena $t_{hitung} > t_{tabel}$ sehingga panjang total ikan jantan di Sungai Ummiding dan di Sungai Matama berbeda nyata

Bobot tubuh antara ikan jantan

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	1,3035	3,0617
Variance	0,8779	5,17035
Observations	611	281
Pooled Variance	2,2283	
Hypothesized Mean Difference	0	
df	890	
t Stat	-16,3399	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6465	
P(T<=t) two-tail	0,0000	P<0.05 berbeda nyata
t Critical two-tail	1,9626	

Karena $t_{hitung} > t_{tabel}$ sehingga bobot tubuh ikan jantan di Sungai Ummiding dan di Sungai Matama berbeda nyata

Lampiran 10. Uji statistik panjang total dan bobot tubuh ikan gobi *Sicyopterus longifilis* betina di Sungai Ummiding dan di Sungai Matama

Panjang total antara ikan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	45,5246	56,9362	
Variance	90,5664	321,5327	
Observations	904	477	
Pooled Variance	170,2908		
Hypothesized Mean Difference	0		
df	1379		
t Stat	-15,4523		
P(T<=t) one-tail	0,0000		
t Critical one-tail	1,6459		
P(T<=t) two-tail	0,0000	p< 0.05 berbeda nyata	
t Critical two-tail	1,9616		

Karena $t_{hitung} > t_{tabel}$ sehingga panjang total ikan betina di Sungai Ummiding dan di Sungai Matama berbeda nyata

Bobot tubuh antara ikan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	1,3242	3,3095	
Variance	0,6759	13,8738	
Observations	904	477	
Pooled Variance	5,2315		
Hypothesized Mean Difference	0		
df	1379		
t Stat	-15,3379		
P(T<=t) one-tail	0,0000		
t Critical one-tail	1,6459		
P(T<=t) two-tail	0,0000	p < 0.05 berbeda nyata	
t Critical two-tail	1,9616		

Karena $t_{hitung} > t_{tabel}$ sehingga bobot tubuh ikan betina di Sungai Ummiding dan di Sungai Matama berbeda nyata

Lampiran 11. Uji statistik panjang total dan bobot tubuh antara ikan jantan di Sungai Ummiding dan di Sungai Matama pada fase bulan gelap

Panjang total antara ikan jantan

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	42,9013	52,2153	
Variance	115,979	203,9855	
Observations	342	98	
Pooled Variance	135,4692		
Hypothesized Mean Difference	0		
df	438		
t Stat	-6,9841		
P(T<=t) one-tail	0,0000		
t Critical one-tail	1,6483		
P(T<=t) two-tail	0,0000	$p < 0.05$ berbeda nyata	
t Critical two-tail	1,9653		

Karena $t_{hitung} > t_{tabel}$ sehingga panjang total ikan jantan di Sungai Ummiding dan di Sungai Matama pada fase bulan gelap berbeda nyata

Bobot tubuh antara ikan jantan

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	1,1330	2,2311
Variance	0,8688	3,1788
Observations	342,0000	98,0000
Pooled Variance	1,3804	
Hypothesized Mean Difference	0,0000	
df	438,0000	
t Stat	-8,1575	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6483	
P(T<=t) two-tail	0,0000	$p < 0.05$ berbeda nyata
t Critical two-tail	1,9654	

Karena $t_{hitung} > t_{tabel}$ sehingga bobot tubuh ikan jantan di Sungai Ummiding dan di Sungai Matama pada fase bulan gelap berbeda nyata

Lampiran 12. Uji statistik panjang total dan bobot tubuh antara ikan betina di Sungai Ummiding dan di Sungai Matama pada fase bulan gelap

Panjang total antara ikan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	44,0696	55,5928	
Variance	85,9748	198,6042	
Observations	421	218	
Pooled Variance	124,343		
Hypothesized Mean Difference	0.0000		
df	637		
t Stat	-12,3845		
P(T<=t) one-tail	0,0000		
t Critical one-tail	1,6472		
P(T<=t) two-tail	0,0000	p < 0.05 berbeda nyata	
t Critical two-tail	1,9637		

Karena $t_{hitung} > t_{tabel}$ sehingga panjang total ikan betina di Sungai Ummiding dan di Sungai Matama pada fase bulan gelap berbeda nyata

Bobot tubuh antara ikan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	1,1756	2,7329
Variance	0,5631	4,4322
Observations	421,0000	218,0000
Pooled Variance	1,8812	
Hypothesized Mean Difference	0,0000	
df	637,0000	
t Stat	-13,6068	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6472	
P(T<=t) two-tail	0,0000	p < 0.05 berbeda nyata
t Critical two-tail	1,9637	

Karena $t_{hitung} > t_{tabel}$ sehingga bobot tubuh ikan betina di Sungai Ummiding dan di Sungai Matama pada fase bulan gelap berbeda nyata

Lampiran 13. Uji statistik panjang total dan bobot tubuh antara ikan jantan di Sungai Ummiding dan di Sungai Matama pada fase bulan terang

Panjang total antara ikan jantan

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	47,5094	60,5048
Variance	108,1460	280,6433
Observations	269,0000	183,0000
Pooled Variance	177,9116	
Hypothesized Mean Difference	0,0000	
Df	450,0000	
t Stat	-10,1676	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6482	
P(T<=t) two-tail	0,0000	p < 0.05 berbeda nyata
t Critical two-tail	1,9652	

Karena $t_{hitung} > t_{tabel}$ sehingga panjang total ikan jantan di Sungai Ummiding dan di Sungai Matama pada fase bulan terang berbeda nyata

Bobot tubuh antara ikan jantan

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	1,5324	3,5065
Variance	0,8835	5,6897
Observations	269	183
Pooled Variance	2,8273	
Hypothesized Mean Difference	0	
Df	450	
t Stat	-12,2521	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6482	
P(T<=t) two-tail	0,0000	p < 0.05 berbeda nyata
t Critical two-tail	1,9652	

Karena $t_{hitung} > t_{tabel}$ sehingga bobot tubuh ikan jantan di Sungai Ummiding dan di Sungai Matama pada fase bulan terang berbeda nyata

Lampiran 14 Uji statistik panjang total dan bobot tubuh antara ikan betina di Sungai Ummiding dan panjang dan bobot tubuh ikan betina di Sungai Matama pada fase bulan terang

Panjang total antara ikan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	46,7929	58,06691
Variance	91,2944	423,3639
Observations	483,0000	259
Pooled Variance	207,0700	
Hypothesized Mean Difference	0,0000	
df	740	
t Stat	-10,1728	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6469	
P(T<=t) two-tail	0,0000	p < 0.05 berbeda nyata
t Critical two-tail	1,9632	

Karena $t_{hitung} > t_{tabel}$ sehingga panjang total ikan betina di Sungai Ummiding dan di Sungai Matama pada fase bulan terang berbeda nyata

Bobot tubuh antara ikan betina

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	1,4545	3,7949
Variance	0,7444	21,3512
Observations	483	259
Pooled Variance	7,9289	
Hypothesized Mean Difference	0,0000	
Df	740	
t Stat	-10,7921	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6469	
P(T<=t) two-tail	0,0000	p < 0.05 berbeda nyata
t Critical two-tail	1,9631	

Karena $t_{hitung} > t_{tabel}$ sehingga bobot tubuh ikan betina di Sungai Ummiding dan di Sungai Matama pada fase bulan terang berbeda nyata

Lampiran 15. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* jantan di Sungai Ummiding

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9493
R Square	0,9011
Adjusted R Square	0,9010
Standard Error	0,1054
Observations	611

ANOVA

	df	*SS*	*MS*	*F*
Regression	1	61,7037	61,7037	5551,3821
Residual	609	6,7690	0,0111	
Total	610	68,4727		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-4,9611	0,0667	-74,3600	0,0000
X Variable 1	3,0250	0,0406	74,5076	0,0000

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-3,0250)}{0.0406}$

= -0,6157

$t_{0,05}$ = 1,9638

Karena $t_{hitung} > t_{tabel}$ maka pola pertumbuhan ikan gobi jantan di Sungai Ummiding bersifat isometrik

Lampiran 16. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* betina di Sungai Ummiding

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9497
R Square	0,9020
Adjusted R Square	0,9019
Standard Error	0,0865
Observations	904

ANOVA

	df	*SS*	*MS*	*F*
Regression	1	62,0657	62,0657	8304,1742
Residual	902	6,7416	0,0075	
Total	903	68,8073		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-4,6458	0,0515	-90,2099	0,0000
X Variable 1	2,8422	0,0312	91,1272	0,0000

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-2,8422)}{0,0312}$

= 5,0605

$t_{0,05}$ =1,9625

Karena $t_{hitung} > t_{tabel}$ maka pola pertumbuhan ikan gobi betina di Sungai Ummiding bersifat hipoalometrik

Lampiran 17. Uji statistik koefisien regresi antara ikan gobi *Sicyopterus longifilis* jantan dan betina di Sungai Ummiding

t_{hitung} $= \frac{(b1-b2}{SE(b1-b2)}$

(b_1-b_2) = 3,0250-2,8422

=0,1828

$SE(b_1-b_2)$ $= \sqrt{(SEb_1)\ +\ (SEb_2)^2}$

$= \sqrt{(0{,}0406\ )^2 +\ (0{,}0312)^2}$

=0,0511

t_{hitung} $= \frac{0{,}1828}{0{,}0511}$ = 3,5702

db $= (n_1 - 2)\ +\ (n_2 - 2)$

= (611-2) + (904-2)

= 1511

$t_{0,05}$ = 1,96311

Karena $t_{hitung} < t_{tabel}$ berarti ikan gobi jantan di Sungai Ummiding berbeda nyata dengan ikan betina di Sungai Ummiding

Lampiran 18. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* jantan di Sungai Matama

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9698
R Square	0,9406
Adjusted R Square	0,9404
Standard Error	0,1053
Observations	281

ANOVA

	df	*SS*	*MS*	*F*
Regression	1	49,0285	49,0285	4418,0923
Residual	279	3,0961	0,0111	
Total	280	52,1246		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-5,1085	0,0820	-62,3355	0,0000
X Variable 1	3,1193	0,0469	66,4687	0,0000

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-3{,}1193)}{0.0469}$

= 2,5421

$t_{0,05}$ = 1,9685

$t_{hitung} > t_{tabel}$ maka pola pertumbuhan ikan gobi jantan di Sungai Matama bersifat hiperalometrik

Lampiran 19. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* betina di Sungai Matama

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9785
R Square	0,9574
Adjusted R Square	0,9573
Standard Error	0,0922
Observations	477

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	90,8011	90,8011	10680,9378	0,0000
Residual	475	4,0381	0,0085		
Total	476	94,8392			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	-5,2761	0,0543	-97,2507	0,0000	-5,3827
X Variable 1	3,2228	0,0312	103,3486	0,0000	3,1615

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-3,2228)}{0.0312}$

$= -7,1454$

$t_{0,05} = 1,9650$

Karena $t_{hitung} < t_{tabel}$ maka kesimpulanya adalah pola pertumbuhan ikan gobi betina di Sungai Matama bersifat Hiperalometrik

Lampiran 20. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* gabungan betina dan jantan di Sungai Matama

Regression Statistics	
Multiple R	0,9752
R Square	0,9510
Adjusted R Square	0,9510
Standard Error	0,0976
Observations	758

ANOVA

	df	*SS*	*MS*	*F*
Regression	1	139,7823	139,7823	14686,440
Residual	756	7,1954	0,0095	
Total	757	146,9777		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-5,2132	0,0458	-113,8958	0,0000
X Variable 1	3,1839	0,0263	121,1876	0,0000

$t_{hitung} = \left[\frac{3-b}{Sb}\right] = \frac{(3-3,1839)}{0.0263}$

$= -6,9923$

$t_{0,05} = 1,9631$

Karena $t_{hitung} < t_{tabel}$ maka pola pertumbuhan ikan gobi gabungan jantan dan betina di Sungai Matama bersifat hiperalometrik

Lampiran 21. Uji statistik koefisien regresi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Matama

t_{hitung} $= \frac{(b1-b2}{SE(b1-b2)}$

(b_1-b_2) = 3,2228-3,1193

=0,1035

$SE(b_1-b_2)$ $= \sqrt{(SEb_1)\ +\ (SEb_2)}^2$

$= \sqrt{(0{,}0312\ )^2 +\ (0{,}0469)^2}$

=0,0563

t_{hitung} $= \frac{0{,}1035}{0{,}0563}$ =1,8373

db $= (n_1 - 2)\ +\ (n_2 - 2)$

= (477-2) + (281-2)

= 758

$t_{0,05}$ = 1,96311

Karena $t_{hitung} < t_{tabel}$ berarti ikan gobi jantan pada Sungai Matama tidak berbeda nyata dengan ikan betina

Lampiran 22. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* betina di Sungai Ummiding pada fase bulan terang

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9590
R Square	0,9197
Adjusted R Square	0,9195
Standard Error	0,0732
Observations	483

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	29,5409	29,5409	5507,3908	0,0000
Residual	481	2,5800	0,0054		
Total	482	32,1209			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	-4,4549	0,0613	-72,6475	0,0000	-4,5753	-4,3344
X Variable 1	2,7358	0,0369	74,2118	0,0000	2,6634	2,8082

$t_{hitung} = \left[\frac{3-b}{Sb}\right] = \frac{(3-2,7358)}{0.0369}$

$= 7,1670$

$t_{0,05} = 1,9649$

Karena $t_{hitung} > t_{tabel}$ maka pola pertumbuhan ikan gobi betina di Sungai Ummiding pada fase bulan terang bersifat hipoalometrik

Lampiran 23. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* jantan di Sungai Ummiding pada fase bulan terang

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9758
R Square	0,9522
Adjusted R Square	0,9521
Standard Error	0,0650
Observations	269

ANOVA

	df	*SS*	*MS*	*F*
Regression	1	22,5137	22,5137	5323,2896
Residual	267	1,1292	0,0042	
Total	268	23,6430		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-4,8042	0,0673	-71,4040	0,0000
X Variable 1	2,9415	0,0403	72,9609	0,0000

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-2,9415)}{0.0403}$

$= 1,4516$

$t_{0,05} = 1,9688$

Karena $t_{hitung} < t_{tabel}$ maka pola pertumbuhan ikan gobi jantan bersifat Isometrik di Sungai Ummiding pada fase bulan terang

Lampiran 24. Uji statistik koefisien regresi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Ummiding pada fase bulan terang

t_{hitung} $= \frac{(b1-b2}{SE(b1-b2)}$

(b_1-b_2) = 2,9415-2,7358

=0,2057

$SE(b_1-b_2)$ $= \sqrt{(SEb_1)\ +\ (SEb_2)}^2$

$= \sqrt{(0{,}0403\ )^2 +\ (0{,}0369)^2}$

= 0,0546

t_{hitung} $= \frac{0{,}2057}{0{,}0546}$ = 3,7649

db $= (n_1 - 2)\ +\ (n_2 - 2)$

= (269-2) + (483-2)

= 748

$t_{0,05}$ = 1,96311

Karena $t_{hitung} < t_{tabel}$ berarti ikan gobi jantan pada fase terang di Sungai Ummiding berbeda nyata dengan ikan betina

Lampiran 25. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* gabungan betina dan jantan di Sungai Ummiding pada fase bulan terang

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9501
R Square	0,9027
Adjusted R Square	0,9026
Standard Error	0,0857
Observations	754

ANOVA

	df	*SS*	*MS*
Regression	1	51,2921	51,2921
Residual	752	5,5261	0,0073
Total	753	56,818	

	Coefficients	*Standard Error*	*t Stat*
Intercept	-4,3172	0,0528	-81,7
X Variable 1	2,6529	0,0317	83,5452

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-2,6529)}{0.0317}$

$= 10,9495$

$t_{0,05} = 1,9692$

Karena $t_{hitung} > t_{tabel}$ maka pola pertumbuhan gabungan betina dan jantan di Sungai Ummiding fase bulan terang bersifat hipoalometrik

Lampiran. 26 Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* betina di Sungai Matama pada fase bulan terang

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9747
R Square	0,9500
Adjusted R Square	0,9498
Standard Error	0,1129
Observations	259

ANOVA

	df	*SS*	*MS*	*F*
Regression	1	62,2215	62,2215	4883,4477
Residual	257	3,2745	0,0127	
Total	258	65,4960		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-5,2978	0,0808	-65,5962	0,0000
X Variable 1	3,2357	0,0463	69,8817	0,0000

$t_{hitung} = \left[\frac{3-b}{Sb}\right] = \frac{(3-3{,}2357)}{0{,}0463}$

$= -5{,}0907$

$t_{0,05} = 1{,}9692$

Karena $t_{hitung} < t_{tabel}$ maka pola pertumbuhan ikan gobi betina di Sungai Matama fase bulan terang bersifat hiperalometrik

Lampiran. 27 Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* jantan di Sungai Matama pada fase bulan terang

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9628
R Square	0,9270
Adjusted R Square	0,9266
Standard Error	0,1219
Observations	183

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	34,1520	34,1520	2297,9525	0,0000
Residual	181	2,6900	0,0149		
Total	182	36,8420			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	-5,2286	0,1174	-44,5202	0,0000	-5,4603
X Variable 1	3,1849	0,0664	47,9370	0,0000	3,0538

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-3,1849)}{0,0664}$

$= -2,7846$

$t_{0,05} = 1,9731$

Karena $t_{hitung} < t_{tabel}$ maka pola pertumbuhan ikan gobi jantan di Sungai Matama fase bulan terang bersifat hiperalometrik

Lampiran 28. Uji statistik koefisien regresi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Matama pada fase bulan terang

t_{hitung} $= \frac{(b1-b2}{SE(b1-b2)}$

$(b_1\text{-}b_2)$ = 3,2357-3,1849

=0,0508

$SE(b_1\text{-}b_2)$ $= \sqrt{(SEb_1)\ +\ (SEb_2)}^2$

$= \sqrt{(0{,}0463\ )^2 +\ (0{,}0664)}^2$

= 0,0809

$t_{\ hitung}$ $= \frac{0{,}0508}{0{,}0809}$ =0,6267

db $= (n_1 - 2)\ +\ (n_2 - 2)$

= (259-2) + (183-2)

= 438

$t_{0,05}$ = 1,96311

Karena $t_{hitung} < t_{tabel}$ maka ikan gobi betina dan jantan di Sungai Matama pada fase bulan terang tidak berbeda nyata

Lampiran 29. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* gabungan betina dan jantan di Sungai Matama pada fase bulan terang

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9703
R Square	0,9415
Adjusted R Square	0,9413
Standard Error	0,1169
Observations	442

ANOVA

	df	*SS*	*MS*	*F*
Regression	1	96,7109	96,7109	7078,3273
Residual	440	6,0117	0,0137	
Total	441	102,7226		

	Coefficients	*Standard Error*	*t Stat*	*P-value*
Intercept	-5,2643	0,0670	-78,6213	0,0000
X Variable 1	3,2117	0,0382	84,1328	0,0000

$t_{hitung} = \left[\frac{3-b}{Sb}\right] = \frac{(3-3,2117)}{0,0382}$

$= -5,5418$

$t_{0,05} = 1,9656$

Karena $t_{hitung} < t_{tabel}$ maka pola pertumbuhan gabungan betina dan jantan di Sungai Matama pada fase bulan terang pada fase bulan bersifat hiperalometrik

Lampiran 30. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* betina di Sungai Ummiding pada fase bulan gelap

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9414
R Square	0,8862
Adjusted R Square	0,8859
Standard Error	0,0964
Observations	421

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	30,3260	30,3260	3262,9622	0,0000
Residual	419	3,8942	0,0093		
Total	420	34,2202			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	-4,7745	0,0834	-57,2296	0,0000	-4,9385
X Variable 1	2,9110	0,0510	57,1223	0,0000	2,8108

$t_{hitung} = \left| \frac{3-b}{Sb} \right| = \frac{(3-2,9110)}{0,0510}$

$= 1,7450$

$t_{0,05} = 1,9656$

Karena $t_{hitung} < t_{tabel}$ maka pola pertumbuhan ikan gobi *Sicyopterus longifilis* betina di Sungai Ummiding pada fase bulan gelap bersifat Isometrik

Lampiran 31. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* jantan di Sungai Ummiding pada fase bulan gelap

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9307
R Square	0,8662
Adjusted R Square	0,8658
Standard Error	0,1267
Observations	342

ANOVA

	Df	*SS*	*MS*	*F*	*Significance F*
Regression	1	35,3360	35,3360	2200,4523	0,0000
Residual	340	5,4599	0,0161		
Total	341	40,7959			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	-5,0038	0,1053	-47,5252	0,0000	-5,2109
X Variable 1	3,0433	0,0649	46,9090	0,0000	2,9157

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-3,0433)}{0,0649}$

$= -0,6671$

$t_{0,05} = 1,9669$

Karena $t_{hitung} < t_{tabel}$ maka pola pertumbuhan ikan gobi jantan di Sungai Ummiding pada fase bulan gelap bersifat Isometrik

Lampiran 32. Uji statistik koefisien regresi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Ummiding pada fase bulan gelap

t_{hitung} $= \frac{(b1-b2}{SE(b1-b2)}$

(b_1-b_2) = 3,0433-2,9110

=0,1323

$SE(b_1-b_2)$ $= \sqrt{(SEb_1)\ +\ (SEb_2)}^2$

$= \sqrt{(0{,}0649\ )^2 +\ (0{,}0510)}^2$

= 0,0824

t_{hitung} $=\frac{0{,}1323}{0{,}0824}$ =1,6033

db $= (n_1 - 2)\ +\ (n_2 - 2)$

= (342-2) + (421-2)

= 759

$t_{0,05}$ = 1,96311

Karena $t_{hitung} < t_{tabel}$ berarti ikan gobi betina dan jantan di Sungai Ummiding pada fase bulan gelap tidak berbeda nyata

Lampiran 33. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* gabungan betina dan jantan di Sungai Ummiding pada fase bulan gelap

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9357
R Square	0,8755
Adjusted R Square	0,8753
Standard Error	0,1113
Observations	763

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	66,2458	66,2458	5349,7287	0,0000
Residual	761	9,4235	0,0124		
Total	762	75,6693			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	-4,9011	0,0665	-73,6522	0,0000	-5,0317
X Variable 1	2,9846	0,0408	73,1418	0,0000	2,9045

$t_{hitung} = \left[\frac{3-b}{Sb}\right] = \frac{(3-2,9846)}{0,0408}$

$= 0,3774$

$t_{0,05} = 1,9710$

Karena $t_{hitung} < t_{tabel}$ pola pertumbuhan ikan gobi gabungan betina dan jantan di Sungai Ummiding fase bulan gelap bersifat hiperalometrik

Lampiran 34. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* gabungan betina dan jantan di Sungai Matama pada fase bulan gelap

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9869
R Square	0,9740
Adjusted R Square	0,9739
Standard Error	0,0593
Observations	218

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	28,5149	28,5149	8101,6853	0,0000
Residual	216	0,7602	0,0035		
Total	217	29,2751			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	-5,2289	0,0616	-84,9316	0,0000	-5,3502
X Variable 1	3,1951	0,0355	90,0094	0,0000	3,1252

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-3{,}1951)}{0.0355}$

$= -5{,}4966$

$t_{0,05} = 1{,}9710$

Karena $t_{hitung} > t_{tabel}$ maka pola pertumbuhan ikan gobi gabungan jantan dan betina di Sungai Matama fase bulan gelap bersifat hiperalometrik

Lampiran 35. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* jantan di Sungai Matama pada fase bulan gelap

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9863
R Square	0,9728
Adjusted R Square	0,9725
Standard Error	0,0613
Observations	98

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	12,9051	12,9051	3434,4074	0,0000
Residual	96	0,3607	0,0038		
Total	97	13,2658			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*
Intercept	-4,8976	0,0873	-56,0867	0,0000	-5,0709	-4,7243
X Variable 1	3,0003	0,0512	58,6038	0,0000	2,8987	3,1019

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-3{,}0003)}{0{,}0512}$

= -0,0058

$t_{0,05}$ = 1,9849

Karena $t_{hitung} < t_{tabel}$ maka pola pertumbuhan ikan gobi jantan di Sungai Matama fase bulan gelap bersifat isometrik

Lampiran 36. Uji statistik koefisien regresi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Matama pada fase bulan gelap

t_{hitung} = $\frac{(b1-b2}{SE(b1-b2)}$

$(b_1\text{-}b_2)$ = 3,1951-3,0003

=0,1948

$SE(b_1\text{-}b_2)$ = $\sqrt{(SEb_1)\ +\ (SEb_2)}^2$

= $\sqrt{(0{,}0355 +\ (0{,}0512}$

= 0,0622

t_{hitung} = $\frac{0{,}1948}{0{,}0622}$ = 3,1273

db = $(n_1 - 2)\ +\ (n_2 - 2)$

= (259-2) + (183-2)

= 438

$t_{0,05}$ = 1,96311

Karena $t_{hitung} < t_{tabel}$ berarti ikan gobi betina dan jantan pada fase bulan gelap di Sungai Matama berbeda nyata

Lampiran 37. Analisis regresi hubungan panjang-bobot ikan gobi *Sicyopterus longifilis* gabungan betina dan jantan di Sungai Matama pada fase bulan gelap

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,9865
R Square	0,97317
Adjusted R Square	0,9730
Standard Error	0,0607
Observations	316

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	41,9797	41,9797	11390,6870	8,7996
Residual	314	1,1572	0,0036		
Total	315	43,1369			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*
Intercept	-5,1169	0,0506	-101,115	1,2675	-5,2164
X Variable 1	3,13002	0,0293	106,7272	8,7996	3,0723

$t_{hitung} = \left|\frac{3-b}{Sb}\right| = \frac{(3-3,1300)}{0,0293}$

$= -4,4368$

$t_{0,05} = 1,9849$

Karena $t_{hitung} < t_{tabel}$ maka pola pertumbuhan ikan gobi gabungan betina dan jantan di Sungai Matama fase bulan gelap bersifat hiperalometrik

Lampiran 38. Uji statistik faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Ummiding

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	1,2291	1,0186
Variance	0,0530	0,0377
Observations	611,0000	903,0000
Pooled Variance	0,0439	
Hypothesized Mean Difference	0,0000	
Df	1512,0000	
t Stat	19,1801	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6459	P<0.05 berbeda nyata
P(T<=t) two-tail	0,0000	
t Critical two-tail	1,9615	

Karena $t_{hitung} < t_{tabel}$ sehingga faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Ummiding berbeda nyata

Lampiran 39. Uji statistik faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Ummiding pada fase bulan terang

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	1,2680	1,0144	
Variance	0,0366	0,0315	
Observations	269	483	
Pooled Variance	0,0333		
Hypothesized Mean Difference	0		
Df	750		
t Stat	18,2389		
P(T<=t) one-tail	0,0000		
t Critical one-tail	1,6468		
P(T<=t) two-tail	0,0000	p>0.05 berbeda nyata	
t Critical two-tail	1,9631		

Karena $t_{hitung} < t_{tabel}$ faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Ummiding pada fase bulan terang berbeda nyata

Lampiran 40. Uji statistik faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Ummiding pada fase bulan gelap

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*	
Mean	1,2009	1,2284	
Variance	0,0637	0,0659	
Observations	342,0000	421	
Pooled Variance	0,0649		
Hypothesized Mean Difference	0,0000		
Df	761,0000		
t Stat	-1,4843		
P(T<=t) one-tail	0,0691		
t Critical one-tail	1,6469		
P(T<=t) two-tail	0,1381	p >0.05 tidak berbeda nyata	
t Critical two-tail	1,9631		

Karena $t_{hitung} > t_{tabel}$ faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Ummiding pada fase bulan gelap tidak berbeda secara nyata

Lampiran 41. Uji statistik faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Matama

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	0,9994	1,0789
Variance	0,0520	0,0366
Observations	281,0000	477
Pooled Variance	0,0423	
Hypothesized Mean Difference	0,0000	
Df	756,0000	
t Stat	-5,1396	
P(T<=t) one-tail	0,0000	
t Critical one-tail	1,6469	
P(T<=t) two-tail	0,0000	P<0.05 berbeda nyata
t Critical two-tail	1,9631	

Karena $t_{hitung} < t_{tabel}$ faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Matama berbeda nyata

Lampiran 42. Uji statistik faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Matama pada fase bulan terang

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	1,0343	1,0269
Variance	0,0688	0,0450
Observations	183	259
Pooled Variance	0,0548	
Hypothesized Mean Difference	0	
Df	440	
t Stat	0,3282	
P(T<=t) one-tail	0,3714	
t Critical one-tail	1,6483	
P(T<=t) two-tail	0,7428	p>0.05 tidak berbeda nyata
t Critical two-tail	1,9653	

Karena $t_{hitung} > t_{tabel}$ faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Matama pada fase bulan terang tidak berbeda nyata

Lampiran 43. Uji statistik faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Matama pada fase bulan gelap

t-Test: Two-Sample Assuming Equal Variances

	Variable 1	*Variable 2*
Mean	1,2812	1,2812
Variance	0,0471	0,0471
Observations	98	98
Pooled Variance	0,0471	
Hypothesized Mean Difference	0	
Df	194	
t Stat	0,0000	
P(T<=t) one-tail	0,5000	
t Critical one-tail	1,6527	
P(T<=t) two-tail	1,0000	p > 0.05 tidak berbeda nyata
t Critical two-tail	1,9722	

Karena $t_{hitung} > t_{tabel}$ faktor kondisi ikan gobi *Sicyopterus longifilis* betina dan jantan di Sungai Matama pada fase bulan gelap tidak berbeda nyata

Lampiran 44 Uji *chi-square* nisbah kelamin ikan gobi *Sicyopterus longifilis* berdasarkan waktu pengambilan sampel di Sungai Ummiding

Bulan	Jantan	Betina	Jumlah
Juli	26	96	122
Agustus	39	76	115
September	221	199	420
Oktober	29	79	108
November	123	155	278
Desember	173	229	402
Total	611	904	1.515

X^2 hitung = 56,66

X^2 (0,05;5) = 3,84

Karena $X^2_{hitung} > X^2_{tabel}$ maka nisbah kelamin ikan gobi jantan dan betina di Sungai Ummiding berbeda nyata atau 1:1.

Lampiran 45. Uji *chi-square* nisbah kelamin ikan gobi *Sicyopterus longifilis* berdasarkan fase bulan di Sungai Ummiding

Bulan	Jantan	Betina	Jumlah
Bulan gelap	324	554	878
Bulan terang	287	530	817
Total	611	904	1.515

X^2 hitung = 56,67

X^2 (0,05;5) = 3,84

Karena $X^2_{hitung} > X^2_{tabel}$ maka nisbah kelamin ikan gobi jantan dan betina di Sungai Ummiding berbeda nyata atau 1:1.

Lampiran 46. Uji *chi-square* nisbah kelamin ikan gobi *Sicyopterus longifilis* berdasarkan tingkat kematangan gonad di Sungai Ummiding

Tingkat kemtangan goand	Jantan	Betina	Jumlah
I	565	758	1.323
II	44	124	168
III	2	17	19
IV	0	5	5
V	0	0	0
Total	611	904	1.515

X^2 hitung = 28,33

X^2 (0,05;5) = 3,84

Karena $X^2_{hitung} > X^2_{tabel}$ maka nisbah kelamin ikan gobi jantan dan betina di Sungai Ummiding berbeda nyata atau 1:1.

Lampiran 47. Uji *chi-square* nisbah kelamin ikan gobi *Sicyopterus longifilis* berdasarkan waktu pengambilan sampel di Sungai Matama

Bulan	Jantan	Betina	Jumlah
Juli	17	44	61
Agustus	36	68	104
September	48	57	105
Oktober	24	47	71
November	74	114	118
Desember	82	147	229
Total	281	476	758

X^2 hitung = 49,65

X^2 (0,05;5) = 3,84

Karena $X^2{}_{hitung} > X^2{}_{tabel}$ maka nisbah kelamin ikan gobi jantan dan betina di Sungai Matama berbeda nyata atau 1:1.

Lampiran 48. Uji *chi-square* nisbah kelamin ikan gobi *Sicyopterus longifilis* berdasarkan fase bulan gelap dan bulan terang di Sungai Matama

Bulan	Jantan	Betina	Jumlah
Bulan gelap	98	218	316
Bulan terang	183	259	442
Total	281	477	758

X^2 hitung = 50,68

X^2 (0,05;5) = 3,84

$X^2_{hitung} > X^2_{tabel}$ maka nisbah kelamin ikan gobi jantan dan betina berdasarkan fase bulan gelap dan bulan terang di Sungai Matama berbeda nyata atau 1:1.

Lampiran 49. Uji *chi-square* nisbah kelamin ikan gobi *Sicyopterus longifilis* berdasarkan tingkat kematangan gonad di Sungai Matama

Tingkat kemtangan goand	Jantan	Betina	Jumlah
I	246	370	616
II	23	62	85
III	12	23	35
IV	0	8	5
V	0	14	14
Total	281	477	758

X^2 hitung = 50,68

X^2 (0,05;5) = 11,07

Karena $X^2_{hitung} > X^2_{tabel}$ maka nisbah kelamin ikan gobi *Sicyopterus longifilis* berdasarkan tingkat kematangan gonad di Sungai Matama berbeda nyata atau 1:1.

Lampiran 50. Distribusi frekuensi panjang total dan tingkat kematangan gonad serta perhitungan pendugaan rata-rata panjang total pertama kali matang gonad ikan gobi *Sicyopterus longifilis* Betina di Sungai Ummiding

Panjang kelas	TK	log TK	TMG	MG	Total	pi	Pi	ln((1-pi)/pi)	ln((100-pi)/pi)
10-20	15	1,1761	1	0	1	0	0	0	0
20-30	25	1,3979	30	1	31	0,0000	0,0000	0,0000	0,0000
30-40	35	1,5441	230	0	230	0,0000	0,0000	0,0000	0,0000
40-50	45	1,6532	365	7	372	0,0188	20,6989	3,9540	1,3432
50-60	55	1,7404	191	9	200	0,0450	49,5000	3,0550	0,0200
60-70	65	1,8129	55	5	60	0,0833	91,6667	2,3979	-2,3979
70-80	75	1,8751	10	1	11	0,0909	100,0000	2,3026	0
Total			882	23	905	0,2381			

a =9,9430

b =0,1870

L_m =53,15

Ukuran pertama kali matang gonad ikan gobi *Sicyopterus longifilis* betina pada ukuran 53,15 mm di Sungai Ummiding

Lampiran 51. Distribusi frekuensi panjang total dan tingkat kematangan gonad serta perhitungan pendugaan rata-rata panjang total pertama kali matang gonad ikan gobi *Sicyopterus longifilis* jantan di Sungai Matama

Panjang kelas	**TK**	**log TK**	**TMG**	**MG**	**Total**	**pi**	**Pi**	**ln((1-pi)/pi)**	**ln((100-pi)/pi)**
20-30	25	1,3979	13	0	13	0	0,0000	0,0000	0,0000
30-40	35	1,5441	34	0	34	0,0000	0,0000	0,0000	0,0000
40-50	45	1,6532	49	0	49	0,0000	0,0000	0,0000	0,0000
50-60	55	1,7404	62	0	62	0,0000	0,0000	0,0000	0,0000
60-70	65	1,8129	46	1	47	0,0213	6,382979	3,8286	2,6856
70-80	75	1,8751	48	6	54	0,1111	33,33333	2,0794	0,6931
80-90	85	1,9294	14	4	19	0,2105	63,15789	1,3218	-0,539
90-100	95	1,9777	2	1	3	0,3333	100	0,0000	0,0000
Total			268	12	281	0,6762			

a =8,1410

b =0,0928

L_m =87,64

Ukuran pertama kali matang gonad ikan gobi *Sicyopterus longifilis* jantan pada ukuran 87,64 mm di Sungai Matama

Lampiran 52. Distribusi frekuensi panjang total dan tingkat kematangan gonad serta perhitungan pendugaan rata-rata panjang total pertama kali matang gonad ikan gobi *Sicyopterus longifilis* betina di Sungai Matama

Panjang kelas	TK	log TK	TMG	MG	Total	pi	Pi	ln((1-pi)/pi)	ln((100-pi)/pi)
10-20	15	1,1761	0	0	0	0	0	0	0
20-30	25	1,3979	14	0	14	0,0000	0,0000	0	0,0000
30-40	35	1,5441	70	0	70	0,0000	0,0000	0	0,0000
40-50	45	1,6532	96	3	99	0,0303	4,0404	3,465736	3,1676
50-60	55	1,7404	105	4	109	0,0367	4,8930	3,267666	2,9672
60-70	65	1,8129	72	5	77	0,0649	8,6580	2,667228	2,3561
70-80	75	1,8751	53	11	64	0,1719	22,9167	1,572397	1,2130
80-90	85	1,9294	18	10	28	0,3571	47,6190	0,587787	0,0953
90-100	95	1,9777	1	3	4	0,7500	100,0000	-1,098612	0,0000
100-110	105	2,0212	1	2	3	0,6667	100,0000	-0,693147	0,0000
110-120	115	2,0607	3	3	6	0,5000	75,0000	0	-1,0986
120-130	125	2,0969	1	2	3	0,6667	100,0000	-0,693147	0,0000
Total		21,2856			477	3,2443			

a =7,0940

b =0,0789

L_m =89,81

Ukuran pertama kali matang gonad ikan gobi *Sicyopterus longifilis* betina pada ukuran 89,81 mm di Sungai Matama

Lampiran 53. Koefisien hubungan panjang-bobot ikan gobi dan pola pertumbuhan dari berbagai lokasi

Species	Lokasi	Jenis kelamin	n	Parameter regresi			Tipe pertumbuhan	Pustaka
				A	b	R^2		
Acentrogobius caninus	Pantai Pabean Indonesia	G	152	0,000009	3,0356	0,8336	Isometrik	Syafei 2021
Acentrogobius cyanomos	Laguna Pulicat India	G	18	0,0199	2,693	0,930	Hipoalometrik	Nallathambi et al 2020
Acentrogobius dayi	Iran	J	52	0,010	2,860	0,939	Hipoalometrik	Sadeghi dan Esmaeili 2018
		B	67	0,010	2,897	0,934	Hipoalometrik	
		G	119	0,010	2,871	0,933	Hipoalometrik	
Acentrogobius moloanus	Sungai Red Vietnam	G	36	0,003	3,408	0,801	Hiperalometrik	Tran et al., 2021
Acentrogobius virdipunctatus	Sungai Red Vietnam	G	109	0,008	3,164	0,975	Hiperalometrik	Tran et al., 2021
Apocryptodon madurensis	Sungai Red Vietnam	G	188	0,005	3,266	0,888	Hiperalometrik	Tran et al., 2021
Arcygobius baliurus	Laguna Pulicat India	G	69	0,0144	2,847	0,880	Hipoalometrik	Nallathambi et al., 2020
Aulopareia unicolor	Sungai Red Vietnam	G	196	0,004	3,451	0,910	Hiperalometrik	Tran et al., 2021
Awaous jayakari	Muscat, Oman	J	5	0,0021	3,723	0,985	Hiperalometrik	Masoumi et al., 2021
		B	19	0,0052	3,282	0,970	Hiperalometrik	
Babka gymnotrachelus	Sungai Danube Serbia	G	40	0,009	3,05	0,83	Hiperalometrik	Krpo-Ćetković et al 2018
Bathygobius meggitti	Iran	J	79	0,013	2,961	0,967	Isometrik	Sadeghi & Esmaeili 2018
		B	122	0,010	3,120	0,951	Hiperalometrik	
		G	201	0,011	3,041	0,958	Isometrik	

Lampiran 53. Lanjutan

Species	Lokasi	Jenis Kelamin	n	Parameter regresi			Tipe Pertumbuhan	Pustaka
				A	b	R^2		
Chaenogobius gulosus	South-eastern Korea	J	178	0,0085	3,151	0,987	Hiperalometrik	Park & Jeong 2020
		B	152	0,0086	3,157	0,989	Hiperalometrik	
		G	330	0,0086	3,155	0,990	Hiperalometrik	
Cryptocentroides arabicus	Iran	J	155	0,011	2,704	0,957	Hipoalometrik	Sadeghi & Esmaeili 2018
		B	178	0,012	2,697	0,955	Hipoalometrik	
		G	333	0,011	2,702	0,950	Hipoalometrik	
Favonigobius reicheri	Laguna Pulicat India	G	44	0,0041	3,538	0,984	Hiperalometrik	Nallathambi et al, 2020
Glossogobius giuris	Mekong Delta, Vietnam	J	297	0,009	2,94	0,95	Isometrik	Phan et al., 2021
		B	363	0,007	3,06	0,93	Isometrik	
	Sungai Red Vietnam	G	270	0,009	2,909	0,966	Hipoalometrik	Tran et al., 2021
	Lake Lapompakka, Indonesia	J	153	0,0001	2,4667	0,9600	Hipoalometrik	Suwarni et al., 2022
		B	59	0,0001	2,3770	0,9175	Hipoalometrik	
Glossogobius olivaceus	Sungai Red Vietnam	J	334	0,005	3,276	0,93	Hiperalometrik	Ta et al., 2022
		B	345	0,005	3,300	0,95	Hiperalometrik	
		G	679	0,005	3,285	0,95	Hiperalometrik	
Glossogobius sirkumspelitus	Pabean Bay, Indonesia	G	29	0,0247	2,4919	0,7225	Hipoalometrik	Syafei et al., 2022
Glossogobius sparsipapilus	Sungai Bassac Vietnam	J	408	0,016	2,70	0,924	Hipoalometrik	Truong et al., 2021
		B	356	0,017	2,69	0,916	Hipoalometrik	

Lampiran 53. Lanjutan

Species	Lokasi	Jenis kelamin	n	Parameter regresi			Tipe pertumbuhan	Pustaka
				a	b	R^2		
Gobiopsis macrostoma	Sungai Red Vietnam	G	56	0,005	3,391	0,934	Hiperalometrik	Tran et al., 2021
Neogobius caspius	Southern Caspian Sea, Iran	G	102	0,032	2,47	0,831	Hipoalometrik	Nikmehr et al., 2021
Neogobius fluviatilis	Sungai Danube Serbia	G	37	0,004	3,24	0,93	Hiperalometrik	Krpo-Ćetković et al., 2018
Neogobius melanostomus	Sungai Danube Serbia	G	115	0,005	3,41	0,98	Hiperalometrik	Krpo-Ćetković et al., 2018
Neogobius pallasi	Southern Caspian Sea, Iran	G	178	0,003	3,45	0,902	Hiperalometrik	Nikmehr et al., 2021
Oxyurichthys microlepis	Laguna Pulicat India	G	370	0,0106	2,677	0,834	Hipoalometrik	Nallathambi et al., 2020
Oxyurichthys omanensis	Arabian Peninsula, Oman	G	23	0,0038	3,128	0,939	Hiperalometrik	Massoumi et al., 2023
Paracheaturichthys ocellatus	Mumbai, India	J	685	0,000015	2,9159	0,9790	Hipoalometrik	Panicker dan Katchi 2021
		B	489	0,000044	2,7216	0,9400	Hipoalometrik	
Ponticula bathybius	Southern Caspian Sea, Iran	C	165	0,003	3,32	0,988	Hiperalometrik	Nikmehr et al., 2021
Proteorhinus nasalis	The Anzali Wetldan, Iran	C	25	0,0027	3,04	0,97	Isometrik	Heidari et al., 2018
Rhinogobius similis	Pasikhan Stream, Iran	C	30	0,0131	2,99	0,95	Isometrik	Heidari et al., 2018

Lampiran 53. Lanjutan

Species	Lokasi	Jenis kelamin	n	Parameter regresi			Tipe pertumbuhan	Pustaka
				a	B	R^2		
Chaenogobius gulosus	South-eastern Korea	J	178	0,0085	3,151	0,987	Hiperalometrik	Park & Jeong 2020
	Bacme Resorvoir, Vietnam	C	195	0,005	3,257	0,826	Hiperalometrik	Ha et al., 2022
	Hoabinh Resorvoir, Vietnam	C	349	0,005	3,330	0,858	Hiperalometrik	
	Lak Lake, Vietnam	C	638	0,010	3,025	0,913	Isometrik	
	Sungai Red Vietnam	C	1326	0,007	3,131	0,921	Hiperalometrik	
Sicyopterus longifilis	Kalumpang, Indonesia	C	13	0,000014	3,0037	0,9606	Isometrik	Muthiadin et al., 2020
	Bonehau, Indonesia	C	15	0,000070	2,6107	0,8948	Hipoalometrik	
	Arassi, Indonesia	C	17	0,000023	2,8884	0,8179	Hipoalometrik	
	Kalonding, Indonesia	C	17	0,000149	2,4685	0,8551	Hipoalometrik	
Sicyopus zosterophorum	Sungai Bohi Indonesia	M	34	0,000055	2,607	0,8281	Hipoalometrik	Gani et al., 2020
		F	21	0,003	1,546	0,2401	Hipoalometrik	
Yongeichthys criniger	Laguna Pulicat India	C	65	0,0074	3,235	0,942	Hiperalometrik	Nallathambi et al., 2020

Keterangan: n = Jumlah ikan (ekor), B= betina, J = jantan, G = Gabungan (jantan dan betina), a = intercept, b = slope (*regression coefficient*), R^2 = *coefficient of determinat*

Lampiran 54. Faktor kondisi ikan gobi dari berbagai lokasi

Species	Lokasi	Jenis Kelamin	Faktor kondisi	Pustaka
Acentrogobius caninus	Teluk Pabean, Indonesia	G	0,798-1,322	Syafei 2021
Babka gymnotrachelus	Sungai Danube, Serbia	G	0,97	Krpo-Ćetković et al., 2018
Glossogobius giuris	Delta Mekong, Vietnam	J	0,99±0,01	Phan et al., 2021
		B	1,02±0,01	
	DanauLapompakka, Indonesia	J	0,6369-1,6753	Suwarni et al., 2022
		B	0,7605-1,2513	
Glossogobius sirkumspelitus	Teluk Pabean, Indonesia	G	1,074	Syafei et al., 2022
Glossogobius sparsipapilus	Sungai Bassac, Vietnam	J	0,97±0,01	Truong et al., 2021
		B	0,98±0,01	
		G	0,89-1,10	
Neogobius fluviatilis	Sungai Danube, Serbia	G	0,67	Krpo-Ćetković et al., 2018
Neogobius melanostomus	Sungai Danube, Serbia	G	1,18	Krpo-Ćetković et al., 2018
Sicyopterus longifilis	Kalumpang, Indonesia	G	1,997	Muthiadin et al., 2020
	Bonehau, Indonesia	G	1,974	
	Arassi, Indonesia	G	2,134	
	Kalonding, Indonesia	G	2,282	
Sicyopus zosterophorum	Sungai Bohi, Indonesia	J	0,76-1,41	Gani et al., 2020
		B	0,64-1,43	

Lampiran 55. Nisbah kelamin ikan gobi dari berbagai lokasi

Spesies	Nisbah kelamin (Jantan dan betina)	Lokasi	Pustaka
Macrones gulio	1.0:1,1	Indramayu	Johansen et al., 2021
Dermogenys orientalis	1,00:1,63	Sungai Pattunuang, Kawasan Karst Maros	Wardhani et al., 2022
Glossogobius matanensis	1:1	Danau Towuti, Sulawesi Selatan	Sulistiono et al., 2007
Glossogobius giuris	1:1,1	Perairan Ujung bangkah	Sulistiono, 2012
Glossogobius giuris	1:1	Danau Temmpe	Eragradhini, 2014
Syciopterus lagocephalus	1:0,54 (tidak seimbang)	Sungai Cibareno	Ambarwati et al., 2023
Neogobius caspius	1:1	Pantai Noor	Mahdipour et al., 2020
Mudskippers	3.20:1	Muara sungai Musi	Ridho et al., 2021

Lampiran 56. Ukuran pertama kali matang gonad ikan gobi dari berbagai lokasi

Spesies	Ukuran pertama kali matang gonad		Lokasi	Pustaka
	Jantan	Betina		
Glossogobius giuris	221 mm	209 mm	Danau Tempe	Eragradhini, 2014
Syciopterus lagocephalus	87,5 mm	78,5 mm	Sungai Cibareno	Ambarwati et al., 2023
Syciopterus lagocephalus	-	43,6 hingga 55 mm	Sungai Marsouins	Teichert et al., 2014
Neogobius caspius	100-110 mm	90-100 mm	Pantai Noor	Mahdipour et al., 2020
Glossogobius matanensis	36,22 cm	31,43 cm	Danau Towuti	Mamangkey dan Nasution, 2012