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LAMPIRAN

Lampiran 1. Data Penelitian Hasil Tangkapan Cakalang (*Katsuwonus pelamis*) pada kapal 1 (Bintang Samudera)

Trip	Tanggal	Letak / Posisi		Jumlah hasil tangkapan (ekor)	umpan (ember)	lama pemancingan (menit)	Suhu (°C)	klorofil-a
		Bujur Timur	Lintang Selatan					
1	23/12/2012	120° 43' 07.0"	03° 29' 27.3"	45	3	17	29.9814	0.2030
		120° 40' 42.5"	03° 18' 43.4"	-		8	31.5692	0.1182
2	26/12/2011	120° 39' 32.0"	03° 20' 28.3"	28	4	14	31.4946	0.1387
		120° 37' 29.1"	03° 18' 35.4"	-		12	31.9472	0.1646
		120° 42' 07.0"	03° 29' 27.3"	77		19	29.7045	0.2030
3	27/12/2011	120° 37' 53.4"	03° 27' 48.7"	21	5	15	30.4224	0.2030
		120° 40' 43.9"	03° 32' 28.0"	43		14	29.9713	0.1350
4	29/12/2011	120° 38' 43.5"	03° 31' 37.2"	85	2	23	29.668	0.1303
		120° 36' 53.4"	03° 27' 48.7"	-		7	30.8112	0.1476
5	31/12/2011	120° 37' 38.0"	03° 26' 15.1"	23	2	9	31.2616	0.1476
		120° 39' 02.4"	03° 20' 49.3"	-		8	31.4946	0.1387
6	18/01/2012	-	-	-	-	-		
7	21/01/2012	-	-	-	-	-		
8	20/02/2012	120° 35' 16.9"	03° 29' 45.4"	38	4	17	31.9206	0.1387
		120° 42' 05.5"	03° 33' 20.5"	125		22	31.5456	0.1353
		120° 40' 42.5"	03° 31' 43.4"	24		15	31.968	0.1353
9	21/02/2012	120° 37' 44.2"	03° 27' 54.6"	-	4	14	31.6187	0.1387
		120° 44' 43.5"	03° 35' 37.2"	213		33	31.1009	0.1257
		120° 40' 53.4"	03° 32' 48.7"	83		24	31.5456	0.1353
		120° 35' 43.9"	03° 29' 28.0"	-		10	31.9206	0.1387
10	22/02/2012	120° 39' 32.4"	03° 20' 20.4"	36	2	15	31.4932	0.1455
11	24/02/2012	120° 39' 22.5"	03° 32' 47.1"	27	4	11	31.5943	0.1155
		120° 40' 32.0"	03° 17' 28.3"	-		8	31.826	0.1434
		120° 47' 21.8"	03° 35' 27.3"	216		26	31.4459	0.1293
12	25/02/2012	120° 45' 47.4"	03° 49' 43.1"	335	3	38	31.3605	0.1096
		120° 42' 08.7"	03° 34' 46.6"	110		22	31.5456	0.1257
13	26/02/2012	120° 42' 34.0"	03° 39' 17.3"	164	2	27	31.7227	0.1257
		120° 36' 34.0"	03° 31' 71.5"	108		21	31.1282	0.1155
14	27/02/2012	120° 40' 45.4"	03° 32' 70.3"	91	4	18	31.5456	0.1353
		120° 35' 52.1"	03° 27' 47.0"	-		10	31.9206	0.1387
		120° 42' 02.9"	03° 35' 25.6"	110		23	31.7478	0.1257
15	29/02/2012	120° 43' 12.0"	03° 35' 37.3"	104	4	17	31.6209	0.1257
		120° 39' 72.6"	03° 20' 25.7"	-		8	32.5123	0.1358
16	01/03/2012	120° 36' 42.4"	03° 29' 30.6"	39	4	13	31.22	0.1287

		120° 43' 12.7"	03° 33' 07.0"	111		22	30.6814	0.1526
17	02/03/2012	120° 44' 58.3"	03° 36' 25.8"	203	5	34	30.705	0.1175
		120° 38' 52.1"	03° 31' 40.3"	74		18	29.9419	0.1477
18	03/03/2012	120° 38' 52.8"	03° 18' 47.4"	-	5	10	31.6503	0.1420
		120° 40' 72.0"	03° 31' 25.3"	81		19	29.9713	0.1526
		120° 45' 12.5"	03° 49' 37.3"	262		36	30.7351	0.1008
		120° 42' 32.0"	03° 33' 29.2"	140		23	29.7605	0.1526
		120° 35' 47.3"	03° 20' 37.9"	-		8	31.3311	0.1524
19	05/03/2012	120° 42' 32.8"	03° 32' 27.9"	128	4	16	30.2546	0.1526
		120° 45' 02.7"	03° 35' 27.5"	200		27	30.2295	0.0843
20	07/03/2012	120° 38' 12.8"	03° 34' 25.3"	78	5	15	29.668	0.1477
		120° 47' 24.9"	03° 38' 17.2"	209		31	29.8422	0.1787
		120° 39' 20.0"	03° 33' 23.3"	102		22	29.668	0.1477
21	08/03/2012	120° 45' 32.0"	03° 49' 27.6"	358	3	39	30.7351	0.1008
		120° 37' 52.8"	03° 27' 51.4"	57		24	31.2494	0.1287
22	09/03/2012	120° 35' 02.9"	03° 27' 47.2"	-	6	14	30.6742	0.1287
		120° 37' 12.4"	03° 32' 09.0"	28		7	30.345	0.1287
		120° 42' 22.2"	03° 39' 37.3"	208		32	29.5869	0.1175
		120° 45' 38.1"	03° 40' 17.9"	231		38	29.9176	0.1063
		120° 39' 02.9"	03° 32' 07.5"	98		18	29.8659	0.1477
23	10/03/2012	120° 38' 32.0"	03° 18' 19.5"	-	5	14	30.7531	0.1420
		120° 43' 12.0"	03° 32' 37.3"	127		20	30.6835	0.1526
24	11/03/2012	120° 40' 21.0"	03° 29' 07.0"	113	5	21	30.7645	0.1344
		120° 44' 32.0"	03° 40' 28.3"	225		39	30.8298	0.1361
		120° 38' 08.0"	03° 34' 27.3"	-		6	30.9202	0.1477
25	12/03/2012	120° 45' 22.2"	03° 37' 19.3"	218	3	30	30.7818	0.0843
		120° 39' 38.1"	03° 31' 17.9"	56		19	30.8183	0.1477
26	14/03/2012	120° 43' 08.0"	03° 48' 27.3"	143	4	25	31.7249	0.1248
		120° 47' 96.0"	03° 53' 71.3"	362		37	31.2651	0.1045
27	17/03/2012	120° 43' 52.1"	03° 33' 24.6"	92	6	20	29.7605	0.1526
		120° 44' 21.0"	03° 56' 07.0"	338		45	29.9577	0.1009
		120° 36' 38.0"	03° 29' 15.1"	-		11	30.8112	0.1287
		120° 39' 02.4"	03° 35' 49.3"	198		28	29.7153	0.1787
28	18/03/2012	120° 39' 22.5"	03° 31' 47.1"	67	7	19	29.8659	0.1477
		120° 42' 32.0"	03° 29' 28.3"	18		12	29.7045	0.1344
		120° 47' 21.8"	03° 53' 27.3"	211		30	29.3897	0.1045
29	20/03/2012	120° 42' 47.4"	03° 33' 26.1"	110	5	22	29.1078	0.1526
		120° 45' 08.7"	03° 44' 43.6"	435		39	30.2324	0.1063
30	21/03/2012	120° 44' 96.0"	03° 49' 71.3"	308	4	32	30.5766	0.1045
		120° 33' 34.0"	03° 35' 17.5"	164		27	30.2338	0.1483
				<b>7898</b>	<b>114</b>	<b>1487</b>		

Lampiran 2. Data Penelitian Hasil Tangkapan Cakalang (*Katsuwonus pelamis*) pada kapal 2  
(Sumber Bahari)

Trip	Tanggal	Letak / Posisi		Jumlah hasil tangkapan (ekor)	umpan (ember)	lama pemancingan (menit)	Suhu (°C)	klorofil
		Bujur Timur	Lintang Selatan					
1	21/12/2011	120° 38' 43.5"	03° 29' 37.2"	-	2	7	30.4224	0.1476
		120° 40' 53.4"	03° 33' 48.7"	38		14	31.1078	0.1350
2	22/12/2011	120° 42' 43.9"	03° 27' 28.0"	73	3	15	29.5647	0.2030
		120° 39' 32.4"	03° 20' 20.4"	18		10	31.4946	0.1387
3	24/12/2011	120° 37' 22.5"	03° 33' 47.1"	51	3	13	29.5869	0.1303
		120° 40' 32.0"	03° 29' 28.3"	21		11	30.7045	0.2030
		120° 38' 21.8"	03° 18' 27.3"	-		9	31.6503	0.1646
4	27/12/2012	120° 37' 96.0"	03° 29' 71.3"	94	5	19	29.8659	0.1303
		120° 36' 34.0"	03° 31' 17.5"	75		16	30.345	0.1303
5	30/12/2011	120° 38' 31.0"	03° 32' 09.3"	51	4	15	30.8659	0.1303
		120° 45' 45.4"	03° 24' 70.3"	73		17	30.3923	0.2515
		120° 42' 52.1"	03° 18' 47.0"	-		8	31.6273	0.1182
		120° 42' 02.9"	03° 20' 25.6"	22		19	31.2601	0.1985
6	31/12/2012	120° 42' 12.0"	03° 33' 37.3"	16	4	12	30.1078	0.1350
		120° 39' 72.6"	03° 17' 25.7"	-		7	31.8253	0.1182
		120° 43' 42.4"	03° 35' 30.6"	158		23	29.9599	0.1188
7	15/01/2012	-	-	-	-	-	-	-
8	19/02/2012	120° 43' 58.3"	03° 35' 25.8"	107	5	20	30.6209	0.1257
		120° 35' 52.1"	03° 31' 40.3"	-		9	31.1282	0.1155
		120° 43' 72.0"	03° 33' 27.5"	55		13	31.1009	0.1353
9	20/02/2012	120° 42' 52.8"	03° 53' 47.4"	113	3	25	29.8747	0.1085
		120° 39' 12.5"	03° 31' 37.3"	-		8	31.4186	0.1155
10	21/02/2012	120° 36' 32.0"	03° 35' 29.2"	87	4	18	30.5771	0.1166
		120° 38' 47.3"	03° 29' 37.9"	19		12	31.6187	0.1387
11	23/02/2012	120° 37' 32.8"	03° 32' 27.9"	48	6	12	31.4186	0.1155
		120° 45' 17.0"	03° 35' 45.3"	374		35	29.4459	0.1293
		120° 39' 02.7"	03° 27' 27.5"	-		7	32.4621	0.1387
12	24/02/2012	120° 37' 20.6"	03° 17' 48.8"	-	3	8	31.8812	0.1383
		120° 40' 26.6"	03° 32' 42.7"	83		21	31.5456	0.1353
13	26/02/2012	120° 45' 38.0"	03° 49' 15.1"	503	5	38	30.3605	0.1096
		120° 35' 02.4"	03° 56' 49.3"	-		13	31.2264	0.0980
14	27/02/2012	120° 38' 12.8"	03° 31' 25.3"	69	5	16	31.4186	0.1155
		120° 42' 24.9"	03° 34' 17.2"	135		20	30.5456	0.1353
15	28/02/2012	120° 38' 20.0"	03° 25' 23.3"	-	6	10	31.4621	0.1387
		120° 47' 32.0"	03° 44' 27.6"	309		42	30.7779	0.1099
		120° 44' 52.8"	03° 38' 51.4"	213		34	30.7227	0.1257
		120° 42' 12.4"	03° 31' 09.0"	46		16	31.968	0.1353

16	29/02/2012	120° 36' 22.2"	03° 32' 37.3"	89	5	23	31.2945	0.1155
		120° 39' 38.1"	03° 34' 17.9"	174		31	30.5943	0.1155
17	02/03/2012	120° 37' 02.9"	03° 20' 07.5"	22	4	14	30.1069	0.0887
		120° 42' 32.0"	03° 32' 19.5"	153		27	30.0882	0.0911
		120° 39' 12.0"	03° 18' 37.3"	16		12	30.2873	0.0891
18	03/03/2012	120° 44' 21.0"	03° 39' 07.0"	202	5	24	29.9649	0.1011
		120° 38' 32.0"	03° 26' 28.3"	28		14	31.2616	0.0878
19	04/03/2012	120° 35' 08.0"	03° 28' 27.3"	-	4	11	29.3149	0.0878
		120° 46' 96.0"	03° 39' 71.3"	221		28	30.6400	0.0723
20	06/03/2012	120° 47' 45.4"	03° 35' 70.3"	246	6	23	29.2295	0.0843
		120° 43' 52.1"	03° 33' 47.0"	113		20	30.7605	0.1526
21	07/03/2012	120° 44' 02.9"	03° 53' 25.6"	495	5	36	29.7024	0.1163
		120° 35' 12.0"	03° 20' 37.3"	-		10	31.3311	0.1524
22	08/03/2012	120° 43' 72.6"	03° 35' 25.7"	139	7	21	29.9599	0.1175
		120° 45' 42.4"	03° 40' 30.6"	375		29	29.0639	0.1063
		120° 44' 12.7"	03° 56' 07.0"	130		18	30.9577	0.1009
23	09/03/2012	120° 47' 58.3"	03° 39' 25.8"	256	5	26	29.8422	0.0843
		120° 38' 52.1"	03° 33' 40.3"	30		8	30.6680	0.1477
24	11/03/2012	120° 42' 72.0"	03° 33' 27.5"	164	4	22	29.1078	0.1526
		120° 36' 42.4"	03° 25' 30.6"	-		14	31.2494	0.1287
25	13/03/2012	120° 44' 12.7"	03° 31' 07.0"	108	8	17	30.6835	0.1526
		120° 45' 58.3"	03° 39' 25.8"	504		36	30.1848	0.0843
		120° 47' 52.1"	03° 53' 40.3"	307		27	30.2651	0.1045
		120° 43' 72.0"	03° 33' 27.5"	67		13	31.941	0.1526
26	14/03/2012	120° 43' 21.0"	03° 30' 07.0"	83	3	21	30.6835	0.1526
		120° 40' 08.0"	03° 34' 27.3"	75		25	30.9611	0.1526
27	18/03/2012	120° 45' 32.0"	03° 38' 19.5"	483	6	38	29.0538	0.0843
		120° 44' 12.0"	03° 35' 37.3"	208		28	30.9599	0.1175
28	19/03/2012	120° 47' 21.0"	03° 49' 07.0"	202	5	28	30.7351	0.1008
		120° 40' 32.0"	03° 32' 28.3"	71		16	30.8659	0.1526
29	21/03/2012	120° 45' 08.0"	03° 49' 27.3"	327	6	34	29.7350	0.1008
		120° 39' 96.0"	03° 34' 71.3"	164		18	30.6680	0.1175
30	22/02/2012	120° 44' 37.6"	03° 35' 02.3"	201	5	27	29.9599	0.1175
		120° 38' 52.1"	03° 23' 24.6"	-		9	30.9905	0.1524
		120° 40' 21.0"	03° 31' 07.0"	80		21	30.9713	0.1526
				<b>8584</b>	<b>136</b>	<b>1399</b>		

Lampiran 3. Hasil uji wilcoxon Untuk Menentukan Perbedaan Produktivitas penangkapan *pole and line* berdasarkan waktu pemancingan.

### A. pemancingan 1

**Descriptive Statistics**

	N	Mean	Std. Deviation	Minimum	Maximum
P1.K1	28	4,1257	2,74840	,00	9,63
P1.K2	28	5,2379	3,53167	,00	11,50

**Ranks**

		N	Mean Rank	Sum of Ranks
P1.K2 - P1.K1	Negative Ranks	10(a)	14,20	142,00
	Positive Ranks	18(b)	14,67	264,00
	Ties	0(c)		
	Total	28		

a P1.K2 < P1.K1

b P1.K2 > P1.K1

c P1.K2 = P1.K1

**Test Statistics(b)**

	P1.K2 - P1.K1
Z	-1,389(a)
Asymp. Sig. (2-tailed)	,165

a Based on negative ranks.

b Wilcoxon Signed Ranks Test

### B. pemancingan 2

**Descriptive Statistics**

	N	Mean	Std. Deviation	Minimum	Maximum
P2.K1	27	4,0878	3,18571	,00	11,15
P2.K2	28	4,3189	3,65217	,00	12,93

**Ranks**

		N	Mean Rank	Sum of Ranks
P2.K2 - P2.K1	Negative Ranks	10(a)	15,10	151,00
	Positive Ranks	16(b)	12,50	200,00
	Ties	1(c)		
	Total	27		

a P2.K2 < P2.K1

b P2.K2 > P2.K1

c P2.K2 = P2.K1

**Test Statistics(b)**

	P2.K2 - P2.K1
Z	-,622(a)
Asymp. Sig. (2-tailed)	,534

a Based on negative ranks.

b Wilcoxon Signed Ranks Test



### C. pemancingan 3

**Descriptive Statistics**

	N	Mean	Std. Deviation	Minimum	Maximum
P3.K1	11	4,3318	2,87448	,00	8,31
P3.K2	9	4,3233	4,25252	,00	11,37

**Ranks**

		N	Mean Rank	Sum of Ranks
P3.K2 - P3.K1	Negative Ranks	1(a)	3,00	3,00
	Positive Ranks	2(b)	1,50	3,00
	Ties	0(c)		
	Total	3		

a P3.K2 < P3.K1

b P3.K2 > P3.K1

c P3.K2 = P3.K1

**Test Statistics(b)**

	P3.K2 - P3.K1
Z	,000(a)
Asymp. Sig. (2-tailed)	1,000

a The sum of negative ranks equals the sum of positive ranks.

b Wilcoxon Signed Ranks Test

### D. Total Pemancingan 1, 2 & 3 (Kapal 1 dan kapal 2)

**Ranks**

		N	Mean Rank	Sum of Ranks
Pemancingan.Kapal.2 - Pemancingan.Kapal.1	Negative Ranks	14(a)	12,79	179,00
	Positive Ranks	14(b)	16,21	227,00
	Ties	0(c)		
	Total	28		

a Pemancingan.Kapal.2 < Pemancingan.Kapal.1

b Pemancingan.Kapal.2 > Pemancingan.Kapal.1

c Pemancingan.Kapal.2 = Pemancingan.Kapal.1

**Test Statistics(b)**

	Pemancingan.K apal.2 - Pemancingan.K apal.1
Z	-,547(a)
Asymp. Sig. (2-tailed)	,585

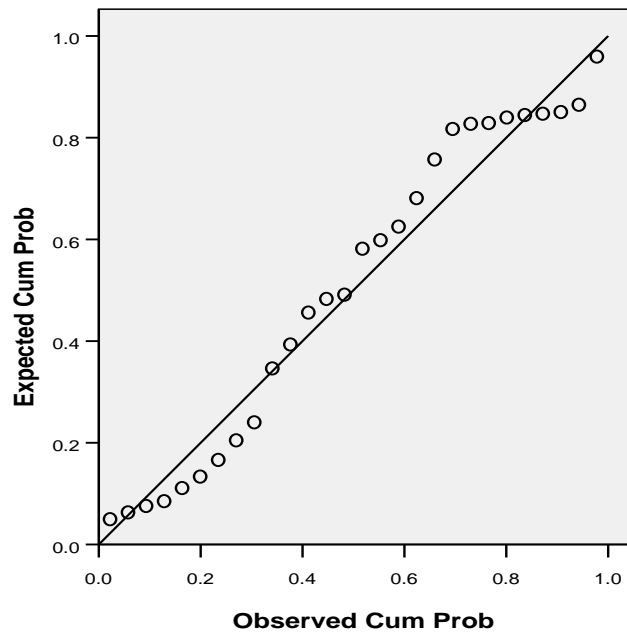
a Based on negative ranks.

b Wilcoxon Signed Ranks Test

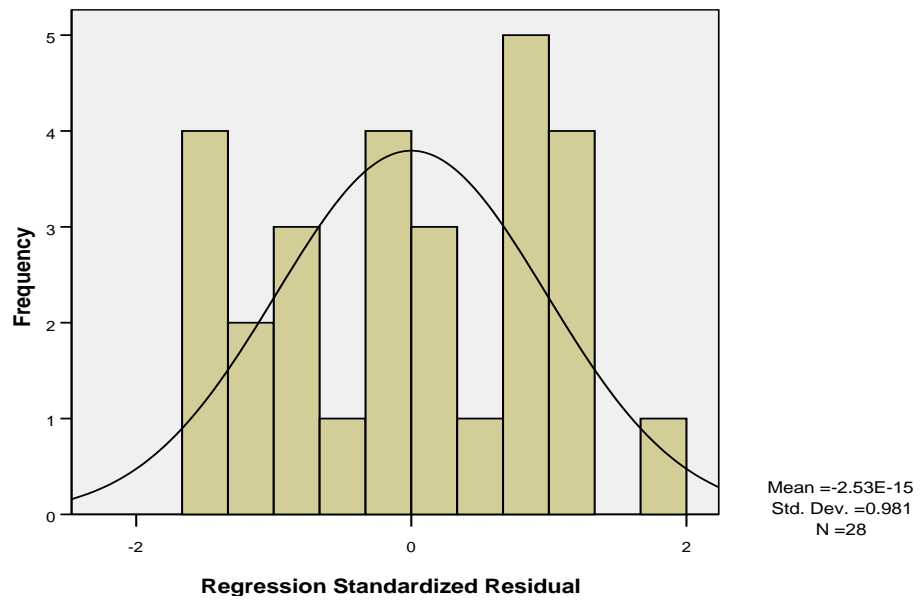
Lampiran 4. Grafik Uji Normalitas kapal 1

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
produktivitas	.094	58	0.200(*)	.910	58	0.000

**Dependent Variable: Hasil Tangkapan**



**Dependent Variable: Hasil Tangkapan**



Lampiran 5. Hasil Analisis Regresi Berganda Hubungan Antara Lama Waktu Pemancingan, Jumlah Umpan dan suhu Terhadap Hasil Tangkapan Ikan Cakalang pada kapal 1.

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Klorofil.a, Umpan, Suhu, Lama.Pemancingan <sup>a</sup>		. Enter

a. All requested variables entered.

b. Dependent Variable: Produktivitas

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.865 <sup>a</sup>	.748	.704	2.3499018	1.478

a. Predictors: (Constant), Klorofil.a, Umpan, Suhu, Lama.Pemancingan

b. Dependent Variable: Produktivitas

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	376.850	4	94.213	17.061	.000 <sup>a</sup>
	Residual	127.007	23	5.522		
	Total	503.857	27			

a. Predictors: (Constant), Klorofil.a, Umpan, Suhu, Lama.Pemancingan

b. Dependent Variable: Produktivitas

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	17.784	25.276		.704	.489
	Lama.Pemancingan	.165	.038	.642	4.295	.000
	Umpan	.048	.516	.014	.093	.926
	Suhu	-.908	.782	-.147	-1.161	.258
	Klorofil.a	88.218	37.007	.306	2.384	.026

a. Dependent Variable: Produktivitas

**Residuals Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.404649	1.562173E1	9.928571E0	3.7359627	28
Residual	-3.6217299E0	4.3874025E0	-2.9024402E-15	2.1688611	28
Std. Predicted Value	-2.014	1.524	.000	1.000	28
Std. Residual	-1.541	1.867	.000	.923	28

a. Dependent Variable: Produktivitas

Lampiran 6. Grafik Uji Normalitas kapal 2

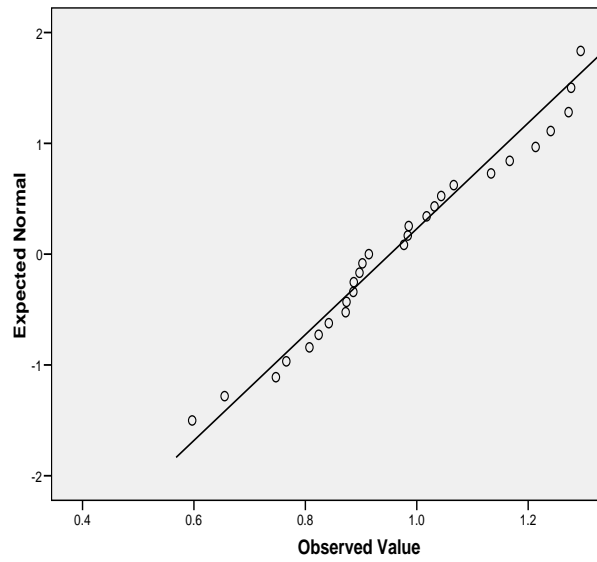
Tests of Normality

	Kolmogorov-Smirnov(a)			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
produktivitas	,089	29	,200(*)	,969	29	,546

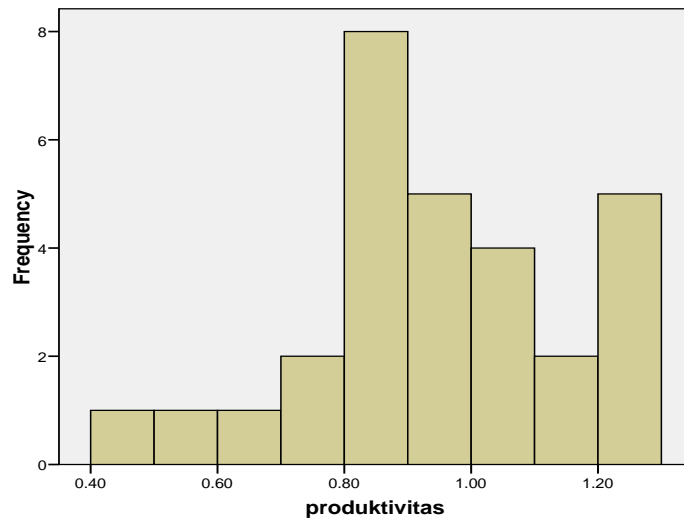
\* This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Normal Q-Q Plot of produktivitas



Histogram



Mean =  
Std. Dev. =  
N = 2

Lampiran 7. Hasil Analisis Regresi Berganda Hubungan Antara Lama Waktu Pemancingan, Jumlah Umpan dan suhu Terhadap Hasil Tangkapan Ikan Cakalang pada kapal 2.

**Variables Entered/Removed<sup>b</sup>**

Model	Variables Entered	Variables Removed	Method
1	Klorofil.a, Suhu, Lama.Pemancingan, Umpan <sup>a</sup>		Enter

a. All requested variables entered.

b. Dependent Variable: Produktivitas

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.879 <sup>a</sup>	.773	.735	2.4009450	1.729

a. Predictors: (Constant), Klorofil.a, Suhu, Lama.Pemancingan, Umpan

b. Dependent Variable: Produktivitas

**ANOVA<sup>b</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	470.617	4	117.654	20.410	.000 <sup>a</sup>
	Residual	138.349	24	5.765		
	Total	608.966	28			

a. Predictors: (Constant), Klorofil.a, Suhu, Lama.Pemancingan, Umpan

b. Dependent Variable: Produktivitas

**Coefficients<sup>a</sup>**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	100.012	36.205		2.762	.011
	Lama.Pemancingan	-.025	.050	-.084	-.502	.620
	Umpan	2.882	.596	.828	4.837	.000
	Suhu	-3.403	1.197	-.308	-2.844	.009
	Klorofil.a	14.324	24.695	.067	.580	.567

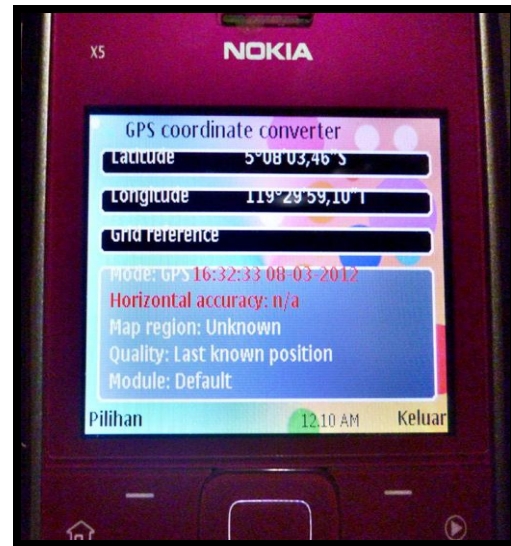
a. Dependent Variable: Produktivitas

**Residuals Statistics<sup>a</sup>**

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.968416	1.907525E1	1.003448E1	4.0997240	29
Residual	-5.0410595E0	4.2078238E0	.0000000	2.2228432	29
Std. Predicted Value	-1.967	2.205	.000	1.000	29
Std. Residual	-2.100	1.753	.000	.926	29

a. Dependent Variable: Produktivitas

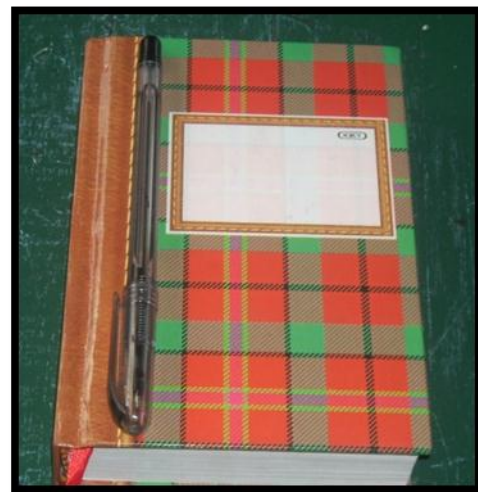
Lampiran 8. Gambar Alat – Alat yang Digunakan Selama Penelitian



1. GPS



2. Stopwatch



3. Alat Tulis

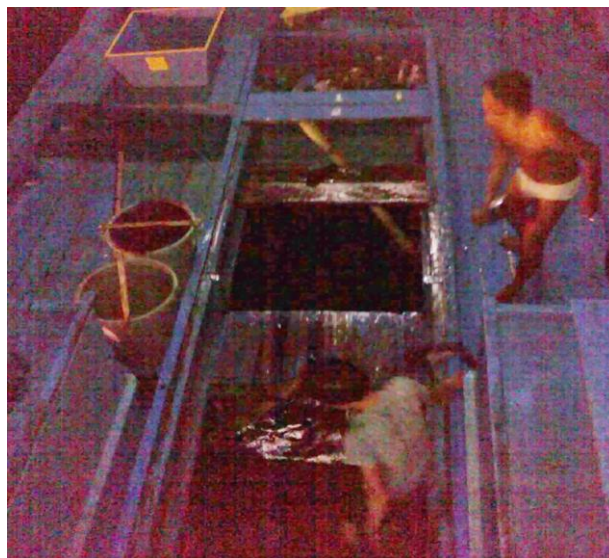
Lampiran 9. Aktivitas Penangkapan *Pole and Line*



**1. Aktivitas Pembersihan Dek Kapal**



**2. Aktivitas Makan**



**3. Aktivitas Pengisian Air Laut ke Palka Umpan**



**4. Aktivitas Pengambilan Umpan dari Bagan**



**5. Aktivitas Pemantauan daerah *fishing ground***



**6. Aktivitas Pelemparan/Penyebaran Umpan**





**7. Aktivitas Pemancingan**



**8. Hasil Tangkapan Ikan Cakalang.**