

Lampiran 6. Perhitungan uji t tidak berpasangan *service per conception*

No	S/C Sapi Peranakan Ongole (Y1)	S/C Sapi Peranakan Limousin (Y2)	(Y1- \bar{Y} 1)^2	(Y2- \bar{Y} 2)^2
1	1	1	0,3844	0,6084
2	1	2	0,3844	0,0484
3	1	3	0,3844	1,4884
4	2	3	0,1444	1,4884
5	2	1	0,1444	0,6084
6	1	2	0,3844	0,0484
7	1	1	0,3844	0,6084
8	1	2	0,3844	0,0484
9	1	3	0,3844	1,4884
10	2	1	0,1444	0,6084
11	3	1	1,9044	0,6084
12	1	3	0,3844	1,4884
13	3	2	1,9044	0,0484
14	1	2	0,3844	0,0484
15	1	1	0,3844	0,6084
16	1	1	0,3844	0,6084
17	1	3	0,1444	0,0484
18	3	1	0,3844	0,6084
19	3	3	0,3844	0,0484
20	3	2	1,9044	0,0484
21	1	1	0,3844	0,6084
22	1	1	0,3844	0,6084
23	1	2	0,3844	0,0484
24	3	2	1,9044	0,0484
25	1	2	0,3844	0,0484
26	2	1	0,1444	0,6084

27	1	2	0,3844	0,0484
28	3	3	1,9044	1,4884
29	2	1	0,1444	0,6084
30	1	2	0,3844	0,0484
31	1	1	0,3844	0,6084
32	3	2	1,9044	0,0484
33	1	3	0,3844	1,4884
34	3	2	1,9044	0,0484
35	1	1	0,3844	0,6084
36	1	3	0,3844	1,4884
37	2	1	0,1444	0,6084
38	1	2	0,3844	0,0484
39	2	3	0,1444	1,4884
40	1	2	0,3844	0,0484
41	1	1	0,3844	0,6084
42	2	2	0,3844	1,4884
43	1	1	1,9044	0,6084
44	1	2	1,9044	1,4884
45	3	2	1,9044	0,0484
46	2	1	0,1444	0,6084
47	1	2	0,3844	0,0484
48	2	1	0,1444	0,6084
49	2	1	0,1444	0,6084
50	1	1	0,3844	0,6084
Jumlah	81	89	31,78	28,58
Rataan	1,62	1,78	0,6356	0,5716
N	50	50		
SD	0,80	0,76		

Perhitungan S/C pada induk sapi Peranakan Ongole dan sapi Peranakan Limousin dengan uji-t tidak berpasangan :

$$\sum_{i=1}^n Y_1 = 81$$

$$\bar{Y}_1 = (\sum_{i=1}^n x_1) / n = 81/50 = 1,62$$

$$S_1 = \sqrt{\sum_{i=1}^n (Y_1 - \bar{Y}_1)^2 / (n-1)} = \sqrt{31,78 / 49} = 0,6485$$

$$S_1^2 = 0,4205$$

$$\sum_{i=1}^n Y_2 = 89$$

$$\bar{Y}_2 = (\sum_{i=1}^n x_2) / n = 89/50 = 1,78$$

$$S_2 = \sqrt{\sum_{i=1}^n (Y_2 - \bar{Y}_2)^2 / (n-1)} = \sqrt{28,58 / 49} = 0,5832$$

$$S_2^2 = 0,3401$$

$$\begin{aligned} S_{\text{gabungan}}^2 &= \{(n_1 - 1) s_1^2 + (n_2 - 1) s_2^2\} / \{(n_1 - 1) + (n_2 - 1)\} \\ &= \{(50-1) 0,4205 + (50-1) 0,3401\} / \{(50-1) + (50-1)\} \\ &= (20,6045 + 16,6649) / 98 \\ &= 0,3803 \end{aligned}$$

$$t_{\text{hitung}} = \left\{ \left| \bar{Y}_1 - \bar{Y}_2 \right| \right\} / \left\{ \sqrt{s^2 (1/n_1 + 1/n_2)} \right\}$$

$$\begin{aligned}
&= \{ | 1,62 - 1,78 | \} / \{ \sqrt{0,3803 (1/50 + 1/50)} \\
&= 0,16 / \sqrt{0,0152} \\
&= 0,16 / 0,1232 \\
&= 1,2987
\end{aligned}$$

$$\begin{aligned}
Db &= (n_1 + n_2) - 2 \\
&= (50 + 50) - 2 \\
&= 98
\end{aligned}$$

$$t_{0,05} = 1,984$$

$$t_{0,01} = 2,627$$

Kesimpulan :

Dari perhitungan diatas di ketahui bahwa t hitung = 1,2987 < $t_{0,05} = 1,984$ jadi dapat disimpulkan bahwa tidak terdapat perbedaan nyata S/C sapi Peranakan Ongole dengan sapi Peranakan Limousin di Kecamatan Kotaanayar Kabupaten Probolinggo.

Lampiran 7. Perhitungan uji t tidak berpasangan *days open*

No	DO Sapi Peranakan Ongole (Y1) (hari)	DO Sapi Peranakan Limousin (Y2) (hari)	(Y1- \bar{Y}) ²	(Y2- \bar{Y}) ²
1	117	97	3,5344	703,3104
2	87	131	1016,334	55,9504
3	120	154	1,2544	929,0304
4	135	157	259,8544	1120,91
5	106	117	165,8944	42,5104
6	96	144	523,4944	419,4304
7	84	103	1216,614	421,0704
8	97	121	478,7344	6,3504
9	100	158	356,4544	1188,87
10	127	112	65,9344	132,7104
11	133	115	199,3744	72,5904
12	130	167	123,6544	1890,51
13	171	160	2716,494	1330,79
14	103	115	252,1744	72,5904
15	111	119	62,0944	20,4304
16	94	108	395,2144	931,4704
17	74	145	102,4144	6,1504
18	142	80	221,4144	463,1104
19	148	136	15,0544	2,3104
20	160	143	3377,934	12,1104
21	104	108	221,4144	240,8704
22	100	101	356,4544	507,1504
23	101	116	319,6944	56,5504
24	147	124	790,7344	0,2304
25	123	119	16,9744	20,4304

26	115	139	15,0544	239,6304
27	105	122	192,6544	2,3104
28	141	154	489,2944	929,0304
29	114	107	23,8144	272,9104
30	105	163	192,6544	1558,67
31	96	139	523,4944	239,6304
32	145	128	682,2544	20,0704
33	111	175	62,0944	2650,19
34	150	126	968,4544	6,1504
35	110	99	78,8544	601,2304
36	101	151	319,6944	755,1504
37	130	81	123,6544	1807,95
38	110	123	78,8544	0,2704
39	127	122	65,9344	2,3104
40	101	96	319,6944	757,3504
41	99	93	619,0144	240,8704
42	129	126	2014,214	461,3904
43	104	102	534,5344	1893,99
44	115	122	847,9744	155,7504
45	177	127	1690,854	379,4704
46	140	108	446,0544	240,8704
47	106	117	165,8944	42,5104
48	137	115	328,3344	72,5904
49	144	93	631,0144	931,4704
50	122	98	9,7344	651,2704
Jumlah	5944	6176	24683,28	25560,48
Rataan	118,88	123,52	493,6656	511,2096
n	50	50		
SD	22,44	22,83		

Perhitungan DO pada induk sapi Peranakan Ongole dan sapi Peranakan Limousin dengan uji-t tidak berpasangan :

$$\sum_{i=1}^n Y_1 = 5944$$

$$\bar{Y}_1 = (\sum_{i=1}^n x_1) / n = 5944/50 = 118,88$$

$$S_1 = \sqrt{\sum_{i=1}^n (Y_1 - \bar{Y}_1)^2 / (n-1)} = \sqrt{24683,28 / 49} = 3,2063$$

$$S_1^2 = 10,2803$$

$$\sum_{i=1}^n Y_2 = 6176$$

$$\bar{Y}_2 = (\sum_{i=1}^n x_1) / n = 6176 / 50 = 123,52$$

$$S_2 = \sqrt{\sum_{i=1}^n (Y_2 - \bar{Y}_2)^2 / (n-1)} = \sqrt{25560,48 / 49} = 3,26227$$

$$S_2^2 = 10,6452$$

$$\begin{aligned} S_{gabungan}^2 &= \{(n_1 - 1) s_1^2 + (n_2 - 1) s_2^2\} / \{(n_1 - 1) + (n_2 - 1)\} \\ &= \{(50-1) 10,2803 + (50-1) 10,6452\} / \{(50-1) + (50-1)\} \\ &= (503,7347 + 521,6148) / 98 \\ &= 10,4627 \end{aligned}$$

$$\begin{aligned}
t_{hitung} &= \left\{ \left| \bar{Y}_1 - \bar{Y}_2 \right| \right\} / \left\{ \sqrt{s^2 (1/n_1 + 1/n_2)} \right\} \\
&= \left\{ \left| 118,88 - 123,521 \right| \right\} / \left\{ \sqrt{10,4627 (1/50 + 1/50)} \right\} \\
&= 4,64 / \sqrt{0,4185} \\
&= 4,64 / 0,6469 \\
&= 7,1726
\end{aligned}$$

$$\begin{aligned}
Db &= (n_1 + n_2) - 2 \\
&= (50 + 50) - 2 \\
&= 98
\end{aligned}$$

$$t_{0,05} = 1,984$$

$$t_{0,01} = 2,627$$

Kesimpulan :

Dari perhitungan diatas di ketahui bahwa $t_{hitung} = 7,1726 > t_{0,01} = 2,627$ jadi dapat disimpulkan bahwa terdapat perbedaan yang sangat nyata DO sapi Peranakan Ongole dengan sapi Peranakan Limousin di Kecamatan Kotaanyar Kabupaten Probolingg.

Lampiran 8. Perhitungan uji t tidak berpasangan *calving interval*

No	CI Sapi Peranakan Ongole (Y1) (hari)	CI Sapi Peranakan Limousin (Y2) (hari)	(Y1- \bar{Y} 1) ²	(Y2- \bar{Y} 2) ²
1	394	375	14,44	589,5184
2	363	411	1211,04	137,3584
3	401	435	10,24	1275,9184
4	418	434	408,04	1205,4784
5	385	398	163,84	1,6384
6	372	419	665,64	388,8784
7	361	381	1354,24	334,1584
8	377	398	432,64	1,6384
9	372	437	665,64	1422,7984
10	409	392	125,44	52,9984
11	412	393	201,64	39,4384
12	404	449	38,44	2472,0784
13	450	440	2724,84	1658,1184
14	383	393	219,04	39,4384
15	390	392	60,84	52,9984
16	368	383	432,64	1107,5584
17	351	422	67,24	7,3984
18	421	358	282,24	690,6384
19	429	408	3,24	0,5184
20	439	416	3745,44	0,5184
21	389	378	77,44	452,8384
22	380	374	316,84	639,0784
23	379	390	353,44	86,1184
24	430	399	1036,84	0,0784
25	401	390	10,24	86,1184

26	394	413	14,44	188,2384
27	385	399	163,84	0,0784
28	416	432	331,24	1070,5984
29	392	379	33,64	411,2784
30	384	437	190,44	1422,7984
31	372	414	665,64	216,6784
32	429	402	973,44	7,3984
33	392	446	33,64	2182,7584
34	431	400	1102,24	0,5184
35	387	375	116,64	589,5184
36	380	429	316,84	883,2784
37	413	361	231,04	1465,3584
38	391	394	46,24	27,8784
39	403	399	27,04	0,0784
40	380	369	316,84	916,8784
41	377	366	888,04	265,0384
42	406	402	2190,24	516,1984
43	381	373	538,24	1704,0384
44	396	400	973,44	76,0384
45	459	400	1697,44	279,5584
46	419	383	449,44	265,0384
47	388	389	96,04	105,6784
48	413	389	231,04	105,6784
49	424	369	686,44	916,8784
50	400	379	4,84	411,2784
Jumlah	19890	19964	26940	26772,08
Rataan	397,8	399,28	538,8	535,4416
n	50	50		
SD	23,44	23,37		

Perhitungan CI pada induk sapi Peranakan Ongole dan sapi Peranakan Limousin dengan uji-t tidak berpasangan :

$$\sum_{i=1}^n Y_1 = 19890$$

$$\bar{Y}_1 = (\sum_{i=1}^n x_1) / n = 19890/50 = 397,8$$

$$S_1 = \sqrt{\sum_{i=1}^n (Y_1 - \bar{Y}_1)^2 / (n-1)} = \sqrt{26940 / 49} = 3,3496$$

$$S_1^2 = 11,2198$$

$$\sum_{i=1}^n Y_2 = 19964$$

$$\bar{Y}_2 = (\sum_{i=1}^n x_1) / n = 19964 / 50 = 399,28$$

$$S_2 = \sqrt{\sum_{i=1}^n (Y_2 - \bar{Y}_2)^2 / (n-1)} = \sqrt{26772,08 / 49} = 3,3392$$

$$S_2^2 = 11,1502$$

$$S_{gabungan}^2 = \{(n_1 - 1) s_1^2 + (n_2 - 1) s_2^2\} / \{(n_1 - 1) + (n_2 - 1)\}$$

$$= \{(50-1) 11,2198 + (50-1) 11,1502\} / \{(50-1) + (50-1)\}$$

$$= (549,7702 + 546,3598) / 98$$

$$= 11,185$$

$$\begin{aligned}
t_{hitung} &= \left\{ \left| \bar{Y}_1 - \bar{Y}_2 \right| \right\} / \left\{ \sqrt{s^2 (1/n_1 + 1/n_2)} \right\} \\
&= \left\{ \left| 397,8 - 399,281 \right| \right\} / \left\{ \sqrt{11,185 (1/50 + 1/50)} \right\} \\
&= 1,48 / \sqrt{0,4474} \\
&= 1,48 / 0,6688 \\
&= 2,2129
\end{aligned}$$

$$\begin{aligned}
Db &= (n_1 + n_2) - 2 \\
&= (50 + 50) - 2 \\
&= 98
\end{aligned}$$

$$t_{0,05} = 1,984$$

$$t_{0,01} = 2,627$$

Kesimpulan :

Dari perhitungan diatas di ketahui bahwa $t_{hitung} = 2,2129 > t_{0,05} = 1,984$ jadi dapat disimpulkan bahwa terdapat perbedaan yang nyata CI sapi Peranakan Ongole dengan sapi Peranakan Limousin di Kecamatan Kotaanyar Kabupaten Probolinggo.

Lampiran 9. Perhitungan CR

CR sapi PO

$$\begin{aligned} \text{CR} &= \frac{\text{Jumlah akseptor yang bunting pada IB pertama}}{\text{Jumlah akseptor}} \times 100\% \\ &= \frac{29}{50} \times 100\% \\ &= 58\% \end{aligned}$$

CR sapi Peranakan Limousin

$$\begin{aligned} \text{CR} &= \frac{\text{Jumlah akseptor yang bunting pada IB pertama}}{\text{Jumlah akseptor}} \times 100\% \\ &= \frac{21}{50} \times 100\% \\ &= 42\% \end{aligned}$$

Lampiran 10. Perhitungan IF

IF sapi PO

$$IF = \frac{CR}{S/C} - (DO - 125)$$

$$= \frac{58}{1,62} - (118,88-125)$$

$$= 35,8024 + 6,12$$

$$= 41,9224$$

IF sapi Peranakan Limousin

$$IF = \frac{CR}{S/C} - (DO - 125)$$

$$= \frac{42}{1,78} - (123,52-125)$$

$$= 23,5955 + 1,48$$

$$= 25,0755$$