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STA 3123 Ch. 14, Sec 14.4

Paired expts. Non parametric test for paired
expt. is Wilcoxon Signed Rank test

Ex 14.46 P14-29

<u>Pair</u>	<u>Sample 1</u>	<u>Sample 2</u>	<u>I - II Difference</u>	<u>Rank absolute difference</u>
1	8	7	-1	1
2	10	1	9	8
3	6	4	2	2.5
4	10	10	0	(eliminated)
5	7	4	3	4
6	8	3	5	6
7	4	6	-2	2.5
8	9	2	7	7
9	8	4	4	2
<u>$n=9$</u>				
				<u>$n=8$</u>

now $n = 8$.

$T^- = 2.5$ (sum of ranks for negative differences)

- ① H_0 : Pop. distns. are the same
- ② H_a : Pop. distn. 1 is shifted to the right of Pop. distn. 2. (one-tailed test)
- ③ $\alpha = .05$
- ④ Test stat. is $T = T^-$
- ⑤ Rule: Reject H_0 if $T \leq T_0$ where T_0 is based on $\alpha = .05$, $n = 8$
i.e., $T \leq 6$
- ⑥ Calculation: $T = T^- = 2.5$ Use Table 13 P787

(2)

⑥ Conclusion: $T_0 T_m = 2.5 \times < 6$

Reject H_0 . There is sufficient evidence to conclude that pop. distn. 1 is to the right of the pop. distn. 2.

similar problems

14.43 p 14.29

14.49 p 14.30