- **Question:** Do the distributions of heart rate for men and women differ in terms of scale?

- **Study:** A blood bank keeps records of the heart rates of blood donors. A random sample of m=8 men and a separate random sample of n=9 women are selected from the blood bank records.

- **Data:** Heart rates, heart beats per minute.

  The combined sample median is 73.

Men, X	$\lvert X-73\rvert$	Rank	Women, Y	$\lvert Y-73\rvert$	Rank
58	15	17	66	7	13
65	8	14	67	6	11.5
73	0	1	68	5	9.5
74	1	2.5	69	4	7.5
76	3	6	71	2	4.5
79	6	11.5	72	1	2.5
82	9	15	75	2	4.5
86	13	15	77	4	7.5
			78	5	9.5
		83			70

- **Fligner test: Is the scale greater for men than women?**

  $\mathrm{Fl}_X = 83 \Rightarrow U_X = 83 - \frac{8(9)}{2} = 84 - 36 = 47$

  $\mathrm{Fl}_Y = 70 \Rightarrow U_Y = 70 - \frac{9(10)}{2} = 69 - 45 = 25$

Table H	Left		Right
n	U	P	U
		m=8	
9	25	0.161	47

The P-value is 0.161. This is larger than 0.05 and so we should not reject the hypothesis of no difference in scales. The distribution of heart rates for both men and women could have the same scale.