

Testing for a Difference in the Sex Discrimination Study

Sex Discrimination in Employment—An Observational Study

Did a bank discriminatorily pay higher starting salaries to men than to women? The data in Display 1.3 are the beginning salaries for all 32 male and all 61 female skilled, entry-level clerical employees hired by the bank between 1969 and 1977. (Data from a file made public by the defense and described by H. V. Roberts, “Harris Trust and Savings Bank: An Analysis of Employee Compensation” (1979), Report 7946, Center for Mathematical Studies in Business and Economics, University of Chicago Graduate School of Business.)

DISPLAY 1.3 Starting salaries (\$U.S.) for 32 male and 61 female clerical hires at a bank									
Males			Females						
4,620	5,700	6,000	3,900	4,500	4,800	5,220	5,400	5,640	
5,040	6,000	6,000	4,020	4,620	4,800	5,220	5,400	5,700	
5,100	6,000	6,000	4,290	4,800	4,980	5,280	5,400	5,700	
5,100	6,000	6,300	4,380	4,800	5,100	5,280	5,400	5,700	
5,220	6,000	6,600	4,380	4,800	5,100	5,280	5,400	5,700	
5,400	6,000	6,600	4,380	4,800	5,100	5,400	5,400	5,700	
5,400	6,000	6,600	4,380	4,800	5,100	5,400	5,400	6,000	
5,400	6,000	6,840	4,380	4,800	5,100	5,400	5,520	6,000	
5,400	6,000	6,900	4,440	4,800	5,100	5,400	5,520	6,120	
5,400	6,000	6,900	4,500	4,800	5,160	5,400	5,580	6,300	
	6,000	8,100						6,300	

Statistical Conclusion

As evident in Display 1.4, the data provide convincing evidence that the male mean is larger than the female mean (one-sided p -value < 0.00001 from a two-sample t -test). The male mean exceeds the female mean by an estimated \$818 (95% confidence interval: \$560 to \$1,076).

DISPLAY 1.4 Histograms for male and female starting salaries



Scope of Inference

Although there is convincing evidence that the males, as a group, received larger starting salaries than the females, the statistics alone cannot address whether this difference is attributable to sex discrimination. The evidence is consistent with discrimination, but other possible explanations cannot be ruled out; for example, the males may have had more years of previous experience.