

Artsy Case¹

The Artsy Corporation has been sued in the United States Federal Court on charges of employment discrimination under Title VII of the Civil Rights Act of 1964. (Artsy is an actual corporation and the data given in the case is real, but the name has been changed to protect the firm's true identity.) The litigation at contention here is a "class action" lawsuit brought on behalf of all females whom the company employed, or who had applied for work with the company, between 1979 and 1987. Artsy operates in several states, runs four quite distinct businesses, and has many different types of employees. The allegations against Artsy include issues of hiring, pay, promotions, and other "conditions of employment." In such large class action employment discrimination lawsuits statistical evidence commonly plays a central role in the determination of guilt or damages. In an interesting twist on traditional legal procedures, the precedent in these cases is that plaintiffs may make a "prima-facie" case purely in terms of circumstantial statistical evidence. If that statistical evidence is reasonably strong, the burden of proof shifts to the defendants to rebut the plaintiff's statistics with other statistical data, other statistical analyses of the same data, or by non-statistical testimony. In practice, statistical arguments often dominate the proceedings of such EEO cases. Indeed, in this case the statistical data used filled numerous computer tapes and the supporting statistical analysis comprised thousands of pages of computer printouts and reports. We work here with a small subset of the voluminous data that pertain to one of the several contested issues in one of the company's locations.

Specifically, the data relate to the pay of 256 employees on the bi-weekly payroll at one of the Artsy Company's Pocahontas, Maine production facilities. The data include:

- an identification number (IDNUMBER) that would permit us to identify the person by name or social security number,
- the person's sex (SEX) where a 0 denotes female and a 1 denotes a male,
- the person's job grade in 1986 (GRADE),
- the length of time (in years) the person had been in that job grade as of 12/31/86 (TING), and
- the person's weekly pay rate as of 12/31/86 (RATE). The issue of concern is fair pay for female employees.

The plaintiff's attorneys have proposed settling the pay issues for this group of female employees for a "back pay" lump payment of 25% of their pay during the period 1979 to 1987. It is our task to examine the data for evidence in favor of, or against the charges of pay discrimination against the females. To make our mission explicit suppose that we are to advise the lawyers for the Artsy Company on how to proceed. (An alternative mission would be to assist the plaintiffs.)

1 Peter J. Kolesar, 2001.