

STATISTICS FOR ECONOMISTS

Class Exercise 9 (Barrow chapter 6). Please have a look at extra questions on this to get more practise applying these tests.

1. A sample of 40 observations has a standard deviation of 20. Estimate the 95% confidence interval for the variance of the population.
2. A company wishes to see whether there are any differences between its departments in staff turnover. Looking at their records for the past year the company finds the following data:

Department	Personnel	Marketing	Admin	Accounts
Number on post at start of year	23	16	108	57
Number leaving	3	4	20	13

Do the data provide evidence of a difference in staff turnover between the various departments?

3. A survey of 100 firms found the following evidence regarding profitability and market share:

Profitability	Market share		
	<15%	15-30%	>30%
Low	18	7	8
Medium	13	11	8
High	8	12	15

Is there evidence that market share and profitability are associated?

4. Given the following data on two sample variances, test whether there is any significant difference in their variances. Use the 1% significance level.

Sample 1: $n=25$, $s^2=55$

Sample 2: $n=30$, $s^2=48$

5. Lottery tickets are sold in different outlets: supermarkets, smaller shops and outdoor kiosks. Sales were sampled from several of each of these with the following results:

Supermarkets	355	251	408	302
Small Shops	288	257	225	299
Kiosks	155	352	240	

Does the evidence indicate a difference in sales?