

Business Analytics (108-1)

Assignment 4

Due: 9:00 am, Tue 10-Dec-2019

1.

In a 1962 social experiment, 135 third- and fourth-year-old children from poverty-level families in Michigan were randomly assigned either to a treatment group receiving 2 years of preschool instruction or to a control group receiving no preschool. The participants were followed into their adult years. The following table show how many in each group were arrested for some crime by the time they were 19 years old.

	Arrested for some crime?	
	Yes	No
Preschool	21	46
Control	35	33

- (a) Is it possible to use these data to see whether preschool instruction can cause a lower rate of criminal arrest for some populations?
- (b) Is this a retrospective or a prospective study?
- (c) Analyze the data to determine whether a preschool program like the one used can lead to lower levels of criminal activity; and, if so, by how much.

2.

A marketing survey of car owners was presented in two ways. One way asked the customer whether he was satisfied with his car. The other way asked the customer whether he was dissatisfied. This table summarizes the results.

Response	Question Uses Satisfied	Question Uses Dissatisfied
Very satisfied	139	128
Somewhat satisfied	82	69
Somewhat dissatisfied	12	20
Very dissatisfied	10	23

- (a) Quantify the amount of association between the type of question and the degree of satisfaction, using Chi-Squared Test.
- (b) Combine the counts of very satisfied with somewhat satisfied, and very dissatisfied with somewhat dissatisfied, so that the table has only two rows rather than four. What happens to the degree of association?