**Activity 7.5.4 Gender, Intelligence, and College**

In Activity 7.5.3, you analyzed data which was collected from Monitoring the Future surveys. In this activity you will analyze data from the following three questions:

1. What is your gender?

Female Male

2. How intelligent do you think you are compared to others your age?

 Above average Average Below average

3. How likely is it that you will graduate from college (four-year program)?

 Definitely won’t Probably won’t Probably will Definitely will

Because we are analyzing three variables, the data have been organized into a three-way table. To do that, two of the variables become row variables and one variable is left as a column variable. Table 1 shows a printout of the three-way table produced by Minitab statistical software.

**Rows: Gender / Intelligence Columns: Graduate College**

 **PRB DEF**

 **DEF WILL PRB WILL WONT WONT All**

**Female**

 **Above Average 3118 533 125 124 3900**

 **Average 1157 563 205 153 2078**

 **Below Average 214 131 54 83 482**

**Male**

 **Above Average 3000 973 280 223 4476**

 **Average 561 485 258 214 1518**

 **Below Average 105 92 74 105 376**

**All**

 **All 8155 2777 996 902 12830**

Table 1. Three-way table organizing responses to three questions.

1. What percentage of students rated their intelligence as above average, identified themselves as male, and responded that they definitely will graduate from college? Show your calculations.

2.

a. How many females responded to these three questions?

b. What percentage of the females rated their intelligence as average and responded that they definitely won’t graduate from college. Show your calculations.

c. What percentage of females responded that they definitely won’t graduate from college? Show your calculations.

3. Sometimes it is helpful to collapse a three-way table into a two-way table. Use the data from Table 1 to find a two-way frequency table for questions 1 and 3.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Frequency | DEF WILL | PRB WILL | PRB WON’T | DEF WON’T | Total |
| Female |  |  |  |  |  |
| Male |  |  |  |  |  |
| Total |  |  |  |  |  |

Table 2. Data from questions 1 and 3 organized into a two-way table.

4. Now that you have some background on calculating percentages from a three-way table, and of collapsing a three-way table over one of the variables to form a two-way table, you are ready to analyze the data in Table 1. Analyze the data from Table 1 in any way that interests you or makes sense to you. Write a brief report on your findings.