

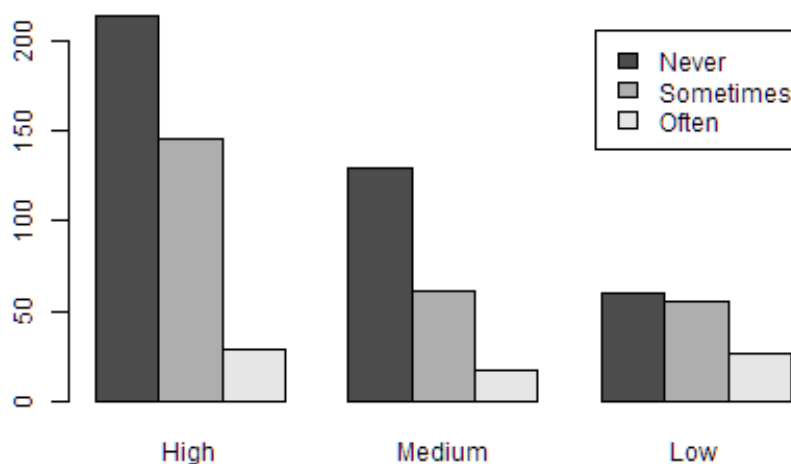
Lesson 19: Inference for Several Proportions, Goodness-of-Fit, and Independence

Homework

Solutions

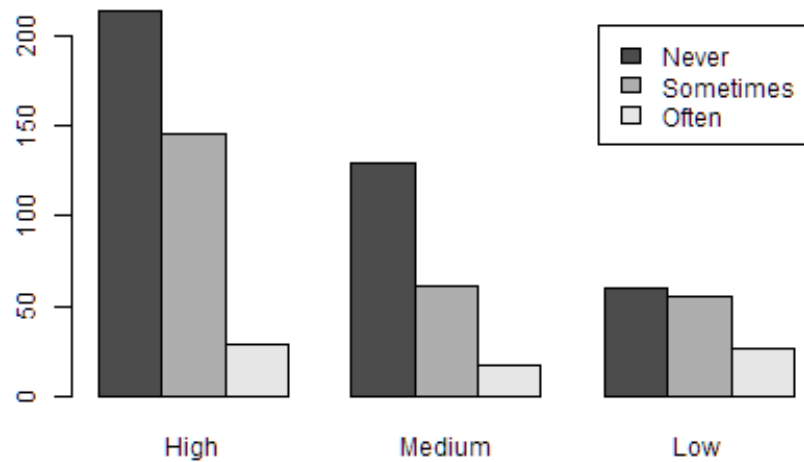
Please note that the steps show rounded numbers, but that the final answers to the problems are calculated without rounding.

Problem	Part	Solution
1	-	The requirements are met because all expected counts are greater than or equal to five



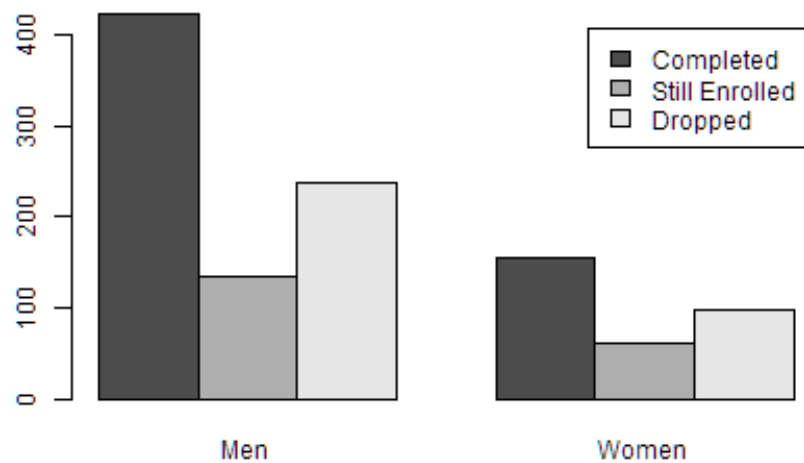
2	-	
3	-	H_0 : Religiosity and frequency of anger are independent H_a : Religiosity and frequency of anger are not independent
4	-	$\chi^2 = 23.474$ $df = 4$
5	-	P-value = 0.0001
6	-	reject the null hypothesis
7	-	There is sufficient evidence to suggest that religiosity and frequency of anger at something beyond one's control are not independent.
8	-	The requirements are met because all expected counts are greater than or equal to five

Problem	Part	Solution
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| 9 | - | |
| 10 | - | H_0 : Family structure and whether a girl goes to college are independent |
| | | H_a : Family structure and whether a girl goes to college are not independent |
| 11 | - | $\chi^2 = 10.357$ |
| | | $df = 3$ |
| 12 | - | P-value = 0.016 |
| 13 | - | reject the null hypothesis |
| 14 | - | There is sufficient evidence to suggest that family structure and whether a girl goes to college are not independent |
| 15 | - | The requirements are met because all expected counts are greater than or equal to five |

Problem	Part	Solution
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16	-	
17	-	H_0 : Gender and PhD status are independent H_a : Gender and PhD status are not independent.
18	-	$\chi^2 = 1.932$ $df = 2$
19	-	P-value = 0.381
20	-	fail to reject the null hypothesis
21	-	There is insufficient evidence to conclude that a student's gender and status in a PhD program are not independent.