Biostatistics 203A – Fall 2023

Final Project Submission Template

Student Name: Yuhui Wang

Student ID Number: 606332401

Data Subset Number: 50

**Written responses to items I, II, III in Step 2**

1. Of all the meeting locations, which one corresponded to the highest percentage of respondents endorsing Excellent relationship quality?

*Answer:* *It’s on vacation or on the trip.*

1. Of all the different routes of introduction, which one corresponded to the highest percentage of respondents endorsing Excellent relationship quality?

*Answer:* *It’s introduced by family.*

1. What percentage of respondents whose partners were a similar age endorsed Excellent relationship quality?

*Answer:* *60.63%.*

Did this percentage differ significantly (p < 0.05) relative to respondents whose partners were not a similar age?

*Answer: It is significant, as p-value=0.0078 < 0.05.*

**Proportional (100%) stacked bar graph generated in Step 2**

*Insert graph here*

*A graph with colorful squares

Description automatically generated with medium confidence*

**Line graph generated in Step 3**

*Insert graph here*

A graph showing a line

Description automatically generated

**2-3 sentences you wrote as part of Step 3**

Describe the results you obtained and how they may have implications for situations in which multiple hypothesis tests are being conducted.

*Insert 2-3 sentences here*

The proportion of replications with at least one significant result will go up along with the increasement of number of Chi-Square Tests.

With more multiple hypothesis tests conducted, the risk of a false positive error (Type 1 error) will increase, as the cumulative probability of finding at least one significant result will increase because of randomness.

*Appendix*

|  | | *Not Excellent* | | *Excellent* | |  |
| --- | --- | --- | --- | --- | --- | --- |
| *N* | *%* | *N* | *%* | *P Value* |
| *1. Where Met Partner:* | *Bar* | 146 | 47.71 | 160 | 52.29 | 0.0105 |
| *Church* | 50 | 32.26 | 105 | 67.74 | 0.0235 |
| *Dating Service* | 63 | 46.67 | 72 | 53.33 | 0.0473 |
| *Other* | 401 | 42.26 | 548 | 54.74 | 0.3053 |
| *Private Party* | 126 | 41.72 | 176 | 58.28 | 0.7692 |
| *School* | 112 | 29.71 | 265 | 70.29 | 0.0000 |
| *Social Organization* | 54 | 43.90 | 69 | 56.10 | 0.4939 |
| *Vacation* | 10 | 27.03 | 27 | 72.97 | 0.0831 |
| *Work* | 193 | 43.27 | 253 | 56.73 | 0.2723 |
| *2. Who Introduced Partner:* | *Classmates* | 41 | 36.28 | 72 | 63.72 | 0.3037 |
| *Co-Workers* | 95 | 44.19 | 120 | 55.81 | 0.3128 |
| *Family* | 90 | 36.14 | 159 | 63.86 | 0.1062 |
| *Mutual Friends* | 368 | 42.59 | 496 | 57.41 | 0.2301 |
| *Neighbors* | 19 | 46.34 | 22 | 53.66 | 0.4784 |
| *Other* | 108 | 40.15 | 161 | 59.85 | 0.7809 |
| *Self or Partner* | 431 | 39.98 | 647 | 60.02 | 0.4081 |
| *3. Similar Age:* | *Age* | 741 | 39.37 | 1141 | 60.63 | 0.0078 |