

## Biostatistics 203A – Fall 2023

### Final Project Submission Template

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Data Subset Number: 50

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

- I. 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.*

- II. 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.*

- III. 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?

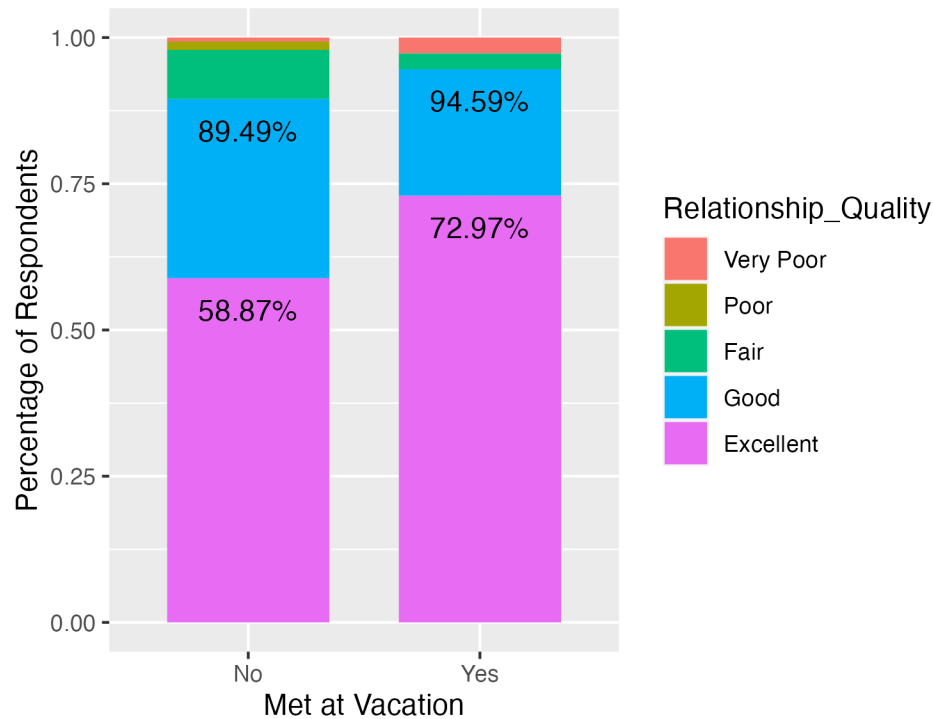
*Answer: It is significant, as  $p\text{-value}=0.0078 < 0.05$ .*

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

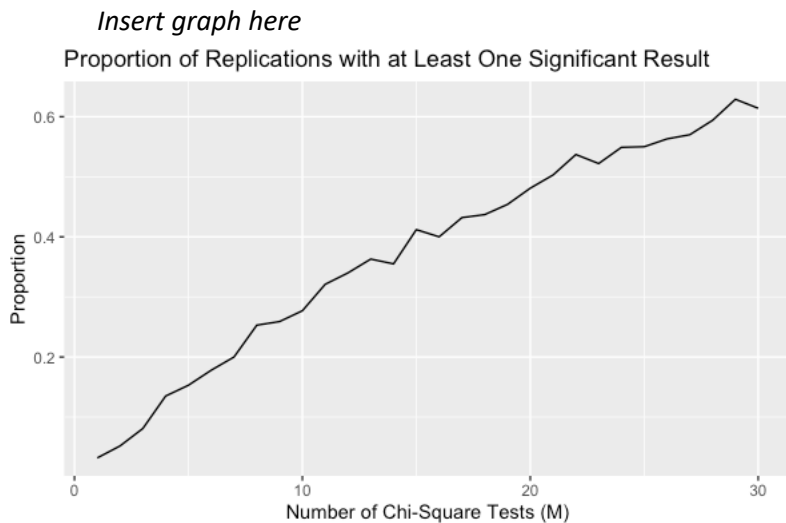
*Insert graph here*

## Relationship Quality

Among those who met at vacation versus those who did not



### Line graph generated in Step 3



### 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

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

