IC4 Assignment 1

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A researcher is interested in the effects of alcohol on mate selection at nightclubs. Her rationale was that after alcohol has been consumed, the perceptions of physical attractiveness (out of 100) would become more inaccurate. The researcher took 48 students in total to a nightclub. She went 3 times with groups of 16. the first group got no alcohol (participants received alcohol free beer), the second group got 2 pints of strong lager and the third group got 4 pints of strong lager. At the end of the evening she took a picture whith the person that the students were chatting too. She presented these pictures to people and asked it to rate it. The hypothesis is that there is an effect of the number of pints you drink on the attractiveness of the one you are talking with at the end of the evening.

A:

One way Anova was used in this test.

As per the significance value it shows high significance <.01 hence we can proceed to the next step.

ANOVA

Attractiveness

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3332.292	2	1666.146	13.307	.000
Within Groups	5634.375	45	125.208		
Total	8966.667	47			

Then the levenes statistics is used to decide if equal variances are used or not. In this use case there is a significance of .043 hence equal variances are not assumed.

We specified that we will be using Dunnett's T3 hence we shall be checking the it in the Multiple comparisons table.

Test of Homogeneity of Variances

Attractiveness

Levene Statistic	df1	df2	Sig.
3.378	2	45	.043

In the multiple Comparisons table, we can check the significant column to see the difference between two variables.

Multiple Comparisons

Dependent Variable: Attractiveness

	(I) Alcohol	(J) Alcohol	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Bonferroni	no beer	2 pints	-.938	3.956	1.000	-10.78	8.90
		4 pints	17.188*	3.956	.000	7.35	27.03
	2 pints	no beer	.938	3.956	1.000	-8.90	10.78
		4 pints	18.125*	3.956	.000	8.29	27.96
	4 pints	no beer	-17.188*	3.956	.000	-27.03	-7.35
		2 pints	-18.125*	3.956	.000	-27.96	-8.29
Dunnett T3	no beer	2 pints	-.938	3.259	.988	-9.17	7.29
		4 pints	17.188*	4.164	.001	6.55	27.83
	2 pints	no beer	.938	3.259	.988	-7.29	9.17
		4 pints	18.125*	4.359	.001	7.05	29.20
	4 pints	no beer	-17.188*	4.164	.001	-27.83	-6.55
		2 pints	-18.125*	4.359	.001	-29.20	-7.05

*. The mean difference is significant at the 0.05 level.

Based on the significant scores the no beer and 2 pint does not show a high significant difference.

No beer and 4 pints show a high significant difference while 2 pints and 4 pints also show a high significant difference.

Next, we can proceed to view the descriptive to derive the direction of the beer and attractiveness.

Descriptives

Attractiveness

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
					Lower Bound	Upper Bound		
no beer	16	63.75	8.466	2.116	59.24	68.26	50	80
2 pints	16	64.69	9.911	2.478	59.41	69.97	45	85
4 pints	16	46.56	14.343	3.586	38.92	54.21	20	70
Total	48	58.33	13.812	1.994	54.32	62.34	20	85

Based on the mean values the direction of the use case is that High Alchohol bring less attractiveness. 2 pints and no beer brings higher attractiveness in comparison to that (which showed less significance via the post hoc test).

There is a significant effect of beer on attractiveness ($F(2,45) = 13.31$, $p < .001$). Dunnett's T3 post-hoc tests show that not drinking (M=63.75, SD=8.47, p=.001) and 2 pint(M=64.69,SD=9.91, p=001) leads to more attractiveness compared to 4 pints of beer which significantly bring less attractiveness (M=46.56,SD=14.34, p=.001). No significant differences were found between the three other types of costumes (all p's > .988)

This indicates that only drinking more alchohol leads to less attractiveness. Hence, our hypothesis is not supported.

IC4 Assignment 2

Viagra is a sexual stimulant that broke into the black market under the belief that it will make someone a better lover. Suppose we test this hypothesis by taking two groups of participants and administering one group with a placebo (cf. sugar pill) and one group with a small dose of Viagra and look whether they differ in libido (10 point scale).

A:

The Independent Samples T test was used.

When we refer the values in the Levene's Test we could see a significance value of .302 which indicates that equal variances are assumed.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
libido	Equal variances assumed	1.148	.302	-2.175	14	.047	-2.317	1.066	-4.603	-.032
	Equal variances not assumed			-2.311	13.410	.037	-2.317	1.003	-4.477	-.158

There is a difference with Viagra and No Viagra with the scale

As per Group statistics the mean indicates that the mean of Viagra is more than the mean of no Viagra which indicates that Viagra has more influence on being a better lover.

Group Statistics

	dose	N	Mean	Std. Deviation	Std. Error Mean
libido	No viagra	7	2.57	1.512	.571
	viagra	9	4.89	2.472	.824

Viagra does show effect on someone being a better lover (M = 4.89, SD = 2.472) compared to people not taking viagra (M = 2.57, SD = 1.51; t(14) = 2.18, p = .047). Hence our hypothesis is supported as there is a difference between taking Viagra and no viagra for being a better lover. Because the direction shows that with Viagra shows higher mean value for being a better lover.