

Practice with Variables, Bivariate Stats, Hypotheses & SPSS -- ANSWERS

The Story

A social psychologist wanted to examine how students select their friends. In particular, she wanted to begin to understand things related to how someone decides whether or not to befriend an "odd person". Twenty-four volunteers from an Introductory Psychology class participated in the study. Each was asked to report their **birth sex** (1=male 2=female), **age**, and to indicate the type of person they were most likely to become friends with (**friend**: 1=someone with shared interests, 2=someone interesting to be around). Also, each person completed the Odd Friends Scale (**OFS**: the author claims persons with higher scores are more likely to have odd friends, 30 items).

The last part of the questionnaire included a vignette. There were two versions of this **vignette**, and 12 participants were randomly assigned to receive each version. Both versions contained a story about a new neighbor who had moved in next door and describes them as having a job as "an independent deep sea gilet recovery expert, with hobbies that all involve imminent death or dismemberment". One version (coded 1) of the questionnaire tells that this new neighbor makes a concerted and polite effort to "become friends", while the other version (coded 2) tells that they are "quite standoffish". After reading the story, each participant was asked to rate the likelihood (**likerate**) of their befriending this new neighbor, using a 10-point scale (on which a "10" means they would certainly want to make friends with this person and a "1" means they would definitely not want to make friends with this person).

Each of the participants came back one week later to complete a follow-up data collection session. First they were asked to remember the vignette they had read and to again rate the likelihood of their befriending this new neighbor, using the same scale (**likerat2**). Then they read two additional vignettes that described new neighbors who had different "senses of humor" and rated the likelihood of turning each neighbor over to the police for their actions (using a 10-point for which a "10" meant they would definitely inform the police and a "1" meant they would definitely not inform the police). The first vignette (the "Joker vignette") told of a neighbor who loved practical jokes -- harmless things like putting your car in a tree or kidnapping your child for a day or two. The second vignette (the "Borrower vignette") described a neighbor who had a tendency to borrow things and take them to his house without asking -- small things such as your refrigerator or your bed. In the dataset, these variables are referred to as **jokepol** and **borowpol**, respectively. They were also asked whether or not they had ever called the police to report a neighbor (**polever**). Finally they were asked to tell the number of close friends they had that were the same major as they (**majfrnd**) and the number of friends they had that were a different major than they (**diffrnd**).

1. Identify the type (qualitative or quantitative) of each variable

Variable	Type	Variable	Type
Birth sex	Categorical	likerat2	Quantitative
age	Quantitative	jokepol	Quantitative
friend	Categorical	borowpol	Quantitative
OFS	Quantitative	polever	Categorical
vignette	Categorical	majfrnd	Quantitative
likerate	Quantitative	diffrnd	Quantitative

2. The hypotheses & statistical tests

- a. There will be lower likelihood ratings given by those folks who read the vignette that described the new neighbor as "quite standoffish" than those who read the vignette that described the new neighbor as "friendly" (use the rating data collected during the first session).

Proper statistical test **BG ANOVA**

Variables to use **IV – vignette (categorical)**
DV – likerate (quantitative)

H0: There is no mean difference between the likelihood ratings from those who read the two kinds of vignettes.

Vignette
Become friendly (1) Quite standoffish (2)

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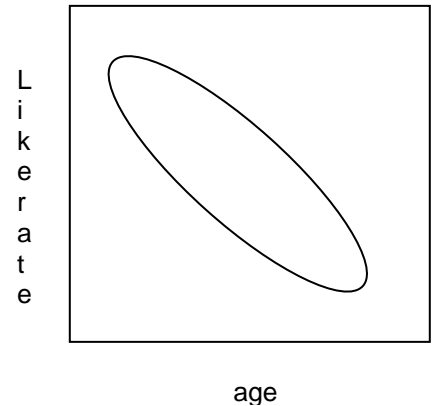
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- b. The researcher hypothesized that younger folks are more likely to befriend the new neighbor (i.e., give a higher likelihood rating -- use the rating data collected during the first session).

Proper statistical test **r**

Variables to use **age (quantitative)**
likerate (quantitative)

H0: There is no linear relationship between age and likelihood ratings



- c. People will give lower likelihood rating during the follow-up session than during the original session.

Proper statistical test **WG ANOVA**

Variables to use **likerate (quantitative)**
likerat2 (quantitative)

H0: There is no mean difference between likerate and likerat2.

Which Session
Original Followup

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- d. Males are more likely than females to have reported a neighbor to the police.

Proper statistical test **X²**

Variables to use **Birth Sex (categorical)**
polerev (categorical)

H0: Females are no more likely to report a neighbor to the police than are males
or There is no pattern of relationship between gender and whether or not someone will report a neighbor to the police.

Draw the boxes.

Birth Sex
Males Females

p o l e v e r	n		
	e		

3. The SPSS output...

a.

Descriptives

RATING			
	N	Mean	Std. Deviation
1.00	12	3.6667	2.18812
2.00	12	6.0833	2.77843
Total	24	4.8750	2.73960

ANOVA

RATING					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	35.042	1	35.042	5.603	.027
Within Groups	137.583	22	6.254		
Total	172.625	23			

Retain or Reject H0: **p < .05 - reject H0:** Do these results support the RH: **No – results are contrary to (backwards from) the RH:**

b.

Correlations

		RATING	AGE
RATING	Pearson Correlation	1	-.061
	Sig. (2-tailed)	.	.777
	N	24	24
AGE	Pearson Correlation	-.061	1
	Sig. (2-tailed)	.777	.
	N	24	24

Retain or Reject H0: **p > .05 – retain H0:**

Do these results support the RH: **No – we expected a -r and found no correlation**

c.

Descriptive Statistics

	Mean	Std. Deviation	N
RATING	4.8750	2.73960	24
RATING2	6.9583	2.15647	24

Tests of Within-Subjects Effects

Measure: MEASURE_1						
Source		Type III Sum of Squares	df	Mean Square	F	Sig.
TIME	Sphericity Assumed	52.083	1	52.083	41.427	.000
Error(TIME)	Sphericity Assumed	28.917	23	1.257		

Retain or Reject H0: **p < .05 – Reject H0:** Do these results support the RH: **No – results are contrary to (backwards from) the RH:**

d.

		Birth Sex			
		Male	Female	Total	
POLEVER	At least once	6	1	7	
	never	6	11	17	
	Total	12	12	24	

Chi-square Tests			
	Value	df	Asymp Sig (2-sided)
Pearson Chi-square	5.042	1	.025

Retain or Reject H0: **p < .05 – Reject H0:** Do these results support the RH: **Yes 6/12 males is more than 1/12 females**