PSYC 480 -- Dr. King

Lab Exercise 14 -- I Hold In My Hand The Last Lab Exercise (Review)

These are some of the problems that appeared on the review exercise I handed out last week. Choose at least three of these and complete an analysis in R. The name of the dataset has been added to the description of the study. You can get the data online in the usual way. "Complete" means summarize the appropriate variables, make a graph if appropriate, state a null hypothesis, and do the correct statistical test with interpretation. (In some of the datasets there are additional variables. If they sound interesting to you, ask me what they are, and you can include them in your analysis.)

2. Angelia Hackett (Psyc 497, Spring 1997) collected scores on the Student Alcohol Questionnaire (SAQ), which quantifies on a scale of 1 to 6 how much college students drink. (1 is a person who rarely if ever drinks and 6 is a frequent binge drinker.) Subjects (all CCU students) were divided into four groups on two variables: gender (male and female) and age (categorized as young or under 21 and old or 21 or older). The interest is in seeing how SAQ scores are related to these two variables. The design was unbalanced.

> SAQ=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/saq1997.csv")
variables: drink (score on the SAQ), gender, age (and esteem which can be ignored)

5. Elizabeth Ostop (Psyc 497, Spring 2010) measured scores of CCU students on the Social Avoidance and Distress Scale (gives a score between 0 and 28) as well as on the Cheek and Buss Shyness Scale (gives a score between 13 and 65). Her interest was in finding if there is any relationship between the two measures.

> SHY=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/shyness.csv")
variables: SAD (Social Avoidance and Distress), Shyness (Cheek and Buss scale), others

8. Cesare, et al. (1990), studied discrimination against the handicapped in job interviews. Subjects were all college students and were divided into five groups. Each group saw an actor portraying a person with a different handicap: none, amputee, crutches, hearing-impaired, wheelchair. The actor was portraying an interviewee as part of a job application for a sales position. After the subjects watched the interview, they were asked to rate on a numeric (1-9) scale how employable they thought the person being interviewed was. The interest was in seeing if people with different handicaps were judged differently.

> HAN=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/handicap.csv")
> HAN=stack(HAN) ### very important!
variables: values (students' ratings), ind (type of handicap they saw)

10. James Tresselt (Psyc 497, Fall 1995) obtained data on a random sample of 251 CCU freshman who were admitted to Coastal in Fall 1990. His interest was in seeing if the students' freshman GPAs could be predicted by their SAT scores (Scholastic Aptitude Test) and their gender (male/female).

> TRE=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/tresselt3.csv")
variables: Gender (0=female, 1=male), SATT (total SAT), GPA91 (freshman GPA)
11. Fouts (1973) examined the rate of learning by chimpanzees being taught American Sign Language signs. Four chimps were each taught the same ten signs. The time in minutes required to teach each sign to each chimp was recorded. The interest was in seeing if there were differences in learning times among the ten signs.

> CHI=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/chimps.csv", row.names=1)
> CHI=t(CHI)  # very important if you plan to use the rmsaov() function
variables: each column of the wide format data frame are scores for one chimp

13. Liz Morris (Psyc 497, Spring 2005), wanted to determine if student evaluations of a professor's teaching were influenced by the professor's appearance. Three groups of students were given a transcript of a lecture as well as a picture of the professor. The materials the subjects saw were identical except one group saw a picture in which the professor's hair was "photoshopped" to be short, a second group saw the professor with medium length hair, and a third group saw the professor with long hair. (The professor was female.)

> EVA=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/evaluations.csv")
variables: group (hair length), score (students' evaluation of teaching)

15. Josh Weiner (Psyc 497, Fall 2009) examined reaction time (in seconds) to four different colored stimulus lights. Each subject's reaction time was measured to each of the four different colored lights. The interest was in seeing if reaction times differed among the four different lights.

> RTC=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/rtcolor.csv")
variables: each row in the wide format data frame are scores for one subject

18. Wes Rowe (Psyc 497, Spring 2009) had subjects perform a card-matching task, in which they sat in front of a 4x5 array of cards and were allowed to turn them over two at a time. If the cards were the same, they were removed from the array. If not, they were turned back over. Time (in seconds) to remove all cards from the array was measured. Each subject performed this task three times, once each with no background music, classical background music, and instrumental rap background music. Of interest was whether type of background music was related to solving time.

> MAT=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/matching.csv", row.names=1)
variables: each row in the wide format data frame are scores for one subject (and gender)
note: MAT$Gender=NULL if you don't plan to use Gender

19. Stoecker and Rukenbrod (Psyc 497, Spring 2006) gave a sample of CCU students two surveys. One gave a quantitative index of social internet usage. The other was the UCLA Loneliness scale, which gives a quantitative index of loneliness. Of interest was the relationship between social internet usage and loneliness. (Hint: use loneliness as the DV. Including Soc.Anx as an IV is interesting.)

> INT=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/internet.csv")
variables: Lone (score on loneliness scale), SIU (social internet usage), others (Soc.Anx is a social anxiety measure, GIU is general internet usage, LIU is leisure internet usage)
23. Tom Prin (Psyc 497, Spring 2005) looked at locus of control scores on the Rotter scale in three groups of firemen who differed by risk rating (likelihood of engaging in meritorious behavior). He proposed that risky behavior was related to locus of control.

> FIR=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/firemen.csv")
variables: Rotter (locus of control scores), Area (ignore?), Risk (risk rating, A riskiest)

31. Ryan Russ (Psyc 497, Fall 1996) examined the effect of noise due to activity at a nearby construction site on bird feeding at a feeder in his back yard. Every day over the course of a summer he measured the volume of food consumed from the feeder and whether or not construction was present at the construction site next door. Bird seed consumption on construction days was compared to that on non-construction days. His hypothesis was that activity at the construction site would reduce the amount of bird seed eaten at the feeder.

> BIR=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/birds.csv")
variables: constr (was there construction activity), food.eaten (cubic centimeters of seed/hr)
note: there are missing values; to get rid of them, do BIR=na.omit(BIR)

32. Rodriguez, et al. (1997), wanted to know the extent to which childhood abuse leads to adult post-traumatic stress disorder (PTSD). Degree (severity) of adult PTSD was assessed with a quantitative measuring instrument (survey). Physical abuse suffered during childhood was also measured with a quantitative measuring instrument (survey). Childhood sexual abuse was noted (yes/no). The hypothesis was that both childhood physical abuse and childhood sexual abuse would contribute to the severity of adult PTSD.

> PTS=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/ptsd.csv")
variables: cpa (childhood physical abuse), ptsd (adult PTSD), csa (childhood sexual abuse)

34. Criqui (1994) looked at the relationship between wine consumption and deaths from heart disease in 19 countries. Wine consumption was measured as liters of alcohol consumed by drinking wine per person per year. Heart disease was measured as yearly deaths from heart disease per 100,000 population. The finding was that increased wine consumption was related to decreased death rate from heart disease. (Why?)

> WIN=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/wine.csv",row.names=1)
variables: wine (wine consumption), hd.deaths (heart disease deaths)
note: name of country is in the row names

37. Lindsey Chopyk (Psyc 497, Fall 2009) went to the mall and passed out surveys to participants in which they were asked, "How many sex partners is one allowed to have before one is considered a slut?" (Her words!) Participants were grouped according to their gender, according to the gender of the person they were being asked about in the survey, and according to their age (young/old). A three-way interaction was found.

> SEX=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/sex.csv")
variables: Rater.G (the gender of the participant taking the survey), Subj.G (the gender of the person being asked about in the survey), Age.Grp (old, young), Slut (answer to query)
Erin Vannoy (Psyc 497, Spring 2009) measured a personality trait called Conscientiousness in CCU students by using the Big Five Personality Inventory. She grouped her subjects by degree of body modification: none, tattoos only, piercings only, tattoos and piercings. Her hypothesis was that the Conscientiousness score would differ among those groups. However, I think it would be more interesting if you also included gender as an IV.

> BOD=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/bodymod.csv") variables: Gender, the five scales from the Big Five, Bodmod (body modification)

Jaclyn Stoll (Psyc 497, Spring 2007) collected data on how much exercise CCU students get (in minutes per week). She related this to scores on the Friedman Well Being Scale (quantitative) and to gender (male/female).

> EXE=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/exercise.csv") variables: exmin (exercise time), fwbs (well being scale score), gender hint: the interesting analysis is fwbs~exmin+gender

Earlier this semester we looked at data on body temperature in men and women. We found that women have significantly higher mean body temperatures than men do.

> NOR=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/normtemp.csv") variables: temp (body temp degrees F), sex, hr (heart rate)

The most accurate way to measure percent body fat in humans is by a method called underwater weighing. Several studies (references available) have attempted to find a less moist and less naked method that is, nevertheless, still accurate. This usually involves making various body measurements, such as weight, height, abdominal circumference, etc., and attempting to predict percent body fat (measured by the accurate underwater method) from them.

> FAT=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/bodyfat.csv") variables: density (ignore), fat (percent body fat calculated from density), age (years), weight (lbs), height (inches), and a whole lot of body measurements (in cm) the task: find the best body measurements to predict body fat percent

The data are scores from the first exam and the second exam from many semesters ago when I taught a section of Psyc 225. The scores are out of 100. There are several interesting questions. How well did the students do on the exams? Did their scores improve from the first to the second exam? Etc. Each row in the data is one student.

> TWO=read.csv("http://ww2.coastal.edu/kingw/psyc480/data/twoexams.csv") > TWO=na.omit(TWO) # get rid of scores from students who only took one exam variables: Ex.1 (scores on first exam), Ex.2 (scores on second exam)

Note: to get the rmsaov() function...
> source("http://ww2.coastal.edu/kingw/psyc480/functions/rmsaov.R")
If you plan to use this function, remember that the dataframe must be all numeric and must be converted to a matrix. Example: CHI=as.matrix(CHI).