Homework #5
RPAD 316
Professor Stephen Holt

Instructions: You will be doing some problems by hand and some problems using Stata. For the problems by hand, show your work for each step. For the Stata section, when asked for graphs, save the graph as a .png file and paste the image into the appropriate section of the word document. Paste your code that produced the graph below the graph. When asked for tables, use the esttab process covered in class to create the "csv" tables and paste them into the homework. Paste the code used to create the table under the table.

Dataset 1. Hospital survival rates based on patient initial condition

Condition	Hospital	Survival	Count
All	A	Dead	63
All	B	Dead	16
All	A	Survived	2037
All	B	Survived	784
Good	A	Dead	6
Good	B	Dead	8
Good	A	Survived	594
Good	B	Survived	592
Poor	A	Dead	57
Poor	B	Dead	8
Poor	A	Survived	1443
Poor	B	Survived	192

1. Using Dataset 1 above:
   a. Create a two-way table of Hospital and Survival that captures the number of observations in each cell.

   b. Create a new two-way table with Hospital and Survival that replaces the number of observations with the conditional and marginal distributions.

   c. Calculate the average deaths in hospital A.

Dataset 2. NBA Team Spending Over the Salary Cap and Wins

Season	Team	Wins	Spending over cap
2017-18	Atlanta Hawks	24	1321.02
2017-18	Boston Celtics	55	15991.12
2017-18	Brooklyn Nets	28	-3053.23
2017-18	Charlotte Hornets	36	18135.16
2017-18	Chicago Bulls	27	-9667.96
2017-18	Cleveland Cavaliers	50	38269.71
2017-18	Dallas Mavericks	24	-13188.51
2017-18	Denver Nuggets	46	8796.10
2017-18	Detroit Pistons	39	20993.11
2017-18	Golden State Warriors	58	38401.85
2017-18	Houston Rockets	65	19977.16
2017-18	Indiana Pacers	48	-4663.21
2017-18	Los Angeles Clippers	42	20771.77
2017-18	Los Angeles Lakers	35	6262.45
2017-18	Memphis Grizzlies	22	11180.31
2017-18	Miami Heat	44	32129.62
2017-18	Milwaukee Bucks	44	21712.33
2017-18	Minnesota Timberwolves	47	18375.55
2017-18	New Orleans Pelicans	48	20706.73
2017-18	New York Knicks	29	8762.41
2017-18	Oklahoma City Thunder	48	35201.06
2017-18	Orlando Magic	25	-2120.97
2017-18	Philadelphia 76ers	52	1701.28
2017-18	Phoenix Suns	21	-4274.67
2017-18	Portland Trailblazers	49	20015.92
2017-18	Sacramento Kings	27	-3465.47
2017-18	San Antonio Spurs	47	17060.55
2017-18	Toronto Raptors	59	17481.88
2017-18	Utah Jazz	48	8520.33
2017-18	Washington Wizards	43	24129.23

2. Using dataset 2 above:

   a. Calculate the mean and standard deviation of wins among NBA teams.

   b. Calculate the z-score of wins for each basketball team.

   c. What team had the highest z-score?

d. In terms of wins, what team had more wins than 56% of the teams in the NBA? (HINT: Use the z-scores and z-table to figure this out)

3. Using dataset3_hw5 (For all time variables, you can use the time variables in the dataset. You do not need to create new ones):
   a. Create a bar chart of the types of employment in years 2003, 2009, and 2018. (Hint: you should have three bar graphs, one for each year, and the if conditions will always come before the commas of options.)

   b. Create a table that captures the mean and standard deviation (to two decimal points) of all the time spent on household chores and personal care by income level.

   c. Create a table that compares the mean and standard deviation of work time and socializing time by region of the country.

   d. Re-create your table from (b), but use a standardized score for time spend on household chores and personal care instead. Remember to copy the csv table here.

   e. How much time would someone have to spend on chores to spend more time than 83% of the sample? (HINT: You should use the z-table to find the associated z-score, and then plug the pieces you have into the formula and solve for the missing piece)

4. Using dataset4_hw5:
   a. Create a table that captures the 7-point party identification by education level. (HINT: pid7 will give you the categories, and there are indicators for each category. Follow the process from the first table made in the class activity to create this table, using the different variables here).

Extra credit

1. Using dataset3_hw5.dta:
   a. What is the Pearson's R of the relationship between household size and the amount of time on household chores?

   b. What is the Person's R of the relationship between household size and the amount of time spent on personal care?

   c. Create a table that captures the types of employment by region of the country.

2. Using dataset4_hw5.dta (NOTE: This one is tricky and requires pulling together skills from various pieces we've done before):
   a. Create a bar graph of retrospective views of the economy (variable economy_retro) by education level for 2006 and 2018. This should be two different bar graphs, one for each

year. (HINT: you may want to create indicators for each category and graph the mean of those indicator variables using education as the over variable.)