

```

-----
> -----
      name: <unnamed>
      log: C:\Users\saiomkark\OneDrive - The University of Chicago\AdvStats\PS4\Sai_
> Omkar_K_PS4.log
      log type: text
      opened on: 29 Oct 2021, 23:15:20

```

```

.
. *Loading data and removing first line using names
.
. insheet using "C:\Users\saiomkark\OneDrive - The University of Chicago\AdvStats\PS4\
> ppha312x2021.csv", names clear
(14 vars, 10,149 obs)

```

```

.
.
. label data "Data is from IPUMS-USA restricted to Albuquerque,New Mexico (2018)"
.
.
. *analyze the data using summarize to check for NAs etc..
. summarize

```

Variable	Obs	Mean	Std. Dev.	Min	Max
year	10,149	2019	0	2019	2019
statefip	0				
met2013	0				
perwt	10,149	115.5946	104.4547	2	1977
sex	0				
age	0				
race	0				
hispan	0				
bpl	0				
educd	0				
empstat	0				
uhrswork	0				
inctot	10,149	1743385	3748625	-6900	9999999
incwage	10,149	209523.8	379486.3	0	999999

```

.
. *Inctot has negative values, which it cannot be. Hence keeping only those where inct
> ot is greater than equal to 0
. keep if inctot>= 0
(9 observations deleted)

```

```

.
.
. *check the data if changes are applied
. summarize

```

Variable	Obs	Mean	Std. Dev.	Min	Max
year	10,140	2019	0	2019	2019
statefip	0				
met2013	0				
perwt	10,140	115.6266	104.4945	2	1977
sex	0				
age	0				
race	0				
hispan	0				
bpl	0				
educd	0				
empstat	0				
uhrswork	0				
inctot	10,140	1744935	3749928	0	9999999
incwage	10,140	209709.4	379603.5	0	999999

```

. *Encoding the string variables so that we can analyze them in STATA
. encode hispan, gen(hispan_cat)

. encode sex, gen(sex_cat)

. encode race, gen(race_cat)

. encode educd, gen(educd_cat)

. encode empstat, gen(empstat_cat)

. *encode labforce, gen(labforce_cat)
. encode age, gen(age_cat)

. encode uhrswork, gen(uhrswork_cat)

.
. *Question 1, variable for if respondent is Hispanic. Variable for if respondent is A
> frican/American
.
. codebook hispan_cat

-----
> -----
hispan_cat
> (unlabeled)
-----
> -----

                type:  numeric (long)
                label:  hispan_cat

                range:  [1,5]                      units:  1
unique values:  5                                missing .:  0/10,140

                tabulation:  Freq.   Numeric  Label
                             4         1   Cuban
                             212        2   Mexican
                             9,851       3   Not Hispanic
                             52         4   Other
                             21         5   Puerto Rican

. gen is_hispanic = 1

. replace is_hispanic = 0 if (hispan_cat ==3)
(9,851 real changes made)

.
. codebook race_cat

-----
> -----
race_cat
> (unlabeled)
-----
> -----

                type:  numeric (long)
                label:  race_cat

                range:  [1,9]                      units:  1
unique values:  9                                missing .:  0/10,140

```

tabulation:	Freq.	Numeric	Label
	9	1	American Indian or Alaska Native
	3,899	2	Black/African American/Negro
	9	3	Chinese
	3	4	Japanese
	61	5	Other Asian or Pacific Islander
	93	6	Other race, nec
	15	7	Three or more major races
	136	8	Two major races
	5,915	9	White

```
. gen is_AfricanAmerican = 0

. replace is_AfricanAmerican =1 if (race_cat == 2)
(3,899 real changes made)

.
.
. *Question 1b Limit the sample to white, non-Hispanic or African American, non-Hispan
> ic respondents;
.
. keep if (race_cat == 9 & is_hispanic == 0) | (is_AfricanAmerican == 1 & is_hispanic
> == 0)
(508 observations deleted)

.
. *Question 1c Limit the sample to those 25 to 59 years of age;
. codebook age_cat

-----
> -----
age_cat
> (unlabeled)
-----
> -----

      type:  numeric (long)
      label:  age_cat, but 1 nonmissing value is not labeled

      range:  [1,93]
unique values: 93

      units:  1
missing .:  0/9,632

      examples: 19    26
                  37    42
                  52    56
                  65    68

. keep if (age_cat >= 25 & age_cat <= 59)
(5,292 observations deleted)

.
.
. *Question 1d Define a binary variable indicating whether the respondent is female;
. codebook sex_cat

-----
> -----
sex_cat
> (unlabeled)
-----
> -----

      type:  numeric (long)
      label:  sex_cat

      range:  [1,2]
unique values: 2

      units:  1
missing .:  0/4,340
```

```

      tabulation:  Freq.    Numeric  Label
                  2,294         1  Female
                  2,046         2  Male

. gen is_female = 0

. replace is_female = 1 if (sex_cat == 1)
(2,294 real changes made)

.
.
. *Question 1e  Create an education variable with five categories: Less than high scho
> ol (including GED recipients), high school
> degree, some college (including associates degree), bachelor's degree, and graduate
> degree;
.
. codebook educd_cat, tab(500)

-----
> -----
educd_cat
>                                     (unlabeled)
-----
> -----

      type:  numeric (long)
      label:  educd_cat

      range:  [1,25]
unique values: 21                                units:  1
                                                    missing .:  0/4,340

      tabulation:  Freq.    Numeric  Label
                   653         1  1 or more years of college
                                credit, no degree
                   91         2  12th grade, no diploma
                   323         3  Associate's degree, type not
                                specified
                   806         4  Bachelor's degree
                   53         5  Doctoral degree
                   218         6  GED or alternative credential
                   16         7  Grade 1
                   81         8  Grade 10
                   83         9  Grade 11
                    3        13  Grade 5
                    5        14  Grade 6
                    7        15  Grade 7
                   12        16  Grade 8
                   44        17  Grade 9
                   64        18  Kindergarten
                   388        19  Master's degree
                   122        21  No schooling completed
                   120        22  Nursery school, preschool
                    97        23  Professional degree beyond a
                                bachelor's degree
                   903        24  Regular high school diploma
                   251        25  Some college, but less than 1
                                year

. gen edu_level = ""
(4,340 missing values generated)

```

```
. replace edu_level = "less than high school" if (educd_cat != 1 & educd_cat != 3 & ed
> ucd_cat != 24 & educd_cat != 4 & educd_cat
> != 19)
variable edu_level was str1 now str21
(1,267 real changes made)
```

```
. replace edu_level = "some college" if (educd_cat == 1 | educd_cat == 3)
(976 real changes made)
```

```
. replace edu_level = "high school degree" if (educd_cat == 24)
(903 real changes made)
```

```
. replace edu_level = "bachelors degree" if (educd_cat == 4)
(806 real changes made)
```

```
. replace edu_level = "graduate degree" if (educd_cat == 19)
(388 real changes made)
```

```
.
.
.
.
.
. *Question 1f Define a dummy variable for whether the respondent is employed.
.
. codebook empstat_cat
```

```
-----
> -----
empstat_cat
> (unlabeled)
-----
> -----
```

```

      type:  numeric (long)
      label:  empstat_cat

      range:  [1,4]
unique values: 4
                        units:  1
                        missing .: 0/4,340
```

```

      tabulation:  Freq.   Numeric   Label
                   3,037         1   Employed
                   289          2   N/A
                   899          3   Not in labor force
                   115          4   Unemployed
```

```
. gen is_employed = 0
```

```
. replace is_employed = 1 if (empstat_cat == 1)
(3,037 real changes made)
```

```
.
.
.
. *Question 2 Compare the educational attainment of African American to white responde
> nts.
. tab race_cat
```

race_cat	Freq.	Percent	Cum.
Black/African American/Negro	1,757	40.48	40.48
White	2,583	59.52	100.00
Total	4,340	100.00	

```
. * Only African/American and whites are limited to, in the data
. tab edu_level is_AfricanAmerican
```

edu_level	is_AfricanAmerican		Total
	0	1	
bachelors degree	603	203	806
graduate degree	259	129	388
high school degree	426	477	903
less than high school	725	542	1,267
some college	570	406	976
Total	2,583	1,757	4,340

```
.
. * In the above table, 1 is African/American and 0 are Whites
. *Sample Observation : Number of African/American with bachelors degree is 203 and Wh
> ites with bachelors degree is 603
.
. *Another way of doing this is below, to show both frequency and percentages
. tab edu_level race_cat, row
```

```
+-----+
| Key |
|-----|
| frequency |
| row percentage |
+-----+
```

edu_level	race_cat		Total
	Black/Afr	White	
bachelors degree	203	603	806
	25.19	74.81	100.00
graduate degree	129	259	388
	33.25	66.75	100.00
high school degree	477	426	903
	52.82	47.18	100.00
less than high school	542	725	1,267
	42.78	57.22	100.00
some college	406	570	976
	41.60	58.40	100.00
Total	1,757	2,583	4,340
	40.48	59.52	100.00

```
.
.
.
. *Quesion 3 Compare the employment rate by sex for African Americans and whites.
. table is_employed sex_cat race_cat, contents(freq)
```

is_employ ed	race_cat and sex_cat			
	- Black/Afri -		----White ---	
	Female	Male	Female	Male
0	317	321	410	255
1	670	449	897	1,021

```
.
. *Second way of doing this is grouping by sex , gives the same result
. table is_employed race_cat, by(sex_cat) row
```

sex_cat and is_employed		race_cat	
		Black/African American	White
Female	0	317	410
	1	670	897
	Total	987	1,307
Male	0	321	255
	1	449	1,021
	Total	770	1,276

```
.
. *Question 4 Conditional on working, compare hours worked and its standard deviation
> by sex for African Americans and whites.
```

```
.
. *We create a new variable which hours worked with employment condition
. gen uhrswork_employed = uhrswork_cat * is_employed
. table race_cat, by(is_female) contents(freq)
```

is_female and race_cat	Freq.
0	
Black/African American/Negro	770
White	1,276
1	
Black/African American/Negro	987
White	1,307

```
. table race_cat, by(is_female) contents(sum uhrswork_employed)
```

is_female and race_cat	sum(uhrswork_employed)
0	
Black/African American/Negro	16352
White	39503
1	
Black/African American/Negro	22691
White	30063

```
. table race_cat, by(is_female) contents(sd uhrswork_employed)
```

is_female and race_cat	sd(uhrswork_employed)
0	
Black/African American/Negro	19.57617
White	17.62994
1	
Black/African American/Negro	17.48415
White	17.70414

```
. table race_cat, by(is_female) contents(mean uhrswork_employed)
```

```
-----
      is_female and race_cat | mean(uhrswo~d)
-----+-----
0                               |
Black/African American/Negro |      21.23636
                             White |      30.95846
-----+-----
1                               |
Black/African American/Negro |      22.98987
                             White |      23.00153
-----+-----
```

```
.
. *Another way of doing this using bysort, tabstat. Similar result as above
. bysort is_AfricanAmerican: tabstat uhrswork_cat if is_employed==1, by(sex_cat) stat(
> sum mean sd skewness)
```

```
-----
> -----
-> is_AfricanAmerican = 0
```

```
Summary for variables: uhrswork_cat
by categories of: sex_cat
```

```
sex_cat |      sum      mean      sd  skewness
-----+-----
Female |    30063  33.51505  10.20329  -.4224225
Male   |    39503  38.6905   9.437628  .2787859
-----+-----
Total  |    69566  36.27007  10.13524  -.1395582
-----+-----
```

```
-----
> -----
-> is_AfricanAmerican = 1
```

```
Summary for variables: uhrswork_cat
by categories of: sex_cat
```

```
sex_cat |      sum      mean      sd  skewness
-----+-----
Female |    22691  33.86716   9.033998  .6073129
Male   |    16352  36.41871  10.18131  .3011089
-----+-----
Total  |    39043  34.89097   9.588525  .4949161
-----+-----
```

```
.
. *Third way is by plotting a graph to visualize
. *total hours worked below
. graph bar (sum) uhrswork_cat if is_employed ==1, over(is_AfricanAmerican) by(sex_cat
> )
```

```
.
. *Mean and standar deviation
. graph bar (mean) uhrswork_cat (sd) uhrswork_cat if is_employed ==1, over(is_AfricanA
> merican) by(sex_cat)
```

```
.
```



```
.
. *Question 5 Conditional on working, compare total income, its standard deviation, an
> d its skewness by education and sex for Af
> rican Americans and whites.
```

```
. gen inctot_employed = inctot * is_employed
```

```
. table edu_level race_cat, by(is_female) contents(freq)
```

is_female and edu_level		race_cat	
		Black/African Americ	White
0			
	bachelors degree	61	263
	graduate degree	28	116
	high school degree	239	212
	less than high school	275	407
	some college	167	278
1			
	bachelors degree	142	340
	graduate degree	101	143
	high school degree	238	214
	less than high school	267	318
	some college	239	292

```
. table edu_level race_cat, by(is_female) contents(sum inctot_employed)
```

is_female and edu_level		race_cat	
		Black/African Americ	White
0			
	bachelors degree	3422670	3.34e+07
	graduate degree	1831000	1.52e+07
	high school degree	5706834	9780510
	less than high school	4282580	2.42e+07
	some college	6254520	1.75e+07
1			
	bachelors degree	6153600	1.86e+07
	graduate degree	5881600	9598544
	high school degree	4217410	5161150
	less than high school	4026150	1.05e+07
	some college	7177664	1.02e+07

```
. table edu_level race_cat, by(is_female) contents(sd inctot_employed)
```

is_female and edu_level		race_cat	
		Black/African Americ	White
0			
	bachelors degree	37837.73	128774.8
	graduate degree	46177.36	124259.2
	high school degree	29270.37	37662.02
	less than high school	38751.9	109319.5
	some college	46228.24	54510.44
1			
	bachelors degree	38947.17	59998.14
	graduate degree	49511.88	65751.48
	high school degree	17674.01	25857.32
	less than high school	25657.01	61071.14
	some college	23214.05	36893.19

```
. table edu_level race_cat, by(is_female) contents(mean inctot_employed)
```

is_female and edu_level	race_cat	
	Black/African Americ	White
0		
bachelors degree	56109.34	126903.7
graduate degree	65392.86	131180.3
high school degree	23877.97	46134.48
less than high school	15573.02	59477.05
some college	37452.21	62793.45
1		
bachelors degree	43335.21	54791.71
graduate degree	58233.66	67122.69
high school degree	17720.21	24117.52
less than high school	15079.21	32862.67
some college	30032.07	34972.67

```
.
. *Second way of doing this is by using bysort, tabstat
. bysort is_AfricanAmerican is_female: tabstat inctot_employed if inctot != 9999999, b
> y(edu_level) stat(sum mean sd skewness)
```

```
> -----
-> is_AfricanAmerican = 0, is_female = 0
```

```
Summary for variables: inctot_employed
by categories of: edu_level
```

edu_level	sum	mean	sd	skewness
bachelors degree	3.34e+07	126903.7	128774.8	2.131521
graduate degree	1.52e+07	131180.3	124259.2	2.364456
high school degr	9780510	46134.48	37662.02	1.575425
less than high s	2.42e+07	73133.41	117052.5	2.890569
some college	1.75e+07	62793.45	54510.44	2.319985
Total	1.00e+08	83364.03	104022.8	2.949336

```
> -----
-> is_AfricanAmerican = 0, is_female = 1
```

```
Summary for variables: inctot_employed
by categories of: edu_level
```

edu_level	sum	mean	sd	skewness
bachelors degree	1.86e+07	54791.71	59998.14	2.667338
graduate degree	9598544	67122.69	65751.49	4.038562
high school degr	5161150	24117.52	25857.32	1.479817
less than high s	1.05e+07	42654.41	66529.39	3.662441
some college	1.02e+07	34972.67	36893.19	1.699672
Total	5.41e+07	43801.64	54613.18	3.542987

```
> -----
-> is_AfricanAmerican = 1, is_female = 0
```

```
Summary for variables: inctot_employed
by categories of: edu_level
```

edu_level	sum	mean	sd	skewness
bachelors degree	3422670	56109.34	37837.73	.6054301
graduate degree	1831000	65392.86	46177.35	.6173322
high school degr	5706834	23877.97	29270.37	2.018818
less than high s	4282580	20890.63	43650.54	6.399114
some college	6254520	37452.22	46228.24	5.393441
Total	2.15e+07	30710.86	41474.53	4.3768

```

> -----
-> is_AfricanAmerican = 1, is_female = 1

```

Summary for variables: inctot_employed
by categories of: edu_level

edu_level	sum	mean	sd	skewness
bachelors degree	6153600	43335.21	38947.17	3.321626
graduate degree	5881600	58233.66	49511.88	2.581866
high school degr	4217410	17720.21	17674.01	.7791044
less than high s	4026150	20437.31	27987.84	1.875164
some college	7177664	30032.07	23214.05	.8367091
Total	2.75e+07	29941.57	32617.02	2.979788

```

.
. *Third way is by plotting a graph and visualize
. graph bar (mean) uhrswork_cat (sd) uhrswork_cat if is_employed ==1, over(is_AfricanA
> merican) by(edu_level sex_cat)

```

```

.
.
.
. *Question 6 For those with positive wages, compare the wage income, its standard dev
> iation, and its skewness by education and
> sex for African Americans and whites.
.
. table edu_level race_cat, by(is_female) contents(freq)

```

is_female and edu_level	Black/African Americ	White
0		
bachelors degree	61	263
graduate degree	28	116
high school degree	239	212
less than high school	275	407
some college	167	278
1		
bachelors degree	142	340
graduate degree	101	143
high school degree	238	214
less than high school	267	318
some college	239	292

```
. table edu_level race_cat, by(is_female) contents(sum incwage)
```

is_female and edu_level	race_cat	
	Black/African Americ	White
0		
bachelors degree	3577300	2.94e+07
graduate degree	1712400	1.39e+07
high school degree	5253300	9198930
less than high school	7.41e+07	9.91e+07
some college	5774270	1.57e+07
1		
bachelors degree	5575200	1.80e+07
graduate degree	5326500	9028140
high school degree	4156030	4822400
less than high school	7.39e+07	8.24e+07
some college	6641300	9780680

```
. table edu_level race_cat, by(is_female) contents(sd incwage)
```

is_female and edu_level	race_cat	
	Black/African Americ	White
0		
bachelors degree	38360.06	114542.2
graduate degree	47571.19	106966.3
high school degree	25332.19	36330.76
less than high school	429131.3	376511.1
some college	44847.04	46061.5
1		
bachelors degree	29150.61	60514.68
graduate degree	36789.86	63411.49
high school degree	17094.43	25529.79
less than high school	432486.6	408710.5
some college	21448.42	35337.39

```
. table edu_level race_cat, by(is_female) contents(mean incwage)
```

is_female and edu_level	race_cat	
	Black/African Americ	White
0		
bachelors degree	58644.2623	111952.8517
graduate degree	61157.14286	120209.4828
high school degree	21980.33473	43391.17925
less than high school	269543.8545	243408.1671
some college	34576.46707	56356.8705
1		
bachelors degree	39261.97183	52923.82353
graduate degree	52737.62376	63133.84615
high school degree	17462.31092	22534.57944
less than high school	276813.221	258964.8648
some college	27787.86611	33495.47945

```

. *The above gives abnormal results due to the incwage values of 999999 present in the
> data. We can use bysort function to exclu
> de them from the analysis
. bysort is_AfricanAmerican is_female: tabstat incwage if incwage != 999999, by(edu_le
> vel) stat(sum mean sd skewness)

```

```

-----
> -----
-> is_AfricanAmerican = 0, is_female = 0

```

Summary for variables: incwage
by categories of: edu_level

edu_level	sum	mean	sd	skewness
-----+-----				
bachelors degree	2.94e+07	111952.9	114542.2	2.175663
graduate degree	1.39e+07	120209.5	106966.3	1.973413
high school degr	9198930	43391.18	36330.76	1.329041
less than high s	2.31e+07	69689.43	110934.9	2.70288
some college	1.57e+07	56356.87	46061.5	1.748684
-----+-----				
Total	9.13e+07	76101.03	93994.52	2.837475
-----+-----				

```

-----
> -----
-> is_AfricanAmerican = 0, is_female = 1

```

Summary for variables: incwage
by categories of: edu_level

edu_level	sum	mean	sd	skewness
-----+-----				
bachelors degree	1.80e+07	52923.82	60514.68	3.089306
graduate degree	9028140	63133.85	63411.49	3.934896
high school degr	4822400	22534.58	25529.79	1.581003
less than high s	9350900	38166.94	61479.88	3.755523
some college	9780680	33495.48	35337.39	1.779512
-----+-----				
Total	5.10e+07	41309.74	52870.12	3.682119
-----+-----				

```

-----
> -----
-> is_AfricanAmerican = 1, is_female = 0

```

Summary for variables: incwage
by categories of: edu_level

edu_level	sum	mean	sd	skewness
-----+-----				
bachelors degree	3577300	58644.26	38360.06	.5614435
graduate degree	1712400	61157.14	47571.19	.7331596
high school degr	5253300	21980.33	25332.19	1.380713
less than high s	4124630	20120.15	41719.81	6.965436
some college	5774270	34576.47	44847.04	5.941005
-----+-----				
Total	2.04e+07	29202.71	39790.68	4.754682
-----+-----				

```

-----
> -----
-> is_AfricanAmerican = 1, is_female = 1

```

Summary for variables: incwage
by categories of: edu_level

edu_level	sum	mean	sd	skewness
bachelors degree	5575200	39261.97	29150.61	.5987706
graduate degree	5326500	52737.62	36789.86	1.039774
high school degr	4156030	17462.31	17094.43	.8381983
less than high s	3909200	19843.65	26290.99	1.697665
some college	6641300	27787.87	21448.42	.6037291
Total	2.56e+07	27926.1	27420.88	1.361015

```
.
.
. *Question 7 Calculate employment rates by age and sex for African Americans and whit
> es.
. table age_cat race_cat, by(is_female) contents(freq)
```

is_female	age_cat	Black/African Americ	White
0			
	31	23	35
	32	16	39
	33	24	34
	34	24	36
	35	15	32
	36	15	38
	37	15	33
	38	24	29
	39	21	29
	4	22	19
	40	23	35
	41	14	33
	42	21	24
	43	13	19
	44	15	16
	45	19	33
	46	16	35
	47	19	34
	48	25	59
	49	20	33
	5	29	33
	50	23	37
	51	16	32
	52	29	27
	53	30	38
	54	27	59
	55	33	51
	56	20	31
	57	24	49
	58	32	48
	59	22	41
	6	19	24
	60	33	52
	61	26	57
	62	23	52
1			
	31	28	34
	32	25	32
	33	29	40
	34	26	36
	35	26	33
	36	32	34
	37	18	36
	38	23	26
	39	30	21
	4	21	18
	40	26	28
	41	20	28

42		24	28
43		25	27
44		28	35
45		30	28
46		19	38
47		30	40
48		21	46
49		30	40
5		30	29
50		32	40
51		23	39
52		27	30
53		26	53
54		27	37
55		36	45
56		27	52
57		38	44
58		35	54
59		46	50
6		19	26
60		34	52
61		39	53
62		37	55

```

. table age_cat race_cat, by(is_female) contents(mean is_employed)

```

is_female and age_cat	Black/African Americ	White
0		
31	.4782609	.7714286
32	.75	.8717949
33	.375	.7352941
34	.75	.75
35	.7333333	.9375
36	.6	.8421053
37	.8	.9393939
38	.6666667	.7586207
39	.7142857	.862069
4	0	0
40	.6956522	.8285714
41	.8571429	.8787879
42	.5238096	.9166667
43	.6153846	.9473684
44	.6	.9375
45	.6842105	.8484849
46	.8125	.8571429
47	.7368421	.9117647
48	.72	.9322034
49	.7	.8484849
5	0	0
50	.5652174	.9459459
51	.625	.96875
52	.7241379	.9259259
53	.6	.9736842
54	.5555556	.8474576
55	.6969697	.8627451
56	.6	.9032258
57	.625	.877551
58	.5625	.8333333
59	.7727273	.8048781
6	0	0
60	.6363636	.7692308
61	.6538461	.7543859
62	.3478261	.6538461
1		
31	.7142857	.7941176
32	.8	.75

33		.7931035	.825
34		.7692308	.75
35		.9230769	.6969697
36		.78125	.6470588
37		.8333333	.7222222
38		.8695652	.8076923
39		.8333333	.6190476
4		0	0
40		.7307692	.7857143
41		.85	.75
42		.8333333	.8214286
43		.76	.7777778
44		.6428571	.8
45		.7666667	.8214286
46		.8421053	.8947368
47		.8	.775
48		.7619048	.6739131
49		.7666667	.8
5		0	0
50		.59375	.8
51		.8260869	.7948718
52		.7777778	.7666667
53		.7307692	.754717
54		.7777778	.6216216
55		.6944444	.6222222
56		.5555556	.6153846
57		.6315789	.7272727
58		.6571429	.7037037
59		.7391304	.78
6		0	0
60		.5	.6346154
61		.6923077	.5660377
62		.5135135	.6181818

```

. table age_cat race_cat, by(is_female) contents(sd is_employed)

```

is_female and age_cat	race_cat Black/African Americ	White
0		
31	.5107539	.426043
32	.4472136	.3386884
33	.4945354	.4478111
34	.4423259	.439155
35	.4577377	.2459347
36	.5070925	.369537
37	.4140393	.2423058
38	.4815434	.4354942
39	.4629101	.3509312
4	0	0
40	.470472	.3823853
41	.3631365	.331434
42	.5117663	.2823299
43	.5063697	.2294157
44	.5070925	.25
45	.4775669	.3641095
46	.4031129	.3550358
47	.4524139	.2879022
48	.4582576	.2535545
49	.4701623	.3641095
5	0	0
50	.5068698	.2292434
51	.5	.1767767
52	.4548588	.2668802
53	.4982729	.1622214
54	.5063697	.3626321
55	.4666937	.3475404
56	.5026247	.3005371
57	.4945354	.3312007

58		.5040161	.3766218
59		.428932	.4012177
6		0	0
60		.4885042	.4254356
61		.4851645	.434277
62		.4869848	.4803845

1			
31		.4600437	.4104256
32		.4082483	.4399413
33		.4122508	.3848076
34		.4296689	.439155
35		.2717465	.4666937
36		.4200134	.4850712
37		.3834825	.4542568
38		.3443502	.4019185
39		.379049	.4976133
4		0	0
40		.4523443	.4178554
41		.3663476	.4409586
42		.3806935	.390021
43		.4358899	.4236593
44		.48795	.4058397
45		.4301831	.390021
46		.3746343	.3110118
47		.4068381	.422902
48		.4364358	.4739596
49		.4301831	.4050958
5		0	0
50		.4989909	.4050958
51		.3875534	.4090739
52		.4236593	.4301831
53		.4523443	.4343722
54		.4236593	.4916724
55		.4671766	.4903101
56		.5063697	.4912508
57		.4888515	.4505106
58		.481594	.4609109
59		.4439611	.418452
6		0	0
60		.5075192	.4862359
61		.4675719	.5003627
62		.5067117	.4903101

```
. *Second way to do this is by using bysort, tabstat
. bysort is_AfricanAmerican is_female : tabstat is_employed, by(age_cat) stat(sum mean
> sd skewness)
```

```
-----
> -----
-> is_AfricanAmerican = 0, is_female = 0
```

```
Summary for variables: is_employed
by categories of: age_cat
```

age_cat		sum	mean	sd	skewness
31		27	.7714286	.426043	-1.292786
32		34	.8717949	.3386884	-2.224198
33		25	.7352941	.4478111	-1.066667
34		27	.75	.439155	-1.154701
35		30	.9375	.2459347	-3.614784
36		32	.8421053	.369537	-1.876388
37		31	.9393939	.2423058	-3.683004
38		22	.7586207	.4354942	-1.208734
39		25	.862069	.3509312	-2.1
4		0	0	0	.
40		29	.8285714	.3823853	-1.743626
41		29	.8787879	.331434	-2.321192
42		22	.9166667	.2823299	-3.015113
43		18	.9473684	.2294157	-4.006938

44	15	.9375	.25	-3.614784
45	28	.8484848	.3641095	-1.943855
46	30	.8571429	.3550358	-2.041241
47	31	.9117647	.2879022	-2.903465
48	55	.9322034	.2535545	-3.438419
49	28	.8484848	.3641095	-1.943855
5	0	0	0	.
50	35	.9459459	.2292434	-3.944254
51	31	.96875	.1767767	-5.388159
52	25	.9259259	.2668803	-3.252691
53	37	.9736842	.1622214	-5.918364
54	50	.8474576	.3626321	-1.932759
55	44	.8627451	.3475404	-2.108271
56	28	.9032258	.3005372	-2.727724
57	43	.877551	.3312007	-2.303519
58	40	.8333333	.3766218	-1.788854
59	33	.804878	.4012177	-1.538644
6	0	0	0	.
60	40	.7692308	.4254356	-1.278019
61	43	.754386	.434277	-1.181952
62	34	.6538462	.4803845	-.6467617

Total	1021	.8001567	.4000392	-1.501225

```
-----
> -----
-> is_AfricanAmerican = 0, is_female = 1
```

Summary for variables: is_employed
by categories of: age_cat

age_cat	sum	mean	sd	skewness

31	27	.7941176	.4104256	-1.454786
32	24	.75	.4399413	-1.154701
33	33	.825	.3848076	-1.710674
34	27	.75	.439155	-1.154701
35	23	.6969697	.4666937	-.8571946
36	22	.6470588	.4850713	-.6154575
37	26	.7222222	.4542568	-.9922779
38	21	.8076923	.4019185	-1.56144
39	13	.6190476	.4976134	-.4902903
4	0	0	0	.
40	22	.7857143	.4178554	-1.392621
41	21	.75	.4409586	-1.154701
42	23	.8214286	.390021	-1.678509
43	21	.7777778	.4236593	-1.336306
44	28	.8	.4058397	-1.5
45	23	.8214286	.390021	-1.678509
46	34	.8947368	.3110117	-2.572479
47	31	.775	.4229021	-1.317106
48	31	.673913	.4739596	-.7419822
49	32	.8	.4050957	-1.5
5	0	0	0	.
50	32	.8	.4050957	-1.5
51	31	.7948718	.4090739	-1.460501
52	23	.7666667	.4301831	-1.260977
53	40	.754717	.4343722	-1.184028
54	23	.6216216	.4916724	-.5015504
55	28	.6222222	.4903101	-.5041842
56	32	.6153846	.4912508	-.4743416
57	32	.7272727	.4505106	-1.020621
58	38	.7037037	.4609109	-.8922178
59	39	.78	.418452	-1.351853
6	0	0	0	.
60	33	.6346154	.4862359	-.5591061
61	30	.5660377	.5003627	-.2664854
62	34	.6181818	.4903101	-.4865128

Total	897	.6863045	.4641718	-.8030467

> -----

-> is_AfricanAmerican = 1, is_female = 0

Summary for variables: is_employed
by categories of: age_cat

age_cat	sum	mean	sd	skewness
31	11	.4782609	.5107539	.0870388
32	12	.75	.4472136	-1.154701
33	9	.375	.4945354	.5163978
34	18	.75	.4423259	-1.154701
35	11	.7333333	.4577377	-1.05529
36	9	.6	.5070926	-.4082483
37	12	.8	.4140393	-1.5
38	16	.6666667	.4815434	-.7071068
39	15	.7142857	.46291	-.9486833
4	0	0	0	.
40	16	.6956522	.470472	-.8504201
41	12	.8571429	.3631365	-2.041241
42	11	.5238095	.5117663	-.0953463
43	8	.6153846	.5063697	-.4743416
44	9	.6	.5070926	-.4082483
45	13	.6842105	.4775669	-.7925939
46	13	.8125	.4031129	-1.601282
47	14	.7368421	.4524139	-1.075706
48	18	.72	.4582576	-.9799579
49	14	.7	.4701623	-.8728716
5	0	0	0	.
50	13	.5652174	.5068698	-.2631174
51	10	.625	.5	-.5163978
52	21	.7241379	.4548588	-1.002972
53	18	.6	.4982729	-.4082483
54	15	.5555556	.5063697	-.2236068
55	23	.6969697	.4666937	-.8571946
56	12	.6	.5026247	-.4082483
57	15	.625	.4945354	-.5163978
58	18	.5625	.5040161	-.2519763
59	17	.7727273	.428932	-1.301583
6	0	0	0	.
60	21	.6363636	.4885042	-.5669467
61	17	.6538462	.4851645	-.6467617
62	8	.3478261	.4869848	.6390097
Total	449	.5831169	.4933637	-.3371586

> -----

-> is_AfricanAmerican = 1, is_female = 1

Summary for variables: is_employed
by categories of: age_cat

age_cat	sum	mean	sd	skewness
31	20	.7142857	.4600437	-.9486833
32	20	.8	.4082483	-1.5
33	23	.7931034	.4122508	-1.447136
34	20	.7692308	.4296689	-1.278019
35	24	.9230769	.2717465	-3.175426
36	25	.78125	.4200134	-1.360672
37	15	.8333333	.3834825	-1.788854
38	20	.8695652	.3443502	-2.194691
39	25	.8333333	.379049	-1.788854
4	0	0	0	.
40	19	.7307692	.4523443	-1.040532
41	17	.85	.3663475	-1.960392
42	20	.8333333	.3806935	-1.788854
43	19	.76	.4358899	-1.217562

```

44 |      18 .6428571      .48795 -.5962848
45 |      23 .7666667 .4301831 -1.260977
46 |      16 .8421053 .3746343 -1.876388
47 |      24      .8 .4068381      -1.5
48 |      16 .7619048 .4364358 -1.229837
49 |      23 .7666667 .4301831 -1.260977
5 |      0      0      0      .
50 |      19 .59375 .4989909 -.3817709
51 |      19 .826087 .3875534 -1.720618
52 |      21 .7777778 .4236593 -1.336306
53 |      19 .7307692 .4523443 -1.040532
54 |      21 .7777778 .4236593 -1.336306
55 |      25 .6944444 .4671766 -.8442318
56 |      15 .5555556 .5063697 -.2236068
57 |      24 .6315789 .4888515 -.5455447
58 |      23 .6571429 .481594 -.6621222
59 |      34 .7391304 .4439611 -1.089162
6 |      0      0      0      .
60 |      17      .5 .5075192      0
61 |      27 .6923077 .4675719 -.8333333
62 |      19 .5135135 .5067117 -.0540738
-----
Total |      670 .6788247 .4671647 -.7659628
-----

```

```

.
.
. *Question 8 Conditional on working, compare the hours worked by education and sex fo
> r African Americans and whites.
.

```

```

. table edu_level race_cat, by(is_female) contents(freq)

```

```

-----
is_female and      |      race_cat
edu_level          | Black/African Americ      White
-----
0
  bachelors degree |      61      263
  graduate degree  |      28      116
  high school degree |     239      212
less than high school |     275      407
  some college     |     167      278
-----
1
  bachelors degree |     142      340
  graduate degree  |     101      143
  high school degree |     238      214
less than high school |     267      318
  some college     |     239      292
-----

```

```

. table edu_level race_cat, by(is_female) contents(sum uhrswork_employed)

```

```

-----
is_female and      |      race_cat
edu_level          | Black/African Americ      White
-----
0
  bachelors degree |     1988     9779
  graduate degree  |      885     4375
  high school degree |     5273     6488
less than high school |     3405     9572
  some college     |     4801     9289
-----
1
  bachelors degree |     4028     8795
  graduate degree  |     3145     4598
  high school degree |     5295     4387
less than high school |     3701     5295
  some college     |     6522     6988
-----

```

```
. table edu_level race_cat, by(is_female) contents(mean uhrswork_employed)
```

is_female and edu_level	race_cat	
	Black/African Americ	White
0		
bachelors degree	32.59016	37.18251
graduate degree	31.60714	37.71552
high school degree	22.06276	30.60377
less than high school	12.38182	23.51843
some college	28.7485	33.41367
1		
bachelors degree	28.3662	25.86765
graduate degree	31.13861	32.15385
high school degree	22.2479	20.5
less than high school	13.86142	16.65094
some college	27.2887	23.93151

```
. table edu_level race_cat, by(is_female) contents(sd uhrswork_employed)
```

is_female and edu_level	race_cat	
	Black/African Americ	White
0		
bachelors degree	15.29529	12.78884
graduate degree	13.8252	10.22852
high school degree	19.22184	16.68622
less than high school	18.21675	20.2488
some college	18.13893	16.61579
1		
bachelors degree	14.49797	16.78996
graduate degree	13.87878	16.05111
high school degree	17.462	16.91702
less than high school	17.78272	18.00265
some college	15.68158	17.02178

```
.
.
.
. log close
.   name: <unnamed>
.   log: C:\Users\saiomkark\OneDrive - The University of Chicago\AdvStats\PS4\Sai_
> Omkar_K_PS4.log
.   log type: text
.   closed on: 29 Oct 2021, 23:15:26
> -----
```