Эконометрика

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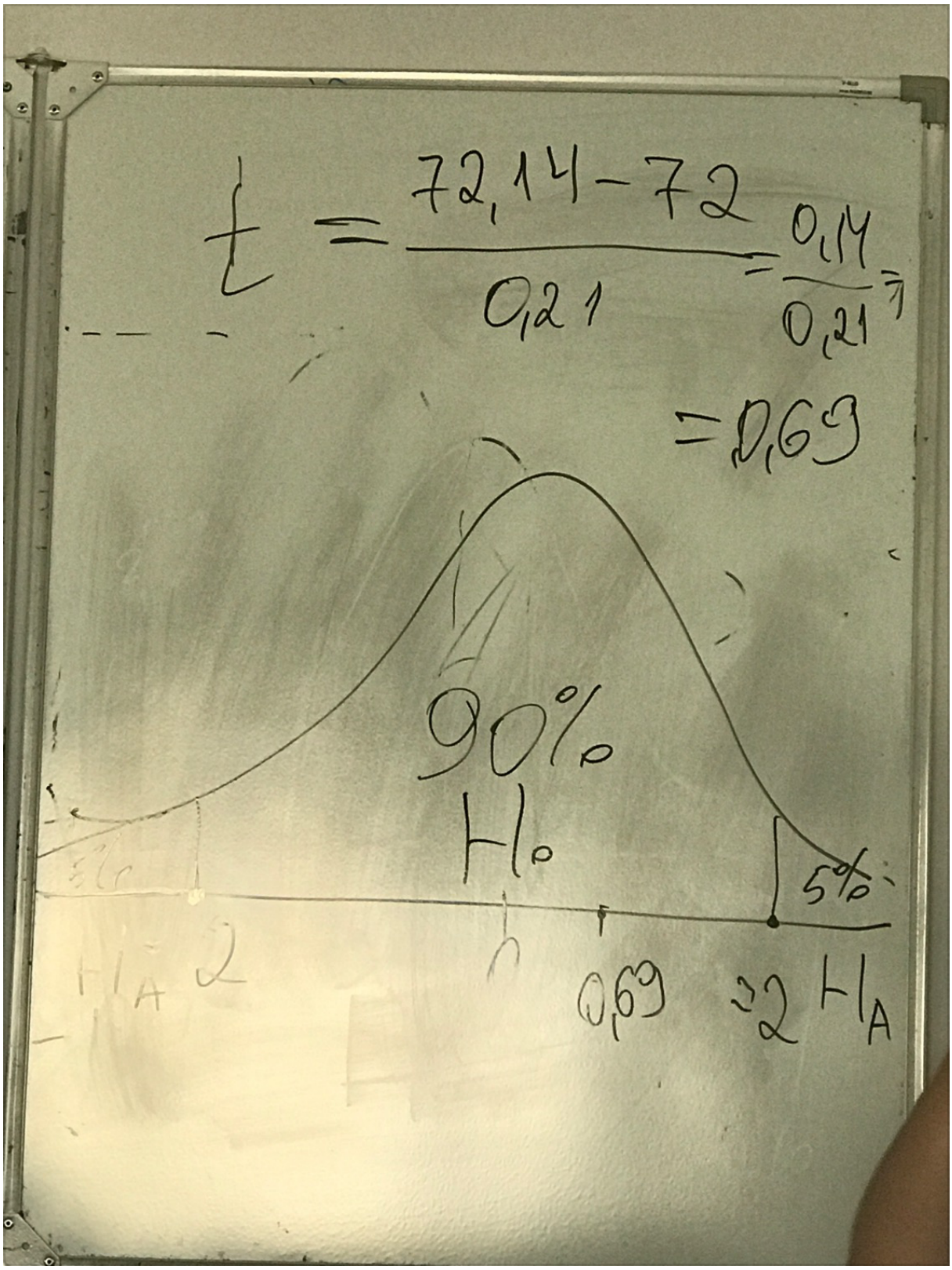
- Тестируем гипотезы через t-распределени
- Для сравнения использовать стандартную ошибку
- Делать вывод относительно того, куда попала значение по t статистике

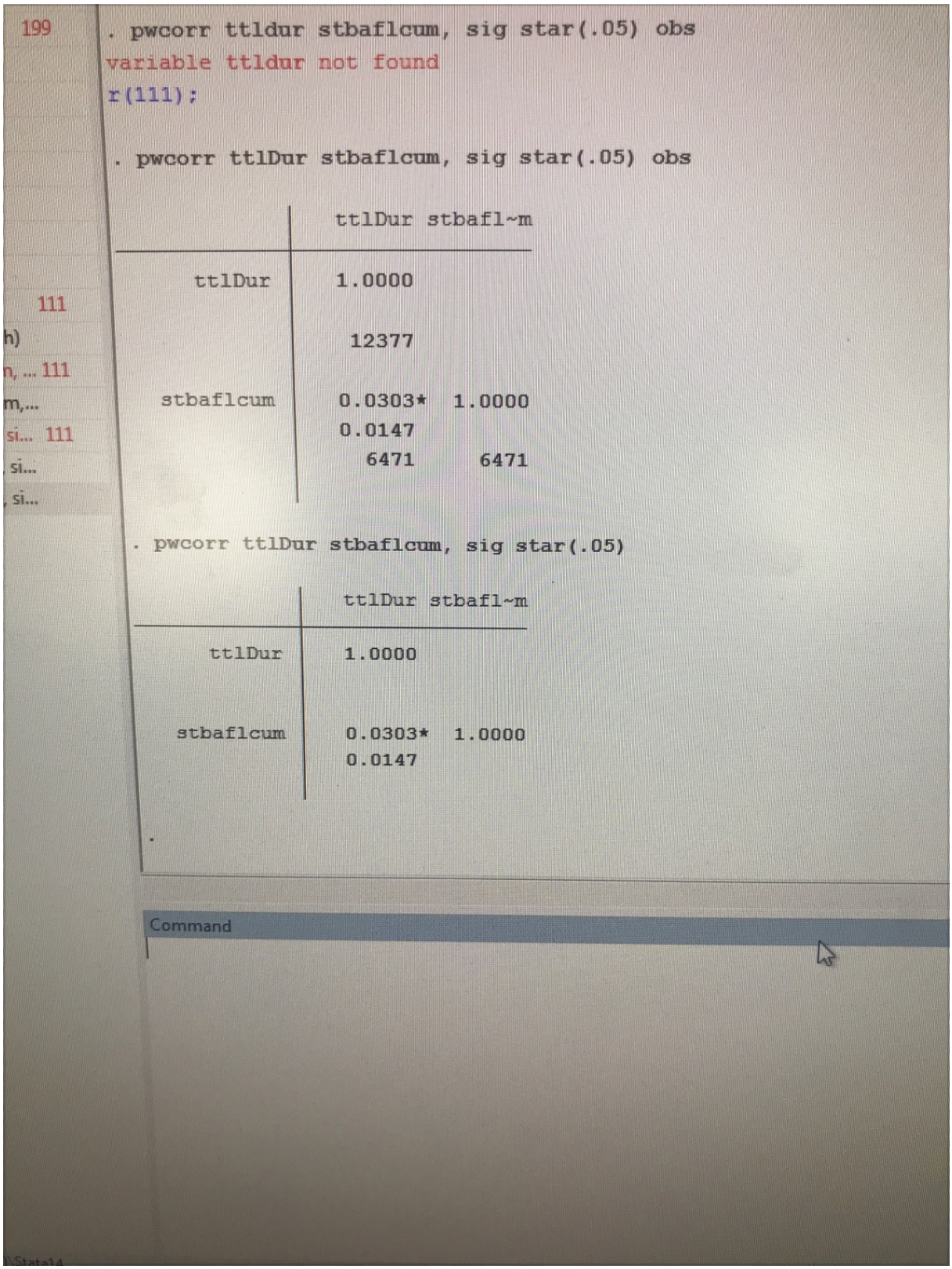


- P-value это площадь кусочка с правой стороны. То есть от точки до конца
- Как раз насчёт него делаем вот эти !=, <, >

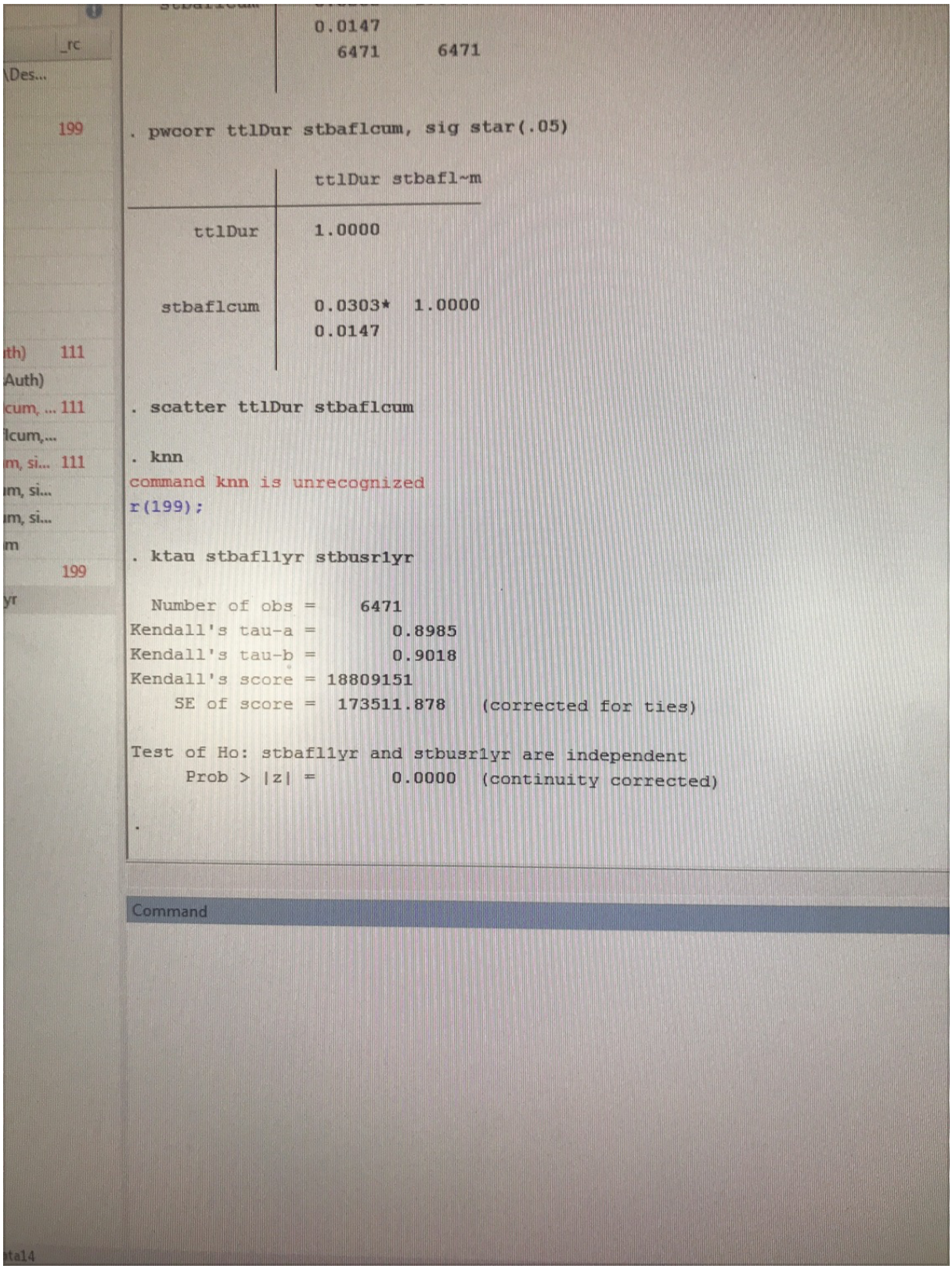
  Если первый вариант находим p value между значение по t статистике -0,59 и 0,59.

  Если значение по статистике 0.59
- Уровень значимости - то значение с которым сравниваем p value if больше значит принимаем гипотезе

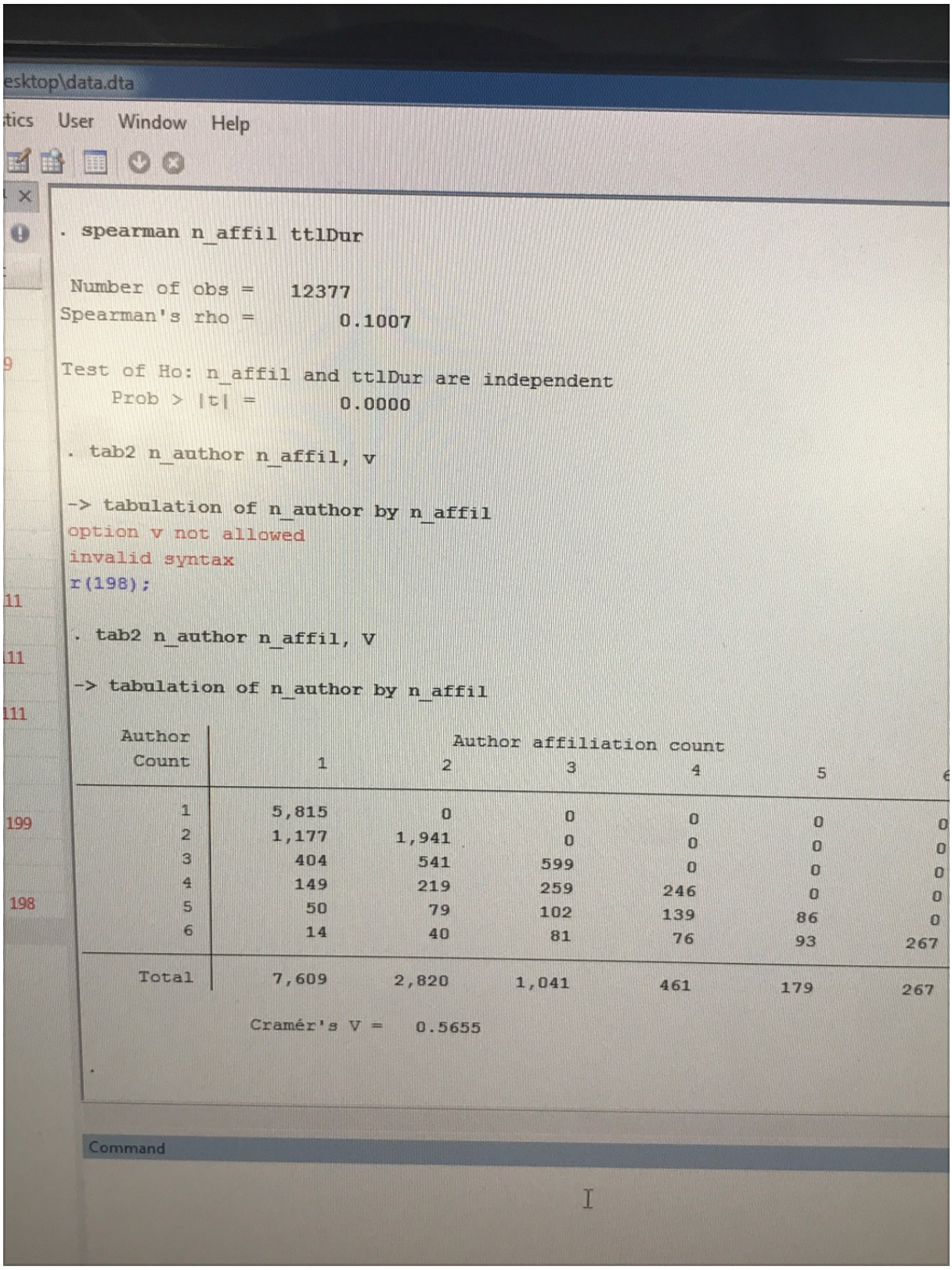
- Если p-value больше уровня значимости значит принимаем гипотезе
- При корреляции прям так просто тестировать, что корреляция допустим равна 0
- При корреляции значение под числом со звездочкой - p value



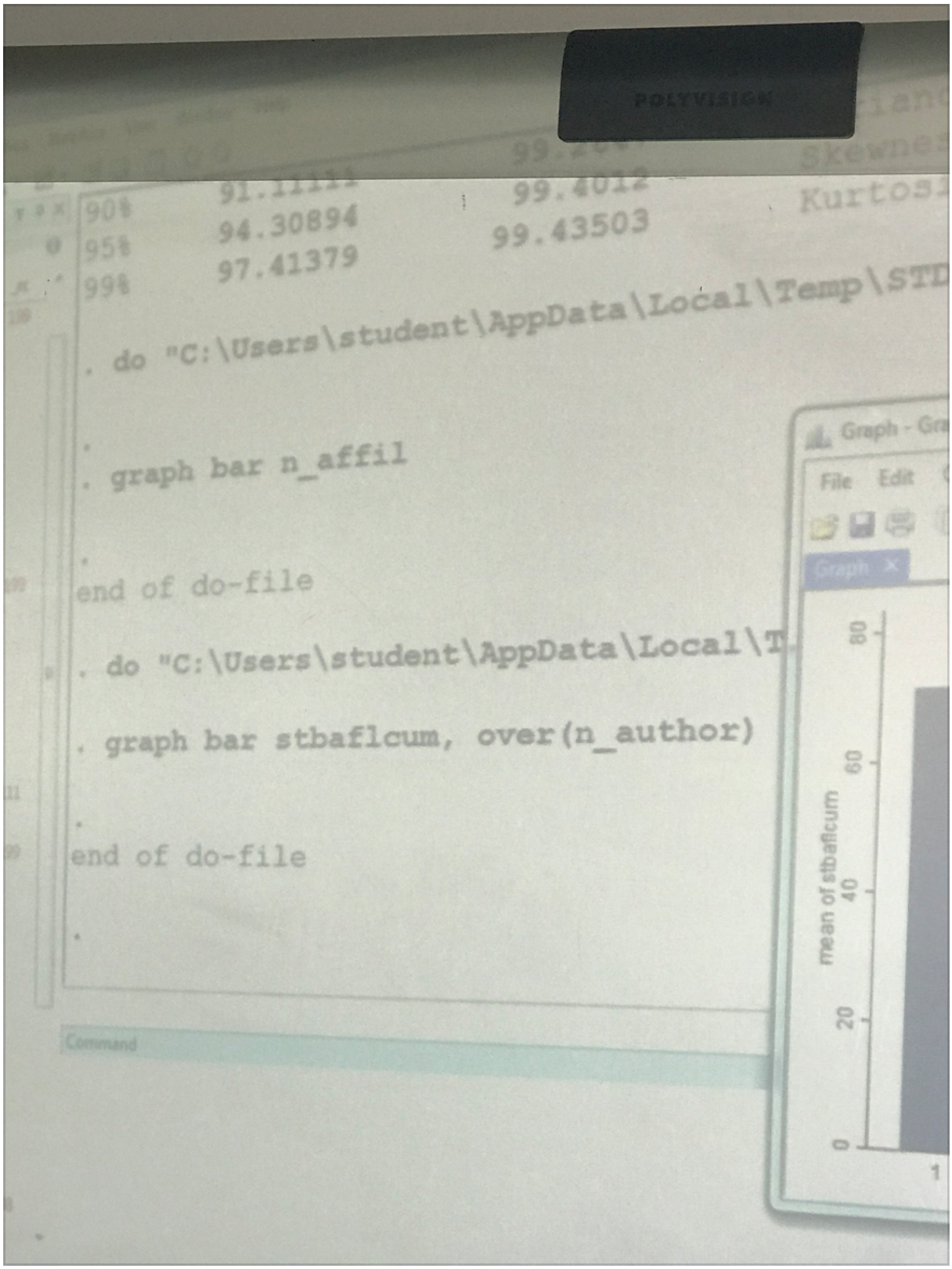
- Корреляция Пирсона - pwcorr
- Pvalue = 0 значит отвергаем



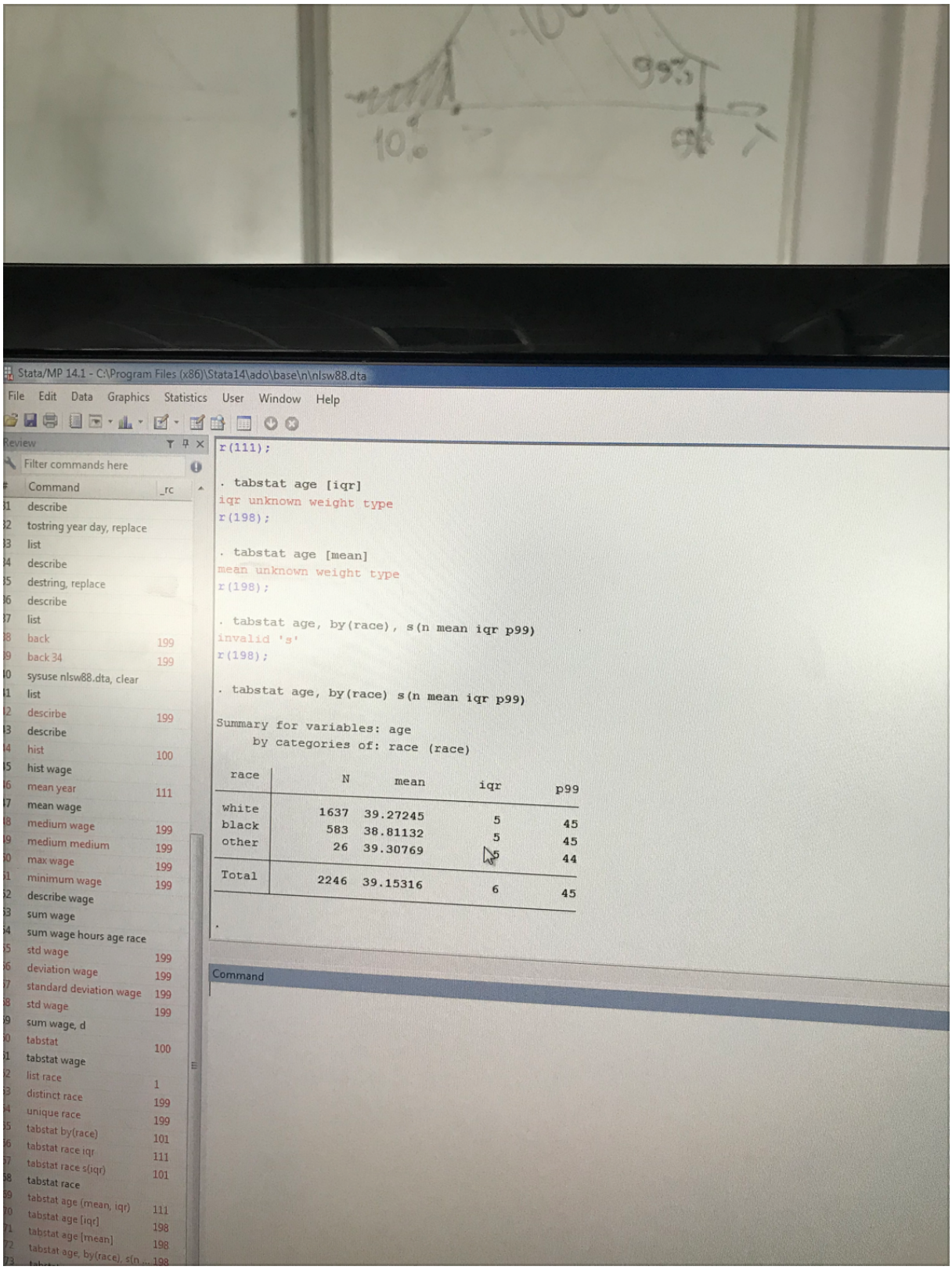
- Корреляция Крамера



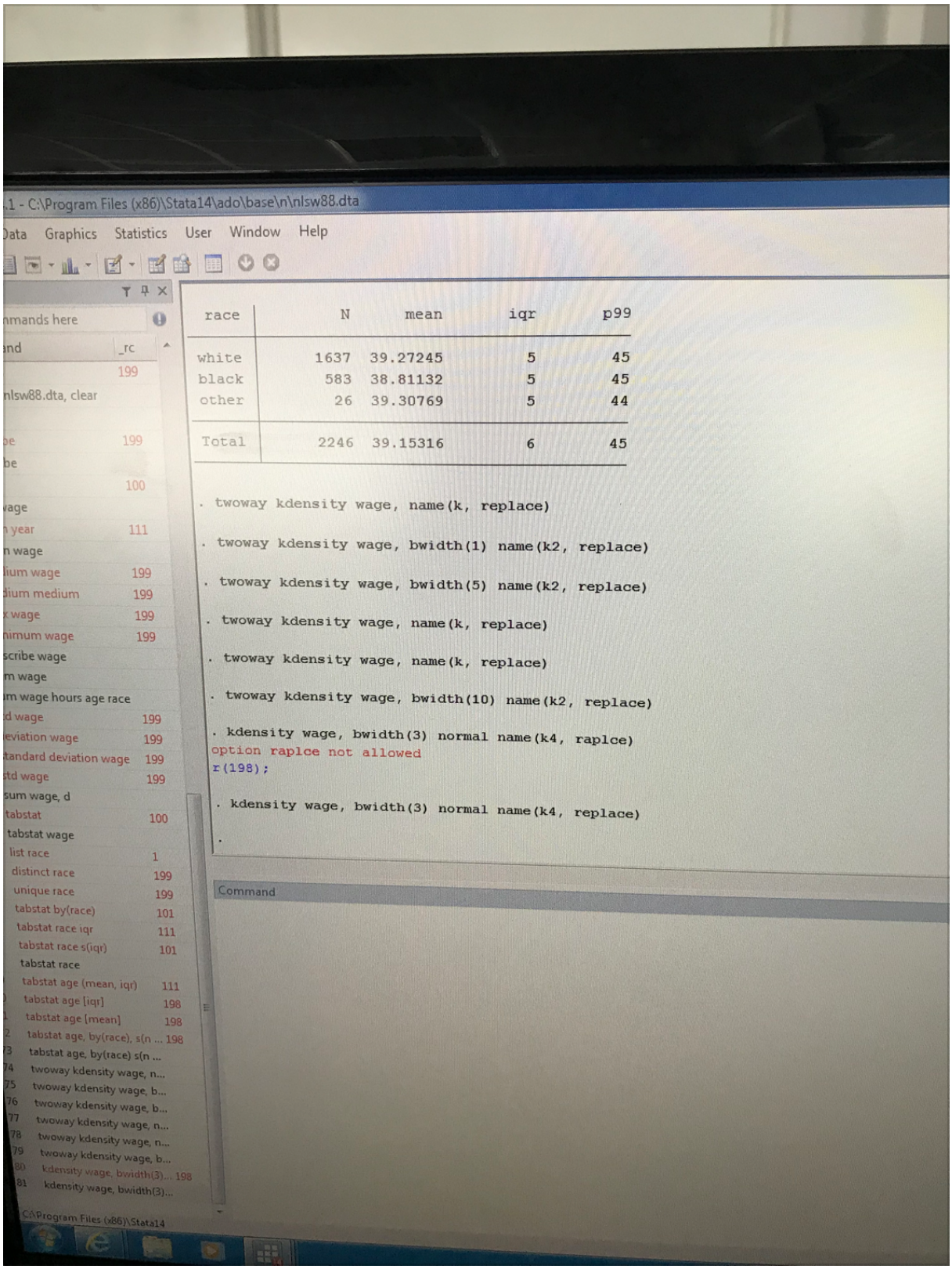
- Sum, d даёт перцентили
- Писать небольшое объяснение к каждой функции
- График баров:

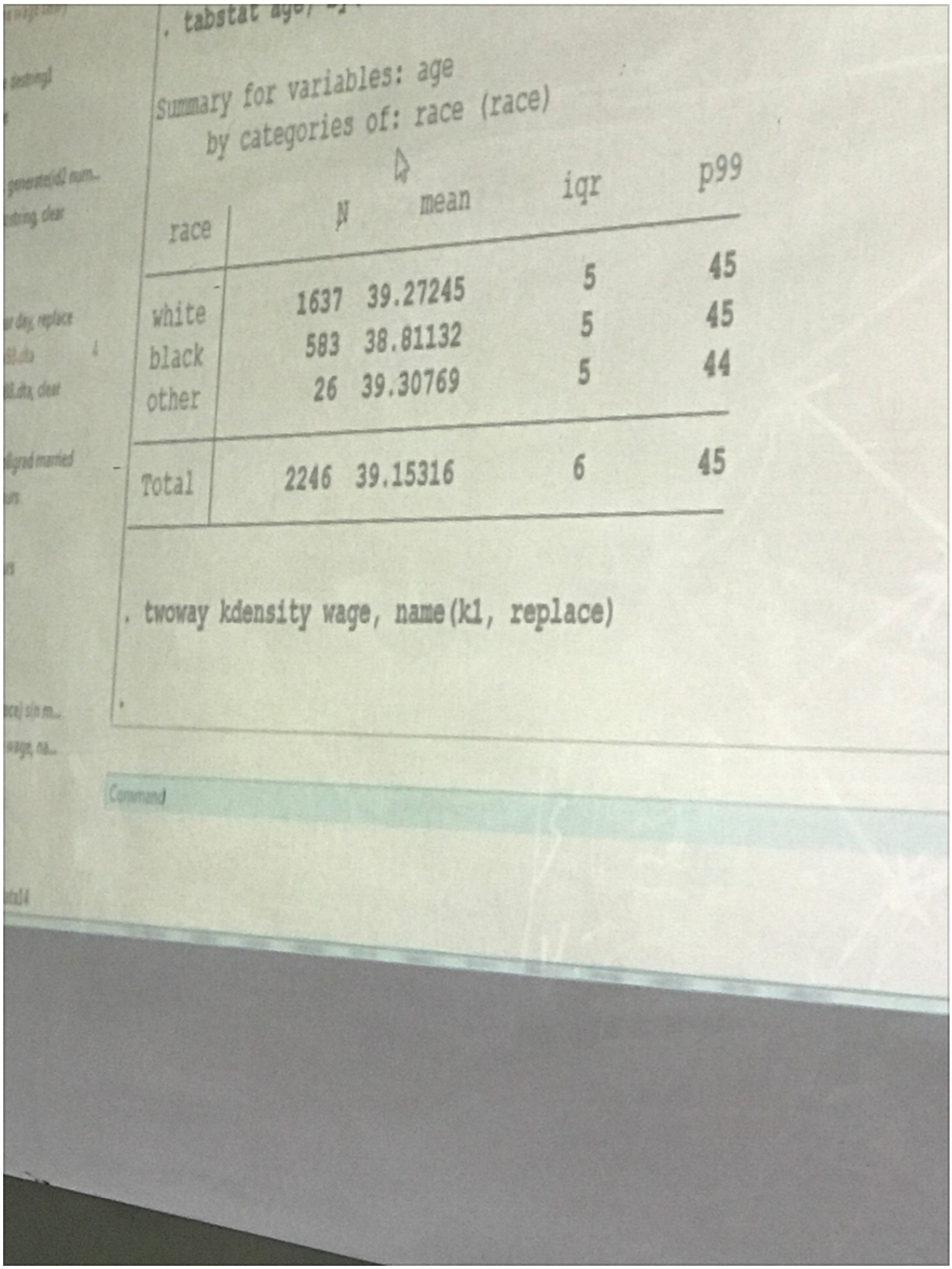

90% 91.11111 99.4012
95% 94.30894 99.43503
99% 97.41379
Kurtosi
. do "C:\Users\student\AppData\Local\Temp\STD
. graph bar n_affil
end of do-file
. do "C:\Users\student\AppData\Local\T
. graph bar stbaflcum, over(n_author)
end of do-file
Command
Graph - Gra
File Edit
Graph
mean of stbaflcum
0
20
40
60
80
1

- Срезы



- Ниже располагается список полезных функций для проекта
- Twoway для рисования двух элементов, описывающих данные, на одном графике


.1 - C:\Program Files (x86)\Stata14\ado\base\n\nlsw88.dta
Data Graphics Statistics User Window Help
race | N mean iqr p99
white | 1637 39.27245 5 45
black | 583 38.81132 5 45
other | 26 39.30769 5 44
Total | 2246 39.15316 6 45
. twoway kdensity wage, name(k, replace)
. twoway kdensity wage, bwidth(1) name(k2, replace)
. twoway kdensity wage, bwidth(5) name(k2, replace)
. twoway kdensity wage, name(k, replace)
. twoway kdensity wage, name(k, replace)
. twoway kdensity wage, bwidth(10) name(k2, replace)
. kdensity wage, bwidth(3) normal name(k4, raplce)
option raplce not allowed
r(198);
. kdensity wage, bwidth(3) normal name(k4, replace)
Command



. tabstat age, [illegible]

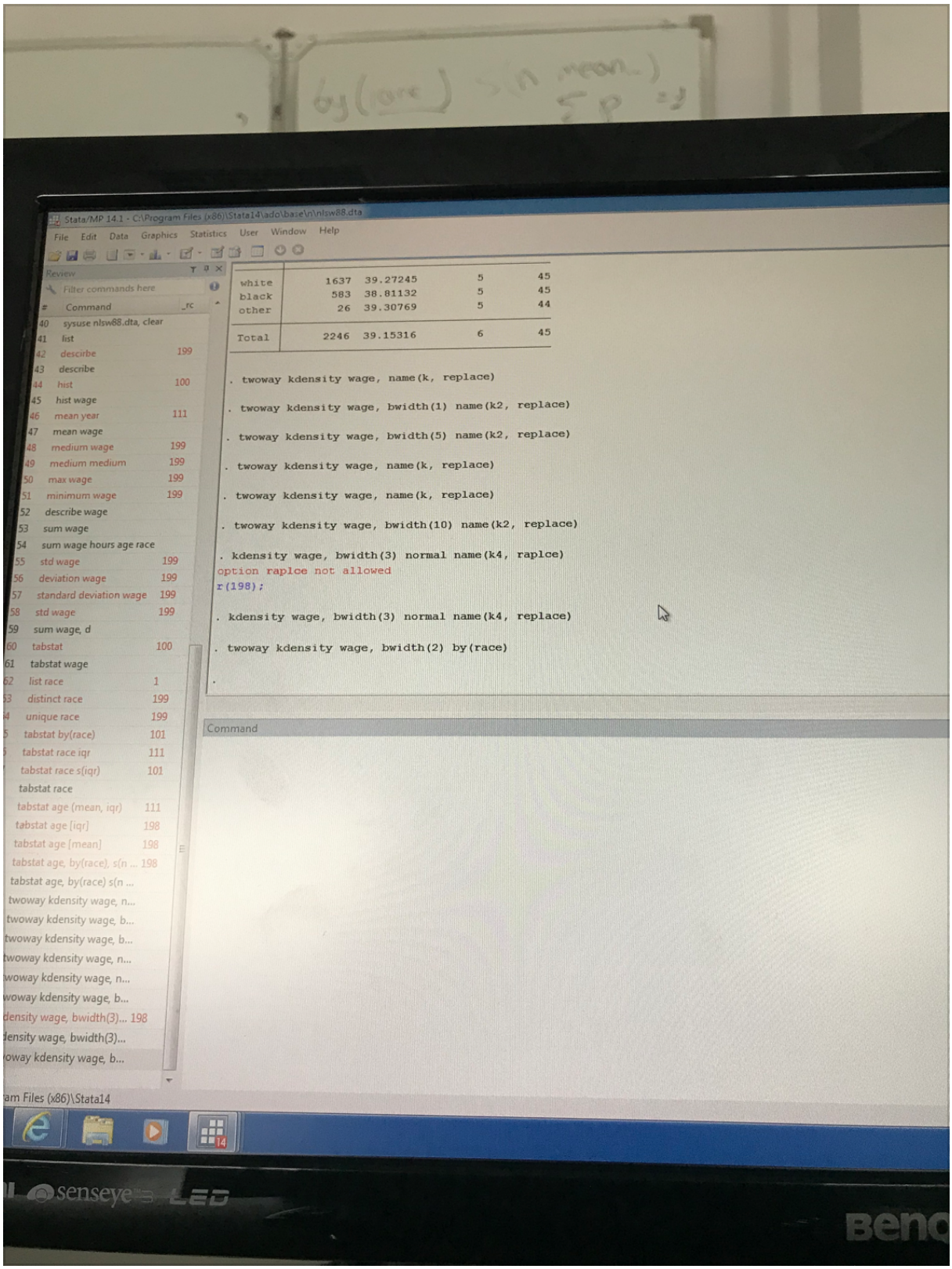
Summary for variables: age
by categories of: race (race)

race	N	mean	iqr	p99
white	1637	39.27245	5	45
black	583	38.81132	5	45
other	26	39.30769	5	44
Total	2246	39.15316	6	45

. twoway kdensity wage, name(k1, replace)

.

Command


Stata/MP 14.1 - C:\Program Files (x86)\Stata14\ado\base\n\nlsw88.dta
File Edit Data Graphics Statistics User Window Help
white 1637 39.27245 5 45
black 583 38.81132 5 45
other 26 39.30769 5 44
Total 2246 39.15316 6 45
. twoway kdensity wage, name(k, replace)
. twoway kdensity wage, bwidth(1) name(k2, replace)
. twoway kdensity wage, bwidth(5) name(k2, replace)
. twoway kdensity wage, name(k, replace)
. twoway kdensity wage, name(k, replace)
. twoway kdensity wage, bwidth(10) name(k2, replace)
. kdensity wage, bwidth(3) normal name(k4, raplce)
option raplce not allowed
r(198);
. kdensity wage, bwidth(3) normal name(k4, replace)
. twoway kdensity wage, bwidth(2) by(race)
Command
Review
Filter commands here
Command _rc
40 sysuse nlsw88.dta, clear
41 list
42 describe 199
43 describe
44 hist 100
45 hist wage
46 mean year 111
47 mean wage
48 medium wage 199
49 medium medium 199
50 max wage 199
51 minimum wage 199
52 describe wage
53 sum wage
54 sum wage hours age race
55 std wage 199
56 deviation wage 199
57 standard deviation wage 199
58 std wage 199
59 sum wage, d
60 tabstat 100
61 tabstat wage
62 list race 1
63 distinct race 199
64 unique race 199
5 tabstat by(race) 101
tabstat race iqr 111
tabstat race s(iqr) 101
tabstat race
tabstat age (mean, iqr) 111
tabstat age [iqr] 198
tabstat age [mean] 198
tabstat age, by(race), s(n ... 198
tabstat age, by(race) s(n ...
twoway kdensity wage, n...
twoway kdensity wage, b...
twoway kdensity wage, b...
twoway kdensity wage, n...
woway kdensity wage, n...
woway kdensity wage, b...
density wage, bwidth(3)... 198
density wage, bwidth(3)...
oway kdensity wage, b...
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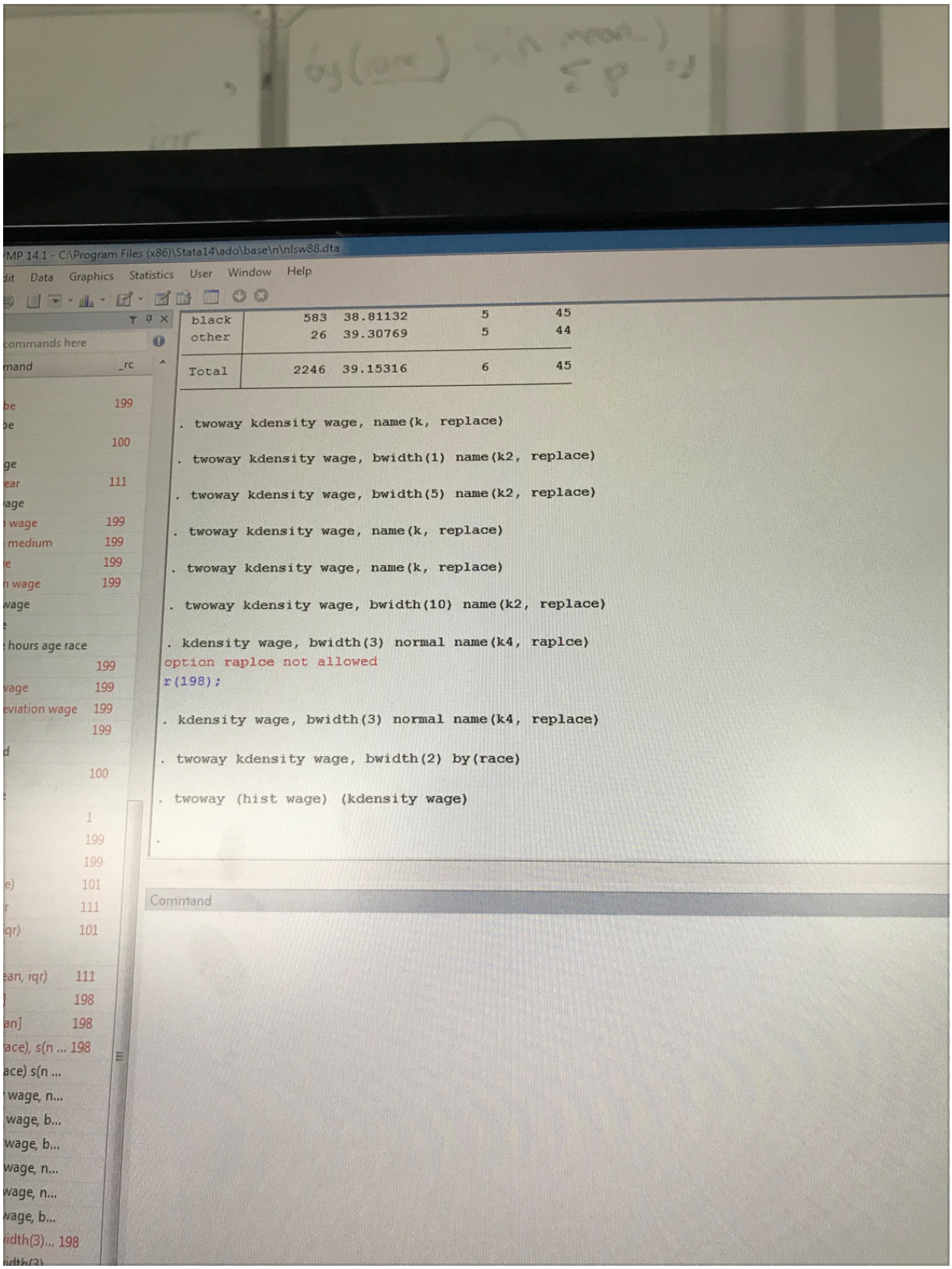
Benq


MP 14.1 - C:\Program Files (x86)\Stata14\ado\base\n\nlsw88.dta
dit Data Graphics Statistics User Window Help
commands here
mand _rc
be 199
be
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ge
ear 111
age
wage 199
medium 199
e 199
n wage 199
wage
hours age race
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wage 199
eviation wage 199
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199
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111
qr) 101
ean, iqr) 111
198
an] 198
ace), s(n ... 198
ace) s(n ...
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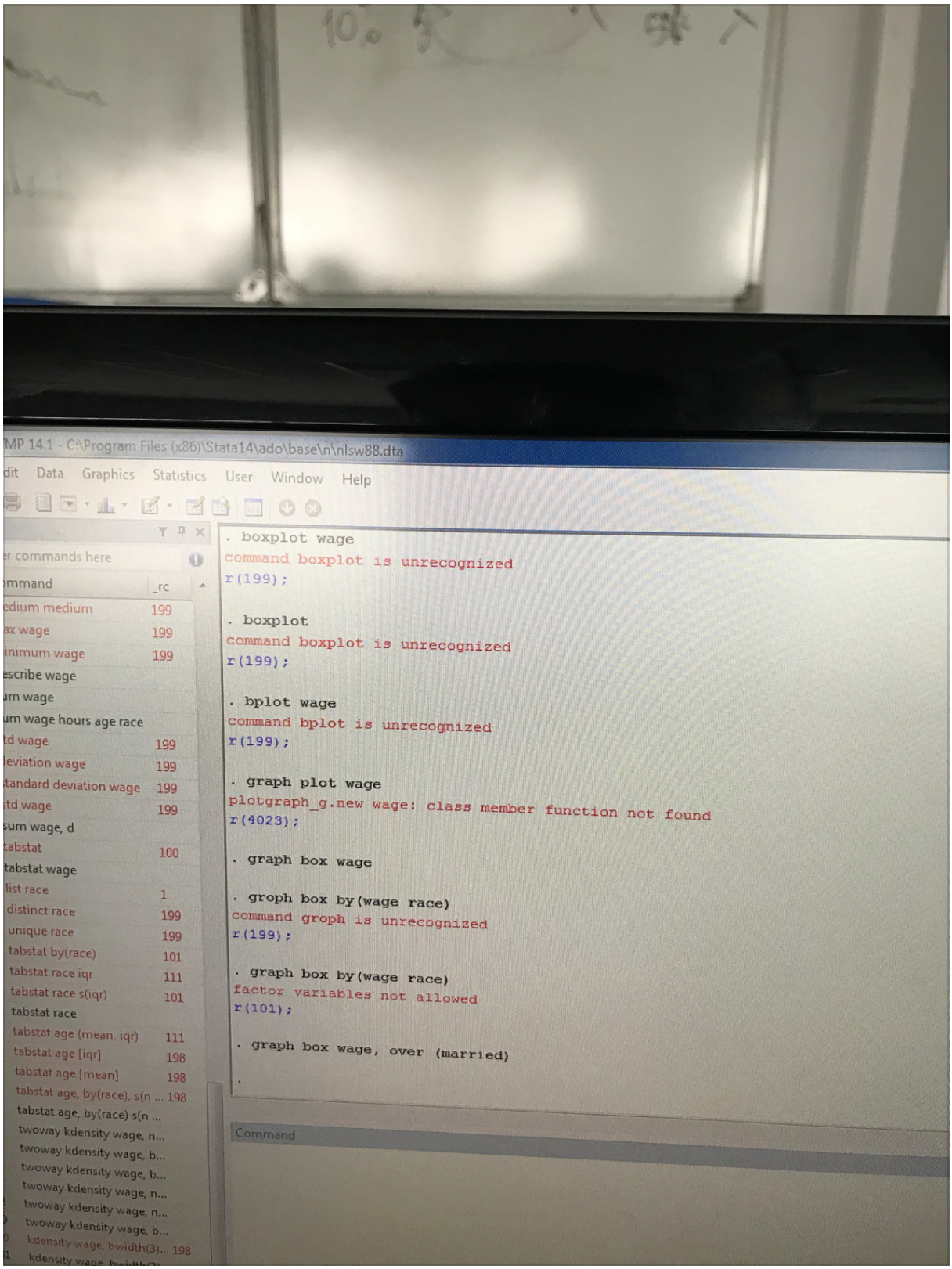
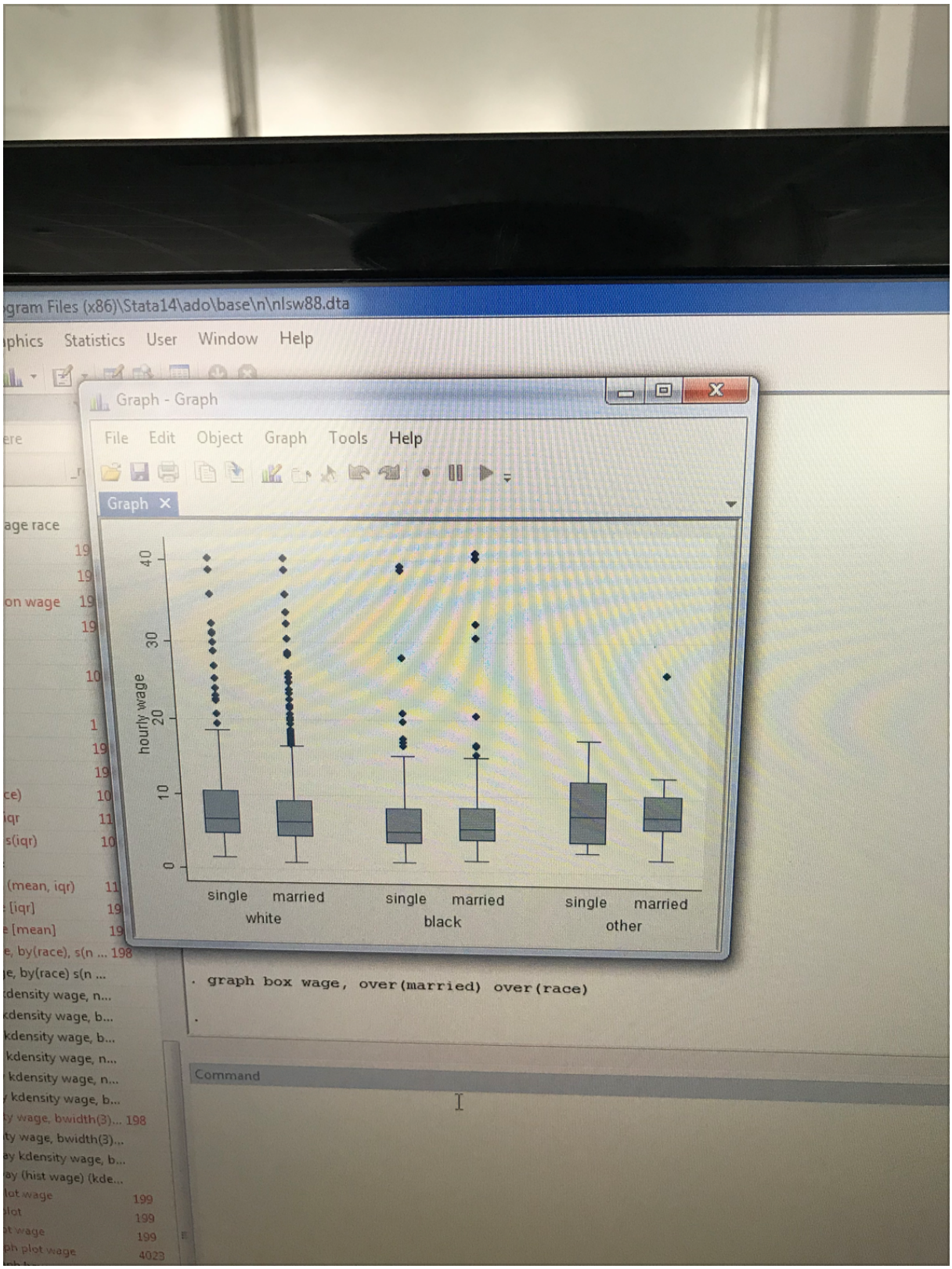
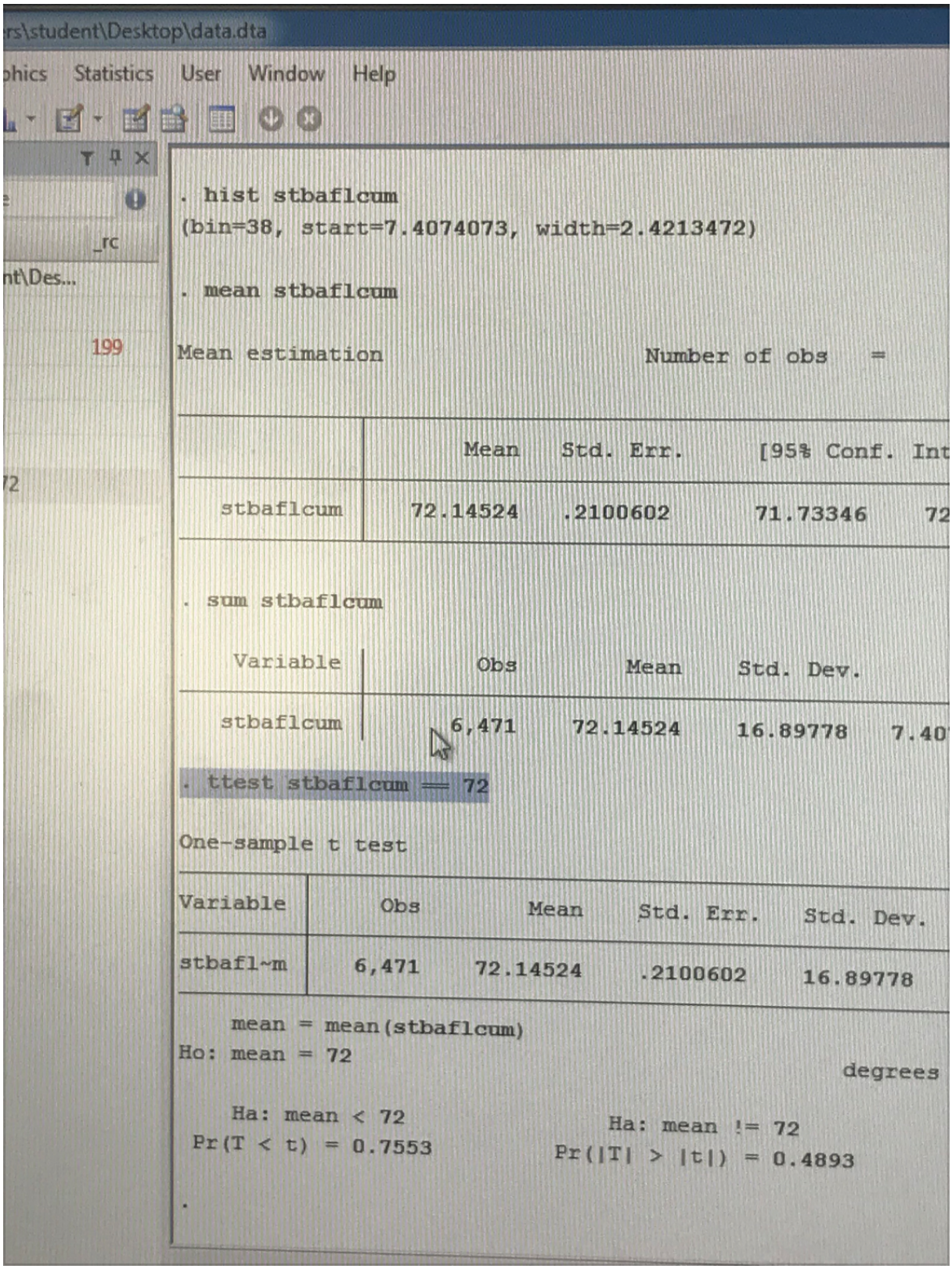
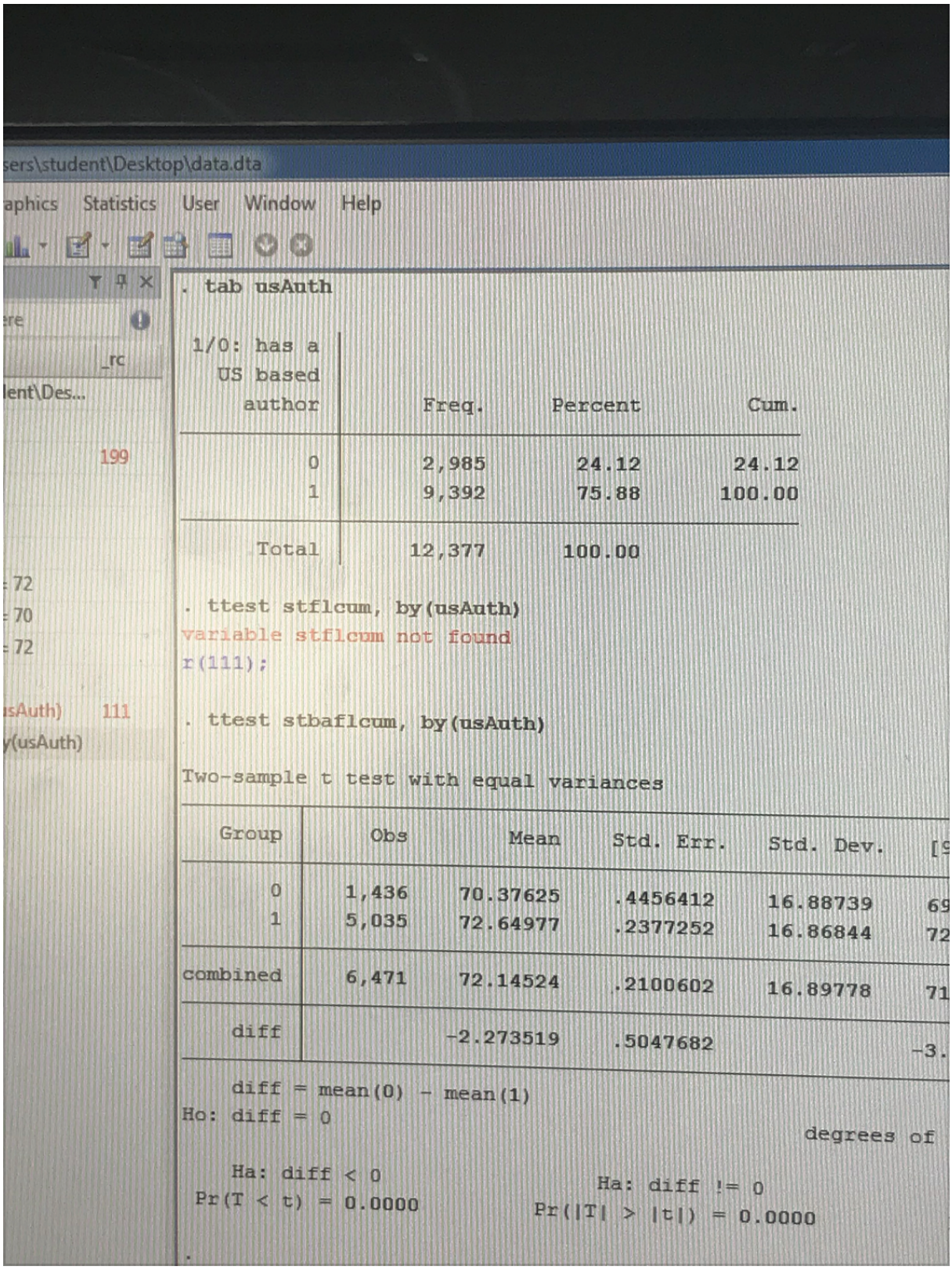
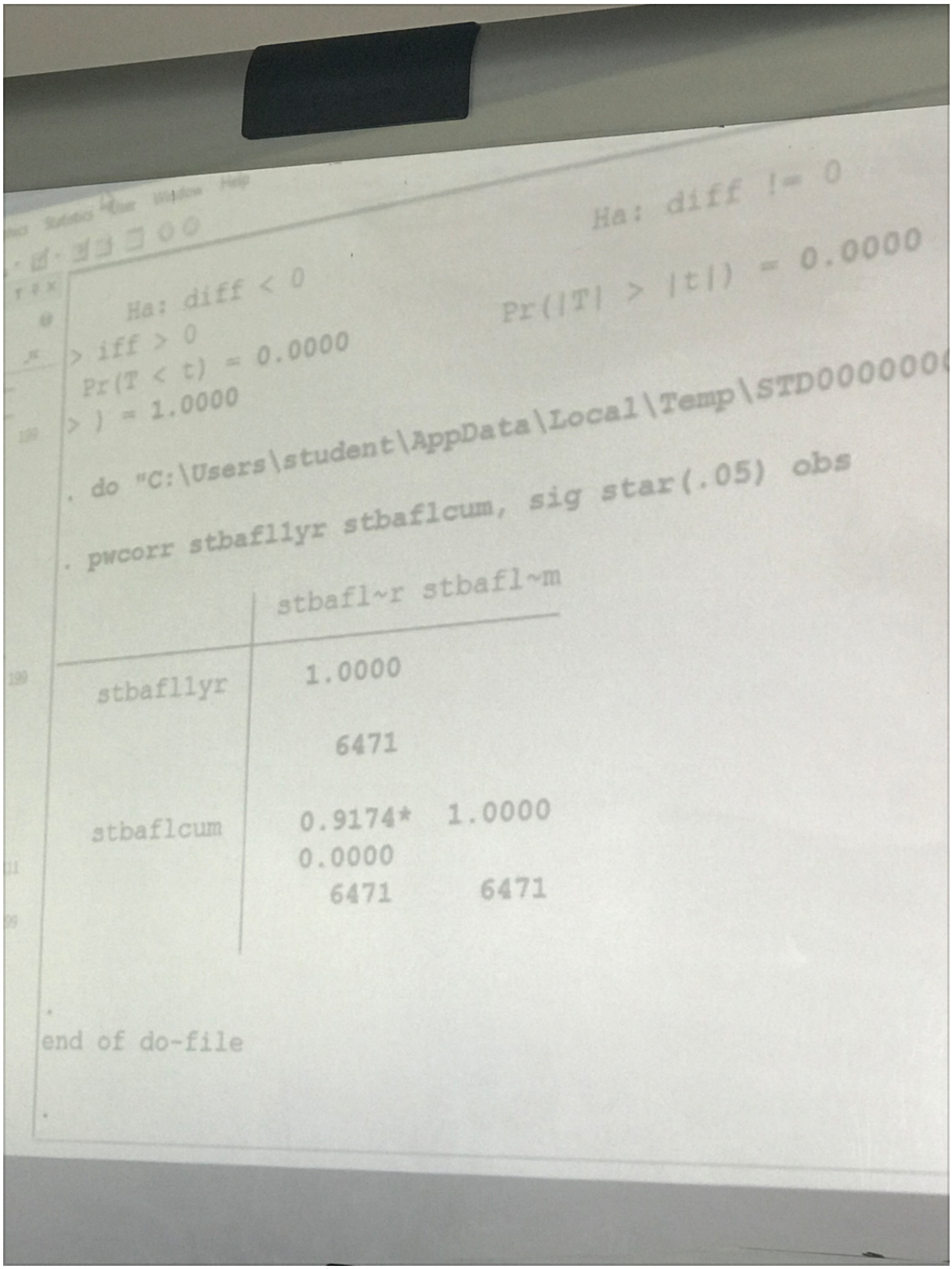
wage, b...
wage, b...
wage, n...
wage, n...
wage, b...
idth(3)... 198
black 583 38.81132 5 45
other 26 39.30769 5 44
Total 2246 39.15316 6 45
. twoway kdensity wage, name(k, replace)
. twoway kdensity wage, bwidth(1) name(k2, replace)
. twoway kdensity wage, bwidth(5) name(k2, replace)
. twoway kdensity wage, name(k, replace)
. twoway kdensity wage, name(k, replace)
. twoway kdensity wage, bwidth(10) name(k2, replace)
. kdensity wage, bwidth(3) normal name(k4, raplce)
option raplce not allowed
r(198);
. kdensity wage, bwidth(3) normal name(k4, replace)
. twoway kdensity wage, bwidth(2) by(race)
. twoway (hist wage) (kdensity wage)
.
Command


MP 14.1 - C:\Program Files (x86)\Stata14\ado\base\n\nlsw88.dta
dit Data Graphics Statistics User Window Help
. boxplot wage
command boxplot is unrecognized
r(199);
. boxplot
command boxplot is unrecognized
r(199);
. bplot wage
command bplot is unrecognized
r(199);
. graph plot wage
plotgraph_g.new wage: class member function not found
r(4023);
. graph box wage
. groph box by(wage race)
command groph is unrecognized
r(199);
. graph box by(wage race)
factor variables not allowed
r(101);
. graph box wage, over (married)
.
Command

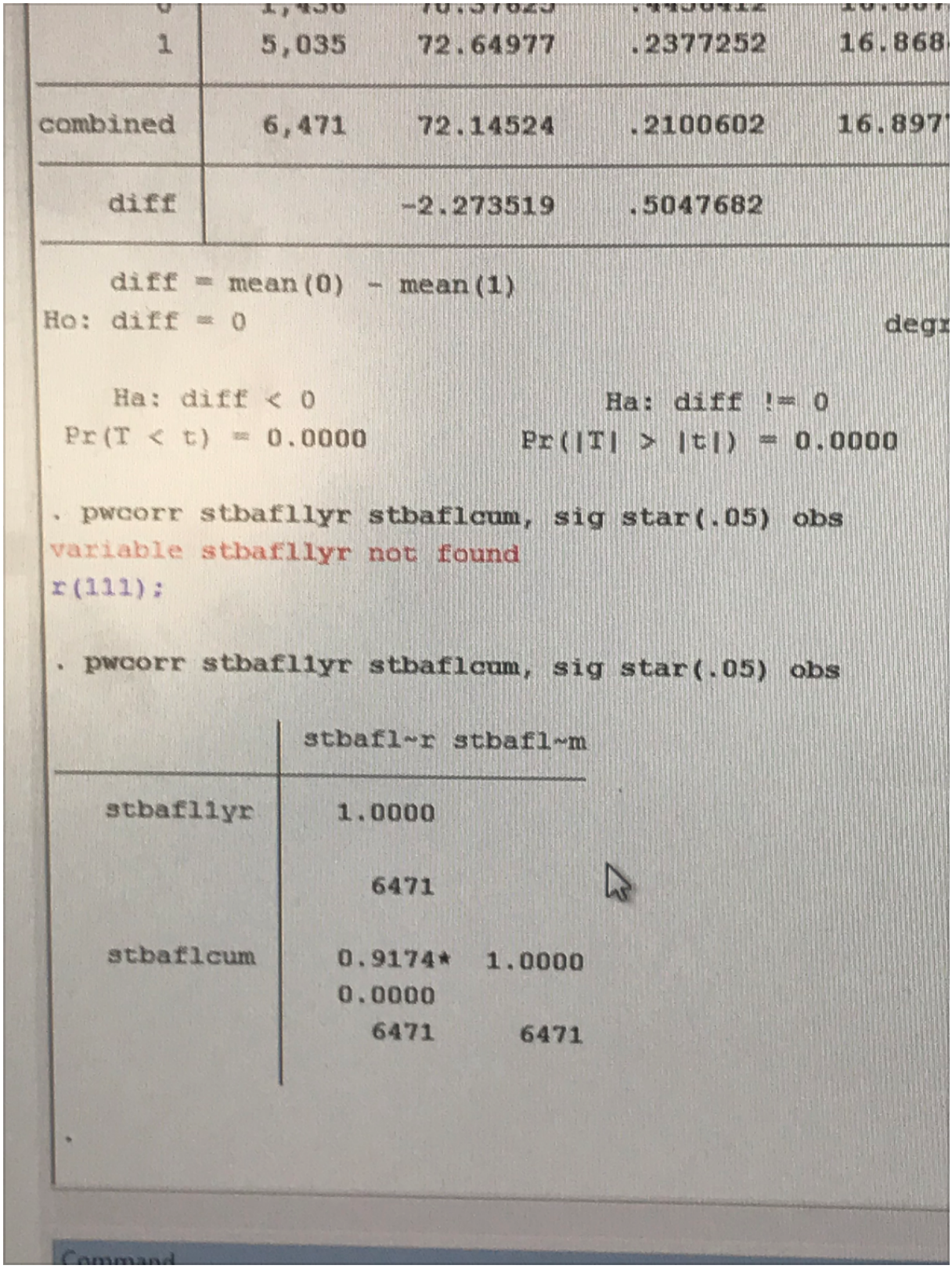

gram Files (x86)\Stata14\ado\base\n\nlsw88.dta
phics Statistics User Window Help
Graph - Graph
File Edit Object Graph Tools Help
Graph
hourly wage
0
10
20
30
40
single
married
white
black
other
. graph box wage, over(married) over(race)
Command


rs\student\Desktop\data.dta
phics Statistics User Window Help
. hist stbaflcum
(bin=38, start=7.4074073, width=2.4213472)
. mean stbaflcum
Mean estimation Number of obs =
Mean Std. Err. [95% Conf. Int
stbaflcum 72.14524 .2100602 71.73346 72
. sum stbaflcum
Variable Obs Mean Std. Dev.
stbaflcum 6,471 72.14524 16.89778 7.40
. ttest stbaflcum == 72
One-sample t test
Variable Obs Mean Std. Err. Std. Dev.
stbafl~m 6,471 72.14524 .2100602 16.89778
mean = mean(stbaflcum)
Ho: mean = 72
degrees
Ha: mean < 72
Pr(T < t) = 0.7553
Ha: mean != 72
Pr(|T| > |t|) = 0.4893
.


sers\student\Desktop\data.dta
aphics Statistics User Window Help
. tab usAuth
1/0: has a US based author | Freq. | Percent | Cum.
0 | 2,985 | 24.12 | 24.12
1 | 9,392 | 75.88 | 100.00
Total | 12,377 | 100.00
. ttest stflcum, by(usAuth)
variable stflcum not found
r(111);
. ttest stbaflcum, by(usAuth)
Two-sample t test with equal variances
Group | Obs | Mean | Std. Err. | Std. Dev.
0 | 1,436 | 70.37625 | .4456412 | 16.88739
1 | 5,035 | 72.64977 | .2377252 | 16.86844
combined | 6,471 | 72.14524 | .2100602 | 16.89778
diff | -2.273519 | .5047682
diff = mean(0) - mean(1)
Ho: diff = 0
degrees of
Ha: diff < 0
Pr(T < t) = 0.0000
Ha: diff != 0
Pr(|T| > |t|) = 0.0000



```
    Ha: diff < 0                 Ha: diff != 0
> iff > 0
 Pr(T < t) = 0.0000         Pr(|T| > |t|) = 0.0000
> ) = 1.0000

. do "C:\Users\student\AppData\Local\Temp\STD000000

. pwcorr stbafllyr stbaflcum, sig star(.05) obs

             | stbafl~r stbafl~m
-------------+------------------
  stbafllyr  |   1.0000
             |
             |     6471
             |
  stbaflcum  |   0.9174*  1.0000
             |   0.0000
             |     6471      6471


.
end of do-file

.
```



1	5,035	72.64977	.2377252	16.868
combined	6,471	72.14524	.2100602	16.897
diff		-2.273519	.5047682	

diff = mean(0) - mean(1)
Ho: diff = 0 degr

Ha: diff < 0 Ha: diff != 0
Pr(T < t) = 0.0000 Pr(|T| > |t|) = 0.0000

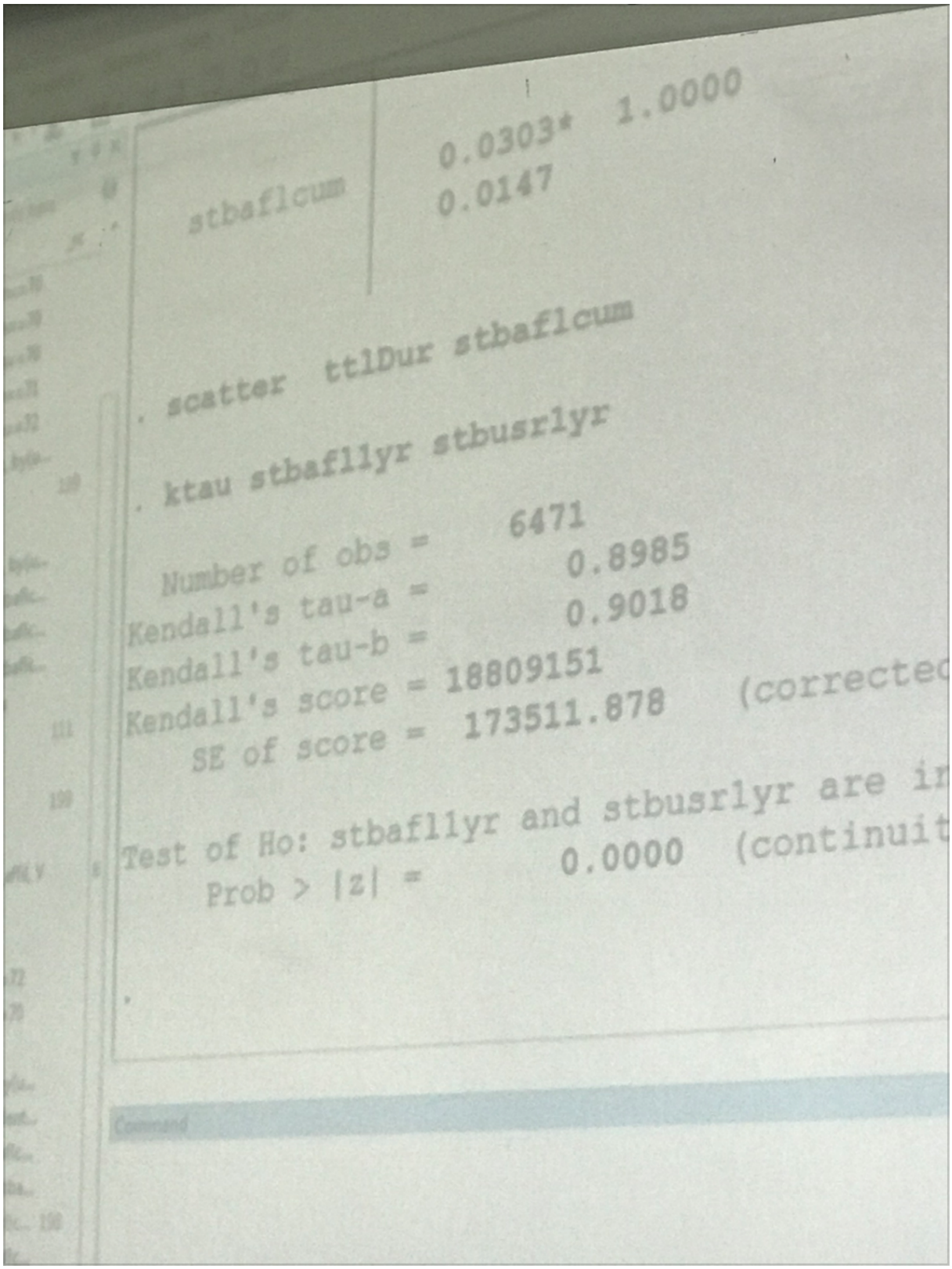
```
. pwcorr stbafl1yr stbaflcum, sig star(.05) obs
variable stbafl1yr not found
r(111);

. pwcorr stbafl1yr stbaflcum, sig star(.05) obs
```

	stbafl~r	stbafl~m
stbafl1yr	1.0000	
	6471	
stbaflcum	0.9174*	1.0000
	0.0000	
	6471	6471

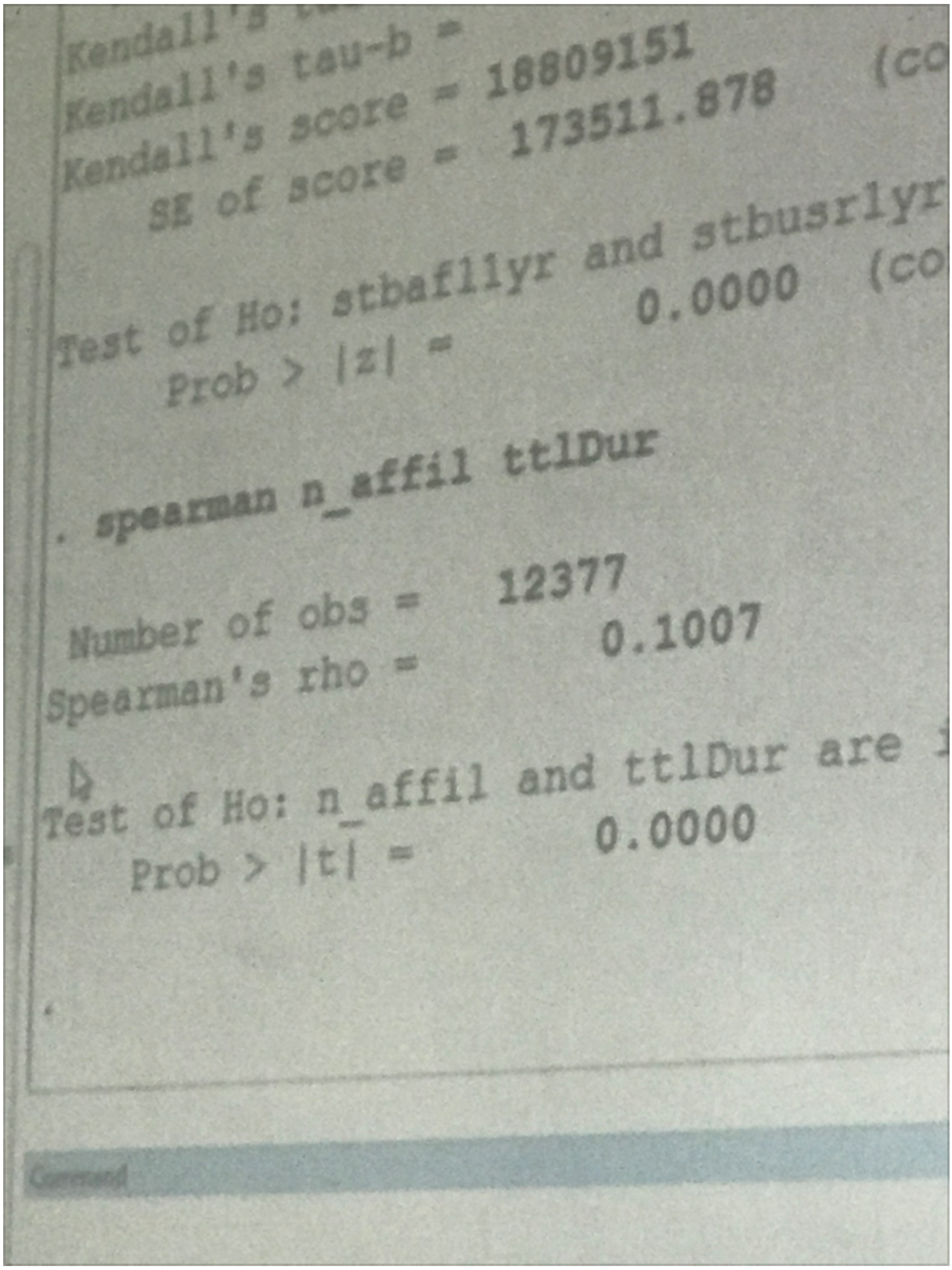
.

Command

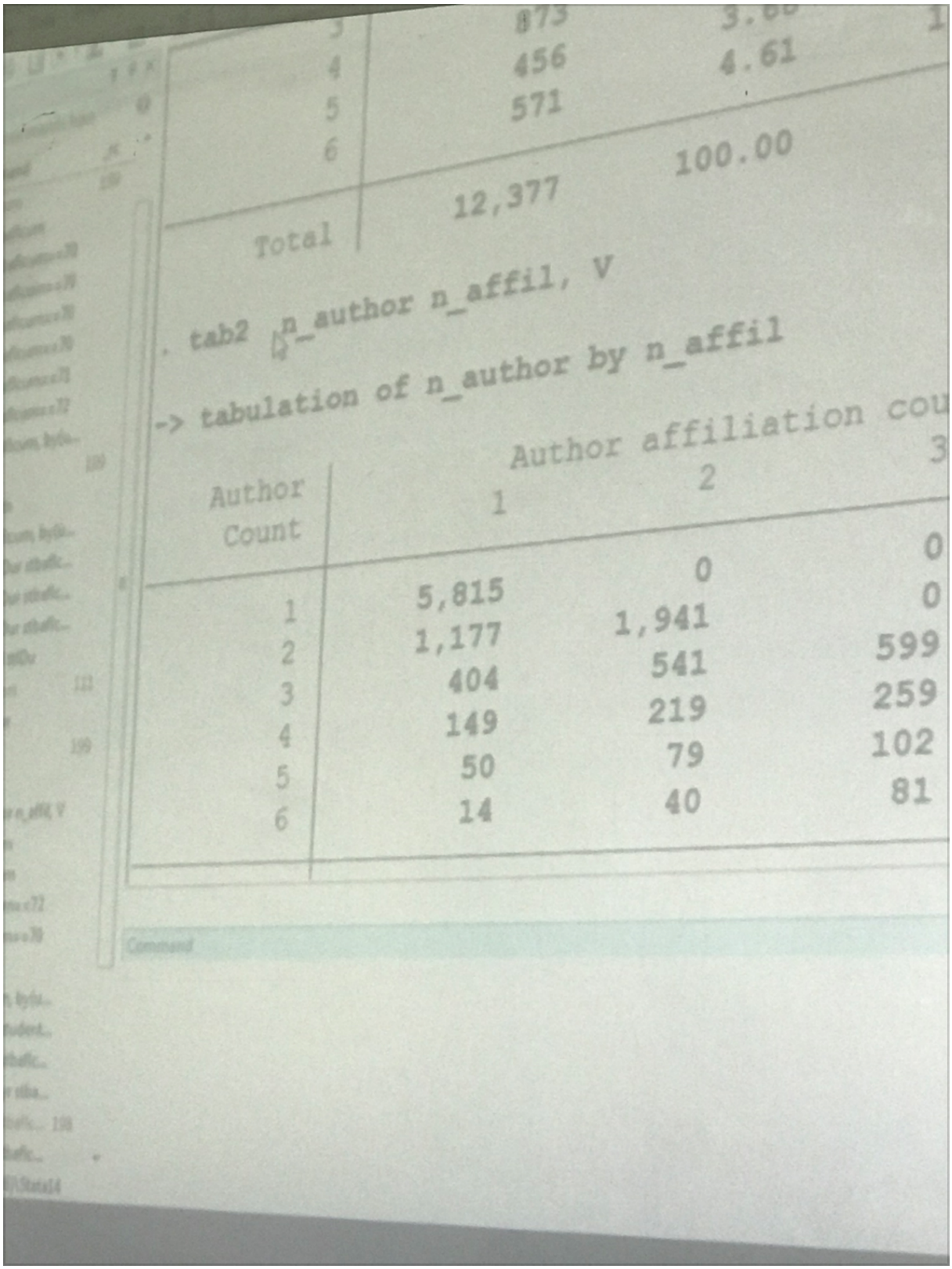
- Корреляция Кендала



- Корреляция Спирмана



-
- Корреляция Крамера



4	456	4.61	
5	571		
6			
Total	12,377	100.00	

. tab2 n_author n_affil, V

-> tabulation of n_author by n_affil

Author Count	Author affiliation cou 1	2	3
		0	0
1	5,815	1,941	0
2	1,177	541	599
3	404	219	259
4	149	79	102
5	50	40	81
6	14		